If there are two methyl groups on the first carbon, from the one with a triple bond, the boiling temperature is lowered by 33°, if these two groups are on the second and on further C-atoms, the boiling temperature is lowered by 28°. Two methyl groups on two neighboring C-atoms increase the boiling temperature by 5°. Thus, the effect of the structural factors has a strictly regular character in the acetylene series. The boiling temperatures of these hydrocarbons can be determined by the following formula: $T = T' \pm (A + Bp)$ (1), where T' denotes the boiling temperature of a saturated hydrocarbon of normal structure with the same atomic number as in the acetylene hydrocarbon, A the coefficient of the triple bond, B the coefficient of the effect of the methyl group as substituents and p the number of the same structural factors. Thus, the boiling temperature of acetylene hydrocarbons of most various chemical structure was calculated (Table 1). The experimental data were taken from the references 3 and 4. Although the accuracy of the calculation of these data is somewhat inferior to that of the calculation of methane hydrocarbons, it still

demonstrated the usefulness of this method. From the comparison of the data the author draws several conclusions. This method might also be employed for the acetylene hydrocarbons not yet synthesized. In the diolefin hydrocarbons the effect of the interaction of the double bond on the boiling temperature can be expressed in the form of certain coefficients. The effect of the double bonds is then clearest if these bonds are on two neighboring C-atoms. Then the boiling temperature is increased by 14°. With the increase of the distance between the double bonds the effect mentioned above decreases and finally becomes insignificant. The formula (1) may also be used for diolefins in the same sense as for acetylene. Some conclusions are drawn. The calculation results together with the experimental data (according to Refs 6,7) are given in table 2. They agree well. According to the author's opinion, the method proposed by him may be used for the evaluation of some experimental data. Examples are mentioned. There are 2 tables and 8 references, 4 of which are Soviet.

Chemical Structure and Boiling Temperatures of Acetylene and Diolefin Hydrocarbons SOV/153-58-3-14/30

ASSOCIATION: Permskiy sel'skokhozyaystvennyy institut (Perm' Agricultural Institute); Kafedra khimii (Chair of Chemistry)

SUBMITTED: September 20, 1957

Card 4/4

KOZLOV, N.S.; PANOVA, N.I.

Catalytic amination of organic compounds. Part 7:Catalytic conversions in butylamine series. Zhur.ob.khim. 28 no.9: 2384-2386 S '58. (MIRA 11:11)
(Butylamine)

KOZLOV, N.S.; CHUMAKOV, S.Ya.

Catalytic method of synthesizing vinyl esters. Zhur. prikl. khim. 31 no.1:143-144 Ja '58. (MIRA 11:4)

1.Permskiy gosudarstvennyy universitet im. A.M. Gor'kogo.
(Vinyl alcohol)

5(3)

AUTHORS: Kozlov, N. S., Shur, I. A. SOV/20-123-1-27/56

TITLE: Catalytic Synthesis of 4-Methyl-2-Phenyl-5,6-Benzoquinoline and 2,4-Diphenyl-5,6-Benzoquinoline and Their Derivatives (Kataliticheskiy sintez 4-metil-2-fenil-5,6-benzokhinolina i 2,4-difenil-5,6-benzokhinolina i ikh proizvodnykh)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1, pp 102-104 (USSR)

ABSTRACT: It is known that 5,6-benzoquinoline and its derivatives are produced by means of methods of synthesis commonly used for quinoline compounds (Ref 1). But even the most simple compound amongst them (Döbner(Debner) method, Refs 2, 3) cannot be regarded as perfect since the 2 steps of reaction reduce the yield and complicate the operation. Some further, previously developed methods (Refs 4-7) are insufficient as well. The 5,6-benzoquinoline nucleus is a constituent of the physiologically active ergot alkaloid and other plants. It might therefore be assumed that several derivatives of the 5,6-benzoquinoline ought to possess bactericidal properties.

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For that reason, the synthesis under review is of scientific and practical interest. In performing the present study the authors were led by theoretical conceptions which were already earlier reported by the first mentioned author (Ref 8). The present tests have confirmed the correctness of the mentioned assumptions. The Schiff bases from 2-naphthylamine and from aromatic aldehydes (benzaldehyde, aubepine, m- and p-nitro-benzaldehyde, p-dimethyl-amino benzaldehyde) actually react under adequate conditions with acetone and acetophenone and produce the two compounds mentioned in the title and their p-methoxy-, p-dimethylamino- as well as i- and p-nitro derivatives. Most of these compounds were obtained by the authors for the first time. As active catalyst 2-naphthyl-amine hydrochloride was used. The mechanism of the reaction is illustrated by schemes and equations. It was also experimentally confirmed. For this purpose, the authors have elaborated a modification of the synthesis of β-2-naphthyl-amino-β-phenyl-propiophenone. The latter was subjected to cyclization and formed 1,3-diphenyl-5,6-benzoquinoline. Finally the method

Catalytic Synthesis of 4-Methyl-2-Phenyl-5,6- Benzoquinoline and 2,4-Diphenyl-5,6-Benzoquinoline and Their Derivatives SOV/20-123-1-27/56

is described. There are 1 table and 10 references, 4 of which are Soviet.

ASSOCIATION: Permskiy sel'skokhozyaystvennyy institut (Perm' Institute of Agriculture)

PRESENTED: June 14, 1958, by A. A. Balandin, Academician

SUBMITTED: April 24, 1958

Card 3/3

5(3) SOV/79-29-8-58/81

AUTHORS: Kozlov, N. S., Shur, I. A.

TITLE: Catalytic Condensation of the Schiff Bases With Organic Compounds. I. Synthesis of β-Arylaminoketones and Their Hydramine Cleavage

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2706 - 2709 (USSR)

ABSTRACT: Taking into consideration the inadequately worked out syntheses and properties of the β-aminoketones according to references 1-5, the authors describe in the present paper a very convenient method for the synthesis of the β-arylaminoketones which is based on the reaction of the Schiff bases with aliphatic-aromatic ketones in the presence of an acid catalyst(the hydrochloride amine contained in the Schiff base):

$$ArN = CHAr' + RCOCH_3 \longrightarrow ArNHCHAr'$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad CH_2COR$$

By this way a number of new compounds belonging to this class could be synthesized. The assumption repeatedly found in publi-

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cations that the β-aminoketones easily cyclize into the respective quinoline bases according to scheme 2 (Ref 1) holds in the case of Ar= β-naphthylamine only. In the case of Ar=phenyl the cyclization of the β-arylaminoketones is subjected to a hydramine cleavage (Refs 4,6,7). Attempts aiming at a cyclization of the β-arylaminoketones synthesized by the authors by means of melting them down with zinc chloride and heating them with hydrochloric acid did not succeed, since during the heating process a decomposition into the primary amine and benzalacetophenone takes place (Scheme 3). This process is interpreted and more thoroughly explained by means of formula (A) as a consequence of a weakening of the $-NH-CH-C_6H_8$ bond in the molecule of β-arylaminoketone due to polarization. There are 2 tables, and 8 references, 4 of which are Soviet.

ASSOCIATION: Permskiy gosudarstvennyy sel'skokhozyaystvennyy institut (Perm' State Agricultural Institute)

SUBMITTED: November 4, 1958

5(3) SOV/80-32-5-38/52

AUTHORS: Kozlov, N.S., Chumakov, S.Ya.

TITLE: The Catalytic Condensation of Compressed Acetylene With Aromatic Amines in the Liquid Phase

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1149-1153 (USSR)

ABSTRACT: Favorskiy and Shostakovskiy developed a safe method for using compressed acetylene in the synthesis of vinyl ethers / Ref 1 /. The reaction of compressed acetylene with primary aromatic amines is investigated here. There are three variants of the reaction: 1) condensation of acetylene with the amines, the final products being quinaldine and its derivatives; 2) condensation with a mixture of aromatic amine and acetone, the final product being 2,4-dimethylquinoline and its homologs; 3) condensation with a mixture of primary aromatic amines with aromatic aldehyde, in which α-phenylquinoline and its homologs are formed. Cuprous chloride, mercury dichloride, copper acetylenide and the mercury salts of organic acids were used as catalysts. The saturation of the reaction mass by acetylene took formerly 30 hours, but could be reduced to 2 - 3 hours by the use of compressed acetylene. Mercury dichloride and the mercury salts of the acetic, propionic and butyric acid as catalysts produce

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The Catalytic Condensation of Compressed Acetylene With Aromatic Amines in the Liquid Phase

quinaldine, cuprous chloride and copper acetylenide produce quinaldine and indole. The pressure in the experiments was 10 - 12 atm. There are 6 Soviet references.

