

24936

S/188/61/000/004/002/003
B111/B209

Some peculiarities of USW-signal ...

geneous, the fluctuations at the output of the receiver will differ from those in free space. This difference is determined by the conditions in the troposphere and by the reflection coefficient. Next, some results of experimental studies during 1959 - 60 (Ref. 8: Semenov, A. A., Karpeyev, G. A., Radiotekhnika i elektronika, 4, vyp. 2, 1959) are given proving the fluctuational characteristics of the wave field to be patel-shaped when the structure of the mean field level is also patel-shaped. The studies lead to the conclusion that in certain cases, when refraction is enhanced, the amplitude fluctuations in the course of one measuring process cannot be regarded as steady. The authors point out that the fluctuations with nonsteady characteristics reveal a definite seasonal course. A comparison of the temporal self-correlations of the fluctuations with the spatial correlations showed that an analysis of the temporal self-correlations only agrees satisfactorily with the theory of local isotropic turbulence when during the reception time τ of two consecutive signals the inhomogeneities do not vary but are transmitted with drift velocity only. Measurements of the coefficient of the spatial transverse correlations of the amplitude fluctuations of the received signal resulted in values that are in agreement with those ascertained by time analysis. There are 4 figures and

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Some peculiarities of USW-signal ...

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14 Soviet-bloc references.

ASSOCIATION: Kafedra rasprostraneniya radiovoln (Department of Radiowave Propagation)

SUBMITTED: May 26, 1960 (initially)
May 25, 1961 (after revision)

Card 4/4

31984

S/142/61/004/004/005/018
E192/E382

9.9700 (1046, 1327)

AUTHORS: Karpeyev, G.A., Kubasov, P.Ye., Semenov, A.A. and
Filipp, N.D.

TITLE: Possibility of employing the phase-meter method
in the investigation of field fluctuations of radio
waves propagating in a turbulent medium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 4, no. 4, 1961, 425 - 431

TEXT: It is known that during propagation over routes near
the ground the field at the receiver is determined by the
average characteristics of the medium and the earth surface
as well as their statistical characteristics (Ref. 2 - A.G.
Arenberg - Propagation of decimetre and centimetre waves -
izd-vo Sovetskoye radio, 1957). The presence of statistical
processes leads to the amplitude- and phase-fluctuations of
the waves and these fluctuations are random functions of time
and space coordinates. It can be assumed for the purpose of
analysis that at a point P of the space v the field
(vector or scalar) can be expressed by:
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Possibility of employing

³¹⁹⁸⁴
S/142/61/004/004/005/018
E192/E382

$$\vec{E}(P, t) = \sum_m \vec{E}_m(P, t) = \sum_m E_m'(P, t) e^{i\varphi_m'(P, t)}$$

where the sum extends over all the partial fields $\vec{E}_m(P, t)$, which can be regarded as having arrived at the receiver along various trajectories; the field $\vec{E}(P, t)$ is therefore a result of multi-ray propagation. A two-antenna interferometer, shown in Fig. 1, is used as the receiver; it consists of: 1 - two antennae; 2 - feeder system and 3 - a square-detector. The voltage at the point C of the receiving system can be expressed by:

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$$\vec{E}_c(\vec{r}, t) = \sum_m G_{1m}(t) E_m'(P_1, t) e^{i\varphi_m(P_1, t)} + \sum_m G_{2m}(t) E_m'(P_2, t) e^{i\varphi_m(P_2, t)}$$

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Possibility of employing ...

where G_{1m} and G_{2m} are the gain coefficients of the two antennae,

$\varphi_m(P, t) = \varphi_m^i(P, t) + \varphi_{mp}$, where φ_m^i represents the mean value of the phase in the antenna aperture,

φ_{mp} is the fixed phase-shift during transmission of the signal from point P to point C of the feeder system.

The mathematical expectation $U_o(\vec{r})$ of the amplitude $U(r, t)$ of the output signal of the square-detector (see Fig. 1) is found analytically and this expression is employed to determine the conditions during propagation of ultrashort waves over near-ground routes extending over tens of kilometres. Under the assumption that the fluctuations are small two cases (important in practice) are investigated: 1) the field at the receiver has only one component ($m, n = 1$) and 2) the field consists of two components $E_o + E_s$, such that E_o has a constant phase and amplitude, while E_s is a random component. It is found that for

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31974

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E192/E382

Possibility of employing

the first case the expectation $U_0(\bar{r})$ depends on the invariable field characteristics as well as the statistical characteristics of the medium. It is further shown that use of the phase-meter system accentuates the relative fluctuations of the output signal so that these can be measured and investigated comparatively easily. Secondly, the method makes possible measuring the space correlation characteristics of the field fluctuations. In the case of the field consisting of the two components E_0 and E_s , use of the method permits elimination of the constant field component, which facilitates measurement of the field fluctuations. The problem was investigated experimentally and it was found that in the direct-visibility zone the amplitude-phase fluctuations of the ultrashort waves were so small that there existed practical difficulties in effecting the measurements. Thus, for example, during 65 measurement periods conducted between January and March, 1957, in 33 cases the relative fluctuation $\sigma_0^2 < 0.01$, in 20 cases $0.01 \leq \sigma_0^2 \leq 0.25$ and only in 12 cases $\sigma_0^2 > 0.25$.

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Possibility of employing

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A series of measurements of amplitude-phase fluctuations was carried out in the autumn of 1959 at ultrashort waves by the phase-meter method and it was found that the low-frequency component of the amplitude-phase fluctuations was primarily determined by the phase-fluctuations of the field; on the other hand, the fast component was due to the amplitude-fluctuations. This was further confirmed by some measurements of auto-correlation functions of the amplitude- and amplitude-phase fluctuations of the field at a frequency of $f = 9\ 350\ \text{Mc/s}$. A preliminary estimate of the mean square phase-fluctuations shows it to be of the order of 10^{-2} radians, which compares with data available from the literature (Ref. 6 - A.V. Men', S.Ya. Braude and V.I. Gorbach - DAN SSSR, 1959, 125, no. 5, 1019; Ref. 7 - D.M. Vysokovskiy - Some problems of long-distance tropospheric propagation of ultrashort radio waves, pub. by AS USSR, 1958).

Card 5/6

Possibility of employing

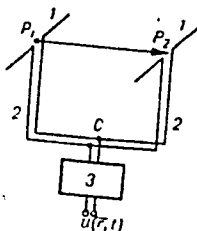
31984
S/142/61/004/004/005/018
E192/E382

There are 4 figures and 7 Soviet-bloc references.

ASSOCIATION: Kafedra rasprostraneniya radiovoln Moskovskogo
ordena Lenina gos. universiteta im.
M.V. Lomonosova (Department of Radio-wave
Propagation of Moscow Order of Lenin State
University im. M.V. Lomonosov)

SUBMITTED: June 20, 1960

Fig. 1:



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9,9000 (incl. 2205, 2305, abq 1127)

21648
S/109/61/006/003/002/018
E032/E314

AUTHOR: Karpeyev, G.A.

TITLE: Application of a Two-element Interferometer to the Study of Fluctuations in Wave Fields

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol. 6, No. 3, pp. 355 - 362

TEXT: A theoretical estimate is given of the fluctuations at the output of a two-element interferometer loaded with a square-law detector and illustrated in Fig. 1. In this figure, I are the receiving elements, II is the feeder system and III is the square-law detector. A mathematical analysis is given of the dependence of the fluctuations in the output signal on the spatial correlational properties of amplitude-phase fluctuations, as well as the "regular" characteristics. The general analysis is then specialised in the case where the amplitude and phase fluctuations are statistically independent, while the phase fluctuations obey the normal distribution law. General formulae are derived which can be used to investigate, with the aid of this interferometer, Card 1/3

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Application of a Two-element - S/109/61/006/003/002/018
E032/E314

statistical regularities in the amplitude-phase fluctuations of wave fields. In the case of small fluctuations this provides a relatively simple method of studying spatial correlational properties of amplitude-phase fluctuations. The interferometer is said to be particularly suitable for studying relatively small fluctuations in the case of the propagation of ultrashort waves in a turbulent medium. There are 2 figures and 2 Soviet references.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova (Physics Department of Moscow State University im. M.V. Lomonosov)

SUBMITTED: May 30, 1960

Card 2/3

38460

S/109/62/007/006/002/024
D266/D308

6.9200

AUTHOR: Karpeyev, G. A.

TITLE: Connection between the time correlation of the fluctuations of a radiointerferometer output signal and the space time correlation of amplitude-phase field fluctuations

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 6, 1962, 929-939

TEXT: The interferometer consists of N identical receiving elements employing a common detector. Assuming independent phase and amplitude fluctuations in the field quantities and employing earlier results the time correlation function of the output signal is derived. The formulas are evaluated for the case of two elements. The conclusions are as follows: (1) The correlation function of the output signal is determined both by the regular and the random characteristics of the field. In the general case no separate information can be obtained on the amplitude and phase

Card 1/2

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Connection between the... APPROVED FOR RELEASE: 06/13/2000

S/109/62/007/006/002/024
D266/D308 CIA-RDP86-00513R000720820016

fluctuations. (2) The spectrum of the output signal fluctuations depends on the spectrum of both phase and amplitude fluctuations of the field but it is not identical with either of them. (3) If the amplitude fluctuations of the field are small the time correlation of the output signal is independent of the amplitude fluctuations of the field and depends in a simple manner on the time correlation of the phase fluctuations of the field. (4) The statistical characteristics of the output signal depend on the regular phase shift. (5) The mean square fluctuation of the output signal reaches its minimum value at the minima and maxima of the mean value. The final conclusion is that the radio interferometer can best be applied when the amplitude-phase fluctuations of the field are small. There are 3 figures.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Department of Physics, Moscow State University im. M. V. Lomonosov)

SUBMITTED: April 19, 1961

Card 2/2

4

SEMENOV, Aleksandr Aleksandrovich; DOLUKHANOV, M.P., prof., retsen-
zent; KARPEYEV, G.A., red.; GEORGIYEVA, G.I., tekhn. red.

