A New Type of Non-Tubular Regenerator for Gas-Turbine Installations

cold-rolled steel sheet is shown in Fig 2. Regenerator heating surfaces may be made by assembling these ribbed plates either as shown in Fig 3a or as shown in Fig 3b. In each case gas flows through the channels between one pair of sheets and air between the next pair of sheets and so on. The arrangement of headers is sketched in Fig 4. The units can be used to build up a regenerator heating surface which may be either rectangular or cylindrical. Regenerators based on this construction were designed for a gas turbine of 50 MW, the operating conditions of which are given. A sketch of the rectangular form of regenerator is given in Fig 5: two such units are required for a 50 MW turbine. The construction of the regenerator is described and performance and other relevant data are recorded in Table 2. A cylindrical regenerator in which the air is delivered to the outside of the cylinder is illustrated in Fig 6 and the construction is described. If necessary, the central part of the regenerator may be used to by-pass

A New Type of Non-Tubular Regenerator for Gas-Turbine Installations

some of the gas. Performance and other useful data are given in the second part of Table 2. Other arrangements are, of course, possible and a sketch of a design with internal air supply is offered in Fig 7. It is concluded that ribbed-sheet surfaces have considerable possibilities for regenerator design. The types of regenerator described in the article are much cheaper and smaller than existing types. There is no special difficulty in manufacturing or assembling the new regenerators. There are 7 figures, 2 tables and 2 references, 1 of which is Soviet and 1 English.

ASSOCIATION: Vsesoyuznyy Teplotekhnicheskiy Institut (All-Union Thermo-Technical Institute)

KLITIN, N.P., inzh.; NECHAYEV, V.A., inzh.; LOKSHIN, V.A., kand.tekhn.nauk

Results of testing the GTU-600-1.5 plate regenerator.
Teploenergetika 8 no.5:11-17 My '61. (MIRA 14:8)

1. Yuzhnoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii elektrostantsiy; Khar'kovskiy tekhnologicheskiy institut i Dneproenergo.
(Gas turbines)

KLITIN, N.P., insh.; LOKSHIN, V.A., kand.tekhn.nauk

Heat transfer and resistance of finned bundles. Teploenergetika 8 no.7:53-57 Jl '61. (MIRA 14:9)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Gas turbines) (Air preheaters)

KLITIN, N.P., inzh.; LOKSHIN, V.A., kand. tekhn. nauk

Heat transfer and resistance of longitudinally ribbed pipes.
Teploenergetika 11 no.5:79-83 My '64. (MIRA 17:5)

1. Vsesoyuznyy teplotekhnicheskiy institut.

KLITINA, L.V.

Brief petrographic characterization of coals in the new deposits of the Kama coal-bearing area. Izv.vys.ucheb.zav.; geol. i razv. 5 no.5:48-58 My '62. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy institut (VSEGEI).
(Kama Valley—Coal—Classification)

KLITINA, N.A., inzh.

Waterproofer with a base of polystyrene resin. Sbor. trud. NII po stroi. ASiA [Rost.] no.6:65-72 '62. (MIRA 17:9)

KLITINA, S.Ya., assistent

Oscillography in hypertension. Nauch.trudy L'vov.obl.terap.ob-va no.1:131-135 '61. (MIRA 16:5)

1. Kafedra propedevticheskoy terapii lechebnogo fakul'teta L'vovskogo meditsinskogo instituta (zav. kafedroy - dotsent V.I. Chernov).

(HYPERTENSION) (OSCILLOGRAPHY)

KLITINA, S.Ye.

Phenatine treatment in hypertension. Nauch.trudy L'vov.obl.terap. ob-va no.1:271-274 '61. (MIRA 16:5)

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(HYPERTENSION) (NICOTINAMIDE)

PETROV, I.T.; POVKH, B.V.; BLIKHARSKIY, B.A.; CHERNOV, V.I. [deceased]; KLITINA, S.Ye.; ROZANOV, Ye.M.; SHUFLAT, A.N.

Incidence of influenza and acute cararrhs of the upper respiratory tracts in miners of Chervonograd, Lvov-Volyn' Basin. Vrach. delo no.1:105-109 Ja'64 (MIRA 17:3)

1. Chervonogradskaya mediko-sanitarnaya chast' kombinata Ukrzapadugol' (for Petrov, Povkh, Blikharskiy). 2. Kafedra propedevticheskoy terapii lechebnogo fakul'teta - zav. dotsent V.I.Chernov [deceased]) L'vovskogo meditsinskogo instituta (for Klitina, Rozanov, Shuflat).

PLOSHKO, V.V.; KLITINA, V.I.

Polymetamorphism of geosynclinal basite series within the Cambrain-Silurian greenstone layer in the Little Laba Valley. Trudy IGEM no.77:225-256 '62. (MIRA 16:2)
(Laba Valley--Metamorphism (Geology))
(Laba Valley--Greenstone)

ALIMARIN, I.P.; SUDAKOV, F.P.; KLITINA, V.I.

Extraction of heteropoly compounds and its use in inorganic analysis. Usp. khim. 34 no.8:1368-1387 Ag '65.
(MIRA 18:8)

L 34375-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR. AP6010717 SOURCE CODE: UR/0189/66/000/001/0098/0100

AUTHOR: Sudakov, F. P.; Klitina, V. I.; Maslova, N. T.

ORG: Analytic Chemistry Department, Moscow State University (Kafedra analiticheskoy khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Extractive photometric determination of phosphorus and silicon in the form of their reduced heteropoly acids

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1966, 98-100

TOPIC TAGS: phosphorus, silicon, phosphorus compound, molybdenum compound, silicon compound, photometric analysis

ABSTRACT: An attempt was made to develop selective and sensitive methods of determining phosphorus and silicon by combining extraction with reactions of reduction of phosphomolybdic acid (PMA) and silicomolybdic acid (SMA) by stannous oxalate. The reduction products of PMA and SMA, obtained at both pH 1.8 and pH 5.0, are satisfactorily extracted with oxygen- and nitrogen-containing extractants, and their extractability depends strongly on the acidity of the aqueous phase, nature of the extractant, and other factors. As a rule, the extractability of reduced PMA and SMA improves with increasing acidity, but optimum conditions exist at pH 5.0. The extracts are stable with time and obey Beer's law. The most suitable method for determining phosphorus

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Card 2/2

KLITINA, V.I.; SUDAKOV, F.P.; ALIMARIN, I.P.

Extraction of reduced phosphomolybdic acid with oxygen-containing solvents. Zhur. anal. khim. 20 no. 11:1145-1152 '65 (MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova. Submitted October 14, 1964.

DOLENKO, G.N.; KLITOCHENKO, I.F.

Structure of the Dolina oil field. Geol.sbor. [Lvov] no.2/3:273-280 '56. (MLRA 10:3)

1. Institut geologii poleznykh iskopayemykh AN USSR, L'vov.
(Dolina--Petroleum geology)

ARSIRIY, Yu.A.; BLANK, M.I.; BLIZNYUK, V.F.; GLUSHKO, V.V.; KLITOCHENKO, I.F.; LITVINOV, V.R.; PALIY, A.M.; PAN'KIV, A.M.; PISTRAK, R.M.; CHERPAK, S.Ye.; CHIRVINSKAYA, M.V.; YARCHENKO, L.M.

Plan for the areal study of the Dnieper-Donets Lowland. Trudy VNIIGAZ no.14:3-17 '62. (MIRA 15:5)
(Dnieper-Donets Lowland—Petroleum geology)
(Dnieper-Donets Lowland—Gas, Natural—Geology)

Klitochenko, Ivan Filipovich

GONTA, Timofey Timofeyevich; GORNV, Nikolay Alekseyevich; KLITOCHENKO, Ivan Filipovich; MIKHAYLOV, Konstantin Fedorovich; DUBROVINA, N.D., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Petroleum and natural gas in the Ukraine] Neft' i prirodnyi gas Ukrainy. Moskva, Gos.nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1957. 78 p. (MIRA 11:1)
(Ukraine--Petroleum) (Ukraine--Gas, Natural)

KLITOCHENKO I.F.