ASSOCIATION: Permskiy sel'skokhozyaystvennyy institut (Perm' Agricultural Institute)

SUBMITTED: March 25, 1959

PHASE I BOOK EXPLOITATION SOV/4350

Soveshchaniye po khimii, tekhnologii i primeneniyu proizvodnykh piridina i khinolina. Riga, 1957

Khimiya, tekhnologiya i primeneniye proizvodnykh piridina i khinolina; materialy soveshchaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

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

Ed.: S. Bazhanova; Tech. Ed.: A. Klyavinya; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Vanaga, Candidate of Chemistry (Resp. Ed.), L. P. Zalukayev, Doctor of Chemistry, and M. M. Kalnyn'.

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

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

II. SYNTHETIC MEANS OF PREPARING PYRIDINES AND QUINOLINES

Kozlov, N.S.

S/153/60/003/004/022/040/XX
B020/B054

AUTHORS: Kozlov, N. S., Shur, I. A.

TITLE: The Mechanism of Synthesis of 2-Phenyl-5,6-benzoquinoline and Its Derivatives

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4, pp. 675 - 679

TEXT: One of the authors developed (Refs.3,4) a new method of synthesizing the compound mentioned in the title and its derivatives by means of co-condensation of 2-naphthyl amine with aromatic aldehydes and acetylene. This synthesis is based on the concept of an interaction of two Schiff's bases forming in the process, and on the cyclization of the resulting intermediate into the α-position of the naphthalene nucleus. On the basis of these concepts, the authors succeeded in synthesizing the compound mentioned in the title and its derivatives by a method developed by them in two variants. The first variant is based on the condensation of Schiff's bases obtained from 2-naphthyl amine

The Mechanism of Synthesis of 2-Phenyl-5,6-benzoquinoline and Its Derivatives

S/153/60/003/004/022/040/XX
B020/B054

and aromatic aldehydes with ketones to form β-aminoketones. The second variant is based on the condensation of Schiff's bases with aldehydes containing mobile hydrogen atoms to form β-amino aldehydes. Both reactions proceed in the presence of 2-naphthyl-amine chlorohydrate. Very different derivatives of 2-phenyl-5,6-benzoquinolinol can be obtained by introduction of homologs and derivatives of acetone and acetophenone instead of the latter together with Schiff's bases, as well as other aldehydes instead of acetaldehyde. Another possibility of synthesizing the compound mentioned is based on the condensation of 2-naphthyl amine with unsaturated ketones and diketones. The authors describe the products obtained in the condensation of 2-naphthyl amine with benzal acetone, dibenzoyl methanol, and benzal acetophenone, and derive the reaction mechanism. They describe the synthesis of the following compounds: 2-phenyl-5,6-benzoquinoline, 4-methyl-2-phenyl-5,6-benzoquinoline, β-(2-naphthyl-amino)-β-phenyl propiophenone, 2,4-diphenyl-5,6-benzoquinoline, 2-(3-nitro-phenyl)-4-phenyl-5,6-benzoquinoline, and 2-(4-nitro-phenyl)-4-phenyl-5,6-benzoquinoline, as well as the cyclization of β-(2-naphthyl-amino)-β-phenyl propiophenone to

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The Mechanism of Synthesis of 2-Phenyl-5,6-benzoquinoline and Its Derivatives

S/153/60/003/004/022/040/XX
B020/B054

2,4-diphenyl-5,6-benzoquinoline. There are 7 references: 3 Soviet and 4 German.

ASSOCIATION: Permskiy sel'skokhozyaystvennyy institut, kafedra khimii (Perm' Agricultural Institute, Department of Chemistry)

SUBMITTED: December 25, 1958

Card 3/3

S/079/60/030/05/40/074
B005/B016

AUTHORS: Kozlov, N. S., Abramova, Z. A.

TITLE: Catalytic Synthesis of β-Aryl-amino Ketones

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1595-1596

TEXT: One of the authors described in a previous paper (Ref. 1) a method of synthesizing β-aryl-amino ketones by catalytic condensation of Schiff's bases with aliphatic-aromatic ketones (first variant), or by catalytic condensation of primary aromatic amines with chalkones (second variant); in another paper (Ref. 2), the mechanism of this condensation was clarified. The present communication continues these investigations. The primary aromatic amines p-ethyl aniline and p-amino cymene, and the aliphatic-aromatic ketone p-methoxy acetophenone were used as initial products. 7 β-aryl-amino ketones were synthesized from these compounds by means of the two variants of the afore-mentioned method which have not yet been described in publications. A table gives for each of these 7 ketones yield, melting point, and nitrogen content. The Schiff's bases used in the first variant were obtained from the two mentioned primary

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aromatic amines and different aromatic aldehydes. In both variants of the above-mentioned method, the hydrochloride of the amine condensed was used as a catalyst (second variant), or the one which formed Schiff's base (first variant). In agreement with the data in publications (Refs. 1-4), the β-aryl-amino ketones synthesized are hydrolyzed on heating with concentrated hydrochloric acid, and are transformed to give the initial products (primary amine and chalkone). In an experimental part, the two variants of this method of synthesis, as well as the reaction conditions of hydrolysis of the amino ketones, are described in detail. There are 1 table and 7 references, 3 of which are Soviet.

ASSOCIATION: Permskiy sel'skokhozyaystvennyy institut (Perm' Institute of Agriculture)

SUBMITTED: May 29, 1959

KOZLOV, N.S.; PAK, V.D.

Catalytic condensation of Schiff bases, synthesized from p-aminobenzoates and aromatic aldehydes, with aromatic ketones. Zhur.ob.khim. 30 no.7:2400-2402 Jl '60. (MIRA 13:7)

1. Permskiy sel'skokhozyaystvennyy institut.
(Schiff bases) (Condensation products)

KOZLOV, N.S.; SHUR, I.A.

Catalytic condensation of Schiff bases with methyl-p-tolyl ketone. Part 6. Zhur.ob.khim. 30 no.8:2492-2496 Ag '60. (MIRA 13:8)

1. Permskiy sel'skokhozyaystvennyy institut.
(Schiff bases) (Ketone)

KOZLOV, N.S.; SHUR, I.A.

Catalytic condensation of Schiff bases with organic substances.
Part 3: Mechanism of the synthesis of β-arylamino ketones.
Zhur.ob.khim. 30 no.8:2746-2748 Ag '60. (MIRA 13:8)

1. Permskiy sel'skokhozyaystvennyy institut.
(Schiff bases) (Ketones)

KOZLOV, N.S.; ABRAMOVA, Z.A.

Catalytic condensation of Schiff bases, synthesized from 4-aminodiphenyl and aromatic aldehydes, with aliphatic-aromatic ketones. Dokl.AN SSSR 132 no.4:839-841 Je '60. (MIRA 13:5)

1. Permskiy gosudarstvennyy sel'skokhozyaystvennyy institut im. D.N.Pryanishnikova. Predstavleno akademikom A.A.Balandinym.
(Schiff bases) (Ketones)

KOZLOV, N.S.; SHUR, I.A.

Catalytic condensation of Schiff bases with methyl-α-naphthyl ketone.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.4:614-616 '61.
(MIRA 15:1)

1. Permskiy sel'skokhozyaystvennyy institut, kafedra khimii.
(Schiff bases) (Ketone)

KOZLOV, N.S.; PAK, V.D.

