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NAKOV, Tr.

Conditions for a minimal surface. Trud Pedag inst Plovdiv 1 no.1:35-36 '63.

1. Chair of Higher Algebra, Higher Pedagogic Institute, Plovdiv. Head: Assistant Professor T.Vasilev.

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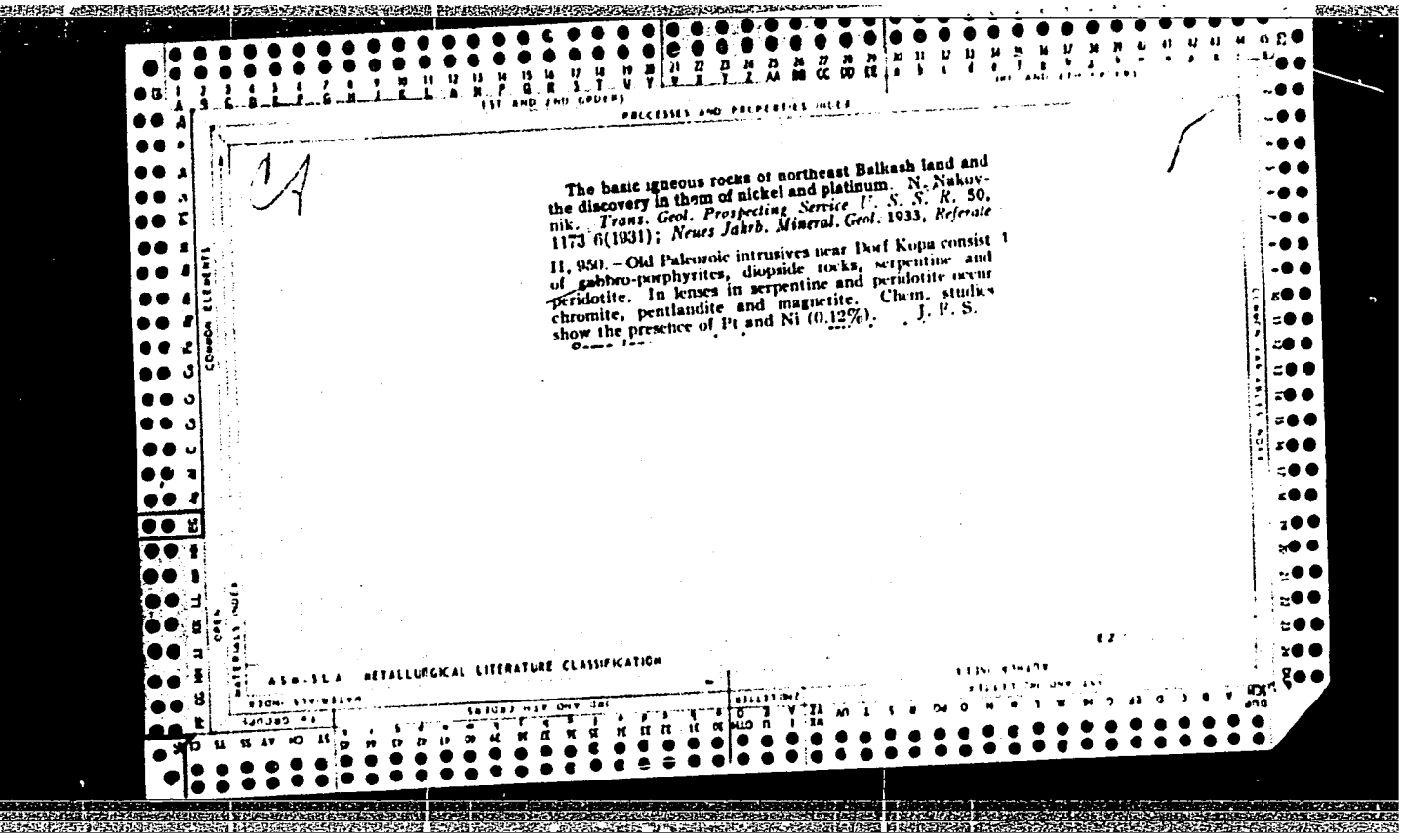

The basic igneous rocks of northeast Balkash land and the discovery in them of nickel and platinum. N. Nakovnik. *Trans. Geol. Prospecting Service U. S. S. R.* 50, 1173 6(1931); *Neues Jahrb. Mineral. Geol.* 1933, *Referate* II, 950. – Old Paleozoic intrusives near Dsof Kopa consist of gabbro-porphyrites, diopside rocks, serpentine and peridotite. In lenses in serpentine and peridotite occur chromite, pentlandite and magnetite. Chem. studies show the presence of Pt and Ni (0.12%). J. P. S.

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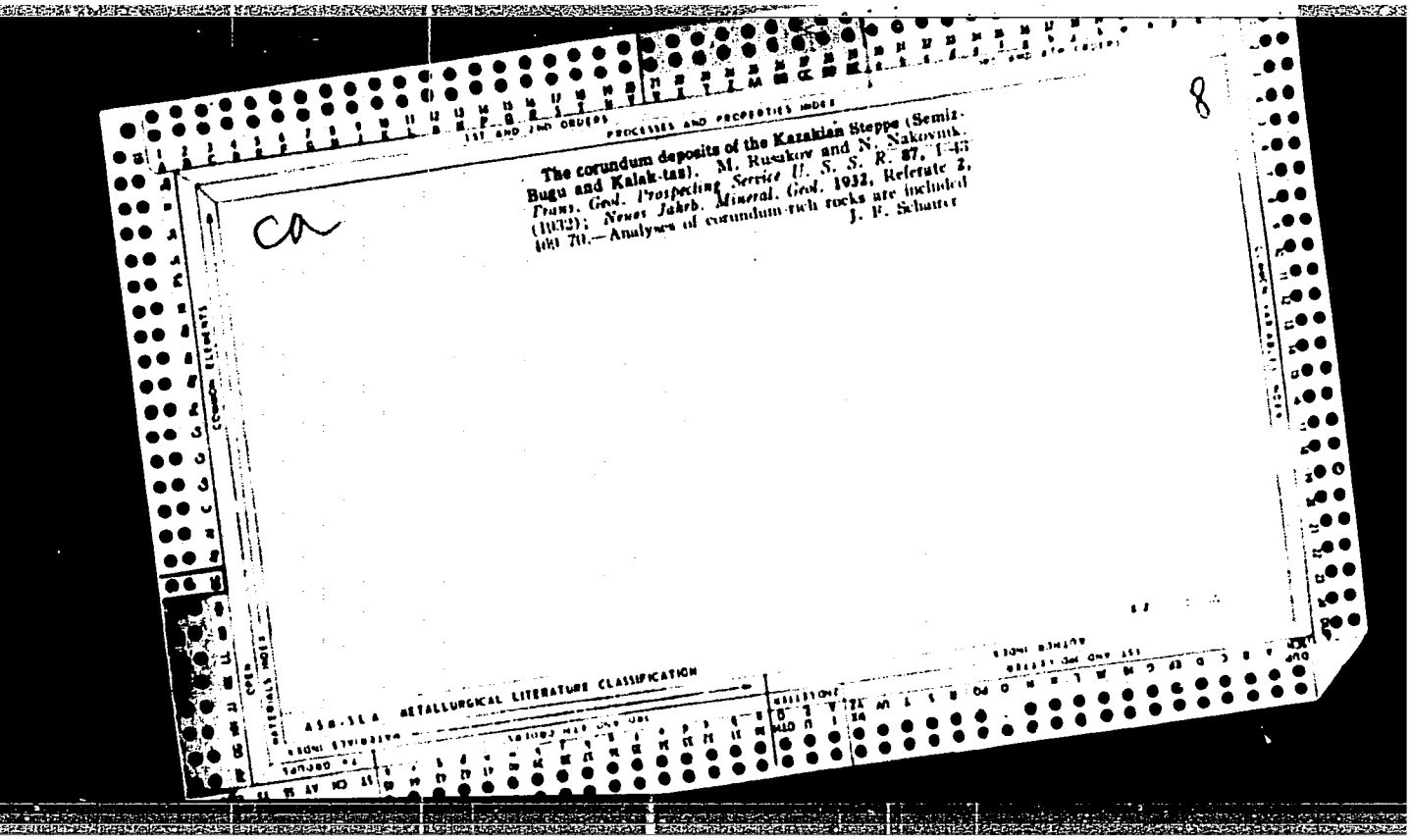

The corundum deposits of the Kazakian Steppe (Semiz-Bugu and Kalak-tau). M. Ruzskov and N. Nakovnik. *Trans. Geol. Prospecting Service U. S. S. R.* **87**, 1–43 (1932); *Neues Jahrb. Mineral. Geol.* 1932, Referate 2, 169–70.—Analyses of corundum-rich rocks are included.
J. F. Schairer

CA

8

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PROCESSES AND PROPERTIES INDEX

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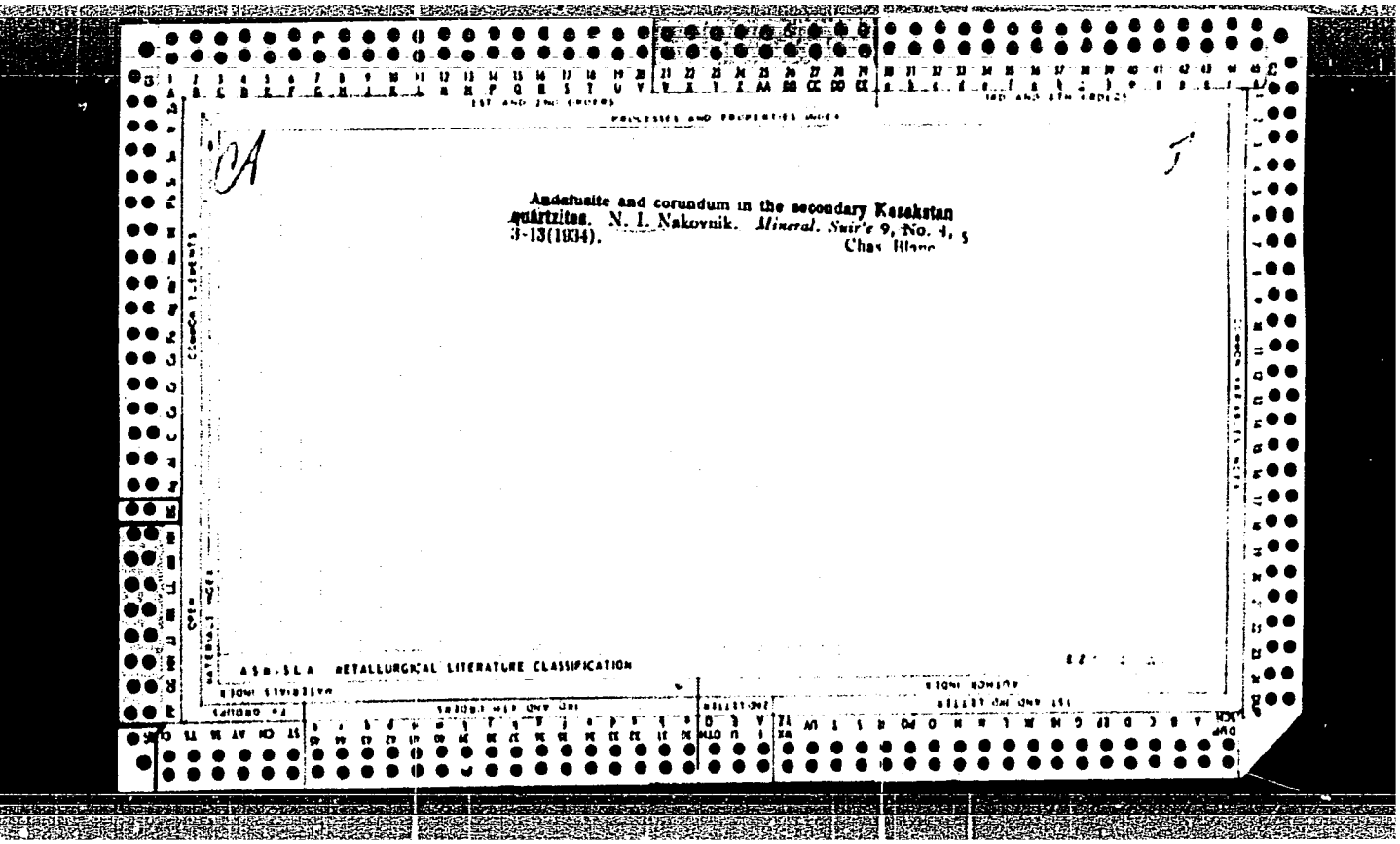

Andalusite and corundum in the secondary Kazakstan quartzites. N. I. Nakovnik. *Mineral. Suir'e* 9, No. 4, 5 3-13(1934).
Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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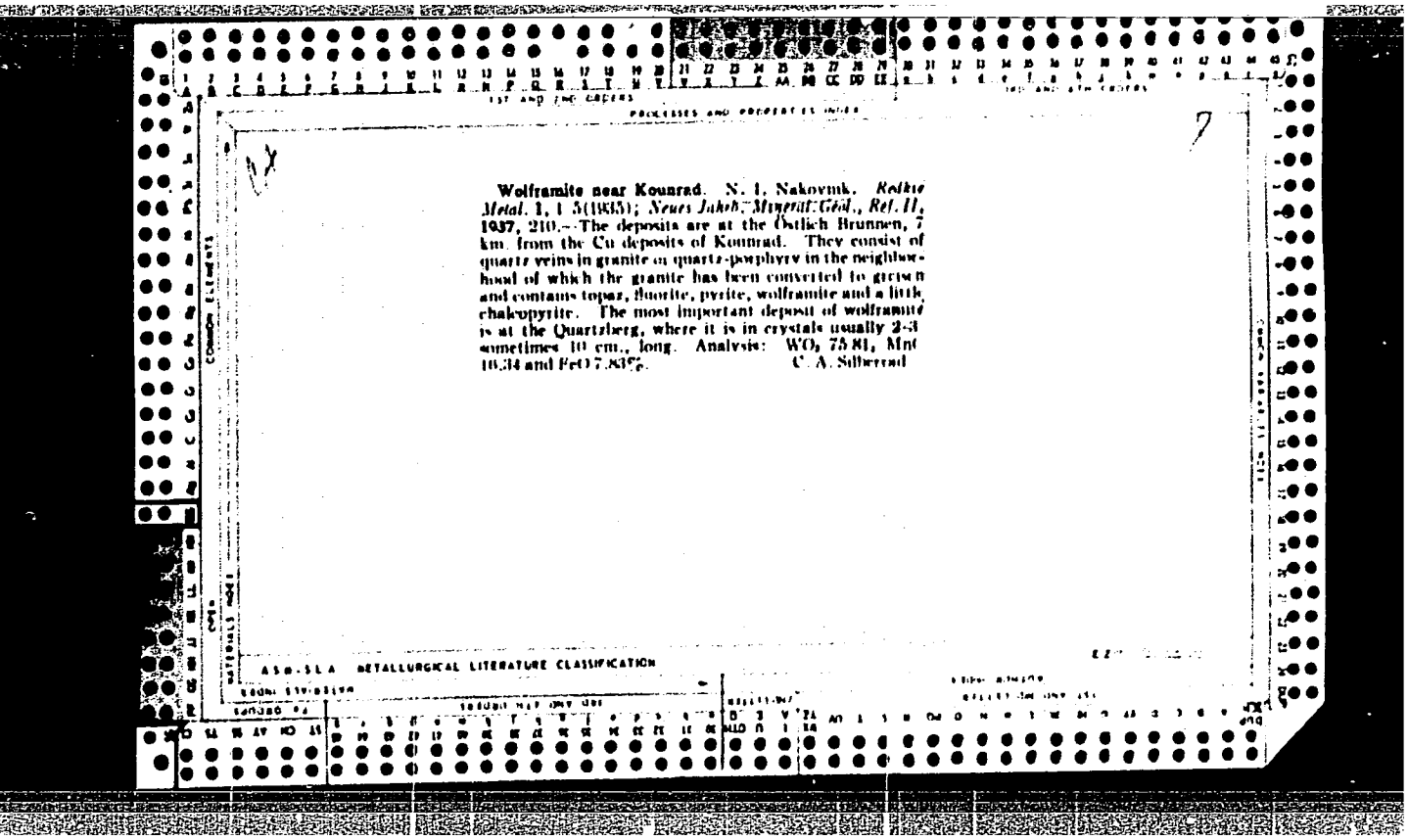

Wolframite near Kounrad. N. I. Nakovnik. *Rolkie Metal.* 1, 1 5(1935); *Neues Jahrb. Mineral. Geol., Ref. II,* 1937, 210.—The deposits are at the Ostlich Brunnen, 7 km. from the Cu deposits of Kounrad. They consist of quartz veins in granite or quartz-porphyry in the neighborhood of which the granite has been converted to greisen and contains topaz, fluorite, pyrite, wolframite and a little chalcopyrite. The most important deposit of wolframite is at the Quartzberg, where it is in crystals usually 2-3 sometimes 10 cm., long. Analysis: WO_3 75.81, MnO 10.34 and FeO 7.83%. C. A. Silberrad

A 5 0 - 5 L A METALLURGICAL LITERATURE CLASSIFICATION

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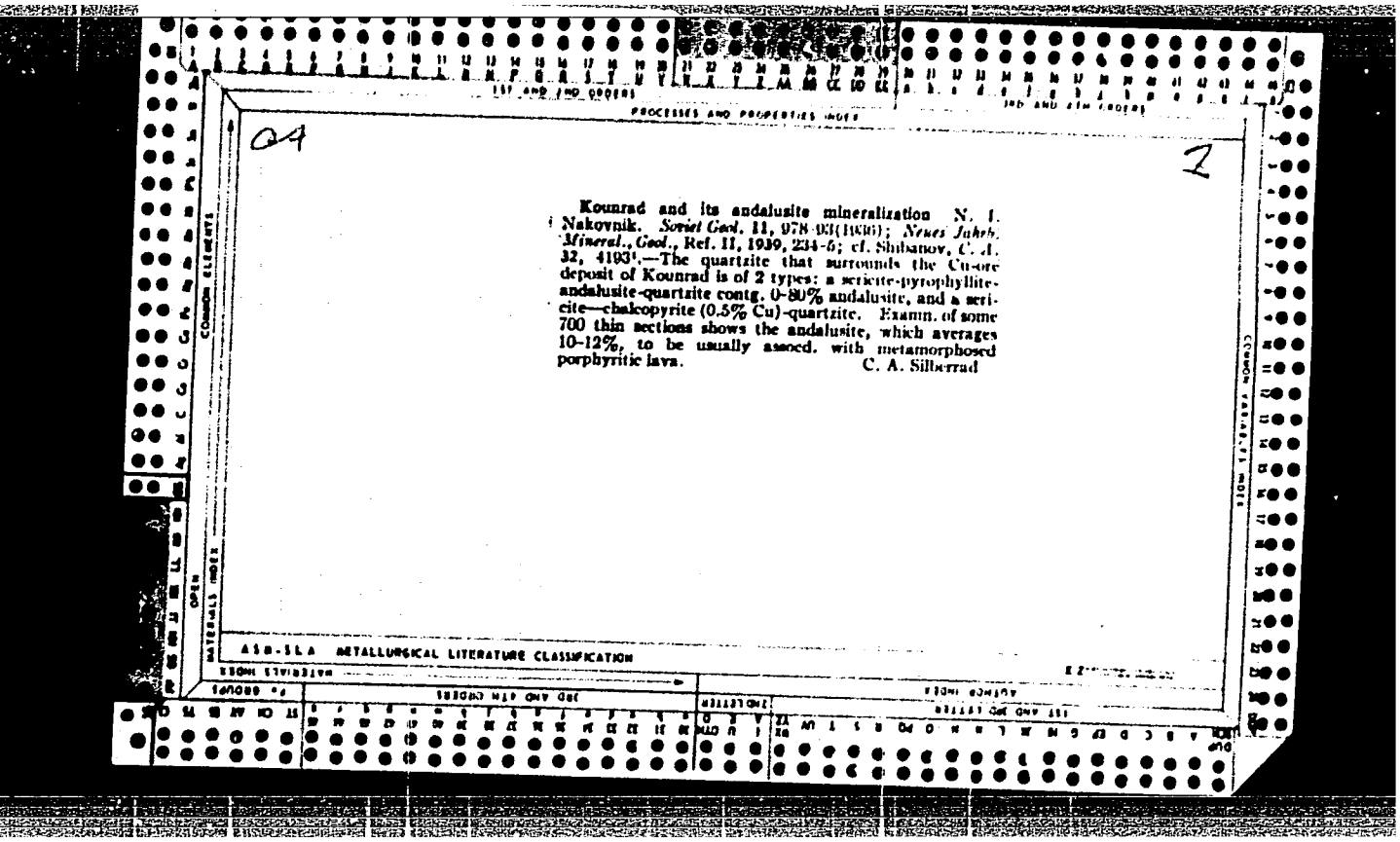

04

1

Kounrad and its andalusite mineralization N. I. Nakovnik. *Soviet Geol.* 11, 978-93(1936); *Neues Jahrb. Mineral., Geol.*, Ref. II, 1939, 234-6; cf. Shibanov, C. A. 32, 4193⁴.—The quartzite that surrounds the Cu-ore deposit of Kounrad is of 2 types: a sericite-pyrophyllite-andalusite-quartzite contg. 0-80% andalusite, and a sericite—chalcopyrite (0.5% Cu)-quartzite. Examn. of some 700 thin sections shows the andalusite, which averages 10-12%, to be usually assocd. with metamorphosed porphyritic lava.

