PALENICHKO, Z.G.

Results of comprehensive research carried out in Onega Bay of the White Sea. Mat. po kompl.izuch.Bel.mor. no.1:15-43 '57. (MLRA 10:8)

1.Belomorskaya biologicheskaya stantsiya Instituta biologii Karel'skogo filiala AN SSSR.
(Onega Bay--Fishes)

PALENICHKO, Z.G.

USSR/Medicine - Marine Organisms Sep/Oct 48
Medicine - Biology

"Biologic Properties of White Sea Mussels (Midin)," Z. G. Palenichko, Lab of Invertebrates, Zool Mus, Moscow State U, 8 pp

"Zool Zhur" Vol XXVII, No 5

White Sea mussels differ from similar mussels found in warm waters in several respects: they develop slower, mature slower, are smaller in size, and live longer. Tabulates all information. These mussels are usually found in sheltered waters. Recent surveys show that their number is diminishing.

28/49T100

PALENICHKO, Z.G., kand.biol.nauk

Resources of the White Sea and the inland waters of Karelia.
Vest.AN SSSR 31 no.3:124-125 Mr '61. (MIRA 14:3)
(White Sea--Fisheries)
(Karelia--Fisheries)

ALTUKHOV, Konstantin Alekseyevich; MIKHAYLOVSKAYA, Aleksandra Aleksandrovna; MUKHOMEDIYAROV, Fettakh Bakirovich; NADEZHIN, Vasiliy Mikhaylovich; NOVIKOV, Petr Ignat'yevich; PALENICHKO, Zinaida Georgiyevna; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[Fishes of the White Sea] Ryby Belogo moria. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1958. 161 p. (MIRA 12:2)
(White Sea--Fishes)

POLYANSKIY, Yu.I., otvetstvennyy redaktor; PALENICHKO, Z.L., redaktor;
NADEZHIN, V.M., redaktor; BORISOV, K.A., redaktor izdatel'stva;
BLEYKH, E.Yu., tekhnicheskiy redaktor

[Papers on an over-all study of the White Sea] Materialy po kompleksnomu izucheniiu Belogo moria. Moskva, Vol. 1. 1957.
494 p. (MLRA 10:4)

1. Akademiya nauk SSSR. Karel'skiy filial, Petrozavodsk.
(White Sea)

PALENICKOVA, Eva

Thiamine and heteroauxin interaction in the extension growth of Avena coleoptiles. Biologia (Bratisl) 20 no.7:481-490 '65.

1. Botanical Institute of the Slovak Academy of Sciences, Department for Plant Physiology in Bratislava.

PALENIK, K.

"Effect of turning back the spent liquors in the process of hot refining of the sulfite pulp masses by alkalies" by E.Oltus, F.Komora. Reviewed by K.Palenik. Przegl papier 18 no.9:303 S '62.

Palenik, K.

Glues for manufacture of corrugated cardboard. p. 85. PAPIR A CELULOSA. (Ministerstvo lesu a drevarskeho prumyslu) Praha. Vol. 11, no. 4, Apr. 1956.

Source: EEAL I? Vol. 5, No. 10 Oct. 1956

PALENIK, K.

"Something can be done about paper and board fishing." Reviewed by K. Palenik. Przegl papier 18 no.1:3 of cover Ja '62.

POLAND / Chemical Technology. Chemical Products and Their Application. (Part 1) Corrosion. Protection From Corrosion. H

Abs Jour : Ref Zhur - Khimiya, No 10, 1959, No. 35286

Author : Myslinska, Zofia; Palenik, Karol
Inst : Not given
Title : Anti-Corrosion Paper Packing for Metallic Parts

Orig Pub : Opakowanie, 1958, 4, No 5, 19-20, 22

Abstract : It was established, as a result of the study of anti-corrosion properties of the paper (P) for packing metallic parts, that a good quality of P must have pH $\geq$ 5. The content of the ion of Cl must be $\leq$ 0.05% and that of $SO_4^{-2} \leq$ $\leq$ 0.25%. It was found that the saturation of paraffined P, used to pack roller bearings, with an aqueous solution containing 5% C_6H_5COONa and 5% $NaNO_2$, considerably improves the protection properties of P. A P of this type is also

Card 1/2

POLAND/Cellulose and Its Production. Paper. H.

Abs Jour : Ref Zhur - Khimiya, No 19, 1958, 66247

Author : Myslinska Zofia, ~~Palenik Karel~~

Inst : -

Title : Use of Native Synthetic Waxes During the Production of Paper.

Orig Pub : Przegl. papiern., 1958, 14, No 2, 45-49.

Abstract : The application of synthetic hard and paraffin montan wax (MR1 and MR3) during the production of white and colored high-gloss paper has been investigated.

Card 1/1

PALENIK, K.

4540 676.1.023.7

Mysliñska Z., Palenik K. A Comparison of Paper Sizing with the Bewold, Gillet and Ordinary Rosin Sizes.

„Porównanie zaklejania papieru klejem Bewold, Gilleta i zwykłym klejem żywicznym". Przegląd Papierniczy, No. 5, 1956, pp. 127—133, 1 fig., 2 tabs.

The theoretical foundations of sizing paper with various rosin sizes. The properties of such sizes, the influence of the kind of paper stock, drying conditions and other factors on the degree of paper sizing are discussed in this article. Investigations on a laboratory and technical scale were executed in the Polish Pulp and Paper Research Institute, concerning sizing of paper with ordinary rosin size, Gillet and Bewold sizes. The following were among the advantages observed in the use of a size with a high content of free rosin (Bewold): a 22 to 25% rosin saving in relation to the ordinary mill-made size, and 10 to 15% to the Gillet size, and a 28 to 34% saving of aluminium sulphate. An economic calculation is given concerning the use of ordinary rosin size (containing about 20% of free rosin), of the Gillet and Bewold sizes.

PALENIK, K

Embossing paper.

P. 205 (PRZEGLAD PAPIERNICZY) (Lodz, Poland) Vol. 13, no. 7, July 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. , No. 5. 1958

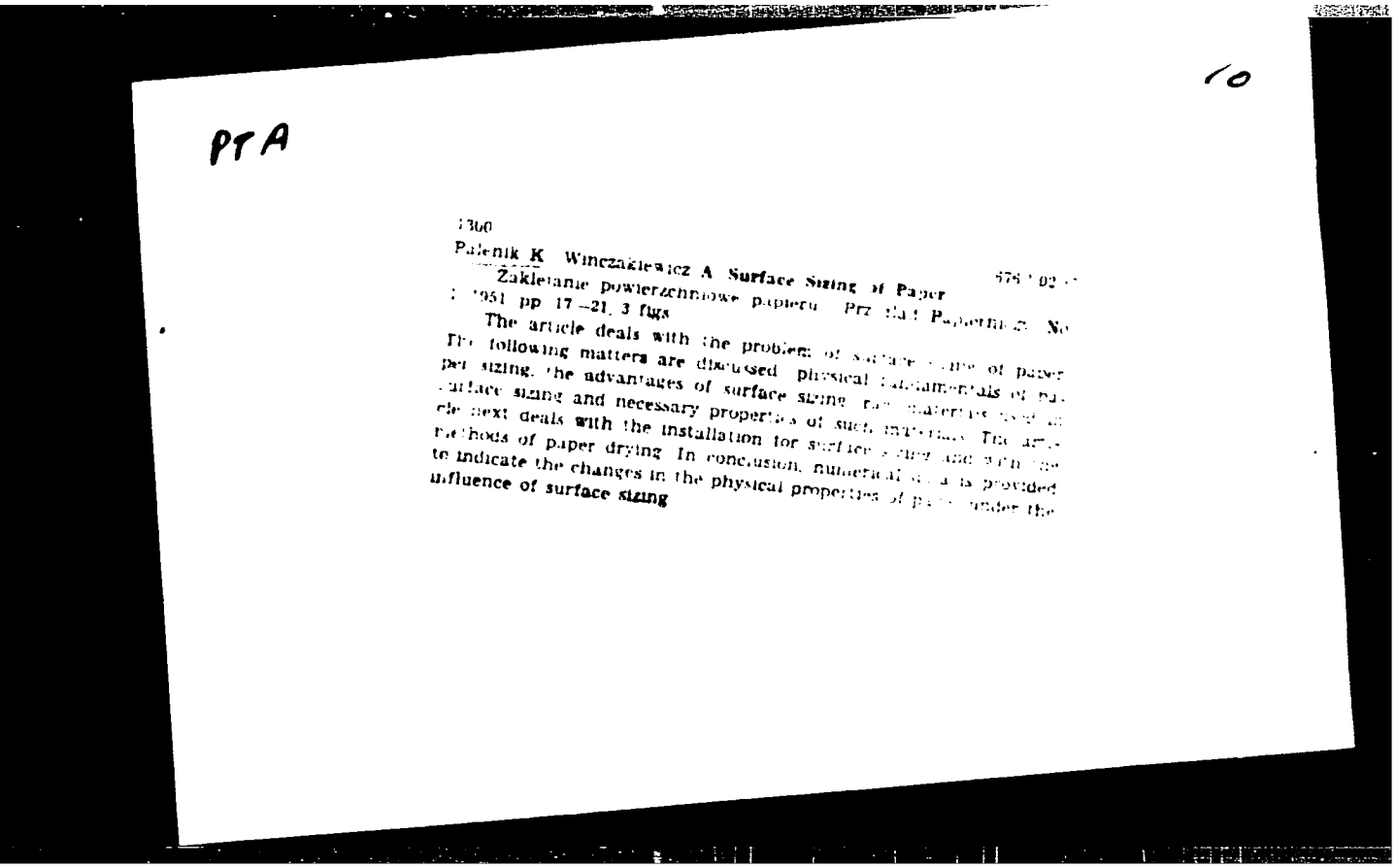
PALENIK, K.

PALENIK, K,

PALENIK, K, WINCZAKIEWICZ, A., "New Chemical Auxiliary Products In The Paper Industry" p. 12

(Przeglad Papierniczy, Vol. 9, no 1, Jan. 1953, Lodz)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, Feb. 1954



PtA

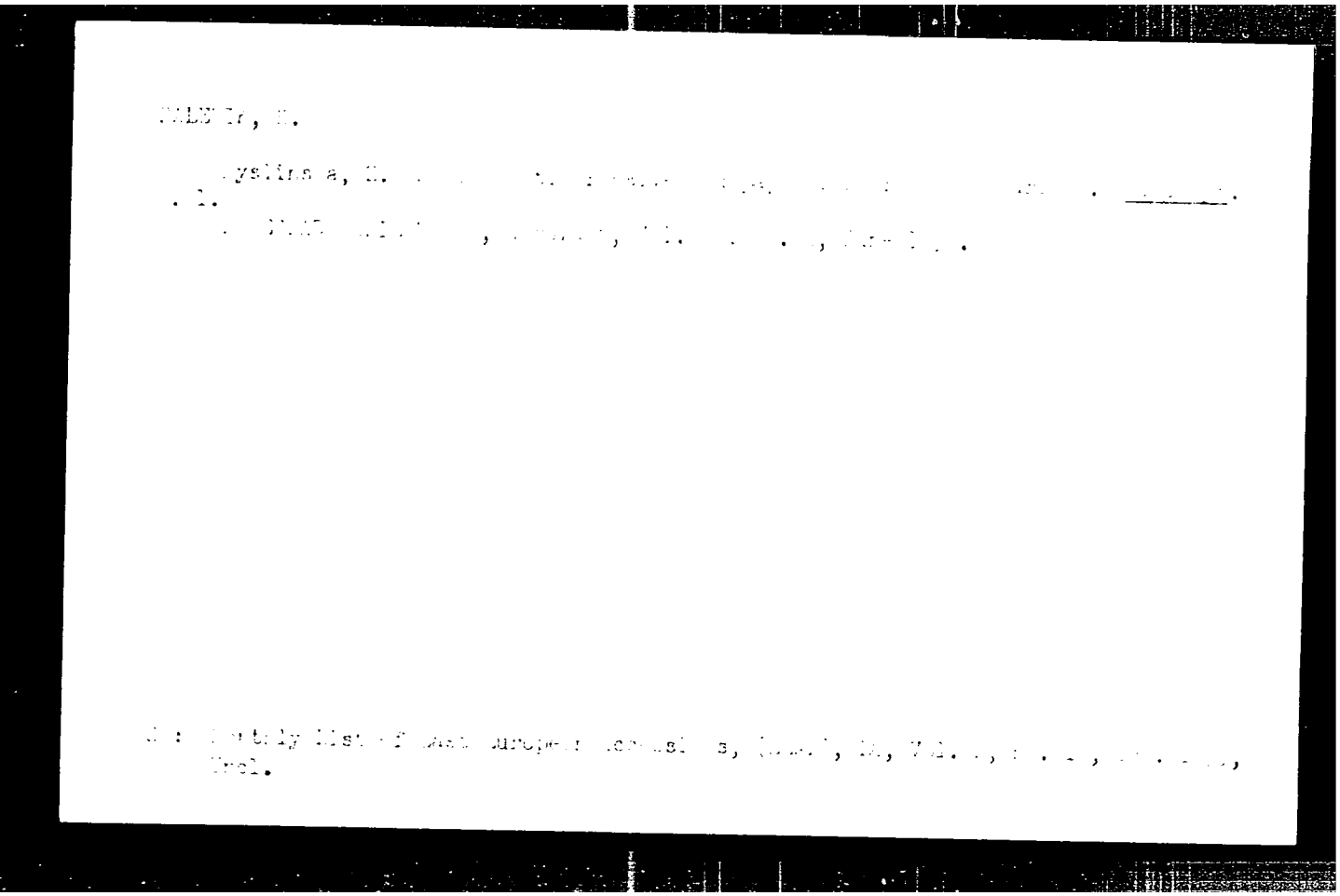
10

1360

Palenik K Winczakiewicz A **Surface Sizing of Paper** 676.02

Zaklejanie powierzchniowe papieru Prz Wlok Papiernicz No 1951 pp 17–21, 3 figs

The article deals with the problem of surface sizing of paper. The following matters are discussed physical fundamentals of paper sizing, the advantages of surface sizing raw materials used in surface sizing and necessary properties of such materials. The article next deals with the installation for surface sizing and with the methods of paper drying. In conclusion, numerical data is provided to indicate the changes in the physical properties of paper under the influence of surface sizing



Palenik, K.

