L 34706-65 EPF(c)/EPR/EWT(m)/EWP(b)/EWP(t) Pr-4/Ps-4/ IJP(c)/BFL
ACCESSION NR: AP4044744 S/0153/64/007/003/0437/0440 25 23 B

AUTHOR: Karavayev, M. M.; Kirillov, I. P.

TITLE: Production of nitric acid of intermediate concentration

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 7, no. 3, 1964, 437-440

TOPIC TAGS: nitric acid, nitric acid production, process, intermediate concentration, nitrogen oxide recovery, nitric oxide, nitrogen peroxide, nitrogen tetroxide

ABSTRACT: The possibility of obtaining 70-90% HNO_3 $\frac{\%HNO_3 \cdot 100}{\%HNO_3 + \%H_2O}$ by the condensation of water vapor in the presence of nitrogen oxides and of nitric acid vapors formed in the gas phase was investigated. The reactor described previously by M. M. Karavayev (Kandid. dissertatsiya, Ivanovo, 1959) was used; two condensers, one water-cooled to 20-??C and the other ice-cooled to 8-10C, and an ice-cooled collector were connected to the reactor. The nitrogen oxides were obtained by the vapor-oxygen oxidation of ammonia, suitably at about 102C. The

Card 1/2

L 34706-65

ACCESSION NR: AP4044744 2

effect of the $[NO_2]:[H_2O]$ ratio on the degree of nitrogen oxide recovery and the concentration of the HNO_3 produced is summarized in the enclosed figure. Reactor volume had no effect on the synthesis of HNO_3 from NO_2, but in the synthesis from NO, the first stage of the reaction--oxidation of the NO must be completed before condensation of the vapors. Lowering the condenser and collector temperatures below 8C did not increase HNO_3 concentration, but did increase the solubility of the nitrogen tetroxide. The degree of nitrogen oxide recovery was lowered from 86% to 12-15% when increasing the HNO_3 concentration from 68% to 85-87%. The gas remaining after condensation can be recycled into the system either to the reactor or before the condenser. Thus the recovery of the nitrogen oxides in the production of HNO_3 from vapor-oxygen or oxygen oxidation of ammonia can be increased to 99-99.5%. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Lisichanskiy filial GIAP (Lisichansk Branch GIAP); Ivanovskiy khimikotekhnologicheskiy institut (Ivanov Chemotechnical Institute)

SUBMITTED: 20Sep63 ENCL: 01

SUB CODE: GC NO REF SOV: 006 OTHER: 005

Card 2/3

KARAVAYEV, M.M.; ZHANTALAY, V.A.

Density of solutions of nitrogen tetroxide in concentrated nitric acid. Zhur. prikl. khim. 37 no. 4:756-760 Ap '64. (MIRA 17:5)

1. Lisichanskiy filial Gosudarstvennogo institut azotnoy promyshlennosti.

ACCESSION NR: AP4043762 S/0080/64/037/008/1689/1695

AUTHOR: Karavayev, M.M.; Kaganskiy, I.M.; Zhantalay, V.A.

TITLE: Pressure of nitric acid vapors over high concentrated nitro-oleum

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 2, 1964, 1689-1695

TOPIC TAGS: nitric acid, nitro-oleum absorption, saturated vapor, permanganatometric method, potenciometric method, acidometry, optical density

ABSTRACT: The author's intention is to obtain data on the equilibrium vapor pressure over the system HNO_3-N_2O_4-H_2O in the presence of high concentrations of nitrogen tetroxide. The pressure of saturated vapor was determined by a dynamic method using an installation which was described in a previous paper (Kaganskiy, I.M., Karavayev, M.M., Sukachev, B.P., and Lyubchenko, T.V., Zh.P.Kh, XXXIV, 1087, (1961)). The equilibrium composition, and hence the pressure of saturated vapors as well as the partial pressure of the components was found through an analysis of the gas mixture. A glass vessel 500 mm long and 50 mm in diameter was used for spectroscopic measurements. The HNO_3 vapors were determined with the spectral instrument IKS-12. The authors concluded that the equilibrium pressure of nitric acid vapors over concentrated nitro-oleum does not change with the

Card 1/2

ACCESSION NR: AP4043762

increase in the concentration of nitrogen oxides from 35% up to separation into layers. A drop in P_{HNO_3} has been noticed only during the transition to binary systems at all temperatures. A decrease in the concentration of HNO_3 within the investigated range does not change the partial pressure of nitric acid. Orig. art. has: 2 figures and 4 tables

ASSOCIATION: Severnodonetskiy filial Gosudarstviennogo instituta azotnoy promy*shlennosti (Northern Don Branch, State Institute of the Nitrogen Industry)

SUBMITTED: 23Oct62 ENCL: 00

SUB CODE: IC NO REF SOV: 005 OTHER: 004

Card 2/2

ACCESSION NR: AP4032496 S/0080/64/037/004/0756/0760

AUTHOR: Karavayev, M. M.; Zhantalay, V. A.

TITLE: Density of solutions of nitrogen tetroxide in concentrated nitric acid.

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 4, 1964, 756-760

TOPIC TAGS: nitric acid, density, nitrogen tetroxide solution density, HNO sub 3 N sub 2 O sub 4 H sub 2 O system, density, HNO sub 3 .N sub 2 O sub 4 solvate

ABSTRACT: The density of solutions of N_2O_4 (from 20% to limits of separation) in 98.2, 96.0, 94.2 and 92.2% HNO_3 $\left(\frac{\text{wt.\% } HNO_3 \cdot 100}{\text{wt.\% } HNO_3 + \text{wt.\% } H_2O}\right)$ was determined at 0, 10 and 20C. The values were tabulated and shown graphically (fig. 1). Under the investigated conditions the density of the HNO_3-N_2O_4-H_2O system has a maximum, within limits of 40-43 wt.% N_2O_4, whose position changes depending on temperature and water concentration in the system. This increased density is attributed to the formation of the solvate $HNO_3 \cdot N_2O_4$. Values are also given for the constants a and b in the equation $\rho = a - bt$ from which densities at other temperatures may be calculated. Orig. art. has: 5 equations, 1 figure and 2 tables.

Card 1/3 Lisichansk Branch, State Inst. of the Nitrogen Industry

L 16628-65 EWT(m)/EPF(c)/EPR Pr-4/Ps-4 RPL/AEDC(a)/SSD/SSD(a)/AFWL/
AS(mp)-2/AFETR WW/JW

ACCESSION NR: AP4041790 S/0080/64/037/007/1420/1426

AUTHOR: Karavayev, M. M.; Kaganskiy, I. M.; Skvortsov, G. A.

TITLE: Investigation of a process for producing nitric acid of increased concentration

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 7, 1964, 1420-1426

TOPIC TAGS: nitric acid, production, heterogeneous process, 70% nitric acid, gas phase reaction, ammonia conversion, thermodynamics, nitrogen oxide conversion, reaction rate

ABSTRACT: The method investigated for obtaining more concentrated nitric acid from gases obtained by conversion of ammonia with air is based on bringing about a heterogeneous process in the condenser with the reaction proceeding partially in the gas phase. According to thermodynamic calculations using gas of composition approximating that obtained in 97% conversion of ammonia in air (11.5% ammonia): 10.6% NO_2, 16.4% H_2O, 6.2% O_2, 66.8% N_2 it is possible to obtain 70% HNO_3. The decrease of nitrogen oxide conversion was found to drop as temperature is increased from 298-500K. Upon combining the heterogeneous

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L 16628-65
ACCESSION NR: AP4041790

process for HNO_3 formation with the process for its formation in the gas phase, the role of the latter is minor. Optimum reaction pressure is 1-3 atmospheres. The partial pressure of the nitrogen oxides in the initial gas affects the HNO_3 concentration; to obtain 70% HNO_3 the partial pressure of the nitrogen oxides should be 190-200mm Hg or higher. Increasing the water vapor content in the gas lowered the acid concentration but increased the degree of nitrogen oxide conversion. The use of oxygen promoted the oxidation of the secondary nitrogen oxide and increased HNO_3 concentration in the product. Orig. art. has: 3 equations, 4 figures and 1 table.

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promy*shlennosti (Lisichansk Branch State Institute of the Nitrogen Industry)

SUBMITTED: 07Aug62 ENCL: 00

SUB CODE: GC, IC NO REF SOV: 003 OTHER: 004

Card 2/2

L 23410-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c)/
RPL JD/WW/JW

ACCESSION NR: AT5000504 S/0080/64/037/011/2371/2375

AUTHOR: Karavayev, N. M.; Kaganskiy, I. M.; Zhantalay, V. A.

TITLE: The viscosity of nitrogen tetroxide solutions in concentrated nitric acid

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 11, 1964, 2371-2375

TOPIC TAGS: nitrogen tetroxide, nitric acid, nitric acid viscosity

ABSTRACT: The viscosity of the HNO_3-N_2O_4-H_2O system was studied at high concentrations of N_2O_4 (from 20% to a concentration at which a second layer was formed) in 92.2, 94.2, 96.0, and 98.2% HNO_3 at 0, 10, and 20C. It was shown that the viscosity increases initially as the concentration of N_2O_4 increases, but when the concentration of N_2O_4 goes above 39-44%, the viscosity decreases somewhat. In general, the higher the concentration of acid and the lower the temperature, the greater is the viscosity; while the viscosity of N_2O_4 solutions in 98.2% HNO_3 at 0C increased by 75% as the N_2O_4 concentration increased, the viscosity of the 92.2% HNO_3 solution, under analogous conditions, increased by only 23%. At 20C the respective increments were 52% and 14%. The addition of water resulted in the release of free N_2O_4 and as the concentration of the latter increased the

Card 1/2

L 23410-65
ACCESSION NR: AP5000504

viscosity of the solution decreased. Increasing the concentration of water in $HNO_3 \cdot N_2O_4$ resulted in a lower viscosity of the hydrate ($HNO_3 \cdot H_2O$) than of the solvate ($HNO_3 \cdot N_2O_4$). However, in solutions containing mixtures of nitrogenous oxides in concentrations below 30-35%, there was still a considerable amount of free HNO_3 or $(HNO_3)_2$, with a consequent increase in the amount of $HNO_3 \cdot H_2O$. This leads to an increase in the number of associated molecules in the solution and therefore an increased viscosity, even when the concentration of water increases. Orig. art. has: 1 figure, 3 formulas and 3 tables.

ASSOCIATION: Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti (Lisichansk branch, State nitrogen industry institute)

SUBMITTED: 10Nov62 ENCL: 00 SUB CODE: IC

NO REF SOV: 001 OTHER: 003

Card 2/2

KARAVAYEV, M.M.; KAGANSKIY, I.M.; SKVORTSOV, G.S.

Method of production of nitric acid of higher concentration. Zhur. prikl.khim. 37 no.7:1420-1426 Jl '64. (MIRA 18:4)

1. Lisichanskiy filial Gosudarstvennogo instituta azotnoy promyshlennosti.

L 00935-66 EWT(m)/EPF(c)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5019729 UR/0153/65/008/003/0435/0439
661.56

17
15
B

AUTHOR: Karavayev, M. M.; Kirillov, I. P.; Skvortsov, G. A.

TITLE: Desorption of nitrogen oxides from nitric acid solutions by intermediate concentration

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 3, 1965, 435-439

TOPIC TAGS: nitrogen oxide, nitric acid bleaching, nitrogen oxide desorption

ABSTRACT: Preliminary laboratory experiments were carried out on the desorption of nitrogen oxides from nitric acid solutions (bleaching) at atmospheric pressure; the process was also studied on a semi-industrial scale at pressure up to 5.5 atm. An artificial mixture of 70% HNO_3 + N_2O_4 was prepared at zero degrees, then heated. It was found that the desorption process is determined by the temperature, by the quantity of gas supplied, and by the area of contact between the phases. The rate of evolution of nitrogen oxides increases with rising temperature and is relatively high during the initial stage over the entire temperature range. The best conditions for carrying out the process in a packed column at 5.5 abs. atm. are: temperature, 45-55C; reflux

Card 1/2

L 00935-66

ACCESSION NR: AP5019729

2

density, 40-50 m^3/m^2 of column cross section; air flow, 120-200 m^3/t. By increasing the amount of air supplied, the temperature of the process can be lowered to 35-40C. The reflux densities in the bleaching columns of operating plants can be increased by a factor of approximately two by carrying out the process under the conditions studied. The reaction volumes can be correspondingly reduced. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv, Severodonetskiy filial instituta azotnoy promyshlennosti (Department of Technology of Inorganic Compounds, North Donets Branch, Institute of the Nitrogen Industry); Ivanovskiy khimiko-tekhnologicheskiy institut (Ivanovo Chemical Engineering Institute)

SUBMITTED: 06Apr64 ENCL: 00 SUB CODE: IC

NO REF SOV: 003 OTHER: 001

dy

Card 2/2

L 10991-66 EWT(m)/EWP(t)/EWP(b) IJP(c)/RPL JD/WW/JW/RM

ACC NR: AP6000601 SOURCE CODE: UR/0080/65/038/009/1949/1953

AUTHOR: Kegansky, I. M.; Kerevayev, M. M. Skvortsov, G. A.

ORG: North Don Branch of GIAP (Severodonetskiy filial GIAP)

TITLE: Production of highly concentrated nitric acid

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 9, 1965, 1949-1953

TOPIC TAGS: nitric acid, inorganic synthesis, nitrogen oxide

ABSTRACT: The article considers some aspects of the production of highly concentrated nitric acid after contact (catalytic) oxidation of ammonia. For the calculations, the following initial gas composition was assumed (%): NO_2--10.6; H_2O--16.4; O_2--6.2; N_2--66.8. The experiments were carried out at the following temperatures: in the reaction volume--102°; after the first condensation stage--15°; after the second condensation stage--8 to 9°. Results are shown in a series of curves. The concentration of the product nitric acid and the conversion of the nitrogen oxides increases almost linearly with an increase in pressure. The maximum concentration of the product nitric acid, other conditions being equal, is attained at that combination of free volume and surface in the cooler which, at a given cooling temperature, assures almost 100%

Card 1/2 UDC: 661.56

oxidation of the exit gases. The experimental data show that at a pressure of 2.6 atm an acid concentration of 68% may be achieved, while at a pressure of 3 atm it reaches 69.5 to 70%. In these cases, the degree of conversion of the nitrogen oxides is 70 and 74%, respectively. The degree of conversion can be increased by reducing the NO_2: H_2O ratio; however, in this case the concentration of the nitric acid decreases correspondingly. To attain complete conversion of the initial nitrogen oxides, the article proposes a scheme involving a 25 to 35% recycle of the nitrogen gases. A series of runs was made to test this hypothesis and the results are shown in a figure. Calculation on the basis of these results shows that with a 30% recycle, the conversion of the initial nitrogen oxides reaches 98% with a product acid concentration of from 65 to 70%. Orig. art. has: 5 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 18 Jul63/ ORIG REF: 001/ OTH REF: 000

L 26263-66 EWT(m) JD

ACC NR: AP6014264 SOURCE CODE: UR/0153/66/009/001/0080/0084

38
B

AUTHOR: Skvortsov, G. A.; Kirillov, I. P.; Karavayev, M. M.

ORG: Severodonets Branch of GIAP (Severodonetskiy filial GIAP); Department of the Technology of Inorganic Substances of the Ivanovo Chemical Technology Institute (Kafedra tekhnologii neorganicheskikh veshchestv, Ivanovskiy khimiko-tekhnologicheskiy institut)

TITLE: Absorption of nitrogen oxides by 65—70% nitric acid

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 1, 1966, 80-84

TOPIC TAGS: nitric acid, oxidizer, liquid propellant, propulsion

ABSTRACT: This work deals with the feasibility of using 65—70% nitric acid as a solvent for nitrogen oxides. The absorption parameters were determined. It was found that 99% of nitrogen oxides from catalytic-oxidation products of ammonia could be absorbed, leaving a residual concentration of nitrogen oxides of 0.1% by volume. Nitrogen oxides were absorbed by 65—70% nitric acid, accompained by oxidation of NO to NO_2 to the extent of 85—90%. The N_2O_3 present in the gas stream dissolves without reacting with nitric acid. The degree of nitrogen-oxide absorption with respect to the number of theoretical plates was determined, and the efficiency of the theoretical plates was calculated. Orig. art. has: 5 figures and 1 table. [VS]

SUB CODE: 21/ SUBM DATE: 06Apr65/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4243

Card 1/1

L 41333-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JW

ACC NR: AP6025584 SOURCE CODE: UR/0413/66/000/013/0018/0018

AUTHORS: Skvortsov, G. A.; Karavayev, M. M.; Kirillov, I. P.; Ford, M. L.; Alekseyenko, D. A.; Kaganskiy, I. M.

ORG: none

TITLE: A method for obtaining nitric acid. Class 12, No. 183194 [announced by Severodonets Branch of State Scientific Research and Design Institute of the Nitrogen Industry and of the Products of Organic Synthesis (Severodonetskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 18

TOPIC TAGS: nitric acid, nitrogen compound, nitric acid

ABSTRACT: This Author Certificate presents a method for obtaining nitric acid under the pressure of 5--10 atm, out of nitrogen oxides in the system of condensation of water vapors. To increase the concentration of nitric acid, the unreacted nitrogen oxides are absorbed by the produced acid at a temperature no higher than -5C, bleached, and used to strengthen the acid at a temperature of 25--45C in the absorption part of the bleaching column. [04]

SUB CODE: 07/ SUBM DATE: 13Apr64/ ATD PRESS: 5158

Card 1/1 11b UDC: 661.562.05

KARAVAYEV, M.N.

The UM-2,5-type mobile unit for manufacturing macaroni. Biul. tekh.-ekon.inform. no.12:45-46 '59. (MIRA 13:4)
(Macaroni)

KARAVAYEV, M.N.

The KhTL dough-dividing and rolling production line. Biul. tekh.-ekon.inform. no.1:55-57 '60. (MIRA 13:5)
(Bakers and bakeries--Equipment and supplies)

KARAVAYEV, M.N.

The LPL-1 and LPL-1A screw presses for manufacturing macaroni. Biul.tekh.-ekon.inform. no.4:48-49 '60. (MIRA 13:11)
(Macaroni) (Power presses)

KARAVAYEV, M. N.

Karavayev, M. N. - "The principle features in the growth of the plant covering of central Yakut from the middle of the Tertiary period," In the symposium: Doklady na Pervoy Nauch. sessii Yakut. bazy AN SSSR. Yakutsk, 1948, p. 151-63

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

KARAVAYEV, M.N.

Lichens

Perfumatory lichens and the prospect of their utilization in the U.S.S.R. Trudy Bot. inst. AN SSSR, Ser. 2, No. 6, 1950.

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

KARAVEYEV, M.N.

Review of species of the genus Arctous Niedenzu. Bot.mat.Gerb. 15:182-196 '53. (MLRA 7:2)
(Ericaceae)

KARAVAYEV, M.L.

A species of sweet vetch Hedysarum vicioides Turcz. Bot.mat. Gerb. 16:233-236 '54. (MLRA 8:9)
(Hedysarum)

KARAVAYEV, M.N.

Division of the taiga zone of Yakutia into geobotanical districts.
Vest.Mosk.un.10 no.8:109-115 Ag.'55. (MLRA 9:1)

1.Kafedra geobotaniki.
(Yakutia--Phytogeography)

KARAVAYEV, M.N.

New data on the winterfat Eurotia lenensis Kumin. Bot.mat.Gerb. 17:112-121 '55. (MLRA 9:5)

(Winterfat)

KARAVAYEV, M.N.; POPOVA, A.I.

New data on the spore and pollen analysis of Neocene deposit of Northeastern Asia. Biul.MOIP.Otd.biol. 60 no.6:107-113 N-D '55. (MLRA 9:3)

(SIBERIA, EASTERN--GEOLOGY, STRATIGRAPHIC)

Karavayev, M. N.

USSR/Geology - Paleontology

Card 1/1 Pub. 22 - 38/53

Authors : Karavayev, M. N.

Title : Paleogeographic reconstruction of Cainozoic landscapes of the central Yakutya plain

Periodical : Dok. AN SSSR 102/4, 797-799, Jun 1, 1955

Abstract : A paleogeographic reconstruction is presented of Cainozoic era landscapes of the central Yakutya plains of Central Asia. Five USSR references (1945-1955).

Institution : Acad. of Sc., USSR, Council for the Study of Productive Forces

Presented by: Academician I. P. Gerasimov, December 29, 1954

KORETSKAYA, Lidiya Aleksandrovna; KARAVAYEV, M.N., otvetstvennyy redaktor; KUL'TIASOV, I.M., redaktor izdatel'stva; ASTAF'YEVA, G.A., tekhnicheskiy redaktor

[Fodder resources of the Zeya-Bureya plain] Kormovye resursy Zeisko-Bureinskoi ravniny. Moskva, Izd-vo Akademii nauk SSSR, 1956. 77 p.
(Amur Province--Forage plants) (MLRA 9:8)

KARAVAYEV, M.N.

KARAVAYEV, M.N.

Dividing the eastern part of the Central Yakutian Plain into detailed geobotanical regions. Vest.Mosk.un.Ser.biol.,pochv., geol., geog. 12 no.2:39-46 '57. (MIRA 10:10)

1.Kafedra geobotaniki Moskovskogo universiteta.
(Yakutia--Phytogeography)

KARAVAYEV, M.N.

Rare collection of Polynesian plants at the Moscow University. Vest. Mosk. un. Ser. biol., pochv., geol., geog. 12 no.3:235-242 '57.
(Moscow--Herbaria) (Polynesia--Botany) (MIRA 10:12)
(Forster, Georg, 1754-1794)

KARAVAYEV, M.N.

New species in the flora of Yakutia. Bot. mat. Gerb. 18:7-12 '57.
(Yakutia--Botany) (MLRA 10:6)

KARAVAYEV, M. N.

5-6-37/42

AUTHOR: Karavayev, M. N.