[Theory of electromagnetic waves; lecture course for radio
physicists] Teoriia elektromagnitnykh voln; lektsionnyi kurs
dlia radiofizikov. Moskva, Izd-vo Mosk. univ., 1962. 255 p.
(MIRA 15:3)

(Electromagnetic waves) (Radio)

KARPEYEV, G.A., kand. fiz.-matem. nauk

Possibilities of improving the evaluations of climatic norms.
Metsor. i gidrol. no.6:7-13 Je '65. (MIRA 18:5)

1. Mirovoy meteorologicheskij tsentr.

Card 1/1

Lgc

UDC: 551.506.3

ACC NR: AT6033365

SOURCE CODE: UR/3118/66/000/009/0018/0028

AUTHOR: Karpeyev, G. A.

ORG: none

TITLE: On a method of evaluating statistical characteristics of meteorological fields

SOURCE: Mirovoy meteorologicheskij tsentr. Trudy, no. 9, 1966. Statisticheskiye svoystva meteorologicheskikh poley (Statistical properties of meteorological fields), 18-28

TOPIC TAGS: mathematic analysis, algorithm, meteorologic field, atmosphere sounding

ABSTRACT: An algorithm has been studied for evaluating mathematical expectancy and the dispersion of meteorological fields by the combination of two, not completely corresponding series of results. Generalized expressions for optimum linear evaluation of norms and dispersions are derived and some specific important applications are studied, such as results of aerological sounding of the atmosphere in two fixed spatial points. Results are obtained for both noncorrelated values in observation series and for series with arbitrary correlation. The method represents a generalization of the usual technique of reducing meteorological observations to periodicity. Orig. art. has: 31 formulas.

SUB CODE: 08, 12/ SUBM DATE: none/ ORIG REF: 006

Card 1/1

... YEV I. Ye.
ZAKHAROV, Boris Petrovich; BOGACHEV, I.N., prof. doktor tekhn.nauk, retsenzent;
RYBIN, V.V., inzh., retsenzent; KARPYEV, I.Ye., inzh., retsenzent;
DUGINA, N.A., tekhn.red.

[Heat treatment of metals] Termicheskaja obrabotka metallov. Moskva,
Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 302 p.
(Metals--Heat treatment) (MIRA 11:?)

SEMENOV, Aleksandr Aleksandrovich; KARPEYEV, K.A., red.; VERMAKOV,
M.S., tekhn. red.

[Introduction to electrodynamics of radiating systems] Vvedenie v elektrodinamiku izluchaiushchikh sistem. Moskva, Izd-vo MGU, 1963. 85 p. (MIRA 16:7)
(Electromagnetic waves) (Antennas (Electronics))
(Microwaves)

KARPEYEV, S.A., mladshiy nauchnyy sotrudnik.

Sulfadimezine in paratyphoid fever and bronchopneumonia in pigs.
Veterinariia 32 no.11:32-33 N '55. (MLRA 8:12)

1. Kazanskiy nauchno-issledovatel'skiy veterinarnyy institut.
(SULFONAMIDES) (SWINE--DISEASES) (PARATYPHOID FEVER)

USSR / Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi. R

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000720820016-
Abs Jour: Ref Zhur-Biol., No 8, 1958, 35826.

Author : Karpeyev, S. A.
Inst : Kazan' Scientific Research Veterinary Institute.
Title : Syntomycin Treatment of Piglets in Experimental
and Spontaneous Paratyphoid (Report of the Author).

Orig Pub: Byul. nauchno-techn. inform. Kazansk. n.-i.
vet. in-ta, 1957, No 1, 13-14.

Abstract: Syntomycin was given internally in a dosage
of 0.02 to 0.003 [sic] grams/kilogram three times
daily. Good therapeutic results were obtained.

KARPEEV, S.A., mladshiy nauchnyy sotrudnik

Toxicogenic properties of *Fordetella bronchiseptica* cultures.
Veterinariia 41 no.1:20-21 Ja '65. (MIRA 18:2)

1. Kazanskiy veterinarnyy institut.

KARPEYEV, S.A., mladshiy nauchnyy sotrudnik

Bacteriological examination in infectious atrophic rhinitis
of swine. Veterinariia 41 no.6:26-27 Je '64. (MIRA 18:6)

1. Kazanskiy veterinarnyy institut.

S/032/60/026/04/42/046
B010/B006

AUTHORS: Karpeyev, V., Engineer, Krikunov, L.

TITLE: The Increasing Importance of the Laboratory at the Cheboksarskiy elektroapparatnyy zavod (Cheboksary Electrical Apparatus Plant)

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, p. 509

TEXT: In a short publication, the author draws attention to the fact that no consideration whatsoever is given to the laboratory of the plant mentioned in the title during the rapid development of the plant, and that the laboratory is not used for the intended purpose of research work. The central laboratory is divided into seven separate laboratories: a mechanical- and a chemical laboratory, and laboratories for each of the following fields: insulations, measuring apparatus, safety appliances, controlling apparatus, and installations. As regards its administration, the central laboratory is separate from the SKB and the workshops, but the most able workers are transferred from the laboratories to the workshops. The wages of laboratory hands are lower than the wages of workers in the workshops, and the laboratories are not consulted when various technical questions are solved. The neglect of the central laboratory retards

Card 1/2

The Increasing Importance of the Laboratory at the
Cheboksarskiy elektroapparatnyy zavod (Cheboksary
Electrical Apparatus Plant)

S/032/60/026/04/42/046
B010/B006

the technical development of the entire plant. The editorship of the present periodical has turned to the Sovet Narodnogo khozyaystva Chuvashskogo administrativnogo ekonomicheskogo rayona (Council of the National Economy of the Chuvashskiy Administrativniy Economic Rayon) with the request, to verify the information given in the above-mentioned paper and to report on measures for the elimination of the shortcomings discussed. Lower down, a letter by Krikunov, Chief Engineer of the Upravleniye mashinostroitel'noy, metalloobrabatyvayushchey i elektrotekhnicheskoy promyshlennosti SNKh Chuvashskogo administrativnogo ekonomicheskogo rayona (Administration of the Machine Construction, Metal Working-, and Electrotechnical Industries SNKh of the Chuvashskiy Administrativniy Economic Rayon) is published. L. Krikunov confirms the correctness of the information given by Karpeyev. The plant was constructed during the war and consists of buildings not suitable for industrial purposes. The requirements of the laboratories will therefore be taken into account in the reconstruction of the plant. In 1960 the seven-hour workday will be introduced, and salaries will be adjusted accordingly. This will raise the income of engineers and technicians.

Card 2/2

KARPEYEV, V.A.

Superfluousness in the design and general overhaoul of ships. Rech.
transp. 14 no.4:20-22 Ap '56. (MLRA 9:8)

1. Starshiy inshener sluzhby sdovogo hozhaystva Volzhskogo ob"ye-
dinennogo parokhodstva.

(Naval architecture--Specifications)
(Ships--Maintenance and repair)

KARPEYEV, V.N.

Blood substitutes in emergency surgery. Akt.vop.perel.krovi. no.7:
290-295 '59. (MIRA 13:1)

1. Primorskaya krayevaya stantsiya perelivaniya krovi (Vladivostok).
(MARITIME TERRITORY--BLOOD PLASMA SUBSTITUTES)

L 8958-66 EWT(m)/EWP(j)/T RM

ACC NR: AP5026529

SOURCE CODE: UR/0286/65/000/019/0070/0070

AUTHORS: Yeliseyeva, V. I.; Il'ichev, G. I.; Karpeyev, Ye. F.; Metelkin, A. I.;
Zharkov, M. N.; Petrova, S. A.; Ionova, N. I.; Gorina, F. A.; Khandozhko, Ye. N.;
Zurabyan, K. M.; Loseva, V. A.; Morgulis, I. A.; Arkhangel'skaya, A. P.
Kryuchkova, M. P.

58
B

ORG: none

TITLE: Method for obtaining film-forming materials and impregnating materials for trimming and filling of natural and artificial leather. Class 39, No. 175227¹⁵

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 70

TOPIC TAGS: leather, polymer, protein, vinyl plastic, acrylic plastic

ABSTRACT: This Author Certificate presents a method for obtaining film-forming and impregnating materials for trimming and filling of natural and artificial leather by modification of vinyl, for instance, acrylic and methacrylic monomers by means of proteins. To increase the thermal, acetone, and water stability of coatings and the durability and filling of the material structure, the starting monomers are emulsified in an aqueous protein solution. The emulsification is followed by

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UDC: 678.744.32-416
677.862.524.1

2

L 8958-66

ACC NR: AP5026529

polymerization in the presence of oxidation-reduction initiating systems.

SUB CODE: 07/ SUBM DATE: 09Feb62

BVK
Card 2/2

AUTHORS: Tolstopyatova, A. A., Balandin, A. A., SOV/62-58-10-4/25
Karpeyskaya, Ye. I.

