DAVYDOV, A.V.; MYASOYEDOV, B.F.; NOVIKOV, Yu.P.; PALEY, P.N.; PAL'SHIN, Ye.S.

Concentration and purification of Pa^{231} and Pa^{233}. Trudy Kom. anal. khim. 15:64-79 '65 (MIRA 18:7)

DEBERDEYEVA, R.Yu.; NEMODRUK, A.A.; PALEY, P.N.

Determination of uranium in solutions of tributyl phosphate, in kerosire and synthine as thiocyanate. Radiokhimiia 7 no.3:271-273 '65.
(MIRA 18:7)

L 60398-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-4 IJP(c) JD/WW/JG

ACCESSION NR: AP5017004 UR/0186/65/007/003/0372/0373 21
543.063: 546.791.6 B

AUTHOR: Nemodruk, A.A.; Paley, P.N.; Glukhova, L.P.

TITLE: Determination of small amounts of U(VI) in the presence of large amounts of U(IV)

SOURCE: Radiokhimiya, v. 7, no. 3, 1965, 372-373

TOPIC TAGS: uranium determination, uranium extraction, ammonium vanadate, tributyl phosphate

ABSTRACT: On the basis of data obtained by studying the extractive separation of U(VI) from U(IV), an extraction method for determining small amounts of U(VI) in the presence of large amounts of U(IV) is described. It permits the determination of U(VI) in hydrochloric and nitric acid solutions containing 0.2-500 μg U(VI) per ml in the presence of up to 150 times this amount of U(VI), tributyl phosphate being used to extract U(VI). If it is necessary to determine U(VI) when its content is higher than 50 μg/ml, such solutions are first diluted. The procedure takes 30-35 min. Amounts of SO_4^{2-} greater than 2500 times the U(VI) content lower the results. The influence of other elements interfering with the determination of U(VI) is either negligible or completely absent,

Card 1/2

L 60398-65

ACCESSION NR: AP5017004

except in the case of rare earth metals, which do not interfere if their ratio to U(VI) does not exceed 100. For determining U(IV) in the solution being analyzed, the most suitable method is one involving the titration of U(IV) with a solution of ammonium vanadate in the presence of N-phenylanthranilic acid. Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 08Aug64 ENCL: 00 SUB CODE: IC

NO REF SOV: 003 OTHER: 000

dm

Card 2/2

PALEY, P.N.; NEMODRUK, A.A.; DEBERDEYEVA, R.Yu.

Determination of uranium in chloride-fluoride solutions. Radiokhimiia 6 no.4:459-463 '64. (MIRA 18:4)

L 5472-65 EWT(m)/EPF(n)-2/EWP(j)/T/EWP(t)/EWP(b) Pc-4/Pu-4 IJP(c)
JD/WW/JG/GS/RM

ACCESSION NR: AT5013649 UR/0000/65/000/000/0147/0152
543.253:546.791

AUTHOR: Paley, P. N.; Gusev, N. I.; Sklyarenko, I. S.; Chubukova, T. M.

TITLE: Polarographic determination of uranium in nitric acid media containing tri-n-butyl phosphate. Part 1. Polarography in weakly acidic media

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiye metody opredeleniya mikroelementov (Radiochemical methods for determining trace elements); sbornik statey. Moscow, Izd-vo Nauka, 1965, 147-152

TOPIC TAGS: polarography, uranium determination, tributyl phosphate, nitric acid concentration, gelatin

ABSTRACT: The object of this study was to determine the cause of the influence of tributyl phosphate (TBP) on the polarographic reduction of U(VI), so that optimum conditions for determining U(VI) could be selected. A dropping mercury electrode and an LP-55A polarograph were used. The uranyl ion was analyzed polarographically in HNO_3 solutions with and without TBP. The latter was found to have surface-active properties which complicate the quantitative determination of uranium. The interference of TBP can be eliminated by introducing a gelatin solution, which

Card 1/2

L 54472-65

ACCESSION NR: AT5013649

acts as a competing surfactant. The proposed method of determining U(VI) consists of a fivefold dilution of the nitric acid - tributyl phosphate solution with water or acid (so that the acidity of the final solution is about 0.3 N in HNO_3) and the polarographic analysis of U(VI) on a dropping mercury electrode at a gelatin concentration of 0.01%. HNO_3 - TBP solutions with concentrations of 1.5 N HNO_3, 0.5-0.8 N NH_4NO_3, and 4×10^{-4} - 5×10^{-3} M $UO_2(NO_3)_2$ were thus analyzed with the use of gelatin. The average relative error of 40 determinations of uranium in the range of 7×10^{-5} - 1×10^{-3} M was ± 3.1%. The maximum error (for the minimum uranium content) did not exceed ± 8%. Orig. art. has: 7 figures.

ASSOCIATION: None

SUBMITTED: 16Mar64 ENCL: 00 SUB CODE: EC,OP

NO REF SOV: 002 OTHER: 003

Card 2/2

L 54473-65 EWT(m)/EPF(n)-2/EWP(j)/T/EWP(t)/EWP(b) Pc-4/Pu-4 IJP(c)
JD/WW/JG/GS/RM

ACCESSION NR: AT5013650 UR/0000/65/000/000/0153/0156
543.253:540.791

AUTHOR: Paley, P. N.; Gusev, N. I.; Skiyarenko, I. S.; Chubukova, T. M.

TITLE: Polarographic determination of uranium in nitric acid media containing tri-n-butyl phosphate

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Radiokhimicheskiye metody opredeleniya mikroelementov (Radiochemical methods for determining traco elements); sbornik statey. Moscow, Izd-vo Nauka, 1965, 153-156

TOPIC TAGS: polarography, uranium determination, tributyl phosphate, nitric acid concentration

ABSTRACT: The article points out the advantages of the polarographic determination of U(VI) in moderately concentrated (2.0 N) nitric acid solutions as compared to weakly acidic media (~0.3 N HNO_3). The presence of 0.02-0.035% gelatin eliminates the influence of tributyl phosphate (TBP) on the wave of U(VI) and raises the permissible concentration of Fe(III) to Fe:U = 5:1. When there is a considerable fluctuation of acidity (from 1.5 to 2.0 N HNO_3), the determination should be carried out after diluting TBP with a three- or five-fold volume of 1.75 N HNO_3. Moderately concentrated HNO_3 solutions are more convenient

Card 1/2

L 54473-65
ACCESSION NR: AT5013650

than dilute ones because the height of the polarographic wave obtained is nearly twice as great, and uranium can be determined in the presence of higher concentrations of impurities. The study indicates that the use of complex-forming media (e.g., oxalic acid, acetic acid, etc.) in the polarography of TBP solutions of U(VI) for the purpose of eliminating the interference of certain cations is greatly hindered by the pronounced influence of TBP in weakly acidic solutions (pH 2-5). Apparently, only those reagents can be used which react with U(VI) in acid solutions. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 16Mar64 ENCL: 00 SUB CODE: IC, OP

NO REF SOV:001 OTHER: 001

2/2
Card

RYABCHIKOV, D.I., otv. red.; ALIMARIN, I.P., red.; PALEY, P.N., red.; BORISOVA, L.V., red.; ZOLOTOV, Yu.A., red.; SENYAVIN, M.M., red.; KARYAKIN, A.V., red.; VOLYNETS, M.P., re

[Modern methods of analysis; methods of studying the chemical composition and structure of substances. On the seventieth birthday of Academician A.P.Vinogrado] Sovremennye metody analiza; metody issledovaniia khimicheskogo sostava i stroeniia veshchestv. K semidesiatiletiiu akademika A.P.Vinogradova. Moskva, Nauka, 1965. 333 p. (MIRA 18:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii. 2. Chlen-korrespondent AN SSSR (for Ryabchikov).

L 52004-65 EWT(m) Peb DIAAP UR/2513/65/015/000/0368/0374 9 8 B+1

ACCESSION NR: AT5012688

AUTHOR: Davydov, A.V.; Paley, P.N. (Professor, Doctor of chemical sciences)

TITLE: Concentration of protactinium-233 from neutron-irradiated thorium on silica gel

SOURCE: AN SSSR. Komissiya po analiticheskoy khimii. Trudy, v. 15, 1965. Metody kontsentrirovayiya veshchestv v analiticheskoy khimii (Methods of concentrating substances in analytical chemistry), 368-374

TOPIC TAGS: protactinium concentration, protactinium production, neutron bombardment, theorium irradiation, silica gel, hydrogen peroxide

ABSTRACT: The article describes a rapid laboratory method of separating protactinium-233 formed by the reaction $Th^{232} \xrightarrow{(n,\gamma)} Th^{233} \xrightarrow[23.5\ min]{\beta^-} Pa^{233}$, using a column of silica gel. Experiments on the sorption of protactinium and thorium were carried out under static and dynamic conditions; 6 M HNO_3 was used for the separation of Pa^{233}. Thorium is not adsorbed from nitric acid at this concentration, so that protactinium can be separated from it. The elution of the fission elements Zr^{95},

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L 52004-65

ACCESSION NR: AT5012688

Nb^{95}, Ce^{144} and Ru^{106} under dynamic conditions was satisfactory. Solutions of complex-forming substances-oxalic, citric, trihydroxyglutaric, tartaric, and lactic acid — as well as solutions of phosphoric acid and hydrogen peroxide were compared in the desorption of protactinium. Hydrogen peroxide was found to have several advantages. The yield of protactinium was approximately 95%. Orig. art. has: 7 figures and 2 tables.

ASSOCIATION: Komissiya po analiticheskoy khimii, AN SSSR (Commission on Analytical Chemistry, AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: IC, NP

NO REF SOV: 000 OTHER: 001

Card 2/2

NEMODRUK, Aleksandr Andreyevich; KARALOVA, Zinaida Konstantinovna; VINOGRADOV, A.P., akademik, glav. red.; PALEY, P.N., red.; VOLYNETS, M.P., red.

[Analytical chemistry of boron ($_5B^{10,11}$)] Analiticheskaia khimiia bora ($_5B^{10,11}$). Moskva, Nauka, 1964. 282 p. (MIRA 17:1)

PALEY, P.N.; RYABCHIKOV, D.I.; DEDKOV, Yu.M.; ZOLOTOV, Yu.A.

Methods of concentration in analytical chemistry. Zav.lab. 29 no.11:1279-1280 '63. (MIRA 16:12)

KHALKIN, V.A.; PALEY, P.N.; NEMODRUK, A.A.

Extraction of tetravalent plutonium from nitric acid solutions with oxygen-containing extractants. Radiokhimiia 5 no.2:215-222 '63. (MIRA 16:10)

NEMODRUK, A.A.; PALEY, P.N.; KOCHETOVA, N.Ye.

Comparative study of reagents for the photometric determination of plutonium. Radiokhimiia 5 no.3:335-342 '63. (MIRA 16:10)

(Plutonium--Analysis) (Photometry)
(Chemical tests and reagents)

L 16601-63 EPF(n)-2/EMP(q)/EMT(m)/BDS AFFTC/ASD/SSD Pu-4 WW/JD/JG
S/075/63/018/004/010/015

AUTHOR: Nemodruk, A. A. and Paley, P. N. 63

TITLE: A photometric study of the interaction of 4-valent uranium with arsenazo III 27

PERIODICAL: Zhurnal analiticheskoy khimii, v. 18, no. 4, April 1963, 480-485

TEXT: The authors study the interaction of uranium (IV) with arsenazo III in HCl solutions by the photometric method in order to obtain a deeper understanding of this interaction. It is shown that they react, depending upon the acid concentration, to form two series of complexes which differ markedly in their optical properties. In approx. 0.1 N HCl solution, complexes with uranium-arsenazo III ratio of 1:1 and 1:2 are formed; in 6-8 N HCl solutions, it is complexes with uranium-arsenazo III ration of 1:1, 1:2 and 1:3 which are formed.
The photometric determination of the reaction is most sensitive (the molar extinction coefficient at 665 mμ is 127,000) when the HCl concentration is

Card 1/2

L 16601-63

S/075/63/018/004/010/015

O

A photometric study of .....

6-8 mol/liter and when arsenazo III is present in an amount not less than three times as great as that of uranium. There are 4 figures and 1 tables. The 1 English-language reference reads as follows: Kraus, K. A., Nelson, F., J. Am. Chem. Soc., 72, 3901 (1950).

