GEL'MAN, D.Z., kand.tekhn.nauk; YANOV, A.P., gornyy inzh.

Readers' comments on the article "Geothermal conditions of the Krivoy Rog Basin" by G.V. Duganov, E.I. Baratov. Gor. zhur. no.12:64 D '62. (MIRA 15:11)

1. Krivorozhskiy filial instituta gornogo dela AN UkrSSR, Krivoy Rog.
(Krivoy Rog Basin--Earth temperature)
(Duganov, G.V.) (Baratov, E.I.)

YANOV, E.N.

Growth changes of shells of some Permian Rhynchonellacea. Uch. zap.Len.un. no.159:196-206 '53. (MLRA 9:6)
(Brachiopoda, Fossil)

Yanov, E.N.

BELYAKOV,N.A. [deceased]; BUL'VANKER,E.Z.; DUBATOLOV,V.N.; YELTYSHEVA,R.S.; KRISHTOFOVICH,A.N.,[deceased]; MAKSIMOVA,Z.A.; MODZALEVSKAYA,Ye.A.; MELESHCHENKO,V.S.; NEKHOROSHEV,V.P.; NALIVKIN,B.V.; NOVOZHILOV,N.I.; OBRUCHEV,D.V.; RZHONSNITSKAYA,M.A.; YANOV,E.N.; SPIRINA,N.I.,redaktor; GUROVA, O.A., tekhnicheskiy redaktor

[Field atlas of characteristic complexes of fauna and flora of Devonian deposits of the Minusinsk Basin] Polevoi atlas kharakternykh kompleksov fauny i flory devonskikh otlozhenii Minusinskoi kotloviny, Sost. N.A. Beliakov, i dr. Pod red. M.A.Rzhonsnitskoi i V.S.Meleshchenko, Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, 1955. 139 p. (MLRA 9:1)

1. Leningrad. Vsesoyuznyy geologicheskiy institut.
(Minusinsk Basin--Geology, Stratigraphic--Devonian)

YANOV, E.N.

Stratigraphy of Devonian deposits in the Rybinsk depression.
Dokl.AN SSSR 104 no.5:767-770 O '55. (MLRA 9:2)

1.Predstavleno akademikom D.V.Nalivkinym.
(Rybinskoye--Geology, Stratigraphic)

YANOV, E.N.

Stratigraphy of Devonian deposits in the Rybinsk Depression. Inform.sbor. VSEGEI no.1:70-81 '55. (MLRA 9:12)

(Rybinsk Depression--Geology, Stratigraphic)

YANOV, E. N

YANOV, E. N.: "Devonian deposits of the Rybinsk and Kemchuga lowlands (Krasnoyarsk Kray)." All-Union Sci Res Geological Inst (VSEGEI), Min Geology and Protection of Natural Resources USSR. Leningrad, 1956. (Dissertation for the Degree of Candidate in Geologicomineralogical Science).

Source: Knizhnaya Letopis' No. 28 1956 Moscow

YANOV, E.N.

Devonian stratigraphy of the Kyzyl-Shin Basin (Gornyy Altai).
Inform. sbor. VSEGEI no.6:37-45 '59. (MIRA 13:12)
(Kyzyl-Shin Valley--Geology, Stratigraphic)

MAYMINA, L.G.; MELESHCHENKO, V.S.; YANOV, E.N.

Middle Devonian Azyrtal series in the Minusinsk Basin. Inform. sbor. VSEGEI no.6:55-61 '59. (MIRA 13:12)
(Minusinsk Basin--Geology, Stratigraphic)

3 (5)

SOV/20-126-6-52/67

AUTHOR: Yanov, E. N.

TITLE: Devonian Deposits of the South-eastern Altai Highland (Drainage Area of the Upper Course of the Chuya River) (Devonskiye otlozheniya yugo-vostochnogo Gornogo Altaya (basseyn verkhov'yev r. Chui))

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1334 - 1337 (USSR)

ABSTRACT: The Devonian sediments of the district mentioned in the title are described by several research workers (Refs 1-8). After 1947 geological surveys and the thematic investigations were made by R. T. Gratsianova, N. S. Korzhnev, L. I. Kravtsova, A. I. Rodygin, G. A. Chernov, I. I. Belostotskiy, A. B. Dergunov, S. P. Krasil'nikov, S. R. Mayzelis, I. F. Pozharskiy, M. A. Chernomorskiy, B. A. Yakovlev and others. On the basis of the investigation carried out till 1955 a unified stratigraphic scheme was assumed by mezhvedomstvennoye soveshchaniye po Sibiri (Inter-ressort-conference for Siberia). In this scheme the Devonian complex of the district mentioned in the title was divided into 2-3 suites (thickness 12 km). The author suggested the following stratigraphic scheme on the basis of his own in-

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vestigations and those of L. E. Alekseyeva (1956-58) and of other newest materials. It was constructed by the paleontological method. In this method the sedimentation cycles were taken into account which were expressed in the alternation of the marine and continental masses. The S a y l y u g e m s k a y a s e r i e s (D_2e gv) was selected by I. I. Belostotskiy in 1956. The author divided this series into 3 suites (from the bottom to the top): S a r z h e m a t i n s k a y a s u i t e (D_2e sr) 650-1300 m thick. They were formed under continental conditions. T a s h t y p s k a y a s u i t e (D_2e ts). It is found for the first time in the Chuya-steppe. N. A. Belyakov and V. S. Meleshchenko separated them in 1949 in the Minusinsk-steppe. S e b y s t e y s k a y a s u i t e (D_2gv sb). Its thickness amounts to 1500 m. The suite was formed under continental conditions. Lake- and lagoon facies have a considerable importance. Y u s t y d s k a y a s e r i e s (D_2gv D_3fr) was separated by S. P.

Krasil'nikov in 1955. Considerable interruptions and discordances lack within the series. This series was divided into 3 suites by the author: T a s h a n t i n s k a y a s u i t e (D_2gv th) was separated by Krasil'nikov in 1955. Thickness 4000-5000 m. Age Upper Givetian. U z u n t a l ' s k a y a s u i t e (D_3fr us), 120-300 respectively 550-900 m thick. The suite is either continental (right bank of the Kyzyl-Shin river - stratotype) or continental and marine packets alternate (in more western direction, in the drainage area of the Chagan-Uzun river). The age is Lower Frasnian, the imperfect thickness amounts to 1100 m. B a r b u r g a z i n s k a y a s u i t e (D_3fr bb) was discovered as well by S. P. Krasil'nikov (1955). The most perfect cross section has a thickness of 6500 m. G. P. Radchenko and N. M. Petrosyan determined remains of brachiopods of Upper Frasnian age which belong to this suite. The suite was formed under marine conditions, first of the open sea which was later on subjected to a brackishing. M. S. Potapova, L. E. Alekseyeva, P. S. Yeltysheva, O. P. Kovalevskiy,

Devonian Deposits of the South-eastern Altai Highland (Drainage Area of the Upper Course of the Chuya River) SOV/20-126-6-52/67

S. R. Mayzelis, G. A. Chernov, R. T. Gratsianova, Z. A. Maksimova, B. S. Sokolov, N. Ya. Spasskiy, D. V. Obruchev and N. I. Novozhilov participated in the determination of the fossils. There are 8 Soviet references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (All-Union Scientific Geological Research Institute)

PRESENTED: January 22, 1959, by D. V. Nalivkin, Academician

SUBMITTED: February 23, 1959

Card 4/4

YANOV, E.N.