C. A. Silberrad

A58-5LA METALLURGICAL LITERATURE CLASSIFICATION

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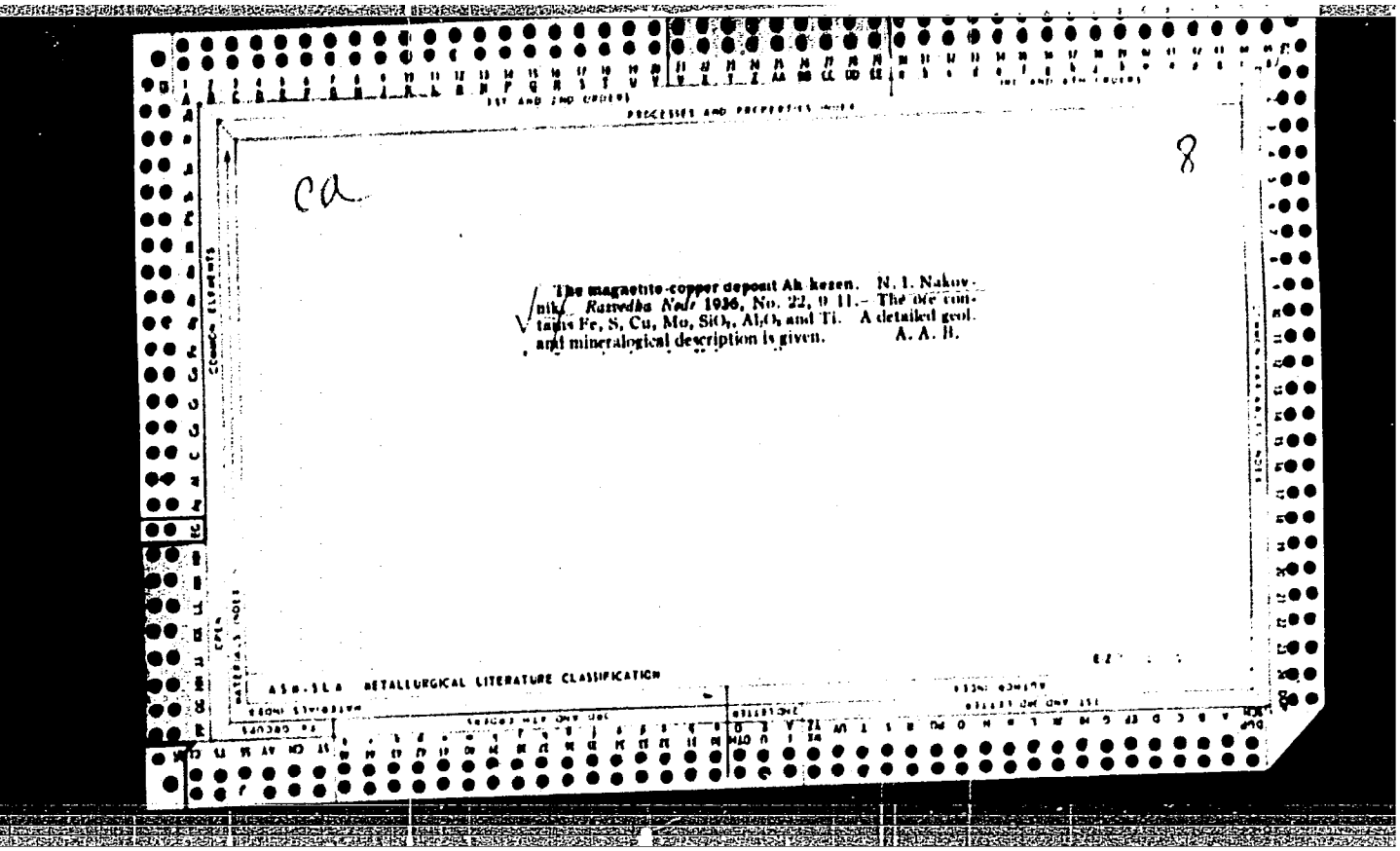

ca

8

The magnetite-copper deposit Ak kezen. N. I. Nakov-nik. *Razvedka Nedr* 1936, No. 22, 9–11.– The ore contains Fe, S, Cu, Mo, SiO_2, Al_2O_3 and Ti. A detailed geol. and mineralogical description is given. A. A. B.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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NAKOVNIK, N.I.

Deposits in Kounrad, its rocks and minerals Moskva, Izd-vo Akademii nauk SSSR, 1937. 176 p., 20 plates, maps. (49-55367)

QE452. R9N28

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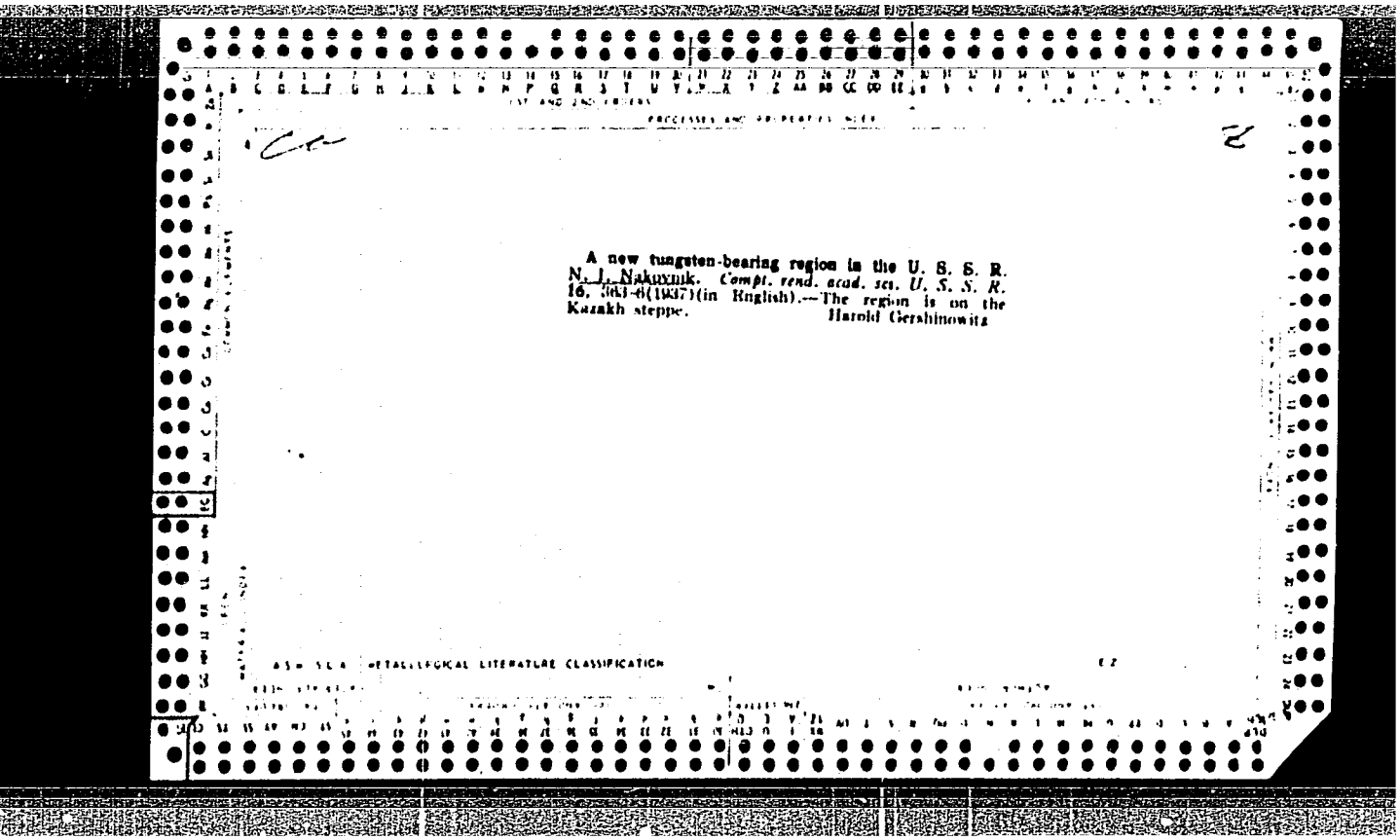

A new tungsten-bearing region in the U. S. S. R.
N. I. Nakuxnik. *Compt. rend. acad. sci. U. S. S. R.* 16, 363-6(1937)(in English).—The region is on the Kazakh steppe.
Harold Gershinowitz

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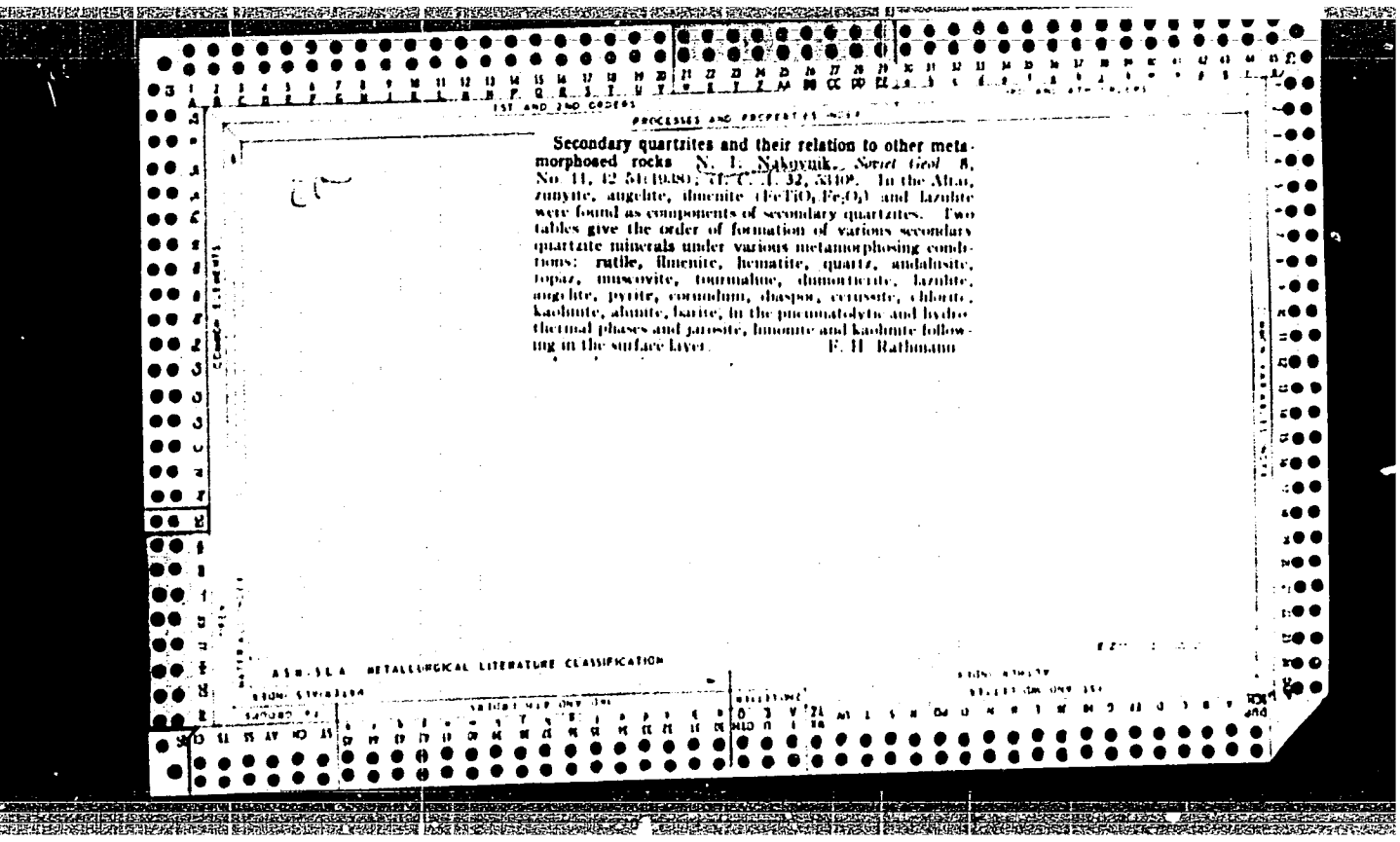
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX



Secondary quartzites and their relation to other metamorphosed rocks N. I. Nakovnik. *Soviet Geol.* 8, No. 11, 42-54(1938); cf. C. A. 32, 5340[9]. In the Altai, zunyite, augelite, ilmenite ($FeTiO_3$-Fe_2O_3) and lazulite were found as components of secondary quartzites. Two tables give the order of formation of various secondary quartzite minerals under various metamorphosing conditions: rutile, ilmenite, hematite, quartz, andalusite, topaz, muscovite, tourmaline, dumortierite, lazulite, augelite, pyrite, corundum, diaspor, cerussite, chlorite, kaolinite, alunite, barite, in the pneumatolytic and hydrothermal phases and jarosite, limonite and kaolinite following in the surface layer. F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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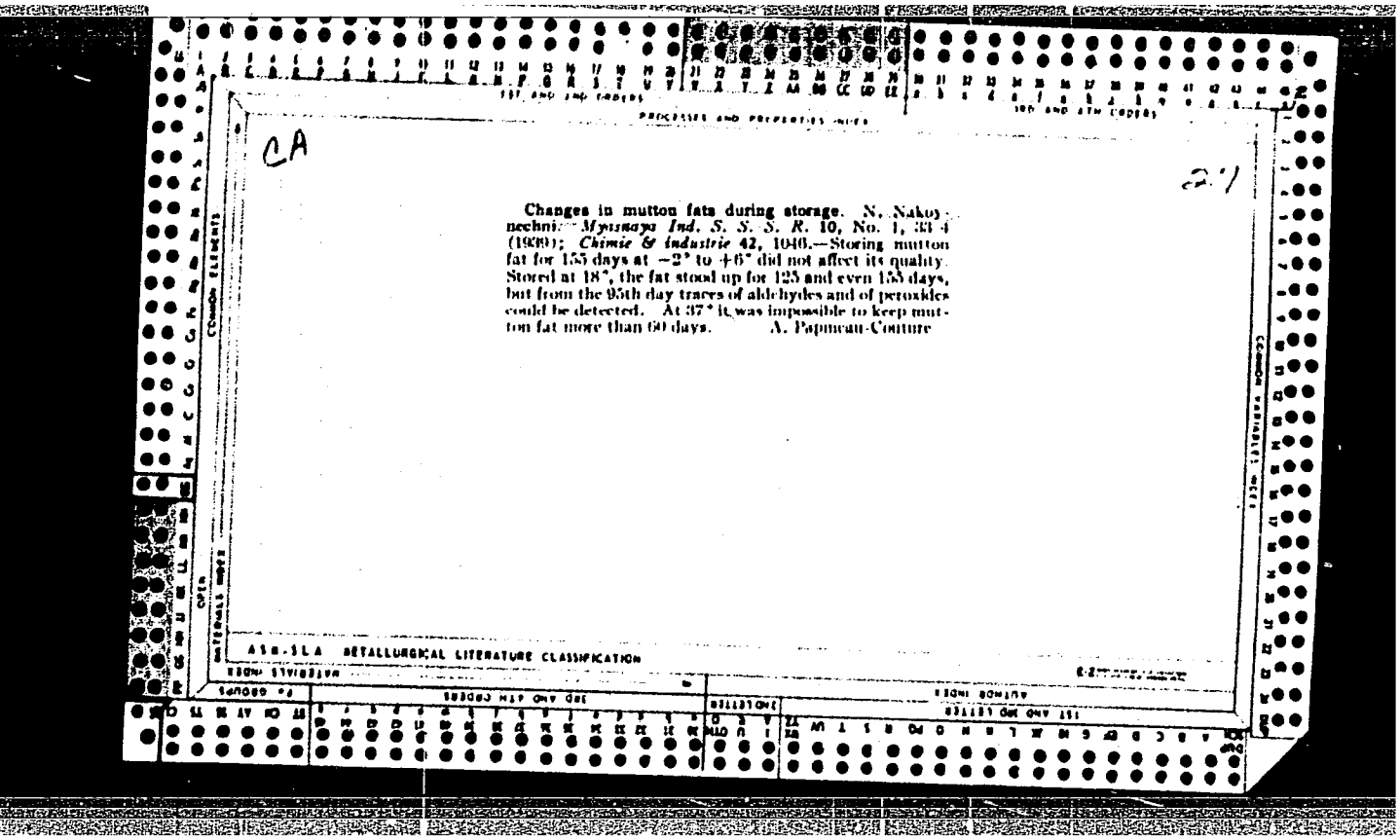

CA

21

Changes in mutton fats during storage. N. Nakoynechnikova. *Myasnaya Ind. S. S. S. R.* **10**, No. 1, 33-4 (1939); *Chimie & Industrie* **42**, 1046.—Storing mutton fat for 155 days at −2° to +6° did not affect its quality. Stored at 18°, the fat stood up for 125 and even 155 days, but from the 95th day traces of aldehydes and of peroxides could be detected. At 37° it was impossible to keep mutton fat more than 60 days. A. Papineau-Couture

A1B-1L A METALLURGICAL LITERATURE CLASSIFICATION

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A. E. S.

Geology

Results of three years' examination of secondary quartzites of the eastern Kazakstan and the problem of alunites. N. I. Nakovnik. Contributions to the Geology of Central Kazakstan; Results of an Expedition to Central Kazakstan in 1936–37, pp. 11–20. Acad. Sci. U.S.S.R., 1940; *Khim. Referat. Zhur.*, 4 [2] 32 (1941). See Secondary . . . ." *Ceram. Abs.*, 19 [1] 27 (1940). M. Ho.