3870 668.736.063 : 678.1.023.1

Kaszyński A., Palenik K. Production of Coal Tar Pitch Emulsions and their Use in the Papermaking Industry.

„Otrzymywanie emulsji pakowych i ich zastosowanie w przemyśle papierniczym", (Prace Inst. Celulozowo-Papiern. No. 1), Warszawa, 1954, WPLiS, 8 pp., 1 fig. 5 tabs.

A discussion of the properties and the means of production of bituminous emulsions of use in the papermaking industry. The means of emulsifying soft coal pitch, using as emulsifier synthetic saponified waxes, are described. The emulsions obtained on a laboratory scale showed satisfactory properties (particle size 0,3 to 1,5 μ, durability, resistance to freezing). When used for sizing cardboards they very considerably improved waterproofness and strength properties in the wet state. An addition of 30% of such emulsion, for instance, made a cardboard of 200 g basic weight retain in the wet state a 25% tearing strength and 45% bursting strength by comparison with the dry condition. Investigations made on a technical scale showed that it is possible to obtain coal tar pitch emulsions by means of a quite simple equipment (a steam-jacketed boiler and an agitator revolving at a rate of 140 per minute). The emulsion obtained was used for the impregnation of barrels made from waste paper stuff. An addition of 20% of this emulsion made it possible to obtain barrels highly watertight and waterproof.

(1)

PALENIK, K.

[illegible] of corrugated paperboard. Karel Palenik. [illegible] 9, 38-41 (1965).—The [illegible] [illegible] dextrin, starch, and [illegible] HCHO ad- [illegible], the methods of their prepn., and their respective [illegible] when used in the manuf. of corrugated boards are discussed.

—T. R. Zearo

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012388

PALENIK, K.

"Delignification of beechwood during sulfate boiling" by J.Farkas. Reviewed by K.Palenik. Przegl papier 18 no.10:335 O '62.

PALENIK, K.

"Pressure forming of wet pasteboard" by M.Lesikar. Reviewed by K.Palenik. Przegl papier 18 no.9:304 S '62.

PALENIK, K.

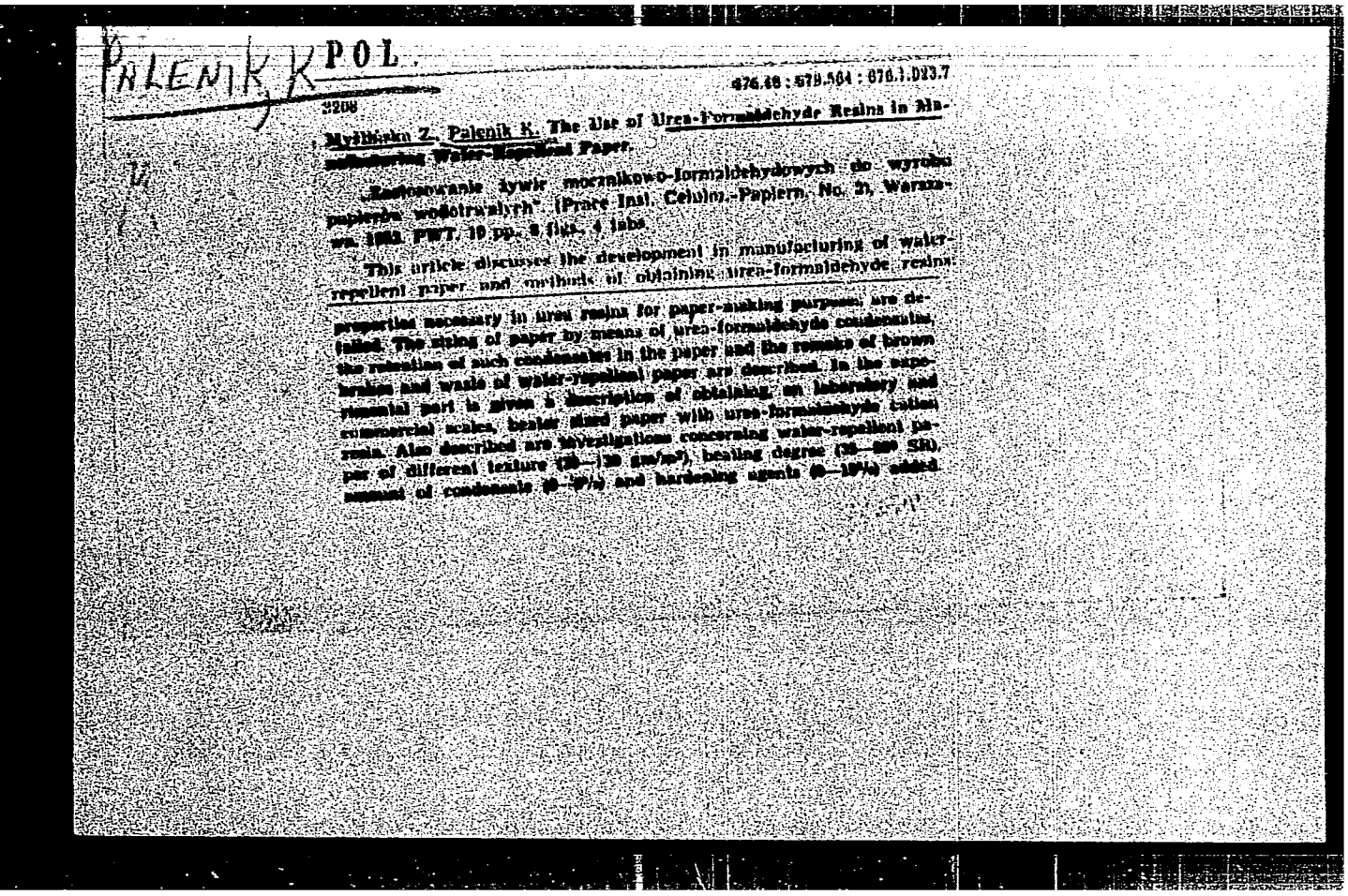
"Collected research works in the field of cellulose and paper"
Pt. 6. Reviewed by K.Palenik. Przegl papier 18 no.9:300
S '62.

PALENIK, K.

"Attempt at obtaining semimass for cigarette paper by means of chemicomechanical cold processing of the raw material" by M. Lukasova-Novotna. Reviewed by K. Palenik. Przegl papier 18 no.11: 368 N '62.

PALENIK, K.

"New trends in the properties of printing paper" by J. Salda.
Reviewed by K. Palenik. Przegl papier 18 no.11:368 N '62.



PALENIK K POL.

676.48 : 678.564 : 676.1.023.7

3208

Myślińska Z., Palenik K. The Use of Urea-Formaldehyde Resins in Manufacturing Water-Repellent Paper.

„Zastosowanie żywic mocznikowo-formaldehydowych do wyrobu papierów wodoodpornych" (Prace Inst. Celuln.-Papiern. No. 2), Warszawa, 1953, PWT, 19 pp., 8 fig., 4 tabs.

This article discusses the development in manufacturing of water-repellent paper and methods of obtaining urea-formaldehyde resins.

properties necessary in urea resins for paper-sizing purposes, are defined. The sizing of paper by means of urea-formaldehyde condensates, the retention of such condensates in the paper and the remarks of brown hydrate and waste of water-repellent paper are described. In the experimental part is given a description of obtaining, on laboratory and commercial scales, beater sized paper with urea-formaldehyde cation resin. Also described are investigations concerning water-repellent paper of different texture (25—120 gm/m²), beating degree (25—60° SR), amount of condensate (0—4%) and hardening agents (0—10%) added.

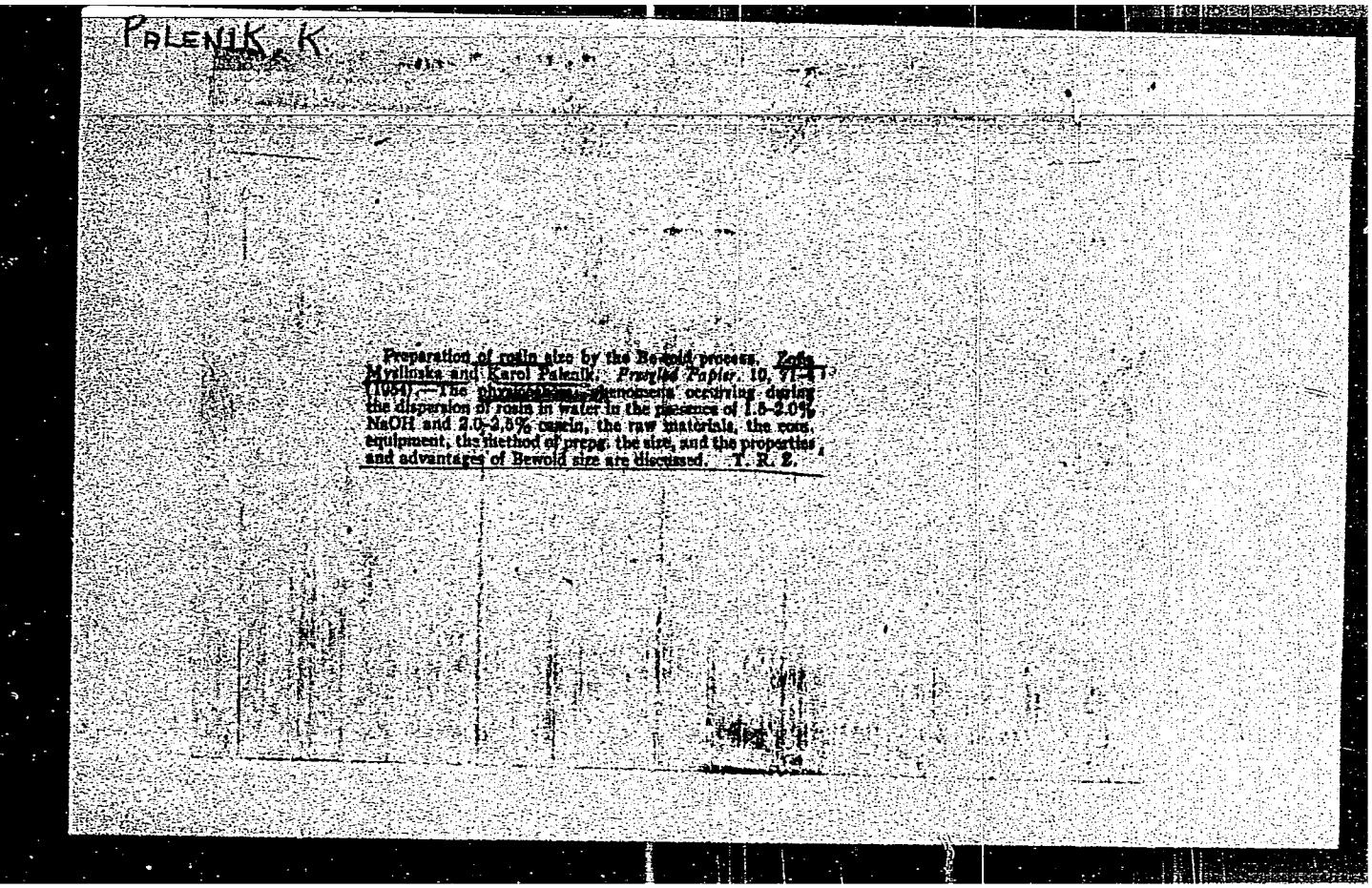
PALENIK, K.

3

Palenik K., Myśliński Z. Water Resistant Starch Adhesives Used in Paper Processing.

„Wodoodporne kleje skrobiowe stosowane w przetwórstwie papierniczym". Przegląd Papierniczy, No. 8, 1953, pp. 168–173, 4 figs.

Methods of obtaining starch adhesives and for rendering them resistant to water. Properties of starch adhesives and the use of urea-formaldehyde condensates for improving the resistance to water of adhesives obtained from hydrolysed and unhydrolysed starch. Results of tests performed on a laboratory and technical scale in the Pulp and Paper Institute as regards the production and use of starch adhesives with the addition of urea resin and of a hardening agent (NH_4Cl). Two methods for determining the resistance to water of a joint produced by using the adhesives mentioned above. Possibility of using water resistant adhesives in paper processing for the production of sacks, gluing of bags, spinning bobbins, multi-ply cardboard and cardboard cups.



PALENIK K

Preparation of rosin size by the Bewold process. Zofia Myslinska and Karol Palenik. *Przegląd Papier.* 10, 71-4 (1954).—The physicochemical phenomena occurring during the dispersion of rosin in water in the presence of 1.5–2.0% NaOH and 2.0–2.5% casein, the raw materials, the cons. equipment, the method of prepg. the size, and the properties and advantages of Bewold size are discussed. T. R. 2.

PALENIK, K.

PALENIK, K.