TITLE: Kinetic Determination of the Binding Energies With the
Chromium Oxide Catalyst. (Kineticheskoye opredeleniye
energii svyazi s katalizatorom okis' khroma)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1958, Nr 10, pp 1184-1191 (USSR)

ABSTRACT: In the present paper the authors investigated the
dehydrogenation and dehydration kinetics of isopropyl alcohol
as well as the dehydrogenation of cyclohexane on chromium
oxide (obtained by annealing ammonium bichromate). The authors
found the relative adsorption coefficient of acetone and
hydrogen. They also determined the activation energy of the
reactions of the dehydrogenation and dehydration of isopropyl
alcohol, as well as of the dehydrogenation of cyclohexane.
The binding energies of the atoms reacting in the molecule
with the catalyst were determined. The authors also compared
the catalytic properties of chromium oxide produced by other
methods with those described already. There are 6 figures,

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Kinetic Determination of the Binding Energies With the Chromium Oxide Catalyst SOV/62-58-10-4/25

9 tables, and 12 references, 11 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova i Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR. (Moscow State University imeni M. V. Lomonosov and Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: April 2, 1957

Card 2/2

AUTHORS: Balandin, A. A., Member, Academy of Sciences, USSR, Karpeyskaya, Ye. I., Tolstopyatova, A. A. SOV/20-122-2-17/42

TITLE: Investigation of the Catalytic Dehydrogenation of Hydrocarbons and Alcohols Over Metallic Rhenium (Issledovaniye kataliticheskoy degidrogenizatsii uglevodorodov i spirteov nad metallicheskim reniyem)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 227-230 (USSR)

ABSTRACT: In recent years more attention has been given to the investigation and the use of rhenium above all to the determination of its catalytic properties. The authors extended their investigations beyond the subject mentioned in the title (a review Ref 1). According to the multiplet-theory of catalysis a lattice of the catalyst of the A1 or A3-type and an atomic radius r within a range of from 1,22 to 1,39 Å is necessary for the dehydrogenation of the sextet-type (Ref 2). Later it was known that metallic rhenium has an A3-lattice and an atomic radius of 1,368 Å. Thus, it corresponds to the above requirements and must theoretically be able

Said 1/3

Investigation of the Catalytic Dehydrogenation of Hydrocarbons and Alcohols Over Metallic Rhenium SOV/20-122-2-17/42

to dehydrogenate catalytically 6-membered hydrocarbons. The structure and the atomic radius of rhenium satisfy the principle of the maintenance of the valent angle of the multiplet-theory (Refs 3,4); for this reason rhenium may also serve as catalyst for the dehydrogenation of hydrocarbons and alcohols according to the doublet-mechanism. The mentioned catalytic properties were experimentally only insufficiently investigated (Refs 5,7,8). Above all, the experimental details as well as the method of production of the catalyst are unknown. For this reason the authors made the present investigations. It was proved by the authors that rhenium applied on coal yields an active catalyst of dehydrogenation of cyclohexane and its homologs, cumene, as well as of the dehydrocyclization of n-heptane. On the rhenium catalysts produced by the authors also alcohol-dehydrogenation takes place between 120 and 500° as well as the conversion of butane-diol-1,4 into γ -butyrolactone. There are 4 tables and 13 references, 9 of which are Soviet.

Card 2/3

Investigation of the Catalytic Dehydrogenation of Hydro- SOV/Co-122-2-17/42
carbons and Alcohols Over Metallic Rhenium

ASSOCIATION: Institut organicheskoy khimii im. N.D.Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni N.D.
Zelinskiy, AS USSR)

SUBMITTED: July 16, 1958

Card 3/3

KARPEYSKAYA, Ye. I. Cand Chem Sci -- (diss) "On the catalytic properties of rhenium." Mos. Publishing House of the Acad Sci USSR, 1959. 11 pp (Acad Sci USSR. Inst of Organic Chem im N. D. Zelinskiy), 150 copies (KL, 43-59, 121)

5 (4)

AUTHORS:

Balandin, A. A., Karpeyskaya, Ye. I., Tolstopyatova, A. A. SOV/62-59-8-4/42

TITLE:

On the Catalytic Properties of Rhenium. Communication 1.
Rhenium as a Dehydrogenation Catalyst

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 8, pp 1365-1371 (USSR)

ABSTRACT:

On the basis of the structural conditions of the multiplet theory it was to be expected that rhenium had a dehydrogenating effect upon hydro-aromatic hydrocarbons. Platonov (Ref 13) reported on such a dehydrogenation upon rhenium, but did not describe the reaction conditions nor the preparation of the catalysts. In the present paper the data cited by Platonov are checked and investigations of the capability of dehydrogenation of Re on hydrocarbons by means of different catalysts (powdery catalysts and carrier catalysts) are carried out. The catalytic activity of the catalysts with regard to cyclohexane was investigated. It was shown that it is possible to dehydrogenate cumene as well as to dehydrocyclize n-heptane on Re. In the experimental part the preparation of 10 catalysts is described. (Catalysts 1 and 2 according to Platonov's nitric acid method (Ref 4)).

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On the Catalytic Properties of Rhenium.
Communication 1. Rhenium as a Dehydrogenation Catalyst

SOV/62-59-8-4/42

Catalysts 1-3 were prepared from ammonium perrhenate, catalysts 4, 5 were Re on aluminum (Re-contents 25 and 60.8%), 6: Re on asbestos, 7: Re on silica gel, 8, 9: Re on activated coal, 10: Re on activated boneblack (Re percentages are given). The initial materials were isopropyl alcohol, cyclohexane, n-heptane, and cumene. The catalytic reaction rate was determined from the amount of hydrogen separated out. The gas analysis was done on a VTI unit. The results of the individual reactions on the various catalysts are compiled in tables 1-8 and figures 1-4. It was found that for the dehydrogenation of isopropyl alcohol on catalysts 1 and 2 an activation energy of 10.4 and 12.0 kcal/mol, respectively, is necessary, as was also shown by Platnov (Ref 3). The dehydrogenation of cyclohexane and -hexene did not succeed upon catalysts 1, 2, 3, 6, 7, while the yield was low with 4 and 5. Cyclohexane is transformed into cyclohexene, which is explained by the doublet mechanism of these two catalysts with regard to the dehydrogenation of the two substances. The carrier catalysts Re on activated coal proved to be the most active ones. It was concluded from these results that the type of carrier plays an important part in catalytic

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On the Catalytic Properties of Rhenium.

SOV/62-59-8-4/42

Communication 1. Rhenium as a Dehydrogenation Catalyst

reactions. The characteristic of this part is the ratio of the difference in the atomic distances of metal atoms and carrier atoms. N-heptane on catalyst 9 resulted in 14.1% toluene, while cumene on catalyst 9 produced α -methylstyrene and, partly, its polymerizate. There are 6 figures, 8 tables, and 15 references, 11 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy, of the Academy of Sciences, USSR)

SUBMITTED: November 5, 1957

Card 3/3

5(2)

AUTHORS:

Balandin, A. A., Karpeyskaya, Ye. I., Tolstopyatova, A. A. SOV/62-59-9-4/40

TITLE:

On the Catalytic Properties of Rhenium. Report 2. Dehydrogenation of Cyclohexane

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 9, pp 1529-1535 (USSR)

ABSTRACT:

Cyclohexane is dehydrogenized on activated carbon by rhenium (Ref 1). In the present paper the authors subjected the mode of operation of the catalyst in the dehydrogenation process to closer investigations. They determined the effect of the rhenium content in the catalyst on the activating rate and energy of the above-mentioned reaction. The reaction process in the presence of benzene and hydrogen was also investigated; therefrom it was possible to determine the relative adsorption coefficient of the reaction products. The following catalysts were used: catalyst Nr 9 of reference 1 and catalysts Nr 11 (Re 4.86%), Nr 12 (Re 9.45%), Nr 13 (Re 16.6%), Nr 14 (Re 38.4%), Nr 15 (Re 42.5%). The determination methods were the same as in previous investigations (Refs 1,2). Hydrogen was added with a gasometer (system Patrikeyev, reference 4). The influence of the

Card 1/3

On the Catalytic Properties of Rhenium. Report 2. Dehydrogenation of Cyclohexane

SO7/62-59-9-4/40

rhenium content in the catalysts appeared in the following way: (analysis results of the reaction products in tables 1, 2 and on figures 1, 2). Pure, activated carbon had the least activity and the reaction proceeded at very high temperatures only. The reaction process was observed to proceed according to different mechanisms on pure carbon and on Re-catalysts. The value

$\frac{\epsilon}{\lg k_0}$ was a maximum for catalyst Nr 9 (best catalyst) (Re content 29.6%).

The adsorption coefficient "z" was determined for benzene and hydrogen on catalyst Nr 9 (Tables 4,6); z was determined according to formula $z = \frac{m_0/m-1}{100/P-1}$.

The adsorption coefficient is temperature independent. The dehydrogenation reaction on the Re-catalyst is a reaction of the order of zero. The activation energy was from 12.8 (Nr 9) to 20.3 kcal. There are 2 figures, 6 tables, and 6 references, 4 of which are Soviet.

Card 2/3

On the Catalytic Properties of Rhenium. Report 2. Dehydrogenation of Cyclo-
hexane

SOV/62-59-9-4/40

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy
of the Academy of Sciences, USSR)

SUBMITTED: December 30, 1957

Card 3/3

5.1190

5(4)

AUTHORS:

Balandin, A. A., Karpeyskaya, Ye. I., Tolstopyatova, A. A.