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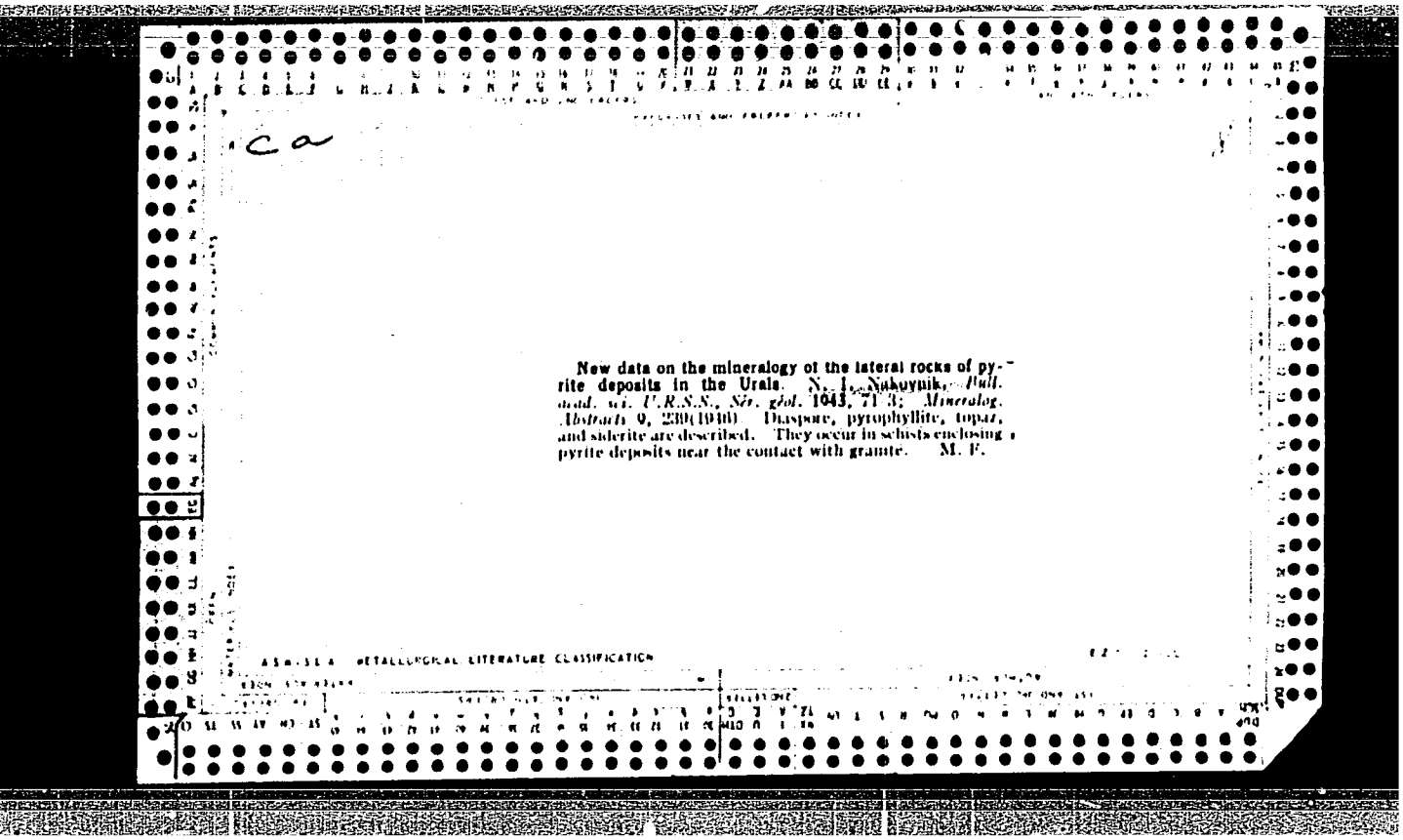

New data on the mineralogy of the lateral rocks of pyrite deposits in the Urals. N. I. Nakovnik. *Bull. acad. sci. U.R.S.S., Sér. géol.* 1043, 71 3; *Mineralog. Abstracts* 9, 230(1940). Diaspore, pyrophyllite, topaz, and siderite are described. They occur in schists enclosing pyrite deposits near the contact with granite. M. F.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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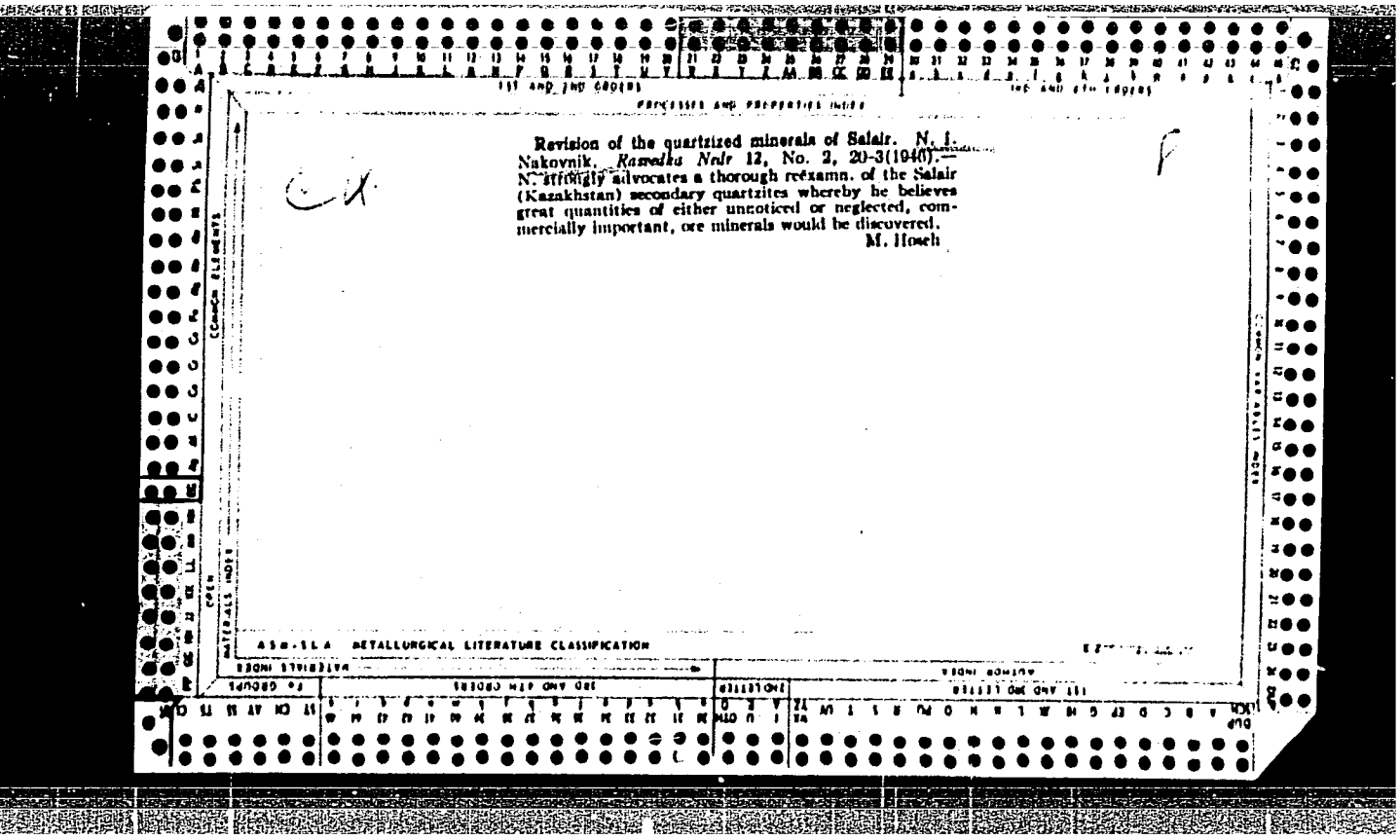

Revision of the quartzized minerals of Salair. N. I. Nakovnik. *Razvedka Nedr* 12, No. 2, 20-3(1940).— N. strongly advocates a thorough reexamn. of the Salair (Kazakhstan) secondary quartzites whereby he believes great quantities of either uncoticed or neglected, commercially important, ore minerals would be discovered.

M. Hoseh

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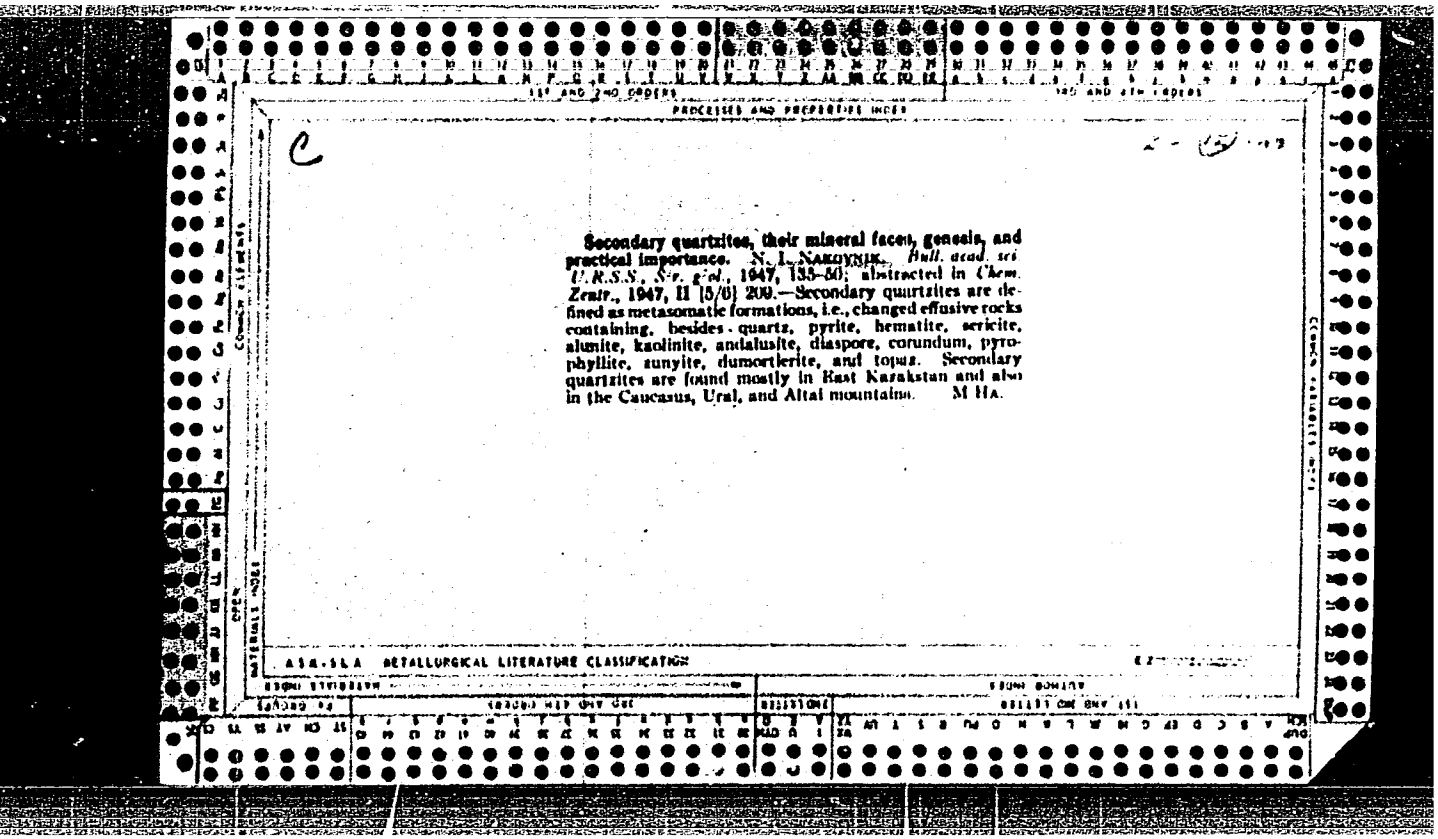

Secondary quartzites, their mineral facies, genesis, and practical importance. N. I. NAKOVNIK. *Bull. acad. sci U.R.S.S., Sér. géol.*, 1947, 133–50; abstracted in *Chem. Zentr.*, 1947, II [5/6] 209.—Secondary quartzites are defined as metasomatic formations, i.e., changed effusive rocks containing, besides quartz, pyrite, hematite, sericite, alunite, kaolinite, andalusite, diaspore, corundum, pyrophyllite, zunyite, dumortierite, and topaz. Secondary quartzites are found mostly in East Kazakstan and also in the Caucasus, Ural, and Altai mountains. M HA.

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MAKOVNIK, N.I.

Characteristics of certain metasomatic rocks as presented in the manual ("Petrography of igneous and metamorphic rocks" by E.A. Kuznetsov. Reviewed by N.I. Makovnik). Vest. LGU 14 no.12:126-129 '59. (MIRA 12:7)

(Petrology) (Kuznetsov, E.A.)

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NAKOVNIK, N.I.

The immersion method as applied to a petrographic microscope 2. izd. Moskva, Gos. izd-vo geol. lit-ry, 1948. 34 p. (51-21081)

QE433.N3 1948

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CH

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Alunite, types and relations to country rocks and ore veins. N. I. Nakovnik. *Zapiski Vsesoyus. Mineral. Obshchestva* (Mém. soc. russe minéral.) 77, 55–64(1948).—The crystallochem. formula is $KAl_3(SO_4)_2(OH)_6$, with a partial substitution of Na for K. Doelter distinguishes the volcanic genesis of alunite, and a hydrothermal type in veins, and a third type characterized by exogenic reactions of H_2SO_4 (from oxidized FeS_2 and S) with country rock. In general, alunite is post-volcanic, formed under low-temp. conditions with pseudomorphs after feldspar. Alunite is a typical mineral of the epithermal metasomatic formation in secondary quartzites, replacing especially the higher alliceous aluminosilicates, but not minerals with Ca, Fe, Mg (limestones, serpentinites, marls, etc.). Liparites, porphyrites, trachytes, and their tuffs and breccias are principally affected by alunitization; basalts and diabases only rarely changed to alunite, ultrabasic rocks never. The discussion of more than 200 analyses shows that the higher is the basicity of the original rocks, the higher is the Na_2O content of the resulting alunite. Andesites have a $K_2O:Na_2O$ ratio of 0.2 to 2:1; the corresponding ratio for porphyrites is 0.4 to 2.7:1, and for dacites 0.7 to 4:1 (av. 2.2:1). Nearly pure K alunites are derived from K-rich porphyries, trachytes, and rhyolites (ratio 8:1).

The analyses of alunite-bearing rocks show the predominance of K alunites derived from high-silica rocks. In cavities in dacites, the ratio $K_2O:Na_2O$ may even be 12:1, or 20:1, but Na alunite is never observed in veins in siliceous rocks. There is a distinct difference between the metasomatic alunites discussed above and hydrothermal deposits of alunite on the walls of cavities, formed by H_2SO_4-contg. waters in the country rocks which often transfer the alkali ions from a distance. The optical consts. of K alunite are characteristically different from those of Na alunite, and a table is given which shows the correlation of the $K_2O:Na_2O$ with ns for 20 samples. Na alunites have a birefringence of 0.005 to 0.012, K alunites of 0.018 to 0.020. The silicification of the country rock to quartz, chalcedony, or opal during alunitization is highly significant. The paragenesis of SiO_2 minerals with alunite is assocd. with pyrite, or hematite and rutile, and in minor amts. by diaspore, dickite, zunyite, and S. Zeolites, carbonates, sericite, chlorite, epidote, and similar minerals are absent. Alunite rocks are often accompanied by veins with minerals of Au, Ag, Hg, Sb, Pb, Zn, Cu, Fe, Sn, Mo, Bi. Kaolinization and propylitization with alunitization is observed in ore deposits all over the world. In cryst. schists alunite is entirely absent, also in granites, greisens, skarns, and contact hornfelses.

W. Eitel

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CA

Metasomatic crystallization with constant volumes N. I. Nakovnik. *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mém. soc. russe minéral.) **78**, 270-2(1949).—The mechanism of metasomatic reactions is chiefly characterized by the impregnation of preëxisting mineral complexes by a "posthume" soln. chiefly of magmatic origin, or as juvenile waters, soln. ascending along channels and throughout the capillary system of the solid framework of the rock. The typical formation of pseudomorphs by chem. reactions, "molecule for molecule," replacing the "host" minerals is observed in saussuritized feldspars, or in the alunitization and kaolinitization of andalusite, with quartz and diaspore, the change of biotite to a mixed aggregate of sericite, rutile, and pyrite. Lindgren's law of "constant volumes" for the host and the reaction products is an important principle in petrography and ore deposit studies. Particularly interesting examples are given, among which the following are taken from the hydrothermally changed lavas of Kazakhstan: *dickite*, replacing biotite and plagioclase, filling the cavities of the lava. In the first case, rutile is simultaneously formed with the dickite, in the second example free SiO_2 crystd. as quartz. Particularly instructive are the parallel orientations of the dickite parcels in the layer structure of the original mica. Less pronounced are the orientation effects of dickite in pseudomorphs after plagioclase. The pseudomorphs of *alunite* after feldspar (with some quartz) are characteristic because of the absence of every influence of the replaced structure on the growth of the new product, although the original volume is entirely preserved and filled. Alunitized micas always show the orientation of the crystals parallel to the cleavage plane, like in the dickite pseudomorphs.

W. Eitel

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NAKOVNIK, N.I.

Mineral facies, genesis, and practical importance of propylitized rocks. N. I. Nakovnik. *Zapiski Vsesoyuz. Mineralog. Obshchestva* (Mem. soc. russe minéral.) 83, 85-91 (1954).—N. defines the propylites as a complex of uralitized, epidotized, chloritized, or albitized rocks, distinguished from sericitized rocks, secondary quartzites and greenstones of regional-metamorphic origin. Propylites are hydrothermal decompn. products of primary intermediate or basic effusive rocks, with albite, adularia, uralite, or actinolite, epidotes, chlorite, rutile, carbonates, quartz, sericite, and pyrite. They are intimately connected with hydrothermal ore deposits of Au, Ag, Cu, Zn, Pb, As, Sb, Hg, W, Mo, and subordinate Sn, Ni, Co, Pt, assocd. with veins of ankerite, calcite, rhodochrosite, quartz, etc. The chem. and mineralogical compn. of propylites derived from andesitic-dacitic or dioritic rocks near the ore veins changes in a characteristic zonality: in the inner zones, next to the ores the quartz-sericite assocn. prevails, while epidote, chlorite, and actinolite are typical minerals of exterior zones. Propylites derived from basic rocks (e.g. gabbros) show the type of listvenites, high in carbonates and sericite, often with Cr-mica. The inner zones are always smaller than the exterior zones. This is very characteristic for the reactions (amphibole, albite, epidote) → (chlorite + pyrite) → RCO_3 → (sericite, quartz, sulfides), with a gradual change of pH from 11 to 8 in the first group, to 9 to 7 for chlorite + pyrite, to 8 for RCO_3, to 7 to 6 in the last group. The first minerals changed by propylitization are the melanocratic silicates, followed by plagioclase, and latest the K feldspar. From a review of propylites from important ore deposits, N. gives two diagrams which demonstrate the chem. changes occurring in intermediate, and in basic rocks during propylitization, especially for SiO_2, Al_2O_3, FeO, Fe_2O_3, CaO, MgO, Na_2O, K_2O, CO_2, FeS_2, Cu, and Au. In the direction from the exterior to the inner zones the data for SiO_2 and Al_2O_3 are not essentially variable, but CaO, MgO, FeO, and Fe_2O_3 decreased continuously, more intensely in the andesitic-dacitic rocks than in those of gabbroidal types. Na_2O and K_2O behave reciprocally, with a max. in Na_2O, a min. in K_2O, for the epidote-chlorite zones. Parallel to the enrichment in K_2O in the inner zones, H_2O, CO_2, and sulfides are increased, and Cu and Au are parallel to the enrichment in the volatiles. Si, Al, Ti are the least mobile elements, more mobile are Ca, Mg, Fe, Mn, most mobile Na, K, Cu, Au, and the volatiles coming from deep-seated sources. A rough parallelism exists with the ionic radii of these elements. The rare and exceptional hydrothermal rock type of the beresites (quartz-muscovite aplites, without any K feldspar) in the Au ore veins of Berezovsk (Ural) is in some respects analogous to the inner zone formations of propylitized rocks.

W. Eitel

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NAKOVNIK, N.I.

NAKOVNIK,N.I.