VYSOTSKIY, I.V.; YEREMENKO, N.A.; KLITOCHENKO, I.F.; KORNILYUK, Yu.I.
MAKSIMOV, S.P.

Classification of drilled wells. Geol. nefti i gaza no.8:8-12 Ag '57.
(MIRA 10:12)

(Oil wells--Classification)

KLITOCHENKO, I.F.; MUROMTSEV, A.S.; BARANOV, I.G.; MARTYNOV, A.A.

Oil-and gas-bearing prospects of the eastern part of the Dnieper-Donets Lowland. Geol. nefti 1 no.9:1-7 S '57. (MIRA 10:9)
(Dnieper Lowland--Petroleum geology)
(Dnieper Lowland--Gas, Natural--Geology)
(Donets Basin--Petroleum geology)
(Donets Basin--Gas, Natural--Geology)

KLITOCHENKO, I.F.

BURSHTAR, M.S.; KLITOCHENKO, I.F.

Geological structure and oil- and gas-bearing prospects in the northern Black Sea and Azov regions. Geol.nefti 1 no.10:1-8 O '57. (MIRA 10:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut, Ob'edineniye "Ukrneft'."

(Black Sea region--Petroleum geology)
(Black Sea region--Gas, Natural--Geology)
(Azov region--Petroleum geology)
(Azov region--Gas, Natural--Geology)

GLUSHKO, V.V.,; KLITOCHENKO, I.F.,; MAKSIMOV, S.P.

Comparative estimation of oil and gas potentials of the Ukrainian S.S.R. Geol. nefti Supplement to no. 7:21-33 '58. (MIRA 11:8)
(Ukraine--Petroleum geology)
(Ukraine--Gas, Natural--Geology)

KLIOCHENKO, I. F.

3(5) PHASE I BOOK EXPLOITATION SOV/2682

Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut

Voprosy poiskov, razvedki i dobychi nefti i gaza na territorii USSR; doklady na vyyezdnoy sessii uchenykh sovetov VNIGNI i VNII, prokhodivshey v g. L'vove v maye 1957 g. (Problems in the Exploration and Production of Oil and Gas in the Ukrainian SSR; Reports Presented at a Session of the Scientific Councils of the All-Union Petroleum Scientific Research Institute for Geological Survey and the All-Union Scientific Research Institute, in Lvov, May 1957) Moscow, Gostoptekhizdat, 1959. 282 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Ministerstvo geologii i okhrany nedr.

Eds.: I. G. Baranov, V. V. Glushko, and A. S. Muromtsev; Executive Eds.: S. M. Yungans, and A. I. Zaretskaya; Tech Ed.: I. G. Fedotova.

PURPOSE: This book is intended for petroleum geologists and Ukrainian area specialists.

COVERAGE: This book contains 27 reports originally read at a meeting of the scientific councils of the VNIGNI (All-Union Petroleum Scientific Research Institute for Geological Survey), the VNII (All-Union Scientific Research

Card 1/4

BONDARCHUK, V.G., akademik, otv.red.; PORFIR'YEV, V.O., akademik, red.; KOZLIN, Ya.D., doktor geol.-miner.nauk, red.; KAPTARENKO-CHERNOUSOVA, O.K., doktor geol.-miner.nauk, red.; SHUL'GA, P.L., doktor geol.-miner.nauk; KLIMENKO, V.Ya., kand.geol.-miner.nauk, red.; MOLYAVKO, G.I., kand.geol.-miner.nauk, red.; KLITOCHENKO, I.F., red.; MUROMTSEV, A.S., red.; MUKHIN, A.V., red.; CHERPAK, A.I., red.; MANVELOVA, K.K., mladshiy nauchnyy sotrudnik, red.; MEL'NIK, A.F., red.izd-va; MILEKHIN, I.D., tekhn.red.

[Geology, and oil and gas potentials of eastern regions in the Ukraine; proceedings of the conference on oil and gas potentials of the Ukraine] Geologicheskoe stroenie i neftegazonosnost' vostochnykh oblastei Ukrainy; trudy nauchno-proizvodstvennogo soveshchaniia po probleme neftegazonosnosti Ukrainy, 27 fevralia - 3 marta 1956 g. Kiev, 1959. 436 p. (MIRA 13:3)

1. Akademiia nauk URSR, Kiev. Instytut geologichnykh nauk. 2. AN USSR (for Bondarchuk, Porfir'yev). 3. Glavnyy geolog ob"yedineniya "Ukrneft'" (for Klitochenko). 4. Direktor Ukrainskogo otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo geologo-razvedochnogo neftyanogo instituta (VNIGNI) (for Muromtsev). 5. Glavnyy inzhener tresta "Ukrneftegeofizika" (for Mukhin). 6. Glavnyy geolog tresta "Ukrvostokneftrazvedka" (for Cherpak). 7. Institut geologicheskikh nauk AN USSR (for Manvelova).
(Ukraine--Petroleum geology) (Ukraine--Gas, Natural--Geology)

14(5) SOV/9-59-7-3/15

AUTHORS: Dolenko, G.N., and Klitochenko, I.F.

TITLE: Oil and Gas Possibilities of the L'vovskiy Paleozoic Depression

PERIODICAL: Geologiya nefti i gaza, 1959, Nr 7, pp 12 - 15 (USSR)

ABSTRACT: Information is given on singling out of gas and oil bearing zones in the L'vovskiy depression, by using available geological and geophysical data. The L'vovskiy depression is characterized by strong tectonic deformations which caused the formation of complicated substructures and faults, accompanied by terrace-shaped elevations. There are three main faults: The Kalush-Nemirovskiy fault accompanied by the upheaval zone of the so-called marginal plateau elevation; the L'vovskiy fault accompanied by the zone of the L'vovskiy terrace-shaped elevation and the Kameno-Bugskiy fault accompanied by the Milyatin-Kulichkovskiy upheaval zone. The mentioned faults can be referred to the type of plutonic breaks which are characterized by considerable extension and depth and by a prolongated development period extending over whole geological stages. This continuous development entailed changes of the rock thicknesses and the introduction of terrigenous components into the sedimentary series. In zones of extended plutonic break cracks

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Oil and Gas Possibilities of the L'vovskiy Paleozoic Depression

were formed in the strata which improved collecting properties of stratigraphic horizons and the development of local structures. This furthered the formation of gas and oil fields. Plutonic breaks had a particular importance since they apparently formed passages for oil migration from the areas of origin into trap structures enclosing the rock-collectors. These conducts were situated in areas of maximum deformation. It is concluded that best gas and oil possibilities in the L'vovskiy Paleozoic depression existed in the marginal plateau zone and in the Milyatin-Kulichkovskiy upheaval. These areas possess all necessary conditions for oil and gas formation, such as rock-collectors, trap structures and disjunctive deformations, forming passages for oil migration. This opinion is supported by other scientists including G.Kh. Dikenshteyn [Ref 3, 4], D.P. Naydin [Ref 5], V.V. Glushko, I.P.

KLITOCHENKO, I.F.

Results of oil and gas prospecting in the Ukrainian S.S.R. in 1960 and prospecting outlook for 1961. Geol. nefti i gaza 5 no. 5:1-6 My '61. (MIRA 14:4)

1. Glavgeologiya USSR.
(Ukraine—Petroleum geology) (Ukraine—Gas, Natural—Geology)

GUREVICH, B.L.; KLITOCHENKO, I.F.; CHIRVINSKAYA, M.V.