SUBMITTED: July 27, 1962

Card 2/2

MYASOYEDOV, B.F.; PAL'SHIN, Ye.S.; [illegible]

Separation of protactinium from other elements by extraction with N-benzoylphenylhydroxylamine. Zhur. anal. khim. [illegible] 105-110 '64. (MIRA [illegible])

1. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo AN SSSR, Moskva.

L 14963-63 EPF(n)-2/EWP(q)/EWT(m)/BDS SSD Pu-4 WW/JD/JG

ACCESSION NR: AP3003682 S/0186/63/005/003/0335/0342

AUTHORS: Nazdrak, A. A.; Paley, P. N.; Kochetkova, N. Ye.

TITLE: Comparative study of reagents for the photometric determination of plutonium

SOURCE: Radiokhimiya, v. 5, no. 3, 1963, 335-342

TOPIC TAGS: photometric determination, plutonium, photometric reagent, toron, arsenazo, chlorophosphonazol, chlorophosphonazo

ABSTRACT: A comparative study of toronI, toron II, arsenazo I, arsenazo II, arsenazo III, chlorophosphonazo I, and chlorophosphonazo III has been performed to determine their possible use as complexometric reagents in the spectrophotometric determination of tetravalent plutonium. The optimum conditions for the determination of plutonium are presented for each reagent investigated. The interfering ions for each reagent are pointed out. It was determined that arsenazoIII and chlorophosphonazo III are most sensitive in the determination of plutonium and give good reproducibility. Orig. art. has: 7 graphs and 7 formulas.

ASSOCIATION: none

Card 1/2

NEMODRUK, A.A.; PALEY, P.N.

Photometric study of the reaction of tetravalent uranium with arsenazo III. Zhur.anal.khim. 18 no.4:479-485 Ap '63. (MIRA 16:6)

(Uranium--Analysis) (Arsenazo) (Photometry)

KUTANOV, I.P. [Kutanau, I.P.]; TURYK, I.V. [Turyk, I.V.]; GALEY, S.V. [Galei, S.F.]

Structure and the adsorptive properties of nickel protoxide hydrate. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.2:87-93 '64.

P.L [illegible], T.

"Determination of Vitamin B1 with the Aid of Microorganisms,"

Mikrobiologiya, 7, 521. 1940.

PALEY, T. Ya.

"Determination of Vitamin B, by means of Micro Organisms," Mikrobiol., 9, No. 5, 1940

SHUBENKO-SHUBIN, L.A.; KORZH, P.I., inzh.; KAPLAN, M.P., inzh.;
PALEY, V.A., inzh.

Gas turbines for large power stations. Teploenergetika 8 no.11:
5-12 N '61. (MIRA 14:10)

1. Khar'kovskiy turbinnyy zavod. 2. Chlen-korrespondent
AN USSR (for Shubenko-Shubin).
(Gas turbines)
(Power engineering)

PALEY, V.A., inzh.; SHOSTAKOVICH, B.V., kand. tekhn. nauk

Study of the heat buckling of a high-temperature cylinder.
Energomashinostroenie 11 no.4:44 Ap '65. (MIRA 18:6)

PALEY, V.Ya., inzh.

Redisigning of two-circuit reinforced concrete 110 kv. power transmission line poles. Energetik 11 no.11:25-28 N '63. (MIRA 16:11)

LENOVICH, A.S., inzh.; LUBINETS, A.Ya., inzh.; PALEY, Ya.M., inzh.

Increase in the operational reliability of rolling mill motors.
Prom. energ. 20 no.6:4-9 Je '65. (MIRA 18:6)

PALEY, Ya.M.; LENOVICH, A.S.; DUBINETS, A.Ya.

A composite slippage regulator for asynchronous motors. Energ.i elektrotekh.prom. no.4:67-69 O-D '62. (MIRA 16:2)

1. Kommunarskiy metallurgicheskiy zavod.
(Electric motors, induction)

LENOVICH, A.S.; DUBINETS, A.Ya.; PALEY, Ya.M.

Automatic temperature control and limiting of the heating of the armatures of d.c. motors of rolling mills. Energ. i elektrotekh. prom. no.2:6-7 Ap-Je '63. (MIRA 16:7)

1. Kommunarskiy metallurgicheskiy zavod.
(Electric motors—Cooling)
(Rolling mills—Electric driving)

LENOVICH, A.S., inzh.; DUBINETS, A.Ya., inzh.; PALEY, Ya.M., inzh.

Continuous automatic control and limiting of the heating of armature windings of the main d.c. motors of rolling mills. Elektrotekhnika 35 no.4:42-43 Ap '64. (MIRA 17:4)

PALEY, Ye. Kh.

Our Work Experience

SO: Veterinariya; Vol 30; No. 4; 10; April 1953 Unclassified. Trans. #121 by L. Lulich

Central Zooveterinary District, Chimilinskiy Rayon, Moldavian SSR

PALEY, Ye.Kh., veterinarnyy vrach.

Our work experience. Veterinariia 30 no.4:1-13 Ap '53.(MLRA 6:4)

1. TSentral'nyy sooveterinarnyy uchastok Chimishlinskogo rayona, Moldavskoy SSR.

1. PALEY, Ye. Kh.; D. V. M.

2. USSR (600)

4. Veterinary Medicine

7. Our work experience. Veterinariia 30, No. 4, 1953.

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

137-58-3-5859

Translation from: Referativnyy zhurnal Metallurgiya 1958, Nr 3, p 199 (USSR)

AUTHORS: Zav'yalov, A S., Paley Ye Ya

TITLE: Types of Carbides in Structural Steels and Processes of Their Formation and Dissolution (Tipy karbidov konstruktsionnykh staley i protsessy ikh obrazovaniya i rastvoreniya)

PERIODICAL: V sb : Metallovedeniye. Leningrad, Sudpromgiz, 1957 pp 220-252

ABSTRACT: The processes of formation and dissolution of carbides in structural steels alloyed with Mn, Cr, W, Mo, V, Ti, and Nb were investigated. Steel samples, which have been tempered and annealed at different temperatures, were subjected to anodic dissolution in an electrolyte containing 3 percent $Fe_3SO_4)_2$, 1 percent NaCl, and 0.2 percent of Rochelle salt The carbide powders precipitated were investigated by means of chemical and X-ray analyses Types of carbides, as well as temperatures of their formation and dissolution, were established. It is shown that in certain steels the α phase is supersaturated with C even at annealing temperatures around 700°C The carbides formed in the process of stepwise annealing are of the same type as

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Types of Carbides in Structural Steels (cont.)

those formed in standard annealing processes, but are richer in carbide-forming elements. The process and the mechanism of formation and dissolution of carbides is described.

V. G

Card 2/2

PALEYES, L.G.

DVIZHKOV, P.P., otvetstvennyy redaktor; AVTSYN, A.P., redaktor; VINOGRADOVA, T.P., redaktor; DERGACHEV, I.S., redaktor; KUYAZEVA, G.D., redaktor; PALEYES, L.G., redaktor; RAPOPORT, Ya.L., redaktor; SMOL'YANNIKOV, A.V., redaktor; UGRYUMOV, B.P., redaktor; SHTERN, R.D., redaktor; KOMAROVA, Z.N., redaktor; ZAKHAROVA, A.I., tekhnicheskiy redaktor

[Proceedings of the All-Union Conference of Pathoanatomists, Leningrad, July 4-9, 1954] Trudy Vsesoiuznoy konferentsii patologoanatomov 4-9 iiulia 1954 g. Leningrad. Moskva, Gos. izd-vo med. lit-ry, 1956. 411 p. (MLRA 10:3)

1. Vsesoyuznaya konferentsiya patologoanatomov. Leningrad, 1954.
(ANATOMY, PATHOLOGICAL--CONGRESSES)

PALEYES, L. Ya., kand.med.nauk

Manifestation and reatment of allergy. Med.sestra 22 no.5: 8-13 My'63. (MIRA 16:8)

1. Iz Klinicheskoy ordena Lenina bol'nitsy imeni S.P.Botkina, Moskva.

(ALLERGY)

SOV/112-59-2-3138

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 128 (USSR)

AUTHOR: Paleyes, R. A.

TITLE: Application of Electricity for Roasting Cacao Beans
(Primeneniye elektroobogreva dlya podzharivaniya bobov kakao)

PERIODICAL: Khlebopek. i konditersk. prom-st', 1958, Nr 1, p 45

ABSTRACT: Bibliographic entry.

Card 1/1

SOV/112-59-1-1438

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 197 (USSR)

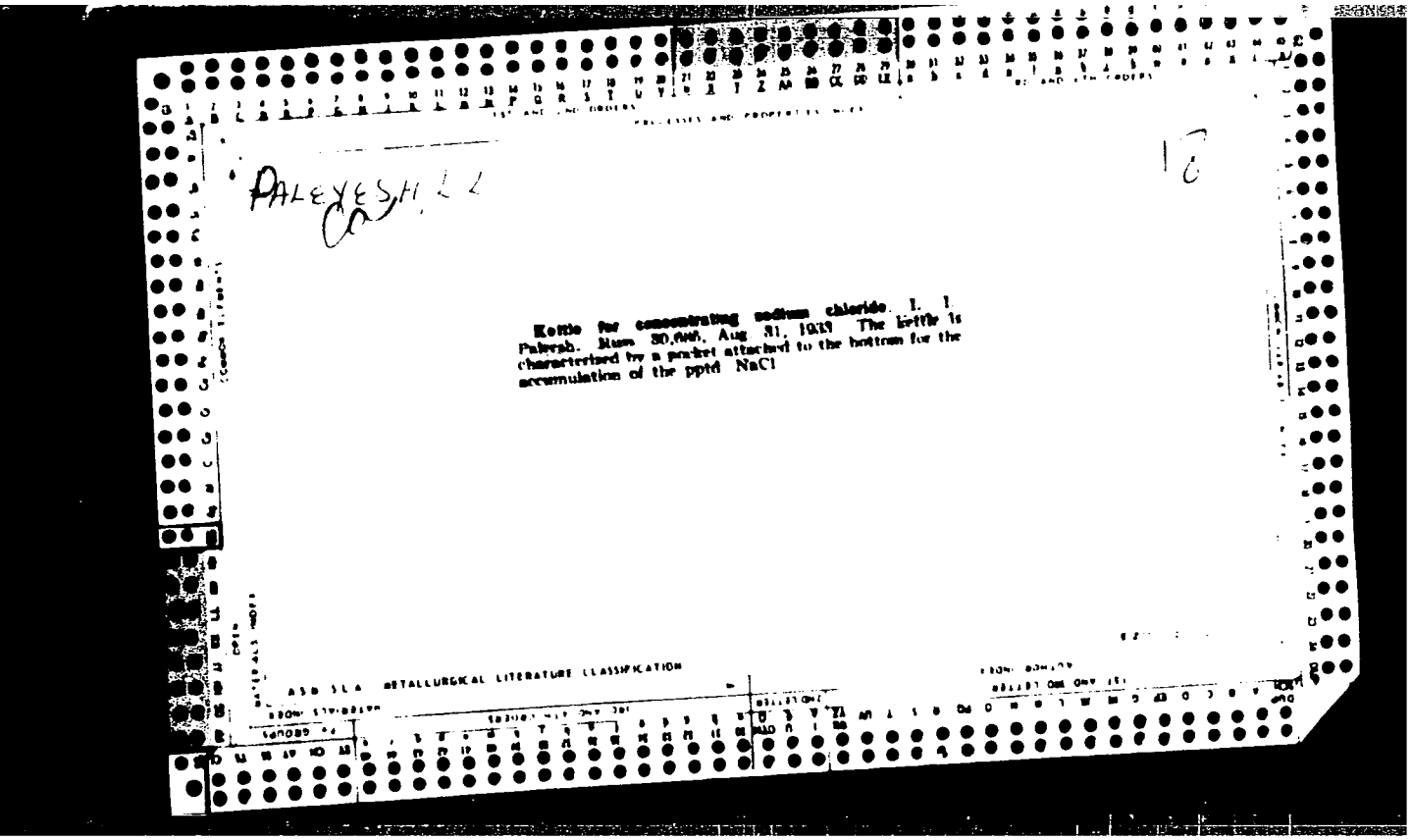
AUTHOR: Paleyes, R. A.