TITLE: New Materials of a James Cook's Expedition in the Herbarium of the MGU (Novyye materialy ekspeditsii Dzhemsa Kuka v gerbarii MGU)

PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskiy, 1957, 32# 6, pp 149-150 (USSR)

ABSTRACT: The Moscow State University, MGU, is in possession of a very rare collection of plants which belonged formerly to G.F. Hofman and which were collected mainly by students and close co-workers of K. Linné. A very interesting herbarium of J. and G. Forsters, co-travellers of J. Cook, is contained in this collection. The Forsters' herbarium consists of 280 plant species. The first part of the herbarium, 193 species, consists of the plants collected on the Pacific islands of the southern hemisphere. The second part, about 60 species, includes the plants collected in the West Indies, in South America and the southern part of Africa.

AVAILABLE: Library of Congress

Card 1/1

Karavayev, M. N.

KARAVAYEV, Mikhail Nikolayevich; TOLMACHEV, A.I., otvetetstvennyy red.; SABUROV, D.N., red.izd-va; TVERITINOVA, K.S., tekhn.red.

[Compendium of the flora of Yakutia] Konspekt flory IAkutii. Moskva, Izd-vo Akad.nauk SSSR, 1958. 1958. 189 p. (MIRA 11:3)
(Yakutia--Botany)

Academy of Sciences, Yakutsk ASSR.

KARAVAYEV, A.N.

3(5) PHASE I BOOK EXPLOITATION SOV/1761

Akademiya nauk SSSR. Institut geografii.

Voprosy fizicheskoy geografii (Problems in Physical Geography) Moscow, Izd-vo AN SSSR, 1956. 370 p. Errata slip inserted. 1,500 copies printed.

Resp. Ed.: G.D. Richter, Doctor of Geographical Sciences, Professor; Ed. of Publishing House: D.N. Tagarinov; Tech. Ed.: N.D. Novikhova.

PURPOSE: This book is intended for meteorologists, hydrologists, pedologists, geologists, and students of physical geography in general.

COVERAGE: These articles are dedicated to Academician A.A. Grigor'yev in commemoration of his seventy-fifth birthday anniversary. They treat problems in physical geography pertaining to the northern regions of the USSR and particularly those of Yakutia. The majority of the articles are devoted to questions of latitudinal and vertical zonation and contain much factual material on the relationship between the various geographic components. Practical conclusions and methodological principles are cited. Each article is accompanied by maps, photographs and numerous bibliographic references.

SOV/1761

Problems in Physical Geography

Kerzhentsev, A.S. Attempt to Divide the Territory of Yakutiya Into Large Natural Units 183

Khromyy, K.K. Geobotanical Zoning of the Eastern Part of the Central Yakutskaya Plains 226

Richter, G.D. The Origin and Evolution of "Oases" in Antarctica 258

Tikhomirov, B.A. Problems in the Dynamics of Surface Heating in the Arctic in Connection With the Origin of Baydzharakhskiy Mounds 285

Kunitsyn, L.F. Perennial Frosts and Related Landforms in the Northeastern Part of the West Siberian Plains 313

Grekov, V.I., and N.S. Prudkin. The Yakut Expedition of the Academy of Sciences of the USSR 1925-1930 and Its Studies in Physical Geography 338

AVAILABLE: Library of Congress

Card 1/4

KARAVAYEV, M.N., FILIN, V.R., RYBAKOVA, N.O.

New data on arctic plants of Yakutia. Nauch.dokl.vys.shkoly; biol.nauki no.1:139-141 '58 (MIRA 11:8)

1. Predstavlena gerbariyem. kafedroy vysshikh rasteniy i laboratoriyey sporo-pul'tsevogo analiza Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(LYAKHOV, ISLANDS--BOTANY)

KARAVAYEV M.N

KARAVAEV, N.N.

Brief characteristics of the flora of Yakutia. Nauch. dokl. vys. shkoly; biol. nauki no.2:102-107 '58. (MIRA 11:10)

1.Predstavlena kafedroy geobotaniki Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.
(Yakutia--Botany)

KARAVAYEV, M.N.

Collection of plant drawings at the Moscow State University.
Biul. Glav. bot. sada no.31:124-125 '58. (MIRA 12:5)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Moscow--Botany--Catalogs and collections)

AUTHOR: Karavayev, M.N. SOV-5-58-2-42/43

TITLE: Coniferous Fossils of the Tertiary and Quaternary Period in the Lena Basin (Iskopayemyye khvoynyye tretichnogo i chetvertichnogo periodov v basseyne r. Leny)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody - Otdel geologicheskiy, 1958, Nr 2, pp 166-167 (USSR)

ABSTRACT: During the last decade, Tertiary and early Quaternary sediments were discovered by geologic research in the Yakutian ASSR, especially in the Central Yakutian plains. The material obtained on north-east Asia was evaluated by A.P. Vas'kovskiy, and on the Lena basin by the author, who gives a short description of the various coniferous fossils of these periods.

1. Paleoecology—USSR

Card 1/1

KARAVAYEV, M.N.

Relict steppe fragments with Helictotrichon krylovii (N.Pavl.) Henrard in Yakutia [with summary in English]. Bot. zhur. 43 no.4: 481-489 Ap '58. (MIRA 11:6)

(Yakutia--Helictrotrichon)

KARAVAYEV, N.N.

First find of Tsuga affin. longibracteata Cheng. in a fossil state in the U.S.S.R. [with summary in English]. Biul.MOIP. Otd.biol. 63 no.4:73-76 Jl-Ag '58 (MIRA 11:11)
(KANGALASSY--HEMLOCK, FOSSIL)

KARAVAYEV, N.N.

Principal characteristics of the distribution of land forms in Yakutia. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.2: 46-53 '59. (MIRA 12:8)

1. Moskovskiy universitet biologo-pochvennyy fakul'tet, kafedra geobotaniki.
(Yakutia--Physical geography)

KARAVAYEV, M.N.

Scirpus uniflorus Trautv., a forgotten good species from Eastern Siberia. Nauch. dokl. vys. shkoly; biol. nauki no.4:90-93 '59. (MIRA 12:12)

1.Rekomendovana kafedroy geobotaniki Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(Siberia, Eastern--Sedges)

KARAVAYEV, M.N.

Nitrogen-fixing nodules on fossil alder (Alnus sp.) roots.
Bot. zhur. 44 no.7:1000-1001 Jl '59. (MIRA 12:12)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Aldan Valley--Alder, Fossil) (Root tubercles)

BOCHANTSEV, V.P.; KARAVAYEV, M.N.

The new genus Gorodkovia Nob. of the mustard family. Bot.mat. Gerb. 19:109-113 '59. (MIRA 12:8)
(Yakutia--Gorodkovia)

BIDZHIYEV, R.A.; KARAVAYEV, M.N.

Recent materials on Neogene deposits of central Yakutia; the problem of Mount Mamontova. Vest.Mosk.un.Ser.biol., pochv., geol., geog. 14 no.4:117-124 '59. (MIRA 13:6)

1. Kafedra paleontologii i geobotaniki Moskovskogo universiteta.
(Aldan Valley--Geology, Stratigraphic)

YURTSEV, B.A.; KARAVAYEV, M.N.

A new Oxytropis species of the section Baicalia Bge. in the mountain steppes of northeastern Yakutia. Biul. MOIP. Otd. biol. 66 no.4:34-41 Jl-Ag '61. (MIRA 14:7)

(YAKUTIA—OXTROPIS)

KARAVAYEV, M.N.

G.Forster as a botanist and his botanical collections in the U.S.S.R. Trudy Inst. ist. est. i tekh. 36:176-201 '61. (MIRA 14:9)

(Forster, Georg, 1754-1794) (Herbaria)

GUCHEK, T.S.; ZEMLYANSKAYA, V.G.; KARAVAYEV, N.N.; SYTINA, A.I.; SENTSOV, V.M.; TYULYAYEVA, V.P.; OBRUCHEV, V.V., otv. red.; KORMIL'TSEVA, A.A., red. izd-va; GOLUB', S.P., tekhn. red.

[Bibliography of the Yakut A.S.S.R., 1931-1959] Bibliografiia IAkutskoi ASSR, 1931-1959. Moskva, Izd-vo Akad. nauk SSSR. Vol.2. [Natural features, resouces, and national economy] Prirodnye usloviia, resursy i narodnoe khoziaistvo. 1962. 254 p. (MIRA 15:7)

1. Akademiya nauk SSSR. Sektor seti spetsial'nykh bibliotek. 2. Nauchnaya biblioteka Soveta po izucheniyu proizvoditel'nykh sil Akademii nauk SSSR (for Guchek, Zemlyanskaya, Sytina Tyulyayeva). 3. Moskovskiy gosudarstvennyy universitet (for Karavayev). 4. Yakutskaya respublikanskaya biblioteka im. A.S. Pushkina (for Sentsov).

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Steppes of the Indigirka River. Biul.MOIP.Otd.geol. 36 no.6:123-124 N-D '61. (MIRA 15:7)
(Indigirka Valley--Steppes)

KARAVAYEV, M.N.; FILIN, V.R.

First discovery of fossil Boschniakia rossica(Cham. et Schlecht.) B.Fedtsch. in the U.S.S.R. Vest. Mosk. un. Ser. 6:Biol., pochv. 17 no. 2:53-56 Mr-Ap '62. (MIRA 17:7)

1. Kafedra geobotaniki i vysshikh rasteniy Moskovskogo universiteta.

KARAVAYEV, M.N.; DOBRETSOVA, L.A.

Brief outline of vegetation of the lower Nera Valley (upper Indigirka Basin). Bot.zhur. 49 no.11:1544-1559 N '64.
(MIRA 18:1)

1. Moskovskiy gosudarstvennyy universitet i Yakutskiy filial Sibirskogo otdeleniya AN SSSR, g. Yakutsk.

KARAVAYEV, M.N.

One of the oldest collections of plants in the world: D. Heyl's collections from the vicinity of Padua in the 16th century. Vest. Mosk. un. Ser. 6; Biol., pochv. 19 no.3:65-70 My-Je '64. (MIRA 17:12)

1. Kafedra geobotaniki Moskovskogo universiteta.

KORZHUYEV, S.S.; VITVITSKIY, G.N.; YEGOROV, O.V.; NAUMOV, S.N.; ZOL'NIKOV, V.G.; KARAVAYEV, M.N.; KACHURIN, S.P.; KOSMACHEV, K.P.; Prinimali uchastiye: KORONKEVICH, N.I.; D'YAKONOV, F.V.; GERASIMOV, I.P., akademik, red.; PREOBRAZHENSKIY, V.S., red.; RIKHTER, G.D., red.; ABRAMOV, L.S. red.; ARMAND, D.L., red.; GELLER, S.Yu., red.; ZONN, S.V., red.; DZERDZEYEVSKIY, B.L., red.; KOMAR, I.V., red.; LAVRENKO, Ye.M., red.; LEONT'YEV, N.F., red.; LEIUKOV, P.A., red.; L'VOVICH, M.I., red.; MESHCHERYAKOV, Yu.A., red.; MINTS, A.A., red.; MURZAYEV, E.M., red.; NASIMOVICH, A.A., red.; POKSHISHEVSKIY, V.V., red.p POMUS, M.I., red.; ROZOV, N.N., red.; SOCHAVA, V.B., red.; FORMOZOV, A.N., red.; YANSHIN, A.L., red.

[Yakutia] IAkutiia. Moskva, Nauka, 1965. 464 p. (MIRA 18:8)

1. Akademiya nauk SSSR. Institut geografii. 2. Institut geografii AN SSSR (for Korzhuyev, Vitvitskiy). 3. Yakutskiy filial Sibirskogo otdeleniya AN SSSR (for Yegorov). 4. Moskovskiy oblastnoy pedagogicheskiy institut im. N.K.Krupskoy (for Naumov). 5. Pochvennyy muzey AN SSSR (for Zol'nikov). 6. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Karavayev). 7. Proizvodstvennyy nauchno-issledovatel'skiy institut stroitel'stva Gosstroya SSSR (for Kachurin). 8. Institut geografii Sibiri i Dal'nego Vostoka Sibirskogo otdeleniya AN SSSR (for Kosmachev).

KARAVAYEV, M.P. (Leningrad)

Multiple neurofibromas of the small intestine. Arkh. pat. 10: 76-77 '62. (MIRA 17:1)

1. Iz patologoanatomicheskogo otdeleniya Sestroretskoy bol'nitsy imeni Olitskogo (glavnyy vrach - zasluzhennyy vrach RSFSR N.Ye. Slupskiy, nauchnyy rukovoditel' - prof. P.V. Sipovskiy).

KARAVAYEV, M.P.

Six cases of giant-cell tumors of the vagina tendinis. Khirurgiia 41 no.4:136-138 Ap '65. (MIRA 18:5)

1. Patologoanatomicheskoye otdeleniye (zav. M.P. Karavayev, nauchnyy rukovoditel' - prof. P.V. Sipovskiy [deceased]) Sestroretskoy bol'nitsy imeni Olitskogo.

KARAVAYEV, M. V.

"Investigation of the KDM-46 Diesel Engine When Operated Under Overload Conditions." Thesis for Degree of Cand. Technical Sci. Sub 18 May 49, Moscow Inst for Mechanization and Electrification of Agriculture imeni V. M. Molotov.

Summary 82, 18 Dec 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

L 39931-65 EWT(d)/EWT(m)/EWP(t)/EPR/T-2/EWA(c)

ACCESSION NR: AR4046123 S/0273/64/000/008/0011/0011 //

B+1

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya. Otdel'ny*y vy*pusk, 8.39.58

AUTHOR: Karavayev, M. V.

TITLE: Effect of valve clearance on the operation of an engine

CITED SOURCE: Uch. zap. Ul'yanovskiy gos. ped. in-t, v. 18, no. 1, 1963, 77-81

TOPIC TAGS: automotive engine, engine efficiency, valve clearance, part wear acceleration, valve clearance range, valve knock, fuel consumption

TRANSLATION: The article describes studies carried out to determine the actual range of valve clearance in running automative engines and the effect of various valve clearances on engine efficiency (i.e. power, fuel consumption and the operation process). It was established that actual valve clearances in a running engine deviate sharply from normal levels and range from 0.01 to 3 or 4 mm. Valve clearance deviations from standards by 50-100% do not exert significant effects on fuel consumption and power generated by an engine. A greater increase in valve clearance becomes more noticeable in terms of engine dynamics and operating economy. Deviation of valve clearances from standards leads to

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increased knocking against balance arms (in top position) or tappets (in side position), thus accelerating the wear on these parts. In view of the increased wear on valves and tappets, as well as the more audible knock, engines should not be operated for prolonged periods of time with excessive valve clearances.

SUB CODE: PR ENCL: 00

Cord 2/2

PRYANICHNIKOV, L.K.; KARAVAYEV, N.I., instruktor

Fan clamp. Transp. stroi. 12 no.8:52-53 Ag '62. (MIRA 15:9)

1. Zamestitel' nachal'nika Tashkentskoy normativno-issledovatel'skoy stantsii Orgtransstroya (for Pryanichnikov).
(Gluing—Equipment and supplies)

KARAVAYEV, N. L.

29062-0 Zamenitelyakh Atsetilena V Avtogennom Dele. Trudy Sredneazist. Industr. In-ta, Vyp. 4, 1949, S. 3-10

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

KARAVAYEV, N.m mekhanik

Reusable demountable booth for operators of T-41 and T-37 hoists. Na stroi.Mosk. 2 no.8:29 Ag '59. (MIRA 12:12)

1. Stroitel'nyy uchastok -74 tresta Mosotdelstroy No.1.
(Buildings, Prefabricated)

KARAVAYEV, N.M.

USSR

Effect of ultrasonic vibrations on processes of leather technology. V. M. Fridman, A. L. Zaides, A. N. Mikhailov, N. N. Dolgopolov, and N. M. Karavaev. *Doklady Akad. Nauk S.S.S.R.* 92, 399-400(1953); cf. *C.A.* 48, 14268a.—The effect of ultrasonic vibrations on depilation and tanning was studied with an app. having a frequency of 1200 kc. and a power of 8-10 w./sq. cm. The app. was equipped with a cooling system to maintain const. temp. in the reaction vessel. After 6 hrs. at 30°, the hair and epidermis came off easily and the grain side was smooth; hair and epidermis were not removed in this time by a lime suspension without ultrasonic vibrations. Tanning was complete after 18 hrs. at 30° with, and in 114 hrs. without, ultrasonic action. The resulting leather was full, with a fibrous microstructure. B. Z. Kamich

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4

Central Sci. Res. Inst. Leather Ind.,
Central Sci. Res. Lab. of Phys. Methods for Investigation of Materials

KARAVAYEV, N.M.

532.72

5339. Action of ultrasound on diffusion-controlled heterogeneous processes. N. N. Dolgopolov, V. M. Fridman and N. M. Karavaev. *Dokl. Akad. Nauk SSSR*, 93, No. 1, 91-3 (1953) *In Russian*.

Ultrasound considerably increases the rate of dissolution of a crystal of $K_4Fe(CN)_6$ in water, and of Cu in HNO_3, even above the rate attained at high rates of rotation (1200 r.p.m.) of the dissolving body.

R. C. Murray

KARAVAYEV, N.M.

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The effects of ultrasonic vibrations on diffusional processes. N. N. Dolgopolov, V. M. Fridman, and N. M. Karavaev. *Doklady Akad. Nauk S.S.S.R.* 93, [illegible] (1953).—The effect of ultrasound on the diffusion rate was studied for the diffusion of $CuSO_4$ in 5% gelatin, and the results were compared with results obtained with varying hydrodynamic conditions (using mixers at various r.p.m.); also the diffusion of $Na_2S_2O_3$ through a swollen gelatin film 0.015 cm. thick was studied. A higher stirring rate increased the diffusion rate, but less than did ultrasonic vibrations. The diffusion rate consts. rose from 0.51×10^{-4} with no stirring in the first test to 0.80×10^{-4} with ultrasound, and in the 2nd test from 2.6×10^{-4} to 11.7×10^{-4}; this shows that ultrasonic vibrations change the value and the nature of diffusional resistance at the solid-liquid interface.

W. M. Sternberg

FRIDMAN,V.M., kandidat khimicheskikh nauk; MESHKOV,K.V., kandidat tekhnicheskikh nauk; KARAVAYEV,N.M.,

The effect of sonic and ultrasonic waves on fur processing. Leg.prom. 15 no.4:42-43 Ap '55. (MLRA 8:7)

1. Chlen-korrespondent Akademii nauk SSSR.
(Fur) (Sound waves) (Ultra sonic waves--Industrial application)

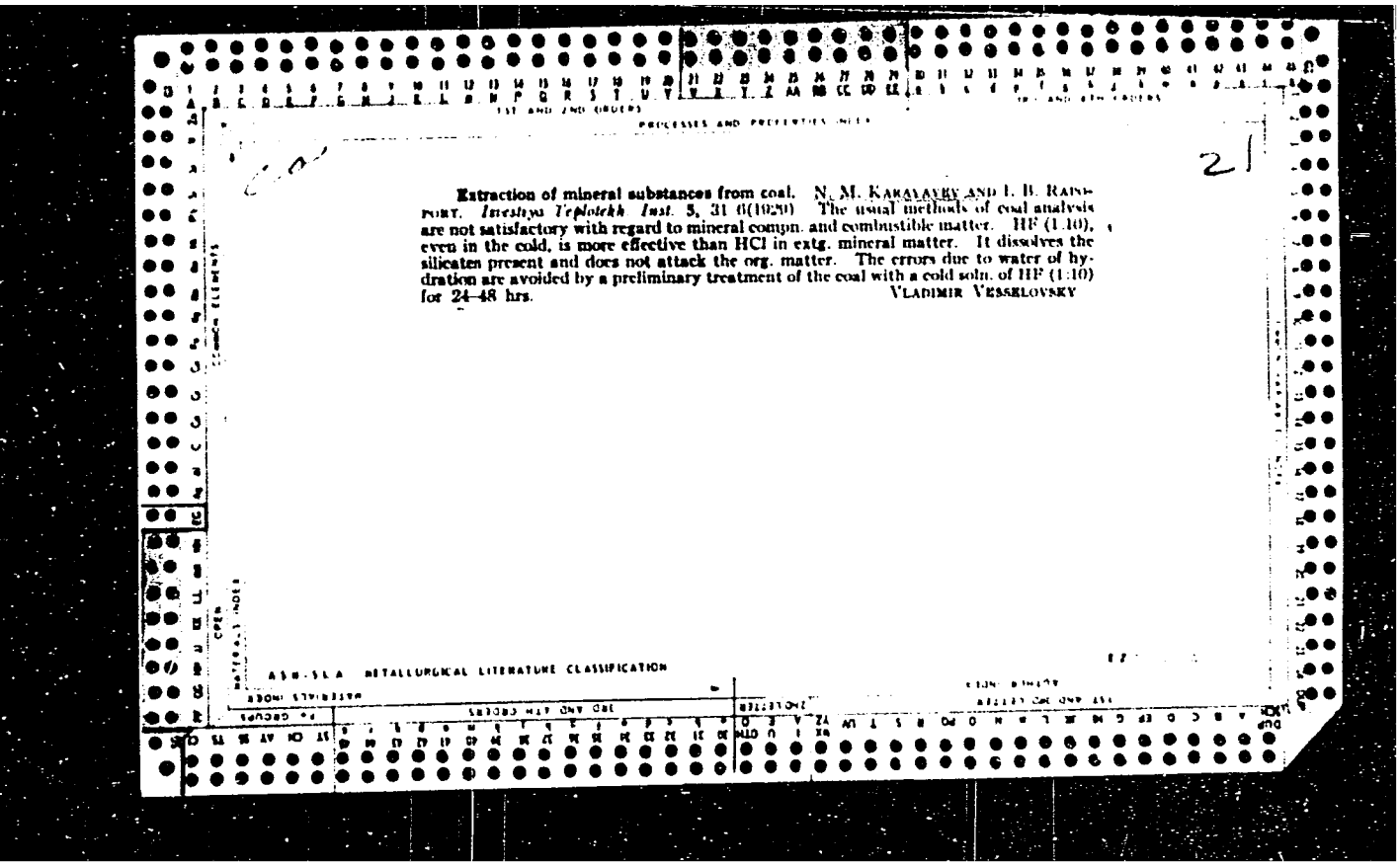
[redacted]

KARAVAYEV, N.