66860

SOV/76-33-11-15/47

TITLE:

Principle of the Structural Congruence and the Catalytic Properties of Rhenium

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2471-2475 (USSR)

ABSTRACT:

Starting from the multiplet theory one may assume that rhenium may act as a dehydrogenation catalyst (as Pt, Pd, Ir, Rh, Co, and Ni with the structural lattice A 1 and Os, Ru, Co, and Ni with the lattice A 3), as it has an A 3 lattice and an atomic radius of 1.37 Å. M. S. Platonov (Ref 2) pointed out at the Conference on Catalysis of 1940 that rhenium cyclohexane can dehydrogenate at 300-350°, but he did not present any experimental data. In the present case an active rhenium catalyst was obtained by preparing from Re_2O_7 and dioxane a $Re_2O_7 \cdot xC_4H_8O_2$ precipitate, which was dissolved in methanol. In one case the solution was deposited on active carbon (birch charcoal) and heated for several hours to 500° in a hydrogen current, in the other case the methanol solution was deposited on asbestos and reduced. Three series of experiments on the dehydrogenation of cyclic

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66860

SOV/76-33-11-15/47

Principle of the Structural Congruence and the Catalytic Properties of Rhenium

hydrocarbons were carried out in a continuously working apparatus, and the gas formed was analyzed in the apparatus VTI. The dehydrogenation of the cyclohexane occurred at 250-340°. It was thus shown that the Re/C catalyst (Table 1) is more effective than the Re/asbestos catalyst (Table 2), but the activation energy remains the same (7.8 kcal/mol) and the composition of the gas is almost independent of the temperature. The structure important for the catalyst depends not only on the catalyst carrier, but also on the method of preparation, since one catalyst was inactive. The latter had been produced by applying rhenium acid to asbestos. The dehydrogenation of methyl cyclohexane occurred on the Re/C catalyst at 270-320°. It showed (Table 3) that the methane content of the gas is temperature-dependent. During the dehydrogenation of ethyl cyclohexane on the Re/C catalyst at 286-388° (Table 4), it was also found that the gas composition is temperature-dependent. There are 1 figure, 4 tables, and 5 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut organicheskoy khimii im. N. D. Zelinskogo (Academy of Sciences, USSR, Institute of Organic Chemistry imeni N. D. Zelinskiy)

Card 2/2

5.3200
5.1190

67.60

5(3)
AUTHORS: Balandin, A. A., Academician, Karpeyskaya, Ye. I., Tolstopyatova, SOV/20-129-4-22/68
A. A.

TITLE: On the Irreversible Catalysis in the Presence of Metallic Rhenium⁷

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 795-798 (USSR)

ABSTRACT: Metallic rhenium, applied to active carbon dehydrogenates the cyclic 6-membered hydrocarbons. On an ammonium perrhenate (Re-1) catalyst small quantities of cyclohexene and also benzene are produced from cyclohexane (Ref 3). This is not the case on a catalyst of a dioxane complex of rhenium-acid-anhydride (Re-2). The authors investigated the transformation of cyclohexene on Re-1 and Re-2 to find the reasons for cyclohexene formation on Re-1. Moreover, the capability of rhenium to bring about irreversible catalysis (expression by N. D. Zelinskiy) was to be investigated. The gaseous reaction products were collected in the gasometer by V. V. Patrikeyev. They consisted of hydrogen with 6-8% methane. The experiments were made between 215° and 465°C. For both catalysts a temperature range was distinctly observable in which no gas is formed and the process takes place according to equation $3C_6H_{10} = C_6H_6 + 2C_6H_{12}$. At higher temperatures hydrogen is separated.

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67260

On the Irreversible Catalysis in the Presence of
Metallic Rhenium

SOV/20-129-4-22/66

Catalysates of several experiments with Re-1 and Re-2 were poured together. After the removal of the incompletely reacted cyclohexene benzene was chromatographically separated from cyclohexane. Figures 1 and 2 show the results of various experiments which were well reproducible. It may be seen from a comparison of the kinetic data on dehydrogenation of cyclohexene and the disproportionation of hydrogen on Re-1 and Re-2 that the activation energies of the processes are in agreement on both catalysts. Apparently both processes stop at the same stage of reaction. Table 3 shows that on Re-2 benzene is formed from cyclohexene twice as rapidly as from cyclohexane. According to M. Ya. Kagan and N. A. Shcheglova (Ref 6) cyclohexane is dehydrogenated on Pt by 4500 times more slowly than is the transformation rate of cyclohexene. On the basis of these data and according to M. Ya. Kagan and R. M. Flid (Ref 7) the mentioned researchers draw the conclusion that the dehydrogenation of the cyclic hydrocarbons takes place step-wise (see Scheme). The results obtained by the authors are in contradiction with this conclusion: cyclohexane is dehydrogenated on rhenium not according to a step-mechanism but according to a sextet mechanism. Benzene was formed on Re-1 from cyclohexene about twice as rapidly (Table 4).

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On the Irreversible Catalysis in the Presence of
Metallic Rhenium

17700

SOV/20-129-4-22/68

It may hardly be assumed that the dehydrogenation of cyclohexane on two catalysts of the same chemical properties and on the same carrier should proceed according to two different mechanisms. Cyclohexene is no intermediate (in contradiction to the scheme of references 6, 7) since it was not obtained in the reaction on Re-2. Cyclohexene thus results from a side-reaction which takes place to a small degree besides the sextet dehydrogenation. There are 2 figures, 4 tables, and 8 references, 7 of which are Soviet.

ASSOCIAT ON: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk
SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the
Academy of Sciences, USSR)

SUBMITTED: July 24, 1959

4

Card 3/3

KARPEYSKAYA, YE. I.

PAPER I BOOK EXPLANATION 307/116.

Vysokomuzhnoye sverkhzhanlye po plavim metallam. 1st, Moscow, 1957
Book by Ye. I. Karpeyskaya... (Rare Metals and Alloys; Transactions of the
2nd All-Union Conference on Rare-Metal Alloys) Moscow, Metallurgizdat, 1950.
428 p. 1,150 copies printed.

Sponsoring Agency: Academy of Sciences. Institute Metallurgii; USSR
Komissiya po veshim metallam pri SSSR-Akademiya Nauk SSSR
M. I. Karpeyskaya, Ed. of Publishing House: O. M. Izrael'skiy, Tech. Ed.;
P. G. Iosad'skiy, Tech. Ed.

Purpose: This collection of articles is intended for metallurgical engineers,
physicists and chemists in the machine-building and radio-engineering industries.
It may also be used by students of schools of higher education.

CONTENTS: The collection consists technical papers which were presented and dis-
cussed at the First All-Union Conference on Rare-Metal Alloys held at the
Institute of Metallurgy, Academy of Sciences USSR in November 1947. Results of
investigations of rare-metal alloys, titanium and copper-base alloys with ad-
ditions of rare metals are presented and discussed along with investigations of
titanium, vanadium, niobium, and their alloys. The effect of rare-earth metals
on properties of magnesium alloys and steels is analyzed. The uses of titanium
making plates for automobile electrical systems are discussed. Also, the ef-
fects of the addition of certain elements on the properties of heat-resistant
metalloids (alloys) are discussed. No personal files are mentioned. Soviet
and non-Soviet references are given at the end of the articles.

PAPER II. TITANIUM AND COPPER-BASE
ALLOYS WITH RARE-METAL ADDITIONS

- Dmitriyev, I. P., Dmitriyev, and M. F. Mal'tsev. Investigations of Alloys
of the Titanium-Titanium-Aluminum and Titanium-Titanium-Aluminum Systems 11
- Mal'tsev, M. F., G. P. Denilov, and Ye. A. Karpeyskaya. Effect of Rare Metals
on the Ductility of Titanium and of Titanium Alloys 42
- Mal'tsev, M. F., and Ye. A. Karpeyskaya. Investigation of Titanium-Aluminum-
Vanadium Ternary Alloy Systems 52
- Denilov, G. P., G. S. Zil'berman, I. A. Mikhaylov, L. I. Solov'ev, and M. F. Mal't-
sev. High-Strength and Heat-Conducting Alloys of the Copper-Cobalt-Titanium
Ternary System 61

Rare Metals (Cont.) 307/116

PAPER III. TITANIUM, VANADIUM, NIOBIUM,
MANGANESE AND ALLOYS BASED ON THEM

- Dmitriyev, I. P., Ye. A. Karpeyskaya, and A. A. Tolstomirova. Titanium as a
Catalytic Catalyst 72
- Yul'ina, M. A., and Ye. M. Gulyaeva. Titanium Alloys 80
- Solov'ev, L. I., Ye. M. Gulyaeva, A. A. Mikhaylov, and I. I. Lavrov. Electro-
plating With Titanium 111
- Yul'ina, M. A., and M. D. Prokhorovskaya. Electrical Contacts Made of Titanium
Gaskets, etc. The Possibility of Using Alloys on Targets With Titanium
for Making Contacts for Airborne Electrical Equipment 123
- Yul'ina, M. A., and Ye. M. Gulyaeva. Properties of Titanium, Niobium, and of
Alloys Based on Them 136



BALANDIN, A.A., akademik; KARFEYSKAYA, Ye.I.; POLKOVNIKOV, B.D.

Rhenium as a catalyst of hydrogenation. Dokl. AN SSSR 139
no.5:1101-1104 Ag. '61. (MIRA 14:8)

1. Institut organicheskoy khimii im. N.D. Zelinskogo
AN SSSR.

(Rhenium) (Hydrogenation)

BALANDIN, A.A., akademik; KARPEYSKAYA, Ye.I.; FERAFONTOV, V.A.; TOLSTOPYATOVA,
A.A.

Catalytic synthesis of piperazine. Dokl. AN SSSR 165 no.1:99-102
N 165. (MIRA 18:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

ACC NR: AP6032860

SOURCE CODE: UR/0020/66/170/003/0589/0592

AUTHOR: Balandin, A. A. (Academician); Ferapontov, V. A.; Karpovskaya, Yo. I.; Gorshkova, L. S.