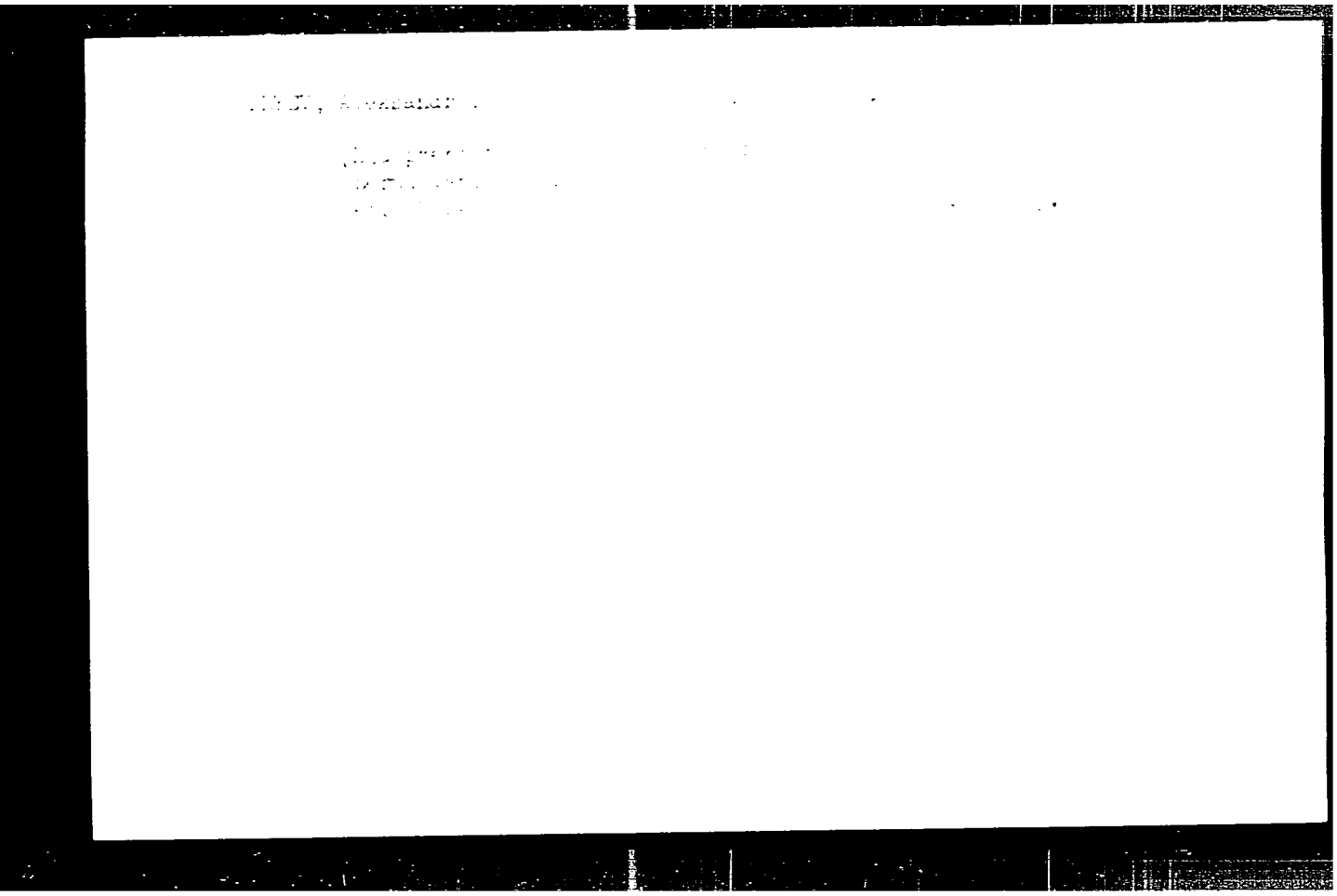
TITLE: A Semiautomatic Device for Packaging Cacao Powder

PERIODICAL: Khlebopek. i konditersk. prom-st', 1958, Nr 2, p 33

ABSTRACT: A semi-controller designed by N. V. Pyrinov at the Sormovo Pastry Factory is briefly described. Two illustrations.

Card 1/1





1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

23

Composition of rye straw A. M. Pakev. *Biokhimiya* 1, 651-64 (1936). Analytical data are recorded. The entire MeO content is accounted for as lignin. The holocellulose is converted by hydrolysis with 1% H_2SO_4 into Cross and Bevan cellulose. The xylan-cellulose ratio is const. H. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

PALEYEV, A.M.

8-2-5

Chemical composition of rye straw. L. P. Sherebov and A. M. Paleev (*Bumazh. Prom.*, 1936, 15, No. 3, 16—34).—There is a definite ratio between the difficulty-sol. xylan and cellulose. The OMe groups in the original straw and in the fibrous substance prepared by Runkel and Lange's method (A., 1931, 1101) are substantially combined with lignin (19—20% OMe). The cellulose content is >41%. Rye-straw holocellulose, hydrolysed with 1% aq. H_2SO_4, leaves a complex identical with that of the Cross and Bevan cellulose. On further hydrolysis with NaOH a more stable complex is formed containing cellulose and pentosans in a 3 : 1 ratio. CH. ABS. (r)

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

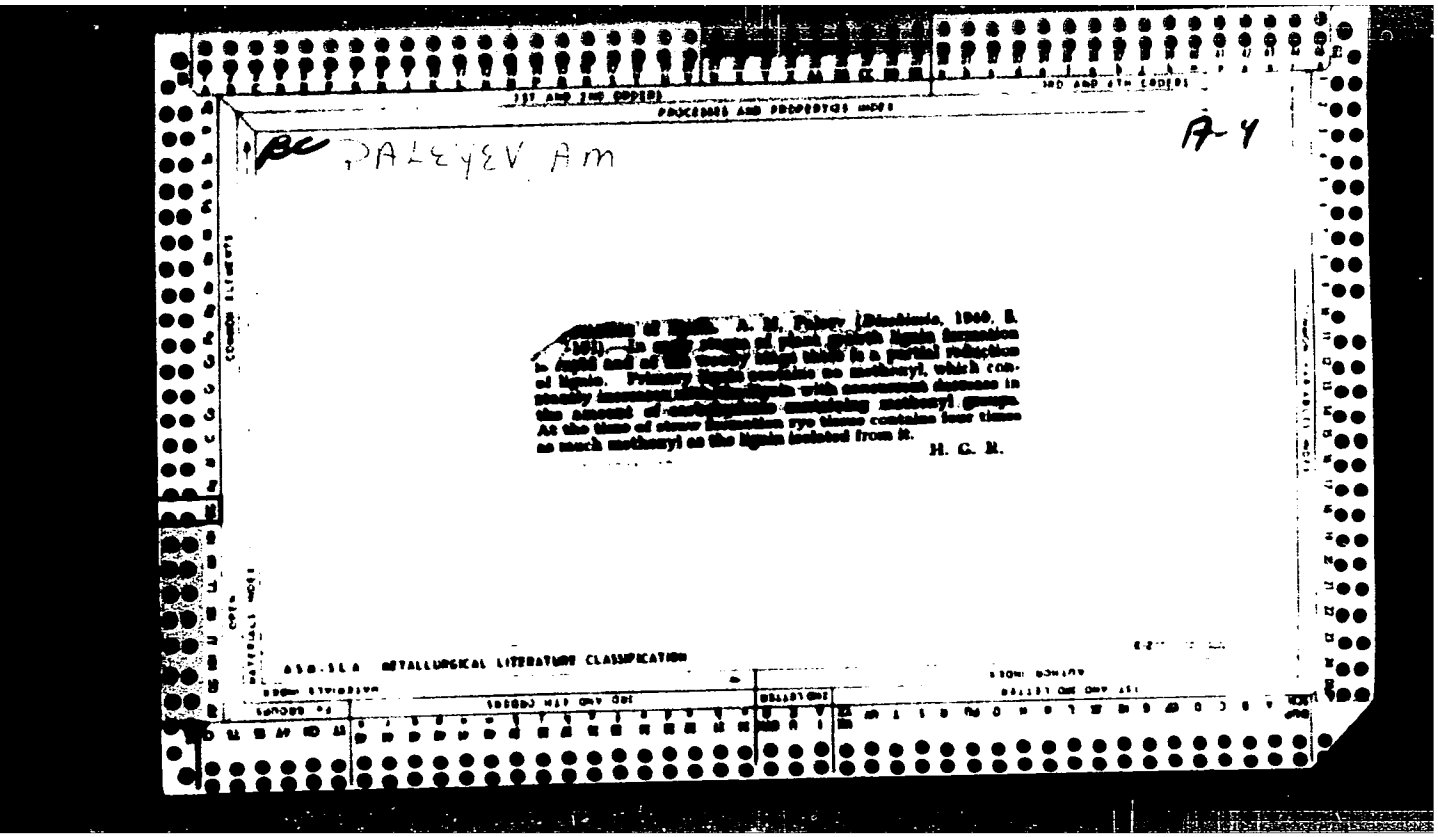
CA

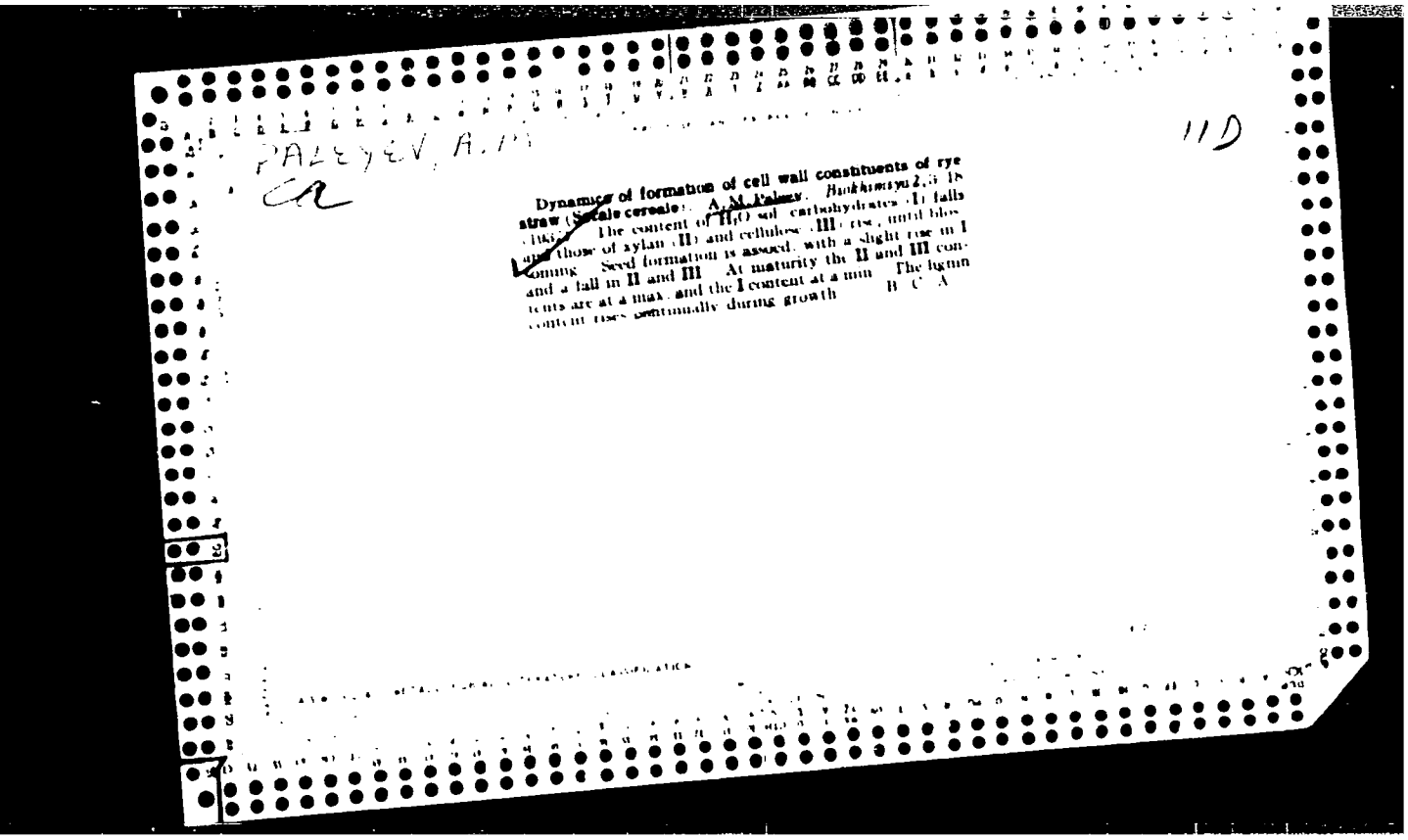
PALEYEV A.M.