Stratigraphy of Devonian sediments of the southeastern Gornyy Altai (Chuya steppe region). Inform.sbor.VSEGEI no.21:13-20 '59. (MIRA 14:12)

(Chuya steppe--Geology, Stratigraphic)

MELESHCHENKO, V.S.; YANOV, B.N.

Troughs lying on geosynclinal borders. Geol. i geofiz. no.11:92-95 '60. (MIRA 14:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut, Leningrad.

(Geology, Structural)

MELESHCHENKO, V.S.; YANOV, E.N.; KASAKOV, I.N.

Basic tectonic characteristics of the Sayan-Altai folded area.
Mat. VSEGEI no.32:5-21 '60. (MIRA 14:3)
(Sayan Mountains—Geology, Structural)
(Altai Mountains—Geology, Structural)

YANOV, E.N.

Methods of stratigraphic division and correlation of red continental formations based on the studies in the Sayan-Altai fold area. Inform.sbor.VSEGEI no.50:21-28 '61. (MIRA 15:8)
(Sayan Mountains--Geology, Stratigraphic)
(Altai Mountains--Geology, Stratigraphic)

MAYMIN, Yu.S.; YANOV, E.N.

Presence of the Lower Devonian in the Uymen' Depression (Gornyy Altai). Trudy VSEGEI 58:145-147 '61. (MIRA 15:5)
(Altai Mountains--Geology, Stratigraphic)

YANOV, E.N.; PREDTECHENSKIY, N.N.

Methods for compiling lithological and paleogeographical maps as revealed by the studies of the Devonian in the Altai-Sayan fold area. Trudy VSEGEI 72:28-45 '62. (MIRA 15:9)
(Altai Mountains—Paleogeography—Maps)
(Sayan Mountains—Paleogeography—Maps)

PREDTECHENSKIY, N.N.; YANOV, E.N.

Methods of analysis of sedimentary cycles and Devonian sedimentary series of the Sayan-Altai region. Geol.i geofiz. no.10:93-105 '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut, Leningrad.

YANOV, E.N.

Intermontane depressions in the Altai-Sayan fold area and adjacent geosynclinal troughs. Trudy VSEGEI 85:119-130 '63.
(MIRA 16:11)

YANOV, Z.N.

Conference on postgeosynclinal crustal structures. Sov.geol. 6 no.8:124-127 Ag '63. (MIRA 16:9)

1. Leningradskoye oblastnoye nauchno-tekhnicheskoye gornoye obshchestvo.

(Earth—Surface)

YANOV, E.N.; PREDTECHENSKIY, N.N.; POLEVAYA, N.I.; MURINA, G.A.; MIRKINA, S.L.; ISKANDEROVA, A.D.; YEFIMOV, K.P.; CHEN' YUY-VEY [Ch'ên Yü-wei]; TITOV, N.Ye.; PANTELEYEV, A.I.; KOCHEGURA, V.V.; GIRFANOVA, O.M.; ZUYEV, A.V.; NIKOL'SKIY, Yu.I.; BURE, G.N.

Problems of the methods of geological investigations. [Trudy] VSEGEI 92:91-98 '63. (MIRA 17:4)

YANOV, E.N.; STRAKHOV, N.M.; KRASHENNIKOV, G.F.; ARUSTAMOV, A.A.; GEYSLER, A.N.; GRAMBERG, I.S.; LIBROVICH, V.L.; MIKHAYLOV, B.M.; NEKRASOVA, O.I.; PISARCHIK, Ya.K.; POLOVINKINA, Yu.I.; TATARSKIY, V.B.; SHUMENKO, S.I.

Reviews and discussions. Lit. i pol. iskop. no.6:85-89 and 91-119 N-D '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut, Leningrad. (for Yanov). 2. Geologicheskiy institut AN SSSR, Moskva. Submitted July 12, 1965 (for Strakhov). 3. Moskovskiy gosudarstvennyy universitet (for Krashennikov). 4. Kazakhskiy nauchno-issledovatel'skiy institut mineral'nogo syr'ya, g. Alma-Ata (for Arustamov).

L 09437-67 EWT(1) GW

ACC NR: AR6034890 SOURCE CODE: UR/0269/66/000/008/0013/0013

AUTHOR: Yanov, E. N.

TITLE: The displacement of the Earth poles

SOURCE: Ref. zh. Astronomiya, Abs. 8.51.121

REF SOURCE: Sb. Materialy k Soveshchaniyu Obshchiya zakonomern. geol. yavleniy, 1966. Vyp. 1, L., 1965, 207-214

TOPIC TAGS: earth planet, geology, coordinate, geologic period, Earth pole

ABSTRACT: The author generalized and assembled recent paleomagnetic and paleoclimatic data which hypotheses widely circulated in geological literature on large-scale continental drifts and considerable displacements of the Earth's poles. Referring to his own systematization of modern paleomagnetic data, the author presents numerical values of the coordinates of the paleomagnetic poles during the Carboniferous, Permian, Triassic, and Jurassic periods. He concludes that the position of the poles in the periods indicated was similar to their present position. [Translation of abstract]

SUB CODE: 03, 08/

Card 1/1 UDC: 521.93

YANOV, G.I., mekhanik; KUDRYAVTSEV, A.N., mekhanik.

Automatic machine for making metal pins. Masl.-zhir.prom. 20 no.1:33-35 '55. (MLRA 8:3)

1. Yevdakovskiy zhirkombinat.
(Metal working machinery)

YANOV, G.I. (g.Berezniki)

Elements of practical application in chemistry classes in schools for young workers. Khim. v shkole 11 no.1:28-32 Ja-F '56. (MLRA 9:2)
(Chemistry--Study and teaching)

YANOV, N.A., inzh.; BRESLAVETS, Z.I., inzh.

Mastic IAN-72 paint for coating the underwater part of vessels.
Sudostroenie 27 no.3:45-47 Mr '61. (MIRA 14:3)
(Hulls(Naval architecture)
(Protective coatings)

YANOV, N.M.

22084 Shkurov, B.I. i Yanov, N.M. Nauchnaya Sessiya Ukrainskogo Nauchna-issled Guatel'skogo instituta ortopedii i travmatologii i Khar'Kovskogo meditsinskogo obshchestva. (Chestvovaniye prof. N.P. Novachenko; Obzor Raboty Sessii. Khar'Kov Mart 1949 g.) Vracheb delo, 1949, No. 7, stb 659-60, s. portr

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

YANOV, N. M.

25279 YANOV, N.M. O Fistulografii Pri Traumaticheskikh Osteomielitakh.
Sov. Meditsina, 1949, No. 8. S. 27-28 14. Urologiya

SO: Letopis' No. 33, 1949

YANOV, N.M.; SHMALIY, K.V.; KHOMENKO, A.G.

Boris Moiseevich Khmel'nitskii; 70th anniversary of his birth and 45th anniversary of his scientific, pedagogic, and social activities. Probl.tub. no.5:78 S-O '55 (MLRA 8:11)

1. Direktor Ukrainskogo instituta tuberkuleza N.M.Yanov. Sekretar' partrogarnizatsii instituta Shmaliy, K.V.; Sekretar' Khar'kovskogo oblastnogo obshchestva ftiziatrov A.G.Khomenko.
(BIOGRAPHIES,
Khmel'nitskii, Boris M.)