KARAVAYEV, N.
Neftjanoje Djelo 1913, No. 16; through Petroleum 9, 550; J. Soc. Chem. Ind. 33, 128
The specific heat of heavy petroleum fractions at high temperatures.

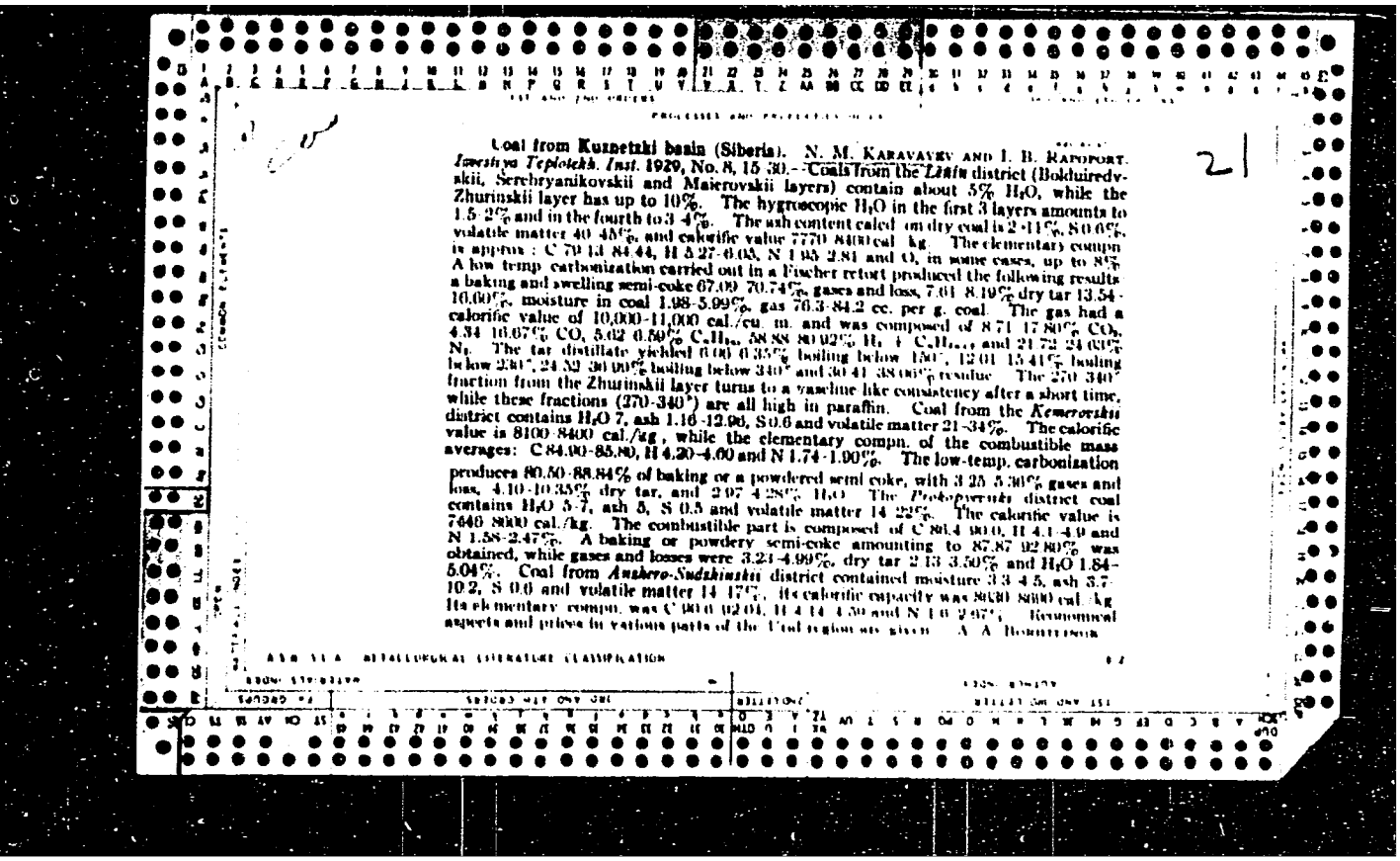
CA: 8-3359/8

[redacted]

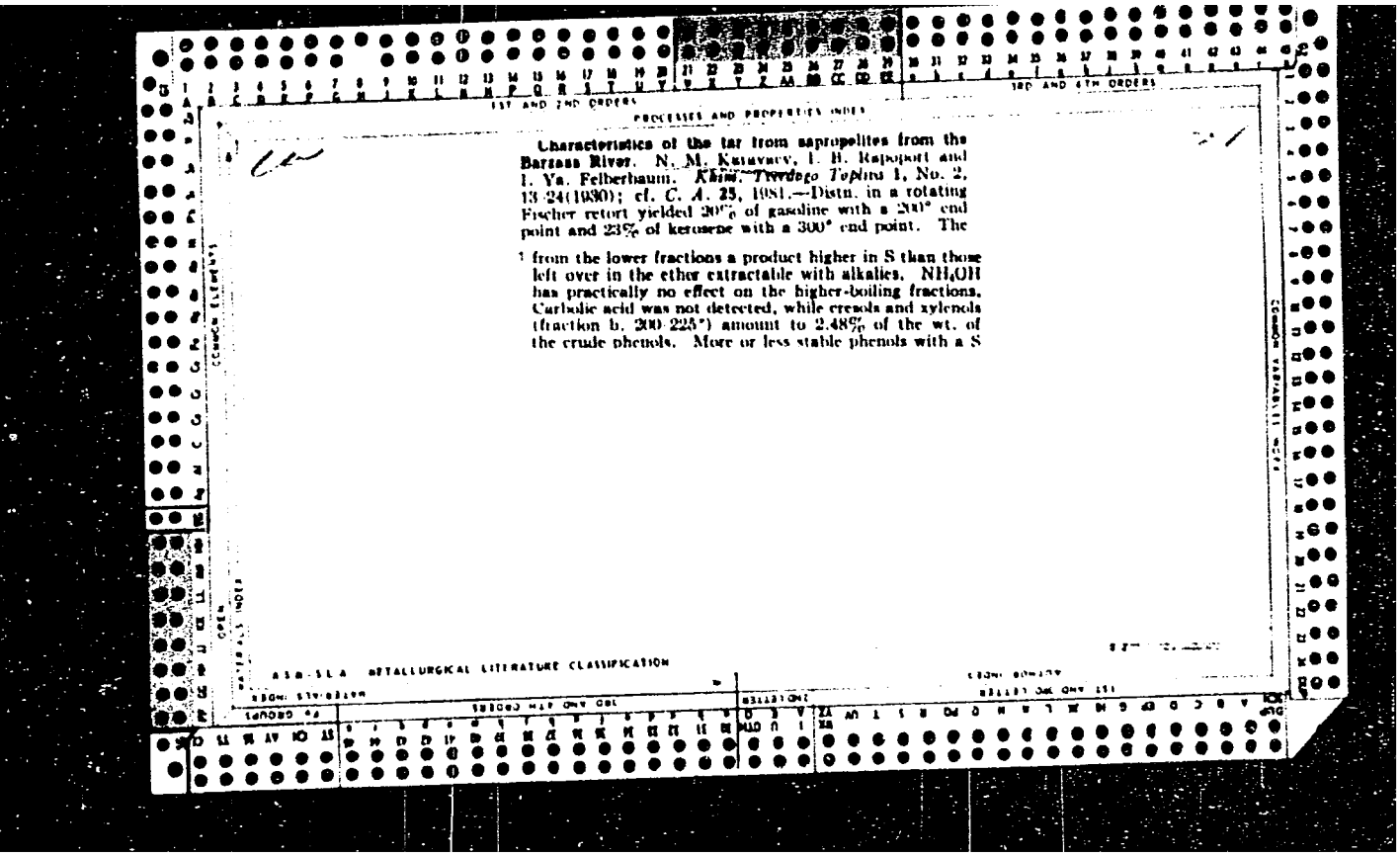


Extraction of mineral substances from coal. N. M. KARALAVKY AND I. B. RAINFORT. *Investiya Teplotekh Inst.* 5, 31-6(1930). The usual methods of coal analysis are not satisfactory with regard to mineral compn. and combustible matter. HF (1:10), even in the cold, is more effective than HCl in extg. mineral matter. It dissolves the silicates present and does not attack the org. matter. The errors due to water of hydration are avoided by a preliminary treatment of the coal with a cold soln. of HF (1:10) for 24–48 hrs.

VLADIMIR VESSELOVSKY

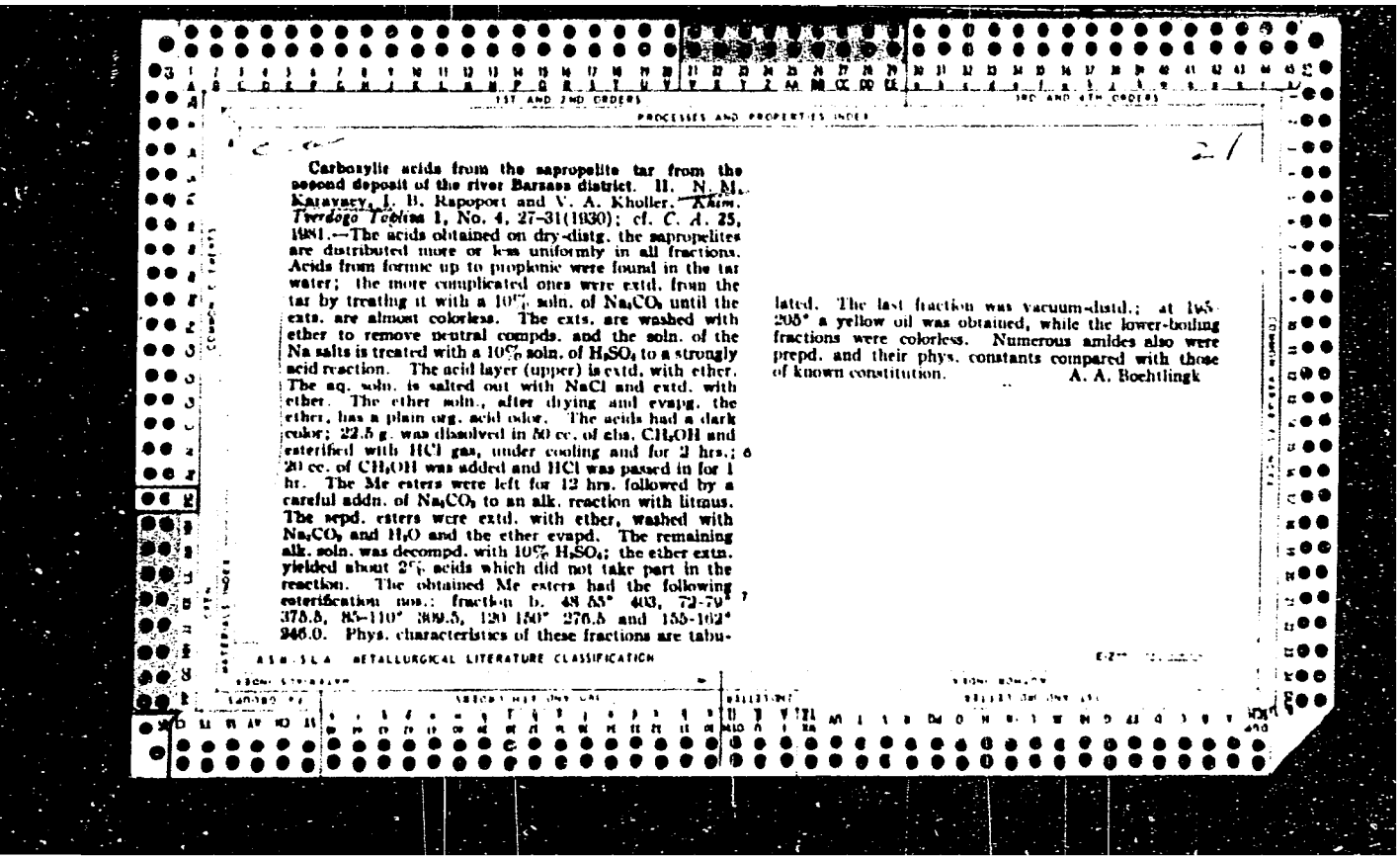


Coal from Kuznetski basin (Siberia). N. M. Karavayev and I. B. Rapoport. *Izvestiya Teplotekh. Inst.* 1929, No. 8, 15-30.—Coals from the *Lutin* district (Bolshiredvskii, Serebryanikovskii and Maierovskii layers) contain about 5% H_2O, while the Zhurinskii layer has up to 10%. The hygroscopic H_2O in the first 3 layers amounts to 1.5-2% and in the fourth to 3-4%. The ash content calcd. on dry coal is 2-11%, S 0.6%, volatile matter 40-45%, and calorific value 7770-8480 cal./kg. The elementary compn. is approx.: C 79.13-84.44, H 5.27-6.05, N 1.95-2.81 and O, in some cases, up to 8%. A low temp. carbonization carried out in a Fischer retort produced the following results: a baking and swelling semi-coke 67.00-70.74%, gases and loss, 7.01-8.19%, dry tar 13.54-16.00%, moisture in coal 1.98-5.99%, gas 76.3-84.2 cc. per g. coal. The gas had a calorific value of 10,000-11,000 cal./cu. m. and was composed of 8.71-17.80% CO_2, 4.34-16.07% CO, 5.62-0.59% C_nH_m, 58.88-80.02% H_2 + C_nH_{m+1} and 21.72-24.03% N_2. The tar distillate yielded 0.00-0.35% boiling below 150°, 12.01-15.41% boiling below 230°, 24.32-30.00% boiling below 340° and 50.41-58.00% residue. The 270-340° fraction from the Zhurinskii layer turns to a vaseline like consistency after a short time, while these fractions (270-340°) are all high in paraffin. Coal from the *Kemerovskii* district contains H_2O 7, ash 1.16-12.96, S 0.6 and volatile matter 21-34%. The calorific value is 8100-8400 cal./kg., while the elementary compn. of the combustible mass averages: C 84.90-85.80, H 4.20-4.60 and N 1.74-1.90%. The low-temp. carbonization produces 80.50-88.84% of baking or a powdered semi coke, with 3.25-5.30% gases and loss, 4.10-10.35% dry tar, and 2.07-4.28% H_2O. The *Prokopyevskii* district coal contains H_2O 5-7, ash 5, S 0.5 and volatile matter 14-22%. The calorific value is 7440-8000 cal./kg. The combustible part is composed of C 80.4-90.0, H 4.1-4.9 and N 1.58-2.47%. A baking or powdery semi-coke amounting to 87.87-92.80% was obtained, while gases and losses were 3.24-4.99%, dry tar 2.13-3.50% and H_2O 1.84-5.04%. Coal from *Anzhero-Sudzhinskii* district contained moisture 3.3-4.5, ash 5.7-10.2, S 0.6 and volatile matter 14-17%. Its calorific capacity was 8030-8800 cal./kg. Its elementary compn. was C 80.6-92.01, H 4.14-4.50 and N 1.6-2.07%. Economical aspects and prices in various parts of the Ural region are given. A. A. Bochvinova



Characteristics of the tar from sapropelites from the Barzass River. N. M. Kazarev, I. B. Rapoport and I. Ya. Felberbaum. *Khim. Tverdogo Topliva* 1, No. 2, 13-24(1930); cf. *C. A.* **25**, 1981.—Distn. in a rotating Fischer retort yielded 30% of gasoline with a 200° end point and 23% of kerosene with a 300° end point. The

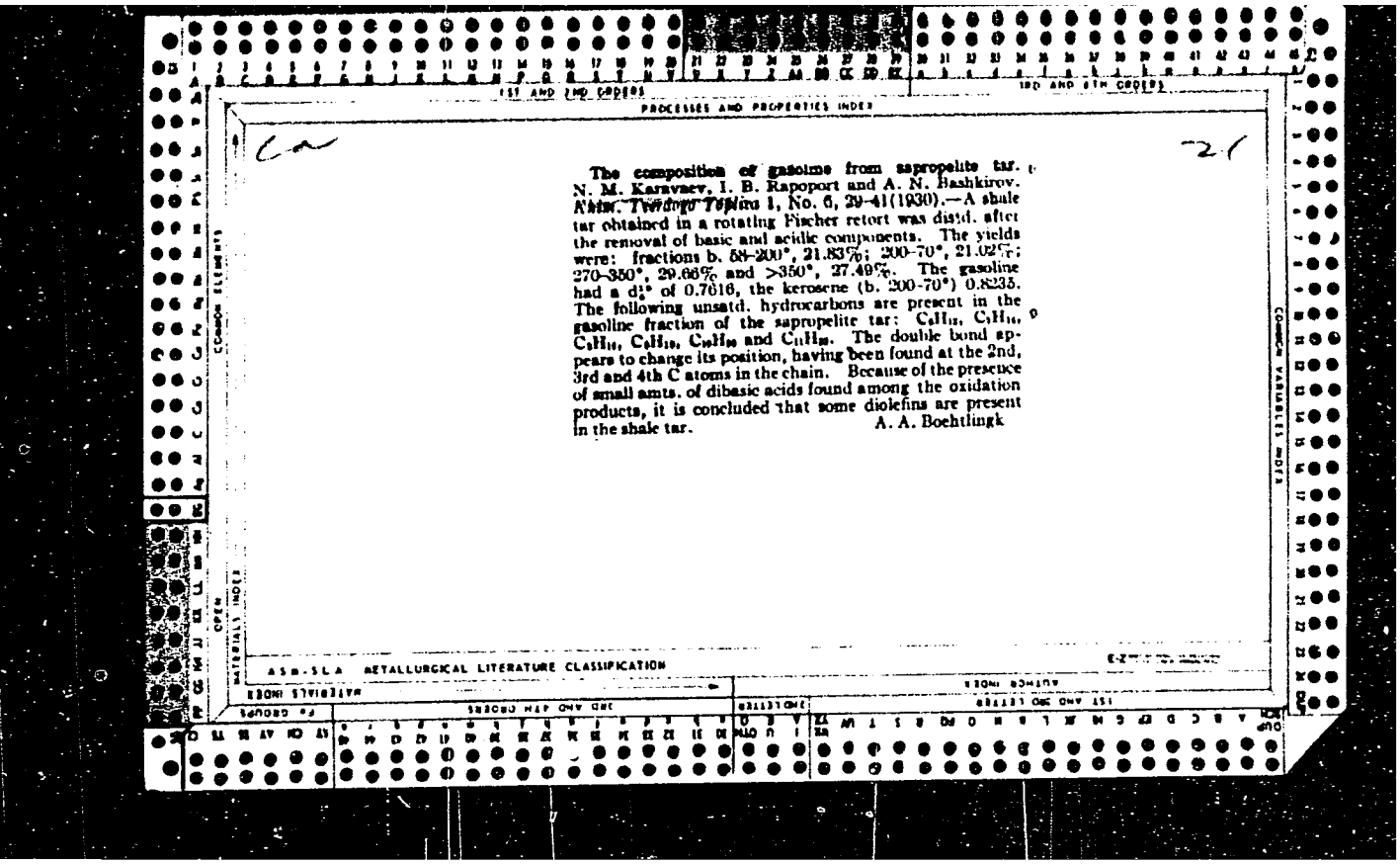
1 from the lower fractions a product higher in S than those left over in the ether extractable with alkalies. NH_4OH has practically no effect on the higher-boiling fractions. Carbolic acid was not detected, while cresols and xylenols (fraction b. 200-225°) amount to 2.48% of the wt. of the crude phenols. More or less stable phenols with a S



PROCESSES AND PROPERTIES INDEX

Carboxylic acids from the sapropelite tar from the second deposit of the river Barzass district. II. N. M. Karavaev, I. B. Rapoport and V. A. Kholler. *Khim. Tverdogo Topliva* 1, No. 4, 27–31(1930); cf. *C. A.* 25, 1981.—The acids obtained on dry-distg. the sapropelites are distributed more or less uniformly in all fractions. Acids from formic up to propionic were found in the tar water; the more complicated ones were extd. from the tar by treating it with a 10% soln. of Na_2CO_3 until the exts. are almost colorless. The exts. are washed with ether to remove neutral compds. and the soln. of the Na salts is treated with a 10% soln. of H_2SO_4 to a strongly acid reaction. The acid layer (upper) is extd. with ether. The aq. soln. is salted out with NaCl and extd. with ether. The ether soln., after drying and evapg. the ether, has a plain org. acid odor. The acids had a dark color; 22.5 g. was dissolved in 80 cc. of abs. CH_3OH and esterified with HCl gas, under cooling and for 2 hrs.; 6 20 cc. of CH_3OH was added and HCl was passed in for 1 hr. The Me esters were left for 12 hrs. followed by a careful addn. of Na_2CO_3 to an alk. reaction with litmus. The sepd. esters were extd. with ether, washed with Na_2CO_3 and H_2O and the ether evapd. The remaining alk. soln. was decompd. with 10% H_2SO_4; the ether extn. yielded about 2% acids which did not take part in the reaction. The obtained Me esters had the following esterification nos.: fraction b. 48 55° 403, 72-79° 7 375.5, 85–110° 309.5, 120 150° 276.5 and 155-162° 246.0. Phys. characteristics of these fractions are tabulated. The last fraction was vacuum-distd.; at 165-205° a yellow oil was obtained, while the lower-boiling fractions were colorless. Numerous amides also were prepd. and their phys. constants compared with those of known constitution. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Ca