Oil and gas prospecting trends in the Black Sea region. Geol. nefti i gaza 5 no.6:6-10 Je '61. (MIRA 14:6)

1. Trest Ukrgeofizrazvedka, Glavgeologiya USSR.
(Black Sea region--Petroleum geology)
(Black Sea region--Gas, Natural--Geology)

KLITOCHENKO, I.F.; PALIY, A.M.

Results of geological prospecting in the Ukrainian S.S.R. for 1961. Geol.nefti i gaza 6 no.5:9-16 My '62. (MIRA 15:5)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov USSR.
(Ukraine—Petroleum geology) (Ukraine—Gas, Natural—Geology)

BROD, I.O.; VITRIK, S.P.; GORDIYEVICH, V.A.; KLITOCHENKO, I.F.; KOSOROTOV, S.P.; PALIY, A.M.; POPOV, V.S.

Evaluating the results and the measures for improving prospecting for oil and gas fields in the Ukraine. Geol.neft i gaza 6 no.10:1-12 O '62. (MIRA 15:12)

1.Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR, Ministerstvo geologii i okhrany nedr SSSR i Moskovskiy gosudarstvennyy universitet.
(Ukraine—Petroleum geology)
(Ukraine—Gas, Natural—Geology)

KLITOCHENKO, I.F.; ANTSUPOV, P.V.; VUL', M.A.

Prospects of oil and gas in the Pokutye section of the Carpathians.
Geol.neft i gaza 6 no.10:13-17 O '62. (MIRA 15:12)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR i Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut.
(Pokutye region—Petroleum geology)
(Pokutye region—Gas, Natural—Geology)

KLITOCHENKO, I.F.; SAMBORSKIY, N.A.

New data on box folds in the Dnieper-Donets Lowland. Geol. nefti i gaza 7 no.8:30-35 Ag '63. (MIRA 16:10)

1. Trest Poltavaneftegazrazvedka.

GLUSHKO, Vasiliy Vasil'yevich; KLITOCHENKO, Ivan Filippovich; KRAMARENKO, Vladimir Nikolayevich; MAKSIMOV, Stepan Pavlovich; CHIRVINSKAYA, Marina Vladimirovna; OVCHINNIKOVA, S.V., red.; VORONOVA, V.V., tekhn. red.

[Geology of oil and gas fields in the Ukrainian S.S.R.] Geologiia neftianykh i gazovykh mestorozhdenii Ukrainskoi SSR. Moskva, Gostoptekhizdat, 1963. 314 p. (MIA 17:2)

AGISHEV, A.P.; KLITOCHENKO, I.F.; LAPKIN, I.Yu.; PALIY, A.N.; STERLIN, B.P.; TIKHONZEVSKIY, S.A.; TKACHISHIN, S.V.

New gas-bearing area in the southeastern section of the Dnieper-Donets Lowland. Gaz. prom. 8 no.12:4-6 '63 (MIRA 18:2)

CHIRVINSKAYA, M. V.; KRAMARENKO, V. N.; KLITOCHENKO, I. F.

"Tectonic and facies conditions as a factor of oil and gas accumulation in the Ukrainian SSR."

report submitted for 22nd Sess, Intl Geological Cong, New Delhi, 14-22 Dec 1964.

KLITOCHENKO, I.F.; PALIY, A.M.

Results of geological prospecting for oil and gas in the Ukraine for 1963. Geol. nefti i gaza 8 no.4:4-9 Ap '64. (MIRA 17:6)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR.

BLIZNYUK, V.F.; GAVRISH, V.K.; GRITSAY, Ye.T.; KEL'BAS, B.I.; KLITOCHENKO, I.F.; MARTYNOV, A.A.; PALIY, A.M.; POPOV, V.S.; SHAYKIN, I.M.; YARCHENKO, L.M.

Stratigraphic boundaries and oil and gas potentials of the Upper Cretaceous sediments in the Dnieper-Donets Lowland. Geol. nefti i gaza 8 no.4:28-35 Ap '64. (MIRA 17:6)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR, Kiyevskaya ekspeditsiya tresta Ukregeofizrazvedka, Kiyevskaya ekspeditsiya Ukrainskogo nauchno-issledovatel'skogo geologorazvedochnogo instituta i Chernigovskaya ekspeditsiya Ukrainskogo nauchno-issledovatel'skogo geologorazvedochnogo instituta.

KLITOCHENKO, I.F.; KRAVCHENKO, V.N.; PALIY, A.M.

Brief digest of the history of the development of petroleum production in the Ukraine. Geol. nefti i gaza 8 no.9:32-37 S '64. (MIRA 17:11)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR i Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut.

BALUKHOVSKIY, N.F.; GAVRISH, V.K.; KLITOCHENKO, I.F.; POPOV, V.S.

Concerning the super-deep Dnieper-Donets oil well. Neft. i gaz. prom. no.4:3-6 O-D '64 (MIRA 18:2)

VASIL'YEV, V.G.; VOROB'YEV, B.S.; DUDKO, N.A.; ZIL'BERMAN, V.I.; KLITOCHENKO, I.F.; LITVINOV, V.R.; TKHORZHEVSKIY, S.A.; CHERNYAK, S.I.

Present status of and prospects for the development of the production of natural gas in the eastern Ukrainian oil- and gas-bearing region. Gaz. prom. 10 no.4:1-6 '65.

(MIRA 18:5)

KLITCHENKO, I.F.

Oil and gas prospecting in the Ukrainian S.S.R.; results for 1964 and problems for 1965. Geol. nefti gaza 9 no.6:1-4 Je '65. (MIRA 18:8)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR.

[illegible], [illegible]; [illegible], [illegible]; [illegible], [illegible]; KLITOCHENKO, I.F.; CHIRVINSKAYA, M.V.

Buried Paleozoic structures in the south-eastern part of the Dnieper-Donets Lowland. Geol. nefti i gaza 9 no.6:16-22 Je '65. (MIRA 18:8)

1. Ukrainskiy nauchno-issledovatel'skiy geologorazvedochnyy institut, Kiyev; Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov UkrSSR i trest Ukrgeofizrazvedka.

KLITOCHENKO, I.T.

Results of and further trends in geological prospecting for oil and gas. Geol.shur.22 no.1:3-13 '62. (MIRA 15:2)

1. Glavnoye geologo-razvedochnoye upravleniye USSR.
(Ukraine—Prospecting)

L 46010-66 EWT(1) IW

ACC NR: AR6029454 SOURCE CODE: UR/0169/66/000/005/D017/D017

AUTHOR: Andreyeva, R. I.; Gdalevskaya, Ts. M.; Lositskaya, Ye. P.; Klitochenko, T. I.; Marchenko, A. P.; Razumenko, G. F.; Sokolova, N. T.; Chayka, V. G.

TITLE: Compilation of composite seismic maps of the southeastern part of the Dnepr-Donets basin

SOURCE: Ref. zh. Geofizika, Abs. 5D115

REF SOURCE: Tr. Ukr. n.-i. geologorazved. in-t, vyp. 14, 1965, 132-139

TOPIC TAGS: Dnepr basin seismic map, Donets basin seismic map

ABSTRACT: A second interpretation is made of seismic data obtained for the southeastern part of the Dnepr-Donets basin, using supplementary data obtained in drillings. Structural maps to the scale of 1:50,000 and 1:100,000 are plotted for four horizons, from the Cenomanian to the Lower Permian. Iso-pachous line maps, plotted on the basis of data obtained in seismic exploration, are also discussed. A detailed analysis is made of the tectonic structure of the Upper Paleozoic, Mesozoic, and Cenozoic stages on the basis of the above-mentioned

Card 1/2 UDC: 550.834

L 46010-66

ACC NR: AR6029454

maps. A regional subdivision is made of the territory from the point of view of natural gas and petroleum deposits. A. Titkov. [Translation of abstract] [SP]

SUB CODE: 08/

Card 2/2 MT

1. KLITROV, F. M., M. D.

2. USSR (600)

4. Limberg, A. A.

7. In answer to Prof. A. A. Limberg's article, "Geometric and biologic aspects in repair of external nose with twisted and doubled flat skin graft." Stomatologiia no. 4 1952

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KLITSA, B., red.; SKVORTSOVA, L., tekhn.red.