YANOV, N.M., dotsent

Surgical treatment of osteoarticular tuberculosis associated with phthivazid and streptomycin therapy. Ortop., travm. i protez. 17 no.3: 22-27 My-Je '56. (MLRA 9:12)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - dotsent N.M.Yanov)

(ISONIAZID, therapeutic use,
osteoarticular tubero., in surg. (Rus))
(STREPTOMYCIN, therapeutic use,
same)
(TUBERCULOSIS, OSTEOARTICULAR, surgery,
with isoniazid & streptomycin ther. (Rus))

YANOV, N.M., dots. (Khar'kov, Shatilovka, Faninskiy per., d.3.kv.4)

Surgery combined with intraoral administration of phthivazid in treating tuberculous arthritis. Nov.khir.arkh. no.1:60-61 Ja-F '58 (MIRA 11:11)

1. Otdeleniye kostno-sustavnogo tuberkuleza (zav. - dots. N.M. Yanov) Khar'kovskogo instituta tuberkuleza.
(JOINTS--TUBERCULOSIS)
(ISONICOTINIC ACID)

YANOV, N. M. Doc Med Sci -- (diss) "Surgical treatment of osteoarticular tuberculosis in combination with antibacterial therapy." Khar'kov, 1959. 33 pp (Kiev Order of Labor Red Banner Med Inst im Academician A. A. Bogomolets), 250 copies (KL, 50-59, 129)

YANOV, N.M., prof. (Khar'kov 59, Faninskiy pereulok, dom 3-a,kv.4)

Intraarticular osteotomy in ankylosis caused by faulty position following tuberculous coxitis. Ortop., travm. i protez. 26 no. 10:39-41 O '65. (MIRA 18:12)

1. Iz Luganskogo meditsinskogo instituta (rektor - dotsent D.G. Korchikov). Submitted April 16, 1964.

YANOV, N.M., prof. (Lugansk, ul. Karla Marksa, d. 5, kv.46).

Method of resection of the coxofemoral joint in destructive tuberculous coxitis. Ortop., travm. i protez. 26 no.7:16-19 Jl '65. (MIRA 18:7)

1. Iz kafedry travmatologii i ortopedii (zav. - prof. N.M.Yanov) Luganskogo meditsinskogo instituta (rektor - dotsent D.G.Korchikov).

YANOV, N.Z.

From the experience in the operation of pneumatic and mechanical conveying of crushed chips. Der. prom. 14 no.9: 12-13 S '65. (MIRA 18:12)

1. Institut "Estpromproyekt".

YANOV, V.

Looking for a ram. Izobr.i rats. no.1:21-22 '63. (MIRA 16:3)
(Moscow--Technological innovations)

IVANOV, V. A.

IVANOV, V. A.

25264 IVANOV, V. A. Vlivanie Antisepticheskikh Rastvorov V Arterii S. Terapevticheskimi. (Iz Kand Dissertatsii) Sbornik Trudov Gospit. Khirrg. Kliniki. (Iz Kand Dissertatsii) Sbornik Trudov Gospit. Khirurg. Kliniki (Pobyy Mosk. Med. In-I) M. 1949, S. 276-79

SO: Letopis' No. 33, 1949

ACC NR: AP5028011 SOURCE CODE: UR/0386/65/002/008/0353/0356

AUTHOR: Ivanov, A. G.; Mineyev, V. N.; Novitskiy, Ye. Z.; Yanov, V. A.; Bezrukov, G.I

ORG: none

TITLE: Anomalous polarization of sodium chloride under impact loading

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 8, 1965, 353-356

TOPIC TAGS: sodium chloride, shock wave propagation, pressure effect, electric polarization, single crystal

ABSTRACT: The authors report results of an investigation of the polarization of single-crystal sodium chloride under impact loading perpendicular to the cleavage plane (100) in the interval of pressures (P) from 50 to 550 kbar. The impact loading was by means of the explosive devices used by L. V. Al'tshuler et al. (FTT v. 5, 279, 1963). A simple measuring circuit was used (Fig. 1). The parameters of the shock wave in the single crystal were calculated from the known state of the screen. A measuring line made of RKK-0.3/10 cable of 200 ohm wave resistance and an OK-21 oscilloscope were used in the experiments. The crystal thickness (l_0) fluctuated between 0.15 and 0.19 cm. The results of the experiments in the form of a plot of the initial current jump density (I) against the compression behind the front of the shock wave (σ) are shown in Fig. 2. Each point on the curve was obtained in a separate experiment. Shock-wave compression of polycrystalline samples of sodium chloride with initial density 2.13

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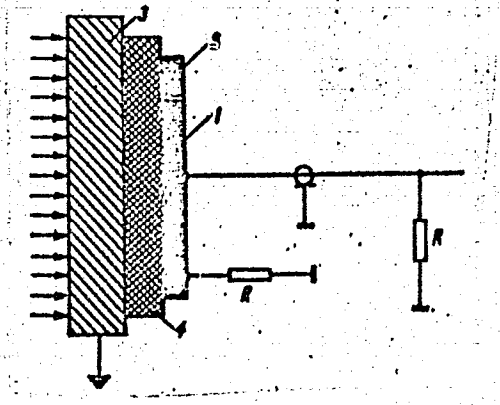

Fig. 1. Experimental setup

1 - Measuring electrode (2 cm dia.); 2 - guard ring (area equal to measuring electrode); 3 - metal screen (Al, Cu); 4 - NaCl single crystal. Arrows show direction of shock wave motion.

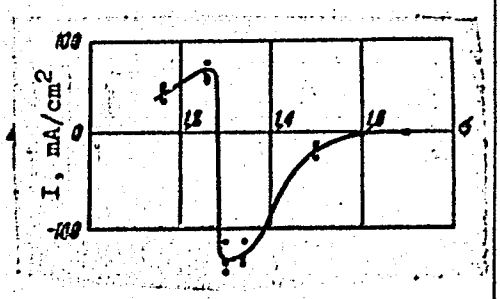

Fig. 2. Plot of I = f(σ).

ACC NR: AP5028011

g/cm^3 (l_0 = 0.3 cm, P = 250—270 kbar) yielded a polarization current I = 5.5 ma/cm^2. The authors found no acceptable physical explanation for the observed anomaly in the behavior of the sodium chloride (in polar crystal I increases monotonically with σ). This fact may be connected somehow with a phase transition which has not been observed hitherto under dynamic loading in the pressure range under consideration. Orig. art. has: 3 figures and 1 formula. [02]

SUB CODE: SS / SUBM DATE: 02Aug65/ ORIG REF: 005/ OTH REF: 002 /

ATD PRESS: 4140

nw

Card 3/3

IVANOV, Dmitriy Afanas'yevich, kand. voyennykh nauk, dots. polkovnik; SHEMANSKIY, Petr Vasil'yevich, kand. voyennykh nauk, polkovnik; YANOV, Vladimir Georgiyevich, kand. voyennykh nauk, dots. general-mayor; SINYAYEV, A.D., red.

[Control of troops in modern combined-arms combat] Upravlenie voiskami v sovremennom obshchevoiskovom boiu. Moskva, Voenizdat, 258 p. (MIRA 17:12)

YANOV, V.G.

Coke sampler. Sbor.rats.predl.vnedr.v proizv. no.5:44-45 '60.
(MIRA 14:8)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Coke—Testing)

YANOV, V.N.