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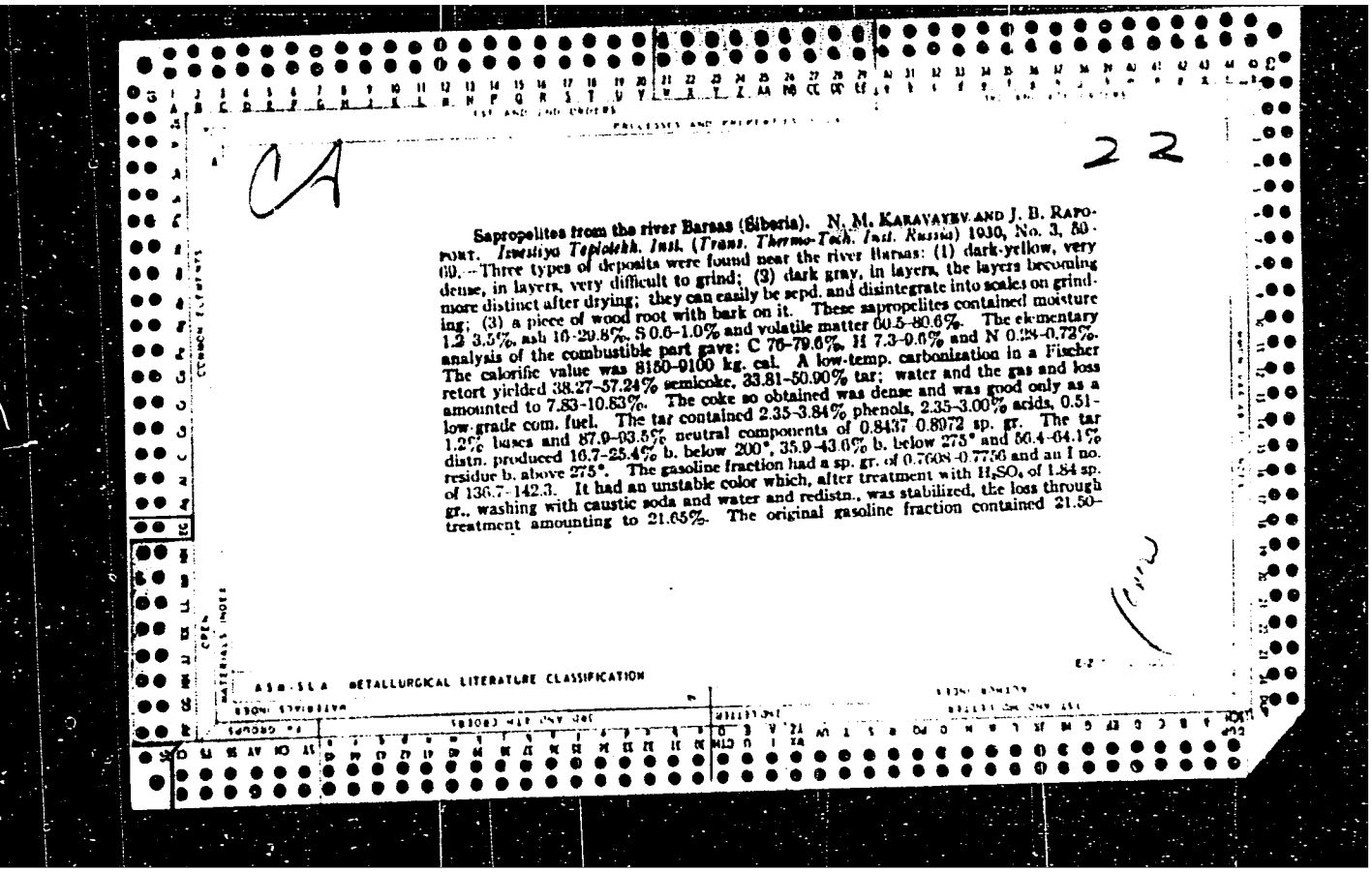
The composition of gasoline from sapropelite tar. N. M. Karavaev, I. B. Rapoport and A. N. Bashkirov. *Khim. Tverdogo Topliva* 1, No. 6, 29-41(1930).—A shale tar obtained in a rotating Fischer retort was distd. after the removal of basic and acidic components. The yields were: fractions b. 58-200°, 21.83%; 200-70°, 21.02%; 270-350°, 29.66% and >350°, 27.49%. The gasoline had a d_4^{20} of 0.7616, the kerosene (b. 200-70°) 0.8235. The following unsatd. hydrocarbons are present in the gasoline fraction of the sapropelite tar: C_5H_{10}, C_7H_{14}, C_8H_{16}, C_9H_{18}, $C_{10}H_{20}$ and $C_{11}H_{22}$. The double bond appears to change its position, having been found at the 2nd, 3rd and 4th C atoms in the chain. Because of the presence of small amts. of dibasic acids found among the oxidation products, it is concluded that some diolefins are present in the shale tar.

A. A. Boehtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

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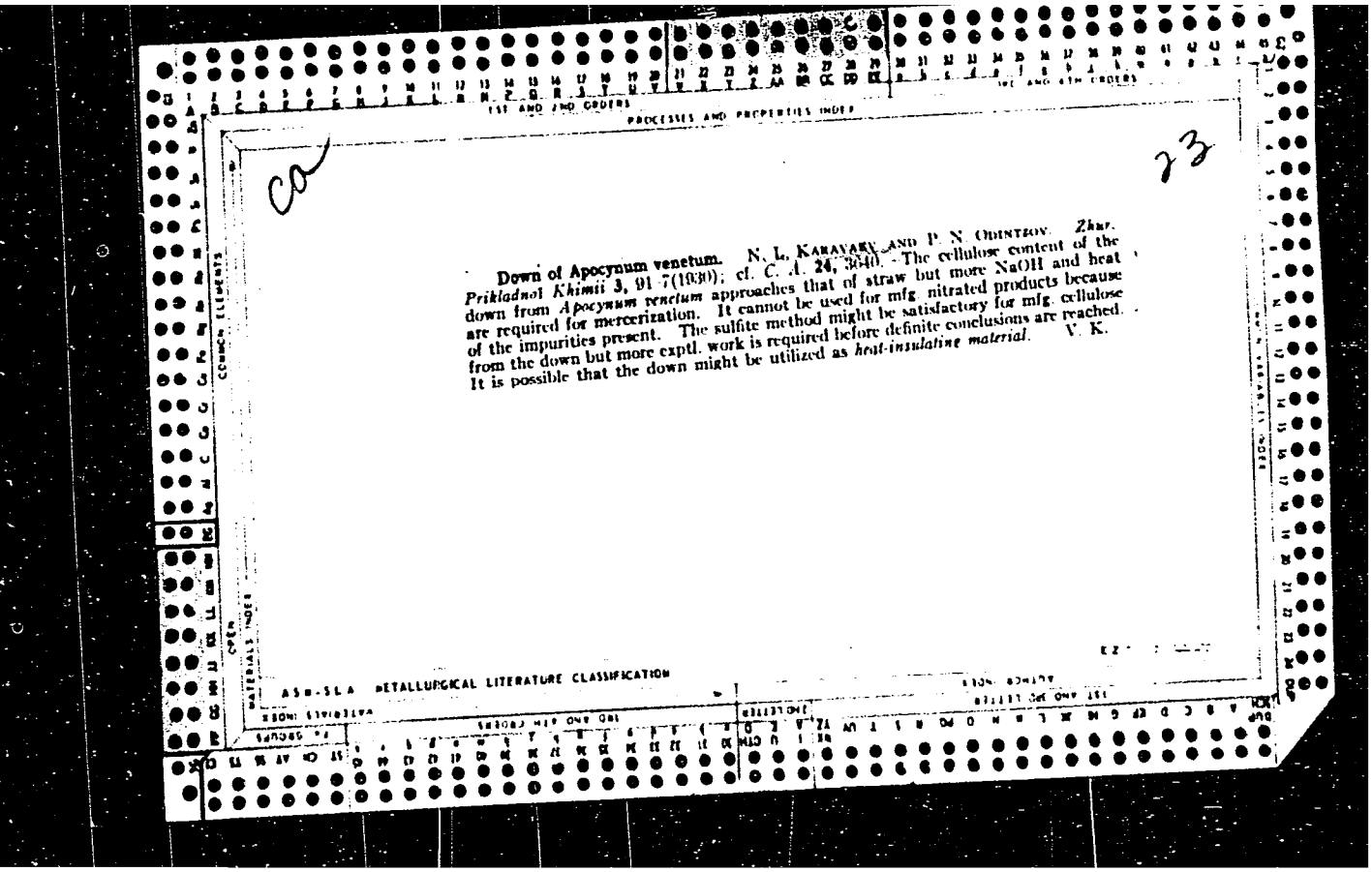
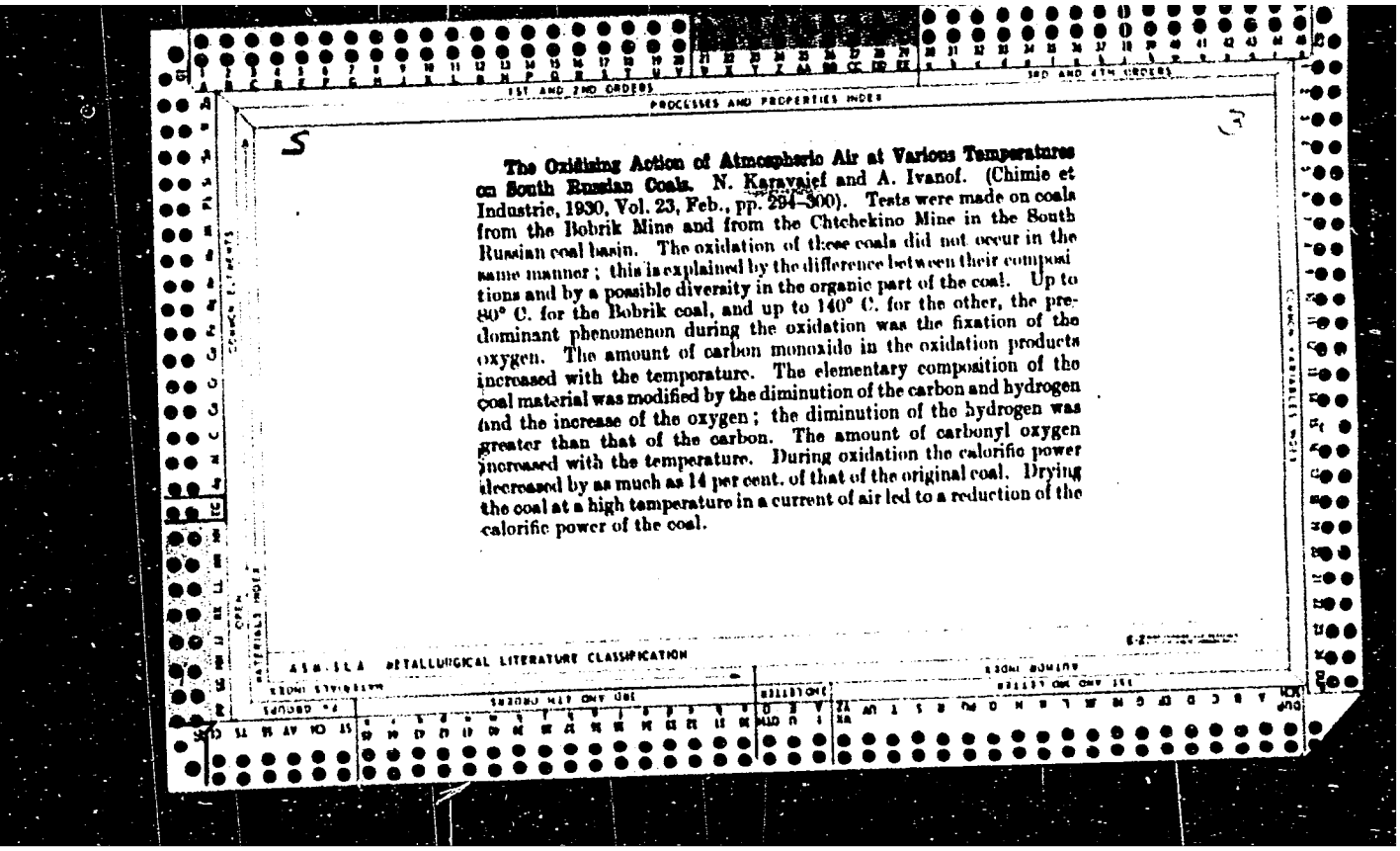
Sapropelites from the river Barsas (Siberia). N. M. KARAVAYEV AND J. B. RAPOPORT. *Izvestiya Teplotekh. Inst.* (*Trans. Thermo-Tech. Inst. Russia*) 1930, No. 3, 50-69.—Three types of deposits were found near the river Barsas: (1) dark-yellow, very dense, in layers, very difficult to grind; (2) dark gray, in layers, the layers becoming more distinct after drying; they can easily be sepd. and disintegrate into scales on grinding; (3) a piece of wood root with bark on it. These sapropelites contained moisture 1.2–3.5%, ash 16–29.8%, S 0.6–1.0% and volatile matter 60.5–80.6%. The elementary analysis of the combustible part gave: C 76–79.6%, H 7.3–0.6% and N 0.28–0.72%. The calorific value was 8150–9100 kg. cal. A low-temp. carbonization in a Fischer retort yielded 38.27–57.24% semicoke, 33.81–50.90% tar; water and the gas and loss amounted to 7.83–10.83%. The coke so obtained was dense and was good only as a low-grade com. fuel. The tar contained 2.35–3.84% phenols, 2.35–3.00% acids, 0.51–1.2% bases and 87.0–93.5% neutral components of 0.8437–0.8972 sp. gr. The tar distn. produced 16.7–25.4% b. below 200°, 35.9–43.6% b. below 275° and 50.4–64.1% residue b. above 275°. The gasoline fraction had a sp. gr. of 0.7608–0.7756 and an I no. of 136.7–142.3. It had an unstable color which, after treatment with H_2SO_4 of 1.84 sp. gr., washing with caustic soda and water and redistn., was stabilized, the loss through treatment amounting to 21.65%. The original gasoline fraction contained 21.50–

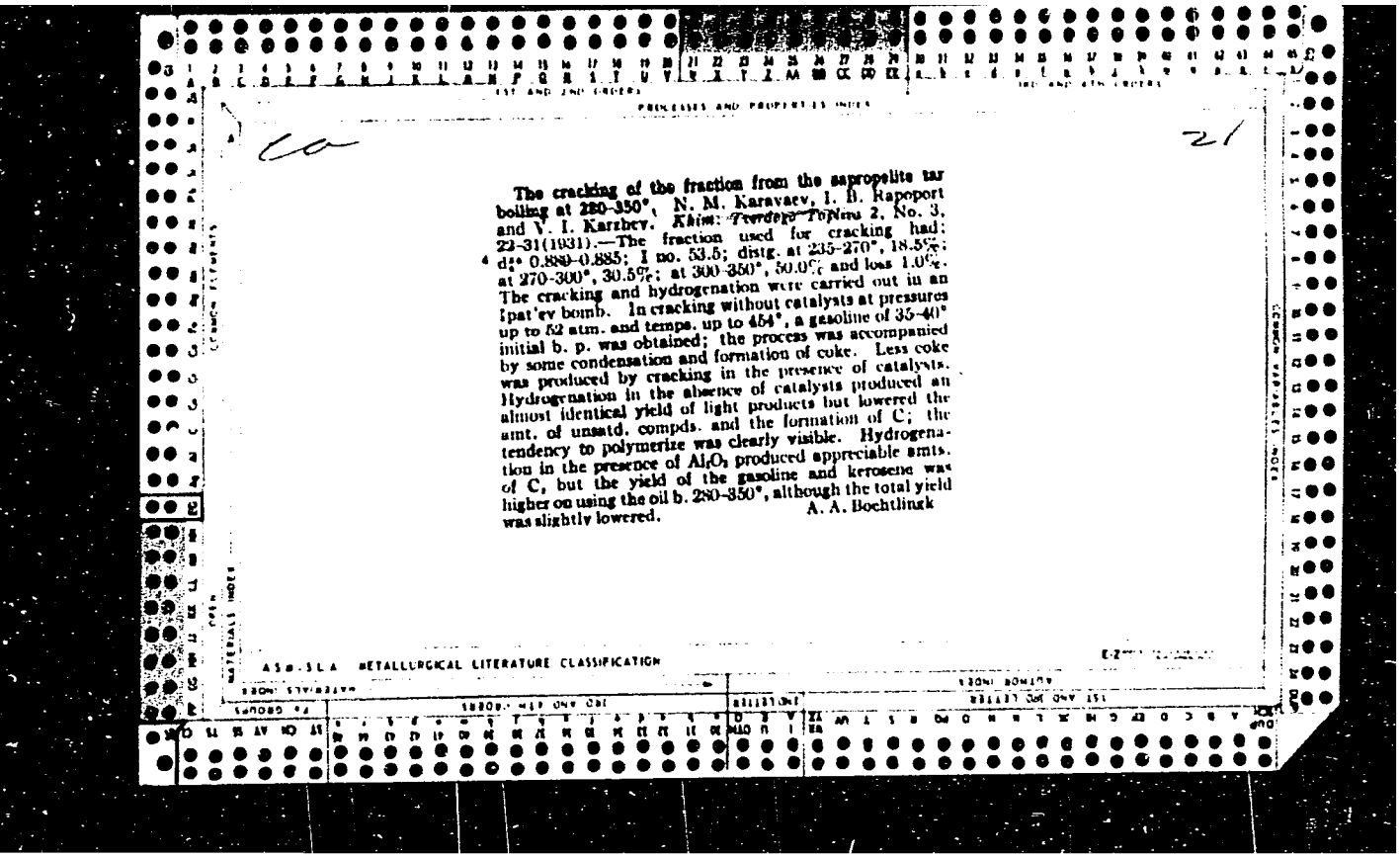
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Down of Apocynum venetum. N. L. Karavaev and P. N. Obintsov. *Zhur. Prikladnoi Khimii* **3**, 91-7(1930); cf. *C. A.* **24**, 3040. The cellulose content of the down from *Apocynum venetum* approaches that of straw but more NaOH and heat are required for mercerization. It cannot be used for mfg. nitrated products because of the impurities present. The sulfite method might be satisfactory for mfg. cellulose from the down but more exptl. work is required before definite conclusions are reached. It is possible that the down might be utilized as *heat-insulative material*. V. K.

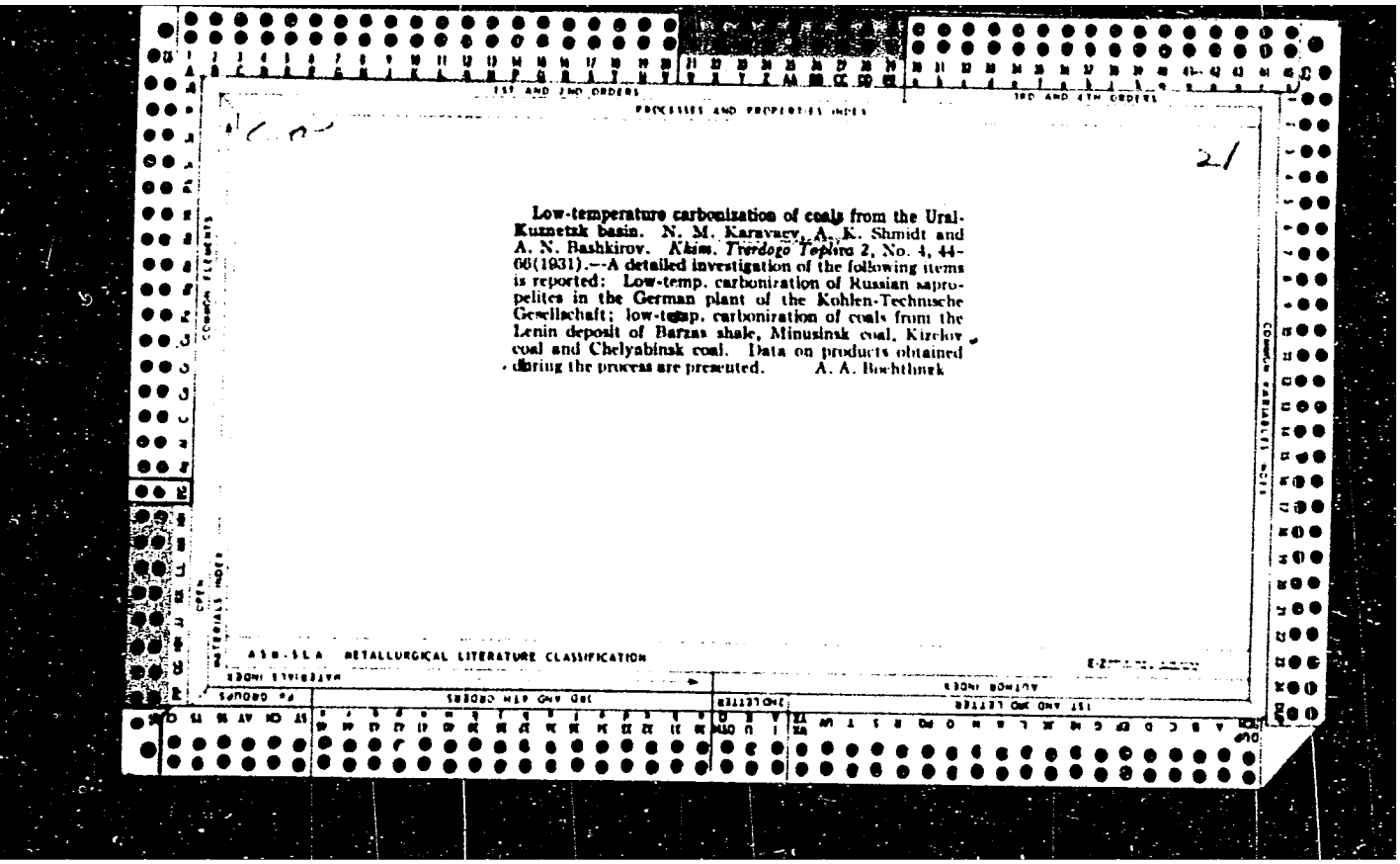


The Oxidising Action of Atmospheric Air at Various Temperatures on South Russian Coals. N. Karavaief and A. Ivanof. (Chimie et Industrie, 1930, Vol. 23, Feb., pp. 294–300). Tests were made on coals from the Bobrik Mine and from the Chtchekino Mine in the South Russian coal basin. The oxidation of these coals did not occur in the same manner; this is explained by the difference between their compositions and by a possible diversity in the organic part of the coal. Up to 80° C. for the Bobrik coal, and up to 140° C. for the other, the predominant phenomenon during the oxidation was the fixation of the oxygen. The amount of carbon monoxide in the oxidation products increased with the temperature. The elementary composition of the coal material was modified by the diminution of the carbon and hydrogen and the increase of the oxygen; the diminution of the hydrogen was greater than that of the carbon. The amount of carbonyl oxygen increased with the temperature. During oxidation the calorific power decreased by as much as 14 per cent. of that of the original coal. Drying the coal at a high temperature in a current of air led to a reduction of the calorific power of the coal.