[For technological progress in industry] Za tekhnicheskii progress v promyshlennosti. Kostroma, Kostromskoe knizhnoe izd-vo, 1960. 85 p. (MIRA 14:1)
(Kostroma--Industries) (Technological innovations)

SOKOLOV, Konstantin Nikolayevich; KLITSA, B., red.; SKVORTSOVA, L., tekhn. red.

[Masters of biological desiccation] Mastera biologicheskoi sushki. Kostroma, Kostromskoe knizhnoe izd-vo, 1960. 25 p. (MIRA 14:10)
(Lumber--Drying)

DVORNIKOV, Makar Matveyevich; KLITSA, B., red.

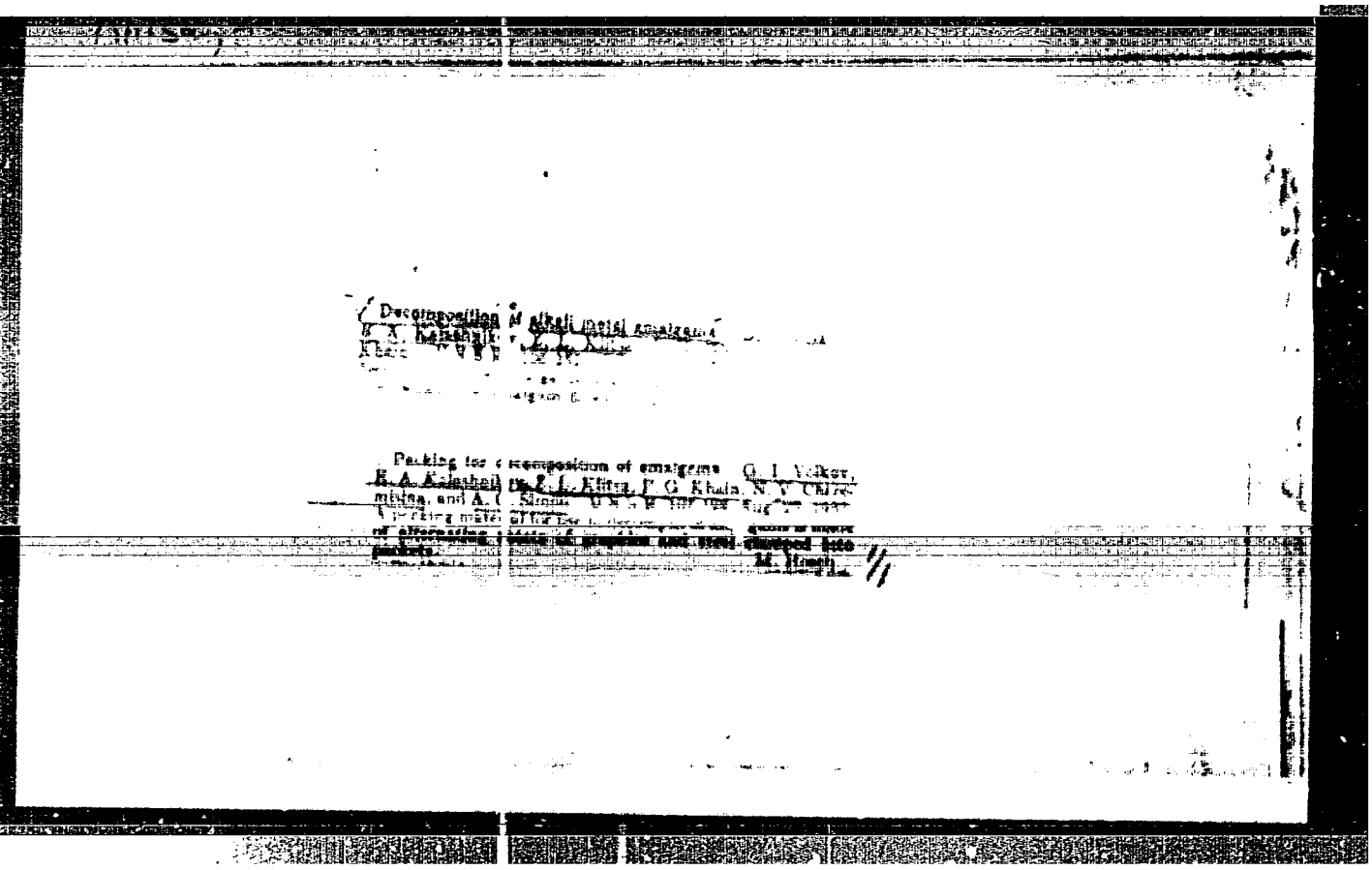
[Mechanization of free floating drive; from practices of the Makar'ev Floating Station] Mekhanizatsiia solevogo splava; iz opyta Makar'evskoi splavnoi kontroy. [n.p.] Kostromskoe knizhnoe izd-vo, 1963. 38 p. (MIRA 18:9)

KLITSA, Z.L.

Metallurgical Abst.
Vol. 21 May 1954
Electrometallurgy and Electrochemistry

*Rate of Decomposition of Sodium Amalgam in Alkaline Solutions. G. I. Volkov and Z. L. Klitsa (Zhur. Prikhad. Khim., 1952, 25, (2), 154-159 [illegible]; J. Appl. Chem. U.S.S.R., 1952, 25, (2), 163-167, 253 (in English)).—The rate of decompn. was determined by measuring the current flowing in a short-circuited graphite/amalgam cell, by a compensation method. The alkali soln. was prepared by diluting 50% NaOH obtained by electrolysis of NaCl with a Hg cathode. Values of c.d. for a 0·1% Na amalgam in NaOH soln. (44-75%) at 30°-90° C. and for 0·1% Na amalgam in soln. conc. from 46% (at 30° C.) to 91·6% NaOH (at 300° C.) are tabulated. Difficulty was experienced in obtaining reproducible results, because of the sensitivity of the graphite electrode to contamination. The results are discussed in terms of the operating conditions of amalgam-decomposing cells.—G. V. E. T.

9-9-54



KLITSA, Z. L.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry: Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodeposition and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Krapshak, O.S., and V.V. Stender (Dnepropetrovsk Institute of Chemical Technology imeni F.E. Dzerzhinskiy). Polarization of Graphite Electrodes During the Anodic Separation of Chlorine 823

Buyanova, V. Ye., and G.A. Tsyganov (Institute of Chemistry, Academy of Sciences, UzSSR). Hydrogen Overvoltage at Electrodes With Homogeneous Surface 827

Rakov, A.A., [illegible], and E.V. Kasatkin (Physicochemical Institute imeni L. Ya. Karpov). Mechanism of the Simultaneous Electrochemical Formation of Persulfuric Acid, Ozone and Oxygen at a Platinum Anode in Sulfuric Acid Solutions 834

Volkov, G.I., Z. L. Klitsa, Ye. K. Suvorova and N. V. Cheramisina. Influence of Surface-Active Substances on the Rate of Decomposition of Sodium Amalgams 841

Il'in, G. G., and V.L. Skripchenko (Novocherkassk Polytechnic

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Transactions of the Fourth Conference (Cont.) SOV/2216

Institute imeni S. Ordzhonikidze). Influence of the Nature of an Electrolytic Cation on the Anode Process During the Electrolysis of Alkaline and Alkaline-Earth-Metal Chloride Solutions 845

Voronin, N.N. (Deceased), D. G. Prikhodchenko, A.A. Yedigaryan, G. V. Irbeeva, I. G. Pavlenko, Ye. Kh. Ignatenko, and Z.V. Trusova (Kiyev Polytechnic Institute). Electrolytic Reduction of Oxygen at Porous Cathodes 849

Discussion (N. A. Fedotov, R.I. Kaganovich, Ye. M. Kuchinskiy, G.N. Kokhanov, and contributing authors) 856

AVAILABLE: Library of Congress

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KLITSENKO, N. T.