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

TITLE: Some characteristics of the identification and analysis of highly polar nitrogen- and oxygen-containing substances by gas-liquid chromatography

SOURCE: AN SSSR. Doklady, v. 170, no. 3, 1966, 589-592

TOPIC TAGS: chromatography, gas chromatography, amine

ABSTRACT: Continuing their study of the identification of certain strongly polar nitrogen- and oxygen-containing compounds in mixtures, the authors focused their attention on the reaction of catalytic synthesis of piperazine from monoethanolamine, in the course of which over 20 highly polar compounds having very different boiling points and reactivities are formed. A study of various liquid phases and solid carriers (60 columns) showed that these compounds are best separated on polyethylene glycol (PEG-2600 or 2000) deposited (in amounts of 1-0.5%) on NaCl treated with KOH (0.5%). A complete analysis of the mixture on a column with 1% PEG-2600 and 0.5% KOH requires a separation at three temperatures, 63, 102 and 173°C. The effect of the amount of KOH and PEG on the separation was determined. The size and shape of NaCl

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UDC: 543.5.43

ACC NR: AP6032860

particles were also found to be important factors. The observed relationship between the retention volume and the structure for compounds having certain structural features in common can be utilized for a standard-free identification of these compounds. The results make it possible to determine the composition of the reaction mixture formed during the catalytic synthesis of piperazine from monoethanolamine, control the process quantitatively in time, and draw certain conclusions about the role of each component of the mixture in this process. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 24Mar66/ ORIG REF: 006/ OTH REF: 003

Card 2/2

NESMEYANOV, A.N.; KOCHETKOV, N.K.; KARPEYSKIY, M. Ya.; ALEKSANDROVA, G.V.

Diene synthesis with 2-chlorovinyl ketones. Condensation with cyclopentadiene. Doklady Akad. Nauk S.S.S.R. 82, 409-12 '52. (MLBA 5:3)
(CA 47 no.14:6876 '53)

1. M.V.Lomonosov State Univ., Moscow.

KARPEYSKI, M. Ya.

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Organic Chemistry

(3)

~~Some transformations of 2-acetyl-1-chlorobicyclo[2.2.1]-heptane. N. K. Kochetkov and M. Ya. Karpelski (M. V. Lomonosov State Univ., Moscow). Doklady Akad. Nauk S.S.S.R. 85, 801-4 (1952); cf. C.A. 47, 6870g. — 2-Acetyl-3-chlorobicyclo[2.2.1]heptane (I) (40 g.) in 400 ml. H₂O, treated in 1 hr. with 100 ml. 10% NaOH and stirred 5 hrs. gave 44% 2-acetylbicyclo[2.2.1]-heptene, b₂ 54-6°, d₂₀ 1.0018, n_D²⁰ 1.4972, which polymerizes on standing and rapidly reduces KMnO₄; 2,4-dinitrophenylhydrazone, m. 153° (from AcOH). Hydrogenation over Pd-CaCO₃ yields 2-acetylbicyclo[2.2.1]heptane, b₂ 49-51° (crude), b₂ 50-2°, d₂₀ 0.9871, n_D²⁰ 1.4772; semicarbazone, m. 160-3.5° (cf. Plate and Meerovich, Invest. Akad. Nauk S.S.S.R., 1940, 219). I (15 g.) in EtOH treated with ice cooling with 6 g. NaOH in EtOH, dild., and extd. with Et₂O gave 60% 2-acetyl-3-ethoxybicyclo[2.2.1]-5-heptene, b₂ 102-3.5°, d₂₀ 1.0254, n_D²⁰ 1.4759; similarly was obtained 50% 3-MeO analog, b₂ 69-70°, d₂₀ 1.0598, n_D²⁰ 1.4825. I heated with 85% HCO₂H and NaO₂CH 10 hrs. at 100° gave 47% 2-acetylbicyclo[2.2.1]-3-hepten-3-ol formate, b₂ 109-11°, d₂₀ 1.1517, n_D²⁰ 1.4921; corresponding acetate, prepd. similarly, b₂ 119-20°, d₂₀ 1.1180, n_D²⁰ 1.4838. G. M. Kosolapoff.~~

MF
7-27-54

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 848

Author: Kochetkov, N. K., Khorlin, A. Ya., and Karpeyskiy, M. Ya.

Institution: None

Title: Direct Synthesis of Aryl- β -chlorovinylketones

Original

Periodical: Zh. obshch. khimii, 1956, Vol 26, No 2, 595-598

Abstract: A convenient method is described for the synthesis of aryl- β -chloro-
vinylketones $\text{ArCOCH}=\text{CHCl}$ (I), where Ar can be C_6H_5 (a), $n\text{-CH}_3\text{C}_6\text{H}_4$
[sic] (b), $n\text{-ClC}_6\text{H}_4$ (c), $o\text{-BrC}_6\text{H}_4$ (d), $n\text{-NO}_2\text{C}_6\text{H}_4$ (e) [Tr. Note: n-
apparently is equivalent to p-], by the direct reaction of ArCOCl
with C_2H_2 in the presence of AlCl_3 and ethylene chloride. To a solu-
tion of 100 gms $\text{C}_6\text{H}_5\text{COCl}$ in 100 ml ethylene chloride cooled to zero
degrees, 95 gms of anhydrous AlCl_3 are added with cooling and constant
mixing (temperature 10°); next, C_2H_2 is passed through the mixture
with vigorous stirring for 6-7 hours at $40\text{-}50^\circ$; the reaction mixture
is then poured over ice, and the organic layer separated and dried

Card 1/2

Incl. Pharmacology & Chemotherapy, AMS USSR

KARPEYSKIY, M. Y.

Direct synthesis of vinyl β -chlorovinyl ketones. N. K. Kochetkov, A. Ye. Khovlin, and M. Ye. Karpeyskiy. 3
Gen. Chem. U.S.S.R. 26: 642-4 (1964) (Engl. translation) [E]
See CIA 89, 18700g

RM
[Signature]

~~KARPEYSKOV, M. Y.~~ KARPEYSKIY, M. Ya

Synthesis of *erythro*-N, N'-Kochalov, N. F. *Sukhomenko, M. Ya. Karpeyev, and V. M. Solov'ev (Acad. Sci. Moscow). Doklady Akad. Nauk S.S.S.R.* 169: 260-2 (1958); cf. *Harwood, J. J. J. Chem. Soc.* 40: 4524. An improved synthesis of erythro-*N,N'* was reported. Treatment of 4.8 g. 2-phenyl-1-carboxymethyl-*o*-methylamine (140 ml. abs. EtOH) with 1.7 g. H₂O₂ base (5-ml.) followed by cooling, dropwise addition of 4.5 g. Na in 16 ml. abs. EtOH, stirring 15-20 min. at room temp., cooling, and neutralizing to bromothymol blue with 10% HCl gave 24% *o*-phenyl-*erythro*-*N,N'*-diamine (1) in 175-178° (from H₂O) which gave cherry-red color with FeCl₃; with abs. HCl it gave the HCl salt in 114-116°. The latter (5 g.) suspended in 15-20 ml. abs. dioxane, dissolved by heating, filtered, not cooled and filtered off gave 64% *o*-phenyl-*erythro*-*N,N'*-*CH₂Cl* in 155-158° (from EtOH-EtOAc) which (14.8 g.) heated to reflux 1-2 min. in 40 ml. 20% NaOH, cooled, neutralized with 20% AcOH gave 17.6% 1 in 175-178° which did not give the color of authentic 1; the filtrate was acidified with dil. AcOH to bromothymol blue yielding 70% *o*-phenyl-*erythro*-*N,N'*-*CH₂OH* in 164-166° (from H₂O) which (4 g.) heated with 20 ml. 35% soln. of HCl in MeOH 1.5-2 hrs. on a steam bath, filtered, and treated with H₂O gave 70% *o*-phenyl-*erythro*-*N,N'*-*CH₂OH* in 145-148° (from abs. EtOH). The latter (0.3 g.) added to 4.1 ml. ac. KOH (contg. 0.036 g. KOH per ml.) followed by rapid filtration of KCl, evap. in vacuo, treatment with 1-2 ml. Et₂O, and filtration gave 66% *o*-phenyl-*erythro*-*N,N'*-*CH₂OH*, decomp. 132-134° (from abs. EtOH). G. M. K.

KARPHYSKIY, M.Ya.
KOCHETKOV, N.K.; KHOMUTOV, R.M.; KARPHYSKIY, M.Ya.

A new synthesis of cycloserine. Dokl.AN SSSR 111 no.4:831-834 D '56.
(MLRA 10:2)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk
SSSR. Predstavleno akademikom A.N.Nesmeyanovym.
(Antibiotics)

KARPEYSKIY, M. Ya.

Distr: 4841/483d/482c(1) 7
✓ Methyl 2-amino-3-hydroxyvalinate dihydrochloride. M. Ya. Karpeyaki, N. K. Kochetkov, and R. N. Khomyatov. U.S.S.R. Izv. Akad. Nauk, Aug. 25, 1957. The ester of dichloro-propionic acid is treated with a metal oxime, the product saponified, aminated, and the resulting substituted amino acid treated with H halide and MeOH. M. Hoff...

BM

4
2 May
3

KARPEYSKIY, M. YA.

79-2-38/58

AUTHORS: Kochetkov, N. K.; Khomutova, Ye. D.; Karpeyskiy, M. Ya.; Khorlin, A. Ya.

TITLE: Study of Isoxazole. Part 3. Synthesis of Arylisoxazoles (Issledovaniye v ryadu izoksazola. III. Sintez arilizoksazolov)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 452-457 (U.S.S.R.)

ABSTRACT: It is shown that aryl-beta-chlorovinyl ketones react with hydrochloride hydroxylamine under the very same conditions as their aliphatic analogues. When both components are heated in methanol, they produce high yields of arylisoxazoles. The reaction of alkyl-beta-chlorovinyl ketones with hydroxylamine yields a mixture of alpha- and gamma-isomers (5- and 3-substituted isoxazoles) with 50 - 60% of the alpha-form. The reaction with phenyl-beta-chlorovinyl ketone produces a mixture of alpha- and gamma-phenylisoxazoles in approximately equal amounts. The alpha-isomer content in the phenylisoxazole was 62-67%. Phenyl-beta-chlorovinyl ketones with substituents in the aromatic ring react smoothly with hydroxylamine, giving high yields of arylisoxazoles. It is shown that the ratio of the alpha- and gamma-substituted isoxazoles formed during the reaction of beta-substituted vinyl ketones $\text{RCOCH} = \text{CHX}$ with hydroxylamine depends

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Study of Isoxazole. Part 3

79-2-38/58

upon the nature of the substitute X. When the substitute X = NR₂, the reaction yields a practically pure alpha-substituted isomer.