The cracking of the fraction from the sapropelite tar boiling at 280-350°. N. M. Karavaev, I. B. Rapoport and V. I. Karzhev. *Khim. Tverdogo Topliva* 2, No. 3, 22-31(1931).—The fraction used for cracking had: d_4^{20} 0.880-0.885; I no. 53.5; distg. at 235-270°, 18.5%; at 270-300°, 30.5%; at 300-350°, 50.0% and loss 1.0%. The cracking and hydrogenation were carried out in an Ipat'ev bomb. In cracking without catalysts at pressures up to 52 atm. and temps. up to 454°, a gasoline of 35-40° initial b. p. was obtained; the process was accompanied by some condensation and formation of coke. Less coke was produced by cracking in the presence of catalysts. Hydrogenation in the absence of catalysts produced an almost identical yield of light products but lowered the amt. of unsatd. compds. and the formation of C; the tendency to polymerize was clearly visible. Hydrogenation in the presence of Al_2O_3 produced appreciable amts. of C, but the yield of the gasoline and kerosene was higher on using the oil b. 280-350°, although the total yield was slightly lowered.

A. A. Bochtlingk



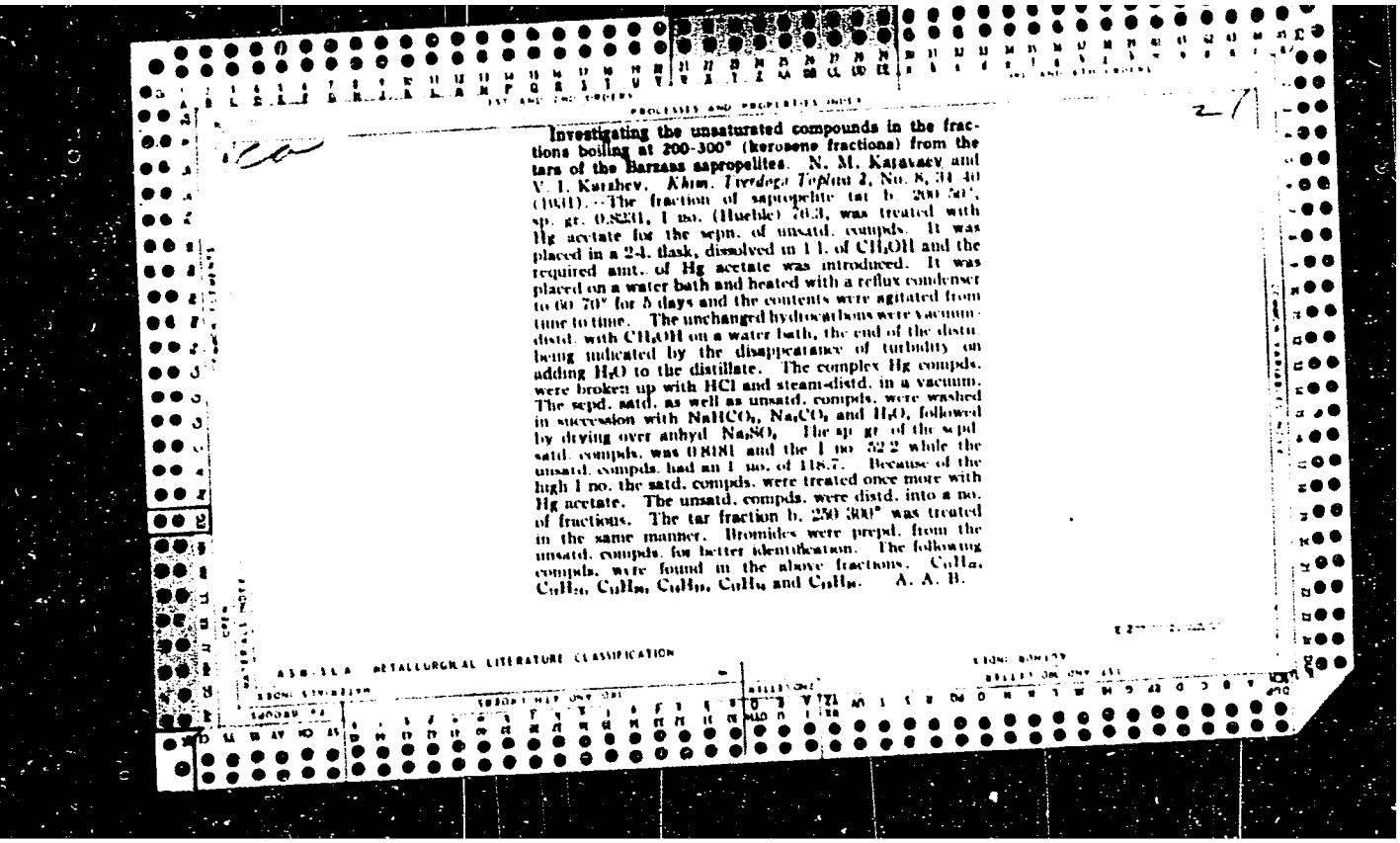
Low-temperature carbonization of coals from the Ural-Kuznetsk basin. N. M. Karavaev, A. K. Shmidt and A. N. Bashkirov. *Khim. Tverdogo Topliva* 2, No. 4, 44-66(1931).--A detailed investigation of the following items is reported: Low-temp. carbonization of Russian sapropelites in the German plant of the Kohlen-Technische Gesellschaft; low-temp. carbonization of coals from the Lenin deposit of Barzas shale, Minusinsk coal, Kizelov coal and Chelyabinsk coal. Data on products obtained during the process are presented. A. A. Bochtlingk

PROCESSES AND PROPERTIES INDEX

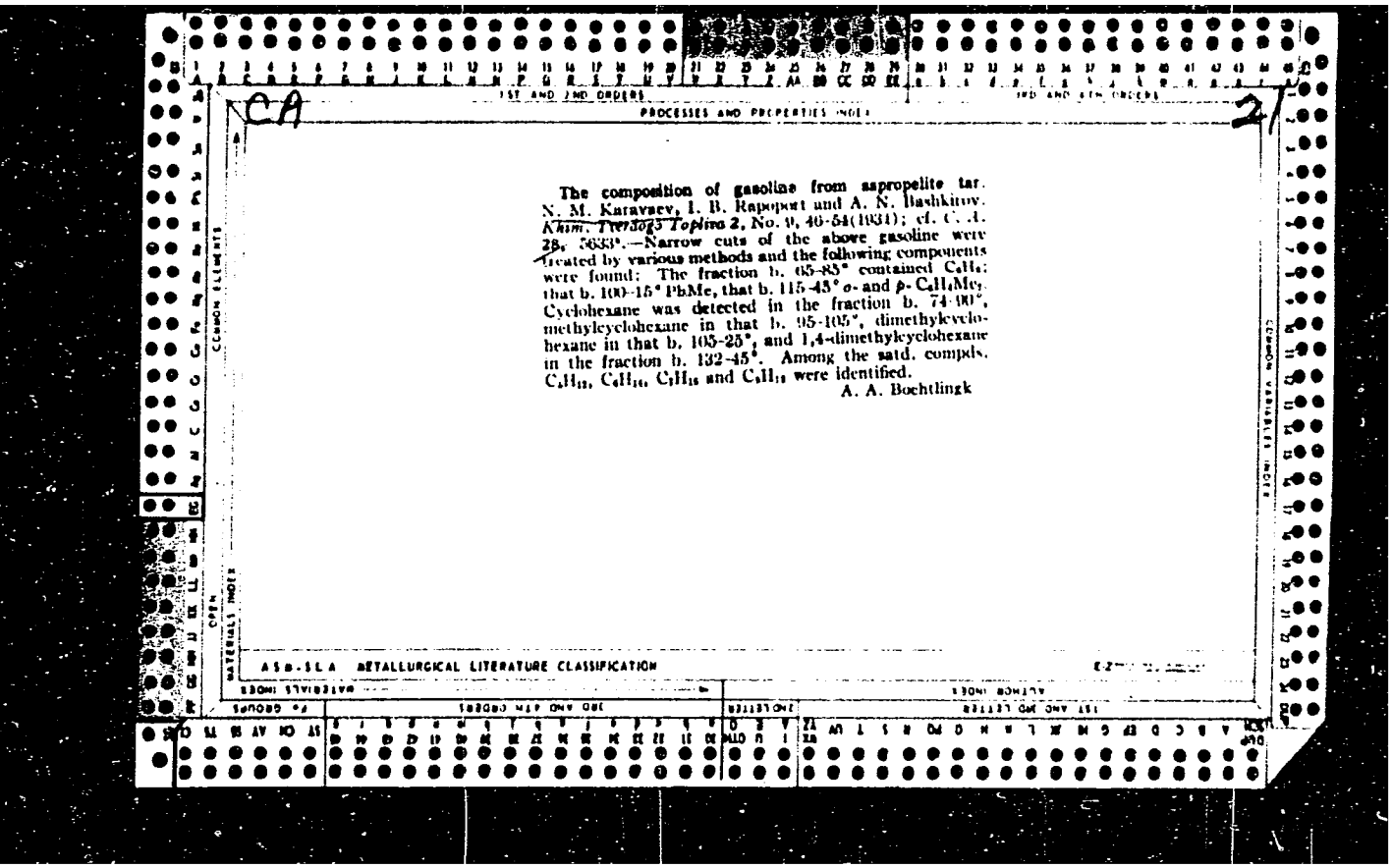
The composition of the upper layer separated in the ammonia liquor in a coke-benzene plant. N. M. Kara-vaev, I. B. Rapoport and A. N. Bashkirov. *Khim. Tverdogo Topliva* 2, No. 6, 10-20(1931). The above oily layer which had a characteristic odor, sp. gr. 1.051, was sepd. into 44% of neutral substances, 32% bases, 18% phenols with 6% loss. The neutral substances, which had a pleasant odor were distd. in a Wuertz flask and the following fractions were sepd.: (1) a liquid b. 187-195° contg. benzonitrile, (2) a cryst. substance (suspended in a liquid b. 205-50°), with m. p. 149-50°, identified as naphthalene; the liquid part was composed of β-methyl-naphthalene, (3) the fraction b. 250-80°, contg. acenaphthene, (4) the fractions b. 280-340° and 340-60° from which cryst. substances were obtained, composed of phenanthrene, quinone and anthracene. The bases contained α-picoline, acetanilide, quinoline and isoquinoline. The phenols were composed of o-cresol, m-cresol and p-cresol. Various reactions are discussed.

A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Investigating the unsaturated compounds in the fractions boiling at 200-300° (kerosene fractions) from the tars of the Barzass sapropelites. N. M. Kazavaev and V. I. Kuzhev. *Khim. Tverdogo Topliva* 2, No. 8, 34-40 (1931).—The fraction of sapropelite tar b. 200-30°, sp. gr. 0.8231, I no. (Huehle) 70.3, was treated with Hg acetate for the sepn. of unsatd. compds. It was placed in a 2-l. flask, dissolved in 1 l. of CH_3OH and the required amt. of Hg acetate was introduced. It was placed on a water bath and heated with a reflux condenser to 60-70° for 5 days and the contents were agitated from time to time. The unchanged hydrocarbons were vacuum-distd. with CH_3OH on a water bath, the end of the distn. being indicated by the disappearance of turbidity on adding H_2O to the distillate. The complex Hg compds. were broken up with HCl and steam-distd. in a vacuum. The sepd. satd. as well as unsatd. compds. were washed in succession with $NaHCO_3$, Na_2CO_3 and H_2O, followed by drying over anhyd Na_2SO_4. The sp. gr. of the sepd. satd. compds. was 0.8181 and the I no. 32.2 while the unsatd. compds. had an I no. of 118.7. Because of the high I no. the satd. compds. were treated once more with Hg acetate. The unsatd. compds. were distd. into a no. of fractions. The tar fraction b. 250-300° was treated in the same manner. Bromides were prepd. from the unsatd. compds. for better identification. The following compds. were found in the above fractions: $C_{11}H_{22}$, $C_{11}H_{20}$, $C_{11}H_{18}$, $C_{11}H_{16}$, $C_{11}H_{14}$ and $C_{11}H_{12}$. A. A. B.



CA

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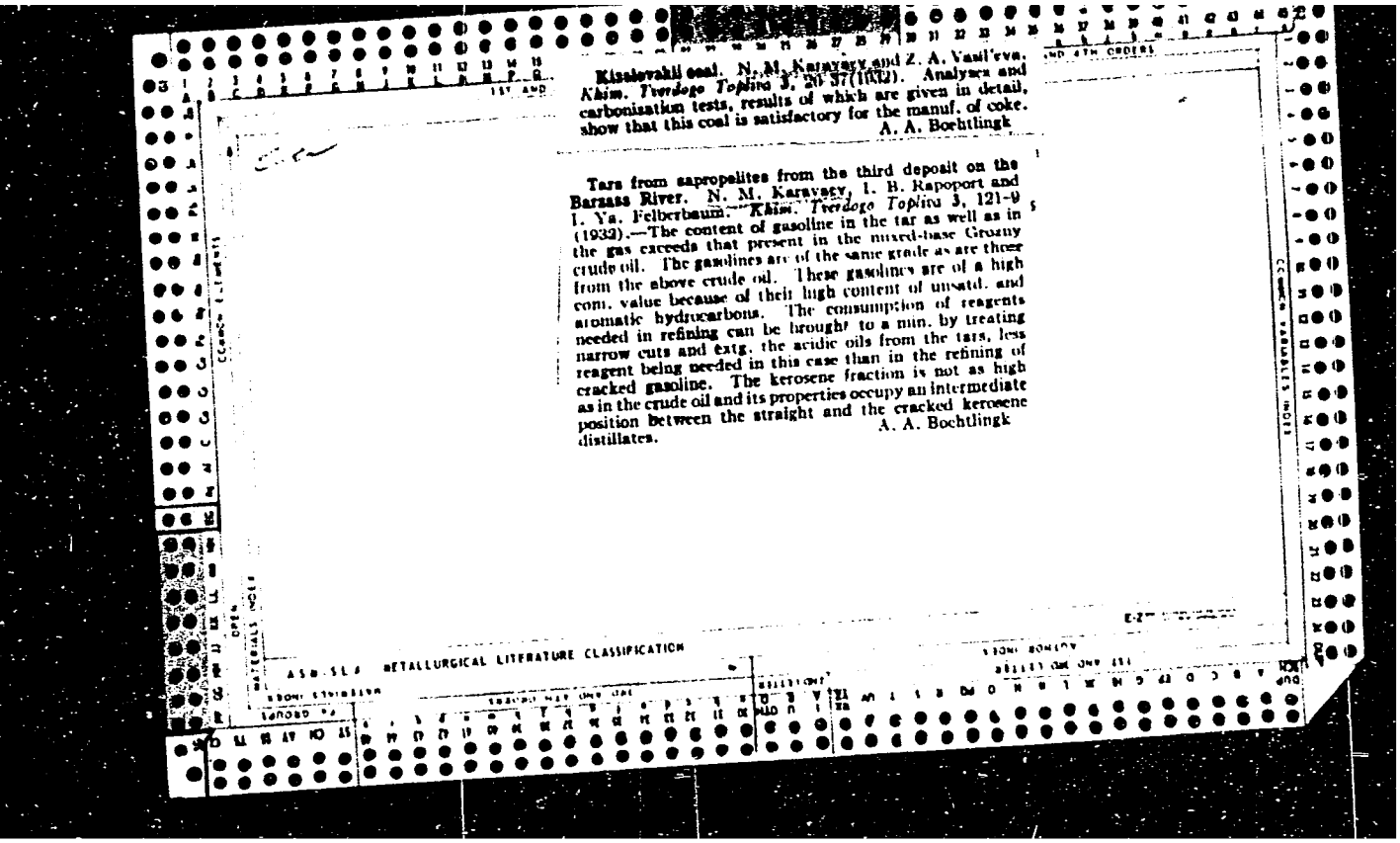
PROCESSES AND PROPERTIES INDEX

The composition of gasoline from sapropelite tar. N. M. Karavaev, I. B. Rapoport and A. N. Bashkirov. *Khim. Tverdogo Topliva* 2, No. 9, 46-54(1931); cf. C. A. 28, 5633°.—Narrow cuts of the above gasoline were treated by various methods and the following components were found: The fraction b. 65-85° contained C_6H_6; that b. 100-15° PhMe, that b. 115-45° *o*- and *p*-$C_6H_4Me_2$. Cyclohexane was detected in the fraction b. 74-80°, methylcyclohexane in that b. 95-105°, dimethylcyclohexane in that b. 105-25°, and 1,4-dimethylcyclohexane in the fraction b. 132-45°. Among the satd. compds. C_6H_{12}, C_7H_{14}, C_8H_{16} and C_9H_{18} were identified.

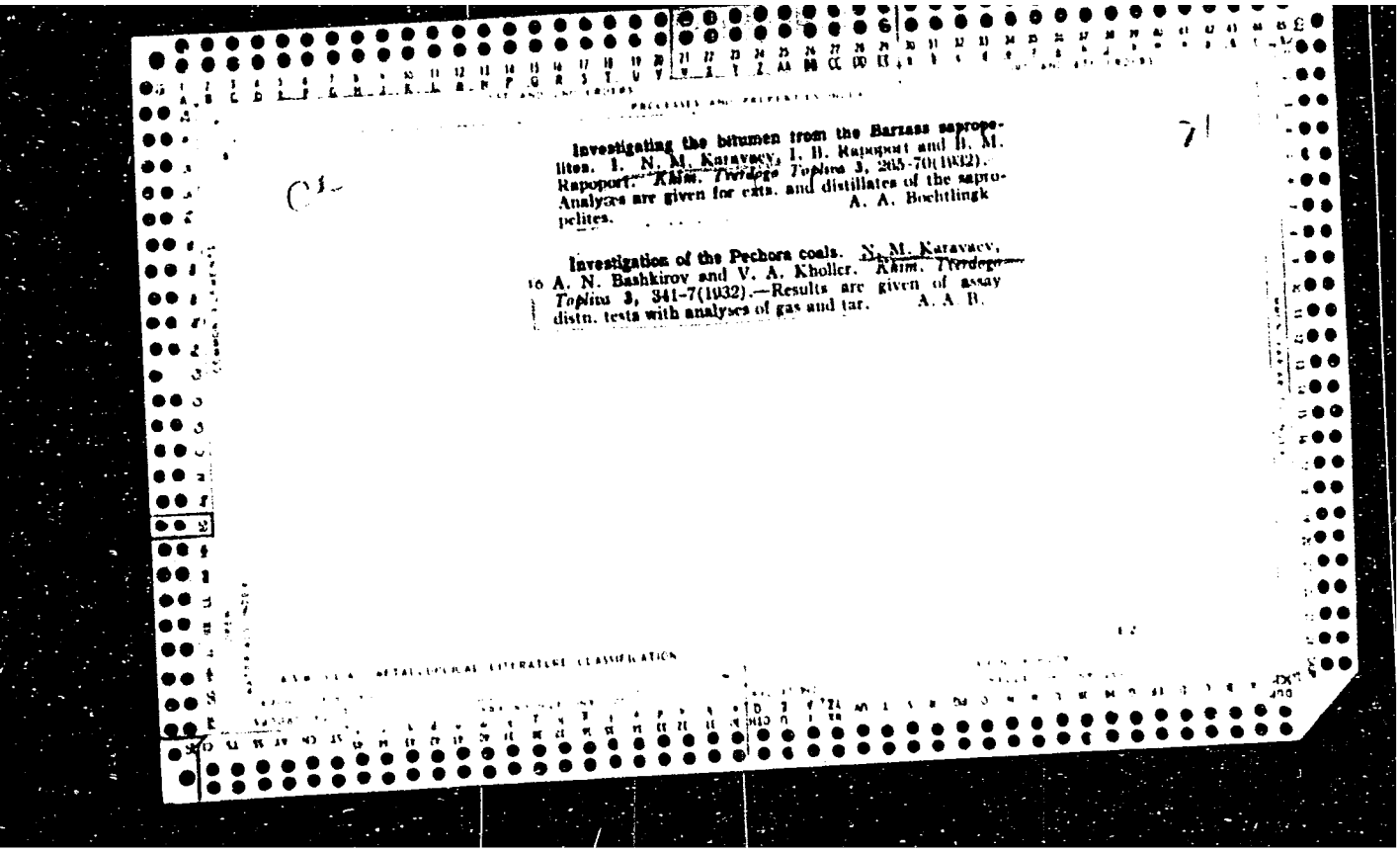
A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