KLITSENKO, N. T. -- "The Effect of Salt (NaCl) Nutrition on the Metabolism and Productivity of Dairy Cows." Min Higher Education Ukrainian SSR. Ukrainian Order of Labor Red Banner Agricultural Academy. Kiev, 1955. (Dissertation for the Degree of Candidate in Agricultural Sciences)

SO: Knizhnaya Letopis', No 1, 1956

KOLONIY, Vladimir Panteleymonovich, kand.biolog.nauk; KLITSENKO, O.T. [Klytsenko, H.T.], otv.red.; GURENKO, V.A. [Hurenko, V.A.], red.

[Ways of increasing livestock production; practices of the "Pamiat' Lenina" Collective Farm, Cherkassy District, Cherkassy Province] Na shliakhu zbil'shennia vyrobnytstva produktiv tvarynnytstva; z dosvidu kolhospu "Pam'iati Lenina" Cherkas'koho raionu Cherkas'koi oblasti. Kyiv, 1960. 39 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.6, no.5). (MIRA 13:6)

(Cherkassy District--Stock and stockbreeding)

KLITSENKO, O.T. [Klitsenko, H.T.], kand.sel'skokhozyaystvennykh nauk

Preparation of coarse fodder. Nauka i zhyttia 10 no.1: 21-23 Ja '60. (MIRA 13:6)
(Feeds)

KLITSENKO, I.I.; POPOV, V.P.

Saturation irrigation of crops. Visnyk AN URSR 24 no.10: 61-62 O '52. (MLRA 9:9)

(Irrigation)

KLITSENKO, S.

Klitsenko, S. Feeding pigs with corn, Tr. from the Russian. p. 28.

Vol. 10, no. 10, Oct. 1955 KOOPERATIVNO ZEMEDELIE Sofiya, Bulgaria

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 2 February, 1956

KLITSENKO, S. T.

Klitsenko, S. T. "The preparation and use of corbined corn silage in raising and fattening pigs." Min Higher Education Ukrainian SSR. Khar'kov Zootechnical Inst. Khar'kov, 1956. (Dissertation for the Degree of Candidate in Agricultural Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow, Pages 94-109; 111.

USSR/Farm Animals. The Swine Q-4

Abs Jour : Ref Zhur - Biol., No 11, 1958, No 50058

Author : Klitsenko S.T.
Inst : [redacted]
Title : The Significance of Combined Silage Fodder for Raising and Fattening of Pigs.

Orig Pub : Zhivotnovodstvo, 1957, No 5, 50-52

Abstract : The 1st group of young sows was fed silage containing 50 percent of milky-waxy corn ears, 30 percent of boiled potatoes, 15 percent of squash, and up to 5 percent of alfalfa chaff. The 2nd group received 40 percent of corn silage (stalks and ears) and 60 percent of squash. The 3rd (control) group was given the usual ration, i.e., standard ration for the given farm. During the fattening period, the weight gains which were achieved until meaty and sonifat conditions were reached in the animals, amounted to 521, 511, and 526 kg per each of the 3 groups, respectively. Digestibility coefficients for each of the 3 groups were as follows:

Card : 1/2

Card : 2/2

KLITSENKO S. T.

COUNTRY : USSR
CATEGORY : Cultivated Plants - Forage Crops. M

ABS. JOUR. : RZhBiol., No.14, 1958, No.63466

AUTHOR : Gorb, T. V., Klitsenko, S. T.
INST. : Kharkov Zootechnical Institute
TITLE : Yields, Chemical Composition and Food Value of Corn During Different Stages of Vegetation.

ORIG. PUB. : Sb. tr. Khar'kovsk. zootekhn. in-ta, 9, 43-56 1957

ABSTRACT : In 1956, productivity, dynamics of the chemical composition and the food value of the corn variety Khar'kovskaya 23 were studied during different stages of vegetation. During the stage of the emergence of the tassels, 246 c of raw mass and 30 c of dry matter were secured from 1 ha; at the stage of wax ripeness - 325 and 95 c respectively. Corn contains the highest amount of food units and digestible protein in the period of the full ripeness of the kernel. Carotene is concentrated chiefly in the leaves of corn; vitamin C - in the leaves and stems. The amount of carotene

Card: 1/2

COUNTRY : USSR
CATEGORY : Cultivated Plants - Forage Crops. M

ABS. JOUR. : RZhBiol., No.14, 1958, No.63466

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : in corn in the period of full ripeness of the kernels is 3/11 of the amount at wax-stage of maturity. With the preparation of corn for silage at wax-stage, more nutrients are obtained than at the milk-stage of ripeness. -- Yo. A. Osorokova

Card: 2/2

KLITSKAYA, N.A.

Parovarian cysts. Sovet. med. 27 no.9:97-100 S'63
(MIRA 17:2)

1. Iz ginekologicheskoy kliniki (zav. - kand. med. nauk M.S. TSirul'nikov) Moskovskogo nauchno-issledovatel'skogo instituta skoroy pomoshchi imeni N.V.Sklifosovskogo (dir. - zasluzhennyy vrach UkrSSR M.M.Tarasov).

KLITSUNOV, V.I., inzhener.

Practical training of electromechanical engineers. Vysop.trudy v prom. 1 no.7:11-12 Jl '57. (MIRA 10:7)
(Electrical engineering--Study and teaching)

KLITSUNOV, V.I., insh.

Cranes at exhibitions in Moscow. Bezop. truda v prom. 1 no.12:19-21 D '57. (MIRA 12:3)
(Moscow--Cranes, derricks, etc.--Exhibitions)

KAPELYUSHNIKOV, O.I., insh.; KLITSUNOV, V.I., insh.

Injuries caused by electric current and measures for their prevention. Bezop.truda v prom. 3 no.5:4-7 My '59.
(MIRA 12:8)
(Electricity in mining--Safety measures)

KLITSUNOV, V.I., inzh.

Achievements of the foremost mine in the Moscow Basin. Bezop. trudy v prom. 2 no. 6:25-27 Je '58. (MIRA 11:7)
(Moscow Basin--Coal mines and mining--Safety measures)

DOLOTOV, N.P., insh.; ZASIAVSKIY, P.M., insh.; KLITSUNOV, V.I., insh.

Observe safety requirements in designing machines and mechanisms.
Bezop. truda v prom. 2 no.7:15-16 Jl '58. (MIRA 11:9)
(Coal mining machinery)

KAPELYUSHNIKOV, German Isaakovich; KLITSUNOV, Viktor Ignat'yevich; MIRSKAYA, V.V., red.izd-va; SHKLYAR, S.Ya., tekhn.red.; BOLDYREVA, Z.A., tekhn.red.

[Safety in the use of electricity in mining] Bezopasnoe primenenie elektricheskoi energii v shakhte. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 50 p. (MIRA 14:2)

(Electricity in mining--Safety measures)

TYURKYAN, Raffi Armenakovich; GORLOV, Petr Ivanovich; ZORI, Anatoliy Stefanovich; AFONCHENKO, Vladimir Vasil'yevich; KLITSUNOV, V.I., otv. red.; CHECHKOV, L.V., red. izd-va; LOMILINA, L.N., tekhn. red.; IL'INSKAYA, G.M., tekhn. red.

[Information for worker on vertical shafts, shaft bottoms, and chambers] Pamiatka prokhodchika vertikal'nykh stvolov, okolostvol'nykh dvorov i kamer. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. 71 p. (MIRA 14:7)
(Shaft sinking)

KLITSUNOV, V.I., inzh.