Silvestri's operation in the treatment of high rectal fistulas.
Zdravookhranenie 4 no.6:48-49 N-D '61. (MIRA 15:2)

1. Iz khirurgicheskogo otdeleniya Kishinevskoy zheleznodorozhnoy bol'nitsy (nachal'nik bol'nitsy A.A.Dorofeyev).
(RECTUM—SURGERY)

LOZANOVSKIY, Aleksandr Leonidovich, inzh.; YANOV, Viktor Petrovich

Performance of the electric insulation of rectifying units on electric locomotives. Izv. vys. ucheb. zav.; elektromekh. 3 no.10: 124-127 '60. (MIRA 14:4)

1. Nachal'nik otdeleniya elektrovozov Novocherkasskogo nauchno-issledovatel'skogo instituta po elektrovozostroyeniy (for Lozanovskiy). 2. Glavnyy inzhener Novocherkasskogo nauchno-issledovatel'skogo instituta po elektrovozostroyeniyu (for Yanov).
(Electric locomotives)
(Electric insulators and insulation)

TUSHKANOV, B.A.; SHAPIRO, I.L.; YANOV, V.P.

Main-line N80 eight-axle a.c. locomotive. Sbor. nauch. trud. EINII 2:3-12 '62. (MIRA 16:8)

(Electric locomotives)

ZHOLOBOV, L.F.; YANOV, V.P.

Dimensional series and standardization of the electric rolling stock for open-pit mining. Sbor. nauch. trud. EINII 2:94-105 '62. (MIRA 16:8)

(Mine railroads--Rolling stock)

YANOV, V.P., inzh.; ZHOLOBOV, L.F., inzh.

Modern electric locomotive haulage for open-pit mines. Gor. zhur. no.9:9-13 S '62. (MIRA 15:9)

1. Novocherkasskiy nauchno-issledovatel'skiy institut elektrovozostroyeniya.

(Mine railroads)

KONSTANTINOV, N.I.; YANOV, V.P.; CHERNYAVSKIY, S.N.

Cooperation among socialist countries in the field of electric locomotive construction. Zhel.dor.transp. 44 no.11:83-86 N '62. (MIRA 15:11)

1. Zamestitel' nachal'nika otdela tyazhelogo mashinostroyeniya Gosplana SSSR (for Konstantinov). 2. Glavnyy inzh. Novocherkasskogo nauchno-issledovatel'skogo instituta elektrovozostroyeniya (for Yanov). 3. Rukovoditel' gruppy Novocherkasskogo nauchno-issledovatel'skogo instituta elektrovozostroyeniya (for Chernyavskiy).
(Communist countries--Electric locomotives--Design and construction)

IVANOV, Viktor Petrovich; KUROCHKA, A.L.; ALIKIN, R.I.; KOLYCHEV, G.K., inzh., retsenzent; KALININ, V.K., kand. tekhn. nauk, red.; DROZDOVA, N.D., tekhn. red.

[Auxiliary machines of main line d.c. locomotives] Vspomogatel'nye mashiny magistral'nykh elektrovozov postoiannogo toka. Moskva, Transzheldorizdat, 1963. 119 p. (MIRA 16:8)
(Electric locomotives--Electric equipment)

YANOV, V.P.

Standardization and specialization in the manufacture of electric locomotives in common market countries. Sbor. nauch. trud. ElNII 3:3-14 '63. (MIRA 17:4)

YANOV, Viktor Petrovich

New stage in the development of the Russian electric locomotive industry. Izv. vys. ucheb. zav.; elektromekh. 6 no.12: 1393-1400 '63. (MIRA 17:1)

1. Glavnyy inzhener Vsesoyuznogo nauchno-issledovatel'skogo i proyektno-konstruktorskogo instituta elektrovozostroyeniya.

ALIKIN, R.I.; GORDIYENKO, P.I.; BESPROZVANNYY, I.G.; ZHIBTSOV, P.P.; ZOLOTAREV, P.A.; ZUSMANOVSKAYA, L.L.; IBRAGIMOV, K.G.; KOZOREZOV, M.A.; KOKOREV, A.I.; KUPRIANOV, Yu.V.; KUROCHKA, A.L., kand. tekhn. nauk; LITVINOVA, L.M.; LOZANOVSKIY, A.L., kand. tekhn. nauk; MAVDRIKOV, F.I.; MAKHAN'KOV, L.V.; PUKALOV, V.I.; RAYLYAN, A.F.; SVERDLOV, V.Ya.; SKLYAROV, B.S.; SOLOV'YEV, K.M., kand. tekhn. nauk; STUKALKIN, A.N.; SUROVIKOV, A.A.; TIKHONOV, N.G.; SHTEPENKO, P.K.; YANOV, V.P.

[VL80 electric locomotive.] Electrovoz VL80. Novocherkassk. Nauchno-issledovatel'skii institut elektrovozostroeniia. Sbornik nauchnykh trudov, vol. 5) (MIRA 18:5)

BONDARENKO, B.R.; YANOV, V.P.; CHERNYAVSKIY, S.N.

Further development of the construction of electric locomotives. Zhel.dor.transp. 47 no.4:43-49 Ap '65.

(MIRA 18:6)

1. Direktor Novocherkasskogo elektrovozostroitel'nogo zavoda i Vsesoyuznogo nauchno-issledovatel'skogo i proyektno-konstruktorskogo instituta elektrovozostroyeniya (for Bondarenko). 2. Glavnyy inzh. Vsesoyuznogo nauchno-issledovatel'skogo i proyektno-konstruktorskogo instituta elektrovozostroyeniya (for Yanov). 3. Nachal'nik otdela tekhniko-ekonomicheskikh issledovaniy Vsesoyuznogo nauchno-issledovatel'skogo i proyektno-konstruktorskogo instituta elektrovozostroyeniya (for Chernyavskiy).

YANOV, V.V., inzh.

Pneumatic jointers with electric contact heaters. Der. prom. 7 no.10:19-20 O '58. (MIRA 11:11)

1. Rostovskaya n/D mebel'naya fabrika im. Uritskogo.
(Veneers and veneering)

YANOV, V.V., inzh.

Using the LGD-10A generator. Der. prom. 8 no.10:22 O '59.
(MIRA 12:12)

1.Rostovskaya-na-Donu mebel'naya fabrika im. Uritskogo.
(Gluing) (Induction heating)

YANOV, Viktor Viktorovich, inzh.; GOLUBEVA, T.M., inzh., red.; FREGER, D.P., red. izd-va; GVIRTS, V.L., tekhn.red.

[Antifriction composition materials based on small-particle wood waste]Antifriktsionnye kompozitsii na osnove drevesnykh otkhodov melkikh fraktsii. Leningrad, 1962. 22 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Derevoobrabatyvaiushchaia promyshlennost', no.4) (MIRA 15:10)

(Wood, Compressed) (Friction)

YANOV, V.V., inzh.

Physical and mechanical properties of piezothermoplastic materials based on partially hydrolyzed wood. Der. prom. 11 no.9:10-12 S '62. (MIRA 17:2)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

MAMADZHANOV, A., inzh.; YANOV, V.Ya., inzh.

EVA-6/200 electric branch cutting unit. Trakt. i sel'khozmash. no.8:39 Ag '65. (MIRA 18:10)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.

ACC NR: AP7009589 SOURCE CODE: UR/0197/66/000/009/0040/0048

AUTHOR: Yanov, Ya. A.