Concerning articles in the collection "Basic problems in the theory of magmatic deposits." Zap.Vses.min.ob-va 84 no.2:237-239 '55. (MLRA 8:10)

(Rocks, Igneous)

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NAKOVNIK, N.I.

Classification and terminology of pyroclastic rocks. Zap.Vses. min.ob-va 84 no.3:381-385 '55. (MLRA 8:11)
(Volcanic ash, tuff, etc.)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

Some observations on D.S. Korzhinskii's work "Study of metasomatic processes." Article reviewed by N.I. Nakovnik. Zap.Vses.min.ob-va 85 no.4:597-603 '56. (MLRA 10:2)

(Metasomatism) (Korzhinskii, D.S.)

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NAKOVNIK, Nikolay Ivanovich; CHETVERIKOV, S.D., redaktor; NEMANOVA, G.F., redaktor izdatel'stva; KRYNOCHKINA, K.V., tekhnicheskiy redaktor

[Immersion method as applied to a petrographic microscope] Immersionnyi metod v primenenii k petrograficheskim shlifam. Izd. 3-e. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1957. 40 p. (MLRA 10:8)
(Petrographic microscope)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

New type of change zones adjacent to ore bodies. Zap. Vses. min. ob-va 86 no.6:713-716 '57. (MIRA 11:3)
(Argillite) (Ore deposits)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

Determining quantitative change of substances in hydrothermal metamorphism. Zap. Vses. min. ob-va 87 no.4:401-417 '58.
(MIRA 12:1)

1. Vsesoyuznyy geologicheskiy institut, Leningrad.
(Rocks, Crystalline and metamorphic)

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DONSKIKH, V.V.; NAKOVNIK, N.I.; PETROVA, Ye.V.

New dumortierite-corundum-andalusite deposit in Kazakhstan.
Zap. Vses. min. ob-va 88 no.5:521-532 '59. (MIRA 13:2)

1.Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut, Leningrad.
(Balkhash region--Mineralogy)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

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VOLOSTNYKH, G.T. ; NAKOVNIK, N.I. ; ROZENTSVIT, A.O.; KLIMOVA, M.S.

Remarks on IU.V. Kuzitsyn and G. V. Aleksandrov's article "Metasomatic zoning in the argillization of granite-porphyries near ore bodies." Geol. rud. mestorozh. no.6:91-97 N-D ' 60. (Mira 14:3)

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

(Clay)

(Kuzitsyn, IU.V.) (Aleksandrov, G.V.)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

Study of kaolin minerals. Min.sbor. no.14:396-399 '60.
(MIRA 15:2)

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

(Kaolin)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001360200

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

History of the study of secondary quartzites. Izv. AN Arm.SSR.- Geol.i geog.nauki 14 no.4:73-84 '61. (MIRA 14:9)

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

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

AVIKSON, Yu.A., inzh.; NAKOZIN, N.I., inzh.

Drilling and punching openings in high-manganese austenitic steel. Sudostroenie 29 no.2:60-62 F '63. (MIRA 16:2)
(Shipfitting) (Manganese steel)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

Vertical zoning of the products of postmagnetic metasomatism and the place of the formation of secondary quartzites and propylites in it. Zap.Vses.min.ob-va 92 no.4:394-409 '63. (MIRA 17:2)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.; KAZITSYN, Yu.V.

Conference on the metasomatic alterations of wall rocks and their role in ore formation. Zap. Vses. min. ob-va 92 no.5:626-629 '63. (MIRA 17:1)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.; TATARINOV, P.M., red.

[Secondary quartzites of the U.S.S.R. and mineral deposits connected with them] Vtorichnye kvartsity SSSR i sviazannye s nimi mestorozhdeniia poleznykh iskopaemykh. Moskva, Izd-vo "Nedra," 1964. 338 p. (MIRA 17:8)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKOVNIK, N.I.

Determination of the "subtraction-addition" of a substance during metasomatism and the law of Lindgren. Zap. Vses. min. ob-va 93 no.1:110-113 '64 (MIRA 18:2)

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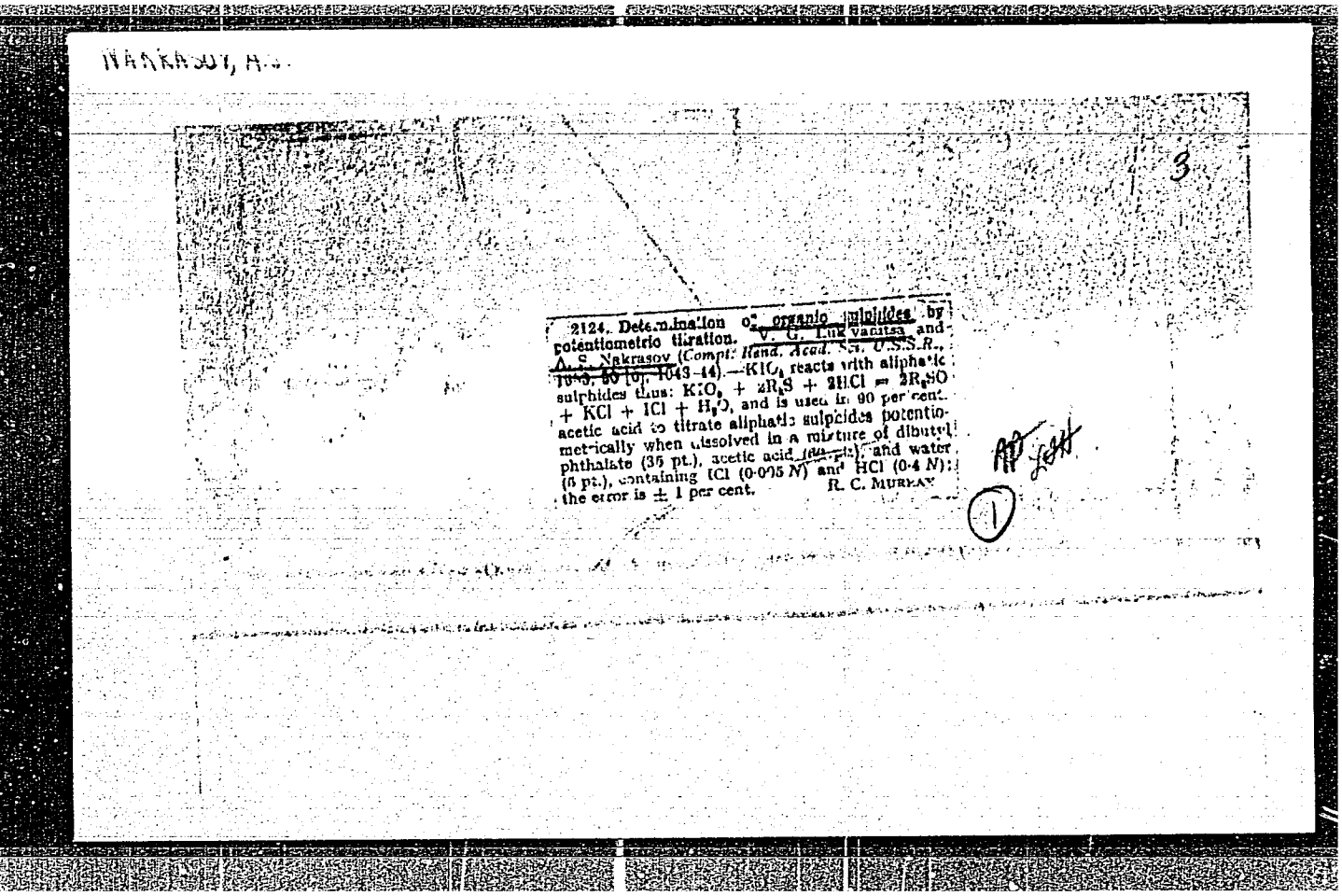

NAKRASOV, A.S.

3

2124. Determination of organic sulphides by potentiometric titration. V. G. Lukyanitsa and A. S. Nakrasov (Compt. Rend. Acad. Sci. U.S.S.R., 1953, 50 [6], 1043-44).—KIO_3 reacts with aliphatic sulphides thus: $KIO_3 + 2R_2S + 2HCl = 2R_2SO + KCl + ICl + H_2O$, and is used in 90 per cent. acetic acid to titrate aliphatic sulphides potentiometrically when dissolved in a mixture of dibutyl phthalate (35 pt.), acetic acid (60 pt.), and water (5 pt.), containing ICl (0·005 N) and HCl (0·4 N); the error is ± 1 per cent. R. C. MURRAY

AP

1

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

87437
S/191/60/000/010/013/017
B004/B060

15.8109

AUTHORS: Moshkin, P. A., Rubtsova, I. K., Zhilina, R. D., Nakrokhin, B. G., Itenberg, Sh. M.

TITLE: Alcoholysis of Some Di-ββ'-Cyanethyl Esters, and Investigation of Products Obtained

PERIODICAL: Plasticheskiye massy, 1960, No. 10, pp. 60-61

TEXT: Proceeding from acrylonitrile the authors synthesized the following compounds: di-(ββ'-cyanethyl)-sulfide; di-ββ'-cyanethyl ether; furthermore, ββ'-cyanethyl ethers of ethylene-, diethylene- and triethylene glycols and butanediols. By alcoholysis by means of 2-ethyl hexanediol one obtains the 2-ethyl hexyl esters of oxadipropionic acid, 2,4-dioxahexane dicarboxylic acid-1,6, 2,6-dioxaoctane dicarboxylic acid-1,8, 2,4,6-trioxaoctane dicarboxylic acid-1,8, 2,4,6,8-tetraoxadecane dicarboxylic acid-1,10, and thiodipropionic acid. [Abstracter's Note: the conditions under which the alcoholysis was performed are not indicated]. These esters were found to be resistant to frost down to -45 - -58°C (determination by L. I. Burinova), and yielded, when mixed

Card 1/2

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87437

Alcoholysis of Some Di-ββ'-Cyanethyl Esters, and Investigation of Products Obtained

S/191/60/000/010/013/017
B004/B060

with polyvinyl chloride resin in a ratio 1 : 1, plastics which satisfied the technological requirements. There are 3 tables and 4 references: 3 Soviet and 1 US.

Card 2/2

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKROKHIN, B.G.; SHIBANOV, G.V.; GINEVICH, G.I.; OBRAZTSOV, A.I.; MATROS, Yu.Sh.; SKUE, G.I.; NAKROKHIN, V.B.; ITENBERG, Sh.M.; RASHRAGOVICH, Kh.D.

Oxidation of methanol to formaldehyde on oxide catalysts. Khim. prom. 41 no.2:17-19 F '65. (MIRA 18:4)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKROKHIN, B.G.; SHIBANOV, G.V.; GINEVICH, G.I.; OBRAZTSOV, A.I.; MATROS, Yu.Sh.; SKUE, G.I.; NAKROKHIN, V.B.; ITENBERG, Sh.M.; RASHRAGOVICH, Kh.D.

Oxidation of methanol to formaldehyde on oxide catalysts. (MIRA 18:4)
Khim. prom. 41 no.2:17-19 F '65.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKROPIN, O.

USSR/ Miscellaneous - Propaganda

Card : 1/1

Authors : Nakropin, O.

Title : A Mouthpiece of the Bonn Avengers

Periodical : Radio, No. 4, 61 - 63, April 1954

Abstract : Propaganda concerning West German radio-broadcasting stations in which they are accused of resorting to Goebbel's methods of defamation and lies against the USSR.

Institution : ....

Submitted : ....

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKROPIN, O.

Instrument of aggression. Voen.vest. 34 no.10:94-96 O '54.
(MIRA 10:10)
(United States--Politics and government)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

107-57-2-53/56

AUTHOR: Nakropin, O.

TITLE: A Voice of Instigators (Golos podstrekateley)

PERIODICAL: Radio, 1957, Nr 2, pp 59-60 (USSR)

ABSTRACT: A review of activities of "Radio Free Europe" is presented. A group of American magnates founded the "Crusade for Freedom" organization in 1949, which quickly built a network of radio stations in Western Europe. "Radio Free Europe" operates 29 radio stations, that transmit 20 hours a day to Poland, Czechoslovakia, and Hungary, and 8 to 10 hours a day to Rumania and Bulgaria. Its headquarters are in Munich, and the total personnel number 1,200, of whom 120 are American citizens. S. Mikhal'skiy, a Pole, and former employee of the Munich radio center, related in the Polish press that Hans Fisher, Chief of the Security Division of "Radio Free Europe", made it clear that obtaining a permanent job there depends on good relations with the Security Division and with the American Intelligence. The West German magazine "Spiegel" commented that "Radio Free Europe" can speak with the voice of a private organization, and still be taken as the official voice of the USA. The role of "Radio Free Europe" in the Hungarian uprising of 1956 is discussed in the article, and a number of West European publications are quoted in this connection.

Card 1/2

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

ACC NR: AP6031729 SOURCE CODE: UR/0136/66/000/009/0078/0080

AUTHOR: Polin, I. V.; Maksimov, V. M.; Darmogray, V. V.

ORG: none

TITLE: Results of experiments on deoxidation of titanium

SOURCE: Tsvetnyye metally, no. 9, 1966, 78-80

TOPIC TAGS: titanium alloy, titanium zirconium alloy, titanium gadolinium alloy, titanium yttrium alloy, titanium deoxidation, metal property, OXYGEN, ZIRCONIUM CONTAINING ALLOY, ALLOY COMPOSITION

ABSTRACT: The possibility of lowering the oxygen content in vacuum arc-melted titanium by alloying with zirconium, gadolinium or yttrium has been investigated. Commercial-grade titanium with addition of the above alloying elements was double melted in a vacuum of 0.012—0.1 mm Hg into 5 kg ingots 130 mm in diameter. It was found that zirconium lowers considerably the oxygen content. For instance, while unalloyed commercial-grade titanium contained 0.102% oxygen, an alloy with 1.5—2.5% Zr contained only 0.055—0.075% oxygen. Results of experiments with yttrium and gadolinium were inconclusive due to the

Card 1/2 UDC: 669.295.046.55

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ACC NR: AP6031729

very small number of tests conducted. It was concluded that it is possible to deoxidize titanium by alloying it with zirconium. Orig. art. has: 3 figures and 3 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

KOMAROV, P.V.; NAKTINAS, Ye.M.

Fluorine, chlorine, and boron as elements-indicators in geochemical prospecting. Geol. rud. mestorozh. 7 no.3:65-74 My-Je '65.
(MIRA 18:7)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

BUSEV, A.I ; NAKU, A. [Nacu, A.]; Prinimala uchastiye: DZERZHINSKAYA, L.S.

Use of mercaptopropionic acid derivatives in analytical chemistry. Report No.1: Extraction-photometric determination of palladium with p-anisidide-1-mercaptopropionic and p-toluidide-1-mercaptopropionic acids. Zhur.anal.khim. 18 no.4:500-506 Ap '63. (MIRA 16:6)

1. M.V.Lomonosov Moscow State University.
(Palladium—Analysis) (Proionic acid)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

BUSEV, A.I.; NAKU, A.

Extraction-photometric determination of palladium by means of thionalide. Zhur. anal.khim. 18 no.12:1479-1482 D '63.
(MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

USEV, A.I.; RUDZIT, G.P.; NAKU, A.

Use of 1-mercaptopropionic acid in analytical chemistry. Report No.4: Extraction-photometric determination of molybdenum in steels with p-phenetidide-1-mercaptopropionic acid. Zhur. anal. khim. 19 no.6:767-769 '64.

(MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

SAVUL, M., acad., BOTEZ K. [Botez, C.] IONESI, L., OLARU, D., NAKU, A. [Nacu, A.]

Chemism of the rocks of the Palegogene Flysch transient facies, developed in the Moldovita Valley (Northern Moldavia) for the Co, Ni, Mn, Cu, Pb, Zn elements. Rev geol geog Rum 7 no. 2: 217-244 '63.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

BUSEV, A.I.; NAKU, A.

Use of 1-mercaptopropionic acid derivatives in analytical chemistry. Report No.2: Photometric determination of palladium with r-phenetidide-1-mercaptopropionic acid. Zhur.anal.khim. 18 no.10:1233-1238 O '63. (MIRA 16:12)

1. Moscow State University.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

BUSEV, A.I.; NAKU, A.; RUDZIT, G.P.

Use of 1-mercaptopropionic acid derivatives in analytical chemistry. Report No.3: 1-Mercaptopropionic acid and some of its anilides as reagents for the extraction-photometric determination of molybdenum. Zhur. anal. khim. 19 no.3: 337-345 '64. (MIRA 17:9)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

ACCESSION NR: AP4019509 S/0075/64/019/003/0337/0345

AUTHORS: Busev, A. I.; Naku, A.; Rudzit, G. P.

TITLE: Use of 1-mercaptopropionic acid derivatives in analytical chemistry. Communication 3: 1-mercaptopropionic acid and some of its anilides as reagents for extraction-photometric determination of molybdenum

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 3, 1964, 337-345

TOPIC TAGS: molybdenum, determination, extraction, photometric extraction determination, mercaptopropionic acid, mercaptopropionic acid derivative, phenetidide, anisidide, touidide, analytical chemistry, quantitative analysis

ABSTRACT: A study was made of the interaction of Mo(V) and Mo(VI) ions with 1-mercaptopropionic acid (I) and some of its derivatives: o- and p-phenetidide, o- and p-anisidide, o- and p-toluidide-1-mercaptopropionic acid. It was established that I and its p-phenetidide interact with Mo(V) and Mo(VI) ions in the ratio of 2:1 (In fig. 1: the tangent of the angle of inclination numerically

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ACCESSION NR: AP4019509

equals the number of moles of reagent interacting with one mole of Mo). The compounds of molybdenum with p-phenetidide-1-mercaptopropionic acid (II) are most readily extracted with a 1:1 mixture of isoamyl alcohol and benzene, and the compounds with I are extracted with a 1:1 mixture of isoamyl alcohol and chloroform, when diphenylguanidinium or benzylthiuronium cations are present in the aqueous phase. During extraction one diphenylguanidinium or benzylthiuronium cation is added to a complex anion of Mo(V) with I and two cations are added to a complex Mo(VI) anion (fig. 2). Extraction-photometric methods were developed for the determination of molybdenum with I and with II in the presence of other elements. A sample containing molybdenum is treated with a solution of I and benzylthiuronium chloride, extracted with 1:1 isoamyl alcohol:chloroform solutions and the optical density is measured and compared with a calibrated graph. It was found that: Cr, Ti, Co, Ni, Zn, Al sulfate and nitrate ions do not interfere; in the presence of large amounts of vanadate and Fe (III) ascorbic acid should be added; Cu ions lower the accuracy of the determination; and very large amounts of W make determination difficult, but with smaller amounts, the optical

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density may be measured at 350-365 and at 430 millimicrons. A similar determination may be made with II, using 1:1 isoamyl alcohol:benzene solution for extraction and measuring the optical density at 360 millimicrons. It was found that: Cr (III), Ti, Co, Ni, Zn, Al, Fe and V do not affect this determination; Cu lowers the accuracy; and W in a 100:1 ratio to Mo has no effect. I does present an odor problem; II has no odor. Orig. art. has: 2 tables, 5 figures and 6 formulas.