Experiments also showed that alkyl-beta-dialkylaminovinyl ketones during reaction with hydroxylamine gave high yields of alkylisoxazoles and the reaction in this case tends exclusively toward the formation of alpha-isomers.

There are 13 references, of which 6 are Slavic. .

ASSOCIATION: Moscow State University and Institute of Pharmacology and Chemiotherapy of the USSR Academy of Medical Sciences

PRESENTED BY

SUBMITTED: February 20, 1956

AVAILABLE: Library of Congress

Card 2/2

KARPEYSKIY, M. YA.

ARENARUK, A.P.; BUDOVSKIY, E.I.; GOTTIKH, B.P.; KARPEYSKIY, M.Ya.
KUDRYASHOV, L.I.; SKOLDINOV, A.P.; SMIRNOVA, N.V.; KROELIN, A.Ya.
KOCHETKOV, N.K.

Dihydrosarcomycin and related compounds. Part 1. Zhur.ob.khim.
27 no.5:1312-1318 My '57. (MLRA 10:8)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh
nauk SSSR.

(Antibiotics)

AUTHORS: Kochetkov, N. K., Khomutova, Ye. D., Karpevskiy, 79-12-9/43
M. Ya., and Khomutov, R. M.

TITLE: Investigation in the Series of the Isoxazol (Issledovaniye
v ryadu izoksazola)
IV. Synthesis of Some Amines of the Isoxazol Series
(Sintez ~~nekotorykh~~ aminov ryada izoksazola)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 12, pp. 3210-
-3214 (USSR)

ABSTRACT: In connection with that, recently obtained in physiological-
ly active substances, to which the isoxazol-cycle belongs,
too, the synthesis of some derivatives of the isoxazol
series with an amino group in the side chain was carried
out by the authors. Thus the reaction of the 3-methyl-
-chloride-isoxazol with diethylaminoethanol leads to
(isoxazol-3-methyl)- β -diethylaminoethyl-ether (see formulae).
This amino ether forms together with ethyl iodide a
quartary salt, which is also confirmed by its structure.
Under the same conditions also the 3-diethylaminomethyl-
-isoxazol forms a quartary salt, whereas a direct influence
of the 3-methyl-chloride-isoxazol upon triethyl-amine does
not lead to the result expected. Furthermore, the authors

Card 1/2

Investigation in the Series of the Isoxazol
IV. Synthesis of Some Amines of the Isoxazol Series

79-12-9/43

succeeded to bring the 3-methyl-chloride-isoxazol in condensation with aromatic amines, with the aim to use the compounds obtained for the synthesis of the isologues (izologov) of the known preparation "Anthergan" (antergan), having the isoxazol-cycle instead of the benzene nucleus (see formulae!). As the halide methyl-isoxazols substituted are difficult to approach, a simple method of producing the 4-methyl-chloride-3-dimethyl-3,5-dimethyl-isoxazol had to be worked out. It succeeded to realize this new reaction by means of the heating of the 3,5-dimethyl-isoxazol with paraformaldehyde in dry tetra-hydrogen-chloride in the presence of hydrogen chloride. The yield of 3,5-dimethyl-4-methyl-chloride-isoxazol amounted to 20-30%. It was shown that the synthesized N-phenyl-N-(3,5-dimethyl-isoxazolyl-4-methyl)-N, N-dialkyl-ethylene-diamines and the iodine ethylate of the 3-diethyl-amino-methyl-isoxazol demonstrate a weak physiologic activity. There are 7 references, 4 of which are Slavic.

Card 2/3

Inst. Pharmacology + Chemotherapy, AMS USSR

KARPEYSKIY, M. Ye., Cand Chem Sci -- (diss) "Synthesis ~~affyeykx~~
of cycloserine and its analogues." Mos, 1958. ~~ixppxa~~ 11 pp.
(Acad Sci USSR, Inst of Organic Chemistry im N. D. Zelinskiy),
110 copies. (KL,9-58, 113)

- 16 -

SOV/63-3-6-36/43

AUTHORS: Kochetkov, N.K., Gottikh, B.P., Karpeyskiy, M.Ya., Khomutov, R.M.

TITLE: The Configuration of β -Chlorovinylketones (O konfiguratsii β -khlorvinilketonov)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, p 834 (USSR)

ABSTRACT: It is supposed that β -chlorovinylketones have a trans-configuration, since the only product of the oxidation of the sodium hypochlorite of the methyl- β -chlorovinylketone is the trans-chloroacrylic acid.
There are 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut farmakologii i khimoterapii (Scientific Research Institute of Pharmacology and Chemical Therapy)

SUBMITTED: May 7, 1958

Card 1/1

AUTHORS:

Kochetkov, N. K., Khomutov, R. M.,
Karpeyskiy, M. Ya., Budovskiy, E.I.

SOV/79-28-11-25/55

TITLE:

Cycloserine and Related Compounds (Tsikloserin i
rodstvennyye soyedineniya) III. On the Synthesis of
Cycloserine (III.0 sinteze tsikloserina)

PERIODICAL:

Zhurnal obshchey khimii, 1958, Vol 26, Nr 11,
pp 3015 - 3019 (USSR)

ABSTRACT:

Lately, the authors had reported on a new synthesis of the antibiotic cycloserine, the d-4-amino isooxazolidone-3, from an accessible ester of the α, β -dichloro propionic acid and acetoxime (Ref 2). As further chemical and clinical investigations (Refs 3,4) proved its high antitubercular activity this synthesis was investigated in detail. All other scientists have hitherto proceeded from the weakly accessible amino acid of serine. The synthesis of the authors took place according to the mentioned scheme 1, with methacrylate serving as initial substance. The condensation of the methyl- α, β -dichloro propionate (I) with acetoxime seems to be the

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*Sci Res Inst Pharmacology & Chemotherapy,
Acad Med Sci USSR*

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bottleneck of this synthesis. The difficulties are due to the fact that a selective substitution of the β -halogen atom must be carried out. The reaction (I) with acetoxime was investigated with different solvents at different temperatures and at different ratios of the reacting compounds. The condensation (I) with the oxime supplied the best results in the presence of sodium methylate in methanol at 0-5° (yield of compound (II): 25-30%). Besides (II) also the α -chloro β -methoxypropionate (20%), and apparently also the methyl- α -chloro-acrylate were obtained. Of the two possible reaction processes the one with the previous separation of hydrogen halide with the subsequent affiliation of the formed α -halogen acrylate to the double bond was selected. In the amination the ester was first transformed with alkali liquor into the acid (III), which then was subjected to the amination. After longer experiments the amination was carried out with excess liquid ammonia on heating under the formation of (IV).

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of Cycloserine

This acid (IV) was separated in form of the chlorine hydrate, which further on served as the main product of the synthesis of dichloro hydrate (V). The acid hydrolysis was used (Scheme 2) for the selection of a secure and convenient transition from (IV) to (V) under various conditions. It was found that the synthesis of (V) is most convenient from (VI); it may, however, also be carried out directly from (IV) or (VIII). In the last stage it was possible to increase the yield in the cyclization of the dichlorine hydrate (V) to the cycloserine from 65 to 82%, with the product already separated in analytically pure state from the reaction mixture. Compared to earlier syntheses of cycloserine the one mentioned here offers a better yield and avoids the use of resinous compounds (Refs 5,10). The racemate of cycloserine showed a high activity against infections of all types. There are 11 references, 3 of which are Soviet.

Card 3/4

AUTHORS: Kochetkov, N. K., Budovskiy, E. I., SOV/79-29-1-16/74
Khomutov, R. M., and Karpeyskiy, M. Ya.

TITLE: Cycloserine and Related Compounds (Tsiklosarin i rodstvennyye soedineniya)
IV. α -Benzoyl-Amino Acrylic Hydroxamide Acids (IV. α -Benzoil-aminoakrilgidroksamovyie kisloty)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 68-75 (USSR)

ABSTRACT: In the search for methods of synthesizing the recently discovered antibiotic cycloserine and related compounds the authors believed it would be of advantage to extend their investigations to several hydroxamide acids having an acyl amino group in the α -position. Further reactions with this group brought about a new way of synthesizing cycloserine analogues. The present paper deals with the synthesis of β -substituted α -benzoyl-amino acrylic hydroxamide acids. The most favorable synthesis of those compounds was the reaction of azolactone with hydroxyl amine. Shaw and McDowell (Ref 4) succeeded in opening azolactone by reaction of 2-phenyl-4-benzylidene oxazolone (Ia) with free hydroxyl amine in methanol. This reaction, was, however, accompanied by

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Acad. Med. Sci. USSR*

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IV. α -Benzoyl-Amino Acrylic Hydroxamide Acids

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side-reactions so that the yield in α -benzoyl-amino- β -phenyl-acrylic hydroxamide acid (IIa) amounted only to 50 %. Apart from this acid α -benzoyl-amino- β -phenyl- β -oxyamino propionic acid was separated (25 %). Here, the reaction was carried out under varying conditions. Of essential importance in this connection the optimum percentage of the medium, which is not allowed to exceed 5-6.5, as otherwise complications would arise. Thus, a general synthesis of β -aryl- α -benzoyl-amino acrylic hydroxamide acids was worked out by reaction of 2-phenyl-4-arylidene oxazolones with acetic hydroxyl amine in methanol (5-6.5 %!). (Yields 70-90 %) which is also applicable to the synthesis of β -alkyl- α -benzoyl-amino acrylic hydroxamide acids. By catalytic hydrogenation of β -aryl- α -benzoyl-amino acrylic hydroxamide acids the α -benzoyl- β -aryl alanine hydroxamide acids were obtained. The structure of the synthesized compounds was proved by hydrolysis up to the α -benzoyl- β -aryl alanines. There are 1 figure, 3 tables, and 16 references, 4 of which are Soviet.