MYSLINSKA, Z., PALENIK, K., "Using Formaldehyde For The Production Of Water-Resistant Paper"

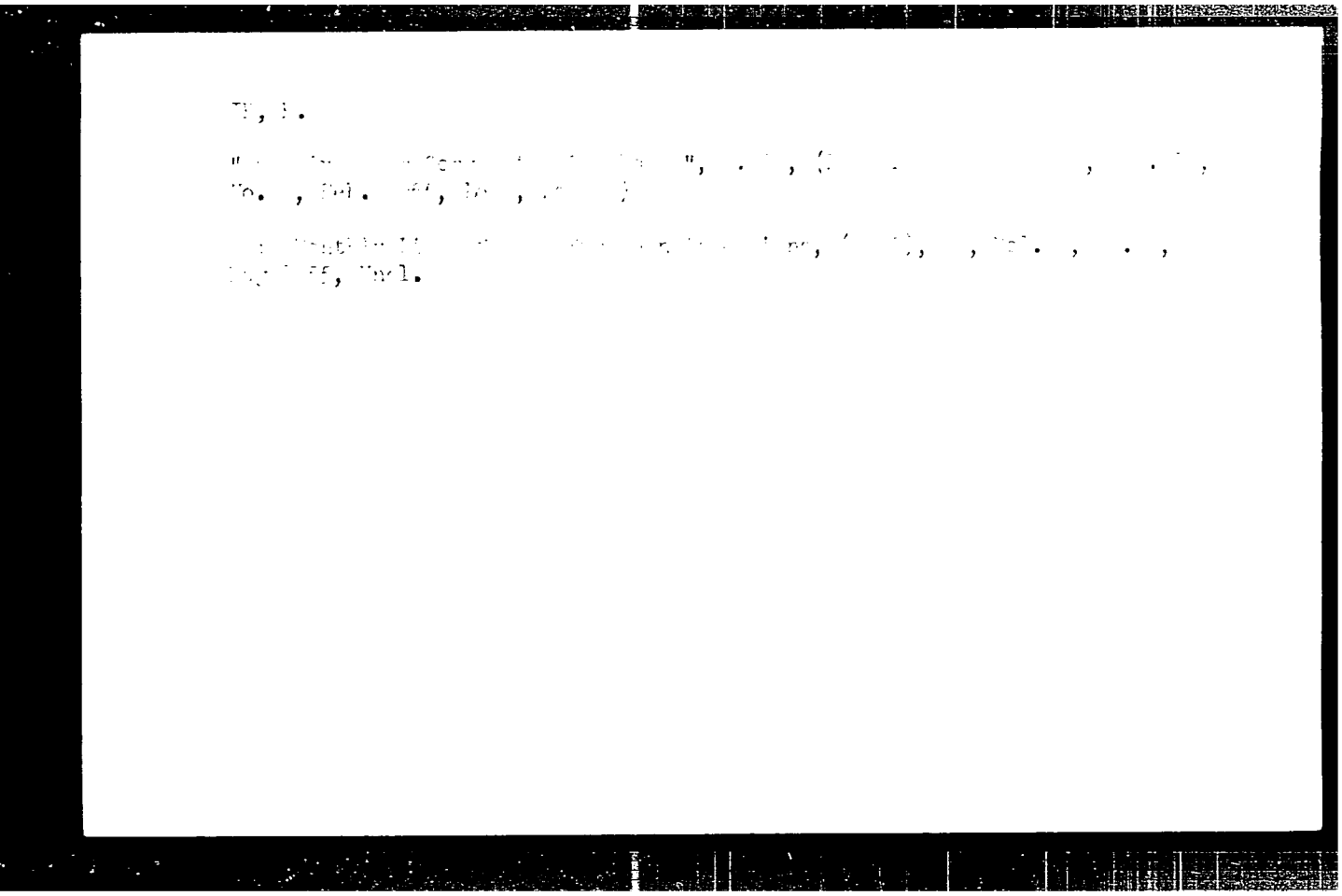
(Przeglad Papierniczy, Vol. 9, no.4, Apr. 1953, Lodz)

SO: Monthly List of East European Accessions, Vol. 3, No.2, Library of Congress, Feb. 1954

PALENIK, K.

"Modern methods in the production of resin size." p. 328.
(PRZEGLAD PAPIERNICZY. Vol. 10, No. 11, Nov. 1954. Lodz, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4.
April 1955. Uncl.



PALENIK, K.

"Paraffin Papers" p. 134. (Przeglad Papierniczy, Vol. 9, no. 5, May 1953, Lodz)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, Feb. 1954

PALENIK, K.

"Obtaining of coating emulsions for wrapping paper and their application [illegible] paper industry" (P. 255). PRZEGLAD PAPIERNICZY (Centralny Zarzad Przemysu Papierniczego i Stowarzyszenie Inzynierow i Techników Przemysu Papierniczego) Lodz, Vol. 9, No. 8, Aug. 1953.

SO: East European Accessions List, Vol 3, No. 8, Aug. 1954.

K

Czechoslovakia / Chemical Technology. Chemical Products and Their Application I-27

Wood chemistry products. Cellulose and its manufacture. Paper.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32712

Author : Palenik Karol

Title : Adhesive for the Manufacture of Corrugated Cardboard

Orig Pub: Papir a celulosa, 1956, 11, No 4, 85-90

Abstract: See RShKhim, 1955, 36187

Card 1/1

PALENIK, K.

"Obtaining of coating emulsions for wrapping paper and their application in the paper industry" (P. 255). PRZEGLAD PAPIERNICZY (Centralny Zarzad Przemyslu Papierniczego i Stowarzyszenie Inzynierow i Techników Przemyslu Papierniczego) Lodz, Vol. 9, No. 8, Aug. 1953.

SO: East European Accessions List, Vol 3, No. 8, Aug. 1954.

PALENIK, K.

Polish Technical Abst.
No. 4, 1951
Chemistry and Chemical
Technology

2163

Palenik, K. Wroclawskie A New Chemical Auxiliary Products in the Paper Industry.

[illegible] Przegląd Papierniczy No 1, 1951, pp 12-18.

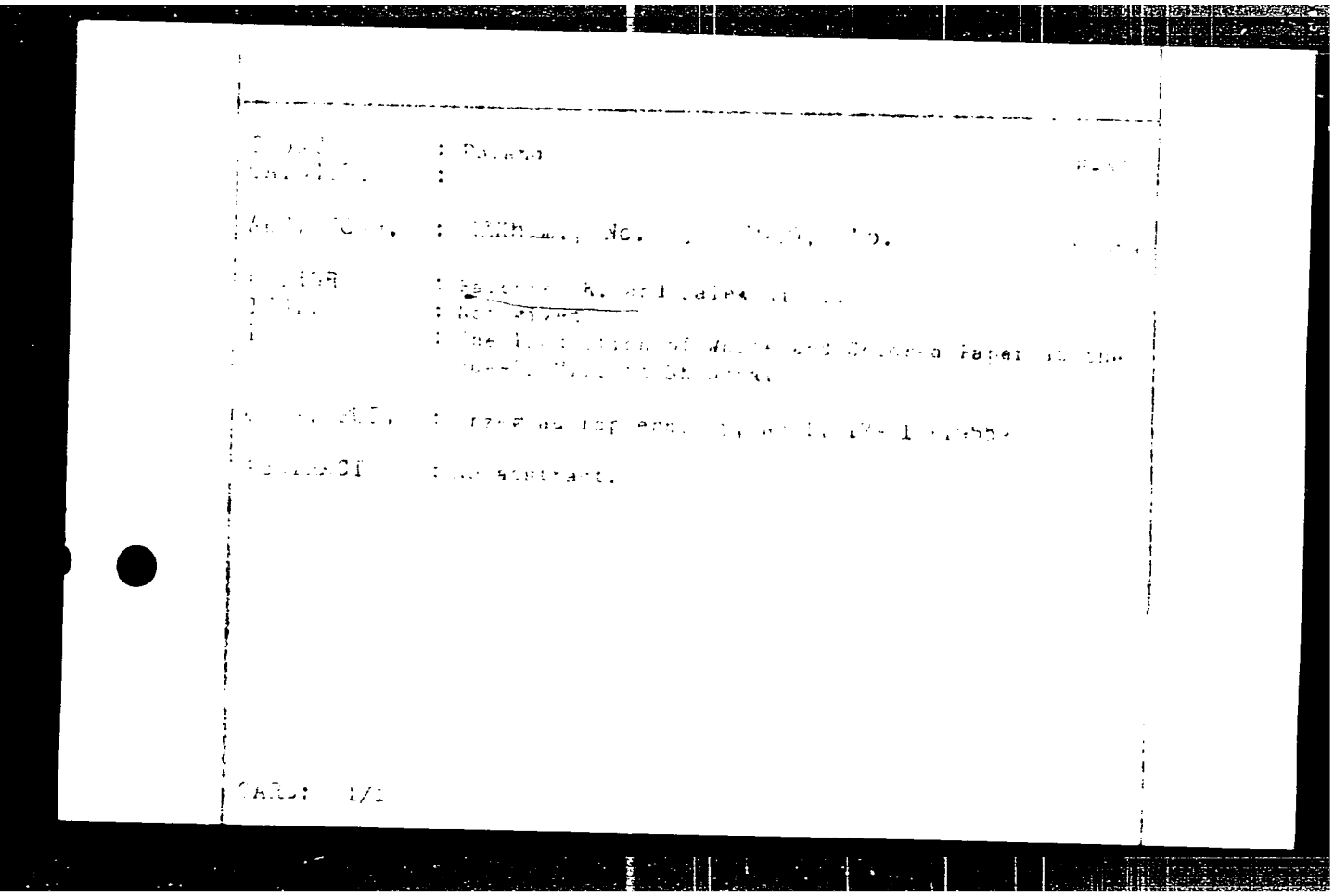
This article deals with auxiliary chemical materials used in paper manufacture (anti-froth and dispersing media, media for improving special properties to the paper produced (bee wax emulsions, resin soaps, water - proofing, water - tightening, fire-proofing and corrosion media etc.), media for improving the whiteness of the paper (luminophors — blancophors), media for fixing acids, basic and direct dyes, and media for obtaining uniformity of colouring. Methods of adding such media to the paper substance.

PALENIK, K.

PALENIK, K.,

PALENIK, K., MYSLINSKA, Z., "Water-Resistant Starch Adhesives Used In The Paper Industry" p. 168. (Przeglad Papierniczy, Vol. 9, no. 6, June 1953, Lodz)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, Feb. 1954



PALENIK, K.

PALENIK, K.

PALENIK, K.; WINCZAKIEWICZ, A.

"Chromatography of paper." p. 35. (Przeglad Papierniczy, Vol. 10, no. 2, Feb 54, Lodz)

SO: Monthly List of East European Accessions, Vol 3 No 6 Library of Congress Jun 54 Uncl

PALENIK, Karol, mgr inż.

Surface treatment of paper on the calender using the water doctor. Przegl papier 20 no.3 45-49 Mr'64.

1. Instytut Celulozowo-Papierniczy, Łódź.

POLAND/Chemical Technology. Chemical Products and Their Applications. Cellulose and Its Derivatives. Paper. H

Abs Jour : Ref Zhur-Khimiya, No 6, 1959, 21853

Author : Myslinska, Zofia; Palenik, Karol
Inst : -
Title : Possible Methods for Reprocessing Paraffinated and Bitumenized Waste Paper.

Orig Pub : Przgl. papiern., 1958, 14, No 6, 164-170

Abstract : As a result of laboratory and pilot plant investigations, the possibility was developed for extracting the paraffin and bitumen from waste paper by extraction with different organic solvents and aqueous solutions of H_2SO_4 and technical NaOH. The

Card : 1/2

H-125

H-33

POLAND/Chemical Technology - Chemical Products and Their Application. Cellulose and Derivatives. Paper.

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 27327

Author : Myslinska Zofia, ~~Palenik Karol~~

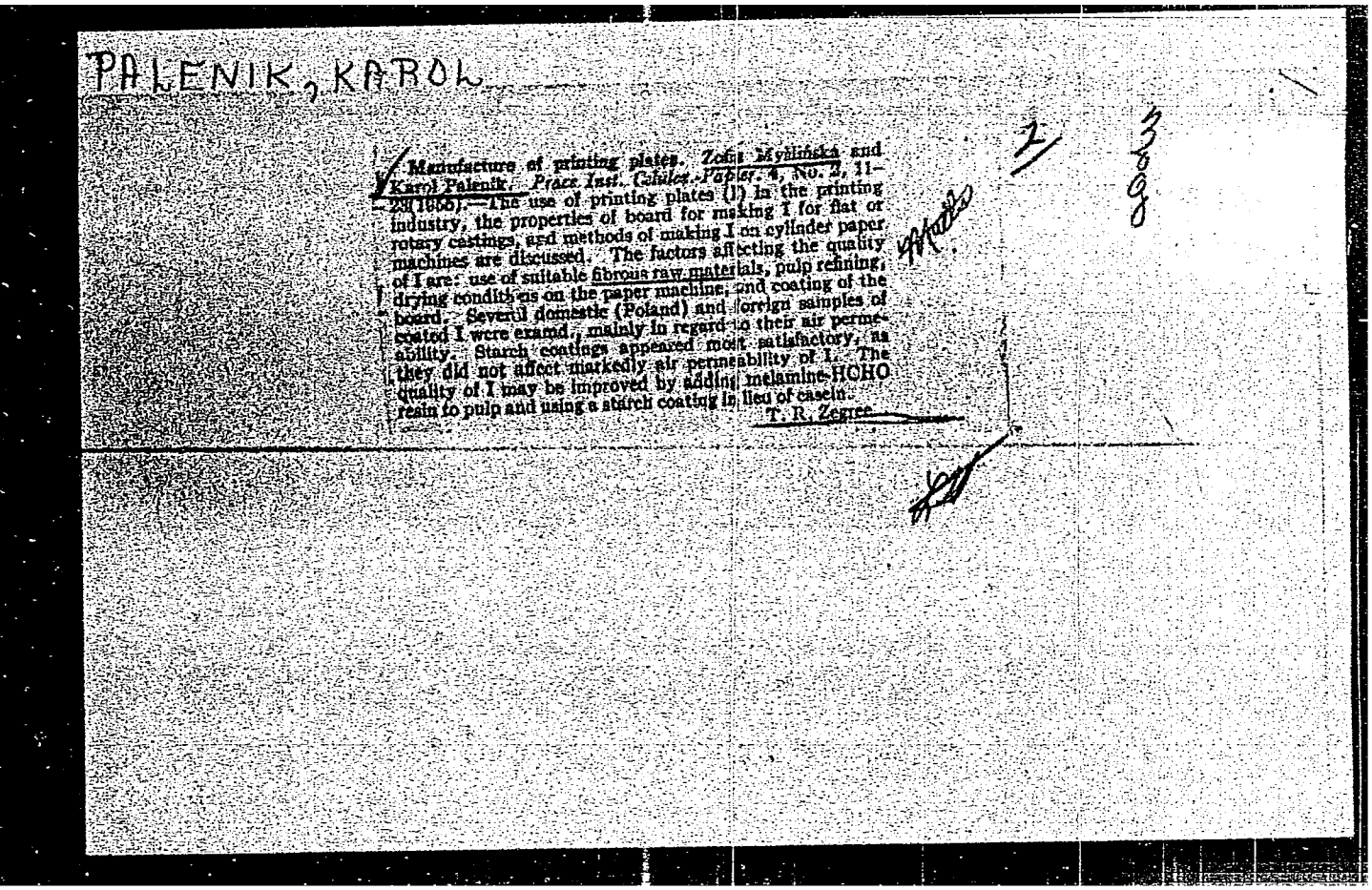
Inst : Institute of Cellulose and Paper.