Catalytic condensation of Schiff bases obtained from esters of aromatic aldehydes with aliphatic-aromatic ketones. Zhur. ob. khim. 31 no. 2:497-499 F '61. (MIRA 14:2)
(Schiff bases) (Aldehydes) (Ketones)

KOZLOV, N.S.; PINEGINA, L.Yu.; POPOV, I.F.

Catalytic synthesis of halogen derivatives of β-aryl amino ketones. Zhur.ob.khim. 31 no.7:2234-2236 Jl '61. (MIRA 14:7)

1. Permskiy sel'skokhozyaystvennyy institut.
(Ketone)

KOZLOV, N.S.; NIKOLAYEV, A.D.

Catalytic synthesis of β-arylamino ketones. Zhur.ob.khim. 31 no.12:3894-3896 D '61. (MIRA 15:2)

1. Permskiy sel'skokhozyaystvennyy institut imeni D.N.Pryanishnikova.
(Ketone)

KOZLOV, N.S.; SHUR, I.A.

Synthesis of β-arylamino ketones and their hydramine cleavage.
Izv.vys.ucheb.zav.;khim.i khim.tekh. 5 no.2:342-345 '62.
(MIRA 15:8)

1. Permskiy pedagogicheskiy institut, kafedra khimii.
(Ketones) (Amines)

KOZLOV, N.S.; PINEGINA, L.Yu.; SELEZNEVA, Ye.A.

Synthesis of p-ethoxy and p-ethyl derivatives of p-arylamino ketones. Zhur.ob.khim. 32 no.2:436-439 F '62. (MIRA 15:2)
(Ketones)

KOZLOV, N.S.; KOZLOV, G.N.

Action of piperidine on β-arylamino ketones. Zhur.ob.khim. 32 no.8:2428-2431 Ag '62. (MIRA 15:9)
(Piperidine) (Ketone)

KOZLOV, N.S.; PAK, V.D.

Synthesis of β-arylamino ketones and their hydramine cleavage. Zhur.ob.khim. 32 no.10:3386-3390 O '62. (MIRA 15:11)

1. Permskiy sel'skokhozyaystvennyy institut.
(Ketones) (Schiff bases)

KOZLOV, N.S.; ABRAMOVA, Z.A.

Synthesis of some derivatives of biphenyl. Zhur.ob.khim. 32 no.8:2426-2428 Ag '62. (MIRA 15:9)

1. Permskiy sel'skokhozyaystvennyy institut.
(Biphenyl)

KOZLOV, N.S.; PINEGINA, L.Yu.

Catalytic condensation of acetylene with aromatic amines. Part 29: Reaction mechanism. Zhur.ob.khim. 33 no.4:1079-1081 Ap '63. (MIRA 16:4)

1. Permskiy sel'skokhozyaystvennyy institut.
(Acetylene compounds) (Amines) (Catalysis)

KOZLOV, N.S.; NIKOLAYEV, A.D.

Catalytic condensation of Schiff bases with malonic ester. Zhur. ob.khim. 33 no.7:2387-2389 Jl '63. (MIRA 16:8)

1. Permskiy sel'skokhozyaystvennyy institut imeni D.N.Pryanishnikova.
(Schiff bases) (Malonic acid)

KOZLOV, N.S.; KOZLOV, G.N.

Addition of piperidine and morpholine to chalcones. Zhur.ob.khim. 33 no.7:2184-2188 Jl '63. (MIRA 16:8)
(Piperidine) (Morpholine) (Chalcone)

KOZLOV, N.S.; NIKOLAYEV, A.D.

Catalytic synthesis of antipyrine derivatives. Dokl. AN SSSR 154 no.6: 1382-1384 F '64. (MIRA 17:2)

1. Permskiy sel'skokhozyaystvennyy institut im. D.N.Pryanishnikova. Predstavleno akademikom A.A.Balandinym.

KOZLOV, N.S.; ONICH, L.P.

Synthesis of β-arylaminoketones, derivatives of 2-acetylbenzofuran. Izv.vys.ucheb.zav.; khim. i khim. tekh. 6 no.4:970-973 '63. (MIRA 17:4)

1. Permskiy gosudarstvennyy pedagogicheskiy institut, kafedra khimii.

KOZLOV, N.S.; ISAYEVA, R.K.

Synthesis of fluoro derivatives of para-aminobonzoic acid.
Izv. vys. ucheb. zav., khim i khim. tekh. 7 no.5:787-790 '64
(MIRA 13:1)

1. Kafedra khimii Permskogo sel'skokhozyaystvennogo instituta imeni akademika D.N. Pryanishnikova.

KOZLOV, N.S.; BRITAN, Ye.A.; ZUYEVA, N.D.

Catalyzed condensation of azomethines with aliphatic-aromatic ketones.
Zhur.ob.khim. 34 no.1:298-303 Ja '64. (MIRA 17:3)

KOZLOV, N.S.; SONICH, I.P.

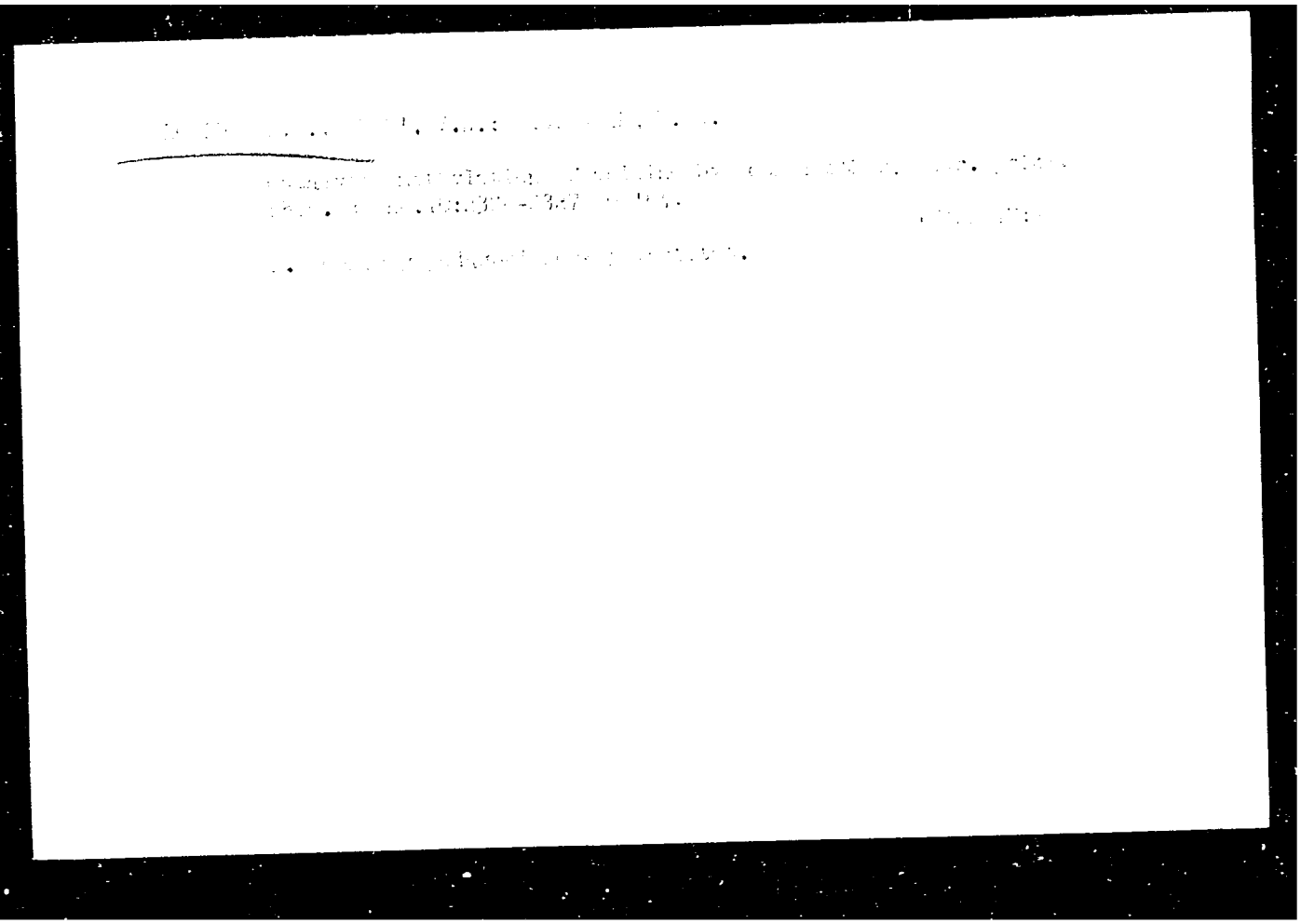
α-Furyl-β-aminoaryl ketones. Zhur. ob. khim. 34 no. 3:927-929 Mr '64. (MIRA 17:6)

1. Permskiy pedagogicheskiy institut.

KOZLOV, N.S.; KISELEV, B.I.; PASTERNAK, V.Sh.