Card 2/3

AUTHORS: Kochetkov, N. K., Budovskiy, E. I., SOV/79-29-2-59/71
Khomutov, R. M., Karpeyskiy, M. Ya.

TITLE: Cycloserine and Related Compounds (Tsikloserin i rodstvennyye soyedineniya). V. Cyclization of α -Benzoylamino- β -Arylacryl Hydroxamic Acids (V. Tsiklizatsiya α -benzoilamino- β -arilakril-gidroksamovykh kislot)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 635-642 (USSR)

ABSTRACT: On reacting hydroxamic acids (I) with HCl and HBr the corresponding hydroxamic acids (II) could be expected to form, leading to compounds (III) by the action of alkali lyes. As is known, however, compounds (I) may cyclize in another manner with hydrochloric acid, i.e. under formation of compounds (IV) (Scheme 1). The latter possibility (way B) was carried out according to reference 2, on the cyclization of α -benzoylamino- β -phenyl and α -benzoylamino- β -n-methoxy phenylacryl hydroxamic acid into the corresponding imidazolindone (IV), in a 50 and 16 % yield. The authors therefore closely investigated the cyclization of α -benzoylamino- β -arylacryl hydroxamic acids in order to determine the influence of the substituent in the aromatic nucleus upon the direction (A) or (B). On treating these

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compounds with HCl or HBr in methanol, dioxan, acetic acid and within a wide temperature range (from -50° to $+100^{\circ}$) a slight cyclization, almost quantitative, was observed, under formation of imidazolinolone (IV), whereas the formation of affiliation products of hydrogen halides of the type (II) was in no case observed. Thus it became evident that the reaction for (I), regardless of the character of the substituents in the nucleus, proceeds in the direction (B). The synthesis was worked out of 2-phenyl-5-arylidene imidazoline- $\Delta^{1,2}$ -ol-3-one-4 (IV) by the cyclization of β -aryl- α -benzoylamino acryl hydroxamic acids with hydrogen halide in alcoholic or acetic acid solution (73 % to quantitative yields). The compounds obtained develop a high bacterial activity, in which connection the substitution of the N-hydroxyl group in them by the methoxy group or the hydrogen atom causes the activity to disappear. There are 3 figures, 1 table, and 10 references, 2 of which are Soviet.

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*Inst. Pharmacology & Chemotherapy,
Acad. Med. Sci. USSR*

AUTHORS: Khomutov, R. M., Karpeyskiy, M. Ya., SOV/79-29-2-60/71
Severin, Ye. S., Budovskiy, E. I., Kochetkov, N. K.

TITLE: Cycloserine and Related Compounds (Tsikloserin i rodstvennyye soyedineniya). VI. Synthesis of Cycloserine Analogues With a Substituted Amino Group (VI. Sintez analogov tsikloserina s zameshchennoy aminogruppoy)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 642-650 (USSR)

ABSTRACT: To investigate the relation between structure and chemotherapeutical activity in the lately discovered 4-aminoisoxazolidone-3-derivatives, the authors applied their earlier worked out method (Refs 1,2) to the synthesis of cycloserine analogues with a substituted amino group. In the course of this work, F. Šorm and collaborators (Ref 3) published a different synthesis of two representatives of this series. The synthesis of the above-mentioned analogues of cycloserine took place according to scheme 1. Other ways to form compounds (II) meet with difficulties. α -chloro- β -isopropylidene aminoxy propionic acid (I), one of the intermediate products in the synthesis of cycloserine (Ref 2) served as initial product. On the reaction of compound (I) with various amines in aqueous and alcohol

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solutions no alanine derivatives (II) were found in the reaction mixture, contrarily to the case in which inert solvents are used and also in case the reaction takes place without solvent with an excess of amine. The amination of (I) was carried out with methyl amine, β -phenyl ethyl amine, benzyl amine, piperidine and morpholine, which were all taken in excess to the initial chloric acid. The result in the crystalline state was α -methyl amino, α -benzyl amino, α -phenyl ethyl amino, α -piperidyl- β -isopropylidene amino oxy-propionic acid, with the specified radical values, in yields of 25-70 %. No pure crystalline product was obtained with morpholine. The next stage was the transition of (II) to the dichloro hydrates of esters (III), which was carried out with a mixture of hydrochloric acid and alcohol, with subsequent esterification. They were partly obtained in the crystalline and partly in the non-crystalline state. For the synthesis of other analogues of cycloserine (IV) the oily dichloro hydrates were used, which were not obtained in crystalline state. It was shown that the substitution in the amino group of cycloserine completely stops its chemotherapeutical activity. The above-described

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cyclization of the N-substituted substances of β -chloro alanine hydroxamic acids into the derivatives of 4-aminoisooxazolidone-3 is preferable to the other schemes suggested by the other authors. There are 3 references, 2 of which are Soviet.

ASSOCIATION: Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR (Institute of Pharmacology and Chemotherapy of the Academy of Medical Sciences, USSR)

SUBMITTED: December 17, 1957

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5 (3)

AUTHORS: Khomutov, R. M., Karpeyskiy, M. Ye., SOV/79-29-4-62/77
Budovskiy, E. I., Severin, Ye. S.,
Kochetkov, N. K.

TITLE: Cycloserine and Related Compounds (Tsikloserin i rodstvennyye soyedineniya). VII Synthesis of 5-Methyl-4-Aminoisoxazolidone-3 (Cyclotreonine) [VII. Sintez 5-metil-4-aminoizoksazolidona-3 (tsiklotreonina)]

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1328 - 1333 (USSR)

ABSTRACT: In the present paper the synthesis of the 5-methyl-4-aminoisoxazolidone-3 (cyclotreonine) is described. The reason for this choice was the authors' desire to use the method earlier worked out by them (Refs 1,2) for the synthesis of the 5-substituted homologues of cycloserine, and since the latter is genetically related to the vital amino acid-treonine. This fact permits the assumption that cyclotreonine is as well biologically active. When this investigation was finished a report was published (Refs 4,5) on the synthesis of cyclotreonine from treonine over the corresponding hydroxamic acid. The synthesis of cyclotreonine (VI) carried out by the authors is illustrated by scheme 1. The

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VII Synthesis of 5-Methyl-4-Aminoisoxazolidone-3 (Cyclotreonine)

initial product (I) was obtained by the chlorination of methyl crotonate in methanol at 10-15° (70-80% yield), contrary to the complicated prescriptions in the publications. The condensation of (I) with the sodium derivative of acetoxime (Ref 2) led to the ester (II) which was saponified into the acid (III). Compound (III) yielded the amino acid (IV) (50%) with excess liquid ammonia at 45-50° within 8-10 hours. The hydrogenation reaction

$$\begin{array}{l} \text{CH}_3 \\ \diagdown \\ \text{C} = \text{N-O-} \\ \diagup \\ \text{CH}_3 \end{array}$$
 was used for the determination of their structure,

since it proceeds without contact with the asymmetrical β -carbon atom (Scheme 2). This way is a new method for the determination of the structure of the α -amino- β -isopropylidenaminoxy acids. The result of the reaction was the separation (37%) and the identification of the d,1-allotreonine which points out that (IV) belongs to the erythro series. The next stage was the transition of the amino acid (IV) to the compound (V) (50-60%). The last stage consisted in the cyclization of the dichloro hydrate (V) into the cyclotreonine (VI) by a caustic potash solution in

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methanol solution (80-85%). Since the structure is not changed by the cyclization the formula *cis*-d, 1-5-methyl-4-aminoisoxazolidone-3 can be ascribed to the cyclotreonine. The structure is also confirmed by the data of the infrared spectrum. Its similarity was determined by means of the paper chromatography. Cyclotreonine has a distinctly marked antitubercular activity. There are 1 figure and 5 references, 3 of which are Soviet.

SUBMITTED: February 10, 1958

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17(4)

AUTHORS:

Kochetkov, N. K., Khomutov, R. M., Karpeyskiy, M. Ya.,
Budovskiy, E. I., Severin, Ye. S.

SOV/20-126-5-62/69

TITLE:

The Mechanism of the Antibiotic Effect of Cycloserine (0
mekhanizme antibioticheskogo deystviya tsikloserina)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1132-1134
(USSR)

ABSTRACT:

The cycloserine was paid attention to since its discovery (1955, Ref 1) on the one hand as high effective antituberculous agent, on the other hand as an interesting and suitable object to study the dependence of the biological effect on the structure. In the institute mentioned in the Association for some years a multiple-purpose study of the cycloserine (d-4-aminoisooxazolidone-3) and related compounds has been carried out. Methods of production of several compounds of this series were elaborated, and cycloserine itself was synthesized. It is not only of interest because of its relative simple structure but also because of its unusual complex of properties by which it differs from other known antibiotics. In spite of many papers the theme mentioned in the title was not dealt with (Ref 4).