ASSOCIATION: Moskovskiy gosndarstvenny*y universitet im. M. V. Lomovosova (Moscow State University)

SUBMITTED: 27Jun63 DATE ACQ: 31Mar64 ENCL: 03

SUB CODE: CH NR REF SOV: 006 OTHER: 004

Card 3/6

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

ACCESSION NR: AP4019509

ENCLOSURE: 01

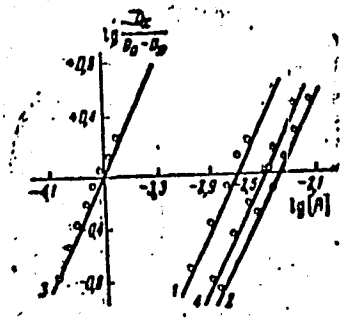

fig. 1

Determining the composition of the compound of Mo(V) with 1-mercaptopropionic acid (1), p-phenetidide-1-mercaptopropionic acid (2) and compounds of Mo(VI) with 1-mercaptopropionic acid (3) and p-phenetidide 1-mercaptopropionic acid (4)

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ACCESSION NR: AP4019609

ENCLOSURE: 02

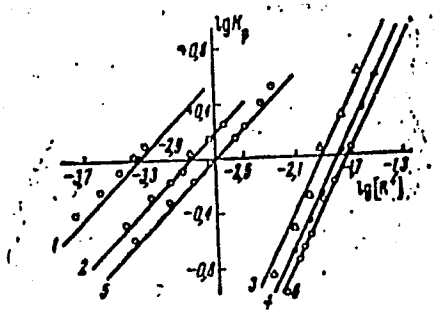

fig. 2

Relationship of lgK_p to $lg[R^+]$ in extraction of diphenylguanidinium and benzylthiuronium salts of molybdenum compounds with 1-mercapto-propionic acid (1-4) and with thioglycolic acid (5, 6)

1-diphenylguanidinium salt of Mo (V); 2-benzylthiuronium salt of Mo (V); 3-diphenylguanidinium salt of Mo (VI); 4-benzylthiuronium salt of Mo (VI); 5-diphenylguanidinium salt of Mo (V); 6-diphenylguanidinium salt of Mo (VI)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

ACCESSION NR: AP4010509

ENCLOSURE: 03

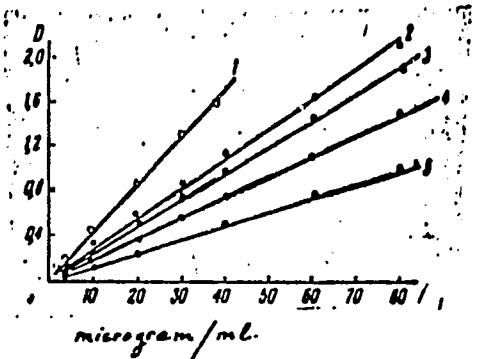

fig. 3

Calibrated graphs

1-determination of molybdenum p-phenetidide-1-mercaptopropionic acid (360 millimicrons); 2-5. determination of molybdenum 1-mercaptopropionic acid: 2-350, 3-365, 4-380, 5-430 millimicrons

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APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAYU, A.G., Cand Med Sci -- (diss) "Role of infection in the ~~origin~~ emergence and course of schizophrenia." Kishinev, 1958, 15 pp (Kishinev State Med Inst) 250 copies (KL, 29-58, 137)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020(

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

MOLOKHOV, A.N.; NAKU, A.G. [Nacu, A.G.]

Rheumatic amentia. Zdravookhranenie 2 no.4:14-18 Jl-Ag '59.
(MIRA 14:6)

1. Iz kafedry psikhiatrii (zav. - prof. A.N.Molokhov) Kishinevskogo meditsinskogo instituta.
(RHEUMATIC FEVER) (MENTAL ILLNESS)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKU, Khristodor [Naku, C.], inzh. (Rumynskaya Narodnaya Respublika)

Corrosion of the alloyed digester shell and methods for its control. Bum. prom. [38] no.6:16-18 Je '63. (MIRA 16:7)

(Autoclaves—Corrosion)
(Woodpulp industry—Equipment and supplies)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKU, N.F.; SHOYKHET, R.N.

Nonspecific pyelonephritis in renal tuberculosis. Zdravookhranenie 6 no.5:37-40 S-O'63 (MIRA 16:12)

1. Iz urologicheskoy kliniki (zav. - doktor med. nauk S.D. Goligorskiy) Kishinevskogo meditsinskogo instituta.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKU, N.F.

Three cases of conservative surgery in secondary renal hemorrhages.
Trudy Kish. gos. med. inst. 24:234-236 '64 (MIRA 18:1)

1. Urologicheskaya klinika Kishinevskogo gosudarstvennogo meditsinskogo instituta.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

KERCIKU, K.; MIHO, K.; NAKUCI, M.

5 cases of keratoacanthoma. Bul.Univ.Shtet.Tirane no.3/4:74-80 '63.

1. Klinika e Dermato-venerollogjise (Shef Doc. K. Kerciku), Universitetit Shteteror te Tiranes.

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KERCIKU, K.; NAKUCI, M.

Results of the treatment of psoriasis with aminopterin. Bul. univ. shtet. Tirane [Mjek] 2:72-75 '63.

1. Katedra e dermato-venerologjise (Shef Doc. K.Kerciku) Universitetit Shteteror te Tiranes.

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KERCIKU, K.; NAKUCI, M.

Results of the treatment of psoriasis with aminopterin. Bul. univ. shtet. Tirane [Mjek] 2:72-75 '63.

1. Katedra e dermato-venerologjise. Universitetit Shteteror te Tiranes. (shef doc. K. Kerciku).

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BAKUL', V.N., kand. tekhn. nauk; ZAKHARENKO, I.P., kand. tekhn. nauk;
BABICH, M.M., kand. tekhn. nauk; BAKUL, I.S., kand. tekhn. nauk;
DUBITSKAYA, I.S., kand. tekhn. nauk

Hard-alloy taps. Mashinostroitel' no.12:15-16 D '65.
(MIRA 18:12)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKUTNYY, D.D., ENG.

Electric Power Plants - Moscow

Activities of inventors and rationalizers of the Moscow Regional Power System Administration. Rab. energ., 1, No. 2, 1951.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

AUTHOR: Nakutnyy, D.D., Engineer SOV-91-58-11-10/20

TITLE: The Centralized Supply of Hydrogen to Generators (Tsentralizovannoye snabzheniye vodorodom generatorov)

PERIODICAL: Energetik, 1958, Nr 11, pp 21-22 (USSR)

ABSTRACT: In order to improve the exploitation of the hydrogen cooling of electric machines, Engineers G.D. Vul'man and V.S. Ivanov, of the Mosenergo TETs, have realised a new system for the centralized supply of hydrogen to the generators of power-stations. This consisted of installing a receptacle with a capacity of 10 cu M of hydrogen at a pressure of 10 atm. near the machine room. Next to the receptable, a building with a gas ramp for discharging the hydrogen balloons into the receptacle was erected. Gas pipes connected the receptacle with each generator. A detailed

Card 1/2

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The Centralized Supply of Hydrogen to Generators

description is given. This system has proved to be satisfactory. Engineer S.A. Mandrykin also took part in the design. There are 2 diagrams.

Card 2/2 1. Generators--Equipment 2. Hydrogen--Applications

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NAKUTNYY, D.D., inzh.

Damage of disconnecting devices installed between the outlets and the cable assembly of the generator. Energetik 9 no.6: 16-17 Je '61. (MIRA 16:7)

(Electric power distribution)
(Electric switchgear)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALANZON, V. Ya.

USSR/Engineering - Theory of elasticity

Card 1/1 : Pub. 22 - 7/44

Authors : Nalanzon, V. Ya.

Title : On a change of a boundary condition of the flat problem in the theory of elasticity

Periodical : Dok. AN SSSR 98/1, 27-29, Sep 1, 1954

Abstract : The so-called flat (two-dimensional) problem of the theory of elasticity, solution of which usually has been reduced to finding two functions satisfying the boundary condition of Muskhelishvili, can be solved by a slight change in the boundary condition, namely, by expressing the variable unknowns in parametric forms of periodic functions. Graphs.

Institution :

Presented by : Academician Muskhelishvili, June 1, 1954

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDOV, B., inzh., mladshiy nauchnyy sotrudnik

Mechanization of the removal of rubbish from construction.
Zhil.-kom. khoz. 11 no.12:15-16 D '61. (MIRA 16:11)

1. Leningradskiy nauchno-issledovatel'skiy institut Akademii kommunal'nogo khozyaystva.

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001360200

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

LANTSOV, V.A., kand.tekhn.nauk; NALBANDOV, B.A., inzh.

Using chain saws in the major repair of buildings. Stroi.i dor. mash. 7 no.10:22-23 O '62. (MIRA 15:11)
(Chain saws) (Apartment houses--Maintenance and repair)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDOV, B., inzh.

Over-all mechanization of the removal of construction rubbish.
Stroitel' 8 no.5:28, 3 of cover My '62. (MIRA 15:7)
(Refuse and refuse disposal) (Building)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDOV, B.A.

Study of the operating process of loading machines used in the major repair of buildings. Nauch. trudy KKH no. 18, 97-105 '62. (MIRA 17:7)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001360200

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDOV, G.Z.

Application of secondary methods by means of intensive water flooding of oil sands at the Krasnokamsk oil field. Neft.khoz. 32 no.8:31-32 Ag '54. (MLRA 7:8)
(Krasnokamsk--Oil field flooding) (Oil field flooding--Krasnokamsk)

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

L 27348-66

ACC NR: AP6007728 (A) SOURCE CODE: UR/0413/66/000/003/0155/0155

AUTHORS: Mayevskiy, A. G.; Nalbandov, V. A.

12
B

ORG: none

TITLE: Caterpillar drive for heavy machines. Class 84, No. 178753

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 155

TOPIC TAGS: tracked vehicle, vehicle component

ABSTRACT: This Author Certificate presents a caterpillar drive for heavy machines, particularly excavators, including a lower frame and caterpillar carriages. To improve maneuverability and to decrease power requirements during turning, the lower frame is equipped with a pivot plate which can rotate in the horizontal direction and which is connected with the carriages so that it can operate vertically with the help of a lifting device (see Fig. 1). As an additional feature, the lifting devices (hydraulic cylinders) are rigidly connected to the lower frame and are pinned to the

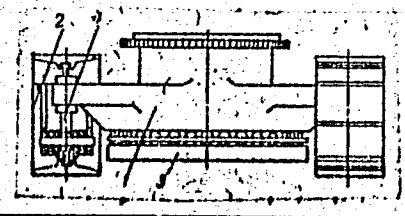

Fig. 1. 1 - lower frame; 2 - 2 - carriages; 3 - pivot plate; 4 - raising mechanism.

2

Card 1/2

UDC: 621.879.48:629.11.012.57

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L 27348-66

ACC NR: AP6007728

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carriages. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 18Oct63

Card 2/2 PB

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDYAN, A.A.

Eliminating the formation of ice locks in railroad tank cars transporting liquefied gases. Gaz. prom. 4 no.7:28 Jl '59. (MIRA 12:10)

(Liquefied gases--Transportation)

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

BCS

1981. Leadless and tin-free opaque glazes for wall tiles and majolica.—A. A. NALBANDYAN (*Stek. Keram.*, **8**, No. 1, 19, 1951) White and coloured opaque glazes are very suitable for tiles, etc. Normally lead glazes are used for this purpose with SnO_2 as an opacifier. Scarcity of Pb and Sn cpds. necessitates the use of substitutes, *e.g.* Sb, Ti, Ce, As, F and Zr cpds. In 1947 a Russian research institute developed the following opaque glazes for tiles, etc. made of Moscow and other clays (m.p. 950°–1,000° C.) *B-Zr white glazes:* In these PbO and Pb_3O_4 are substituted by cheap B cpds., *e.g.* colemanite ($Ca_2B_6O_{11}.5H_2O$) or hydroboracite ($CaMgB_6O_{11}.6H_2O$). An increase of alkali content beyond 0·3 mol. and of B_2O_3 above 0·4 weakens the opacification and causes crazing. To obtain the necessary gloss and to lower the m.p. a small amount of TiO_2, which has a high refractive index (2·3–2·9), is added to the glaze. Up to 3% TiO_2 in the frit lowers the m.p. of the glaze by 20° C. and increases the gloss by 3%; in addition, TiO_2 intensifies the opacification and imparts a pleasant warm tone to the glaze. As a substitute for Sn, de-ferrized Zr cpds. are used ($ZrSiO_4$). The opacifying effect of this is based on the co-existence of 2 phases having different refractive indices and solubilities. The opacification increases with increasing difference between the indices of the opacifier and glaze. The indices of normal glazes vary between 1·5 and 1·6, whereas the index of SnO_2 is 2·04, and that of Sb_2O_3 is 2·6; $ZrSiO_4$ has an index of 1·85. During melting, $ZrSiO_4$ releases ZrO_2 with an index of 2·4 (*i.e.* higher than that of SnO_2). Both SnO_2 and ZrO_2 dissolve in the glaze at the fusion temp., but separate out again during cooling. Another merit of $ZrSiO_4$ is its low coeff. of thermal expansion. Expts. have shown that the fritted glazes are considerably superior to raw ones of the same comp. The addition of 5–7% ZnO and 10–15% Al_2O_3 and a simultaneous reduction of SiO_2 improves the gloss and opacification. The best opacifying effect is achieved when 8–10% of $ZrSiO_4$ is added to the frit and 5–10% to the batch. The m.p. of the glaze is 950°–1,000° C., the coeff. of linear thermal expansion of its optimum comp. is $5{\cdot}37 \times 10^{-6}$, the whiteness 82%, and the gloss 75%. *B–Ti coloured opaque glazes:* As substitutes for Pb cpds., colemanite, hydroboracite and "painter's Ti" were used. $ZrSiO_4$, owing to its chem. inertness, is not suitable for bright colour shades; these frits were therefore used without $ZrSiO_4$ with an increased content of B_2O_3. This reduced the m.p. of frits to 1,000°–1,050° C. and of glazes to 940°–980° C. The latter had a low viscosity and a good gloss. On the basis of the above frits, by the addition to the mill batch of pigments and on-glaze colours (5–15%), a palette of glazes of various rich colours was obtained. The m.p. was 940°–1,000° C., the coeff. of linear thermal expansion $4{\cdot}77 \times 10^{-6}$, and gloss 70%. *F glazes:* Preliminary expts. have shown that Na_2SiF_6 can be used as

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NALBANDYAN, A.A.

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Glass, Clay Products, Refractories, and Enameled Metals

3

Firing of fusible opaque zirconium glaze. S. G. Tumanov (2) and A. A. Nalbandyan. *Steklo i Keram.* 10, No. 1, 15-18 (1953).—Prolonged holding at 1000° improves the surface and luster of boro-Zr glaze, but opacity and whiteness are impaired. Prolonged holding during cooling impairs the surface and causes crystn. Optimum heat cycle includes holding at 1000° for 0.5-1 hr. and cooling in a short period (up to 1 hr.). Microscopic study reveals that opacity is caused by Zr, accumulation of fine-grained needle-like crystals of unknown origin, and quartz. B. Z. Kamich

Matl

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

MALEANDIAN, A. A.

Dissertation: "Investigation of the Possibility of Improving the Quality of Fusible, Boron-Containing, Opaque Zirconium Glaze." Cand Tech Sci, Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev, 7 Jun 54. Vechernyaya Moskva, Moscow, 27 May 54.

SO: SUM284, 26 Nov 1954

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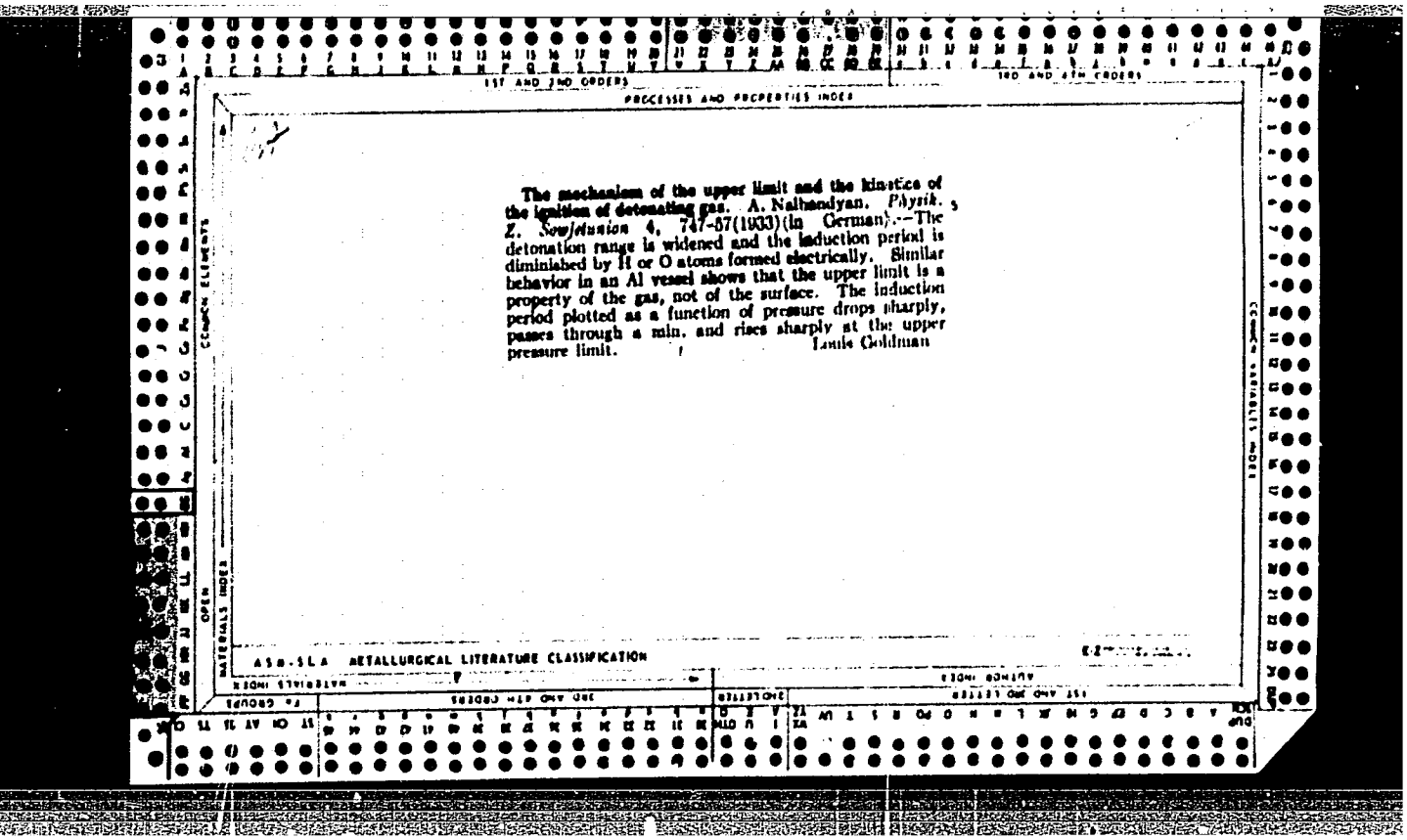

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

The mechanism of the upper limit and the kinetics of the ignition of detonating gas. A. Nalbandyan. *Physik. Z. Sowjetunion* 4, 747-57(1933)(In German).—The detonation range is widened and the induction period is diminished by H or O atoms formed electrically. Similar behavior in an Al vessel shows that the upper limit is a property of the gas, not of the surface. The induction period plotted as a function of pressure drops sharply, passes through a min. and rises sharply at the upper pressure limit. Tamis Goldman