Preparation of 2-phenylbenzoxazole from aromatic nitro compounds. Zhur. ob. khim. 34 no.8:2811 Ag '64. (MIRA 17:9)

1. Permskiy pedagogicheskiy institut.



KOZLOV, N.S.; MISENZHNIKOV, V.V.

Synthesis of derivatives of 2-phenyl-5,6-benzoquinoline. Synthesis of quaternary salts of 4-styryl derivatives of 2-phenyl-5,6-benzoquinoline. Izv.vys.ucheb.zav.; khim. i khim.tekh. 7 no.2:347-349 '64. (MIRA 18:4)

1. Permskiy pedagogicheskiy institut, kafedra khimii.

KOZLOV, N.S.; PASTERNAK, V.Sh.; KISLIEV, B.I.

Catalyzed synthesis of benzoxazoles based on aromatic nitro compounds. Izv. vys. ucheb. zav.; khim. i khim. tekh. 7 no.4: 670-672 '64. (MIRA 17:12)

1. Kafedra obshchey khimii Permskogo pedagogicheskogo instituta.

KOZLOV, N.S.; PASTERNAK, V.Sh.

Catalytic interaction of the ethers of phenols with dimethyl ethers. Izv.vys.ucheb.zav.; khim. i khim.tekh. 8 no.2:347-349 '65. (MIRA 18:8)

1. Permskiy pedagogicheskiy institut, kafedra obshchey khimii.

KOZLOV, N.S.; SIMONOVA, E.V.

Catalytic synthesis of β-arylaminoketone nitro derivatives. Zhur. org. khim. 1 no.9:1638-1640 S '65.

Activity of aliphatic aromatic ketones. Ibid.:1641-1642 (MIRA 18:12)

1. Permskiy sel'skokhozyaystvennyy institut. Submitted July 16, 1964.

PA 62T7

KOZLOV, N. V. Engr.

Jan 1948

USSR/Electricity
Lighting, Industrial
Illumination - Standards

"New Standards," N. V. Kozlov, Engr, 2¼ pp

"Vest Inzher i Tekh" No 1

All-Union Committee on Standards, 22 Jul 1947, confirmed series of standards on artificial lighting in industrial enterprises. Recommendations have the following sections: 1) fields in which these standards apply, 2) general status, 3) equipment for inside illumination, 4) equipment for outdoor illumination, and 5) constants in illumination.

62T7

KOZLOV, N. V.

PA47T26

USSR/Electricity
Lighting, Industrial
Illumination

Mar 1948

"New Specifications for Artificial Illumination in Industrial Installations," N. V. Kozlov, Engr, All-Union Committee for Standards, Council of Ministers USSR, 3 pp

"Elektrichestvo" No 3

New standards became effective on specifications for artificial illumination of industrial installations 22 Jun 1947. Briefly describes some points of new specifications and standards.

47T26

AUTHOR: Kozlov, N.V., Engineer,

28-58-3-2/39

TITLE: The Role of Standardization and Typification in Construction Must Be Increased (Povysit' rol' standartizatsii i tipizatsii v stroitel'stve)

PERIODICAL: Standartizatsiya, 1958, pp 7-10 (USSR)

ABSTRACT: The author outlines the present state of standardization of construction elements in the USSR and its tasks in connection with the decisions of the All-Union conference on construction which convened in April 1958. It is pointed out that the existing organization of types has not stopped development of different specifications by different organizations. Some industrial organizations prefer to manufacture by their own (branch) specifications instead of by the state standards which require higher quality. Construction parts produced by plants are still too heavy and expensive; often they are not interchangeable and require "fitting" at the site because of inaccurate dimensions. The variety of existing parts is illustrated by an example of house construction in Moscow in 1957. A total of 144 different type-sizes of flooring and covering elements, 32 type-sizes of stair flights and landings were used. The plants of Glavzhelezobeton produced 500 differ-

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The Role of Standardization and Typification in Construction Must Be Increased

28-58-3-2/39

ent type-sizes of reinforced concrete elements instead of the 228 prescribed by Mosgorispolkom. The British standard of 1954 for the fundamental design characteristics of rural houses (spans, heights, etc.) is mentioned as an example to be followed. The importance of prospective standards is emphasized and the lack of special literature on standardization in the field of construction is pointed out.

ASSOCIATION: Gosstroy SSSR

Card 2/2 1. Construction--Equipment 2. Construction--Standards
3. Standardization

Kozlov, N.V.

AUTHOR: Kozlov, N.V., Engineer 28-58-2-21/41

TITLE: Windows and Balcony Doors for Apartment Houses (Okna i balkonnyye dveri dlya zhilykh zdaniy)

PERIODICAL: Standartizatsiya, 1958, Nr 2, p 48 (USSR)

ABSTRACT: The article contains information on the "GOST 8671-58" for wooden windows and balcony doors of apartment houses with a story height (from floor to floor) of 3 m. The new standard has been approved by Gosstroy SSSR and replaces this part of the old "GOST 6630-53". The number of standard type-sizes for window frames is reduced from 85 to 24, and that of balcony doors from 65 to 7. Both windows and doors must be supplied completely finished.

ASSOCIATION: Gosstroy SSSR

AVAILABLE: Library of Congress

Card 1/1 1. Buildings-Standards 2. Standardization-USSR

25(5) SOV/28-59-2-13/26

AUTHOR: Kozlov, N.V., Engineer

TITLE: Methods of Testing and Assessing Prefabricated Reinforced Concrete Parts (Metody ispytaniya i otsenki sbornykh zhelezobetonnykh detaley)

PERIODICAL: Standartizatsiya, 1959, Nr 2, pp 41-42 (USSR)

ABSTRACT: The "GOST 8829-58" for testing and evaluating prefabricated reinforced concrete parts was approved by the USSR Gosstroy. The GOST coordinates and describes the testing of durability, hardness and break resistance of ordinary or prestressed prefabricated concrete parts. At present only small concrete parts are regularly checked as tests of large components such as girders and beams are both complicated and expensive. The new GOST does not require testing of large parts if all technical and constructional specifications are strictly adhered to. If this is not the case, then break tests must be done. The new GOST also standardizes indices for an objective assessing of these components after testing.

Card 1/2

25(5) SOV/28-59-2-13/26
Methods of Testing and Assessing Prefabricated Reinforced Concrete Parts

ASSOCIATION: Gosstroy SSSR (The USSR Gosstroy)

Card 2/2

KOZLOV, N.V.

Prestressed reinforced concrete constructions. Standartizatsiia 24 no.11:41-43 N '60. (MIRA 13:11)
(Prestressed concrete construction—Standards)

KOZLOV, N.V., inzh., red.; PETROVA, V.V., red. izd-va; MOCHALINA, Z., tekhn. red.

[Technical specifications MRTU 7-5-61 for devices for fastening deeply corrugated asbestos cement sheets] Tekhnicheskie usloviia na pribory dlia krepleniia asbestotsementnykh volnistykh listov usilennogo profilia; MRTU 7-5-61. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 20 p. (MIRA 14:12)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

(Asbestos cement) (Fastenings)

KOZLOV, N.V.