Valuable initiative of Alekseĭ Kalinin's brigade. Bezop. truda v prom. 4 no.3:23-25 '60. (MIRA 13:6)
(Kuznetsk Basin--Coal mines and mining--Safety measures)

KAPELYUSHNIKOV, O.I., inzh.; KLITSUNOV, V.I.

Measures for preventing underground fires caused by electricity.
Bezop.truda. v prom. 4 no.6:4-6 Je '60. (MIRA 14:3)
(Electricity in mining--Safety measures)

KLITSUNOV, V.I., inzh.

Technological development in Altai mines. Bezop.truda v prom. 4 no.7:26-28 Jl '60. (MIRA 13:8)
(Altai Mountains--Mining engineering)

KLITSUNOV, V.I., inzh.

Conference on preventing coal and gas outbursts in mines. Bezop. truda v prom. 5 no. 2:36-38 F '61. (MIRA 14:2)
(Mine accidents--Safety measures--Congresses)

KLITSUNOV, V.I., inzh.

Sanitary and safe working conditions for miners. Bezop.truda v prom.5 no.3:36 Mr '61. (MIRA 14:3)
(Mine sanitation)
(Mining engineering--Safety measures)

BREGADZE, T.V., inzh.; KLITSUNOV, V.I., inzh.

Increase the responsibility for safe working conditions for miners.
Bezop.truda v prom. 5 no.9:13-14 S '61. (MIRA 14:10)
(Mining engineering--Safety measures)

KLITSUNOV, V.I., inzh.

Activity of a regional office of the State Mine Inspection.
Bezop.truda v prom. 6 no.2:24-26 F '62. (MIRA 15:2)
(Kuznetsk Basin—Mine inspection)

KAPELYUSHNIKOV, German Isaakovich; KLITSUNOV, Viktor Igant'yevich; MANEVICH, Veniamin Fayvovich; PANKRATOV, Yu.A., inzh., retsenzent; ZASADYCH, B.I., retsenzent; FEDOTOV, A.N., otv. red.; OKHRIMENKO, V.A., red. izd-va; IL'INSKAYA, G.M., tekhn. red.

[Safety measures in underground coal mining] Tekhnika bezopasnosti pri podzemnoi dobyche uglia. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962. 503 p. (MIRA 15:4)

(Coal mines and mining—Safety measures)
(Coal miners—Diseases and hygiene)

KLITSUNOV, V.I., inzh.

Results of the increase of responsibility for labor safety. Bezop.truda v prom. 6 no.8:11-12 Ag '62. (MIRA 16:4)
(Vorkuta Basin—Coal mines and mining—Safety measures)

LABOS, E.; SALANKI, J.; KLIUYNA, Galina R.

The effect of cholinotropic drugs on the rhythmic activity of glochidia of fresh-water mussel (Anodonta cygnea L.). Acta biol. Acad. sci. Hung. 15 no.2:119-128 '64

1. Biological Research Institute of the Hungarian Academy of Sciences, Tihany (Head: J. Salanki), and Institute of Physiology, Medical University, Debrecen (Head: St. Went [deceased]).

KLIVANSKAYA, A. A.

25983. Klivenskaya, A. A. O yachmene. Fel'dsher i akusherka, 1949, No 7, s. 52-53

TB Clinic, Inst Pediatrics, AMS USSR

SO: Knizhnaya Letopis', Vol. 1, 1955

KLIVANSKAYA, A. A.

27381. KLIVANSKAYA, A. A. Kak udalit' inorodnoye telo iz glazafel'dsher i akusherka, 1949, No. 8, s. 44-46. EYEBERG, T. E. Nervnaya sistema v patogeneze tuberkuleza.--- Sm. 27368

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

KLIVANSKAYA, A.A.

25983

O yachmyenye. Fyel'dshyer i akushyerka, 1949, No. 7, c. 52-53.

19 Nyevrologiya

Psikhiatriya

So: Letopis' No. 34

KLIVANSKAYA, A. A.

New method of treatment of gonorrheal ophthalmia. Feldsher & akush. no. 8:29-31 Aug. 1950. (CLML 20:1)

1. Candidate Medical Sciences.

KLIVANSKAYA, A. A.

Toxic effect of sulfonamides on the eye. Vest. oft., Moskva 30 no. 4:32-35 July-Aug 1951. (CLML 21:3)

1. Candidate Medical Sciences. 2. Of the Eye Room of the Central Polyclinic of the Administration for Economic Therapeutic Institutions (Head Physician -- N. N. Prokimnov).

1. KLIVANSKAYA, A.A.

2. USSR (600)

4. Eyelids - Inflammation

7. Blepharitis and its therapy. Fel'd. i akush no. 6, 1952. Kandidat Meditsinskikh Nauk.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, UNCLASSIFIED

KLIVANSKAYA, A.A.

Conjunctivitis, Granular

Etiology and clinical aspects of trachoma. Fel'd. i akush., No. 7, '52.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED

KLIVANSKAYA, A.A.

Conjunctivitis, Granular

Therapy and prevention of trachoma. Fel'd. i akush, No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED

KLIVANSKAYA A. A.

Use of Aloe in Eye Treatment," A. A. Klivanskaya, Cand Med Sci

"Tel'deber i Akusher" No 11, pp 55, 56

Aloe is now used in the treatment of incipient cataract and the usual treatment for trachoma and glaucoma is supplemented with injections of this extract. For various infections of the eye, it is used in combination with other animal and plant tissues. Aloe injections stimulate the human organism raising its defensive power to combat malignant diseases which affect the whole organism or any part

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of it. Aloe extract and other biogenic stimulants have been widely used both in external application and in the treatment of the inner membrane of the eye. Aloe also has been used in the treatment of recurrent ties, persistent blepharitis, various degrees of dimness of cornea, and severe forms of atrophy. Even diseases such as atrophy of optic nerve, which do not easily yield to treatment, respond well in some cases to biogenic stimulants.

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1. KLIVANSKAYA, A. A.

2. USSR (600)

4. Eye - Diseases and Defects

7. Effect of sugar upon eye diseases in children. Fel'd. i akush. No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

KLIVANSKAYA, A.A., kandidat meditsinskikh nauk

Treatment and prophylaxis of conjunctivitis in agricultural workers. Med.sestra 15 no.4:9-10 Ap '56. (MLRA 9:7)
(CONJUNCTIVITIS)
(AGRICULTURAL LABORERS--DISEASES AND HYGIENE)

KLIVANSKAYA-KROL', Ye. S. (Prof.)

"Stomach and Duodenum Ulcers in Children," Sov. Med., No.1, 1948

Clinic of Children's Diseases, Med. Faculty, Sverilovsk Med. Inst.

KLIVAROVA, E., MUDr., CSc.

Methods of determination of scientifically justified staffing requirements of the hygiene service at the district level. Cesk. zdrav. 13 no.7/8:354-361 Ag '65.

1. Vyzkumny ustav organizace zdravotnictvi v Praze.

Country : Hungary B-8
Category= : Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical Analysis. Phase Transitions.
Abs. Jour. : Ref Zhur-Khimiya, No 6, 1959 18459

Author : Grasselly, Gy.; Klivenyi, E.
Institut. :
Title : Concerning the Thermal Properties of the Manganese Oxides of Higher Valencies

Orig. Pub. : Acta mineral.-petrogr. Szeged, 1956, 9, 15-32

Abstract : Study of behavior of manganese oxides on heating in presence of air, for 3 hours, in temperature range 460°-1050°. Temperature dependence curves of Mn:O ratio in oxides were obtained for pure synthetic MnO_2 (I), Mn_2O_3 (II), Mn_3O_4 (III), and mixtures I + II, I + III, II + III, with initial component ratios 1:3, 1:1, 3:1, and of I + II + III, with initial component ratios 5:3:2, 2:1:2, 2:3:5. By the oxalate method a determination was made, with an accuracy of ± 0.2%, of the amount of active oxygen in the mixtures, after heating. Average composition of mixtures after calcining: at 460° $MnO_{2.992}$; at 700° Mn_2O_3; at 1050° $Mn_3O_{4.008}$. III in mixtures

Card: 1/2

Country : Hungary B-8
Category : Thermodynamics. Thermochemistry. Equilibria.