Title : Use of Urea-Formaldehyde Resin in the Manufacture of Water-Resistant Paper.

Orig Pub : Prace Inst. celul.-papiern., 1953, 2, No 2, 1-10

Abstract : No abstract.

Card 1/1



PALENIK, KAROL

Manufacture of printing plates. Zofia Mylińska and Karol Palenik. *Prace Inst. Celulozy i Papieru*, 4, No. 2, 11–28(1956).—The use of printing plates (I) in the printing industry, the properties of board for making I for flat or rotary castings, and methods of making I on cylinder paper machines are discussed. The factors affecting the quality of I are: use of suitable fibrous raw materials, pulp refining, drying conditions on the paper machine, and coating of the board. Several domestic (Poland) and foreign samples of coated I were examd., mainly in regard to their air permeability. Starch coatings appeared most satisfactory, as they did not affect markedly air permeability of I. The quality of I may be improved by adding melamine-HCHO resin to pulp and using a starch coating in lieu of casein.

T. R. Zegrer

Palenik, Karol

3

1 PM

2 May

17

Evaluation of three rosin sizes. Zofia Myślińska and Karol Palenik. *Przegląd Papierniczy* 12, 127-33(1956).—The theory of paper sizing, the properties of various rosin sizes, and the effect of type of pulp and of paper machine drying conditions are reviewed. Three rosin sizes contg. 80-8, 33.7, and 18.5-23% of free rosin, resp., i.e., Bewold (I), Gillet (II), and almost completely sapond. size (III) were evaluated on lab. and com. scale. I was found the best, giving 22-8% saving in size and 28-34% saving in alum for the same degree of sizing over III. II was intermediate between I and III.

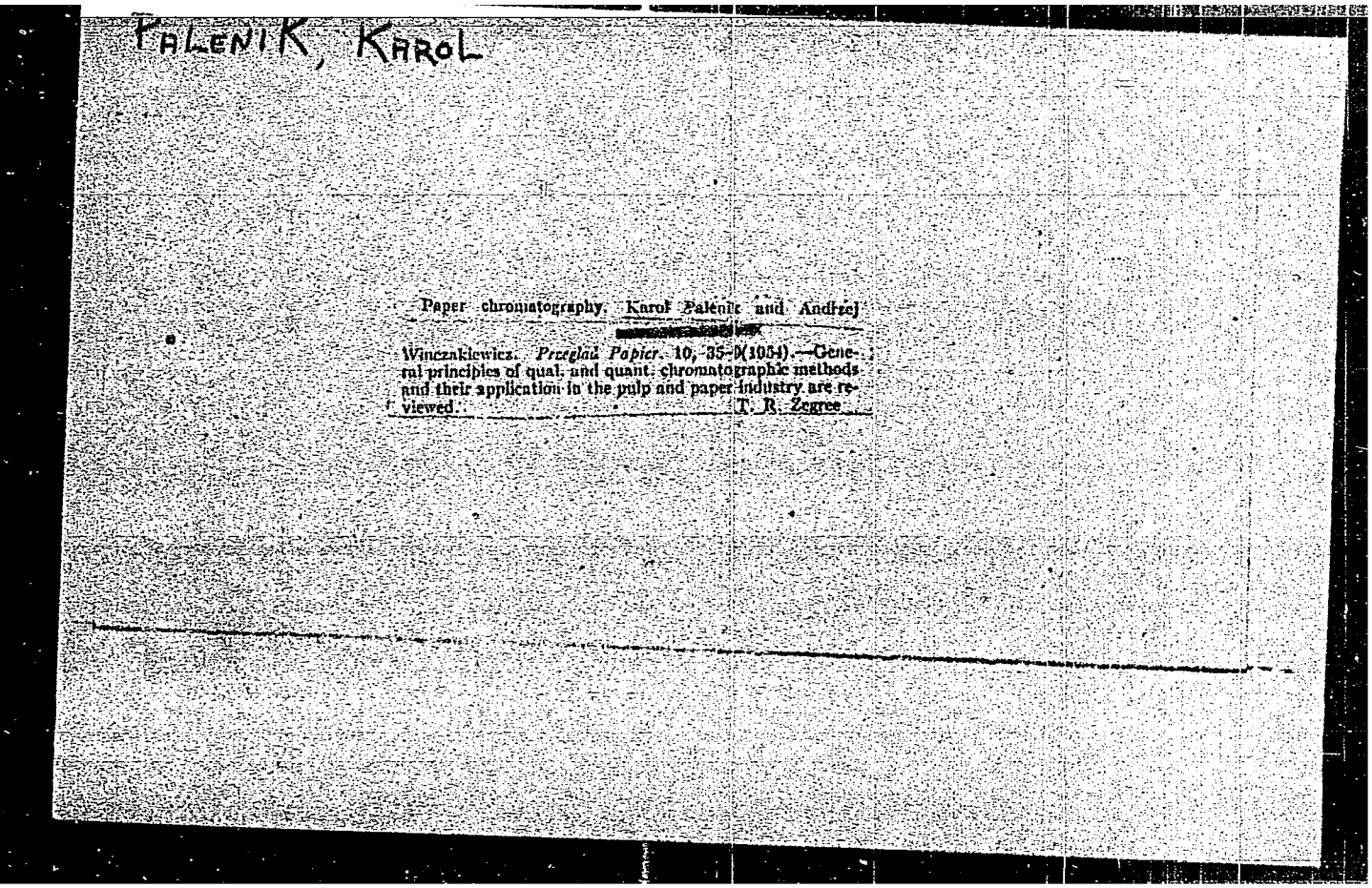
T. R. Zegres

Math

PM myi

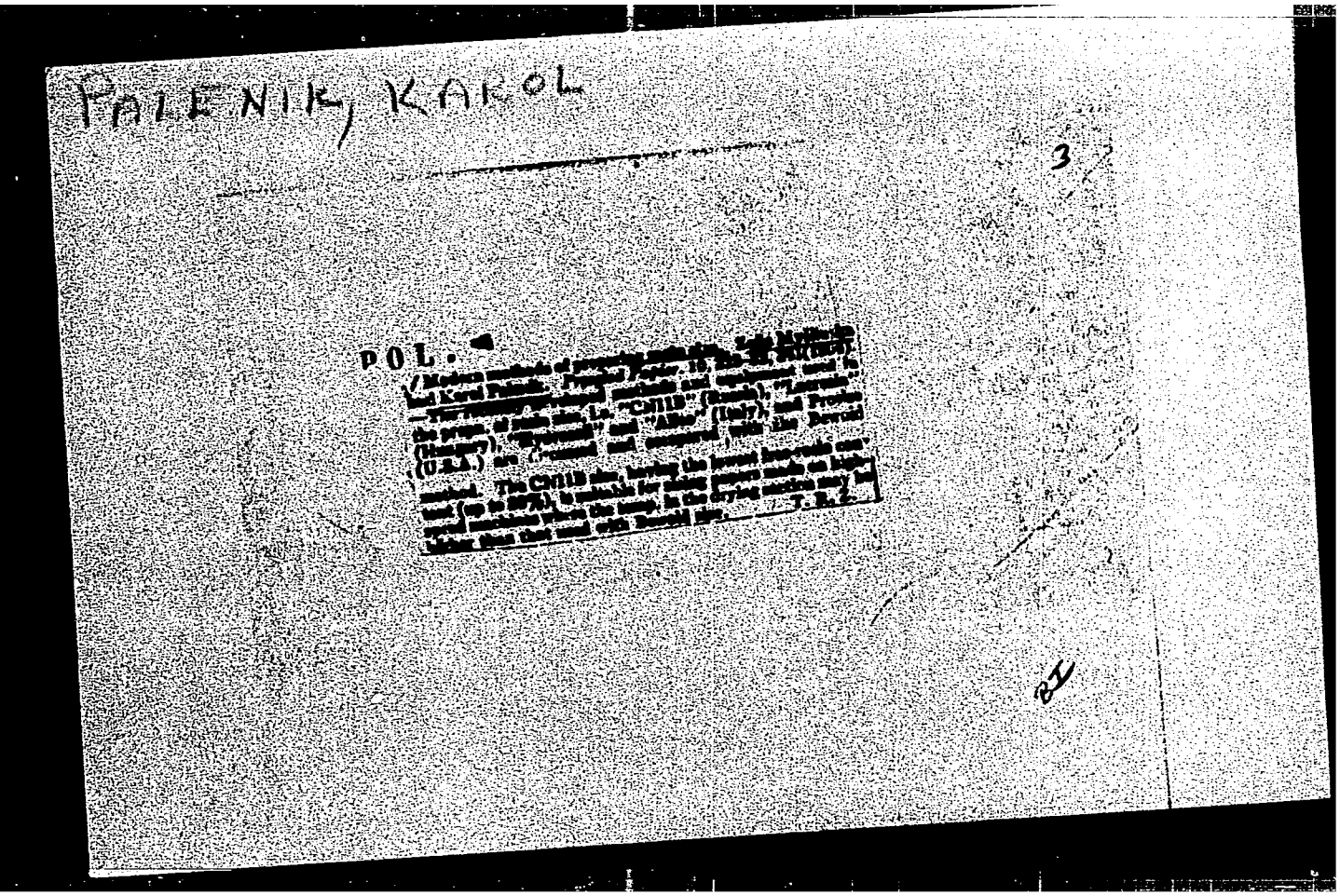
Palenik Karol

Use of bituminous emulsions in the paper industry. Andrzej Kaszynski and Karol Palenik. *Prace Inst. Celulozy Papier.* 3, 15-23(1961). The properties and manufg. methods of making bituminous emulsions for treating papers are reviewed. Compds. prepd. on a lab. scale by emulsifying soft-coal pitch with a synthetic sapond. wax had satisfactory properties, i.e., particle size 0.3-1.5 μ, good stability, and resistance to freezing. When used in sizing cardboards, these compds. improved markedly their waterproofness and wet-strength. E.g., a board of 200 g./sq. m. basis wt. treated with 30% of the emulsion retained in wet condition 55% of dry tear and 49% of dry burst. Coal-pitch emulsions, prepd. on cont. scale in a steam-jacketed boiler provided with an agitator rotating at 140 r.p.m., were very satisfactory. Their use in impregnating or sizing various grades of boards and wrapping papers is recommended. T. R. Zegree



PALENIK, KAROL

Paper chromatography. Karol Palenik and Andrzej Winczaklewicz. *Przegląd Papier.* 10, 35-9(1954).—General principles of qual. and quant. chromatographic methods and their application in the pulp and paper industry are reviewed. T. R. Zegree

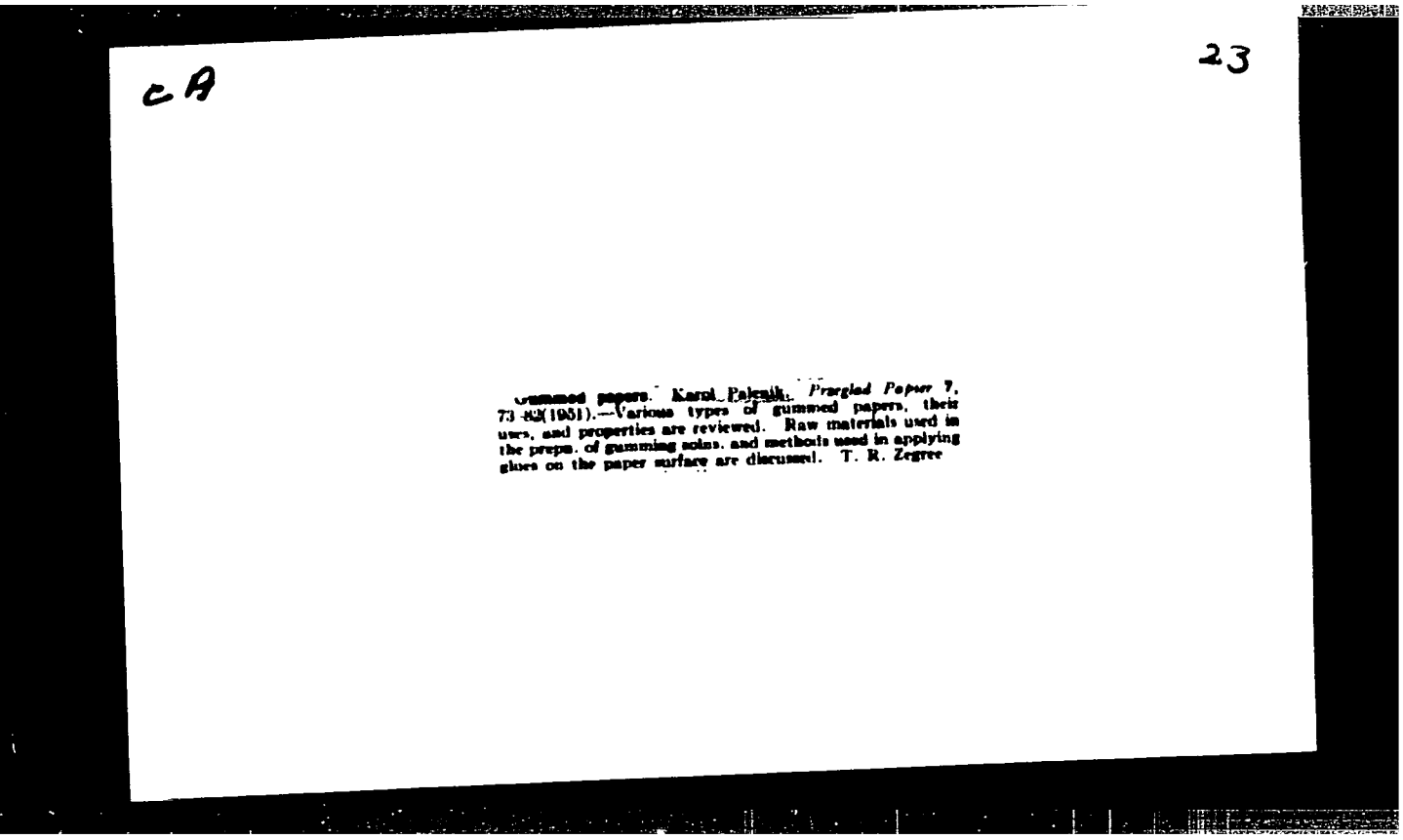


PALENIK, Karol

(3)

Use of urea-formaldehyde resins in manufacture of wet-strength paper. Zofia Myslinska and Karol Palenik. *Prace Inst. Celulozy i Papieru*, 2, No. 2, 1-10(1953); cf. C.A. 47, 8307f, 48, 3027c.--The variables in the addn. to pulp at the beater stage of a urea-HCHO wet-strength resin (I) were studied on a lab. and com. scale. Since substantial increases of wet and dry strength properties of kraft paper were obtained with 3% of I, a reduction of the basis wt. of paper is suggested to a level where the strength of a treated sheet will equal that of an untreated sheet. The use of I should be directed mainly in the manuf. of paper for wrapping, bags, and sacks.