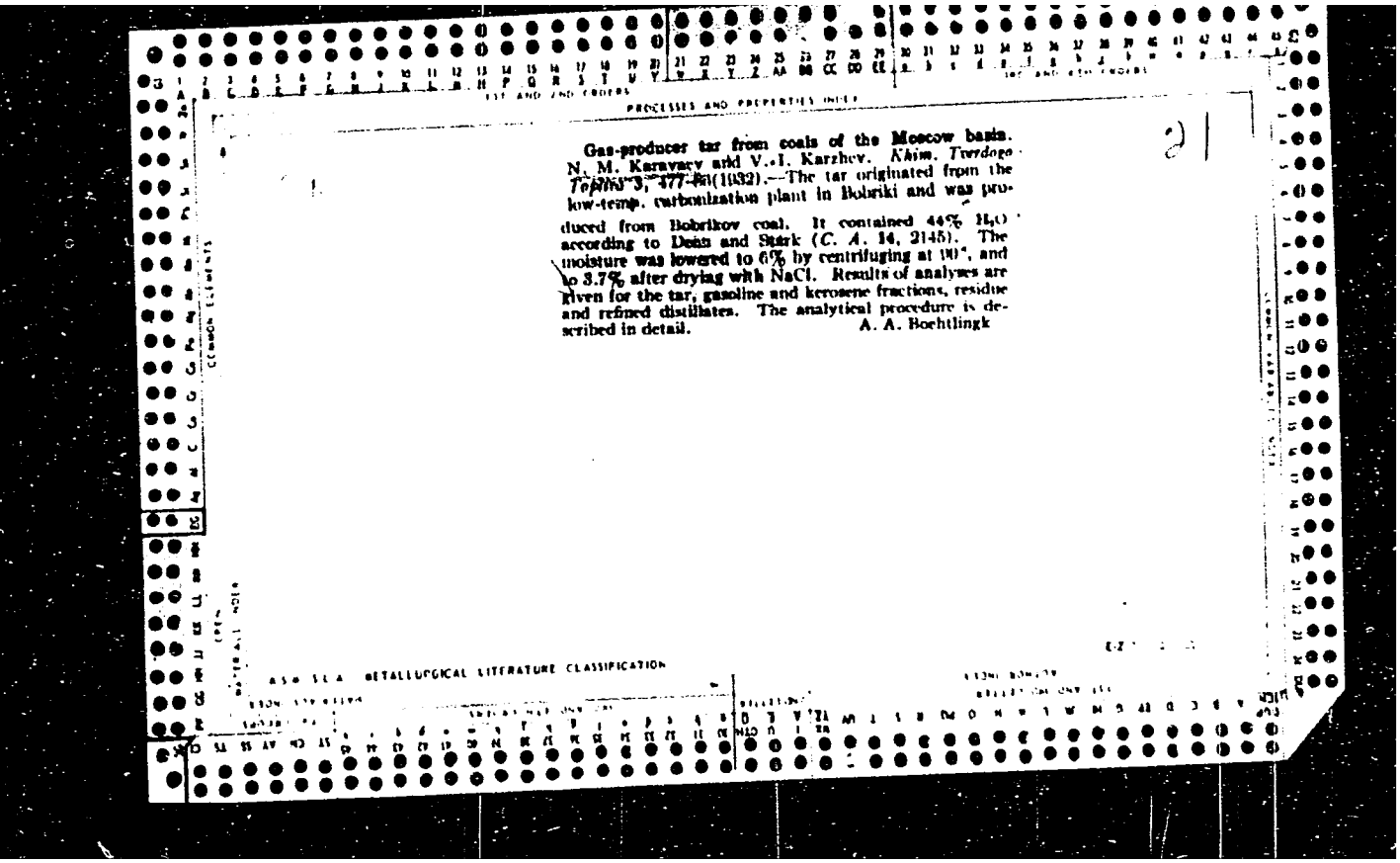
Kisiakvahli coal. N. M. Karavaev and Z. A. Vasil'eva. *Khim. Tverdogo Topliva* 3, 20-37(1932). Analyses and carbonization tests, results of which are given in detail, show that this coal is satisfactory for the manuf. of coke.
A. A. Boehtlingk

Tars from sapropelites from the third deposit on the Barzass River. N. M. Karavaev, I. B. Rapoport and I. Ya. Felberbaum. *Khim. Tverdogo Topliva* 3, 121-9 (1932).—The content of gasoline in the tar as well as in the gas exceeds that present in the mixed-base Grozny crude oil. The gasolines are of the same grade as are those from the above crude oil. These gasolines are of a high com. value because of their high content of unsatd. and aromatic hydrocarbons. The consumption of reagents needed in refining can be brought to a min. by treating narrow cuts and extg. the acidic oils from the tars, less reagent being needed in this case than in the refining of cracked gasoline. The kerosene fraction is not as high as in the crude oil and its properties occupy an intermediate position between the straight and the cracked kerosene distillates.
A. A. Boehtlingk



Investigating the bitumen from the Barzass sapropelites. I. N. M. Karavaev, I. B. Rapoport and B. M. Rapoport. *Khim. Tverdogo Topliva* 3, 265-70(1932). Analyses are given for exts. and distillates of the sapropelites. A. A. Bochtlingk

Investigation of the Pechora coals. N. M. Karavaev, A. N. Bashkirov and V. A. Kholler. *Khim. Tverdogo Topliva* 3, 341-7(1932).—Results are given of assay distn. tests with analyses of gas and tar. A. A. B.



Gas-producer tar from coals of the Moscow basin. N. M. Karavaev and V. I. Karzhev. *Khim. Tverdogo Topliva* 3, 477-84(1932).—The tar originated from the low-temp. carbonization plant in Bobriki and was produced from Bobrikov coal. It contained 44% H_2O according to Dean and Stark (*C. A.* 14, 2145). The moisture was lowered to 6% by centrifuging at 80°, and to 3.7% after drying with NaCl. Results of analyses are given for the tar, gasoline and kerosene fractions, residue and refined distillates. The analytical procedure is described in detail. A. A. Boehtlingk

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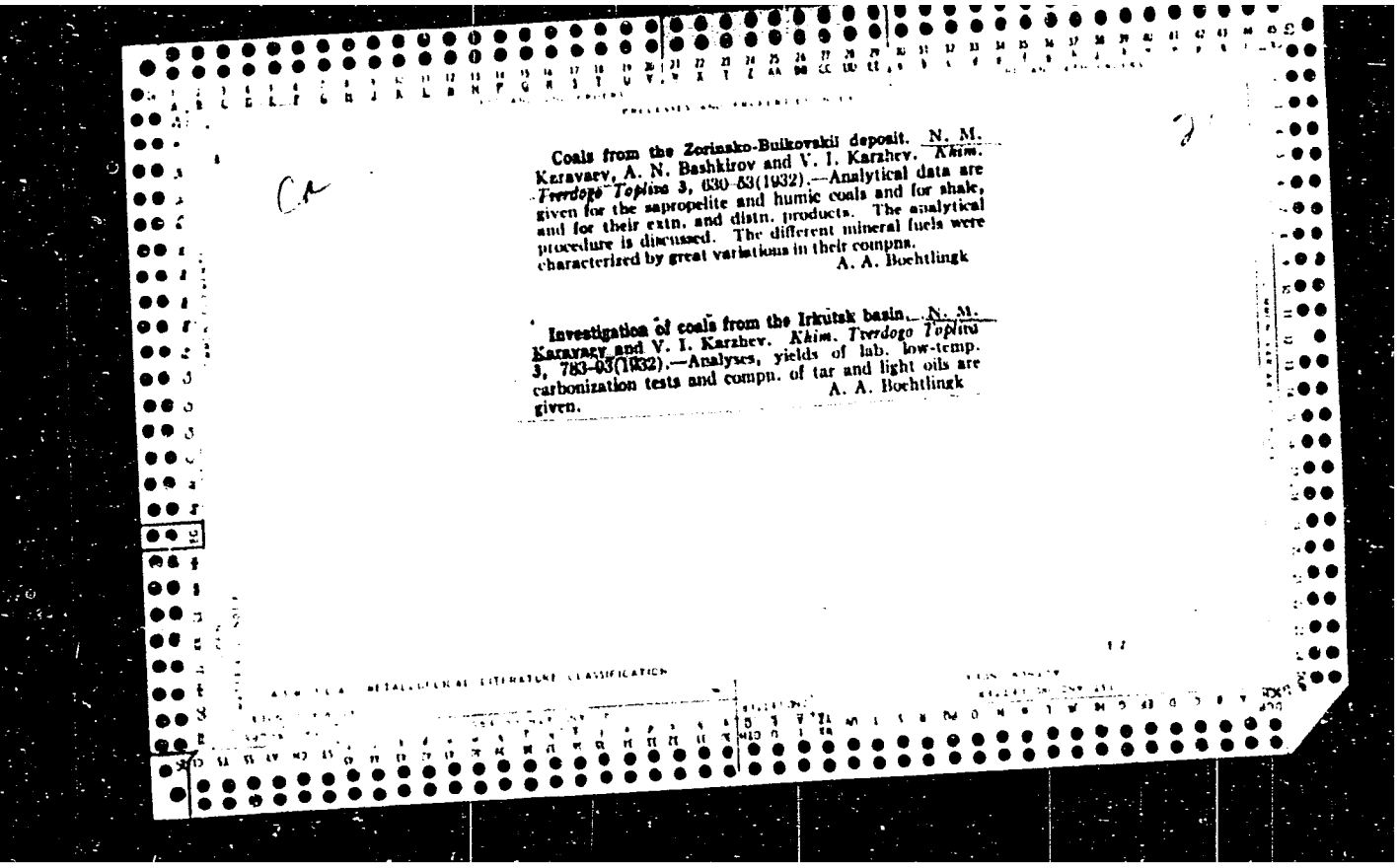
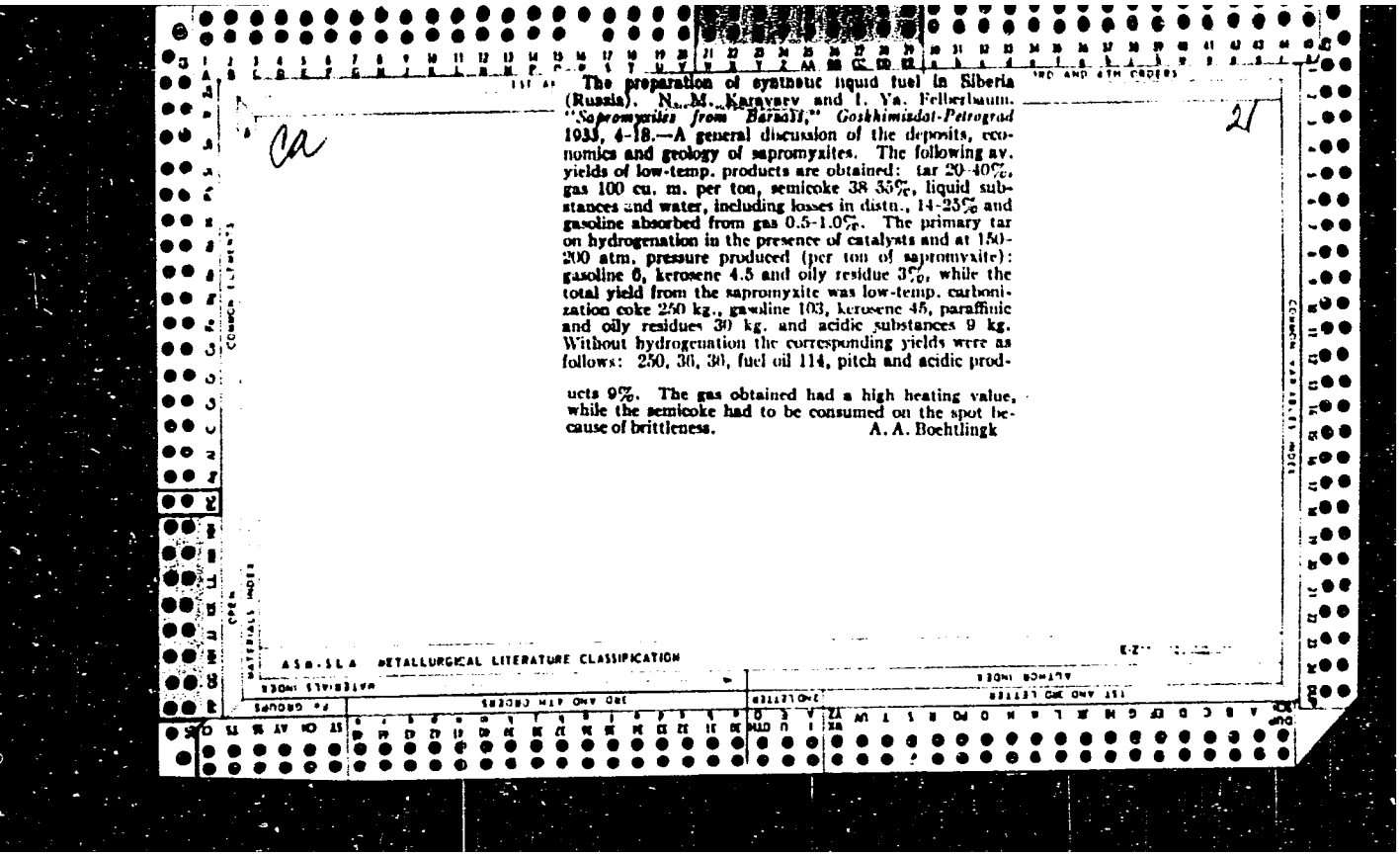


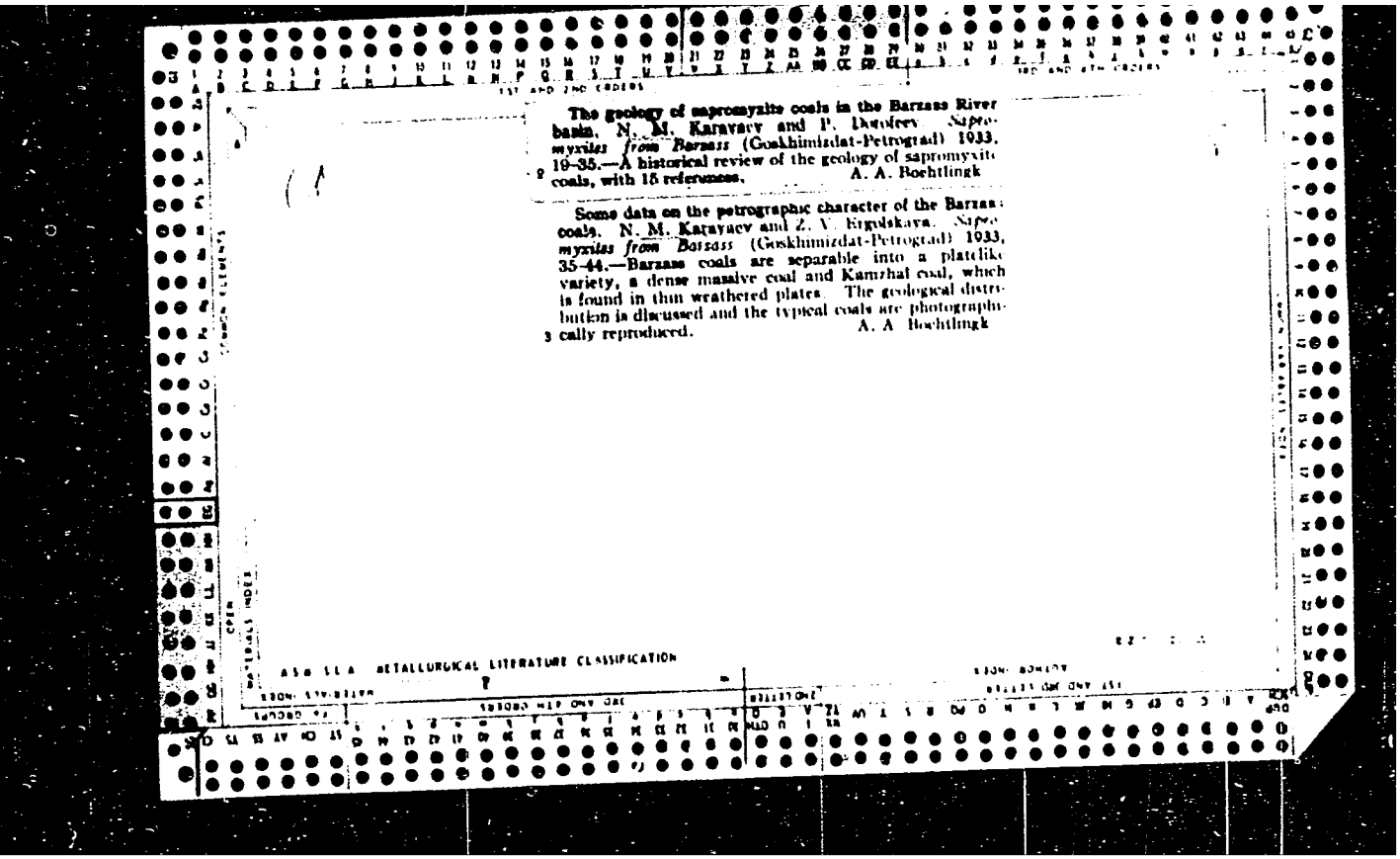
Coals from the Zorinsko-Bulkovskii deposit. N. M. Karavaev, A. N. Bashkirov and V. I. Karzhev. *Khim. Tverdogo Topliva* 3, 630–53(1932).—Analytical data are given for the sapropelite and humic coals and for shale, and for their extn. and distn. products. The analytical procedure is discussed. The different mineral fuels were characterized by great variations in their compns.
A. A. Boehtlingk

Investigation of coals from the Irkutsk basin. N. M. Karavaev and V. I. Karzhev. *Khim. Tverdogo Topliva* 3, 783–93(1932).—Analyses, yields of lab. low-temp. carbonization tests and compn. of tar and light oils are given.
A. A. Boehtlingk



The preparation of synthetic liquid fuel in Siberia (Russia). N. M. Karavaev and I. Ya. Felterbaum. "*Sapromyxites from Barnaul*," *Goskhimizdat-Petrograd* 1933, 4-18.—A general discussion of the deposits, economics and geology of sapromyxites. The following av. yields of low-temp. products are obtained: tar 20-40%, gas 100 cu. m. per ton, semicoke 38-55%, liquid substances and water, including losses in distn., 14-25% and gasoline absorbed from gas 0.5-1.0%. The primary tar on hydrogenation in the presence of catalysts and at 150-200 atm. pressure produced (per ton of sapromyxite): gasoline 6, kerosene 4.5 and oily residue 3%, while the total yield from the sapromyxite was low-temp. carbonization coke 250 kg., gasoline 103, kerosene 45, paraffinic and oily residues 30 kg. and acidic substances 9 kg. Without hydrogenation the corresponding yields were as follows: 250, 30, 30, fuel oil 114, pitch and acidic products 9%. The gas obtained had a high heating value, while the semicoke had to be consumed on the spot because of brittleness.

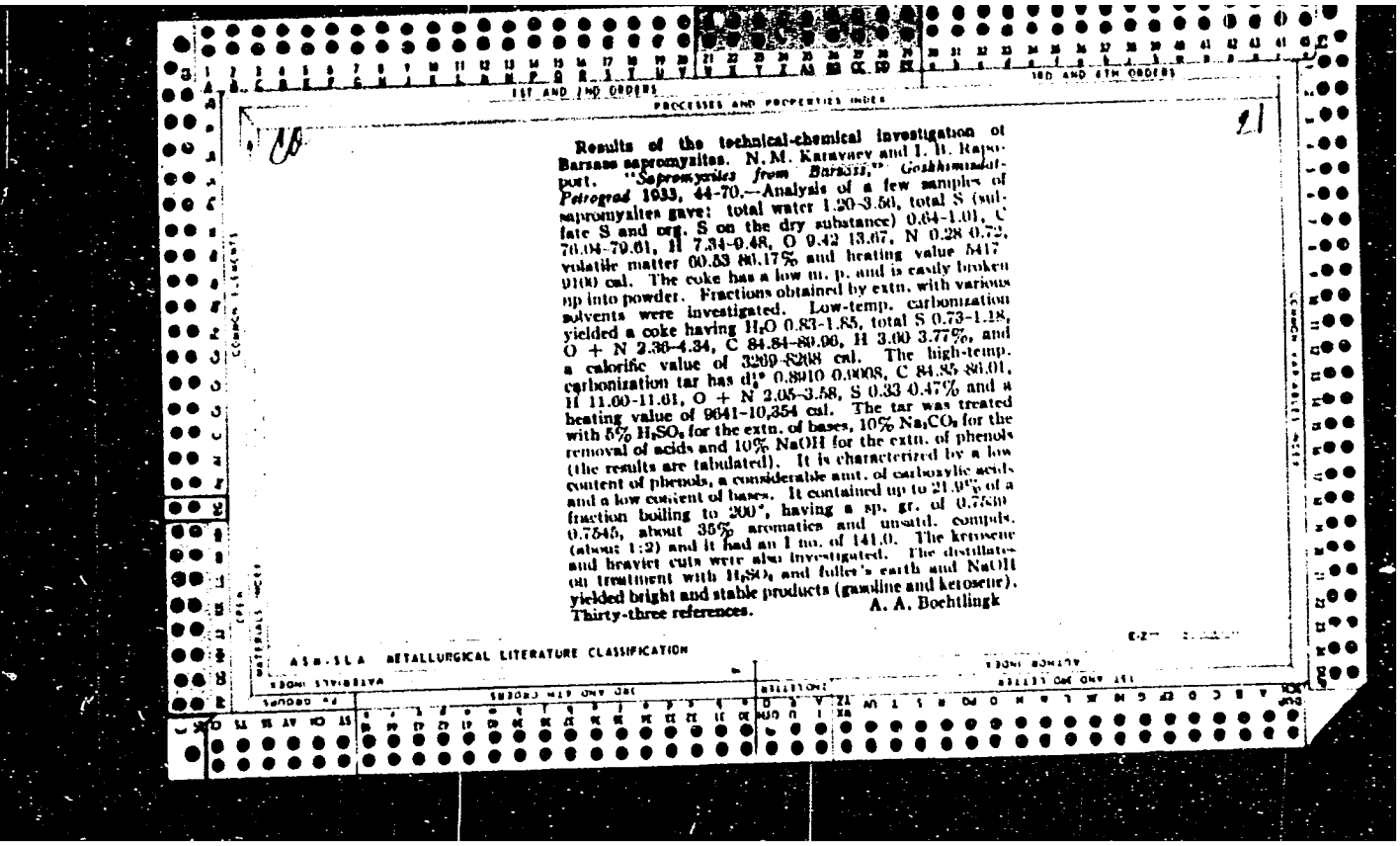
A. A. Boehtlingk



The geology of sapromyxite coals in the Barzass River basin. N. M. Karavaev and P. Dorofeev. *Sapromyxites from Barsass* (Goskhimizdat-Petrograd) 1933, 19–35.—A historical review of the geology of sapromyxite coals, with 18 references. A. A. Boehtlingk

Some data on the petrographic character of the Barzass coals. N. M. Karavaev and Z. V. Ergolskaya. *Sapromyxites from Barsass* (Goskhimizdat-Petrograd) 1933, 35–44.—Barzass coals are separable into a platelike variety, a dense massive coal and Kamzhal coal, which is found in thin weathered plates. The geological distribution is discussed and the typical coals are photographically reproduced. A. A. Boehtlingk

A 5 a 11 a METALLURGICAL LITERATURE CLASSIFICATION



Results of the technical-chemical investigation of Barsano sapromyxites. N. M. Karavaev and I. B. Rapoport. "*Sapromyxites from Barsuki*," *Gosbitumizdat-Petrograd* 1933, 44-70.—Analysis of a few samples of sapromyxites gave: total water 1.20-3.50, total S (sulfate S and org. S on the dry substance) 0.64-1.01, C 70.04-79.01, H 7.34-9.48, O 9.42 13.67, N 0.28 0.72, volatile matter 60.53 80.17% and heating value 5417-9100 cal. The coke has a low m. p. and is easily broken up into powder. Fractions obtained by extn. with various solvents were investigated. Low-temp. carbonization yielded a coke having H_2O 0.83-1.85, total S 0.73-1.18, O + N 2.36-4.34, C 84.84-89.96, H 3.00 3.77%, and a calorific value of 3209-8208 cal. The high-temp. carbonization tar has d_4^{15} 0.8910 0.9008, C 84.85-86.01, H 11.60-11.61, O + N 2.05-3.58, S 0.33 0.47% and a heating value of 9041-10,354 cal. The tar was treated with 5% H_2SO_4 for the extn. of bases, 10% Na_2CO_3 for the removal of acids and 10% NaOH for the extn. of phenols (the results are tabulated). It is characterized by a low content of phenols, a considerable amt. of carboxylic acids and a low content of bases. It contained up to 21.0% of a fraction boiling to 200°, having a sp. gr. of 0.7560-0.7845, about 35% aromatics and unsatd. compds. (about 1:2) and it had an I no. of 141.0. The kerosene and heavier cuts were also investigated. The distillates on treatment with H_2SO_4 and fuller's earth and NaOH yielded bright and stable products (gasoline and kerosene). Thirty-three references.