23

Chemical composition of rye straw. L. P. Zharebov and A. M. Paleev. *Bumazhnaya Prom.* 15, No. 3, 16-24 (1936).—The method of Runkel and Lange (C. A. 30, 590) applied to the prepn. of ligneous substance (I) from rye straw showed, similarly to red beechwood, a definite ratio between the difficultly sol. xylan and cellulose. The MeO groups in the original straw and I are substantially combined with lignin (19-20% MeO). The cellulose content, detd. by the Schmidt (cf. C. A. 25, 1088) method, does not exceed 41%. This confirms the view of Hägglund and Klingstedt (cf. C. A. 18, 3113) that the usual detns. of cellulose give high values. Rye-straw holocellulose, obtained by the method of Ritter and Kurth (C. A. 28, 3169), hydrolyzed with 1% H_2SO_4 leaves a complex identical with that of the Cross and Bevan cellulose. On further hydrolysis with NaOH a more stable complex is formed, contg. cellulose and pentosans in ratio 3:1. C. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





PALEYEV, A.M.

CR

IID

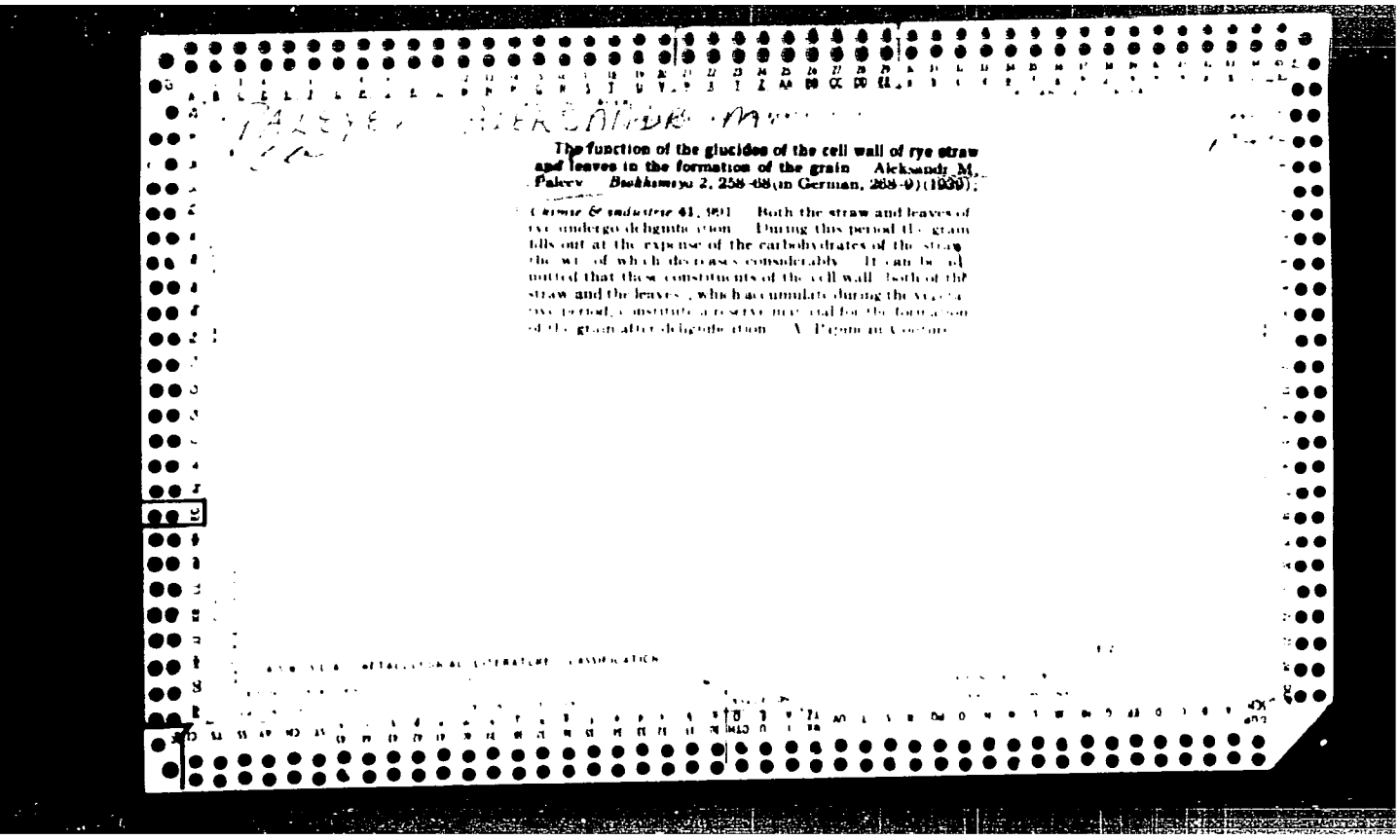
Dynamics of formation of cell wall constituents of rye straw (Secale cereale). A. M. Paleev. *Biokhimiya* 2, 5 18 (1937). The content of H_2O sol. carbohydrates (I) falls after those of xylan (II) and cellulose (III) rise, until blos- coming. Seed formation is assocd. with a slight rise in I and a fall in II and III. At maturity the II and III con- tents are at a max. and the I content at a min. The lignin content rises continually during growth. B. C. A.

PROCESSES AND PROPERTIES INDEX

PALESY, A.M.

Formation of lignin. A. M. Palsey. Biokhimiya 5, No. 1, 81 (1940) (in German). Methoxyl groups were detd. in stem and leaves of rye of various ages. At first, formation of lignin is rapid. Lignin and methoxyl groups migrate in the same ratio in which they are present in lignin, i.e., the whole lignin complex migrates. Primary lignin contains no methoxyl groups; during growth these appear and increase constantly. Rye straw contains during the period of formation of shoots 4 times as many methoxyl groups as does lignin sepd. from the straw. The amt. of carbohydrates contg. methoxyl groups decreases constantly with the growth of the plant, i.e., with the formation of lignin. These carbohydrates take a definite part in the formation of lignin. Twenty-three references. W. R. Henn

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



The function of the glucides of the cell wall of rye straw and leaves in the formation of the grain Aleksandr M. Palcev *Biokhimiya* 2, 258-68 (in German, 268-9) (1937).

Chimie & industrie 41, 991. Both the straw and leaves of rye undergo delignification. During this period the grain fills out at the expense of the carbohydrates of the straw the wt. of which decreases considerably. It can be admitted that these constituents of the cell wall (both of the straw and the leaves), which accumulate during the vegetative period, constitute a reserve material for the formation of the grain after delignification. A. Pigeon in Centre

PALEYEV, A. M.

(1)

The causes of lodging of grain crops. A. M. Paleev. *Zemledelie* 1953, No. 3, 18-23.—P. discusses the type of lodging in which the upper parts bend over because of the unbalanced condition of the heavy tops and poor strength of the lower part of the plant. P. shows that during the milk stage hydrolysis of the cell membrane components (cellulose, xylan, and lignin) takes place. This reaction prevails all through the rest of the growing period during which the stems lose 20–30% of cellulose, xylan, and lignin. This phenomenon, while pos. for grain formation, is neg. for mech. support. I. S. Jolle

PALEYEV, A. M.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Biological Chemistry

Falling of grain culture plants. A. M. Paleev. *Doklady Akad. Nauk S.S.S.R.* 92, 435-8(1953).—It is shown that the falling of grain plants (Vyatka rye) resulting from stem breakage in their upper sections usually occurs during the phase of early ripening and is caused by partial loss or decompn. of the woody stem skeleton. At this phase the carbohydrate components such as xylans, cellulose, and lignin begin to show a decline. G. M. Kosolapoff

PALEYEV, A.M.; SUKACHEV, V.N., akademik.

Problems of grain crop lodging. Dokl.AN SSSR 92 no.2:435-438 S '53.
(MLRA 6:9)

1. Akademiya nauk SSSR (for Sukachev). (Grain--Diseases and pests)

PALEYEV, A.M.

The role of the cell- wall carbohydrates of the grain and leaves of S. CEREALE In the formation of the grain. A. M. PALEYEV. (LAB. OF PLANT PHYSIOLOGY OF THE PEDAGOGIC INST, RYASAN) vol.3, no.2, p. 268, 1938.

PALEYEV, Aleksandr Michaylovich

(Chuvash Agricultural Inst), Academic Degree of Doctor of Biological Sciences, based on his defense, 29 April 1955, in the Council of the Institute of Physiology of Plants imeni Timiryazev, Acad Sci USSR, of his dissertation entitled: "Role of Components of cellular membrane in the exchange of plant substances" and academic title of Professor. Chair: "Chemistry."

Academic degree and/or title: Doctor of Sciences and Professor.

SO: Decisions of VAK, List no. 24, 26 Nov 55, Byulleten' MVO SSSR, No. 20, Oct 57, Moscow, pp 22-24, Uncl. JPRS/NY-471

PALEYEV, A.M.

Chemical composition of the cellular wall of the grass, S. cereale. A.M. PALEYEV. (WOOD CHEMICAL SCIENTIFIC INST. MOSCOW)

vol. 1, no.6, p .654, 1936.

PALEYEV, A.M.

The dynamics of the formation of different components of the cellular walls of rye, grass (S. CEREALE) A.M. PALEYEV (The wood chemical Scientific Research Institute, moscow) vol. 2, no.1, p. 3, 1937.

PAL'YEV, A. N.

"Role of the Cell Components of the /Seed/ Capsule in the Plant Metabolism." Dr Biol Sci, Inst of Plant Physiology imeni K. A. Timiryazev, Acad Sci USSR, Moscow, 1955.
(KL, No 14, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14).

KONDRAT'YEV, I.; ABRAMOV, I., [illegible]; KOSTIN, A., inzh.; STADNICHUK, P., mekhanik; DAVYDENKOV, N.; [illegible]EV, G.

Supply of spare parts. Avt. transp. 43 no.3:26-29 Mr '65. (MIRA 18:5)

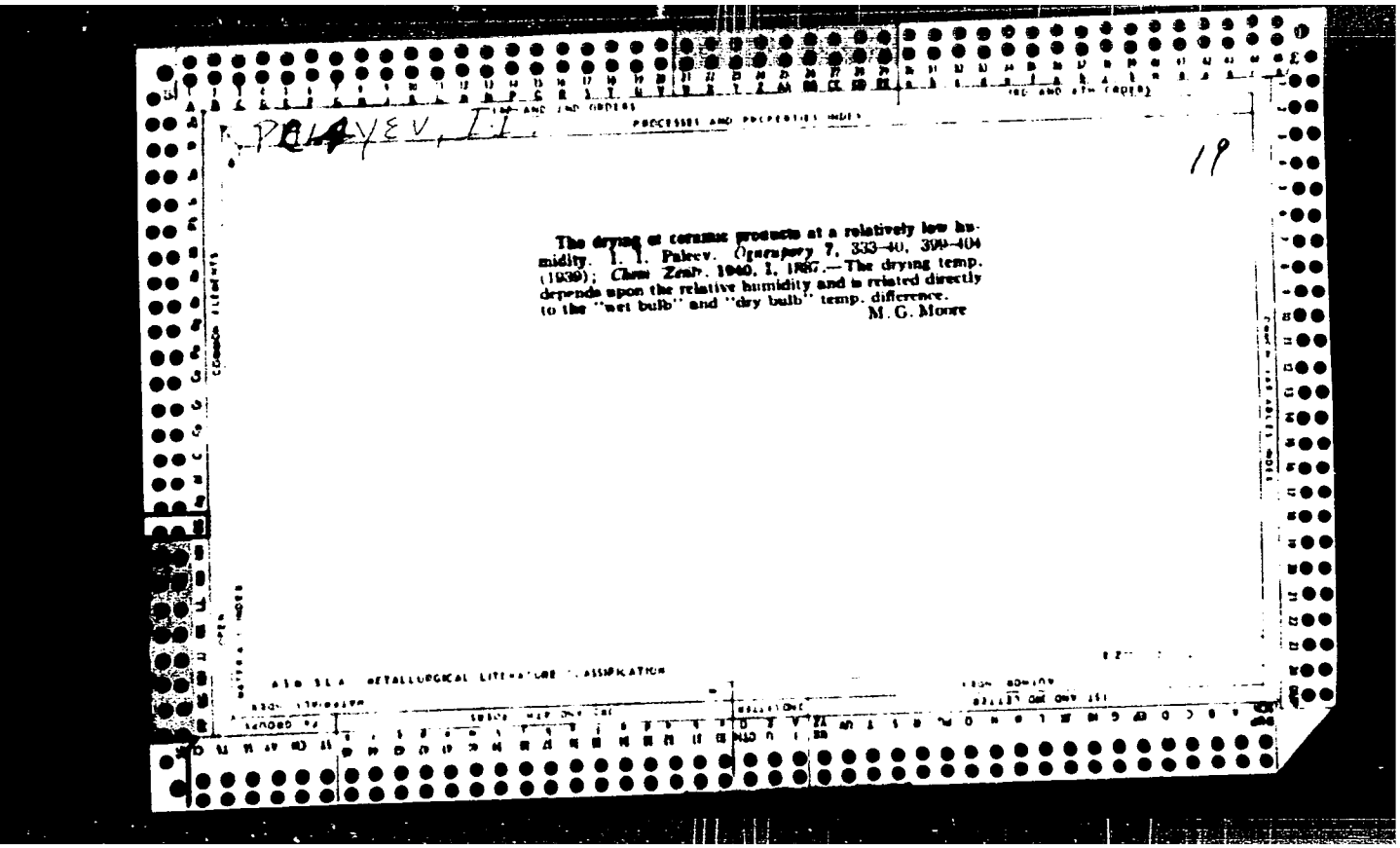
1. Glavnyy inzh. N[illegible] avtobazy (for Abramov).
2. Starokonstantinovskiy avtopark (for Stadnichuk).