T. R. Zegree



cA

23

Gummed papers. Karol Palczak. *Przegląd Papier* 7, 73-83(1951).—Various types of gummed papers, their uses, and properties are reviewed. Raw materials used in the prepn. of gumming solns. and methods used in applying glues on the paper surface are discussed. T. R. Zegree

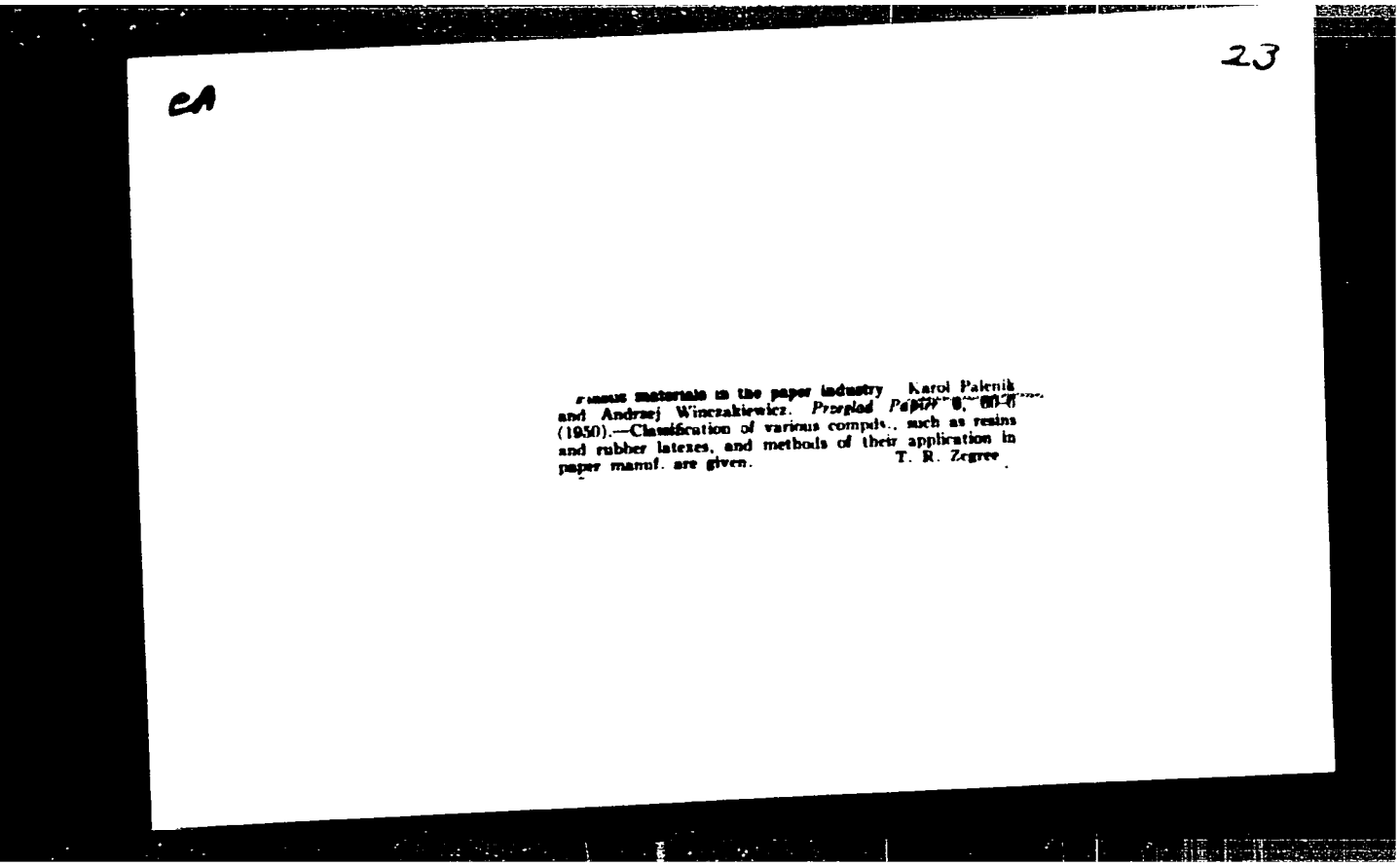
PALENIK, KAROL

Use of melamine-formaldehyde resins in the manufacture of wet-strength paper. Zofia Mysliñska and Karol Palenik. *Przegląd Papierniczy* 9, 319–20(1953).—A melamine-HCHO resin, produced on a semicom. scale in Poland under the designation "Preparat M-80" (I), was evaluated in making a high wet-strength map paper. Results indicated that I was in general comparable to the Swiss resin "Ciba 286." The disadvantages of I were a relatively long aging time (72 hrs.) and a fairly high amt. of insol. materials (about 5%) in a 2% HCl soln. The properties of the paper produced were about equal to those of papers currently made in the U.S.A. and U.S.S.R.

T. R. Zegree

SINIARSKA-CZAPLICK[illegible], Ma[illegible]lena, m/r.inz.; PALELIK, K[illegible]rol, m r.inz

[illegible] kraft [illegible]



23

CA

[redacted] materials in the paper industry. Karol Palenik and Andrzej Winczakiewicz. *Przegląd Papier* [illegible] (1950).—Classification of various compds., such as resins and rubber latexes, and methods of their application in paper manuf. are given. T. R. Zegree

CA

23

Surface sizing of paper. Karol Palenik and Andrzej Winczakiewicz. *Przegląd Papier* 7, 17-21(1951). — Various sizing materials, methods of their application, and properties of sized papers are discussed.
T. R. Zerrer

CZECHOSLOVAKIA/Cultivated Plants. Grains. M

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20285.

Author : S. Palenik.
Inst : Not given.
Title : The Use of Corn During the Period of Milky and Waxy Ripeness.
(Ispol'zovaniye kukuruzy v period molochno-voskovoy spelosti).

Orig Pub: Nas chov, 1956, No 14, 427-428.

Abstract: No abstract.

Card : 1/1

PETRICHENKO, Valentin Kuz'mich; PALENKO, A.V., otv. red.; SINYAVSKAYA, Ye.K., red.izd-va; LIBERMAN, S.S., red.izd-va; ANDREYEV, S.P., tekhn.red.

[Design and use of textolite bearings for rolling mills] Ustroistvo i ekspluatatsiia tekstolitovykh podshipnikov prokatnykh stanov. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 167 p. (MIRA 13:9)
(Rolling mills) (Plastic bearings).

PALENKO, I., kand.geograf.nauk; RIVLIN, A., zhurnalist; OSIPOV, K., zhurnalist; OVECHKINA, L.S., red.

[Blagoveshchensk is 100 years old] Blagoveshchensku 100 let. Blagoveshchensk, Amurskoe knizhnoe izd-vo, 1958. 53 p.
(Blagoveshchensk--Description) (MIRA 12:2)

SHUL'MAN, N.K.; ANDREYEVA, I.A.; PALENKO, I.A.; KOSITSYN, I.Ye.; TIL'BA, A.P.; BARANCHEYEV, L.M.; MOSKALENKO, A.V., red.; GOLOVIN, A.A., tekhn.red.

[Nature in Amur Province] Priroda Amurskoi oblasti. Blagoveshchensk, Amurskoe knizhnoe izd-vo, 1959. 308 p. (MIRA 13:4)

1. Amurskiy otdel Vsesoyuznogo geograficheskogo obshchestva (for all, except Moskalenko, Golovin).
(Amur Province--Geography)

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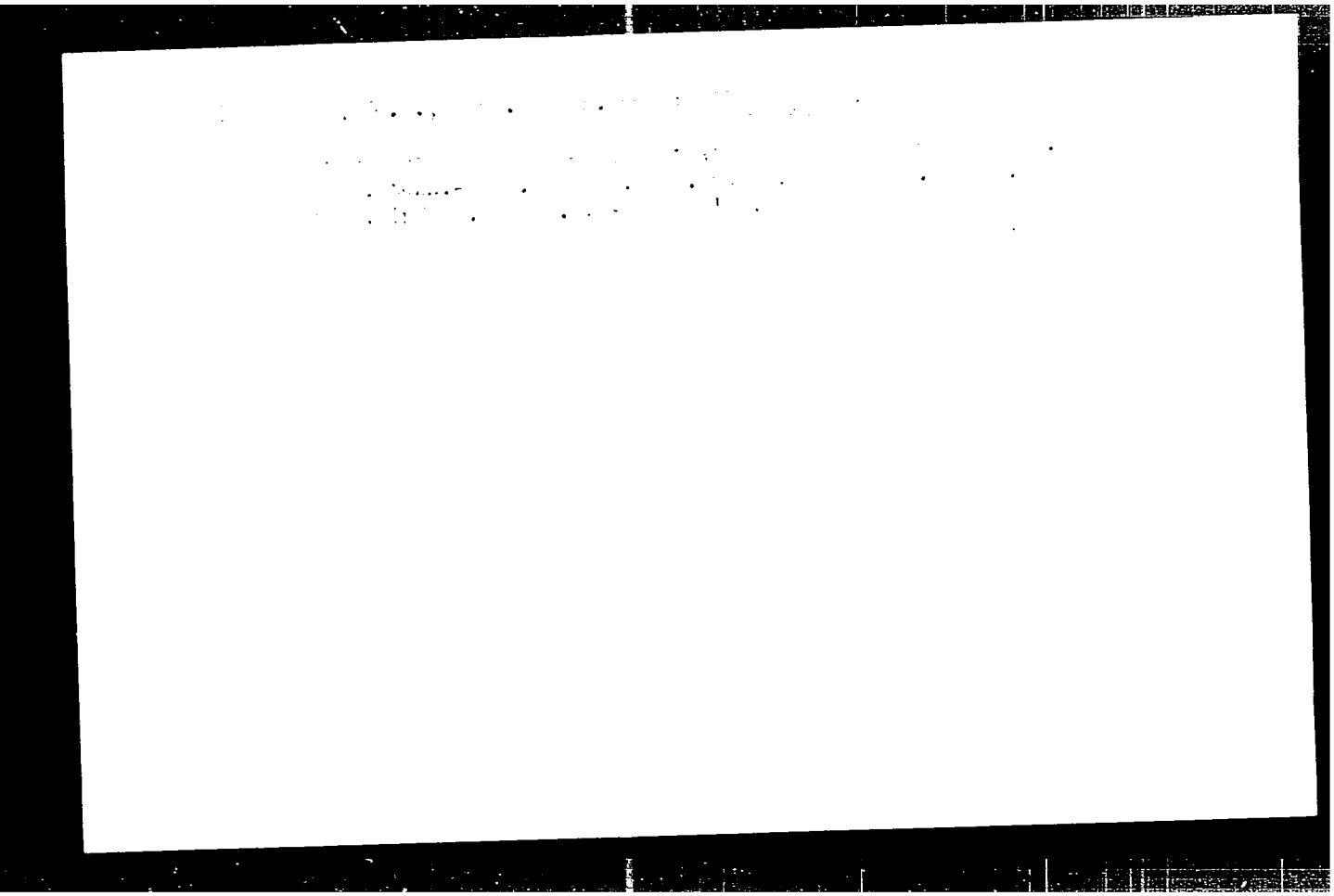
Dissertation: "Amurskaya Oblast (Economic-Geographic Features)." Cand Geog Sci, Moscow Oblast Pedagogical Inst, 24 May 54. Vechernyaya Moskva, Moscow, 24 May 54.

SO: SUM 284, 26 Nov 1954

PALENNYY, I.I.

"Day of the Innovator" in the open-hearth department of the K. Libknekht Plant. Met. i gornorud. prom. no.4:76-77 Jl-Ag '64. (MIRA 18:7)



PALENNYY I.I., inzh.

Mechanized gripping of charging boxes in an open-hearth shop.
Mekh.i avtom.proizv. 17 no.11:17 N '63. (MIPA 17:4)

PALENYY, I.I.

Greater attention to pipe finishing departments. Metallurg 9 no.4:40-41 Ap '64. (MIRA 17:9)

PALENNYY, I.I., inzh.

Conference on the mechanization and automatic control in pipe mill finishing sections. Met. i gornorud. prom. no.3:83 My-Je '63. (MIRA 17:1)

PALENCAR, J.;IVANCO, I.