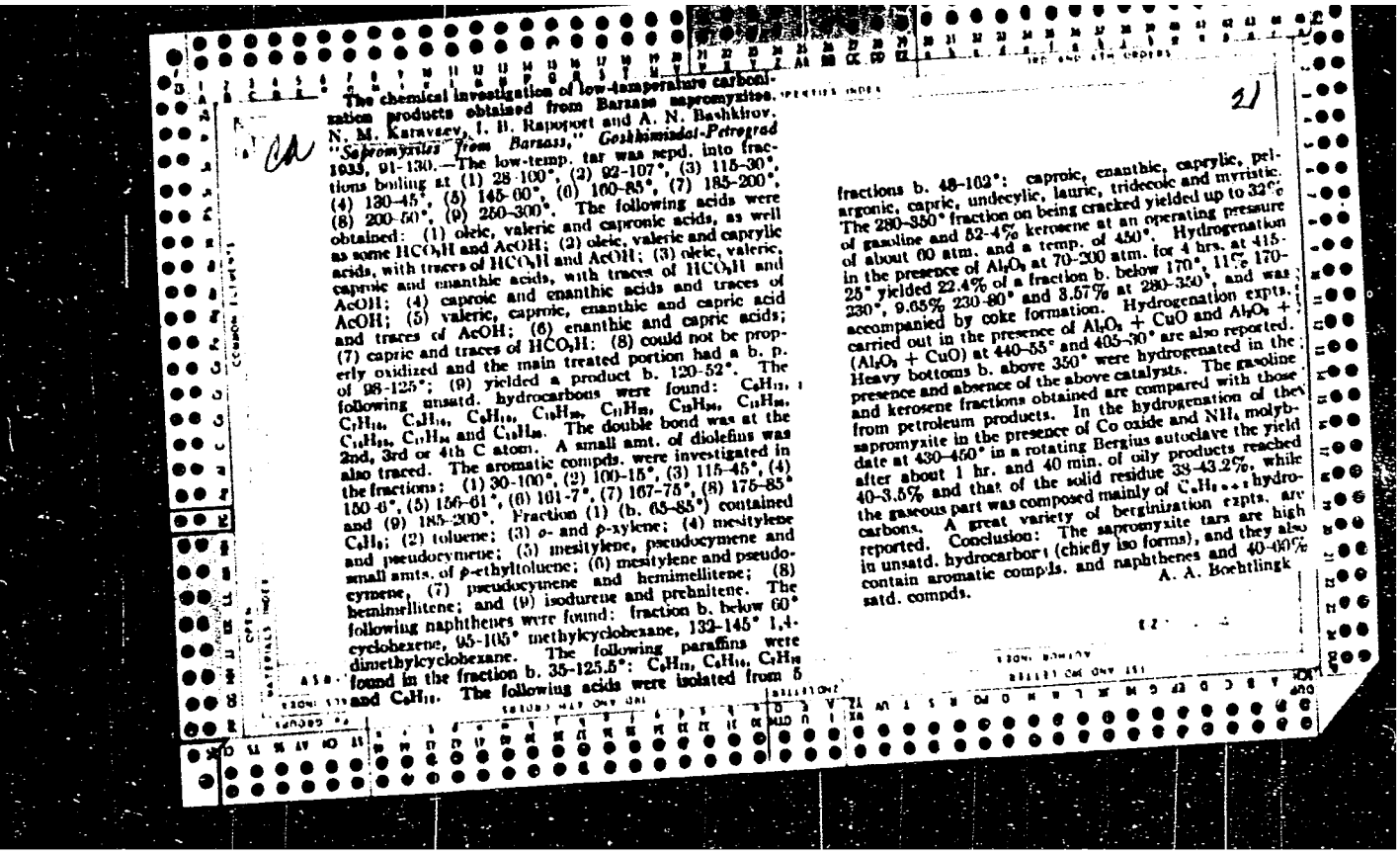
A. A. Boehtlingk

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Semiproduction investigation of low-temperature carbonization of Barzass sapromyxites. N. M. Karavaev and D. D. Zuikov. "*Sapromyxites from Barzass*," *Goskhimizdat-Petrograd* 1933, 71–91.—Barzass sapromyxites were distd. at 600° in rotating retorts (described in detail), the plants having a daily capacity of 5 tons; and semicoke 56.0–75.0, tar 6–13.78 and gas, water and losses 11.83–35.50% were obtained. The semicoke contained H_2O 0.01–5.98, S 0.47–0.96, C 87.34–88.90, H 3.85–5.22 and N + O 2.25–2.40%. The tar had d_{15} 0.9102–0.9535, H_2O 0.6–1.54%, E_{50} 1.26–1.73, S 0.37%, Brenken flash 23–41°, pour point 6°, acidic compds. 4.49–5.70%, acids trace, bases 0.40%, heating value 10,013–10,346 cal. and paraffin 0.55%. The gas was composed of: CO_2 25.2–28.13, C_nH_m 8.91–12.94, O 1.03–3.60, CO 6.02–6.68, H + CH_4 + C_2H_6 43.25–47.25 and N 3.37–12.83%. The steam-distd. tar yielded 19.7% of a fraction boiling below 200° (sp. gr. 0.7870) and 14.3% boiling at 200–273° (sp. gr. 0.8570). The kerosene fraction (steam-distd.) boiling at 185–310° contained 7.5% acidic products and traces of bases. The residue or the fuel oil has d. 1.0423, H_2O 1.07%. Brenken flash 179°, mech. admixts. 0.08%, pour point +22°, ash 0.863% and coke 21.1%. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The chemical investigation of low-temperature carbonization products obtained from Barzass sapromyxites. N. M. Karavaev, I. B. Rapoport and A. N. Bashkirov. "*Sapromyxites from Barzass*," *Goskhimizdat-Petrograd* 1935, 91-130.—The low-temp. tar was sepd. into fractions boiling at (1) 28-100°, (2) 92-107°, (3) 115-30°, (4) 130-45°, (5) 145-60°, (6) 160-85°, (7) 185-200°, (8) 200-50°, (9) 250-300°. The following acids were obtained: (1) oleic, valeric and caproic acids, as well as some HCO_2H and AcOH; (2) oleic, valeric and caprylic acids, with traces of HCO_2H and AcOH; (3) oleic, valeric, caproic and enanthic acids, with traces of HCO_2H and AcOH; (4) caproic and enanthic acids and traces of AcOH; (5) valeric, caproic, enanthic and capric acid and traces of AcOH; (6) enanthic and capric acids; (7) capric and traces of HCO_2H; (8) could not be properly oxidized and the main treated portion had a b. p. of 98-125°; (9) yielded a product b. 120-52°. The following unsatd. hydrocarbons were found: C_6H_{12}, C_7H_{14}, C_8H_{16}, C_9H_{18}, $C_{10}H_{20}$, $C_{11}H_{22}$, $C_{12}H_{24}$, $C_{13}H_{26}$ and $C_{14}H_{28}$. The double bond was at the 2nd, 3rd or 4th C atom. A small amt. of diolefins was also traced. The aromatic compds. were investigated in the fractions: (1) 30-100°, (2) 100-15°, (3) 115-45°, (4) 150-6°, (5) 156-61°, (6) 161-7°, (7) 167-75°, (8) 175-85° and (9) 185-200°. Fraction (1) (b. 65-85°) contained C_6H_6; (2) toluene; (3) *o*- and *p*-xylene; (4) mesitylene and pseudocymene; (5) mesitylene, pseudocymene and small amts. of *p*-ethyltoluene; (6) mesitylene and pseudocymene, (7) pseudocymene and hemimellitene; (8) hemimellitene; and (9) isodurene and prehnitene. The following naphthenes were found: fraction b. below 60° cyclohexene, 95-105° methylcyclohexane, 132-145° 1,4-dimethylcyclohexane. The following paraffins were found in the fraction b. 35-125.5°: C_6H_{14}, C_7H_{16}, C_8H_{18} and C_9H_{20}. The following acids were isolated from 5 fractions b. 48-102°: caproic, enanthic, caprylic, pelargonic, capric, undecylic, lauric, tridecoic and myristic. The 280-350° fraction on being cracked yielded up to 32% of gasoline and 52-4% kerosene at an operating pressure of about 60 atm. and a temp. of 450°. Hydrogenation in the presence of Al_2O_3 at 70-200 atm. for 4 hrs. at 415-25° yielded 22.4% of a fraction b. below 170°, 11% 170-230°, 9.65% 230-80° and 8.67% at 280-350°, and was accompanied by coke formation. Hydrogenation expts. carried out in the presence of Al_2O_3 + CuO and Al_2O_3 + (Al_2O_3 + CuO) at 440-55° and 405-30° are also reported. Heavy bottoms b. above 350° were hydrogenated in the presence and absence of the above catalysts. The gasoline and kerosene fractions obtained are compared with those from petroleum products. In the hydrogenation of the sapromyxite in the presence of Co oxide and NH_4 molybdate at 430-450° in a rotating Bergius autoclave the yield after about 1 hr. and 40 min. of oily products reached 40-3.5% and that of the solid residue 33-43.2%, while the gaseous part was composed mainly of C_nH_{2n+2} hydrocarbons. A great variety of berginization expts. are reported. Conclusion: The sapromyxite tars are high in unsatd. hydrocarbons (chiefly iso forms), and they also contain aromatic compds. and naphthenes and 40-60% satd. compds.

A. A. Boehtlingk

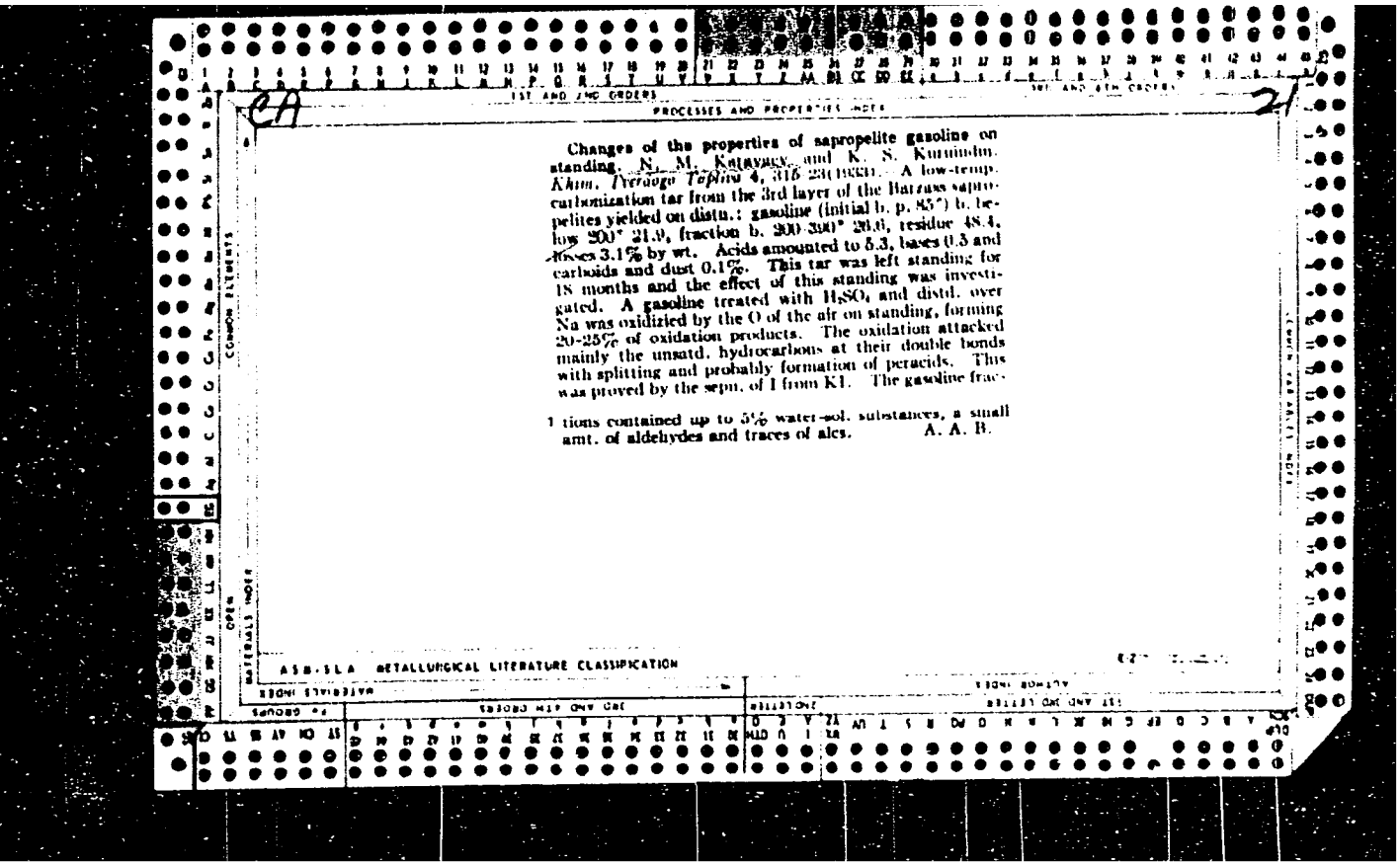
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Changes undergone by coal in contact with air. N. M. Karavaev, I. B. Rapoport and V. A. Holler. *Khim. Tverdogo Topliva* 4, 215-33(1933); *Chimie & industrie* 31, 900-1.—A general description of the phenomena which take place in coal during its oxidation in air. A. P.-C.

3RD AND 4TH ORDERS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



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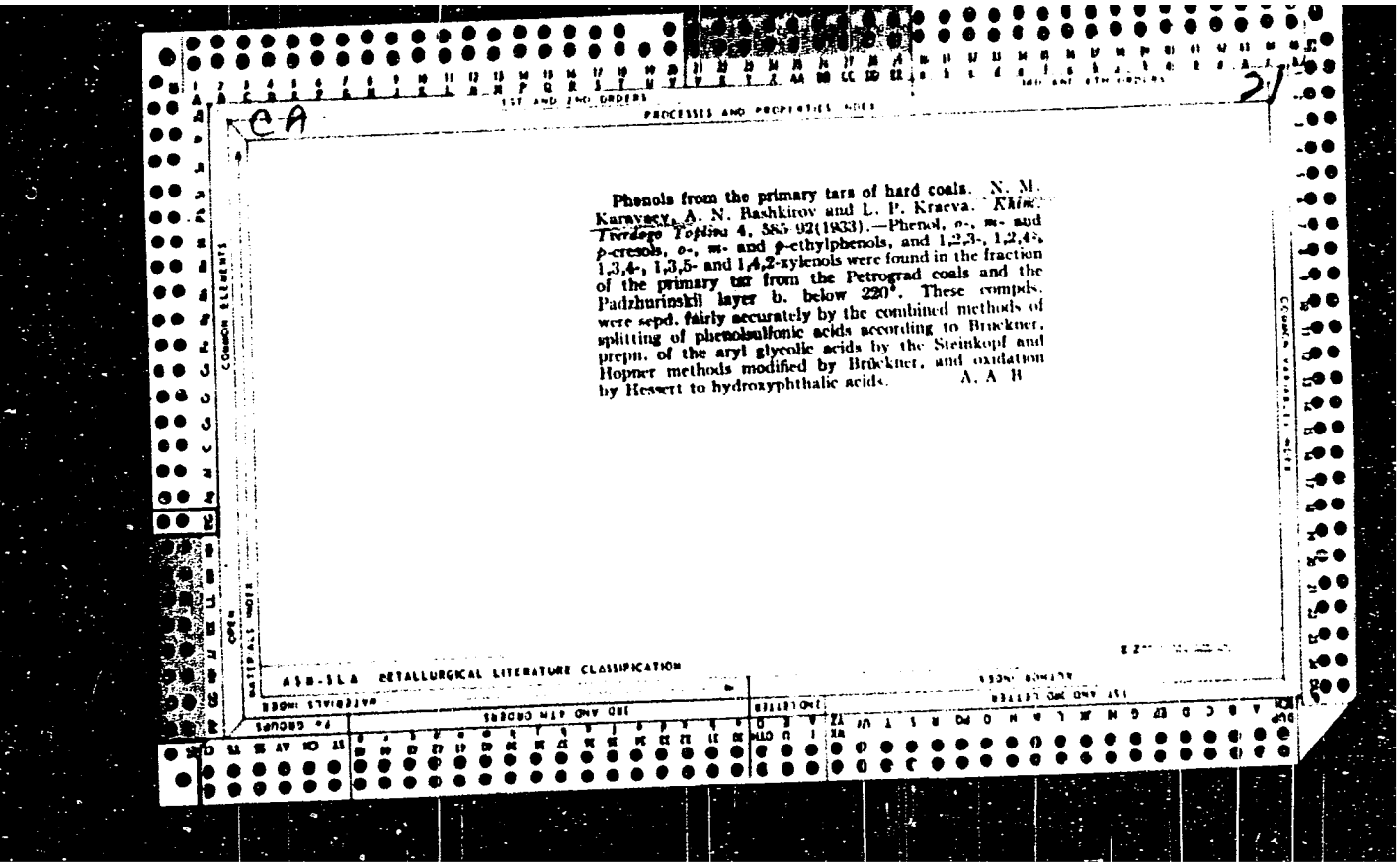
PROCESSES AND PROPERTIES INDEX

Changes of the properties of sapropelite gasoline on standing. N. M. Kotlyarov and K. S. Kurmindin. *Khim. Tverdogo Topliva* 4, 316-23(1933). A low-temp. carbonization tar from the 3rd layer of the Barzass sapropelites yielded on distn.: gasoline (initial b. p. 85°) b. below 200° 21.9, fraction b. 200-300° 20.6, residue 48.4, losses 3.1% by wt. Acids amounted to 5.3, bases 0.5 and carboids and dust 0.1%. This tar was left standing for 18 months and the effect of this standing was investigated. A gasoline treated with H_2SO_4 and distd. over Na was oxidized by the O of the air on standing, forming 20-25% of oxidation products. The oxidation attacked mainly the unsatd. hydrocarbons at their double bonds with splitting and probably formation of peracids. This was proved by the sepn. of I from KI. The gasoline fractions contained up to 5% water-sol. substances, a small amt. of aldehydes and traces of alcs. A. A. B.