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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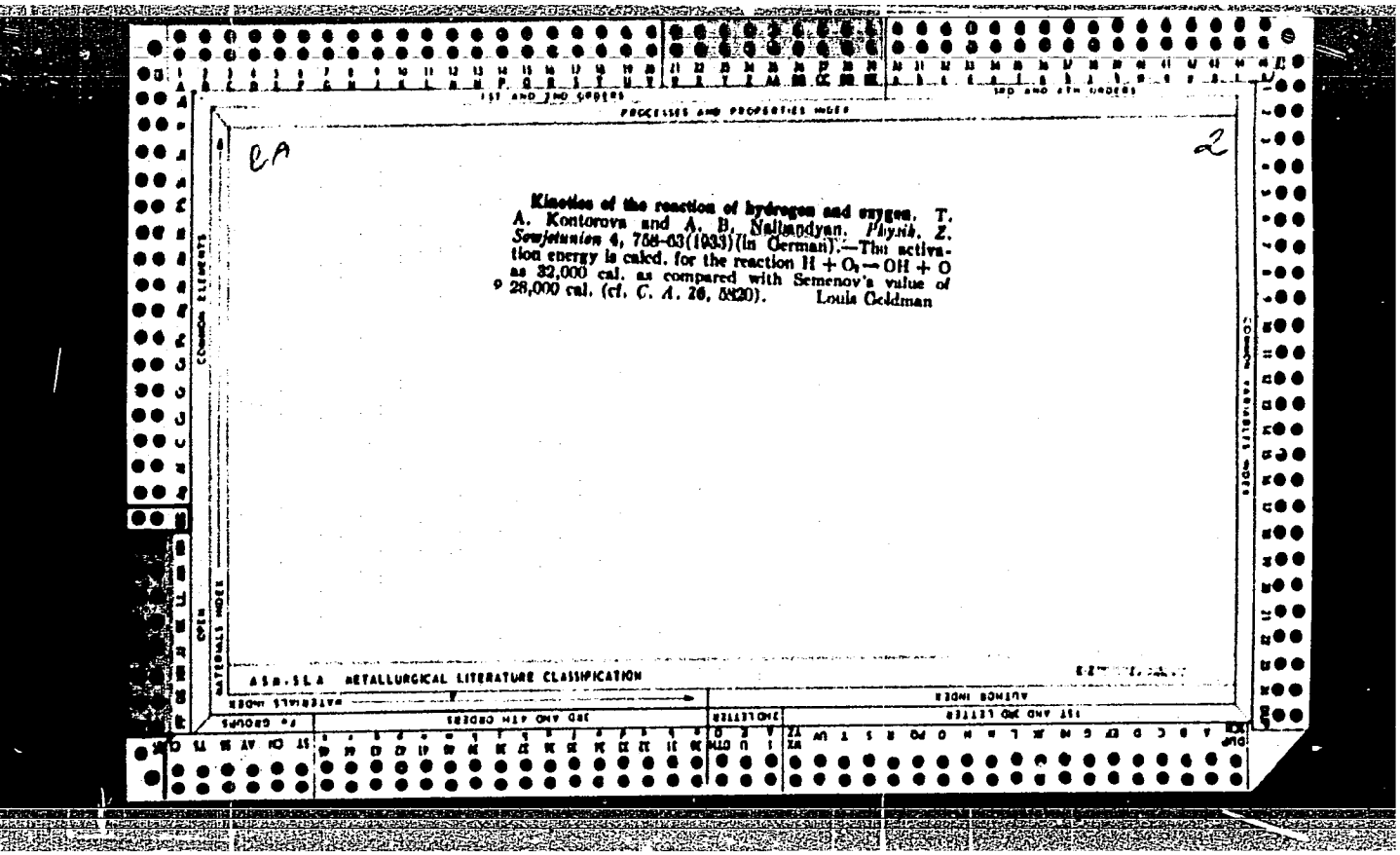

2A

2

Kinetics of the reaction of hydrogen and oxygen. T. A. Kontorova and A. B. Nalbandyan. *Physik. Z. Sowjetunion* 4, 758–63 (1933) (In German).—The activation energy is calcd. for the reaction $H + O_2 \rightarrow OH + O$ as 32,000 cal. as compared with Semenov's value of 28,000 cal. (cf. *C. A.* 26, 5820). Louis Goldman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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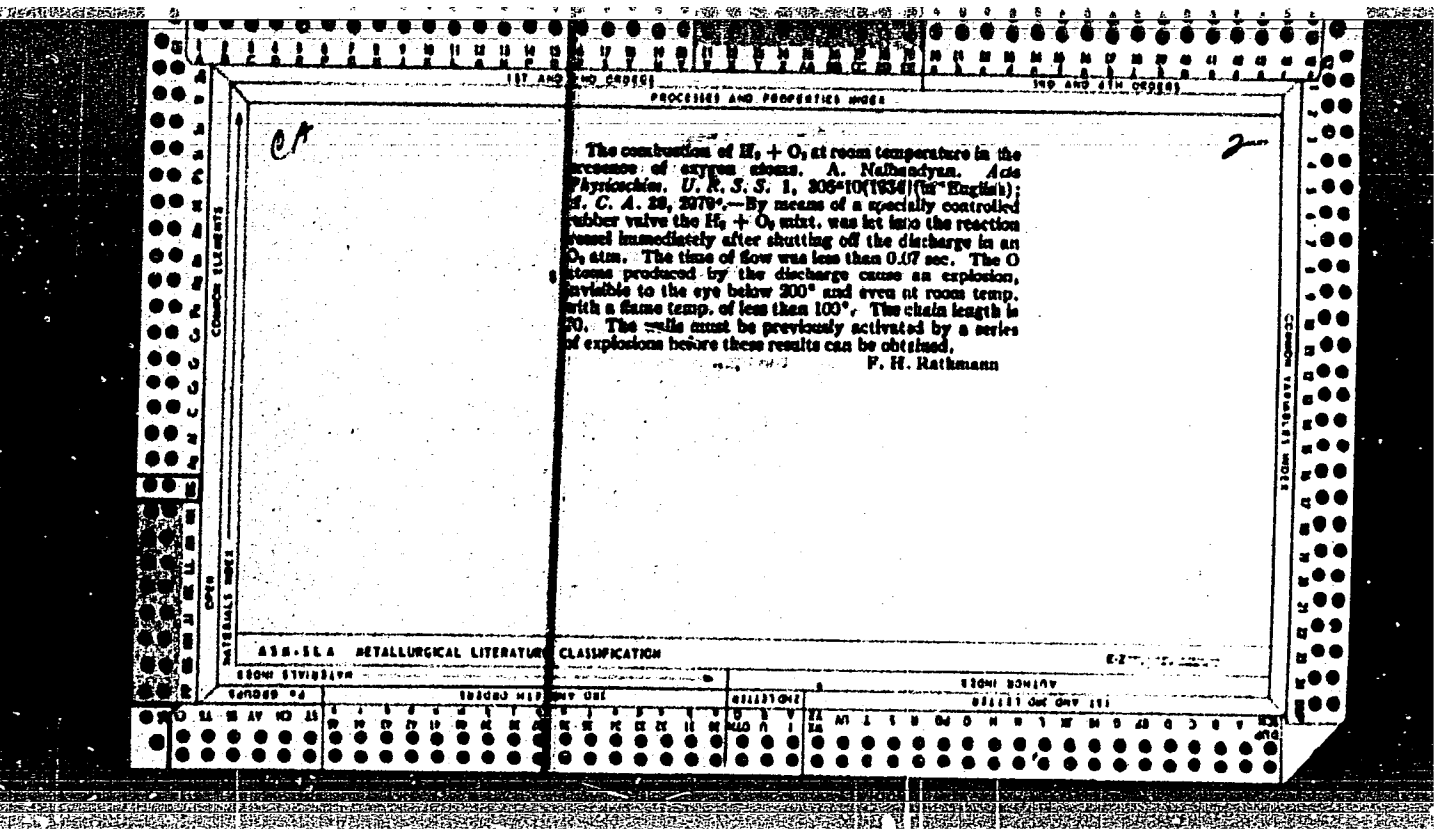

PROCESSES AND PROPERTIES INDEX

The combustion of $H_2 + O_2$ at room temperature in the presence of oxygen atoms. A. Nalbandyan. *Acta Physiochim. U. R. S. S.* 1, 306-10(1934)(in English); *C. A.* 29, 2979⁹.—By means of a specially controlled rubber valve the $H_2 + O_2$ mixt. was let into the reaction vessel immediately after shutting off the discharge in an O_2 atm. The time of flow was less than 0.07 sec. The O atoms produced by the discharge cause an explosion, invisible to the eye below 200° and even at room temp. with a flame temp. of less than 100°. The chain length is 20. The walls must be previously activated by a series of explosions before these results can be obtained.

F. H. Rathmann

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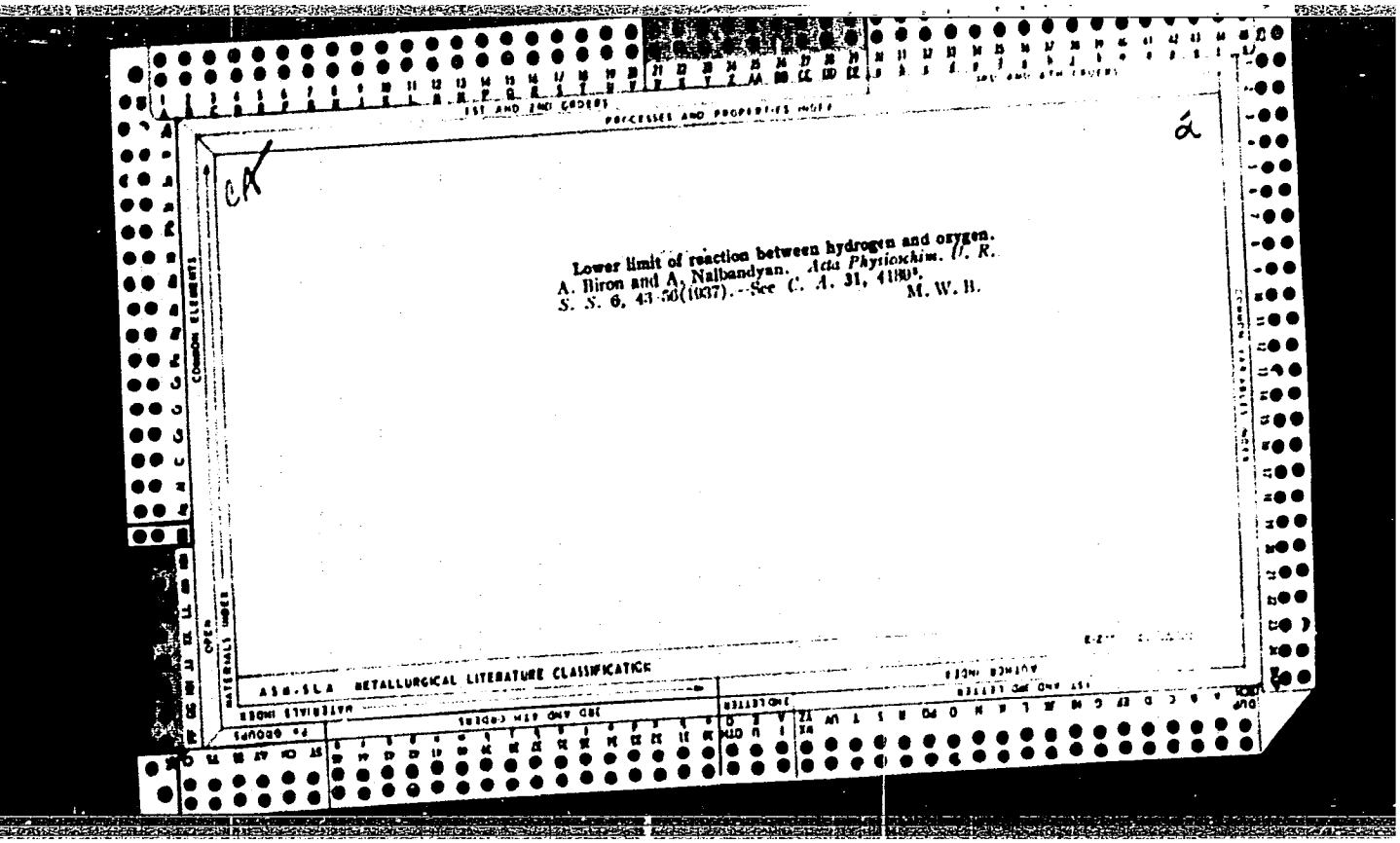

Lower limit of reaction between hydrogen and oxygen.
A. Biron and A. Nalbandyan. *Acta Physiochim. U. R. S. S.* 6, 43-50(1937).--See *C. A.* 31, 4180[9].
M. W. B.

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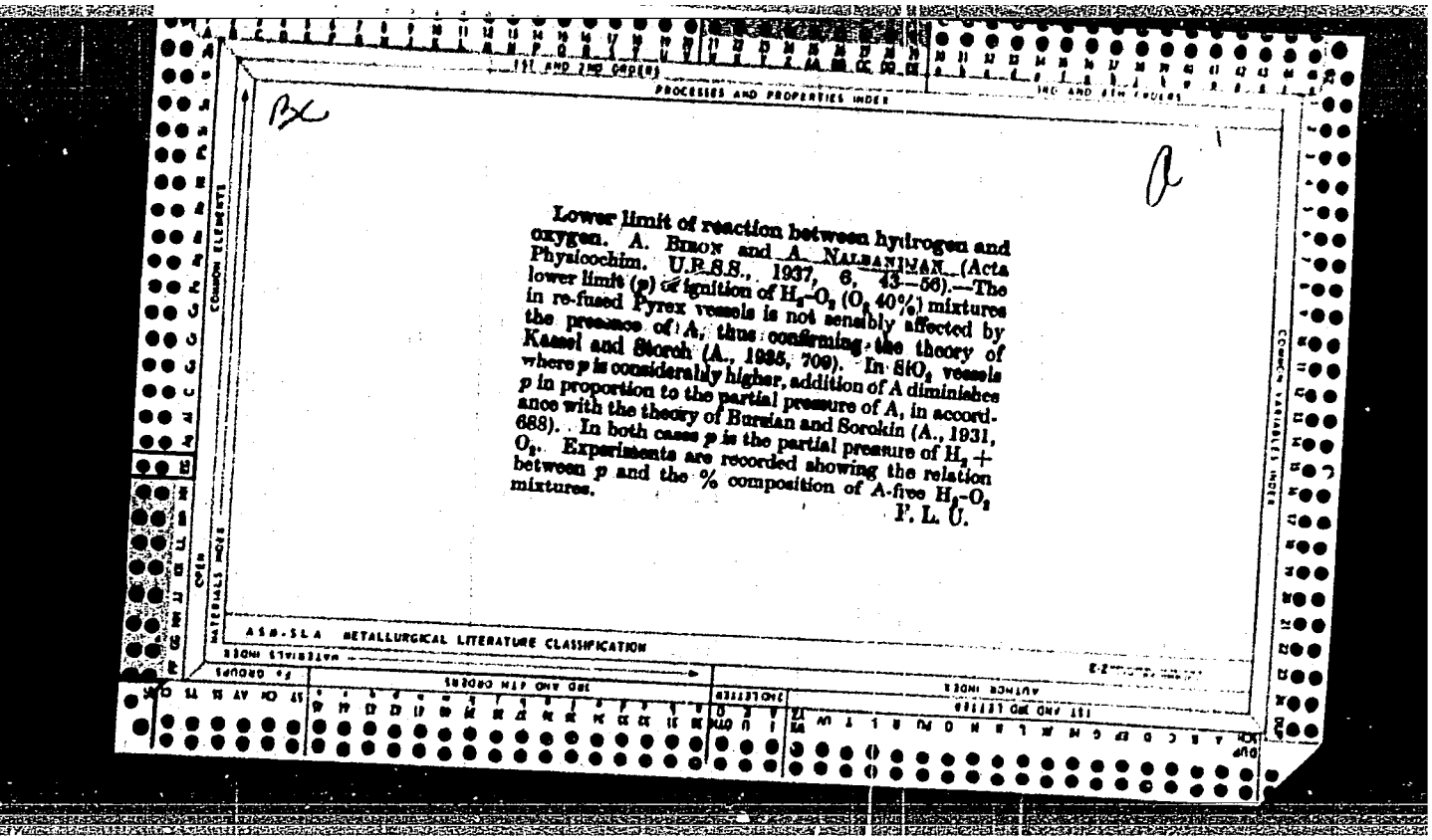

PROCESSES AND PROPERTIES INDEX

Lower limit of reaction between hydrogen and oxygen. A. Bibon and A. Nalbandyan. (Acta Physicochim. U.R.S.S., 1937, 6, 43—56).—The lower limit (p) of ignition of H_2–O_2 (O_2 40%) mixtures in re-fused Pyrex vessels is not sensibly affected by the presence of A, thus confirming the theory of Kassel and Storch (A., 1935, 709). In SiO_2 vessels where p is considerably higher, addition of A diminishes p in proportion to the partial pressure of A, in accordance with the theory of Bursian and Sorokin (A., 1931, 688). In both cases p is the partial pressure of H_2 + O_2. Experiments are recorded showing the relation between p and the % composition of A-free H_2–O_2 mixtures.

F. L. U.

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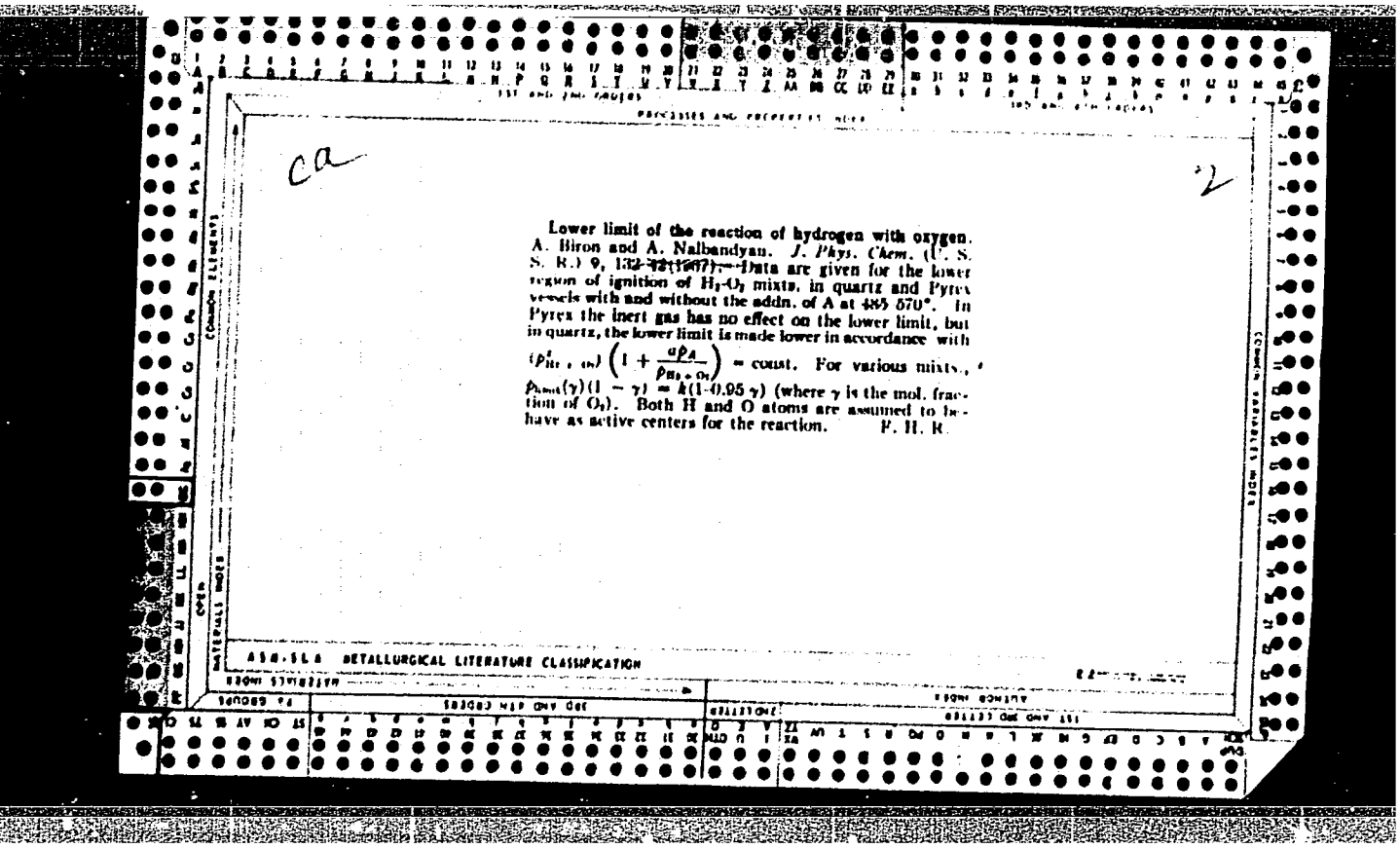

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2

Lower limit of the reaction of hydrogen with oxygen. A. Biron and A. Nalbandyan. *J. Phys. Chem.* (U. S. S. R.) 9, 132-42(1967).—Data are given for the lower region of ignition of H_2-O_2 mixts. in quartz and Pyrex vessels with and without the addn. of A at 485-570°. In Pyrex the inert gas has no effect on the lower limit, but in quartz, the lower limit is made lower in accordance with $(p^{\lambda}_{H_2+O_2})\left(1+\frac{ap_A}{p_{H_2+O_2}}\right)$ = const. For various mixts., $p_{limit}(\gamma)(1-\gamma) = k(1-0.95\gamma)$ (where γ is the mol. fraction of O_2). Both H and O atoms are assumed to behave as active centers for the reaction. F. H. R.