Wooden windows and doors. Stanc rtizatsiia 27 no.1:48-50 Ja '63. (MIRA 17:4)

L 4575-66 EWT(m)/EPF(c)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP5023739 UR/0224/65/000/008/0044/0046
624:678.5/.8

44,55

AUTHOR: Kozlov, N. V. (Engineer)

44
B

TITLE: Polymeric materials in construction 15,44,55

SOURCE: Byulleten' stroitel'noy tekhniki, no. 8, 1965, 44-46

TOPIC TAGS: construction material, polyethelene plastic, solid mechanical property

ABSTRACT: This article lists and discusses the basic characteristics of tubes, made of low density and high density polyethylene by continuous worm screw extrusion, and of glass-reinforced plastics. Data presented cover (for tubes) the resistance to pressure as a function of size and tube thickness, material density, stability to cold, relative strain, and the requirements imposed on the steel used as the outer shell of tubes and (for the plastics) the outline of production technology, the tensile and bending strength, Young's modulus, density, light transmission, and water absorption. The author lists various factories producing the polymeric materials discussed. Orig. art. has: 4 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 000

Card 1/1 DP

0901 0581

KOZLOV, N.V.; ZELENTSOV, V.A.

Soviet measuring instruments at the exhibition in Sokol'niki.
Izm. tekh. no.11:54-57 N '65. (MIRA 18:12)

KOZLOV, N.

Civil aviation in people's China. Grazhd.av. 12 no.6:37-38 Je '55.
(MLRA 9:5)

(China--Aeronautics, Commercial)

KOZLOV, N.; KOSTOGLODOV, I., inzh.; SANOV, K.

Aviation abroad. Grazhd. av. 12 no.7:35-39 Jl '55. (MIRA 11:6)
(Aeronautics, Commercial)

KOZLOV, N.

Commercial aeronautics in the Bulgarian People's Republic. Grazhd. av. 12 no.8:37-38 Ag '55. (MIRA 15:8)
(Bulgaria--Aeronautics, Commercial)

KOZLOV, N.

Air transportation of the United States in 1955. Grazhd.av.13 no.12:36 D '56. (MLRA 10:2)
(United States--Aeronautics, Commercial)

KOZLOV, N.V., inzhener

Gigantic passenger airplanes. Nauka i tekh mladezh no.12:3-5 D '57.

KOZLOV, N., inzhener.

Air express. Tekh.mol. 25 no.8:16, 33 Ag '57. (MLRA 10:9)
(Airplanes)

KOZLOV, N., inzhener.

Giant airplanes. Tekh.mol. 25 no.10:32-34 O '57. (MIRA 10:10)
(Airplanes--Jet propulsion)

29-3-15/25

AUTHOR: Kozlov, N., Engineer

TITLE: "TU - 114" ("TU - 124")

PERIODICAL: Tekhnika Molodezhi, 1955, Vol. 26, Nr 3, pp. 17-19 (USSR)

ABSTRACT: The Muscovites saw the first turbo-air-liner "TU-114" above the aerodrome of Tushinsk the day before the 40th anniversary of the great October in 1955. The air-plane has 4 turbo-propengines which were designed by N. D. Kuznetsov, Hero of Socialist Labor. Their power is almost twice as great than that of foreign engines of analogous design. The vestibule is entered by getting in over a gangway of 4,5m of height. The entrance to the cockpit is to the left, the entrance to the passengers'room with 41 seats is to the right. The restaurant - saloon is behind the passengers'room and also the bar is there. The kitchen is in the groundfloor and the meals are lifted upward by means of special elevators. There is a very cosy compart ent with 3 seats for little children, 4 sleeping compartments for 12 persons and one saloon for 34 passengers. The vestibule with check-rooms and toilets is behind the saloon. Rooms for goods and luggage are in

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the groundfloor. In its basic variant the "TU-114" is designed for the transportation of 170 passengers. 120 passengers are transported on non-stop flights Moscow - New-York, Rangoon, Peking, Tokyo. On short flights, as e.g. to in the health-resorts on the Black Sea, the air-liner will take 220 passengers. Here it must be taken into consideration that an express train does not take more than 400 persons. The crew of the airl-liner comprises 10 men. 2 pilots, 1 navigator, 1 flight engineer and 1 radio operator are in the cockpit which is equiped with complicated electronic -, radiotechnical and navigation instruments. 5 stewards and 2 cooks are at the passenger's service. All prerequisites for a comfortable flight at great height are given. The rooms are soundproof and air-conditioned. The "TU-114" met with great approval also abroad. According to the opinion of American aircraft engineers, it is the most economic aircraft actually existing. They also pointed out that it requires only a short runway contrary to the large American jet-propelled aircraft which require a runway of more than 3000 m of length. There is 1 figure.

Card 2/2

AVAILABLE: Library of Congress

1. Airplanes-USSR 2. Turbopropeller jet engines-USSR
3. TU-114 (Airplane)-USSR 4. Air transportation-USSR

MOSLOV, N. YA.: INZH.

Saw Mil s; Hoisting Machinery

Over-all mechanization of log handling in lumber mills.
Biul. stch. tekh., 9 no. 3, 1952
Trest Mosgrazhdaruglezhilstroy

SO: Monthly List of Russian Accessions, Library of Congress, April 1952 1953, Uncl.

Rolling method of making wall panels. Mekh.trud.rab. 9 no.4:21-23
Ap '55. (Walls) (MLRA 8:7)

KOZLOV, N.Ya., inzhener; BOL'SHAKOV, V.M., inzhener.

Making large gypsum concrete wall panels for rolling mills.
Rats. i izobr.predl.v strei.no.121:18-21 '55. (MLRA 9:7)
(Walls)

KOZLOV, Nikolay Yakovlevich, inzh.; BOL'SHAKOV, Vitaliy Mikhaylovich, inzh.; KAZARNOVSKIY, Zinoviy Iosifovich, inzh.; BIRGER, A.I., inzh., nauchnyy red.; KRYUGER, Yu.V., red. izd-va.; SOLNTSEVA, L.M., tekhn. red.; EL'KINA, E.M., tekhn.red.

[Rolled partitions and facing panels; production and use] Prokatnye, peregorodochnye i oblitsovochnye paneli; proizvodstvo i primenenie. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 110 p. (MIRA 11:12)

(Concrete slabs)

KOZLOV, N.Ya.

Continuous rolling of reinforced concrete products. Na stroi. Mosk. 1 no. 5:13-14 My '58. (MIRA 11:8)
(Concrete slabs)

97-58-5-8/14

AUTHOR: Kozlov, N. Ya., Engineer.

TITLE: Continuous Method of Production of Reinforced Concrete Panels (Izgotovleniye zhelezobetonnykh paneley sposobom prokata)

PERIODICAL: Beton i zhelezobeton, 1958, Nr.5; USSR, Pp 191-193.

ABSTRACT: This method based on the total automation of all technological processes was introduced in 1957 by the author of this article in collaboration with the collectives of SKB, Mosstroy and the Kalibrovskiy research factory for Glavmosstroy. Figure 1 illustrates the pilot plant performing the continuous manufacture of reinforced concrete slabs. This plant consists of a dynamo and reduction gears and the speed of the conveyor belt is 20 m. per hour. The conveyor belt is constructed to form longitudinal transverse ribs on the underside of the slabs. At the end of the plant there is a platform installation for receiving the finished product. (see Figure 2) The author during the tests developed a curing method whereby after 2 hours after the removal of the form work the strength of the concrete reached 70% of the calculated strength. This isothermal method of curing commenced immediately after the

Card 1/2

...y the
... and 15 of
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...es produced by the ... described
... figures and one graph.

Card ... -orced concrete--Applications 2. Reinforced concrete
--Production

KOZLOV, N.Ya.

KOZLOV, N.Ya., inzh.; BOL'SHAKOV, V.M., inzh.

New plant producing rolled wallboard. Gor. khoz. Mosk. 32 no.1:13-17 Ja '58. (MIRA 11:1)

(Moscow--Wallboard)

KOZLOV, N.Ya., inzh.