Abs. Jour. : Ref Zhur-Khimiya, No 6, 1959 18459

Author :
Institut. :
Title :

Orig Pub. :

Abstract : with I or II, or in the presence of both components, is completely oxidized to homogenous II in the interval 560-880°, which is confirmed by chemical and by X-ray analyses. -- I. Sokolova.

Card: 2/2

KLIVENYI, E.

2-7

Stability of Mn_3O_4. Gy. Grasselly and E. Klivenyi (Univ. Szeged, Hung.). *Acta Univ. Szegediensis, Acta Mineral.-Petrog.* 9, 33-40(1950)(in English).—A mixt. of Mn oxides is completely changed to Mn_2O_3 at 800°, or to Mn_3O_4 above 940°. The change from Mn_3O_4 to Mn_2O_3 is possible only when O is available from the atm., and does not occur if a mixt. of MnO and Mn_3O_4 is heated in N. A procedure is described for detg. the compn. of a mixt. of Mn oxides by thermal analysis. Walter R. Averett

4

1/1

HUNGARY / Cosmochemistry; Geochemistry. Hydro- D
chemistry;

Abs Jour: Ref Zhur-Khimiya, No 8, 1959, 26872.

Author : Grasselly, O. and Klivanyi, E.
Inst : Not given.
Title : A Method for Determining the Mineral Composition of Sedimentary Manganese Oxide Ores on the Basis of Their Thermal Properties.

Orig Pub: Acta Miner.-Petrog. Szeged, 10, 33-46 (1957) (in English).

Abstract: The earlier developed method for the analysis of the system MnO -Mn O -Mn O (RZhKhim, 1959, 26814) is applied to the determination of the mineral composition of 12 specimens from various Hungarian deposits containing pyrolusite (I), manganite (II), and psilomelane (III). Thermal analysis has shown

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Country :
Category :

G

Abs. Jour : Ref Zhur - Khim., No 5, 1959, No. 15363

Author :
Institut. :
Title :

Orig. Pub. :

Abstract cont'd. : of isoeugenol (IV), of 4-ethoxy-3-benzyloxypropenylbenzene (V) and of 3,4-diethoxypropenylbenzene (VI) was shown. In the course of the investigation, it was proved that partial debenzylation of I and subsequent methylation lead not to dimethoxybenzyloxyphenylenedane (see Baker, W. et al., J. Chem. Soc., 1952, 4310), but to monomethoxytribenzyloxyphenylenedane. 3.3 g. of I in 60 ml. of CH_3OH are hydrogenated over 0.3 g. of Pd/C, filtered in

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G - 32

VINKLER, Elmer (Szeged, Beloiannisz ter 9, Hungary); KLIVENYI, Elmer (Szeged, Beloiannisz ter 9, Hungary)

Antimicrobial activity of aromatic thiolsulphonates and thiolsulphinates. Acta biol. Hung 12 no.2:121, 126 '61.

1. Institute for Plant Physiology, University of Szeged (Head: I. Szalai) and Institute for Pharmaceutical Chemistry, Medical University, Szeged (Head: D. Rosszegi).

FERENCZY, Lajos (Szeged (428), Hungary.); ZSOLT, Janos (Szeged (428), Hungary.); VINKLER, Elemer (Szeged, Beloiannisz ter 9, Hungary.); KLIVENYI, Elemer (Szeged, Beloiannisz ter 9, Hungary.)

Antimicrobial activity of aromatic thiolsulphonates and thiolsulphinates. Acta biol Hung 12 no.2:121-126 '61.

1. Institute for Plant Physiology, University of Szeged (Head: I. Szalai) and Institute for Pharmaceutical Chemistry, Medical University, Szeged (Head: D. Koszegi).

*

KLIVENYI, FERENC

The bimolecular reduction of benzenesulfonyl chloride as a mechanism for thiophenol formation. I. Elemér Vinkler and Ferenc Klivényi (Univ. Szeged). *Acta Chim. Acad. Sci. Hung.* 1, 211-26(1951)(in German).—$PhSO_2Cl$ (I) (14.12 g.), 100 ml. Et_2O, and 11.4 g. Zn dust (68.75% pure Zn in all cases), treated in 45 min. with 80 ml. concd. HCl with stirring, the mixt. stirred and refluxed until the Zn disappeared, the Et_2O phase sepd., washed with Na_2CO_3 soln. and H_2O, dried, and the Et_2O evapd., gave 8.0 g. (80%) cryst. $PhSO_2SPh$ (II), needles (from MeOH-H_2O), m. 35-40°. Similarly, 1.7 g. $PhSO_2H$, 30 ml. Et_2O, 0.86 g. Zn dust, and 10 ml. concd. HCl gave 0.4 g. crude II. I (17.6 g.) added dropwise with stirring to 25.7 ml. concd. H_2SO_4 and 143 g. crushed ice below −5°, the mixt. treated gradually with 23.75 g. Zn dust below 0°, stirred 1 hr. more, warmed gradually to room temp., heated to boiling, refluxed 30 min. till the Zn disappeared, some PhSH steam distd., the residue extd. with C_6H_6, the ext. washed with H_2O dried, and the C_6H_6 evapd. gave 9.4 g. (84.4%) Ph_2S_2 (III), m. and mixed m.p. 60-1° (from MeOH). II (3.0 g.), 60 ml. MeOH, and 1.53 g. Zn dust, treated with 11 ml. concd. HCl at 0° with stirring, the mixt. gradually heated to boiling, refluxed until the Zn disappeared, steam distd., and worked up as above gave 1.7 g. III. According to the method of Schiller and Otto [*Ber.* 9, 1638(1876)], 1.7 g. $PhSO_2H$ and 1.66 g. PhSH refluxed 30 min. with stirring with 6.4 ml. concd. H_2SO_4 in 35 ml. H_2O, the unreacted PhSH steam distd., the residue extd. with C_6H_6, the ext. dried, and the C_6H_6 evapd. gave 1.0 g. (45%) crude III. The reduction of I is postulated to go through the steps I → $PhSO_2H$ → II → III → PhSH.

Richard L. Akawie

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Klivenyi, F.