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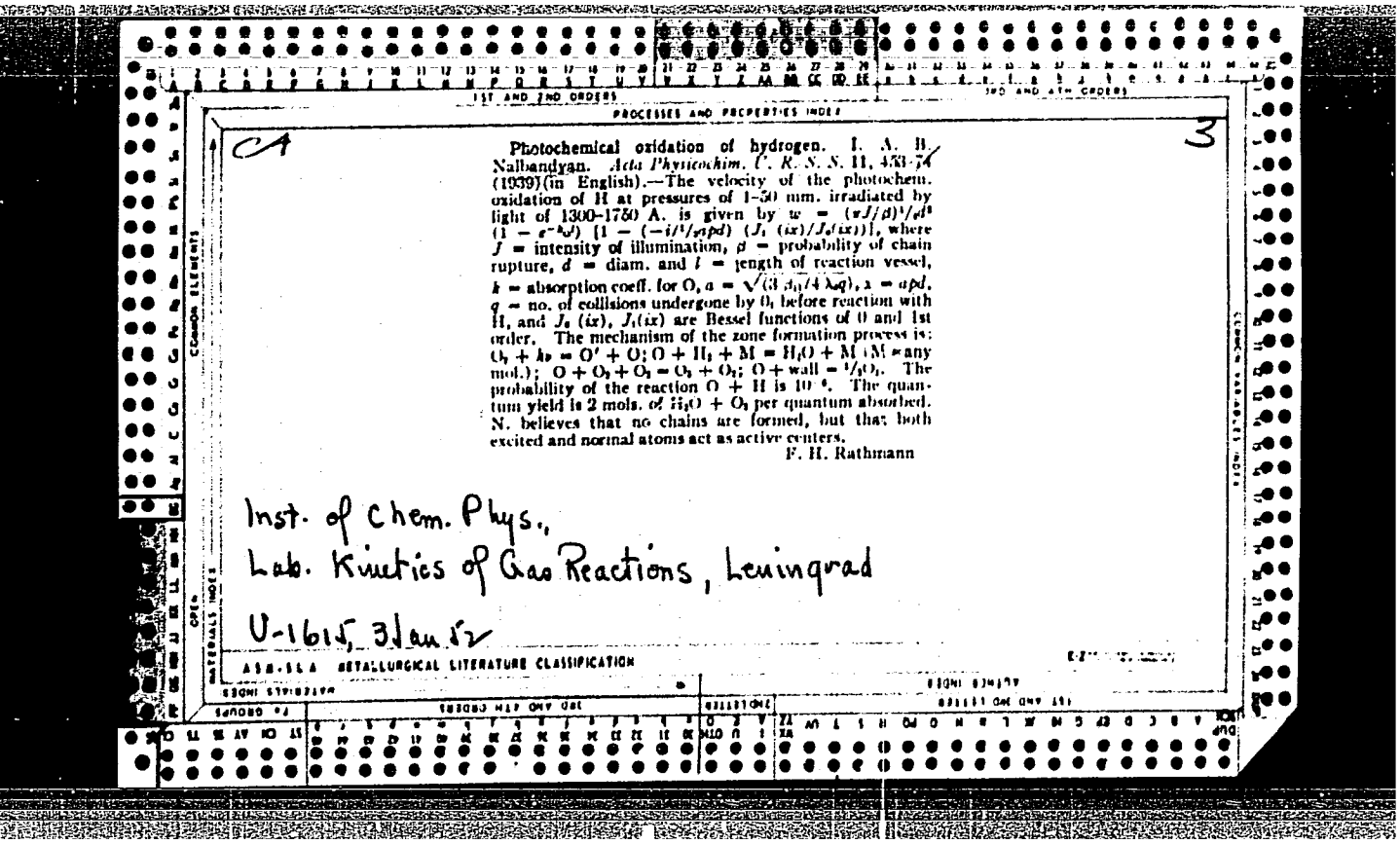

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

3

Photochemical oxidation of hydrogen. I. A. B. Nalbandyan. *Acta Physicochim. U. R. S. S.* 11, 453-74 (1939)(in English).—The velocity of the photochem. oxidation of H at pressures of 1-50 mm. irradiated by light of 1300-1750 A. is given by $w = (\pi J/\beta)^{1/2} d^2 (1 - e^{-k_0 l}) [1 - (-i/^1/_2 apd) (J_1 (ix)/J_0(ix))]$, where J = intensity of illumination, β = probability of chain rupture, d = diam. and l = length of reaction vessel, k = absorption coeff. for O, $a = \sqrt{(3\beta_0/4\lambda_0 q)}$, $x = apd$, q = no. of collisions undergone by O_1 before reaction with H, and $J_0(ix)$, $J_1(ix)$ are Bessel functions of 0 and 1st order. The mechanism of the zone formation process is: $O_2 + h\nu = O' + O$; $O + H_2 + M = H_2O + M$ (M = any mol.); $O + O_2 + O_2 = O_3 + O_2$; O + wall = $^1/_2 O_2$. The probability of the reaction O + H is 10^{-6}. The quantum yield is 2 mols. of $H_2O + O_2$ per quantum absorbed. N. believes that no chains are formed, but that both excited and normal atoms act as active centers.

F. H. Rathmann

Inst. of Chem. Phys.,
Lab. Kinetics of Gas Reactions, Leningrad
U-1615, 3 Jan 52

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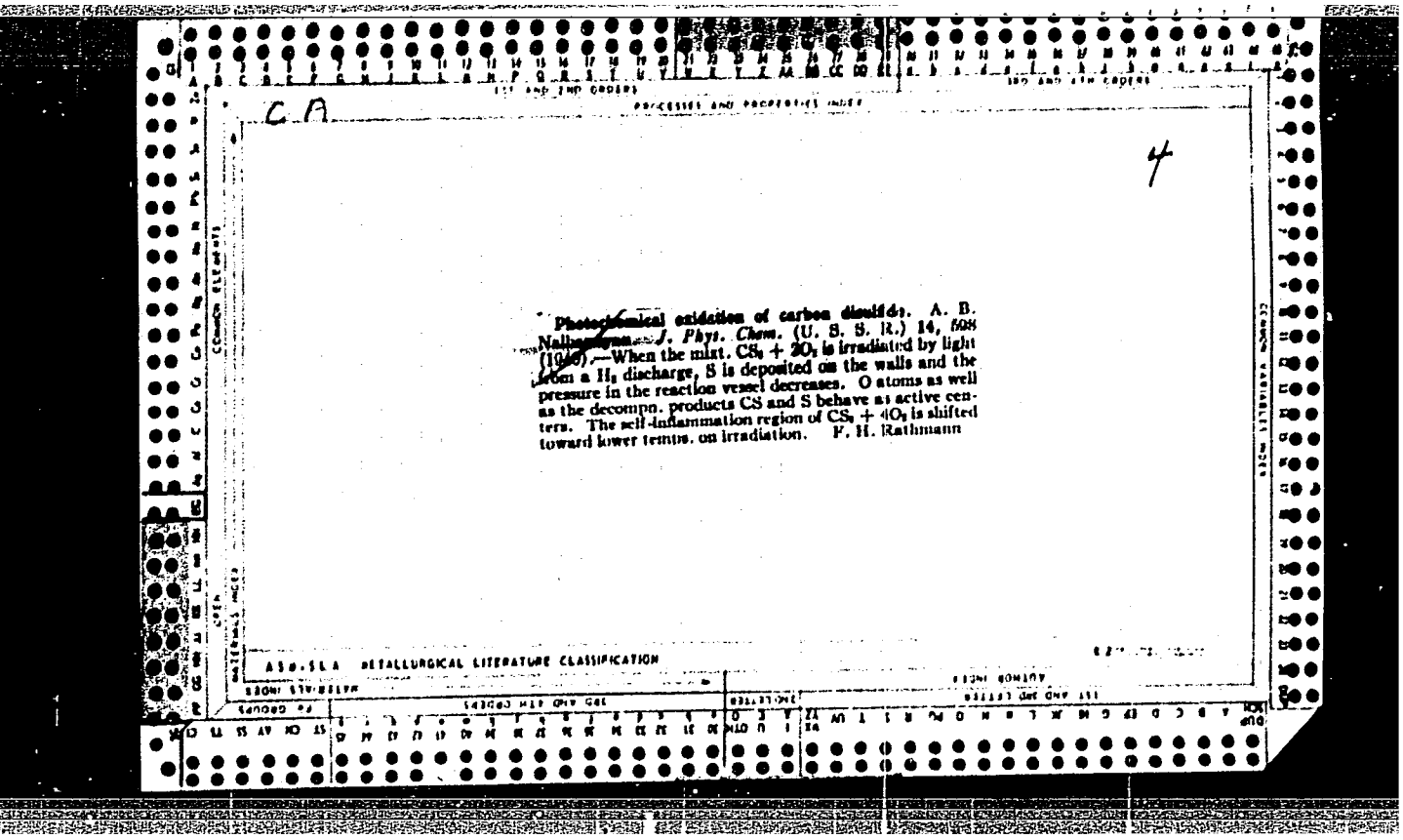

CA

4

Photochemical oxidation of carbon disulfide. A. B. Nalbandyan. *J. Phys. Chem.* (U. S. S. R.) 14, 698 (1940).—When the mixt. $CS_2 + 2O_2$ is irradiated by light from a H_2 discharge, S is deposited on the walls and the pressure in the reaction vessel decreases. O atoms as well as the decompn. products CS and S behave as active centers. The self-inflammation region of $CS_2 + 4O_2$ is shifted toward lower temps. on irradiation. F. H. Rathmann

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

Spontaneous ignition of $2H_2 + O_2$ mixtures in silver vessels. A. B. Nalbandjan (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, **32**, 196–198). In examining the spontaneous ignition of $2H_2 + O_2$ mixtures in Ag vessels, the rapidity of the surface reaction makes very rapid filling necessary, since ignition is inhibited by H_2O. The lower limit of spontaneous ignition in the Ag vessel used decreased with increasing temp. from 32 mm. at 578° to 17 mm. at 655°. The ignition has an induction period which decreases rapidly with increasing pressure above the ignition limit, and at the limit decreases with increasing temp. The shortness of the induction period and the surface reaction prevent the upper limit from being determined. L. J. J.

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"APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R001136020

NALBANDYAN, A. B.

"The Kinetics of Hydrogen Oxidation in the Region of Low-Temperature Ignition, I. Dependence of Induction Period on Pressure and Temperature, II. Influence of Admixtures," Acta. Phys., No. 6, 1944;

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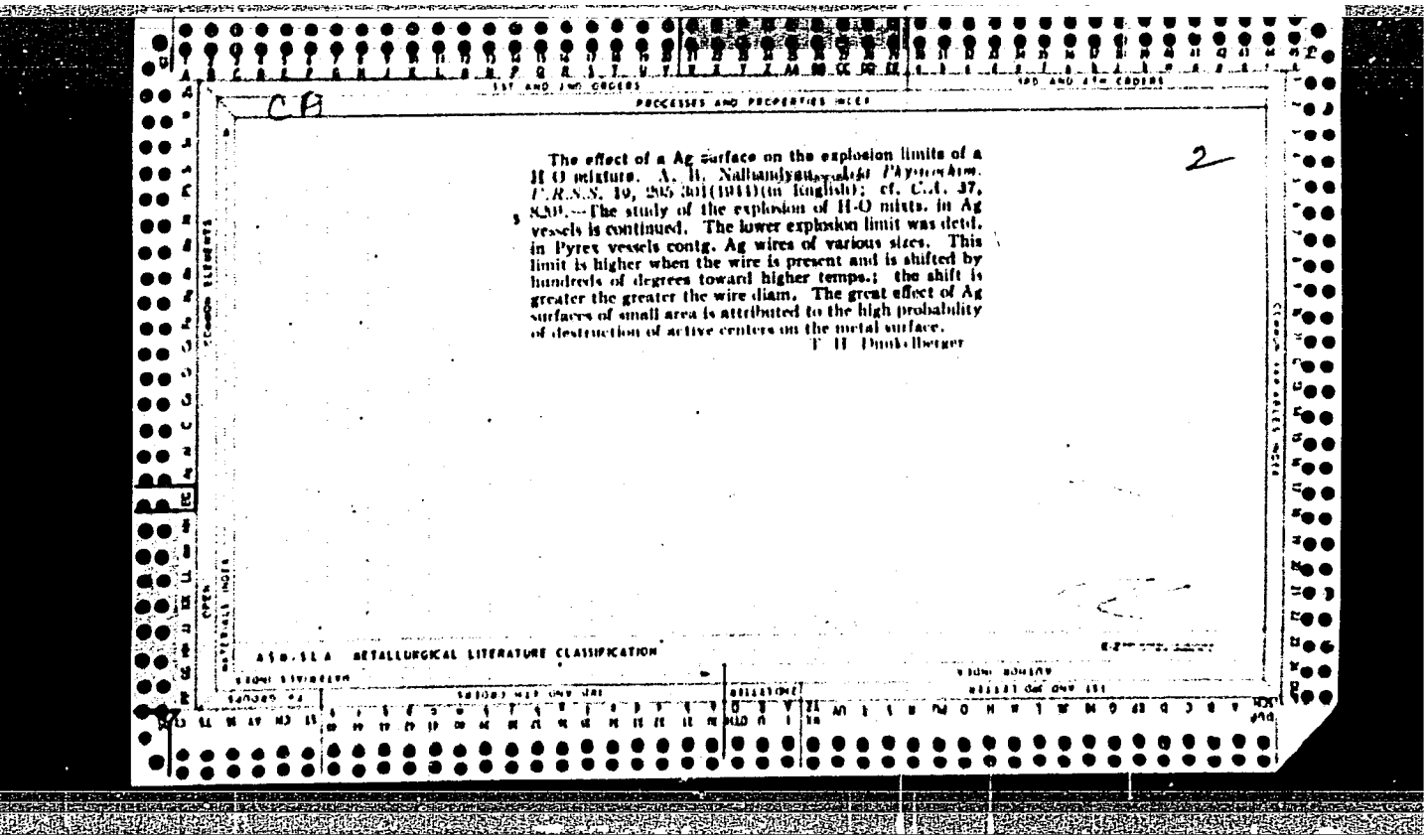
1ST AND 2ND ORDERS

3RD AND 4TH ORDERS



PROCESSES AND PROPERTIES INDEX

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The effect of a Ag surface on the explosion limits of a H-O mixture. A. B. Nalbandyan. *Acta Physicochim. U.R.S.S.* 19, 205-301(1944)(in English); cf. *C.A.* 37, 8209.—The study of the explosion of H-O mixts. in Ag vessels is continued. The lower explosion limit was detd. in Pyrex vessels contg. Ag wires of various sizes. This limit is higher when the wire is present and is shifted by hundreds of degrees toward higher temps.; the shift is greater the greater the wire diam. The great effect of Ag surfaces of small area is attributed to the high probability of destruction of active centers on the metal surface.

T. H. Dunkelberger

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NALBANDYAN, A. B.

The kinetics of hydrogen oxidation in the region of low-temperature ignition. I. Dependence of induction period on pressure and temperature. A. B. Nalbandyan. *Acta Physicochim. U.R.S.S.* 19, 483–98(1944)(In English). —Based on the mechanism of H oxidation suggested by Lewis and Elbe (*Combustion Flames and Explosion of Gases*, Cambridge, 1934) and on Semenov's method of partial stationary concn. (*Chemical Kinetics and Chain Reactions*; *C.A.* 29, 1706⁴), a formula for the dependence of the induction period upon pressure and temp. inside the peninsula of low-temp. ignition of $2H_2 + O_2$ was derived. Expt. shows this formula to be well satisfied on ascribing the value 23,000 cal. to the activation energy of the chain-branching reaction $H + O_2 = OH + O$, which ultimately dets. the over-all reaction rate as well as the temp. dependence of the upper limit. The rate of H oxidation was investigated as a function of the compn. of the mixt. Expt. and theory are shown to be in complete agreement. II. Effect of admixtures. *Ibid.* 497–507.— The effect of water and I_2 on the explosion limits and the kinetics of H oxidation within the region of low-temp. ignition were investigated. H_2O vapor is shown to lower the upper limit and to displace the ignition peninsula towards higher temps. H_2O is further shown to act on the upper limit as an inert gas, its efficiency being six times as large as that of H, and to have no effect on the temp. dependence of the parameter φ characterizing the velocity of H oxidation. Traces of I_2 in the H-O mixt. greatly lower the upper explosion limit, shifting the region of self-ignition towards higher temps., and affect the kinetics of $2H_2 + O_2$ ignition. In contrast to H_2O, I_2 mols. exert a direct action on the branching reaction $H + O_2 = OH + O$, resulting in changes in the temp. dependence of φ.

Kenneth H. Slagle

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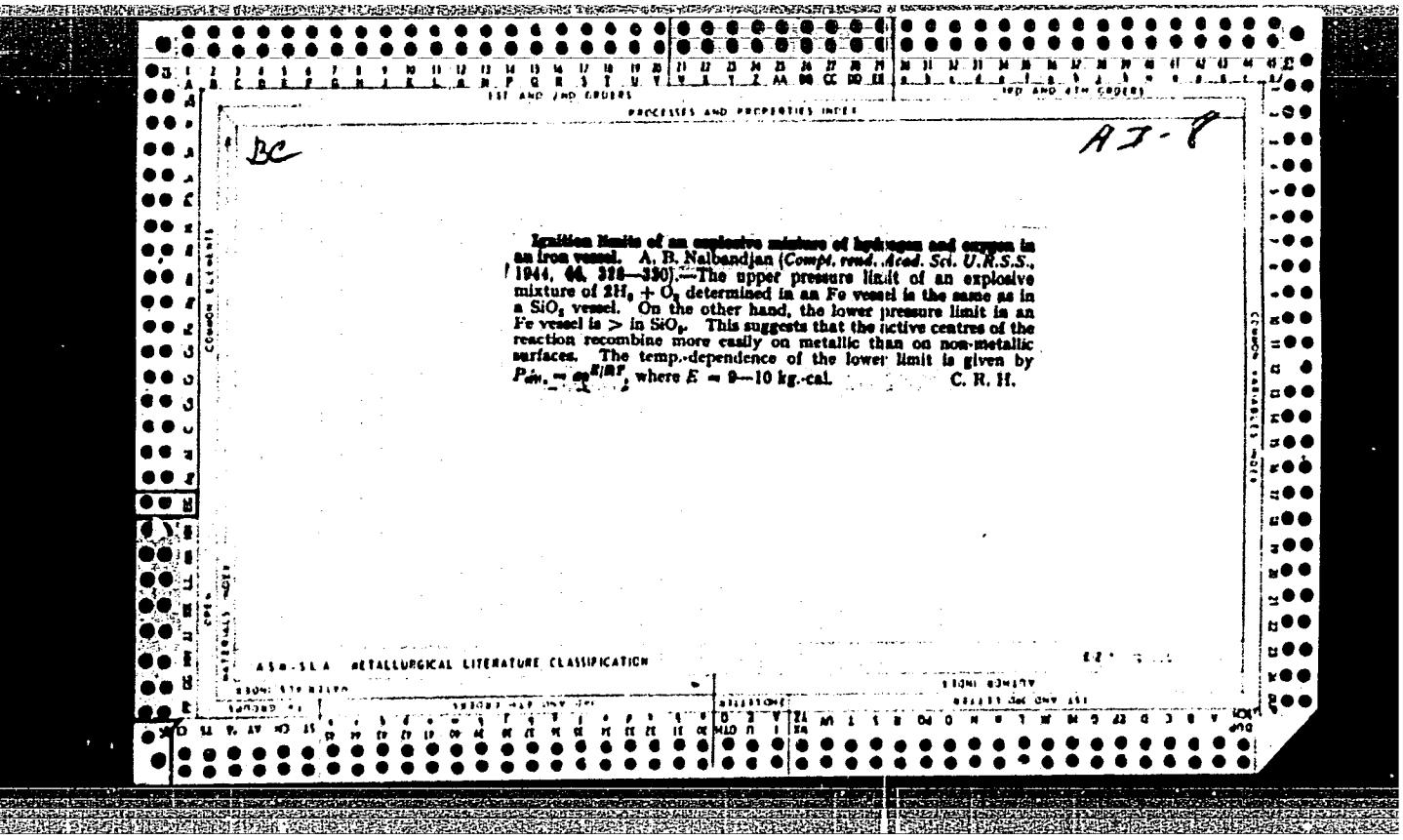

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Ignition limits of an explosive mixture of hydrogen and oxygen in an iron vessel. A. B. Nalbandjan (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, **44**, 328—330).—The upper pressure limit of an explosive mixture of $2H_2 + O_2$ determined in an Fe vessel is the same as in a SiO_2 vessel. On the other hand, the lower pressure limit in an Fe vessel is > in SiO_2. This suggests that the active centres of the reaction recombine more easily on metallic than on non-metallic surfaces. The temp.-dependence of the lower limit is given by $P_{min.} = ae^{E/RT}$, where E = 9—10 kg.-cal. C. R. H.