PALEYEV, I. I.

F

4966. USE OF RADIANT HEAT FOR DRYING OF CERAMIC OBJECTS. Paleev,
I. (Steklo I Keram. (Glass and Ceram.), Mar. 195[illegible], vol.
7, 18-20). Above problem was studied in connection with
the use of infra red lamps emitting long wave length radiation.
American investigators conclusions concerning the existence
of wave lengths which are optimum for drying are refuted.
HLP

METALLURGICAL LITERATURE CLASSIFICATION



PALAYEV, I. I.

19

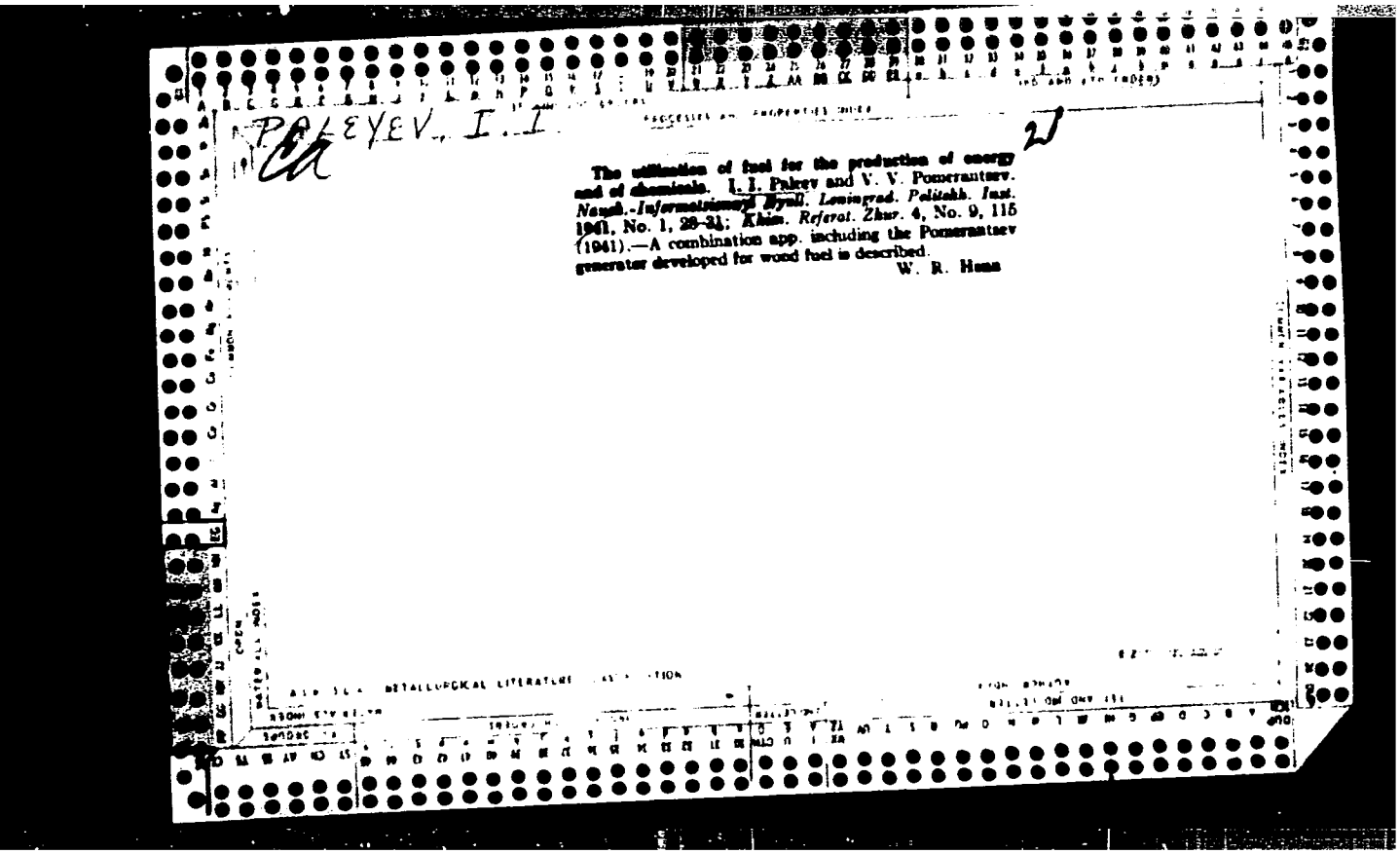
The drying of ceramic products at a relatively low humidity. I. I. Palaev. *Ogneupory* 7, 333–40, 399–404 (1939); *Chem. Zentr.* 1940, I, 1887.—The drying temp. depends upon the relative humidity and is related directly to the "wet bulb" and "dry bulb" temp. difference.
M. G. Moore

PALEYEV, I. I
A.C.S.

Equipment + apparatus

Drying ceramic products in regions of relatively low humidity. I. I. Paleev. *Ogneupory*, 1939, No. 8, pp. [illegible]-40); No. 6, pp. 399–404.—The process of drying products in regions of relatively low humidity is discussed. Experiments show that the distribution of moisture in the interior of the product depends little on the conditions of drying. This fact permits the development of generalizations for drying. On the basis of these generalizations, predictions can be made of the course of drying and the changes taking place when drying conditions vary.

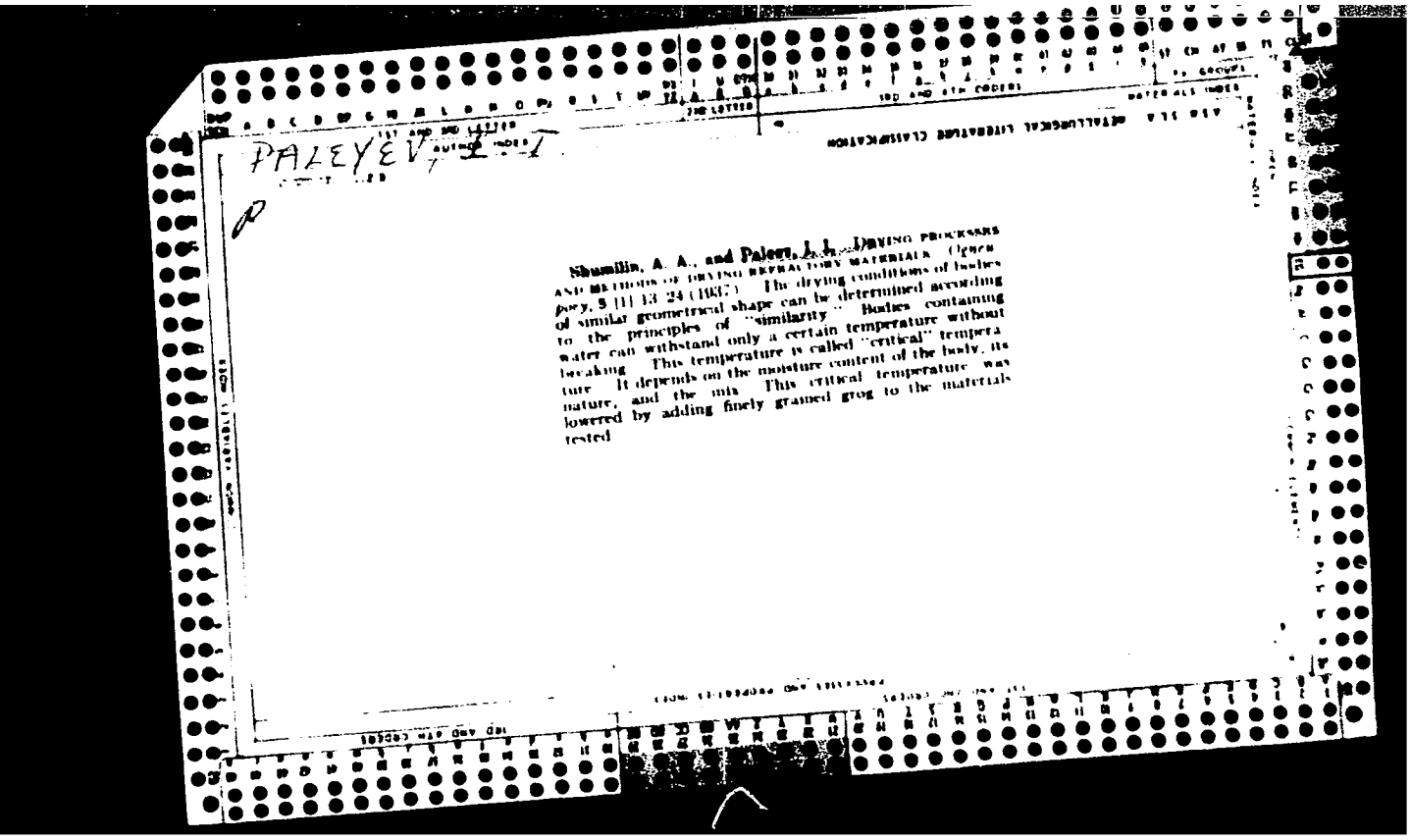
M.V.C.