Making reinforced concrete panels using the method of continuous rolling. Gor. khoz. Mosk. 32 no.6:13-15 Je '58. (MIRA 11:7)
(Concrete blocks)

KOZLOV, N.Ya., inzh.

Unit for making reinforce concrete products by the method of continuous vibration rolling. Stroi. i dor. mashinostr. 5 no.6: 13-16 Je '60. (MIRA 13:7)
(Precast concrete) (Vibrators)

KOZLOV, N.Ya., inzh. Geroy Sotsialisticheskogo Truda; ORENTLIKHER, L.P., inzh.; SPIVAK, N.Ya., kand.tekhn.nauk

Producing keramzit-concrete single-layer panels by the method of continuous vibration rolling. Bet. i zhel.-bet. no.8:371-372 Ag '60. (MIRA 13:8)

(Concrete slabs) (Vibration)

KOZLOV, N.Ya., inzh., Geroy Sotsialisticheskogo Truda

Mechanization and automation of the continuous production of reinforced concrete elements. Mekh.stroi. 17 no.8: 6-9 Ag '60. (MIRA 13:8)
(Reinforced concrete) (Automation)

KOZLOV, Nikolay Yakovlevich, inzh.; LEVANOV, Nikolay Mikhaylovich, dok.tekhn.nauk, prof.; POLUKHIN, Petr Ivanovich; KRASIL'NIKOV, Aleksey Nikolayevich; PANARIN, Nikolay Yakovlevich; FILIPPOV, Boris Ivanovich; MARTYNOV, A.F., red.; GOROKHOVA, S.S., tekhn.red.

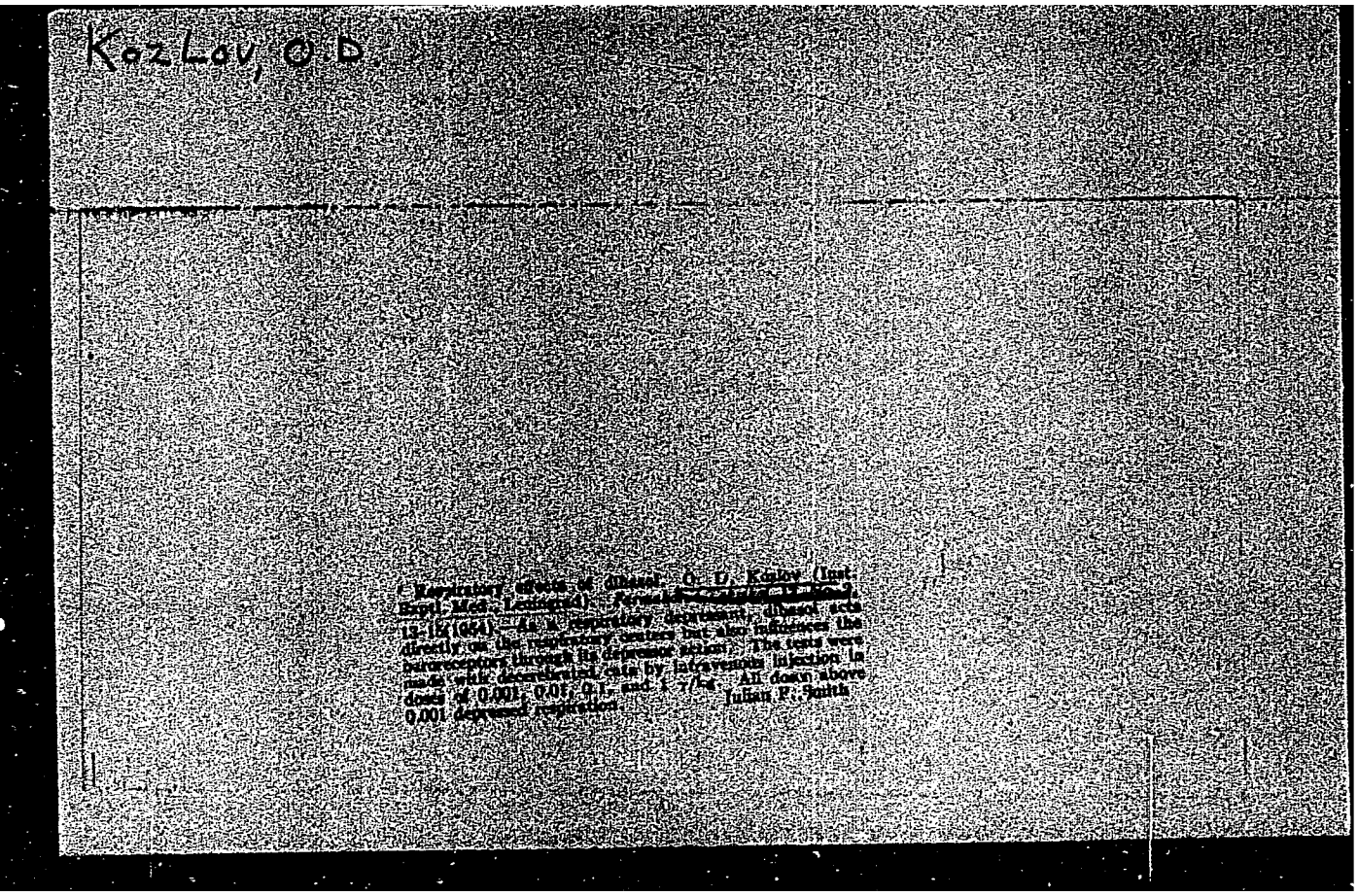
[Technology of the manufacture of vibration rolled elements and their use in the construction industry] Tekhnologiia izgotovleniia vibroprokatnykh konstruktsii i ikh primenenie v stroitel'stve. Moskva, Vysshaia shkola, 1963. 310 p. (MIRA 17:4)

1. Nachal'nik Spetsial'nogo konstruktorskogo byuro Prokatdetal' (for Kozlov, Levanov).

FOMKIN, F.L., dots.; SAPITSKIY, N.I.; KHALOV, O.A., kand. ekon. nauk; SHIKHANOVICH, L.I.; MEREDOV, A.M., starshiy nauchnyy sotr.; ATAYEV, Ch.A., kand. ekon. nauk; KONDAKOV, V.F., kand. ekon. nauk; LAVRINENKO, V.T., kand. ekon. nauk; KOZLOV, N.Ye., refer.; SHUMEYKO, T.I., red. izd-va; ZUBOVA, N.I., tekhn. red.

[Studies on the economics of the agriculture of the Turkmen S.S.R.] Ocherki po ekonomike sel'skogo khoziaistva Turkmenskoi SSR. Ashkhabad, Turkmengosizdat, 1962. 446 p. (MIRA 16:5)

1. Zaveduyushchiy otdelom ekonomiki sel'skogo khozyaystva Turkmenskogo nauchno-issledovatel'skogo instituta zemledeliya (for Shikhanovich). 2. Turkmenskiy nauchno-issledovatel'skiy institut zemledeliya (for Meredov).
(Turkmenistan--Agriculture--Economic aspects)



USSR/Medicine - Pharmacology FD-2512

KOZLOV, O. D.

Card 1/1 Pub 17-11/20

Author : Kozlov, O. D.

Title : The effect of 2,4-dinitrophenol and its isomers on the course and outcome of "korazol" poisoning in white mice.

Periodical : Byul. eksp. biol. i med. 4, 44-46, Apr 1955

Abstract : Investigated the effect of 2,4-dinitrophenol (a poison which disrupts respiratory phosphorylation) on the processes of stimulation of the central nervous system in white mice. The stimulation was produced by administration of "korazol." Tables. Four References, all USSR (all since 1940).

Institution : Laboratory of General Pharmacology (Head - V. M. Karasik Corresponding Member of the Academy of Medical Sciences USSR) of the Department of Pharmacology, (Head - S. V. Anichkov, Member of the Academy of Medical Sciences USSR) of the Institute of Experimental Medicine of the Academy of Medical Sciences USSR, Leningrad

Submitted : July 11, 1953 by S. Ye. Severin, Member of the Academy of Medical Sciences USSR

KAZLAV O.D.