On the problem of changes in the characteristics of defense respiratory changes in various areas of the respiratory tract during ontogenic development in rabbits. Cesk. fysiol. 8 no.6: 554 N '59

1. Fyziologicky ustav Lek. fak. UK, Kosice.
(RESPIRATION physiol.)
(AGING eff.)

B

USSR/General Biology. General Histology

Abs Jour : Ref Zhur-Biol., No 13, 1958, 57128

Author : Galenov A. I.
Inst : Not Given
Title : On the Content and Distribution of Nucleic Acid in the Neurosecretion Cells of the Diencephalon of Osseous Fish

Orig Pub : Dokl. AN SSSR, 1957, 112, No 6, 1122-1125

Abstract : Described are three basic types of neurosecretion elements in the diencephalon of osseous fish: dark and pale colored normal neurons, and their modified, degenerating forms. A study of the content and distribution of RNA and DNA in the nerve cells in the brain's nuclei in the adult species of the carp and white fish "leshch" was carried out by means of ultraviolet microscopy, the Feulgen reaction, and staining by

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17

MYACHKIN, V. I.; RIZNICHENKO, Yu. V.; PALENOV, A. M.

"Investigation of propagation of ultrasonic surface waves."

Joint paper with Ye. Vanek, K. Klima and Z. Pros, Geophysics Inst, Czech AS, presented at Acoustics of Solid Media Conf, Warsaw, 5-10 Oct 64.

Inst of Soil Physics, Moscow.

1970 PALENOV, I. F.

Tablitsy prirashcheniy pryamougol'nykh koordinat, prevysheniy i gorizontal'nykh prolozheniy. M., ugletekhizdat, 1954. 554s.; 1L. OTD. L. "poprauki na sekundy." 29sm. 5.000 EKZ. 59R. 50K. V per.--(54-56787) P

526 (083)

PALENOV, I.F.

Increment tables for rectangular coordinates, excesses, and horizontal plotting Moskva, Ugletekhizdat, 1954 553 p. (55-36909)

TA552.P25

1.Surveying-Tables, etc.

PALIKOV, I.I., SEREDNYAKOV, P.Ya., redaktor; SLAVOROSOV, A.Kh., redaktor; [illegible]EV, G.G., tekhnicheskiy redaktor

[Increment tables for rectangular coordinates, excesses, and horizontal plotting] Tablitsy prirashchenii priamougol'nykh koordinat prevyshenii i gorizonatl'nykh prolozhenii. Moskva, Ugletekhizdat, 1954. 553 p. (MLRA 8:4)

(Surveying—Tables, etc.)

PALENOV, Ivan Filippovich; SLAVOROSOV, A.Kh., red. izd-va; BERESLAVSKAYA, L.Sh., tekhn. red.

[Tables of the increase of rectangular coordinates and trigonometric functions] Tablitsy prirashchenii priamougol'nykh koordinat i trigonometricheskikh funktsii. 2. izd., dop. i ispr. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 564 p. (MIRA 15:1)

(Surveying--Tables, etc.)

PALEEOV, S.G., inshener.

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1. Stroitel'noye upravleniy Sedas.
(Peat machinery)

PALENOV, V.; SLASTENKO, Ye.

On the main and the most important. Sots. trud 5 no.12:145-149 D '60. (MIRA 14:6)

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SHAFRANOVA, V. P.; PALENOVA, N. G.

Some data obtained through a new method of injection into the arteries and veins of animal brains. Nauch. trudy Inst. nevr. AMN SSSR no.1:395-400 '60. (MIRA 15:7)

1. Institut nevrologii AMN SSSR i Institut pediatrii AMN SSSR.

(BRAIN—BLOOD SUPPLY)
(INJECTIONS, ANATOMICAL)

PALENOVA, N.G.

Effect of hyperthyroidism in pregnancy on the development of fetal spinal cord structures. Biul. eksp. biol. i med. 53 no.4:111-115 Ap '62. (MIRA 15:4)

1. Iz laboratorii razvitiya mozga i psikhonevrologicheskoy kliniki (zav. - chlen-korrespondent AMN SSSR prof. B.N.Klosovskiy) Instituta pediatrii (dir. - dotsent M.Ya. Studenikin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR D.D.Sokolovoy-Ponomarevoy.

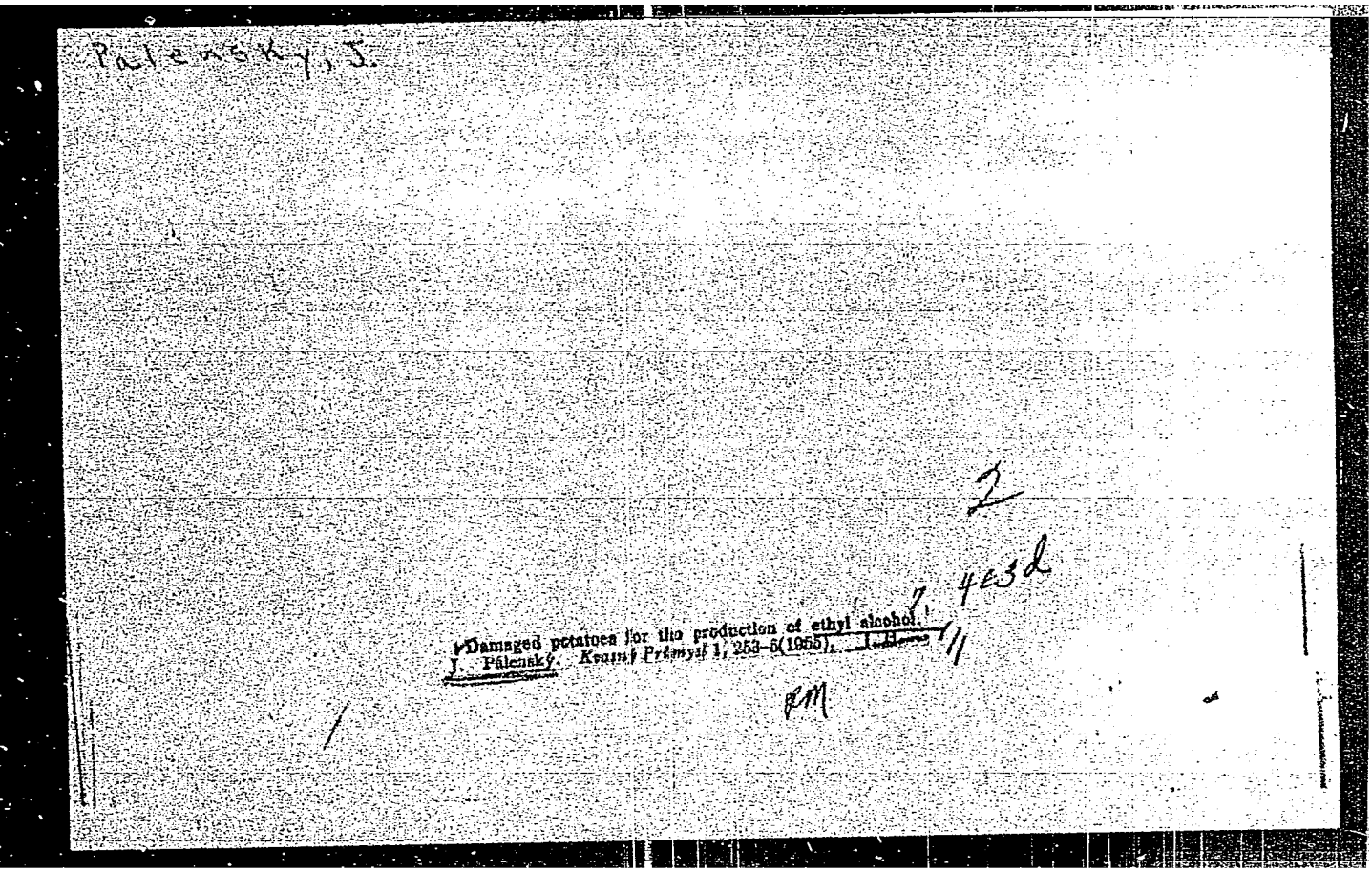
(FETUS) (SPINAL CORD) (PREGNANCY, COMPLICATIONS OF) (HYPERTHYROIDISM)

PALENOVA, N.G.

Neuron-capillary relationship in the phrenic nucleus of the antero-external group of spinal cord cells in adult cats. Biul.eksp.biol. i med. 48 no.7:107-109 Jl '59. (MIRA 12:10)

1. Iz otdela razvitiya mozga (zav. - chlen-korrespondent AMN SSSR prof.B.N.Klosovskiy) Instituta pediatrii (dir. - chlen-korrespondent AMN SSSR prof.O.D.Sokolova-Ponomareva) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR G.N. Speranskim.

(SPINAL CORD - anatomy & histology)



Palecek, J.

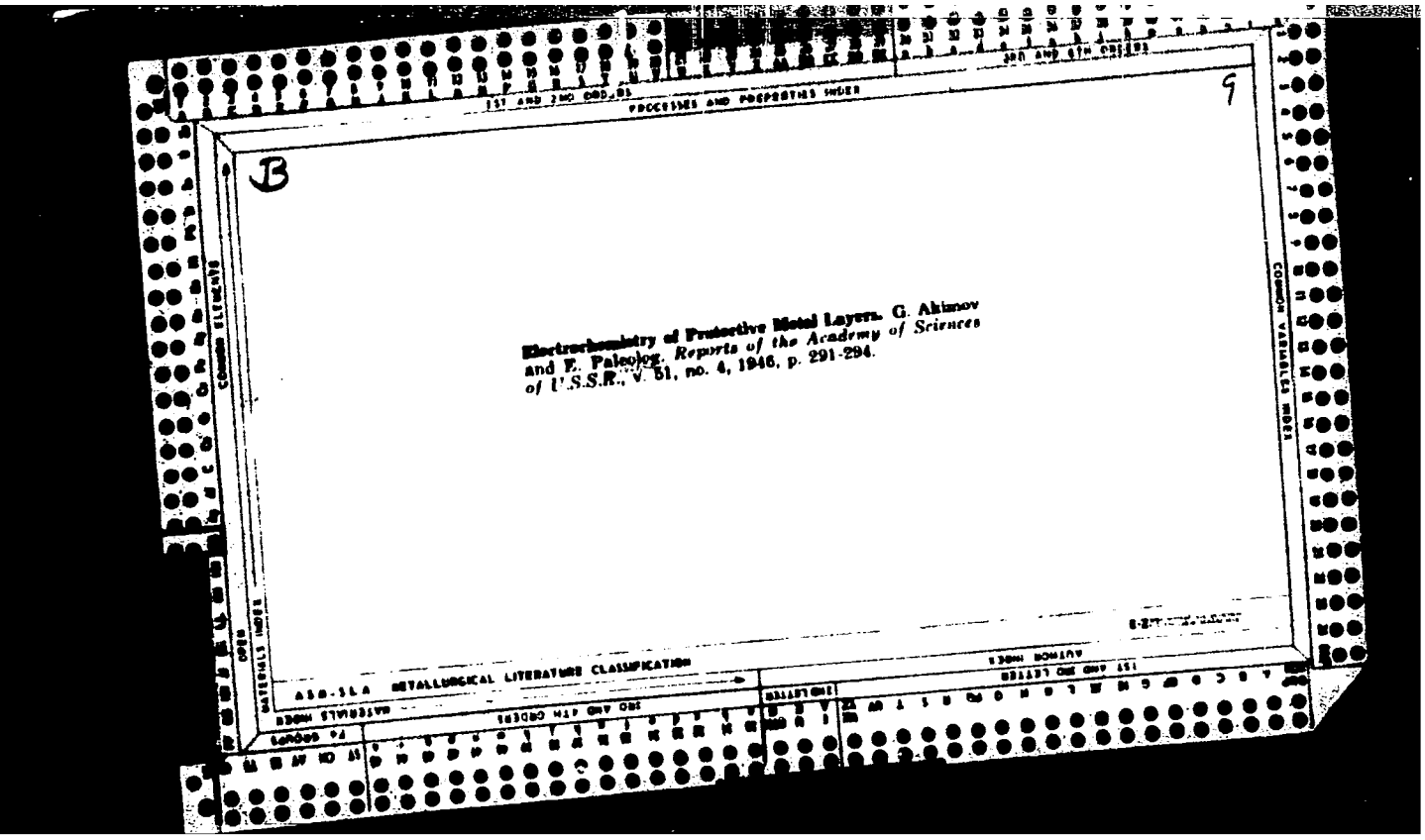
2

4632

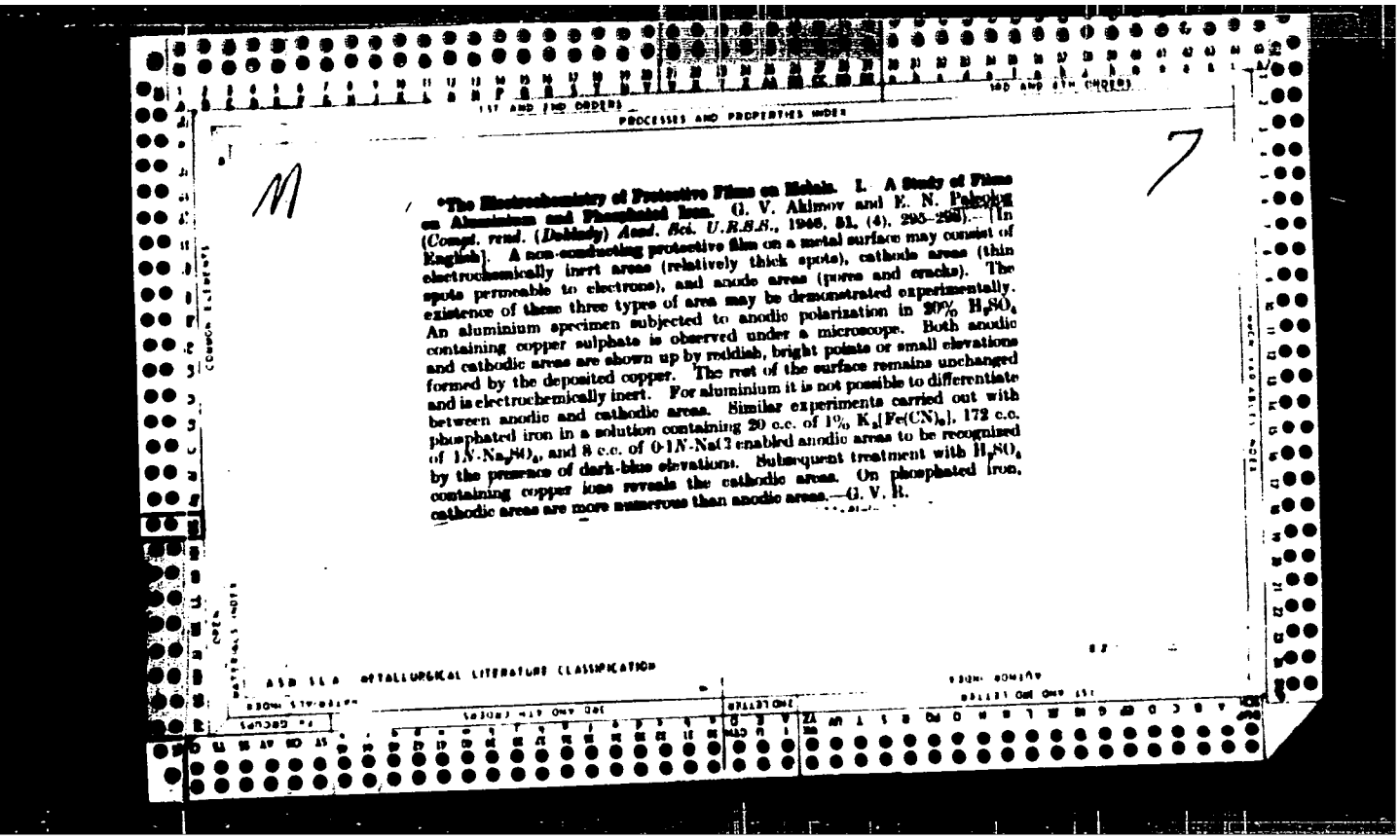
Damaged potatoes for the production of ethyl alcohol.
J. Pálecký. *Kvasný Průmysl* 1, 253-6(1955). [illegible]