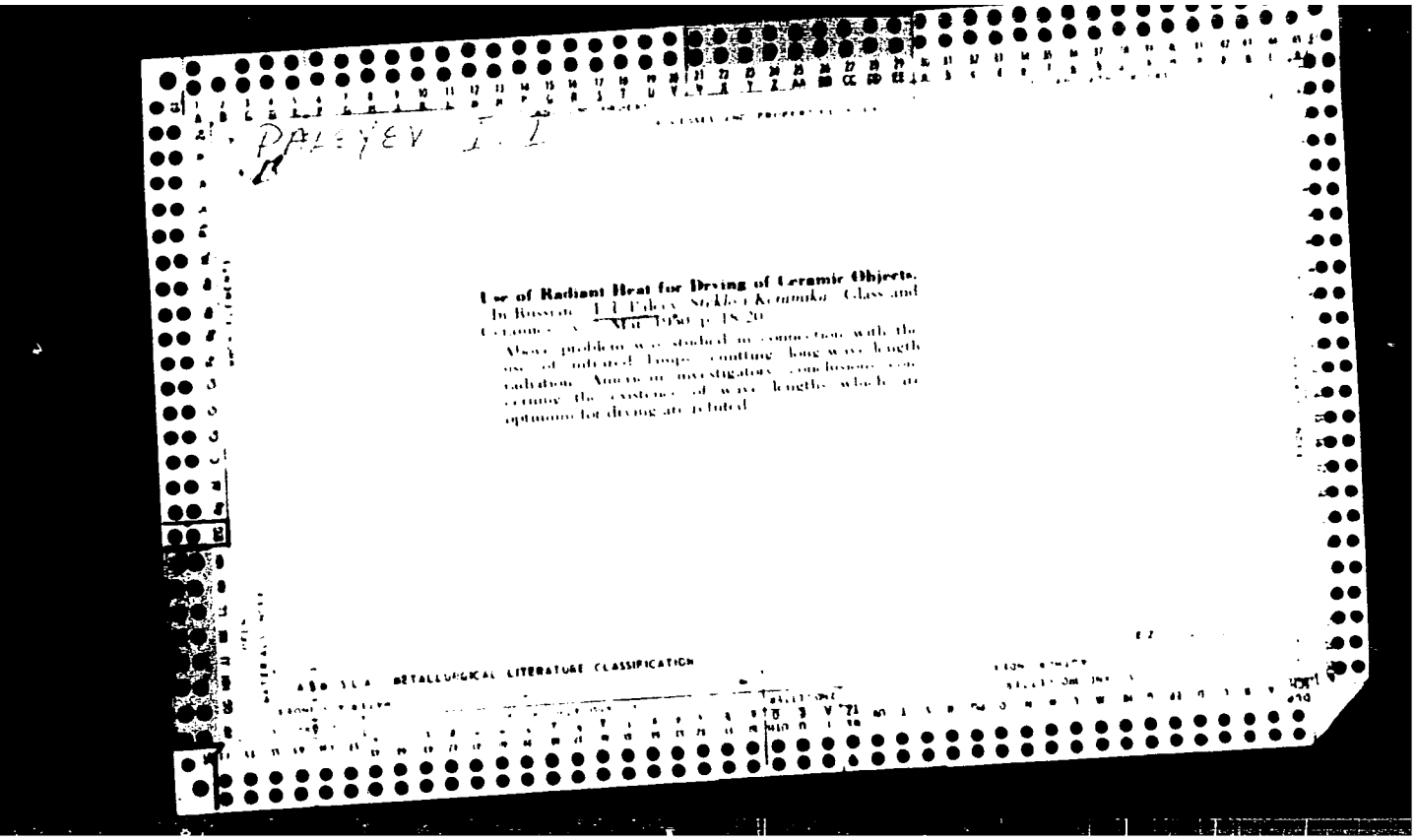


PALEYEV, I. I.

The utilization of fuel for the production of energy and of chemicals. I. I. Paleev and V. V. Pomerantsev. *Nauch.-Informatsionnyĭ Byull. Leningrad. Politekh. Inst.* 1941, No. 1, 28–31; *Khim. Referat. Zhur.* 4, No. 9, 115 (1941).—A combination app. including the Pomerantsev generator developed for wood fuel is described.

W. R. Hess





PALEYEV I. I.

Use of Radiant Heat for Drying of Ceramic Objects.
In Russian. I. I. Paleev, Steklo i Keramika. Glass and Ceramics, May 1950, p. 18-20

Above problems were studied in connection with the use of infrared lamps emitting long wave length radiation. Author's investigations, conclusions concerning the existence of wave lengths which are optimum for drying are related.

A50 SLA METALLURGICAL LITERATURE CLASSIFICATION

PALEYEV, I. I.

C

PROCESSES AND PROPERTIES INDEX

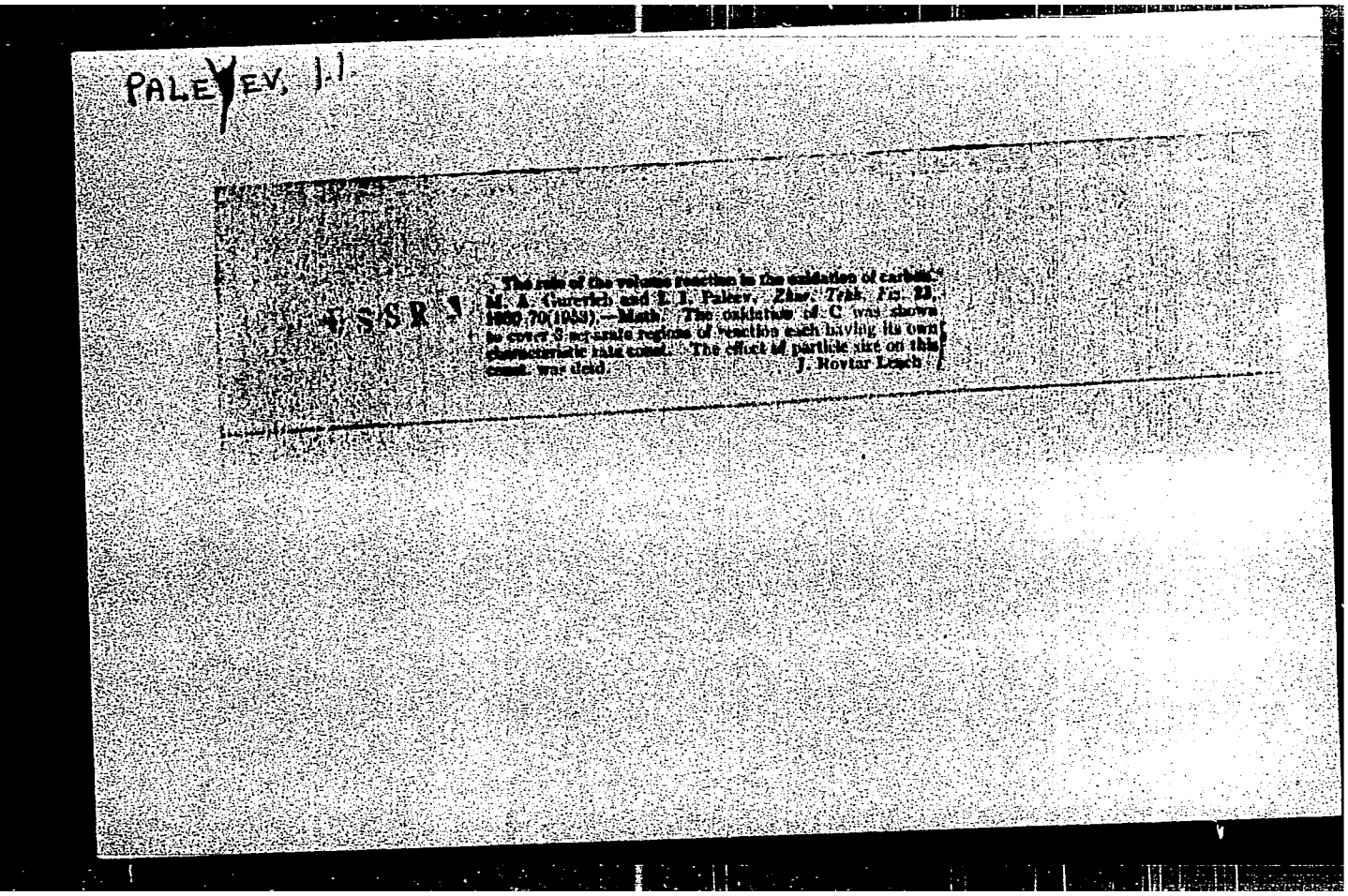
Methods of drying plates in the light of the conception of the physical phases of the process. I. I. Paleev. Kotlo Sbornik, No 17, pp 7-11 (1947). Methods of calculation are described which make it possible to use data on the drying of a given material to predict the course of the drying process under other conditions, including different dimensions of the material to be dried. This is possible in cases where it can be assumed that the inner resistance to heat transfer is very low compared with the resistance to external heat exchange. B. Z. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PALEEV, I. I.

C

Methods of drying plates in the light of the conception of the physical phases of the process. I. I. Paleev. [illegible] *Sbornik*, No. 17, pp. 7-11 (1947). – Methods of calculation are described which make it possible to use data on the drying of a given material to predict the course of the drying process under other conditions, including different dimensions of the material to be dried. This is possible in cases where it can be assumed that the inner resistance to heat transfer is very low compared with the resistance to external heat exchange. B. Z. K.



PALEYEV, I.I.

USSR

The role of the volume reaction in the oxidation of carbon. M. A. Gurevich and I. I. Paleev, *Zhur. Tekh. Fiz.* 23, 1880-70(1953).—Math. The oxidation of C was shown to be over 2 separate regions of reaction each having its own characteristic rate const. The effect of particle size on this const. was detd. J. Hovlar Leach

PALEYEV, I. I.

USSR/Metals - Roasting

FD-433

Card 1/1 : Pub. 153 - 3/18

Author : Gurevich, M. A.; Paleyev, I. I.; Timoshin, Yu. A.

Title : The process of roasting the fuel impurities out of porous materials

Periodical : Zhur. tekh. fiz. 24, 599-609, Apr 1954

Abstract : A thecretical and experimental work attempting to fully solve the problem concerning the roasting of admixtures of carbon and other nonvolatiles from porous materials such as ceramics, briquets, etc. Acknowledge participation of S. M. Pavlov, A. N. Frolova, and L. A. Shilov in the experiments and of D. S. Gorshkov in the integration of the equations.

Institution : –

Submitted : November 11, 1953

PALEYEV, I.I.; YUDIN, V.F.

Reaction of water vapor and fuel carbon. Gaz.prom. no.5:10-16 My '57. (MLRA 10:5)

(Steam) (Coal gasification)

PALEYEV I I

PALEYEV, I.I.; YUDIN, V.F.

Effect of the injection of steam into the air blast on the fuel temperature in a gas generator. Gaz.prom. no.9:9-11 S '57. (MIRA 10:10)

(Coal gasification) (Gas producers)

PALEYEV, I.I.

114-8-4/16

AUTHOR: Paleyev, I.I., Doctor of Technical Sciences and Gurevich, M.A., Candidate of Technical Sciences.

TITLE: On a cause of mechanical incomplete combustion in a furnace with a 'boiling' layer. (Ob odnoy prichine mekhanicheskogo nedozhoga v topke s 'kipyashchim' sloyem)

PERIODICAL: "Energomashinostroyeniye" (Power Machinery Construction) 1957, Vol.3, No.8, pp. 15-19 (U.S.S.R.)

ABSTRACT: A special feature of furnaces with a 'boiling' layer is a good mixing of the fuel at all cross-sections of the layer. In large industrial installations in which there is a considerable distance between the points of fuel supply and ash removal, mixing within the length of the layer is much weaker. But in small installations and particularly in experimental rigs for investigations on the 'boiling" layer there is intense mixing throughout the volume of the layers. This article considers a device represented in Fig.1 in which the fuel particles are delivered into the combustion chamber through an upper aperture, the ashes are drawn from the bottom to another aperture and draught is applied through a grid.

In such installations there is considerable mechanical incomplete combustion even when the mean time for which particles remain in the chamber is much greater than the time

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the problem in certain simple cases.

In order to determine the compositions of the ash or material in the chamber the laws of probability may be used. If the course on the process of combustion of fuel with time is known it is possible to determine the average amount that is not consumed for each group of particle size as a function of the ratio between the mean time of residence of this fraction in the furnace and the time necessary for complete combustion.

The mathematical analysis is then given under the following

Card 2/3

according to time of resi- chamber; the law of combustion of fuel particles; the residue of fuel in the ash; and the residue of fuel in the combustion chamber.

It is pointed out that the distribution functions derived are applicable not only to furnaces with a 'boiling' layer but also to other furnaces with intensive mixing of the fuel. When the mixing is not instantaneous, movement of the fuel layer as a whole must be allowed for. Difficulties are encountered in this case. It is evident that calculation of the mean fuel residue (in the ash and in the chamber) can be made for any desired law of combustion of particles with time so long as the law is known from theoretical construction or from experimental data.

There are 3 figures and 6 Slavic references.

AVAILABLE: Library of Congress

Card 3/3

AUTHORS Agafonova, F.A. Gurevich, M.A. 57-8-23/36
Paleyev, I.I.