ORG: Institute of Economics, Latvian Academy of Sciences (Institut ekonomiki AN LatSSR)

TITLE: Use of electronic computers in multifactor regression analysis

SOURCE: AN LatSSR. Izvestiya, no. 9, 1966, 40-48

TOPIC TAGS: electronic computer, algorithm

SUB CODE: 09

ABSTRACT: One of the most effective means of economic analysis is multifactor regression analysis based on the least squares method. However, the use of this method is complicated by the large number of calculations that have to be performed manually, as a rule. The article suggests a scheme for the use of electronic computers in regression analysis, with most of the calculations to be performed according to standard computer programs for the solution of systems of equations and the inversion of matrices. The calculations are performed automatically, including all stages of analysis. The scheme can be used for the analysis of various forms of dependence between variables. Each individual case requires its own program for the formation of the system of normal equations to be defined by the equation of regression. The number of independent variables and the number of observations are limited by the computer's memory. The article outlines the substance of the scheme and the sequence of calculations, and an algorithm is shown schematically. This algorithm was used at the

Card 1/2

0930 11.25

ACC NR: AP7009589

Computer Center of Leningrad State University for the compilation of a program and a number of calculations. The programming was done by G. STRAZDINA. One of the problems solved is used as an example. The problem, formulated by Candidate of Economic Sciences A. KALNYNSH, involves determining the effect of a number of factors on the formation of gross income per man-day in kolkhozes of the Latvian SSR during 1964. Orig. art. has: 1 figure, 7 formulas and 1 table. [JPRS: 40,006]

Card 2/2

YANOV, Ya.B. (Moskva)

A thinker, materialist; 150 anniversary of Mirza Fatali Akhundov's birth. Priroda 51 no.7:88-89 Jl '62. (MIRA 15:9)
(Akhund-Zade, Feth Ali, 1812-1878)

YANOV, Ya.B. (Moskva)

Philosopher-materialist and educator; 250th anniversary of Denis Diderot's birth. Priroda 52 no.10:92-93 '63. (MIRA 16:12)

YANOV, Ye. I.

USSR / Microbiology. Microbes Pathogenic for Man and Animals. Pathogenic Fungi and Actinomyces. F-4

Abs Jour: Ref Zhur-Biol., 1958, No 17, 76859.

Author : Ariyevich, A. M.; Yanov, Ye. I.; Kogan, T. N.
Inst : Not given.
Title : Case of Yeast Pneumonia and Yeast Sepsis (Candidasepsis) in Connection with Treatment by Antibiotics.

Orig Pub: Terapevt. arkhiv, 1957, 29, No 6, 38-43.

Abstract: A case is described of candidamicosis of the lungs erroneously diagnosed as infiltrative tuberculosis. Treatment with antibiotics (penicillin, streptomycin, and biomycin) caused a sharp deterioration; the patient died from yeast sepsis. The problem of differential diagnosis of yeast pneumonia is set forth. The isolation of the fungus in a Sabouraud's culture medium without its simultaneous discovery in a native

Card 1/2 Protivotuberkuleznogo dispansera No. 13.
Tsentral'. kozhno-venerolo gicheskogo in-ta.

IANOV, Iulii.

IANOV, Iulii. Piatiletka "Annenskoi". Moskva, Ugletekhizdat zapaduglia, 1948. 52 p. (Ministerstvo ugol'noi promyshlennosti zapadnykh raionov SSSR.)

DLC: HD9555.R8I3

So: LC, Soviet Geography, Part II, 1951/Unclassified

YANOV, YU. I., Scientist and LYAPUNOV, A. A., Dr. of Phys. Math. Sci.

"Logical Program Schemes" a paper presneted at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

Yanov, Yu. I.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Mocow, 1956, 237 pp.

Card 64/80

YANOV, Yu. I. Cand Phys-Math Sci -- (diss) "On the equivalence and conversions of program charts." Mos, 1957. 7 pp 22 cm.(Acad Sci USSR. Math Inst im V. A. Steklov), 100 copies. (KL, 15-57, 104)

YANOV, YU. I.

PA - 2910

AUTHOR YANOV YU.I.

TITLE On the equality of program schemes and their transformations. (O ravnosil'nosti i preobrazovaniyakh skhem program.- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 1, pp 39 - 42 (USSR).

Received: 5/1957 Reviewed: 7/1957

ABSTRACT In the present paper program schemes are investigated in form of certain recordings of the order of the realization of operators and of the logical conditions in dependence on the values of the bivalent variables. On this occasion the operators are considered to be elementary objects to which are ascribed a certain ability of changing the values of the logical variables is ascribed.

There follow 11 definitions and the following conceptions are defined: Logical condition, elementary expression, schemes of the program, the value of such a program for a certain sequence, empty period, distribution of displacements, equality in the case of distribution of displacements, partial equality in the case of distribution of displacements, steady burdening of a program scheme.

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On the equality of program schemes and their transformations.

The principal result of the paper under consideration is the following theorem: If the program schemes $\mathcal{A}(p_1,\ldots,p_k)$ and $\mathfrak{B}(p_1,\ldots,p_k)$ are of equal value in the case of a given distribution of the displacements, it is necessary and sufficient that its steady burdening be slightly equivalent. Finally, a system of axioms and laws of derivation is written down.

(No Illustration)

ASSOCIATION: Mathematical Institute "V.A. STEKOLOV" of the Academy of Science of the USSR.
PRESENTED BY: M.V. KELDYSH, Member of the Academy
SUBMITTED: 29.9. 1956.
AVAILABLE: Library of Congress.

CARD 2/2

AUTHOR YANOV, YU.I., PA - 3011

TITLE On Matrix-Schemes.
(O matrichnykh skemakh - Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 2, pp 283-286
(U.S.S.R.)

Received 6/1957 Reviewed 7/1957

ABSTRACT The present paper investigates finite complexes of objects $A_1,\ldots,A_n$ (which are here called operators) and of two-valued (logical) variables $p_1, \ldots, p_k$, which can assume the values 0 and 1. By $\Delta_1,\ldots,\Delta_{2^k}$, all sorts of sets of the values of the variables $p_1,\ldots,p_k$ are denoted. Every order of filling the operators $A_1,\ldots,A_n$ (in dependence on the values of the variables $p_1,\ldots,p_k$) can be put down in form of the matrix

	A_1	A_2	....	A_n
A_0	a_{01}	a_{02}	....	a_{0n}
A_1	a_{11}	a_{12}	....	a_{1n}
A_n	a_{n1}	a_{n2}	....	a_{nn}

$a_{ij} = a_{ij}(p_1,\ldots,p_k)$ $(i=0,1,\ldots,n.\ j=1,\ldots,n)$ here denote certain logical functions of the variables $p_1,\ldots,p_k$ and A_0 is meant to denote the empty operator (symbolizing the beginning of the process). The matrices of the form given above and the matrices derived from it by several operations are here denoted by the abbreviated form $\overline{A_i \mid a_{ij}}$

Card 1/2 The present paper now inwestigates the matrices which assume the order

On Matrix-Schemes. PA - 3011

of filling operators, and the application of these matrices on the theory of the programme schemes. The paper consists of 6 definitions and 4 theorems, the contents of which cannot be quoted here for the lack of space. The construction of some algorithms is also indicated. Finally the case of a single defining relation of the kind $A_{k1} = A_{k2}$ is briefly discussed. (Without illustrations).