ABRAMOVA, Zh.I., kand. med. nauk; ANICHKOV, S.V., prof.; BELEN'KIY, M.L., prof.; VAL'DMAN, A.V., doktor med. nauk; VEDENEYEVA, Z.I., kand. med. nauk; VINOGRADOV, V.M., kand. med. nauk; GERSHANOVICH, M.L., kand. med. nauk; GINETSINSKIY, A.G., prof.; GORBOVITSKIY, S.Ye., prof.; GREBENKINA, M.A., dotsent; GREKH, I.F., dots.; DENISENKO, P.P., kand. med. nauk; D'YACHENKO, P.K., kand. med. nauk; ZHESTYANIKOV, V.D., kand. med. nauk; ZAUGOL'NIKOV, S.D., prof.; ZEYMAL', E.V., kand. med. nauk; ISKAREV, N.A., kand. med. nauk; KARASIK, V.M., prof.; KIVMAN, G.Ya., kand. med. nauk; KOZLOV, O.D., kand. med. nauk; KROTOV, A.I., doktor veter. nauk; KUDRIN, A.N., doktor med. nauk; LAZAREV, N.V., prof.; LAPIN, I.P., kand. med. nauk; MEL'NIKOVA, V.F., prof.; MESHCHERSKAYA, K.A., prof.; MIKHEL'SON, M.Ya., prof.; MOSHKOVSKIY, Sh.D., prof.; PADEYSKAYA, Ye.N., kand. med. nauk; PARIBOK, V.P., prof.; PERSHIN, G.N., prof.; PLANEL'YES, Kh.Kh., prof.; PONOMAREV, G.A., prof.; POSKALENKO, A.N., kand. med. nauk; MUKHIN, Ye.A., dots.; ROZOVSKAYA, Ye.S., dots.; RYBOLOVLEV, R.S., starshiy nauchnyy sotr.; SALYAMON, L.S., kand. med. nauk; SAFRAZBEKYAN, R.R., kand. biol. nauk; TIUNOV, L.A., kand. med. nauk; TONILINA, T.N., dots.; FELISTOVICH, G.I., kand. med. nauk; FRUYENTOV, N.K., kand. med. nauk; KHAUNINA, R.A., kand. med. nauk; TSYGANOV, S.V., prof.[deceased]; CHERKES, A.I., prof.;

(Continued on next card)

ABRAMOVA, Zh.I.---(continued) Card 2.
CHERNOV, V.A., doktor med. nauk; SHABURSKIY, K.S., prof.; YAKOVLEV, V.Ya., doktor khim. nauk; MASHKOVSKIY, M.D., red.; NIKOLAYEVA, M.M., red.; RULEVA, M.S., tekhn. red.; CHUNAYEVA, Z.V., tekhn. red.

[Manual on pharmacology] Rukovodstvo po farmakologii. Leningrad, Medgiz. Vol.2. 1961. 503 p. (MIRA 15:1)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Anichkov, Karasik, Cherkes). 2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Belen'kiy, Ginetsinskiy, Moshkovskiy, Planel'yes).

(PHARMACOLOGY)

POLUKHIN, P. I., prof., doktor tekhn. nauk; ZHELEZNOV, Yu. D., inzh.; POLUKHIN, V. P., inzh.; KOZLOV, O. F., inzh.

Criteria for the durability of rolls on cold rolling mills. Sbor. Inst. stali i splav. no.40:210-218 '62. (MIRA 16:1)

(Rolls(Iron mills))

SEYDALIYEV, F.S.; SHAYKEVICH, V.S.; KOZLOV, O.F.; SHEVAKIN, Yu.F.

Experimental investigation of metal shape changing during the pipe expansion process with conical rolls. Izv. vys. ucheb. zav.; chern. met. 6 no.7:112-116 '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov.
(Pipe mills)

KOZLOV, O.F.; SHEVAKIN, Yu.F.; SEYDALIYEV, F.S.

Contact surface during the cross rolling of pipe on a cylindrical mandrel. Izv. vys. ucheb. zav.; chern. met. 7 no.9:81-87 '64. (MIRA 17:6)

1. Moskovskiy institut stali i splavov.

L 1384-66 EWT(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACCESSION NR: AP5013074 UR/0149/65/000/001/0136/0141

AUTHOR: Shevakin, Yu. F.; Kozlov, O. F.; Seydaliyev, F. S.

TITLE: Investigation of the process of transverse tube rolling

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 1, 1965, 136-141

TOPIC TAGS: metal tube, metal rolling, plastic deformation

ABSTRACT: The fundamental characteristics of the tube rolling process are experimetally studied using stock with dimensions of 146 × 5.5-8 mm. The rolling was done by a driven mandrel with non-driven rolls. The working rolls were located on opposite sides of the workpiece and had a complex shape consisting of a cylindrical supporting section, a collar, a cylindrical grooving band and a tapered tail section. The axial feed of the workpiece, the angle of the roll flange and the absolute reduction in wall thickness were varied within wide limits during the rolling process. An oscillographic record of the force parameters was kept by using strain gauges and amplifying equipment. Deformation was studied by determining the dimensions of the tube before reaching the deformation point and the tube dimensions at the point itself. The hardness of the metal was measured with respect to thickness

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ACCESSION NR: AP5013074

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and length of the specimen. Analysis of the experimental data indicates that when reductions in wall thickness are small and roll collar angles are large, axial stresses arise in the metal ahead of the collar which exceed the shearing strength of the metal. Thus the surface metal is sheared off and there is a buildup ahead of the roll flange. This metal buildup (increase in wall thickness) reduces the axial stresses, and equilibrium is reached at the deformation point when the stresses reach a certain minimum value. The metal buildup increases the dimensions of the deformation source causing nonuniformity in deformation of the metal with respect to thickness. Outside the contact zone, the length of the workpiece is reduced and the cross section is increased, while at the deformation point there is an increase in the length of the specimen and a reduction in tubular cross section. This type of deformation increases energy consumption since the contact surface may be doubled. Orig: art. has: 5 figures, 1 table.

ASSOCIATION: Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva Moskovskogo instituta stali i splavov (Department of the Technology and Automation of Rolling Production, Moscow Institute of Steel and Alloys)

SUBMITTED: 10Mar64 ENCL: 00 SUB CODE: IE, MM
NO REF SOV: 004 OTHER: 000

Card 2/2

KHLYSTOVA, V.N.; KOZLOV, O.G.

Relationship between structural patterns in the Volga Valley portion of Volgograd. Geol.nefti i gaza 6 no.4:40-43 Ap '62. (MIRA 15:4)

1. Trest Volgogradneftegazrazvedka.
(Vogograd Province--Geology, Structural)

29862
S/044/61/000/007/035/055
C111/C222

16.4100

AUTHOR: Kozlov, O.M.