TITLE A Contribution to the Theory of Burning of the Liquid Fuel Drop.
(K teorii goreniya kapli zhidkogo topliva.)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 8, pp. 1818-1825 (USSR)

ABSTRACT Calculations based on a number of simplified assumptions, which are consequently of approximate nature, are given. Inspite of these insufficiencies they make possible the following conclusions: 1.- The fact that the diffusion theory in the case of the experiment offers coinciding evaporation - velocity values can not yet be taken as proof for a combustion process of liquid fuel taking place on the basis of pure diffusion. Practically the same evaporation velocities are obtained in the case of a taking account of the finite velocity of the chemical reaction.
2.- The consideration of the velocity of the chemical reaction leads to much smaller calculation of the maximum temperature in the case of the same evaporation velocity. This is proved qualitatively by the experiment.
3.- Taking into account the velocity of chemical reaction leads to an approach between the zone with maximum

CARD 1/2

PALEYEV, I. I., Agafonova, F. A.,

"Investigation of the Combustion of Droplets of a Liquid Fuel," Aerodynamic and Heat Transfer Problems in Boiler and Furnace Processes; A Collection of Articles, Moscow, Gosenergoizdat, 1958. 329 p.

Purpose: The book is intended for engineers and combustion specialists concerned with the design and operation of heating equipment and it is also for scientific workers and students of vtuzes.

82805
S/124/60/000/005/004/007
A005/A001

11.5000

Translation from: Referativnyy zhurnal, Mekhanika, 1960, No. 5, pp. 49-50, # 5844

AUTHORS: Paleyev, I.I., Agafonova, F.A.

TITLE: Investigation of the Combustion of Liquid Fuel Droplets

PERIODICAL: V sb.: Vopr. aerodinamiki i teploperedachi v kotel'no-topochn. protsessakh. Moscow-Leningrad, Gosenergoizdat, 1958, pp. 57-80

TEXT: The combustion rate of droplets of solar oil and mazout was studied under conditions similar to the conditions of the combustion within the combustion chambers of gas turbines. It is shown in computational way that the temperature at the combustion surface can be assumed to be equal to the thecretical fuel combustion temperature within a medium having the same temperature and constitution, when the excess-air coefficient amounts to $\alpha = 1$; this result is based on the G. A. Varshavskiy formulae (for calculating the combustion of a droplet having at a definite instant a prescribed dimension), developed on the assumption that the losses by emitting into the surrounding medium (chambers with high forcing) are relatively small and that the equality $D = \alpha$ is valid

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A005/A001

Investigation of the Combustion of Liquid Fuel Droplets

(D is the diffusion coefficient, α is the thermal-diffusivity coefficient). It was stated in experimental way that the partial vapor pressure (when the droplet evaporates during the combustion process) is determined, to a first approximation, by the medium fraction corresponding approximately to 50% distillation. It turned out that the computational combustion rate according to the diffusion theory appears too high in comparison with the experimental rate, when the maximum actual temperature in the droplet's vicinity is used in calculations. Some conditions are mentioned, which are not taken into account by the computation procedure and may lead perhaps to a raise of the combustion duration. A special experimental unit was built for performing the first series of experiments with relatively large fuel droplets supplied into the stream near the thermo-couple joint and burnt at the thermo-couple. The temperature within the furnace was maintained constant at about 1,000°C, the relative flow velocity amounted to 0.5 - 1.0 m/sec. The air consumption amounted to 170 cm^3/sec of st. air. The sequence of engaging the equipment from the instant of droplet supply into the stream was performed automatically. The evaporation temperature was recorded with an accuracy up to 0.5% by a platinum-iridium thermo-couple with an electrode diameter of 10 μ. The droplet dimension amounted to 0.9-1.5 mm.

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Investigation of the Combustion of Liquid Fuel Droplets

Curves of the variations of the droplet's diameter and temperature versus the time are plotted by evaluating the experimental data. It is stated in the first part of the experimental work that the diffusion theory may be applied to calculating the combustion rate of an individual droplet under the condition that the Nusselt number is assumed to be 1.3 - 3.0 times greater than it results from the Reynolds number. A series of tests was performed with benzene for refining the calculation scheme; benzene differs from the polyfractioned mazout and solar oil by the definiteness of the physical constants. It turned out that the computational temperature is lower than the experimental, which may be explained to a considerable extent by heat supply to the thermo-couple electrodes. In the second part of the experimental work, the combustion of mazout- and solar oil droplets in suspended state was investigated. The test unit consisted of a vertical furnace with d = 75 mm and H = 550 mm and with a window along the wall having 10 mm in width and 400 mm in height, of a pneumatic sprayer with cooled diaphragms, an air preheater, a fuel tank, delivery pumps, and a photocamera. The temperature of the furnace walls was maintained constant within the limits from 930 to 950°C. The rate of air flow through the furnace amounted to 700-800 cm^3/sec of st. air. The combustion of solar oil droplets of 193, 161 and 150 μ diameter and mazout droplets

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A005/A001

Investigation of the Combustion of Liquid Fuel Droplets

of 196 μ diameter was studied. The film in the photocamera moved continuously at a velocity from 100 to 400 mm/sec. The trails of the burning droplets, the upper and lower edges of the window, and a chronopher (a neon lamp connected to the alternating current net with 50 cps frequency) were filmed simultaneously. The duration of preheating and burning of the droplet was determined from the photo-record. The maximum average temperature in the stream was 560°C. A table of the evaluation results from recording is given for solar oil- and mazout droplets; the table contains also computational data on the evaporation time determination. It is concluded: for obtaining by calculation the experimental duration of combustion, the average value of the Nusselt number for combustion must be equal to 3.65 for solar oil and to 4.5 for mazout, at $T_2 = 0.65\ T_{theor}$. If the temperature of combustion is assumed to be equal to the theoretical temperature, the Nusselt number will be equal to 2.75 for solar oil and 3.47 for mazout. Schemes, oscillograms, photographs, experimental graphs, and a table are presented.

V.P. Veselago

Translator's note: This is the full translation of the original Russian abstract.

Card 4/4

PALEYEV, T. I

90-3-5/26

AUTHOR: Paleyev, I.I. (Dr.Tech.Sci.) & Svyatskiy, Z.M. (Cand.Tech.Sci.)

TITLE: The aerodynamics of multi-register combustion chambers. (Aerodinamika mnogoregistrovykh kamer sgoraniya)

PERIODICAL: Teploenergetika, 1958, Vol.5 No.3. pp. 18-20 (USSR)

ABSTRACT: Modern combustion chambers are subject to high thermal loading which can only be achieved by efficient mixing of fuel and oxidant. A promising way of accomplishing this mixing is to instal a 'register' round each mozzle which sets up its own aerodynamic zone so that each burner can be considered as an independent fuel combustion unit. An analysis of the operation of a multi-register burner, showed that the combustion process is very efficient. The aerodynamics of a multi-register chamber were accordingly studied to obtain an understanding of the motion of flow in the chamber. The tests were carried out on a model chamber illustrated in Fig.1. The length of the measuring section from the registers to the exhaust is 2 metres, the internal diameter is 240 mm. The tests were made with four and five registers installed on a spherical disc at an angle of 23° to the horizontal. Each register contained four stamped blades set at an angle of 70° to the inlet air. Outlet air velocities were up to 50 metres/second. The fifth register, when used, was on the centre line. Velocity and pressure measurements were made by probes at positions given in the Table. Air that has passed through the

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registers acquires a spiral motion, centrifugal forces then set up the pressure field shown in Fig.2. Axial velocity distribution curves in dimentionless units at five places in the chamber are given in Fig.3. These curves show that near the registers each quadrant of the chamber acts as an independent register. The axial velocity is much lower in the central part of the common flow. The character of flow rotation in a multi-register chamber, beyond the second measuring point, is analogous with that of a single register chamber. Radial velocity curves at later sections of the chamber are given in Table 5. Test results obtained with a five register model chamber are then discussed. The method of measurement was the same as before. The pressure field at the section nearest the registers is shown in Fig.6. and here the influence of the central register is appreciable. The axial velocities are of particular interest and it is seen from Fig.7. that, at the first measuring section, the axial velocities have five inflections. Thus the flows from the different registers can be considered as independent. Reverse flows are small. Beyond the second measuring section the axial velocities are similar to those obtained with a four register chamber. The axial velocity gradient is, of course, most important for turbulent mixing and it is therefore advantageous to use a multi-register chamber with a central register. The conditions of mixing in a multi-register chamber are

The aerodynamics of multi-register combustion chambers. 96-3-5/26

then analysed mathematically. An expression is given for the transfer equation and a similar equation can be written for heat exchange. Expressions are obtained for the co-efficient of turbulent diffusion and for the kinematic viscosity. This latter is determined only approximately. Nevertheless the turbulent exchange curves given in Fig.8. provide a comparative characteristic and show that in a multi-register chamber the exchange co-efficient is several times greater than in a single register chamber. A further advantage of the central register is that if need be it can be used alone at light loads. There are 8 figures.

ASSOCIATION: Central Boiler and Turbine Institute (Tsentral'nyy Kotloturbinnyy [illegible]).

AVAILABLE: Library of Congress.

Card 3/3

SOV/57-28-[illegible]

24(0)

AUTHORS: [illegible], L. G., Faleyev, I. I., [illegible]chkevich, [illegible] M.

TITLE: New Periodical on Technical Physics (Novyy zhurnal po tekhnicheskoy fizike)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, Vol 28, Nr [illegible], pp [illegible] (USSR) 1958

ABSTRACT: The Academy of Sciences, Belorusskaya [illegible], publishes a new monthly periodical since the beginning of this year [illegible]. It is a journal of technical physics - "Inzhenerno-fizicheskiy zhurnal", which is destined to spread the knowledge of results of scientific physical research in practical engineering quarters. The two numbers of the periodical which have hitherto been published fully comply with this program. In Nr [illegible] of this periodical this article is contained: [illegible]. V. Ivanov and V. [illegible]. Yermolov present applications of operational calculus to the solution of the telegraph equations which are important for problems of mathematical physics. In Nr [illegible] a paper by A. V. Ivanov presents an approach to the solution of heat conduction problems by similar methods. [illegible]. I. Veynik presents a comparatively simple method of an approximative integration of heat conduction equations. [illegible]. F. [illegible]ushkov and [illegible]. [illegible]. [illegible]orinov demonstrate,

Card 1/4

how it is possible to achieve a considerably [illegible] sion of the methods of numerical integration of [illegible] equations by introducing additional nodes in the [illegible] network. N. S. Koshlyakov presents a calculation of definite integrals according to the method of mechanical quadratures. The greater part of the papers in the first two numbers of the periodical concerns problems of the hydrodynamics of heat exchange and of combustion. In Nr 1 of the periodical novel formula obtained on the basis of experimental experience specifying the drag of the flow through rough tubes is recommended by G. K. Filonenko. L. V. Kantorovich and A. F. Finyagin presented an approach to problems of the influence of an air excess on the combustion processes of powdered fuel and in particular on the extension of the combustion zone. S. A. Gol'denberg presents a number of critical remarks on the modern theories of flame expansion in a turbulent flow and suggests an approximation method of computing the dimensions of the combustion zone. F. M. [illegible]kaya (a woman) and I. V. Mel'nikov investigate the possibility of a better approximation in a quantitative sense of the formulae for the heat transfer from bodies of different shape to surrounding gas flows by introducing the square root in the [illegible]

Card 2

A New Periodical on Technical Physics SOV 57-28-10-57 4.

surface, as a characteristic length, into the conditions of similarity, A. A. Golubkin approached the same problem for the case of a problem of internal flow. The short notes by M. G. Murashko and V. F. Jani.nskaya a woman fall to the same category of problems. These notes present information concerning problems of soil freezing and of the heat exchange in soils. The note by Yu. I. Mikhaylov is also pertinent to this field, dealing with convection drying, as well as that by V. V. Chibanovas, concerning the drag of granular layers. B. . Grigor'yev and S. N. Fomichev present the theory of the method of determining optical coefficients of technical materials with the help of an albedometer. F. I. Fedorov deals with the problem of the reflection and the refraction of light in two-axial crystals. A. M. Samson utilizes the principle of invariants and thus finds approximation formulae for the angular distribution of the resonance radiation originating from a plane parallel slab. A. M. Kripskiy finds some rules governing the evaporation of the electrode material in light sources of spectroscopic apparatus as dependent upon the electrode shape and material. Besides these papers, others are published in this periodical, of which N. S. Svetitskiy, Z. I. ...pkov, I. ... Kopcj... K...

Card 3/4

A New Periodical on Technical Physics SOV 7-28-10-57 4

L. I. Tkachov, and L. Ya. Rastakaya are the authors. The periodical also incorporates items of "Critical Reviews and Bibliography", "From Abroad", and "Chronicle".