BYT'KO, Nikolay Dmitriyevich; PALEOLOG, G.D., retsenzent; TOLSTIKOV, N.A., retsenzent; IVANOV, I.A., red.; VORONINA, R.K., tekhn. red.

[Physics for secondary special correspondence schools] Fizika dlia zaochnykh srednikh spetsial'nykh uchebnykh zavedenii. Moskva, Gos. izd-vo "Vysshaia shkola," Pt.1-2. [Mechanics. Molecular physics and heat] Mekhanika. Malekuliarnaia fizika i teplota. 1961. 323 p. (MIRA 15:3)
(Physics)



Electrochemistry of Protective Metal Layers. G. Akimov and F. Paleolog. *Reports of the Academy of Sciences of U.S.S.R.*, v. 51, no. 4, 1946. p. 291-294.



PROCESSES AND PROPERTIES INDEX

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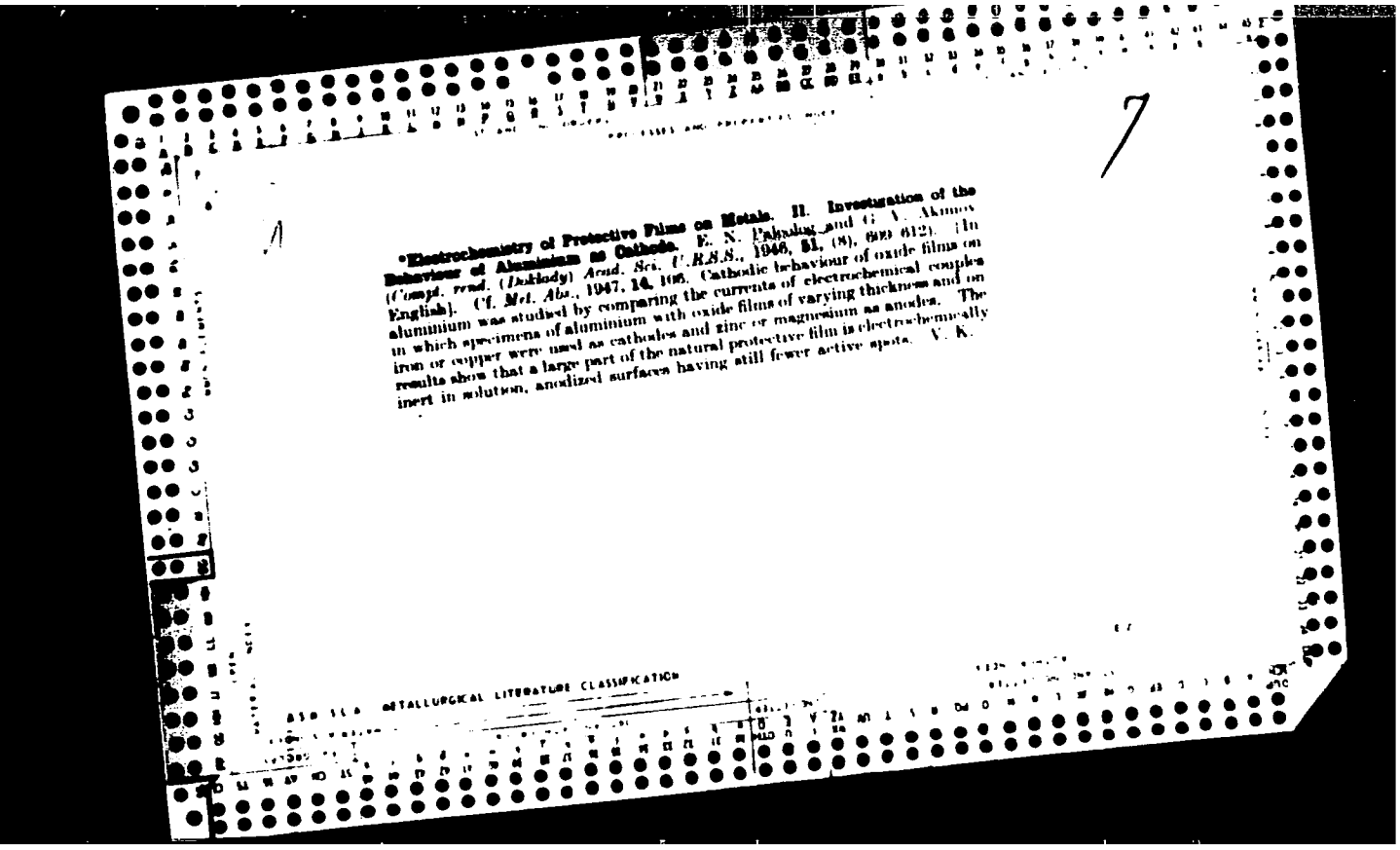
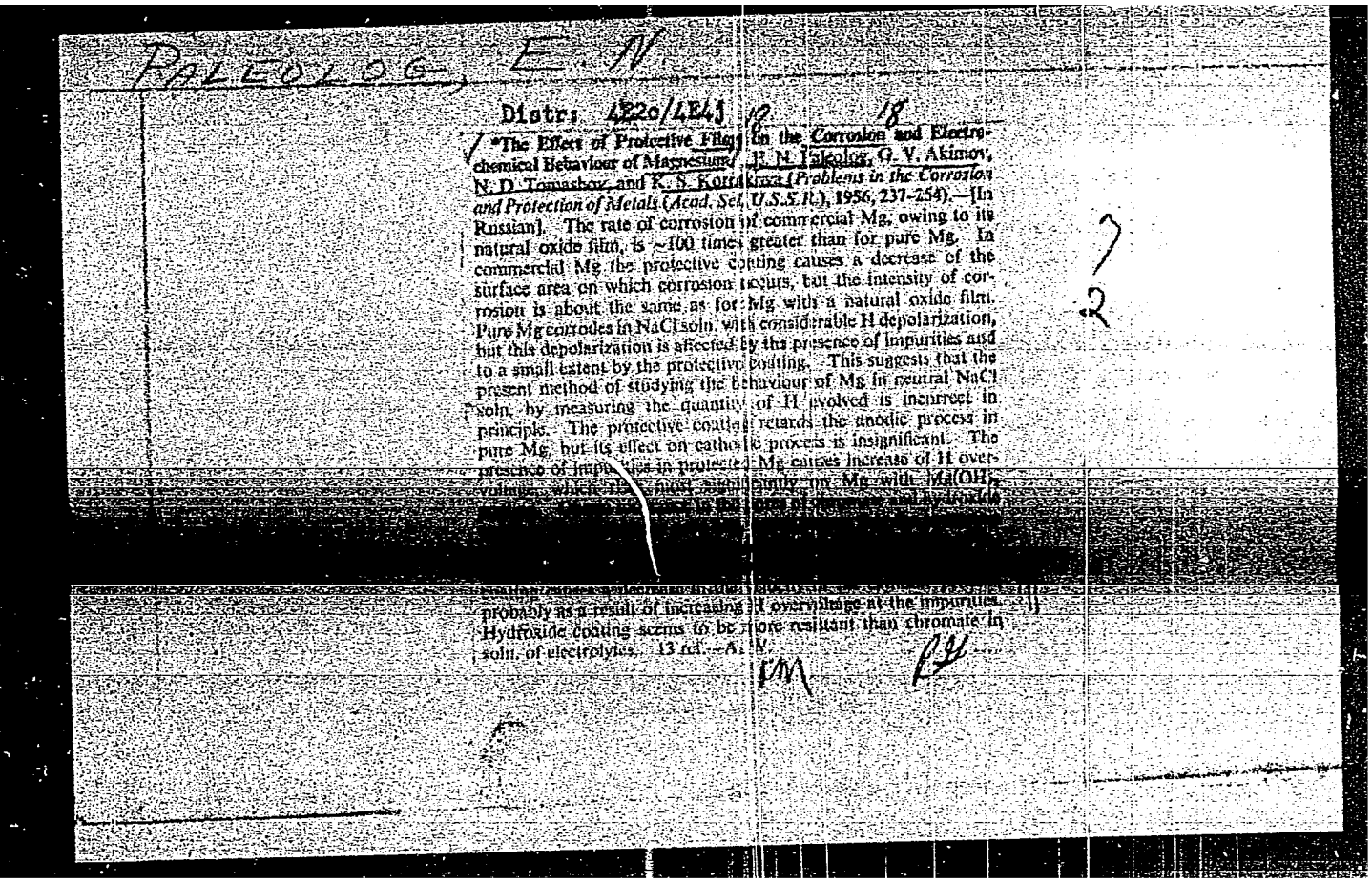
"The Electrochemistry of Protective Films on Metals. I. A Study of Films on Aluminium and Phosphated Iron. G. V. Akimov and E. N. Pokrovskaya (*Compt. rend. (Doklady) Acad. Sci. U.R.S.S.*, 1946, 51, (4), 295–298).—[In English]. A non-conducting protective film on a metal surface may consist of electrochemically inert areas (relatively thick spots), cathodic areas (thin spots permeable to electrons), and anodic areas (pores and cracks). The existence of these three types of area may be demonstrated experimentally. An aluminium specimen subjected to anodic polarization in 20% H_2SO_4 containing copper sulphate is observed under a microscope. Both anodic and cathodic areas are shown up by reddish, bright points or small elevations formed by the deposited copper. The rest of the surface remains unchanged and is electrochemically inert. For aluminium it is not possible to differentiate between anodic and cathodic areas. Similar experiments carried out with phosphated iron in a solution containing 20 c.c. of 1% $K_3[Fe(CN)_6]$, 172 c.c. of 1*N*-Na_2SO_4, and 8 c.c. of 0·1*N*-NaCl enabled anodic areas to be recognised by the presence of dark-blue elevations. Subsequent treatment with H_2SO_4 containing copper ions reveals the cathodic areas. On phosphated iron, cathodic areas are more numerous than anodic areas.—(G. V. R.



"Electrochemistry of Protective Films on Metals. II. Investigation of the Behaviour of Aluminium as Cathode. E. N. Pavlova and G. V. Akimov (*Compt. rend. (Doklady) Acad. Sci. U.R.S.S.*, 1946, **51**, (8), 609-612). [In English]. Cf. *Met. Abs.*, 1947, **14**, 106. Cathodic behaviour of oxide films on aluminium was studied by comparing the currents of electrochemical couples in which specimens of aluminium with oxide films of varying thickness and on iron or copper were used as cathodes and zinc or magnesium as anodes. The results show that a large part of the natural protective film is electrochemically inert in solution, anodized surfaces having still fewer active spots. V. K.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



PALEOLOG-1 E-IV

Distr: 4E2o/4E4j 12 18

√ "The Effect of Protective Film[s] in the Corrosion and Electrochemical Behaviour of Magnesium," P. M. Tolkolos, O. V. Akimov, N. D. Tomashov, and K. S. Kozlikova (*Problems in the Corrosion and Protection of Metals Acad. Sci. U.S.S.R.*), 1956, 237-254).—[In Russian]. The rate of corrosion of commercial Mg, owing to its natural oxide film, is ~100 times greater than for pure Mg. In commercial Mg the protective coating causes a decrease of the surface area on which corrosion occurs, but the intensity of corrosion is about the same as for Mg with a natural oxide film. Pure Mg corrodes in NaCl soln. with considerable H depolarization, but this depolarization is affected by the presence of impurities and to a small extent by the protective coating. This suggests that the present method of studying the behaviour of Mg in neutral NaCl soln. by measuring the quantity of H evolved is incorrect in principle. The protective coating on pure Mg retards the anodic process, but its effect on cathodic process is insignificant. The presence of impurities in protective Mg causes increase of H overvoltage, which [illegible] probably as a result of increasing H overvoltage at the impurities. Hydroxide coating seems to be more resistant than chromate in soln. of electrolytes. 13 ref.—A.

PALEOLOG, E.N.; AKIMOV, G.V.

Electrode potentials of aluminum with protective film of various thicknesses. Trudy Inst. Fiz. Khim., Akad. Nauk S.S.S.R. 2, Issledovaniya po Korrozii Metal. No.1, 5-21 '51. (MLRA 4:10)
(CA 47 no.13:6273 '53)

AKIMOV, G.V.; STOKLITSKIY, L.I.; PALEOLOG, Ye.N.