ASSOCIATION Mathematical Institute V.A. STEKLOV of the Akademy of Sciences of the U.S.S.R.
PRESENTED BY
SUBMITTED
AVAILABLE Library of Congress
Card 2/2

YANOV, Yu.I.
p. 2

PHASE I BOOK EXPLOITATION SOV/1128

Problemy kibernetiki, vyp. 1 (Problems of Cybernetics, no. 1)
Moscow, Fizmatgiz, 1958. 268 p. 20,000 copies printed.

Ed. (title page): Lyapunov, Aleksey Andreyevich; Ed. (inside book): Smolyanskiy, M.L.; Tech. Ed.: Kolesnikova, A.P.; Eds. and Compilers: Lupanov, O.B., Pil'chak, B.Yu., Kulagina, O.S., Yablonskiy, S.V.

PURPOSE: The book is intended to relate the interests of scientific and engineering personnel whose work involves various aspects of cybernetics.

COVERAGE: This collection of articles deals with general problems of cybernetics, information theory, theory of algorithms and automatic machines, theory of control systems, theory of games and tactics, methods of operations analysis, problems in the theory of calculating machines, programming, and the application of cybernetics to other sciences, such as biology, economics and linguistics. "Problems of Cybernetics", as a recurrent publication, will continue to include original papers, survey articles and translations and,

Card 1/4

like the present work, will contain the results of seminars in cybernetics held at Moscow University. There are 107 references, of which 104 are Soviet, 2 English and 1 Hungarian.

TABLE OF CONTENTS:

V. RECENT EVENTS

AVAILABLE: Library of Congress

JP/nah
2-24-59

06521 SOV/141-58-1-11/14

AUTHOR: Yanov, Yu. I.

TITLE: Transformations of the Logical Programme Sets

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Nr 1, pp 110-119 (USSR)

ABSTRACT: The operators of the programme of a computer can be regarded as certain elementary symbols and the logic functions of the computer which can take values either 0 or 1 are the independent variables. The operators and the logical functions or conditions are arranged in a certain manner and form what is known as the logic programme set. The representation of the logic programme sets is done by adopting the following symbolics. A_1, A_2... denote the operators (or operations), while p_1, p_2, p_3... are independent logical variables. A set describing a sequence of operators A_{i1}, A_{i2},...A_{is} can be written as $A_{i1} \cdot A_{i2} \ldots A_{is}$. If the order of the operators depends on the magnitude of a certain

Transformations of the Logical Programme Sets

logical function $\alpha(p_1,\ldots p_k)$, this can be denoted by means of the subscripted symbols $\llcorner_m$, $\lrcorner_m$, which are referred to as the right-hand side and left-hand side semi-brackets. The expression $A_{i_1}\alpha(p_1\ldots, p_k)\llcorner_m A_{i_2}\ldots\lrcorner_m A_{i_3}$ means that after the execution of the operator A_{i_1} , when $\alpha = 1$, the operator A_{i_2} should be executed; this is directly to the right of $\alpha\llcorner_m$; when $\alpha = 0$ the operator A_{i_3} is the second operator. Since in the logical sets the relationship between the logic variables and the "execution" of the operators is not indicated, this can be additionaly given in the form of a correspondence between the operators and those logic variables whose values can change after the execution of the operators. Such correspondence relationships are referred to as the shift distributions. It can easily be seen that for a given shift distribution the same order sequence of the operators can be represented by various sets. These can be referred to as the equivalent sets (for a given shift distribution). The logic

Transformations of the Logical Programme Sets

conditions and the operators can be referred to as the elementary expressions. A logic condition is defined as a logic algebraic function, having a left-hand semi-bracket with a subscript to the right of the function. The equivalents can be strictly defined as follows. Two sets
$\mathfrak{A}(p_1,\ldots,p_k, A_1,\ldots,A_n)$ and $\mathfrak{B}(p_1,\ldots,p_k, A_1,\ldots,A_n)$
are equivalent, for a given shift distribution, if for an arbitrary sequence of samples permissible for $\mathfrak{A}$ and $\mathfrak{B}$, their values coincide. It is possible to carry out various transformations on a set without changing its logic contents. The rules of the transformations are indicated by the equations on p 116. The rules are employed to carry out the transformations on to practical examples. From the analysis, it is found that the so-called identity transformations, that is, the transformations which convert a set into an equivalent set (for a given shift distribution) can lead to the simplification of a set, in particular, the reduction in the number

06521 SOV/141-58-1-11/14

Transformations of the Logical Programme Sets

of [redacted] logical conditions. The paper contains 3 Soviet references.

ASSOCIATION: Matematicheskiy institut im. V. A. Steklova AN SSSR (Mathematical Institute im. V. A. Steklov, Academy of Sciences USSR)

SUBMITTED: June 30, 1957.

Card 4/4

16(1)

AUTHORS: Yanov, Yu.I., Muchnik, A.A. SOV/20-127-1-11/65

TITLE: On the Existence of k-Valued Closed Classes Having no Finite Basis

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 127,Nr 1,pp 44-46 (USSR)

ABSTRACT: The paper completes the investigations of Lyndon [Ref 4], Slupeski [Ref 5] and S.V. Yablonskiy [Ref 6].
Theorem : For every $k \geq 3$ there exists a k-valued closed class without basis.
Theorem : For every $k \geq 3$ there exists a k-valued closed class with infinite basis.
Theorem : For every $k \geq 3$ P_k contains a continuum of different closed classes.
O.B. Lupanov is mentioned in the paper. - There are 6 references, 2 of which are Soviet, 3 American, and 1 Polish.

PRESENTED: March 9,1959, by M.V. Keldysh, Academician
SUBMITTED: March 5,1959

Card 1/1

YANOV, Yu. I.

"On equivalent transformations of regular expressions"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (FAC), Moscow, 24 Sep-2 Oct 1962.

S/582/62/000/008/002/013
D405/D301

AUTHOR: Yanov, Yu. I. (Moscow)

TITLE: On identity systems for algebras

SOURCE: Problemy kibernetiki. no. 8. Moscow, 1962, 75-90

TEXT: Identity transformations of the formulas of (abstract) algebras by some fixed rules are considered. This problem has not only intrinsic importance, but it has many analogues in other systems such as programming schemes, nets, etc. The case is of greater interest when the transformation rules are in a certain sense minimal. After introducing the basic concepts, such a system of rules is derived in the form of identity axioms. An algebra A is said to be algebraically axiomatizable if a finite system of identities exists such that any identity which holds for the algebra A can be obtained from the system by applying only the (given) deduction rules. The general problem of ascertaining the conditions of axiomatizability of finite algebras remains open. Section 2 discusses some properties of arbitrary systems of identities from the

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On identity systems ...

viewpoint of their internal structure as well as in relation to the algebras for which all the identities of a given system hold (such algebras are called models of the given system of identities). In particular, a class of operations over identities is described, such that on supplementing the above deduction rules by an appropriate operation of this class the finite algebra under consideration becomes axiomatizable in the corresponding wider sense. It is also proved that for any finite algebra the system of all true identities containing not more than n different variables (as well as the identities derived from them by the deduction rules), possess a finite complete subsystem from which all the other identities of this system can be obtained by using only the above deduction rules. In section 3 the necessary and sufficient conditions of equational completeness of a system of identities is formulated, i.e. for the case when the system does not permit any extension which has a nontrivial model (an algebra is said to be trivial when its variables can assume one value only). Well-known results are given on the relations of models for imbedded systems of identities. Section 4 deals with the possible non-contradictory exten-

sions of systems of identities to systems which have finite complete subsystems, in other words with the existence of algebraically axiomatizable models.