SUBMITTED: July 10, 1958

Card 4 4

S/123/61/000/008/012/013
A004/A104

11.7400

AUTHORS: Aref'yev, K.M., Maslienenko, P.A., Paleyev, I.I

TITLE: Calculating the evaporation of liquid fuel in a hot gas flow and estimating the possibility of igniting the forming mixture

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 8, 1961, 10, abstract 8I52 ("Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t", 1959, no. 8, 5 - 14)

TEXT: The authors give an account of the calculation method of the evaporation of a semi-dispersed aggregation of drops of liquid fuel taking into consideration the steam oxidation and the anisothermal character of the process. This method is somewhat conditional, but taken as a whole it presents a true characteristic of the process and a correct order of magnitudes. Calculation results are given. There are 5 figures and 8 references.

B. Zemel'man

[Abstracter's note: Complete translation]

Card 1/1

PALEYEV, I.I., prof., doktor tekhn.nauk; MASLICHENKO, P.A., kand.tekhn. nauk; REUTT, V.Ch., inzh.

Order of the reaction between steam and the coke of natural fuel. Izv.vys.ucheb.zav.; energ. 2 no.4:102-108 Ap '59. (MIRA 12:9)

1. Leningradskiy politekhnicheskiy institut imeni M.I.Kalinina. Predstavlena kafedroy teplofiziki.
(Chemical reaction, Rate of) (Steam) (Coke)

S/196/61/000/006/009/014
E073/E535

AUTHOR Paleyev, I.I.

TITLE: On the behaviour of individual drops of heavy fuel in chambers with a twisted flow

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, 1961, No.6, pp.8-9, abstract 6G56. (Sb. 3-e Vses. soveshchaniye po teorii goreniya, T.2., M., 1960, 89-94)

TEXT: In mazout fired combustion chambers of gas turbines, a disturbance of the hydraulic conditions is frequently observed, particularly at low load and no-load operation, which is caused by the formation of appreciable deposits of coke on the walls of the combustion chamber. This is due to the fact that a small number of drops of the heavy fuel hit the walls and adhere to it. When this fuel is partly burned, coke is formed. Therefore, it is necessary to establish whether all the fuel drops evaporate without reaching the wall. Drops which hit the wall may bounce off and break up. The danger arises when the combustion at the wall is sluggish and a dense low-reactivity coke forms. Calculations were made on the evaporation of drops in a combustion

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chamber of 500 mm diameter with a blade cascade at 45°. The calculations are based on speed fields obtained on a cold model at a pressure of 5 atm excess feeding primary air through a lattice with an excess $\alpha = 1.2$. It is assumed that, due to reverse currents and ignition of a part of the fuel behind the lattice, the temperature of the flow rises from 200 to 1250°C. It is also assumed that the diffusion combustion of the drops proceeds at a temperature of 2300°C. The results are given of calculations for drops with initial dimensions of 100, 250 and 600 μ from which it follows that the final dimensions of the drops at the wall are, respectively, 0, 150 and 540 μ. Consequently, under the considered conditions mazout drops with an initial diameter of about 250 μ will no longer manage to evaporate and will hit the wall of the chamber. The behaviour of the drops on the wall was investigated on an experimental rig in the form of a vertical tubular furnace. Into this, drops of equal controlled dimensions were fed at a frequency varying between 1/12-th and 1/25-th sec. The trace of the burning drop was photographed. Into the furnace a plate was introduced, the temperature of which could be controlled by built-in electric

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cooling and electric heating. The drops heating the plate were also photographed. Various cases of formation of spheroids, breaking up of drops during bouncing off and atomization of the fuel along the plate were observed. The degree of combustion of the drops was measured. It is pointed out that if mazout is used as a fuel it is advantageous for the walls of the chamber to be at the maximum permissible temperature.
Abstracted by S. Tager.

[Abstractor s Note: Complete translation.]

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5/196/61/000/006/014/014
E194/E435

AUTHORS: Gol'shtik, M.A., Leont'yev, A.K., Paleyev, I.I.

TITLE: An experimental study of the motion of solid particles in a vortex chamber

PERIODICAL: Referativnyy zhurnal. Elektrotekhnika i energetika, 1961, No. [illegible], Abstract 6G67 (Nauchn. trudy Novosib. elektrotekhn. in-t, 1960, No. 2, pp. 5, 83)

TEXT: [illegible] has been devoted to the motion of gas in cyclone furnaces and dust separators. However, there has appeared [illegible] experimental work on the motion of solid or liquid particles in the gas flow of such chambers and the mechanism of motion of these particles, particularly after impact with the chamber wall, remains unknown. Investigation of the motion of solid particles was carried out in a vortex chamber made up of four blades. End of these was part of a cylindrical surface 600 mm long and of 210 mm radius. The chamber was 600 mm long and the mean diameter was 400 mm. The length of the gap was varied from 10 to 50 mm by turning the blades relative to their axis of rotation. In cross section the gap was convergent. The actual chamber was contained

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in a casing of 600 mm diameter which served as a receiver. This ensured uniform distribution of gas (or air) within the gap. The position of the particles was recorded photographically. The tests were made with particles of wood bar dust of from 53 to 210 microns. It was established that all the particles of 53 micron size reached the walls of the tube. The time of flight up to the first impact with the wall was 0.1 to 0.2 of the total residence time. On hitting the wall the particle commences to rotate and rebounds so that the motion of the solid particles is of a discontinuous nature. It follows from theoretical considerations that this is only possible when the particles are acted upon by forces that arise as a result of the flow passing over the rotating particles. The rate of motion of the particles is rapidly established. Formulae are obtained for the minimum speed and residence time of particles in a vortex chamber. There are 4 references.

Abstractor's Note: Complete translation.

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AUTHORS: Katsnel'son, B.D., Paleyev, I.I., and Tyul'panov, R.S.

TITLE: On the influence of turbulence on the mechanism of heat and mass exchange between the stream and the particles

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 111, abstract 11B729 (Sb. 3-ye Vses. soveshchaniye po teorii goreniya, v. 2, M., 1960, 115 - 122)

TEXT: Experiments were performed on determining the sublimation velocity of stationary spheres of naphthalene of diameters 1.5 - 3.5 mm in a turbulent air stream of T = 20°. Stream velocity was 10 - 35 m/sec^{-1}. Experimental set-up and the method of conducting the experiment are described. Turbulence intensity $\varepsilon(0.04 \leqslant \varepsilon \leqslant 0.14)$ was varied by masking the walls with a layer of sand of different particle size on adhesive support, and was measured with a thermoanemometer. The scale of turbulence exceeded the diameter of the spheres. It was found that the influence of turbulence was significantly higher than that found by other authors, whose scale of

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AUTHORS: Gol'dshtik, M. A., Leont'yev, A. K., Palayev, I. I.

TITLE: The Movement of Fine Particles in a Turbulent Flow

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 2, pp. 17-24

TEXT: An analytical method of integrating the equation of motion for the particles in a turbulence- or cyclone combustion chamber or in a turbul... heater is suggested. The flow in the combustion chamber is divided into 2 zones in which the velocity equation is determined by the relations (1), (2), and (3): the zone of quasi-steady rotation near the axis in which the tangential velocity is distributed according to formula (1): $v_\varphi = \omega r$; $0 \leq r \leq r_0$; the zone of quasi-potential flow (2) $v_\varphi = \frac{c}{r}$; $r_0 \leq r \leq R$. R = radius of the combustion chamber, where the relation $\omega r_0 = \frac{c}{r_0}$ holds. Besides the peripheral velocity there is also a radial velocity component in the flow which is directed toward the rotational axis and is distributed

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like the peripheral velocity, i.e. (3) $v_r = -\lambda r$ $(0 \leqslant r \leqslant r_0)$; $v_r = -\frac{A}{r}$ $(r_0 \leqslant r \leqslant R)$; $\lambda r_0 = \frac{A}{r_0}$. The equation of motion of the particle in the range $0 \leqslant r \leqslant r_0$ will look like this: (4) $\frac{d\vec{w}}{d\tau} = -(\vec{w} - \vec{v}) - \Gamma\frac{\vec{g}}{g}$, (5) $\vec{w} = N\frac{d\vec{r}}{d\tau}$. and the relations (1), (2), and (3) will assume the following form: (6) $v_\varphi = r$ $(0 \leqslant r \leqslant 1)$, $v_\varphi = \frac{1}{r}$ $(r \geqslant 1)$; (7) $v_r = -M_r$ $(0 \leqslant r \leqslant 1)$, $v_r = -\frac{M}{r}$ $(r \geqslant 1)$. The designations are: $\alpha = \frac{18\mu g}{d^2\gamma_T}$, $\Gamma = \frac{g}{\alpha v_0}$, $N = \frac{\alpha r_0}{v_0}$, $M = \frac{A}{r_0 v_0}$; $\vec{w}$, $\vec{v}$ = vectors of the particle and gas velocity; $\vec{g}$ = vector of the gravitational acceleration g; t = time; $\vec{r}$ = radius vector indicating the position of the particle; μ = dynamic viscosity coefficient; d = particle diameter; γ_T = specific gravity of the particle; $\tau = \alpha t$ = nondimensional time. In the range $0 \leqslant r \leqslant 1$, equation (4) can be written down as follows:

$\frac{d^2z}{d\tau^2} + \frac{dz}{d\tau} + (M - i)\frac{z}{N} = -\frac{\Gamma}{N}i$ (8) where $z = x + iy$ is a complex coordinate of the particle. The character of the particle movement depends on the

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quantity of the parameter μ. At $\mu > 1$, the particle has no equilibrium orbit. At $\mu < 1$, if $\tau \to \infty$, the particle tends toward the position of equilibrium (Fig. 1). At $\mu = 1$, the particle has an equilibrium orbit. It represents the circular line of the radius r_∞ the center of which is shifted with respect to the origin of coordinates, and is situated in the point (x_1, y_1). The relation $\mu \leqslant 1$ is equivalent to the inequality $M \geqslant \frac{1}{N}$ or $v_{r_0} \geqslant \frac{v_{\varphi_0}^2}{\alpha r_0}$. For the range $r \geqslant 1$, the transition to complex coordinates is not rational since the solution cannot be expressed by analytical functions. By the method of conjugation of asymptotic representations of the solution for long and short periods, an approximate analytical solution is obtained. A sample of calculation is given (Figs. 2 and 3). There are 3 figures and 2 references, 2 of which is Soviet.

ASSOCIATION: Politekhnicheskiy institut im. M. I. Kalinina, g. Leningrad (Polytechnic Institute imeni M. I. Kalinin, City of Leningrad)

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PALEYEV, I. I., KATSNEL'SON, V. I., and TARAKANOVSKIY, A. A.

"Diffusion Method of Investigation of Heat and Mass Transfer Between a Particle and Pulsing Medium."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

PALEYEV, I. I.

"Heat-exchange between walls and a gas stream carrying drops of the evaporated liquid."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange, Minsk, BSSR, 5-9 June 1961

BORISHANSKIY, V.M., red.; PALEYEV, I.I., red.; MOCHAN, S.I., nauchn. red.

[Convective heat transfer in two-phase and single-phase flows] Konvektivnaia teploperedacha v dvukhfaznom i odnofaznom potokakh; sbornik statei. Moskva, Energiia, 196[illegible]. 447 p. (MIRA 18:4)

ACC NR: AP7002916 SOURCE CODE: UR/0170/66/011/006/0765/0772

AUTHOR: Aref'yev, K. M.; Paleyev, I. I.; Borishanskiy, V. M.; Khomchenkov, B. M.; Ivashchenko, N. I.

ORG: Polytechnical Institute im. M. I. Kalinin, Leningrad; (Politekhnicheskiy institut); Central Boiler and Turbine Institute, Leningrad (Tsentral'nyy kotloturbinnyy institut)

TITLE: Thermal diffusion of cesium gases in helium

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 11, no. 6, 1966, 765-772

TOPIC TAGS: cesium, helium, thermal diffusion, gas kinetics, helium cesium mixture

ABSTRACT: A study was made of the thermal diffusion of cesium vapor in helium using the Enskog-Chapman kinetic theory and taking into account the factor of condensation in Stefan flow. Thermal diffusion was found to comprise 55% of the concentrated diffusion and 35% of the total diffusion flow. It follows that in the case of the condensation of cesium gas from a cesium-helium mixture, thermal diffusion

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must be considered to be an essential effect. Orig. art. has: 4 figures, and 7 formulas.

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