TITLE: On the roots of the selfadjoint extensions of operators

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1961, 88-89, abstract 7 B 432. ("Tr. Seminara po funkts. analizu. Voronezhsk. un-t", 1958, vyp 6, 66-82)

4

TEXT: The author considers a symmetric positive definite closed linear operator A with an everywhere dense region of definition which has a finite defect index. The author investigates the properties of the fractional powers of its positive definite selfadjoint extensions depending on a parameter. A_μ denotes the "rigid" (according to the terminology by M.G. Kreyn) positive definite selfadjoint extension of the operator A. To every positive definite selfadjoint extension A of this operator the author adjoins the positive selfadjoint operator $B = A^{-1} - A_\mu^{-1}$. The properties of the fractional powers of A are expressed with the aid of the operator B. The article consists of 6 paragraphs. In § 1 the author gives formulas for the difference of the

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On the roots of the selfadjoint ...

resolvents of two positive definite selfadjoint extensions of the operator A. Let $R_i(\lambda) = [A_i - \lambda I]^{-1}$, $\Delta R(\lambda) = R_2(\lambda) - R_1(\lambda)$, $B_i = A_i^{-1} - A^{-1}$; $\Delta B = B_2 - B_1$, $U_i(\lambda) = A_i(A_i - \lambda I)^{-1}$. Then there hold the formulas

$$\Delta R(\lambda) = U_2(\lambda)\Delta B U_1(\lambda)$$

$$\Delta R(\lambda) = [I - \lambda U_1(\lambda)B]^{-1} U_1(\lambda)\Delta B U_1(\lambda)$$

(the latter under the assumption that the operator $I - \lambda U_1(\lambda)\Delta B$ has a bounded inverse operator). § 2 is devoted to the different estimations of the norm of the operator $U(\lambda)$ for imaginary λ . E.g. the following assertion is proved : Let the function $v(\lambda)$ assume values in the finite - dimensional subspace $V \subset D\left(A^{1/2}\right)$ where $\|v(\lambda)\|$ is measurable on the imaginary axis and $\|v(\lambda)\| \leq 1$. Then for every $\alpha \in [0, 1/2)$ the function $\| |\lambda|^{-\alpha} A^{\alpha} U(\lambda)v(\lambda) \|^2$ is integrable over the imaginary axis.

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C111/C222

On the roots of the selfadjoint ...

In § 3 the author obtains an estimation for the difference of the resolvents with the aid of the obtained estimations. It holds the estimation

$$\| \Delta R(\lambda) f \| \leq \| \Delta B \| \cdot \| f \| \cdot \| U_1(\lambda) \varphi \| \cdot \| U_2(\lambda) \psi \| ,$$

where φ, ψ are certain elements of V the choice of which depends on f and λ, where $\| \varphi \| = \| \psi \| = 1$. In § 4, with the aid of the formula of Heinz

$$A^{-\alpha} = \frac{1}{\pi} \cos \frac{\pi\alpha}{2} \lim_{l \to \infty} \int_{-l}^{l} |\tau|^{-\alpha} R(i\tau) d\tau$$

and with the aid of the estimation of the difference of the resolvents the author obtains an estimation for the difference of the fractional powers. It holds theorem 1 : Let A_1 and A_2 be positive definite self-adjoint extensions of the operator $\mathring{A}$ for which the corresponding operators B_1 and B_2 have a common finite-dimensional range of values R. Then for $0 < \alpha < \frac{1}{2}$ it holds

Card 3/5

On the roots of the selfadjoint ...

$$\| (A_1^{\alpha} - A_2^{\alpha}) A_2^{-\alpha} \| \leq c(\alpha) \| \Delta B \| \quad .$$

Theorem 2 gives a certain generalization of theorem 1. In § 5 the author investigates the positive definite selfadjoint extensions $A(t)$ of A which depend on the parameter $t \in [0,T]$. It is assumed that the ranges of values $R[B(t)]$ of the operators $B(t)$ increase monotonely, i.e. $R[B(\tau)] \subset R[B(t)]$ for $\tau < t$. The author obtains the following assertion : 1. If the operator function $B(t)$ is continuous on $[0,T]$ then the operator funotion $A^{\alpha}(t)A^{-\alpha}(\tau)$ is continuous on $[0,T]$ too. 2. If $B(t)$ satisfies the Hölder condition, i.e. $\| B(t + \Delta t) - B(t) \| \leq N |\Delta t|^{\delta}$, then $A^{\alpha}(t)A^{-\alpha}(\tau)$ satisfies the Hölder condition with the same exponent δ too. 3. If $B(t)$ has a bounded derivative then $A^{\alpha}(t) A^{-\alpha}(\tau)$ has a bounded derivative too. In § 6 the author applies the developed theory to ordinary differential selfadjoint positive definite operators of the order 2n in the Hilbert space L_2. The region of definition of such an operator is marked by 2n linearly independent boundary conditions. It is assumed

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On the roots of the selfadjoint ...

that only the coefficients of the boundary conditions depend on the parameter t. The investigation is based on the theory developed for such operators by M.G. Kreyn.

[Abstracter's note : Complete translation.]

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Card 5/5

16(1)
AUTHOR: Kozlov,O.M. SOV/20-123-6-4/30

TITLE: Fractional Powers of Selfadjoint Extensions of Operators and Some Boundary Value Problems (Drobnyye stepeni samosopryazhennykh rasshireniy operatorov i nekotoryye granichnyye zadachi)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123,Nr 6,pp 971-974 (USSR)

ABSTRACT: The author considers the equation of parabolic type

$$\frac{\partial u}{\partial t} + Lu = 0 \qquad (1)$$

for homogeneous selfadjoint boundary conditions with temporially variable coefficients. In the L_2 to this problem there corresponds the equation

$$\frac{du}{dt} + A(t)u = 0, \qquad (2)$$

where A(t) is an operator selfadjoint in the L_2 generated only by L and the given boundary conditions.
Theorem 1: Let the selfadjoint positively definite operator A(t) be generated by

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(3) $Lu(x) = u^{[2m]}(x) = p_m(x)u(x) - \frac{d}{dx}\left[p_{m-1}(x)\frac{du}{dx} - \frac{d}{dx}\left[p_{m-2}(x)\frac{d^2u}{dx^2} - \ldots\right.\right.$

$\ldots - \frac{d}{dx}\left[p_1(x)\frac{d^{m-1}u}{dx^{m-1}} - \frac{d}{dx}\left[p_0\frac{d^m u}{dx^m}\right]\right]\ldots\left.\right]\left.\right]$

and by the boundary conditions

(4) $\sum_{k=0}^{2m-1} \alpha_{jk}u^{[k]}(a) + \beta_{jk}u^{[k]}(b) = 0, \quad j=0,\ldots,2m-1.$

If the coefficients of the principal conditions do not depend on t and if the coefficients of the natural boundary conditions in t satisfy the condition $\mathrm{Lip}\,\alpha$ $(0<\alpha\leq 1)$, then for $0<\gamma<\frac{1}{2}$ there holds the inequation

(5) $\left\|\left[A^{\gamma}(t) - A^{\gamma}(\tau)\right]A^{-\gamma}(\tau)\right\| < C|t-\tau|^{\alpha}.$

Here (4) is denoted to be the principal condition if $\alpha_{jk} = \beta_{jk} = 0$ for $k \geqslant m$ (see Kreyn [Ref 3]).

Theorem 2: For (3) and (4) let the assumptions of the theorem 1 be satisfied for an $\alpha > \frac{1}{2}$. Then for every $\varphi(x) \in L_2(a,b)$ there

exists a solution $u(t,x)$ of (1), $0<t<\infty$, which satisfies (4) and the initial condition: for $t \to 0$ in the quadratic mean there holds $u(t,x) \to \varphi(x)$.

Theorem 2 follows from theorem 1 in connection with a result of Sobolevskiy [Ref 4].

Theorem 3 is surpassed by results of Sobolevskiy.

Theorem 4: The selfadjoint operators $S(t)$ in a Hilbert space have a common region of definition and satisfy

$$\| S(t)S^{-1}(\tau) - S^{-1}(t)S(\tau) \| < c\,|t-\tau|^{\alpha}.$$

Then for every $\beta<1$ it holds

$$\| [S^{\beta}(t) - S^{\beta}(\tau)]\, S^{-\beta}(\tau) \| \leq c_1(\beta)\,|t-\tau|^{\alpha}.$$

Theorem 5 is another formulation of a result due to Sobolevskiy.

Theorem 6: Let $\varphi(s) \in L_2(\Gamma)$, Γ - boundary of G, $u(x)$ - the solution of the Dirichlet problem $L_1 u = 0$, $u|_{\Gamma} = \varphi$; $v(x)$ - the solution of $L_2 v = 0$, $\frac{\partial v}{\partial \nu} + \sigma v|_{\Gamma} = \varphi$, where L_1 and L_2 have the form

$$Lu = -\sum_{i,k=1}^{n} \frac{\partial}{\partial x_i} \left(a_{ik}(x) \frac{\partial u}{\partial x_k} \right) + c(x)u, \qquad c(x) \geq 0.$$