SUBMITTED: September 5, 1960 (initially)
April 18, 1961 (final version)

16.1500

42702
S/020/62/147/002/008/021
B112/B186

AUTHOR: Yanov, Yu. I.

TITLE: Identical transformations of regular expressions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 2, 1962, 327-330

TEXT: A countable alphabet $A_s = \{a_1,\ldots,a_s\}$ is considered. From the elementary words $\{a_i\}$ $(i = 1,\ldots,s)$, regular expressions are obtained by the following three operations: 1) the sum $A \vee B$ in the sense of the theory of sets; 2) the product AB as the set of all the words ab, where $a \in A$, $b \in B$; 3) the closure $\bar{A} = \{\lambda\} \vee A \vee AA \vee AAA \vee \ldots$, $\{\lambda\}$ being the empty word. The problem of determining the identical transformations of the regular expressions can be reduced to that of finding a complete system of identities for the algebra $\mathfrak{R}_s = \langle \mathfrak{M}_s, x \vee y, xy, \bar{x} \rangle$, where $\mathfrak{M}_s$ is the set of all regular expressions. In the present paper, this problem is solved for the class $\mathfrak{M}'_s$ of all and only the regular expressions that contain the empty word. The following table is the solution:

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Identical transformations...

S/020/62/147/002/008/021
B112/B186

0. $x = x$.
1. $x \vee x = x$.
2. $x \vee y = y \vee x$.
3. $x \vee (y \vee z) = (x \vee y) \vee z$.
4. $x(yz) = (xy)z$.
5. $x(y \vee z) = xy \vee xz$.
6. $(x \vee y)z = xz \vee yz$.
7. $\bar{\bar{x}} = x$.
8. $\overline{x\bar{x}} = \bar{x}$.
9. $\overline{\bar{x} \vee y} \vee x = \overline{x \vee y}$.
10. $\overline{x \vee y} = \overline{\bar{x} \vee y}$.
11. $\overline{x \vee \bar{y}} = \overline{xy}$.
12. $\overline{xy}x = x\overline{y}$.
13. $x\overline{xy} = \overline{xy}$.
14. $xy \vee y = xy$.
15. $xy \vee x = xy$.

PRESENTED: June 6, 1962, by P. S. Novikov, Academician

SUBMITTED: May 30, 1962

Card 2/2

YANOV, Yu.I. (Moskva)

Identity systems for algebras. Probl.kib. no.8:75-90 '62.
(MIRA 16:4)
(Algebra, Universal)

YANOV, Yu.I. (Moskva)

Invariant operations over events. Probl. kib. no.12:253-258 '64.
(MIRA 18:6)

COUNTRY : USSR
CATEGORY : Cultivated Plants. Grains. Leguminous Grains. Tropical Cereals
ABS. JOUR. : Ref Zhur-Biologiya, No.4, 1959, No. 15584
AUTHOR : Yanova, G.M.
INST. : --

TITLE : Effectiveness of Row Fertilizer of Winter Wheat.

ORIG. PUB. : Byul. nauk.-tekhn. inform. Ternop. derzh. sil'skogospod. dosl. st., 1957, No.1, 12-13

ABSTRACT : No abstract

CARD: 1/1

MALYKH, L.I., kand. tekhn. nauk; YANOVA, I.V., inzh.

Polyamide-resin sealings for heavy-duty hydraulic presses. Vest. mashinostr. 45 no.5:34-37 My '65. (MIRA 18:6)

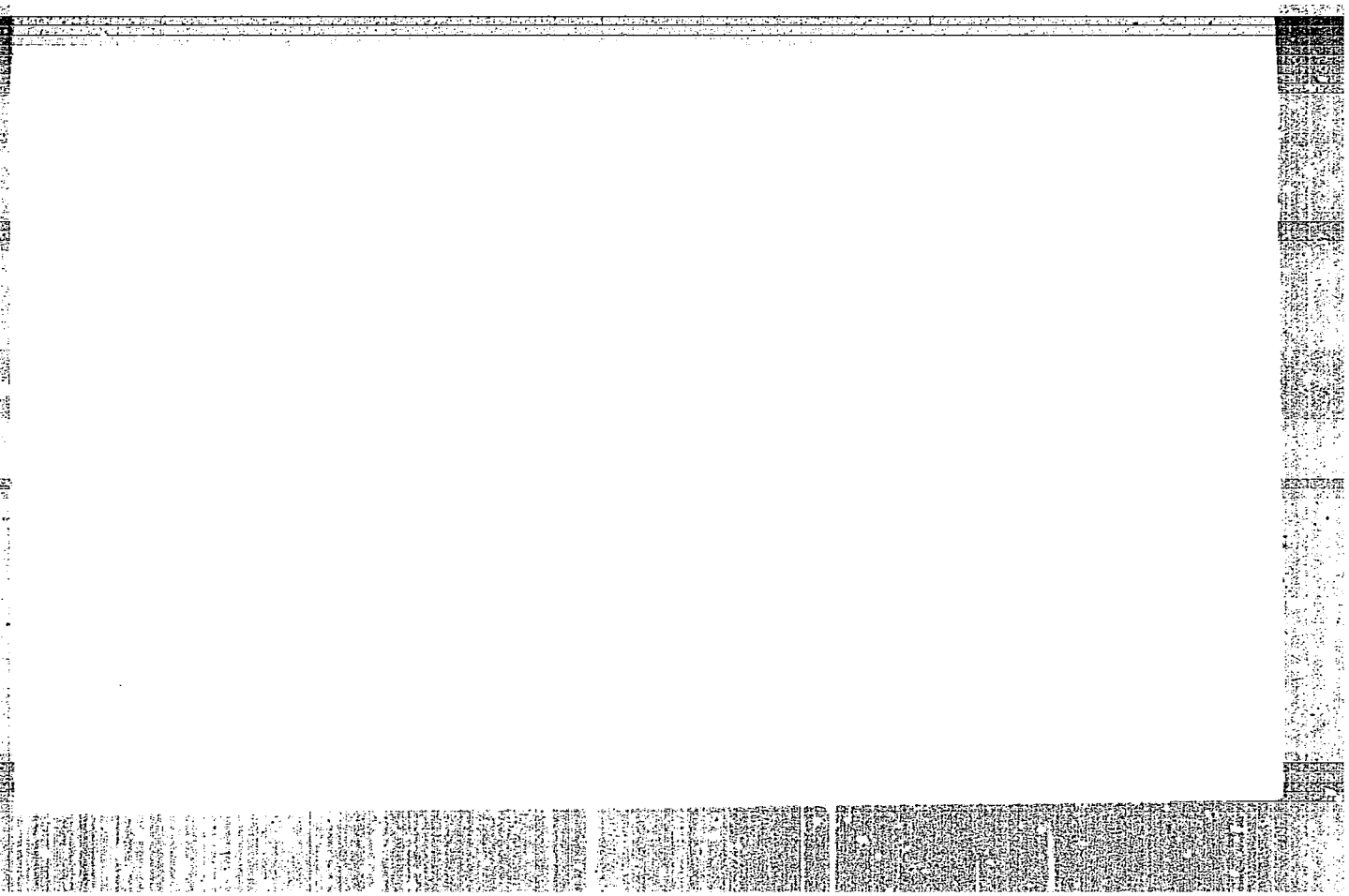
SHCHEGROVA, M.I.; TSYBUL'SKAYA, T.A.; YANOVA, L.I.