Determination by a chemical method of the structure of aromatic thiosulfonic esters. I. E. Vinkler and F. Klivényi (Univ. Szeged). *Acta Chim. Acad. Sci. Hung.* ... 1954 (in German)(English summary).—Decision between the structures $RS(O_2)SR'$ (I) and $RS(O)OSR'$ (II) (R and R' both aromatic) for thiosulfonic esters has not previously been made by chem. methods, and only recently by infrared spectroscopy (Cymerman and Willis, *C.A.* 45, 8354e). Repetition of earlier reductions by HI and $NaHSO_3$ (Miller and Smiles, *C.A.* 19, 1133; Hinsberg, *C.A.* 3, 650) in general substantiated the previous results. Similar addnl. reductions were carried out on I (or II) (R = R' = p-ClC_6H_4) and (R = p-ClC_6H_4, R' = Ph) to give likewise p-$ClC_6H_4SO_2H$ and $(PhS)_2$. Since the mol. was split in all such reductions, no decision between I and II was yet possible. By using Zn and HCl (*C.A.* 40, 2346i) in amts. equiv. to 2 and 4 H g.-atoms per mole I, resp., decision might finally be made. The given wt. of I was dissolved in 80 ml. Et_2O, the Zn dust added, the fuming HCl dropped in during 10-20 min. under stirring and ice-cooling, the mixt. refluxed until all Zn had dissolved, cooled, the Et_2O layer (A) washed with 1% NH_4OH, the alk. soln. acidified with concd. HCl, and 3 g. $FeCl_3$ added to give the orange-red $Fe(O_2SR)_3$ (III), identified by Hinsberg's reduction method (loc. cit.). The filtrate from III was washed with Et_2O and the dried Et_2O layer evapd. to leave the RSH. A was washed repeatedly with H_2O, dried over $CaCl_2$, and the Et_2O evapd. to leave the oily $(RS)_2$. All products were identified by mixed m.p. with authentic samples. R, R', wt. used (g.), g.-atoms H per mole I, duration of reaction (min.), g. Zn, ml. HCl, products, yield (g.), and m.p. are given: Ph, Ph, 1.25, 2, 30, 0.66, 5, $PhS(O_2)SPh$, 0.5, 44° and $(PhS)_2$, 0.42, 60°; Ph, Ph, 1.25, 4, 45, 1.33, 5, $(PhS)_2$, 0.9; p-MeC_6H_4, p-MeC_6H_4, 1.39, 4, 45, 1.59, 5, $(p$-$MeC_6H_4S)_2$, 0.9, 46°; p-$MeOC_6H_4$, p-$MeOC_6H_4$, 1.5, 4, 30, 0.53, 10, $(p$-$MeOC_6H_4S)_2$, 1.2, 40°; 1-$C_{10}H_7$, 1-$C_{10}H_7$, 1.75, 4, 45, 1.4, 10, (1-$C_{10}H_7S)_2$, 1.4, 85°; p-ClC_6H_4, p-ClC_6H_4, 1.6, 4, 30, 0.53, 5, $(p$-$ClC_6H_4S)_2$, 1.2, 70° and p-$ClC_6H_4SO_2H$, 0.19, 93°; (IV) Ph, p-MeC_6H_4, 1.33, 2, 30, 0.42, 5, $PhSO_2H$, 0.15, 80° and unchanged IV, 0.75, 82° and p-MeC_6H_4SH, 0.2; (V) p-ClC_6H_4, Ph, 2.5, 2, 30, 1.59, 10, p-$ClC_6H_4SO_2H$, 0.5, 93° and $(PhS)_2$, 0.4 and V, 0.6, 80° and PhSH, 0.2; Ph, o-MeC_6H_4, 4, 4, 45, 4.85, 10, $(o$-$MeC_6H_4S)_2$, 2, 35° and o-MeC_6H_4SH, 0.5 and $PhSO_2H$, 1.2; o-MeC_6H_4, Ph, 2.64, 4, 30, 3.19, 10, o-$MeC_6H_4SO_2H$, 0.6, 64° and $(PhS)_2$, 0.7; Ph, p-MeC_6H_4, 2.64, 4, 30, 3.19, 10, $PhSO_2H$, 0.1 and $(p$-$MeC_6H_4S)_2$, 1.7, 44° and p-MeC_6H_4SH, 0.7; p-MeC_6H_4, Ph, 2.64, 4, 30, 3.19, 10, p-$MeC_6H_4SO_2H$, 0.2, 80°, and $(PhS)_2$, 0.7 and PhSH, 0.7; Ph, p-ClC_6H_4, 2.84, 4, 20, 3.19, 15, $(p$-$ClC_6H_4S)_2$, 1.1, 71° and $PhSO_2H$, trace; p-ClC_6H_4, Ph, 2.84, 4, 30, 3.19, 15, p-$ClC_6H_4SO_2H$, 0.2, 93° and $(PhS)_2$, 0.85; p-MeC_6H_4, o-MeC_6H_4, 2.78, 4, 30, 3.19, 15, p-$MeC_6H_4SO_2H$, 0.22, and $(o$-$MeC_6H_4S)_2$, 0.95; IV, 1.32, 2, 120, 0.42, 5, $PhSO_2H$, 0.09 and $(p$-$MeC_6H_4S)_2$, 0.9 and IV, 0.3. The preceding I (R ≠ R')

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Production of aromatic thiosulphonic esters and disulphides by
bimolecular reduction of sulphochlorides. E. Vinkler and F. Klivényi
(Acta chim. hung., 1954, 5, 159—168).—The equations, 2 R·SO₂Cl +
3 Zn + 4HCl → R·SO₂SR + 3ZnCl₂ + 2H₂O, and 2R·SO₂Cl + 5Zn +
8HCl → RS·SR + 5ZnCl₂ + 4H₂O, appear to be general expressions
for the conversion of aromatic sulphonyl chlorides into aromatic
thiosulphonic esters and disulphides respectively. Fuming HCl
(d 1·19) is added gradually to a stirred mixture of p-C₆H₄Me·SO₂Cl
and Zn dust at 0° which is then warmed until dissolution of the
metal is complete. The ethereal layer is freed from sulphonic
acid, dried and distilled giving p-tolyl p-toluenethiosulphonate,
m.p. 96—97°, in 87% yield. The following compounds are prepared
similarly: p-tolyl p-toluenethiosulphonate, m.p. 76—77°, p-
methoxyphenyl p-methoxybenzenethiosulphonate, C₁₄H₁₄O₄S₂, m.p.
86—88°, 3 : 4-dimethoxyphenyl 3 : 4-dimethoxybenzenethiosulphon-
ate, C₁₆H₁₈O₆S₂ (73%), m.p. 110—112°, p-acetamidophenyl p-
acetamidobenzenethiosulphonate, m.p. 225° (decomp.), m-carboxy-
phenyl m-carboxybenzenethiosulphonate, C₁₄H₁₀O₆S₂ (78%), m.p.
216—217° (decomp.), p-chlorophenyl p-chlorobenzenethiosulphon-
ate (84%), m.p. 133—134°, 1-naphthyl naphthalene-1-thiosulphon-
ate (100%), m.p. 118—120° (lit., 104—106°). When reaction is
carried out similarly but with use of a larger proportion of Zn the
products are di-o-tolyl (85%), m.p. 36—38°, di-p-tolyl (80%),
m.p. 46—47°, pp'-dimethoxydiphenyl (92%), m.p. 44—45°,
3 : 4 : 3' : 4'-tetramethoxydiphenyl, m.p. 94°, pp'-diacetamido-
diphenyl (76%), forms m.p. 120—121°, and 180—182° respectively,
mm'-dicarboxydiphenyl (100%), m.p. 238—240° (decomp.), pp'-
dichlorodiphenyl (73%), m.p. 70—71°, and di-1-naphthyl disulphide
(100%), m.p. 88—90°.

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Distr: 4E2c (j)/
4E3d

Reactions of sulfuric anhydride. Elemér Vinkler and Ferenc Klivényi (Orvostudományi Egyetem Gyógyszertani Vegyészeti Intézete, Pécs, Hung.). *Magyar Kém. Folyóirat* 60, 95-8(1954).—Using the method of Zincke and Farr (*C.A.* 6, 2937), sulfenic anhydrides were prepd that do not contain NO_2 and CO groups, thus permitting study of their reactions. These compds. have the general formula $(ArS)_2O$, where Ar is *o*-tolyl (I), *p*-anisyl (II), *p*-chlorophenyl (III), or 1-naphthyl (IV). Ether solns. of I and II mixed with fuming HCl at room temp. changed into thiosulfonates, while III and IV remained unchanged. III and IV cannot be reduced by excess Zn and HCl. III may be oxidized by equimolar quantities of H_2O_2-Ac_2O to disulfide. Upon chlorination, III will split into sulfenyl chloride and *p*-chlorobenzenesulfinic acid chloride. I and IV decompd. into sulfoxides and thiols with CH_3MgCl. Lamy Ce, Acyau.