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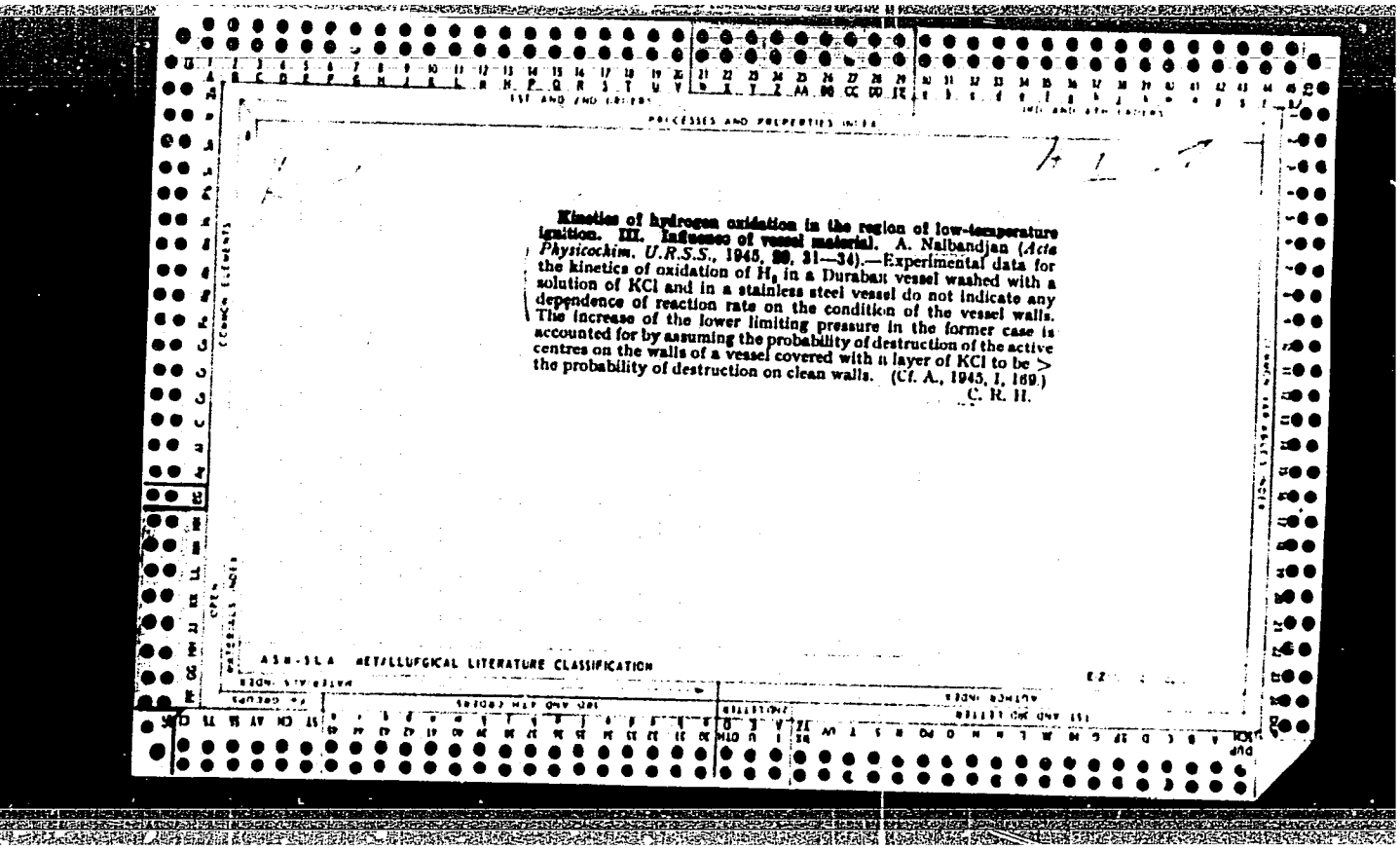

Kinetics of hydrogen oxidation in the region of low-temperature ignition. III. Influence of vessel material. A. Nalbandjan (*Acta Physicochim. U.R.S.S.*, 1945, **20**, 31—34).—Experimental data for the kinetics of oxidation of H_2 in a Duraban vessel washed with a solution of KCl and in a stainless steel vessel do not indicate any dependence of reaction rate on the condition of the vessel walls. The increase of the lower limiting pressure in the former case is accounted for by assuming the probability of destruction of the active centres on the walls of a vessel covered with a layer of KCl to be > the probability of destruction on clean walls. (Cf. A., 1945, I, 169.)

C. R. H.

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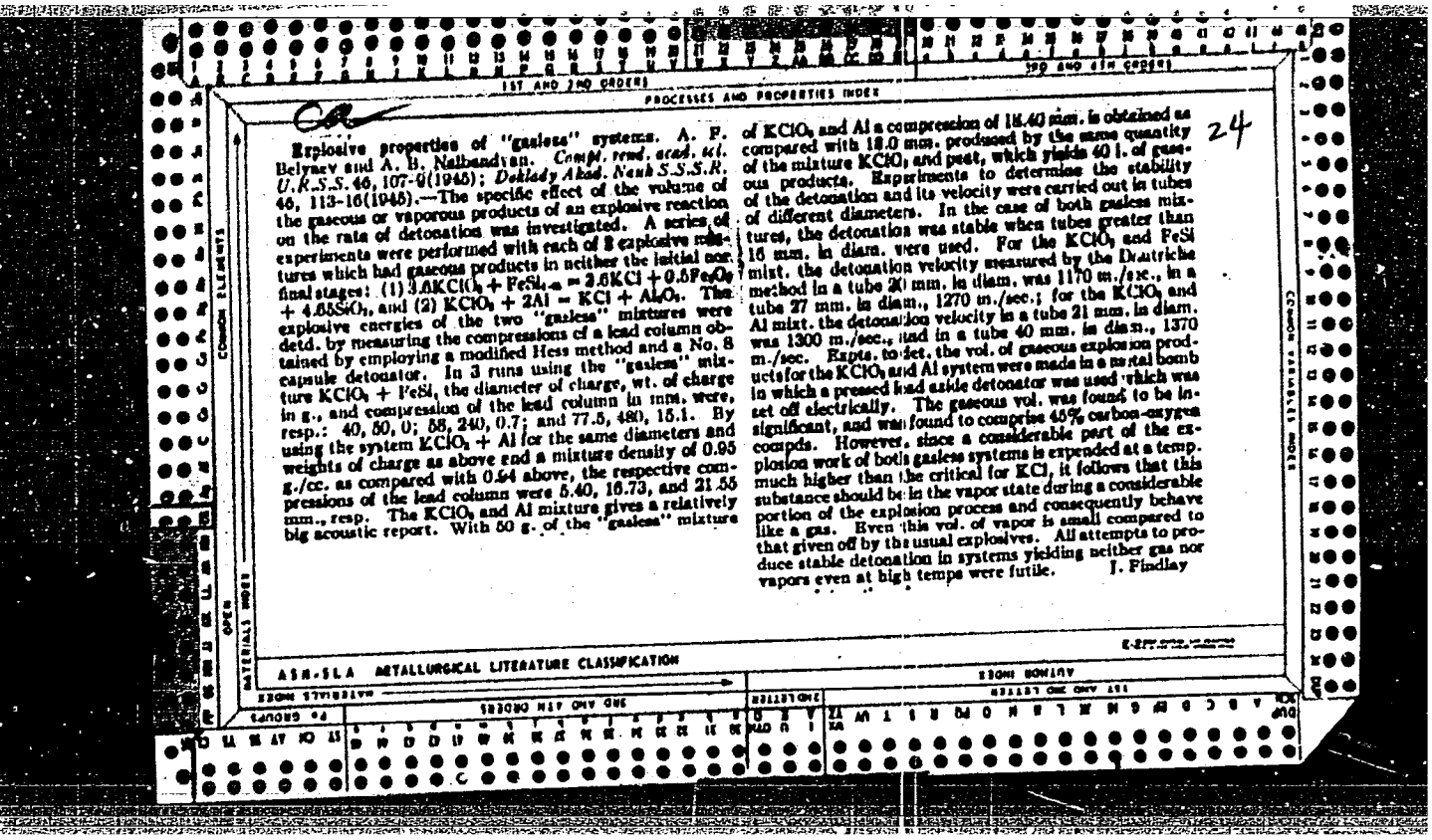

PROCESSES AND PROPERTIES INDEX

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Explosive properties of "gasless" systems. A. F. Belyaev and A. B. Nalbandyan. *Compt. rend. acad. sci. U.R.S.S.* 46, 107-9(1945); *Doklady Akad. Nauk S.S.S.R.* 46, 113-16(1945).—The specific effect of the volume of the gaseous or vaporous products of an explosive reaction on the rate of detonation was investigated. A series of experiments were performed with each of 2 explosive mixtures which had gaseous products in neither the initial nor final stages: (1) $3.6KClO_4 + FeSi_{4.6} = 3.6KCl + 0.5Fe_2O_3 + 4.65SiO_2$, and (2) $KClO_4 + 2Al = KCl + Al_2O_3$. The explosive energies of the two "gasless" mixtures were detd. by measuring the compressions of a lead column obtained by employing a modified Hess method and a No. 8 capsule detonator. In 3 runs using the "gasless" mixture $KClO_4$ + FeSi, the diameter of charge, wt. of charge in g., and compression of the lead column in mm. were, resp.: 40, 50, 0; 58, 240, 0.7; and 77.5, 480, 15.1. By using the system $KClO_4$ + Al for the same diameters and weights of charge as above and a mixture density of 0.95 g./cc. as compared with 0.64 above, the respective compressions of the lead column were 5.40, 16.73, and 21.55 mm., resp. The $KClO_4$ and Al mixture gives a relatively big acoustic report. With 50 g. of the "gasless" mixture of $KClO_4$ and Al a compression of 18.40 mm. is obtained as compared with 18.0 mm. produced by the same quantity of the mixture $KClO_4$ and peat, which yields 40 l. of gaseous products. Experiments to determine the stability of the detonation and its velocity were carried out in tubes of different diameters. In the case of both gasless mixtures, the detonation was stable when tubes greater than 16 mm. in diam. were used. For the $KClO_4$ and FeSi mixt. the detonation velocity measured by the Dautriche method in a tube 20 mm. in diam. was 1170 m./sec., in a tube 27 mm. in diam., 1270 m./sec.; for the $KClO_4$ and Al mixt. the detonation velocity in a tube 21 mm. in diam. was 1300 m./sec., and in a tube 40 mm. in diam., 1370 m./sec. Expts. to det. the vol. of gaseous explosion products for the $KClO_4$ and Al system were made in a metal bomb in which a pressed lead azide detonator was used which was set off electrically. The gaseous vol. was found to be insignificant, and was found to comprise 46% carbon-oxygen compds. However, since a considerable part of the explosion work of both gasless systems is expended at a temp. much higher than the critical for KCl, it follows that this substance should be in the vapor state during a considerable portion of the explosion process and consequently behave like a gas. Even this vol. of vapor is small compared to that given off by the usual explosives. All attempts to produce stable detonation in systems yielding neither gas nor vapors even at high temps were futile. J. Findlay

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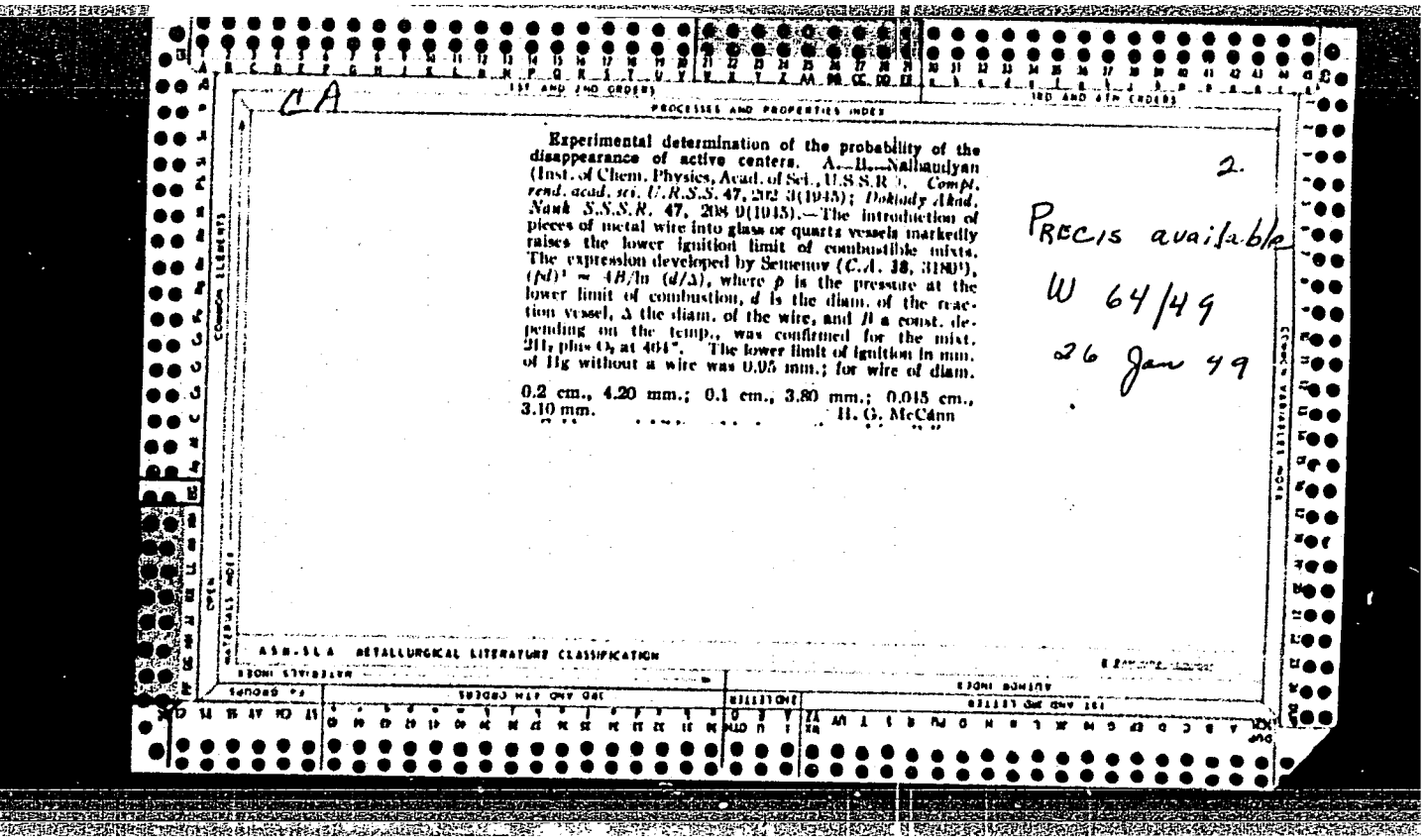

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PROCESSES AND PROPERTIES INDEX

Experimental determination of the probability of the disappearance of active centers. A. B. Nalbandyan (Inst. of Chem. Physics, Acad. of Sci., U.S.S.R.). *Compt. rend. acad. sci. U.R.S.S.* 47, 202–3(1945); *Doklady Akad. Nauk S.S.S.R.* 47, 208–9(1945).—The introduction of pieces of metal wire into glass or quartz vessels markedly raises the lower ignition limit of combustible mixts. The expression developed by Semenov (*C.A.* 38, 3180⁹), $(pd)^2 = 4B/\ln(d/\Delta)$, where p is the pressure at the lower limit of combustion, d is the diam. of the reaction vessel, Δ the diam. of the wire, and B a const. depending on the temp., was confirmed for the mixt. $2H_2$ plus O_2 at 404°. The lower limit of ignition in mm. of Hg without a wire was 0.05 mm.; for wire of diam. 0.2 cm., 4.20 mm.; 0.1 cm., 3.80 mm.; 0.045 cm., 3.10 mm. H. G. McCann

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NALBANDYAN, A. B.

Measurement of the coefficient of recombination of atomic hydrogen at various surfaces by a determination of the lower limit of ignition of the mixture $2H_2 + O_2$. A. B. Nalbandyan and S. M. Shubina (Inst. Chem. Phys., Acad. Sci. U.S.S.R., Moscow). *J. Phys. Chem.* (U.S.S.R.) 20, 1249-58(1946)(in Russian).--The lowest total pressure p at which the mixt. $2H_2 + O_2$ can be ignited at 440° is 1.05 and 7 mm. Hg in glass vessels of 6.50 and 1.83 cm. diam. Filaments of other solids, 0.05-0.1 cm. in diam., raise p. The greatest increase was observed with $ZnCr_2O_4$ and graphite; both give p = 10.3 mm. in a vessel that, alone, gave p = 0.53 at 440°. Au, W, Pt, and stainless steel show smaller increases of p. Untreated quartz raised p at 440° from 0.04 to 2.34, and quartz rinsed with HF raised p to 1.48. KCl did not affect p at 500° because of rapid evapn. Pd and (above 390°) Pt catalyzed the combustion of H_2 so that p could not be measured. From the exptl. p values the coeff. ϵ of recombination of H atoms at various surfaces can be calcd. $ZnCr_2O_4$ and graphite have ϵ = 1.0 at 440°, Au 0.008 at 440°, Pt 0.0089 at 388°, W 0.0057 at 540°, stainless steel 0.0028 at 440°, untreated quartz 0.0005 at 440°, quartz rinsed with HF 0.0003 at 440°, and pyrex glass washed with a $K_2B_4O_7$ soln. 0.00002 at 440°. The pressure p in the presence of graphite was detd. also at 530° and 558°; from these values the energy of activation of the reaction $H + O_2 = OH + O$ appears to be 17,800 cal. From the increase of the upper limit of ignition with temp. between 310° and 410° in a glass vessel washed with $K_2B_4O_7$ soln. the activation energy of 18,000 cal. is computed. All the above results agree with Semenov's theory (*C.A.* 38, 3189[9]).

J. J. Bikerman

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