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Data now already available allow the first considerations. It may be supposed that the essential part of the antimicrobial activity of the cycloserine is its influence on the nitrogen metabolism of the micro-organisms. The paper is dedicated to the discussion of the probable nature of this influence in connection with the hypothesis of the biochemical effect of cycloserine proposed by the authors. Cycloserine reacts easily with aromatic aldehydes (datas of this reaction are published separately) and forms instable azomethine derivatives (Schiff's bases). They transform quickly into isomeric, stable compounds under mild conditions. The azomethine derivatives have a weak antimicrobial effect. Cycloserine analogues with substituted amino group and such without amino group are completely inactive. The racemate of the antibiotic is not inferior to the natural d-isomer in relation to activity but it even surpasses the latter sometimes in this regard. This cannot be explained till now. (The said activity of the single substances was investigated under the direction of Prof. A. M. Chernukha by M. A. Breger, I. R. Balyn', V. P. Zuyeva, G. A. Ivanova, N. A. Kalinina, G. Ya. Kivman, V. S. Mitrofanov, E. G. Rukhadze, V. N. Solov'yev, N. M. Smol'nikova, and N. V. Chumachenko in

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the chemotherapy department.) The authors suppose that the suppression of the AIKA-Biosynthesis is one of the most important manifestations of the antibiotic activity of cycloserine (Ref 5). If this is right then the cycloserine must influence the transamination reaction suppressingly. Actually experiments made by Ye. D. Vyshepan and K. I. Ivanova on the request of the authors have shown that cycloserine completely inhibits the enzymatic transamination in the system pyruvic acid - glutaric acid in concentrations corresponding to the bacteriostatic one (5-10 γ /ml). The original action of the inhibition mechanism is the formation of the azomethine derivative by means of enzyme coferments catalyzing the transamination with the pyridoxal phosphate. The resulting Schiff's base must become a compound which cannot decompose again. Possible ways of such a stabilization are indicated. By the said original action the synthesis of the aspartic and glutamic acid and of the glycine is suppressed. The disturbance of the biosynthesis of the specific nucleoproteids caused thereby is for example lethal for *Microbacterium tuberculosis* at which they are the main part of its proteins (Ref 9). The datas given here are in line with the existing datas concerning the activity of the analogues of this anti-

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biotic (Refs 7,10). The estimation does not enclose all the cycloserine action but only part of it. The salts being formed easily by cycloserine and its azomethine derivatives with heavy metals can be toxic for the micro organisms or they can withdraw trace elements (Fe, Cu, Zn, Mg) out of the sphere of the micro-organisms. There are 10 references, 4 of which are Soviet.

ASSOCIATION: Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR (Institute of Pharmacology and Chemotherapy of the Academy of Medical Sciences, USSR)

PRESENTED: March 12, 1959, by A. N. Nesmeyanov, Academician

SUBMITTED: March 12, 1959

Card 4/4

BUDOVSKIY, E.I.; KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.; SEVERIN, Ye.S.;
KOCHETKOV, N.K.

Some substituted 2-aryl-5-arylidene- $\Delta^{1,2}$ -imidazolin-4-ones. Zhur.
ob.khim. 30 no.8:2569-2573 Ag '60. (MIRA 13:8)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh
nauk SSSR.

(Imidazolinone)

KOCHETKOV, N.K.; BUDOVSKIY, E.I.; KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.;
SEVERIN, Ye.S.

Stereochemistry of azlactones. Zhur.ob.khim. 30 no.8:2573-2578
Ag '60. (MIRA 13:8)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh
nauk SSSR.

(Azlactones)

KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.; CHZHAN CHZHI-PIN [Chang Chich-ping];
KOCHETKOV, N.K.

Cycloserine and related compounds. Part 11: 4-Hydroxy-3-isoxasolidinone and its derivatives. Zhur. ob. khim. 30 no.9:3057-3060 S '60.
(MIRA 13:9)

1. Institut farmakologii i khimioterapii Akademii meditsinskikh nauk
SSSR.

(Isoxazolidinone)

KARPEYSKIY, M. YA., POLYANOVSKIY, O. L., BEVERIN, YE. S., TOCHENSKIY, YU. M.
KHOMUTOV, R. Y., and GNUCHAY, N. V. (USSR)

"The Mechanism of the Inhibition of Pyridoxal Enzymes by Cyloserine
and Related Hydroxylamine Derivatives."

Report presented at the 5th International Biochemistry Congress,
Moscow, 10-16 Aug 1961

KARPENKIN, V. Y., KHAMTAY, R. M., SEVERIN, YE. S., LITVIN, B. A.,
BRIGOR, M. A. (USSR)

"Synthesis of Certain Biologically Active Hydrazolamine
Derivatives."

Report presented at the 5th International Biochemistry Congress,
Moscow, 10-16 August 1961

KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.; SEVERIN, Ye.S.

Relationship between biological action and chemical properties.
Biokhimiia 26 no.5:772-781 S-0 '61. (MIRA 14:12)

1. Institute of Radiation and Physico-Chemical Biology, Academy
of Sciences of the U.S.S.R., Moscow.
(CYCLOSERINE) (BIOLOGICAL PRODUCTS)

KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.; SEVERIN, Ye.S.; GNUCHEV, N.V.

Mechanism of the interaction of cycloserine with pyridoxal and
pyridoxal enzymes. Dokl. AN SSSR 140 no.2:492-495 S '61.
(MIRA 14:9)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.
Predstavleno akademikom V.A.Engel'gardtom.
(Isoxazolidinone) (Pyridoxal)

KARPEVSKIY, M.YA., KHOMUTOV, R.M., SEVERIN, E.S. AND REUSSOV, YU.M. (3)

"The mode of interaction of some cyclic derivatives of hydroxylamine with pyridoxal and palp-enzymes.

Paper presented at the Symposium on Biological and Chemical aspects of pyridoxal catalysis, Rome, Italy 21-31 Oct 1962

KARPEISKI, M. I.

HOMUTOV, R. M. [Khomutov, R. M.]; KARPEISKI, M. I. [Karpeyskiy, M. Ya.]
SEVERIN, E. S. [Severin, Ye. S.]

Correlation between biological action and chemical properties.
Analele chimie 17 no.1:156-167 Ja-Mr '62.

KARPEYSKIY, M.Ya.; KHOMUTOV, R.M.; SEVERIN, Ye.S.

New synthesis of canaline. Zhur.ob.khim. 32 no.4:1357-1358 Ap
'62. (MIRA 15:4)
(Canaline)

KHOMUTOV, R.M.; KARPEYSKIY, M.Ya.; SEVERIN, Ye.S.

Synthesis of tetrahydro-1,2-oxazin-3-one. Izv.AN SSSR.Otd.khim.-
nauk no.6:1074-1076 '62. (MIRA 15:8)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii
AN SSSR.

(Oxazinone)

KHOMITOV, R.M.; KAPPEYSKIY, M.Ya.; BRUGER, N.A.; SEVERIN, Ye.S.

On some analogues of cycloserine with antitubercular effect.
Vop. med. khim. 8 no.4:389-391 J1-Ag '62.

(MIRA 17:11)

1. Laboratoriya khimicheskikh osnov biologicheskogo kataliza
Instituta radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR
i otdela khimioterapii Instituta farmakologii i khimioterapii
AMN SSSR, Moskva.

KHGMUTOV, R. M.; KARPEYSKIY, M. Ya.; SEVERIN, Ye. S.

Derivatives of hydroxylamine. Report No. 4: Synthesis of
cyclocanaline (homocycloserine) and related compounds. Izv.
AN SSSR Otd. khim. nauk no.12:2161-2166 D '62.
(MIRA 16:1)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii
AN SSSR.

(Isoxazolidinone)

SHIYAPNIKOV, S.V., KARPEYSKIY, M.Ia., LITVIN, Ye.P.

Use of gas-liquid chromatography for the separation of some
amino acids. Biokhimiya 28 no.4:664-670, 1983.

(N.B.A. 1840)

I. Institut radiatsionnoy i fiziko-khimicheskoy biologii i
Institut organicheskoy khimii AN SSSR, Moskva.

KHOMUTOV, R. M.; KARPEYSKIY, M. Ya.; SEVERIN, Ye. S. 3

"Rational design of amino acid antimetabolites for specific inhibition of enzymes."

report submitted for 6th Intl Biochemistry Cong, New York City, 26 Jul-1 Aug 1964.

KHOMUTOV, R. M.; KARPEYSKIY, M. Ya.; SEVERIN, Ye. S.

Derivatives of hydroxylamine. Report No. 6: Synthesis and some reactions of B-aminohydroxyalanine. Izv AN SSSR Ser Khim no. 4: 680-685 Ap '64. (MIRA 17:5)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.

KHOMUTOV, R.M.; SEVERIN, Ye.S.; KALITSKI, M.Ya.

Hydroxylamine derivatives. Report No. 7. Synthesis of acetyl-
substituted β -isoxazolidones. Izv. AN SSSR Seriya Khim. no. 11:873-
873 My '64. (USSR 116)

1. Institut khimicheskoy fiziki i khimicheskoy biologii
AN SSSR.

SHLYAPNIKOV, S.V.; KARPEYSKIY, M.Ya.

Gas chromatographic separation of N-acetylamino acid esters in using
polar stationary phases. Biokhimiia 30 no.2:226-234 Mr-Apr '65.

(MIRA 18:7)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR, Moskva.

MOROZOV, M. S.; BASHCHINA, N.P.; IVANOV, V.I.; KARPEVSKIY, M.Ya.;
KUKLIN, A.I.

Optic and luminescent properties of vitamin B₂ and its derivatives.
Biofizika 10 no.4:595-601 '65. (MIRA 13-8)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii.
AN SSSR, Moskva.

KARPEYSKIY, M.Ya.; ERDUSOV, Yu.N.

Structure of the enzyme-inhibitor complex of hepatic transaminase
with L-cycloserine. *Biochimica 30* no.1:153-160 Jan-F '65.

(MIRA 18:6)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN
SSSR, Moskva.

SHCHAPNIKOV, S.V.; KARPEYSKIY, M.Ya.

Comparative study of gas chromatographic separation of β -amino acid esters. *Biochimia* 29 no.6:1076-1087 (1964) (MIRA 18:12)

I. Institut radiatsionnoy i fiziko-khimitcheskoy biologii N SSSR, Moskva. Submitted March 12, 1964.

SHLYAPNIKOV, S.V.; KARPEYSKIY, M. Ya.; YAKUSHINA, L.M.; GONELIKHNIK, V.S.

Use of gas-liquid chromatography method for quantitative analysis
of some amino acids. Biokhimiia 30 no. 5:457-462 My-Jc '65
(MIRA 19:1)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN
SSSR, Moskva.