Effect of some colloids on the performance of ion exchange membranes. Izv. vys. ucheb. zav.; pishch. tekh. no.6:37-39 '63. (MIRA 17:3)

1. Krasnodarskiy politekhnicheskiy institut, kafedra neorganicheskoy i analiticheskoy khimii.

COUNTRY	:	USSR
CATEGORY	:	Cultivated Plants. Fodder Grasses and Root Crops. M
ABS. JOUR.	:	RZhBiol., No. 3, 1959, No. 10983
AUTHOR	:	Yanova, G. M.
INST.	:	-
TITLE	:	The Influence of the Periods of Fertilizer Application on the Hay Yield of Perennial Grasses.
ORIG. PUB.	:	Byul. nauk.-tekhn. inform. Ternop. derzh. sil'skogospod. dosl. st., 1957, No. 34
ABSTRACT	:	No abstract.

CARD: 1/1



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962110012-8"

temperatures and pressures as well as [illegible] the arrangement of the bond. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 01 SUB CODE: MT, IE

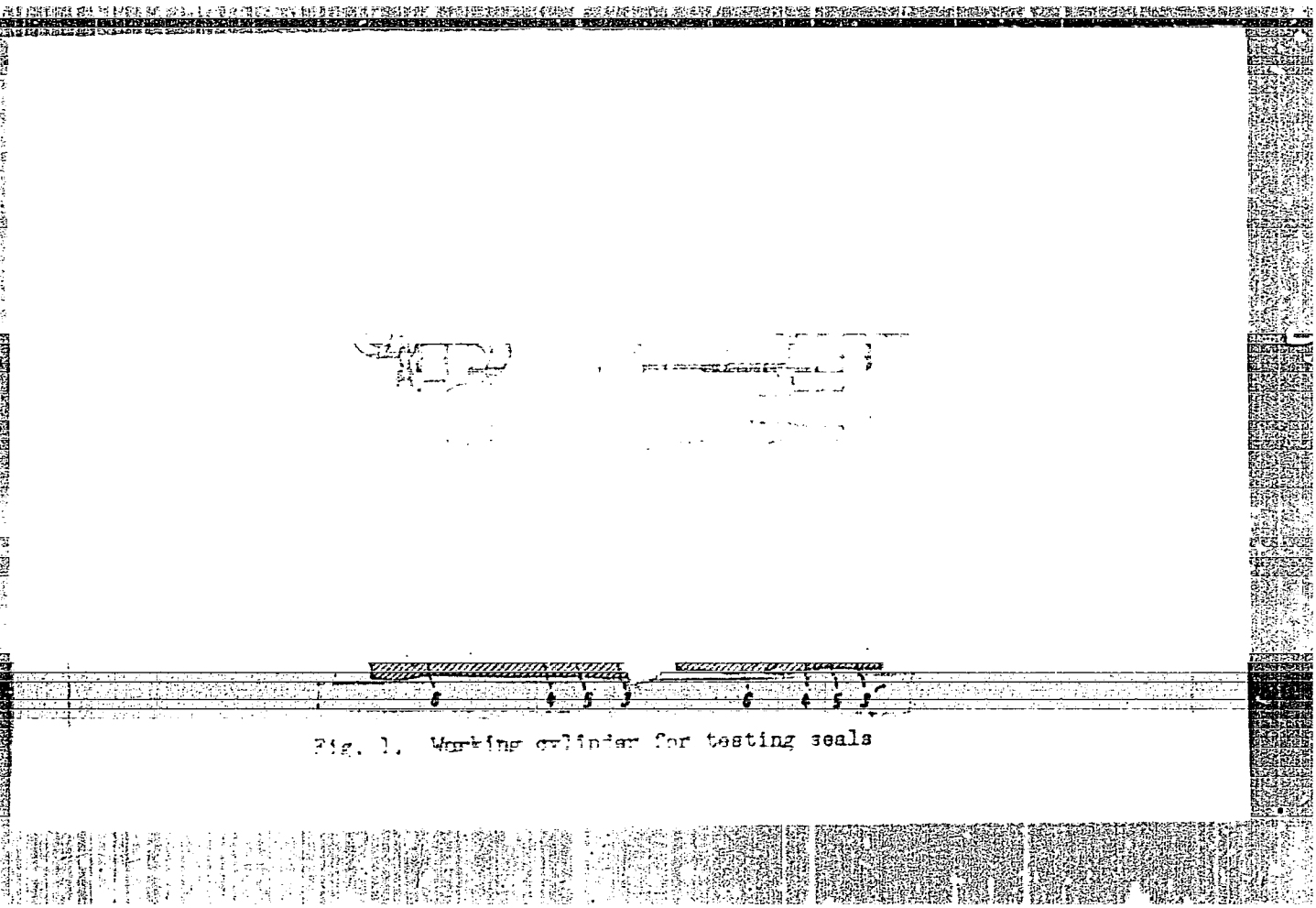


Fig. 1. Working cylinder for testing seals

S/020/62/147/004/021/027
B101/B186

AUTHORS: Sharpatyy, V.A., Safarov, S.A., Yanova, K.G.

TITLE: Radiation-chemical stability of some heterocyclic compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 4, 1962, 863-866

TEXT: The effect of the heteroatom on the stability of furan, pyrrole, thiophene, and pyridine was studied. The e.p.r. spectra were taken at -170 to -160°C, and the formation and accumulation of radicals were recorded with an accuracy of 30%. The initial radical yield increased in the series thiophene < pyrrole < furan, and the ratio was 0.1 : 0.5 : 1.1. The curve of radical accumulation approaches the value of saturation with increasing duration. The similarity in initial radical yields of furan and tetrahydrofuran is explained by a decrease in the aromatic nature of furan owing to the effect of the heteroatom on the distribution of the π-electron cloud density. The e.p.r. spectra are a superposition of two types of radical spectra, one obtained by separation of an H atom from the molecule, the other by attachment of an H atom to a neutral

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molecule. The spectrum of the first radical is a doublet with ~30 oe splitting. The doublet center corresponds to the g-factor of the free electron. The spectrum of the second type of the radical has a multiplet hyperfine structure caused by interaction of the unpaired electron and four protons, the former staying mainly at the C atom bound by two H atoms. The ratio of component intensities is 1 : 2 : 1. Each component itself is split owing to its interaction with other protons. The spin density of the unpaired electron at the CH atom groups increases in the series pyrrole < thiophene < furan as compared to the density at the CH_2 groups.

It is assumed that the H atom in the radiolysis of heterocyclic compounds adds to the heteroatom in β-position. Similar results were obtained for pyridine. The initial yield (0.7) was much higher than that of benzene. G_R increased with the radiation dose. Here too, the increase in reactivity is due to the irregular distribution of the π cloud caused by the heteroatom. The e.p.r. spectrum is a triplet with a 1 : 2 : 1 ratio of component intensities. Atomic H is attached to the γ-carbon atom of the pyridine ring. Splitting of every triplet line into three components is caused by interaction of the spin of the unpaired electron with two

protons or, what is more likely, with the N nucleus. The type of attachment of the H atom to the heterocyclic compounds studied has not been explained sufficiently. Conclusion: The radiolytic behavior and the e.p.r. spectrum of the compounds studied shows the stability to be affected by two opposite factors, namely, the presence of two conjugated bonds and the irregular distribution of the electron density in the ring, caused by the heteroatom. There are 4 figures.

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