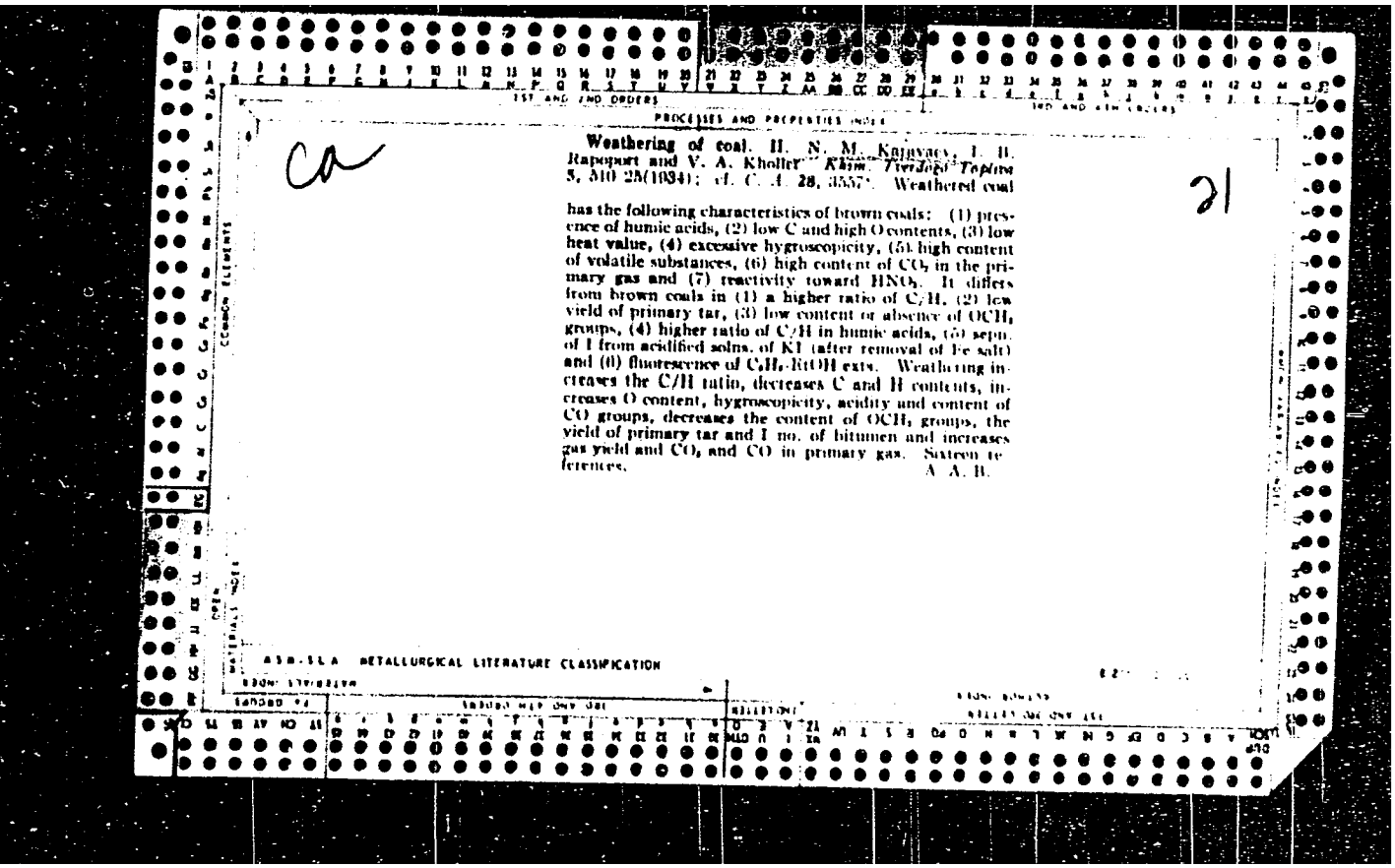
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



C-A

Phenols from the primary tars of hard coals. N. M. Karavaev, A. N. Bashkirov and L. P. Kraeva. *Khim. Tverdogo Topliva* 4, 585-92(1933).—Phenol, *o*-, *m*- and *p*-cresols, *o*-, *m*- and *p*-ethylphenols, and 1,2,3-, 1,2,4-, 1,3,4-, 1,3,5- and 1,4,2-xylenols were found in the fraction of the primary tar from the Petrograd coals and the Padzhurinskii layer b. below 220°. These compds. were sepd. fairly accurately by the combined methods of splitting of phenolsulfonic acids according to Brückner, prepn. of the aryl glycolic acids by the Steinkopf and Hopner methods modified by Brückner, and oxidation by Hessert to hydroxyphthalic acids. A. A. B.

A53-51A METALLURGICAL LITERATURE CLASSIFICATION



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Ca

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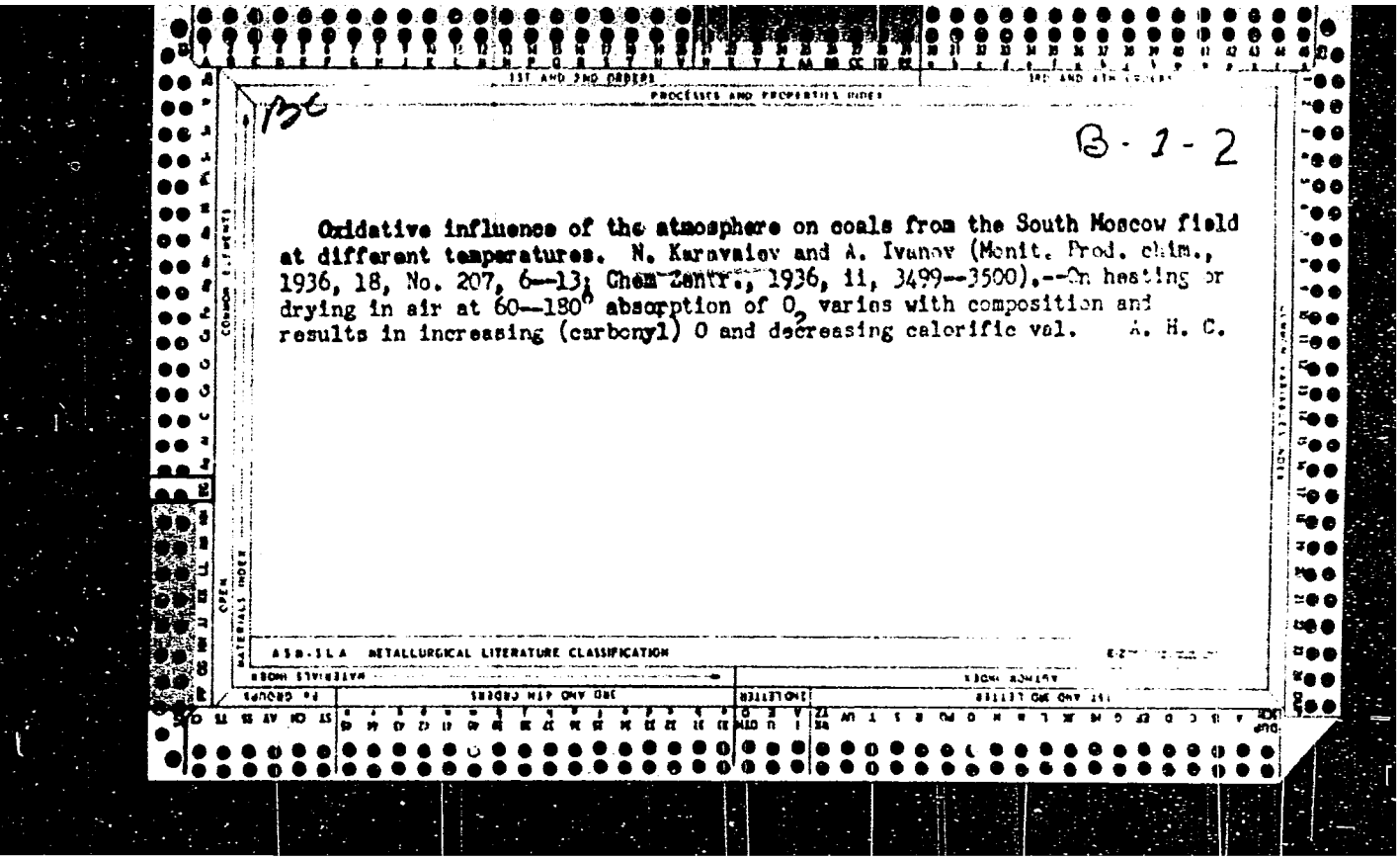
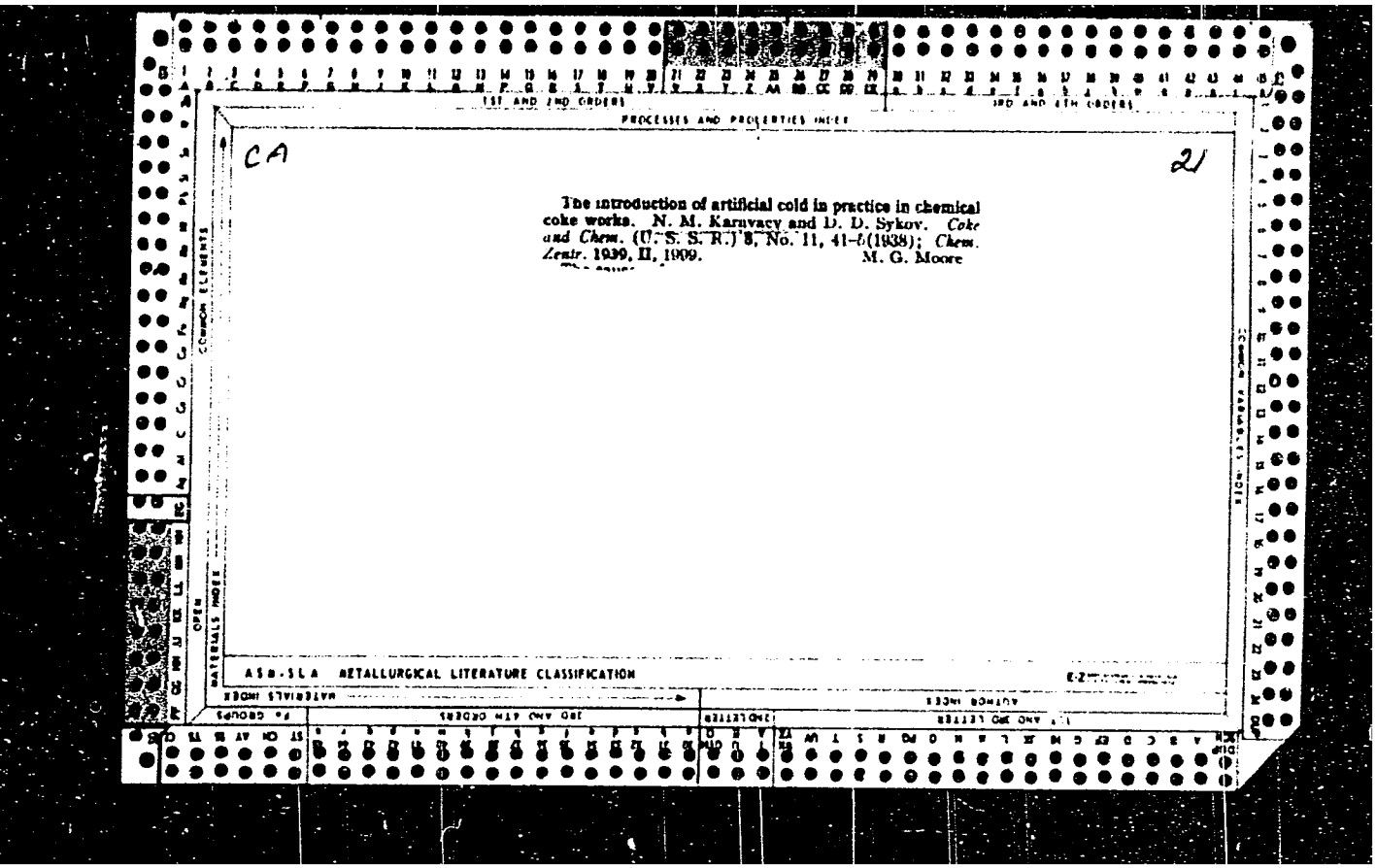
Weathering of coal. II. N. M. Kajnavec, I. B. Rapoport and V. A. Kholler. *Khim. Tverdogo Topliva* 5, 310-28(1934); cf. C. A. 28, 3557⁸. Weathered coal has the following characteristics of brown coals: (1) presence of humic acids, (2) low C and high O contents, (3) low heat value, (4) excessive hygroscopicity, (5) high content of volatile substances, (6) high content of CO_2 in the primary gas and (7) reactivity toward HNO_3. It differs from brown coals in (1) a higher ratio of C/H, (2) low yield of primary tar, (3) low content or absence of OCH_3 groups, (4) higher ratio of C/H in humic acids, (5) sepn. of I from acidified solns. of KI (after removal of Fe salt) and (6) fluorescence of C_6H_6-ROH exts. Weathering increases the C/H ratio, decreases C and H contents, increases O content, hygroscopicity, acidity and content of CO groups, decreases the content of OCH_3 groups, the yield of primary tar and I no. of bitumen and increases gas yield and CO_2 and CO in primary gas. Sixteen references.
A. A. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



B-1-2

Oxidative influence of the atmosphere on coals from the South Moscow field at different temperatures. N. Karavaiev and A. Ivanov (Monit. Prod. chim., 1936, 18, No. 207, 6—13; Chem. Zentr., 1936, ii, 3499—3500).—On heating or drying in air at 60—180° absorption of O_2 varies with composition and results in increasing (carbonyl) O and decreasing calorific val. A. H. C.



CA

21

The introduction of artificial cold in practice in chemical coke works. N. M. Karuvacy and D. D. Sykov. *Coke and Chem.* (U. S. S. R.) 8, No. 11, 41–6(1938); *Chem. Zentr.* 1939, II, 1909.

M. G. Moore

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

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CA

1

A new scheme of batch rectification and the theory of the layout of the process. N. M. Karavaev. *Bull. acad. sci. U. R. S. S., Classe sci. tech.* 1940, No. 9, 79-101.—Equations are given for the rectification process for both the batch and continuous processes. The process in the column can be stabilized by the introduction of addnl. liquid to one of the intermediate plates and by changing the process to a semicontinuous or continuous process.

W. R. H.

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1ST AND 2ND LETTER

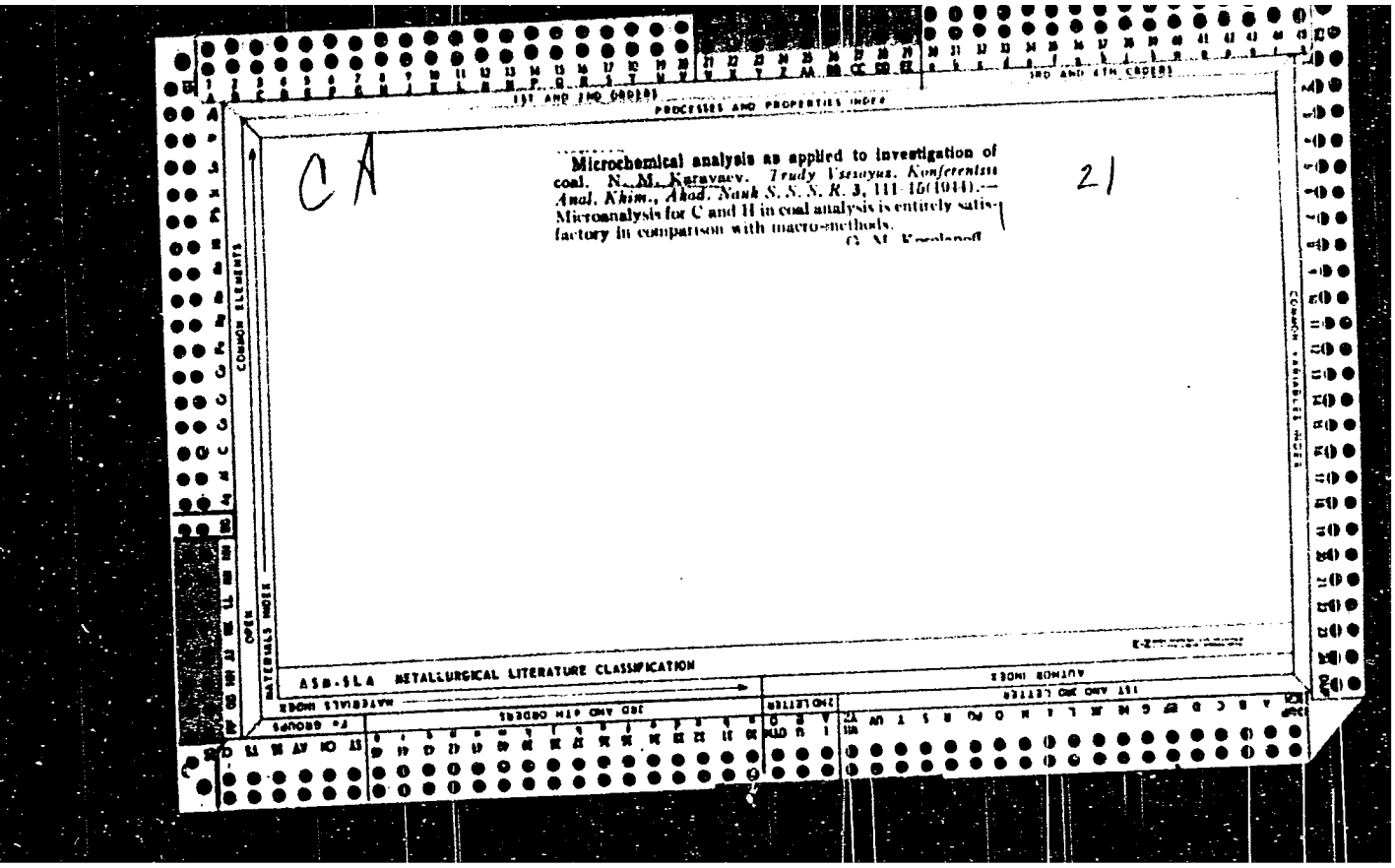
KARAVAYEV,N8M8 600

1. KARAVAYEV, N. M., VENER, I. M.

2. USSR (600)

"Quantitative Determination of Indole in Coal Tar," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 5, 1941, Institute of Mineral Fuels, Academy of Sciences USSR, Submitted 5 Feb 1941.

9. [redacted] Report U-1530, 25 Oct 1951

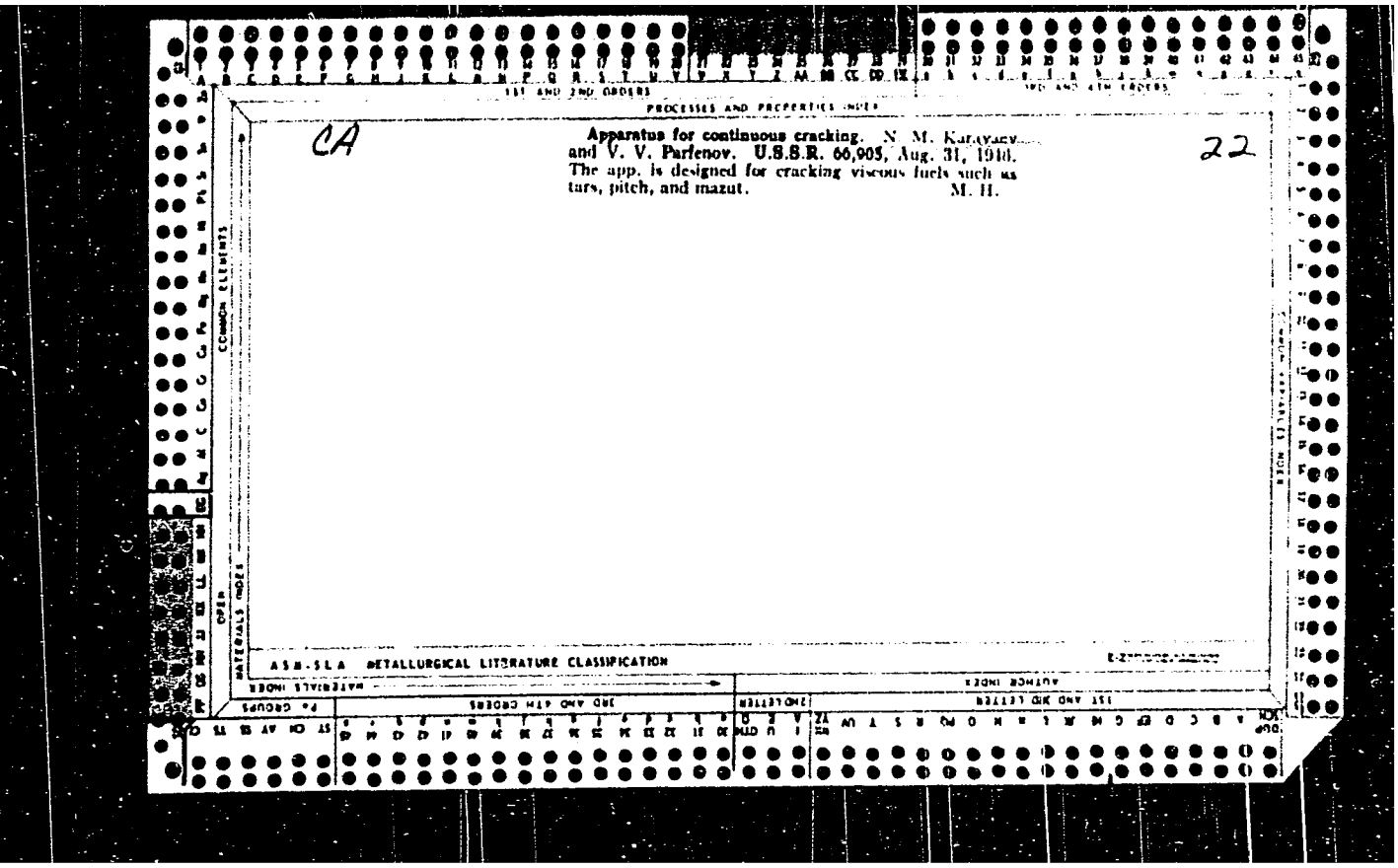


KARAVAYEV, N. M., RASHKIROV, A. N.

Laboratory of Volatile Products of Coking, Institute of Mineral Fuels, Academy of Sciences, USSR (-1944-)

"New Method of Separating Styrene from Crude Benzene."
Iz. Ak. Nauk. SSSR. Otdel. Tekh. Nauk.
Nos. 10-11, 1944

BR-52059019



CA

22

Apparatus for continuous cracking. N. M. Karayev and V. V. Parfenov. U.S.S.R. 66,905, Aug. 31, 1946. The app. is designed for cracking viscous fuels such as tars, pitch, and mazut. M. H.