Apparatus for the determination of the corrosion rate by the amount of evolving hydrogen; hydrogen corrosimeter. Trudy Inst. Fiz.Khim., Akad. Nauk S.S.S.R. 3, Issledovaniya Korrozii Metal. No.2, 33-8 '51. (MLRA 4:10)
(Ca 47 no.16:7831 '53)

AKIMOV, G.V.; STOYLITSKIY, L.I.; PAVLOV, YE.N.

Corrosion and Anti-Corrosives

Device for determining the rate of corrosion by the amount of liberated hydrogen.
Trudy Inst. fiz.khim., AN SSSR, no. 3, 1951.

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

AKIMOV, G.V.; PALEOLOG, E.N.

Electrochemical behavior of aluminum in solutions with various anions. Trudy Inst. Fiz. Khim., Akad. Nauk S.S.S.R. 2, Issledovaniya po Korrozii Metal. No.1, 22-4 '51. (MLRA 4:10)
(CA 47 no.13:6281 '53)

PAL'OLOG, E. N.

ELECTROCHEMISTRY OF PROTECTIVE FILMS ON METALS. I. FILMS. ON ALUMINIUM AND PHOSPHATED IRON. G.V.AKIMOV AND E.N. PALEOLOG (COMPT. RND. ACAD. SCI. URSS 1946, 51, 295-298)The microstructure of films, in particular the presence of non-porous areas, cathodic areas permiable to electrons, and anodic areas with relatively large pores, has been studied by means of an electrolytic bath in which thefilm is subjected to polarisation while under microscopical exam. (X X50-150).Oxide films of Al, thickened by anodic polarisation and examined with $Cu^{\oplus}$ ions as cathode indicator, showed scattered bright dots of Cu on both anodic and cathodic pores. Phosphated Fe showed anodic pores as blue patches with $K_3Fe(CN)_6$ as indicator in anodic polarisation, and bright Cu deposits on cathodic pores (distinct from the anodic pores) with $Cu^{\ominus}$ as indicator in cathodic polarisation. L.J.J. Immediate source clipping

SOV. 137-58-8-18058

Translation from: Referativnyy zhurnal, Metallurgiya, 1958 Nr 8, p 265 (USSR)

AUTHORS: Nabokov, V S., Paleolog, Ye. N., Tomashov, N. D.

TITLE: A New Method of Determination of Porosity and Structure of Oxide Films on Metals (Novyy metod opredeleniya poristosti i struktury okisnykh plenok na metallakh)

PERIODICAL: Tr. In-ta fiz. khimii AN SSSR, 1957, Nr 6, pp 39-49

ABSTRACT: The method of evaluation of the fine structure of protective films(F) without their preliminary removal from the surface of the metal, applicable in principle to any metal and protective F, is described. The basis of the method lies in the ability of an F which is a porous body to adsorb gaseous or liquid matter which does not enter into chemical reaction with it. A specimen of Al with an anodic F is placed into the vacuum chamber of the apparatus at a strictly constant temperature of -72°C. With the aid of a special graduated feeder a small quantity of isopentane vapor is introduced into the chamber. After 10 - 15 min, i.e., upon termination of the adsorption, the equilibrium pressure was measured. Knowing the amount of the vapor introduced, the volume of the chamber,

A New Method of Determination of Porosity (cont.)

and the equilibrium pressure it is possible to calculate the amount of the adsorbed vapor. Introducing new measured amounts of gas it is possible to plot the relationship of the amount of adsorption with pressure. The descending branch of the curve does not coincide with the ascending one. The true surface of F was determined by the shape and dimensions of the curves. The hysterasis loop determined the range of relative pressures within which the capillary condensation went on and made it possible to calculate the radii of the pores their distribution with regard to effective radii, and also the predominant radius. The mean radius of the pores can be estimated by the volume of the liquid filling all the pores and the true surface of F. Protective F of various thicknesses were investigated at an anodizing time of 5, 14, 20, 60, and 120 min. It was demonstrated that with an increse in anodizing time from 5 to 120 min the true surface increases from 24 to 70 m^2/g. The weight of the F was determined after the test by dissolving it in a special solution It is demonstrated that the predominating pores are those with a radius ≤ 50 angstrom (except for those obtained by anodizing for 120 min.). It is shown also that upon saturation of F with distilled water at boiling temperature, the properties of the F become more like those of nonporous bodies. which is probably related to the hydration of the substance of the F and the complete or partial closing of the pores.

Card 2/2 1. Oxide films—Structural analysis 2. Oxide films—Porosity 3. Oxide films—Test methods

G. L.

30V/137-59-7-16036

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 7, p 255 (USSR)

AUTHORS: Nabokov, V.S., Paleolog, Ye.N., Tomashov, N.D.

TITLE: Determining the Structure of Protective Films on Metals by the Sorption Method

PERIODICAL: V sb.: Metody issled. struktury vysokodispersn. i poristykh tel. Moscow, AN SSSR, 1958, pp 137 - 145. Diskus. pp 151 - 16

ABSTRACT: A new adsorption method is described and a diagram is given of an installation for determining the structure of protective films on metals, their weight, thickness and porosity. A method is described of investigating anode films on Al. Isopentane was used as an adsorption substance. Experiments were carried out at a temperature of -72°C, maintained with an accuracy of ± 0.005°C with the use of a special cryostat. An anodized cylindrical specimen of 5 mm in diameter and 22 mm height was carefully washed, held in an exsiccator for 24 hours and was then charged into the installation to take adsorption isotherms. Removal of the film from the specimen surface was carried out in a special solution (20 g CrO_3, 35 g H_3PO_4 per 1 liter H_2O). The specimen was

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AM/137-59-7-16636

Determining the Structure of Protective Films on Metals by the Sorption Method

weighed on microscales prior and after removal of the film. The weighing accuracy was ~1%. On the basis of data obtained the true surface and thickness of the film were computed as well as the general volume of pores, their quantity and distribution over effective radii. The effect of various factors determining the structure of the protective film on Al was investigated. The results obtained confirmed the electrochemical mechanism in the development of anode films on Al in H_2SO_4 solutions and indicated that it took place directly in the solid phase. 20 bibliographical titles.

Z.F.

Card 2/2

PALEOLOG, Ye. N.

~~[illegible]~~ V

5(6) 3 PHASE I BOOK EXPLOITATION SOV/1408

Soveshchaniye po metodam issledovaniya struktury vysokodispersnykh i poristykh tel. 2d, Leningrad, 1956.

Metody issledovaniya struktury vysokodispersnykh i poristykh tel; trudy vtorogo soveshchaniya (Methods of Investigating the Structure of Highly Disperse and Porous Bodies; Transactions of the Second Conference) Moscow, Izd-vo AN SSSR, 1958. 298 p. 2,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut fizicheskoy khimii and Institut khimii silikatov.

Resp. Ed.: Dubinin, M.M., Academician; Ed. of Publishing House: Razumova, L.L.; Tech. Ed.: Markovich, S.N.

PURPOSE: This book is intended for scientists, teachers and advanced students interested in the structural analysis of highly disperse and porous bodies.

COVERAGE: This collection contains reports by members of various Soviet institutions of higher education: Institute of Physical Chemistry, AS UkrSSR; Institute of Chemistry, AS Georgian SSR; Far Eastern Branch, AS USSR; Georgian Scientific Research Institute for Petroleum; State Optical Institute; Leningrad Technological Institute; Moscow and Leningrad State Universities; Far Eastern Polytechnic Institute; "Agrophysical" Institute, and others. Introductory remarks were made by Professor N.A. Toropov, Director of the Institute of Silicate Chemistry. Apart from reports under the four subject divisions (see Table of Contents), the collection includes discussions, considerations and proposals adopted at the close of the conference.

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TOMASHOV, Nikon Danilovich. Prinimali uchastiye: TYUKINA, M.N.; PALEOLOG, Ye.N.; CHERNOVA, G.P.; MIKHAYLOVSKIY, Yu.N.; LUNEV, A.F.; TIMONOVA, M.A.; MODESTOVA, V.N.; MATVEYEVA, T.V.; BYALOBZHESKIY, A.V.; ZHUK, N.P.; SHREYDER, A.V.; TITOV, V.A.; VEDENEYEVA, M.A.; LOKOTILOV, A.A.; BERUKSHTIS, G.K.; DERYAGINA, O.G.; FEDOTOVA, A.Z.; POKIN, M.N.; MIROLYUBOV, Ye.N.; ISAYEV, N.I.; AL'TOVSKIY, R.M.; SHCHIGOLEV, P.V.. YEGOROV, N.G., red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Theory of the corrosion and the protection of metals] Teoriia korrozii i zashchity metallov. Moskva, Izd-vo Akad.nauk SSSR, 1959. 591 p. (MIRA 13:1)

(Corrosion and anticorrosives)

BERYAGINA, O.G.; PALEOLOG, Ye.N.; TOMASHOV, N.D.

Anodic solution of germanium with a p - n transition. Dokl. AN SSSR 133 no.2:388-391 Jl '60. (MIRA 13:7)

1. Institut fizicheskoy khimii Akademii nauk SSSR. Predstavleno akademikom A.N.Frumkinym.
(Germanium)

84248

S/076/60/034/009/008/015
B015/B056

1018
1145
54600 1153

AUTHORS: Deryagina, O. G., Paleolog, Ye. N., and Tomashov, N. D.

TITLE: Electrochemical and Corrosion Behavior of Semiconductors in Electrolytic Solutions. III. Dissolution of Germanium in Contact With Other Metals

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 9, pp. 1952-1959

TEXT: In the fusion of n-type germanium with indium, a narrow band of p - n junction may be obtained. If electric contacts (Cu wires) are soldered onto the germanium and indium with tin, and if the whole is insulated against air with the exception of the free Cu wire ends (e.g., with an epoxy resin shell), a plate cathode Ge - In - Sn - Cu is obtained (Fig. 1). As the surface of this diode is edged before being embedded into the resin shell, the electrochemical behavior of Ge in the many-electrode system Ge - In - Sn - Cu was investigated, and the mechanism of its dissolution was explained. The experiments were carried out in 1 N NaOH solutions of different H_2O_2 contents (0.3 N H_2O_2 and 1.0 N H_2O_2) or in pure

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S/076/60/034/001/004/[illegible]
B015/B064

Electrochemical and Corrosion Behavior of Semiconductors in Electrolytic Solutions. III. Dissolution of Germanium in Contact With Other Metals

17.5 N H_2O_2 solutions. Samples of n-type Ge (of the type ДМ(DM) : БМ ВМ ... In, Cu, and Sn embedded in polystyrene, as well as pairs of n-type Ge-... and n-type Ge-In, and ready diodes (of the type Дг4 22 (DGTs-22)) were used. The area of the electrodes in the diodes investigated are given in Table 1. The corrosion current of Ge, as well as the quantity of the dissolved Ge were determined by a colorimetric method (Ref. ...); the surface profile of Ge was measured by means of a microscope, the ... density and dissolution rate of Ge (in the pair Ge-Cu) was ... from the polarization diagram. A comparison between the experimental data and the calculated values (Table 2) shows that a self ... of Ge takes place, and that the latter increases with the H_2O_2 ...

In the many-electrode system investigated, Ge is the anode and Cu ... most effective cathode, whereas Sn and In are highly ... ing to conditions, act as a cathode or anode. The total ... Ge (Table 3, Ge Cu loss) in contact with Cu, In, and Sn ... the rate of anodic dissolution or self-dissolution, the ratio between

Card 2/3

Electrochemical and corrosion behavior of
Semiconductors in Electrolytic Solutions.
III. Dissolution of Germanium in Contact With
Other Metals

84248

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B015/B064

the two rates depending on the H_2O_2 content (Table 4), i.e., self-dis-
solution predominates in pure H_2O_2 solutions. The behavior of n-type Ge
during etching in the afore-mentioned solutions corresponds to the
activity of the Ge electrode in the system Ge - In - Sn - O, and is
subject to electrochemical rules. There are 6 figures, 4 tables, and
8 references: 7 Soviet and 1 US.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva
(Academy of Sciences USSR, Institute of Physical Chemistry,
Moscow)

SUBMITTED: December 13, 1958

Card 3/3

Paleolog, Ye. A.

PHASE I BOOK EXPLOITATION SOV/4271

Akademiya nauk SSSR. Institut fizicheskoy khimii

Issledovaniya po korrozii metallov. [vyp.] 5: Novyye metody i pribory dlya korrozionnykh ispytaniy (Investigations on Corrosion of Metals [No. 5]: New Methods and Instruments for Corrosion Testing) Moscow, Izd-vo AN SSSR, 1959. 176 p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 3,000 copies printed.

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PURPOSE: This collection of articles is intended for scientific workers at research institutes and technical personnel of plant laboratories.

COVERAGE: The articles included in this collection deal basically with methods of corrosion investigation which have not yet been published in Soviet periodical literature but are of definite interest for studying corrosion processes. A wide range of problems is covered. In addition to the methods discussed the articles provide some experimental data which make possible full utilization of each individual method. No personalities are mentioned. References accompany each article.

Investigations on Corrosion (Cont.) SOV/4271

[illegible], V.S., [illegible], and N. D. Tomashov. Adsorption Method for [illegible]ing the Porosity of Electroplating Coatings 159

[illegible], N.N., P.P. Zalivalov, and N.D. Tomashov. Electron-Microscope Investigation of the Microstructure of Anodic Oxidation Films on Aluminum 165

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Paleolog. Yu. A

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AUTHORS: Deryagina, O. G., Paleolog, Yu. A., Tomashev, N. D.

TITLE: Anodic Dissolution of Germanium With a p-n Transition

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2, pp. 388 - 391

TEXT: The objective of the present paper was to determine the conditions for a selective etching of the p-n transitions of germanium taking into account the electrochemical processes of the diode components at the boundary of the solution. The authors investigated the distribution of the potential, the current density, and the dissolving speed in the components of a germanium diode at various anodic polarizations. Indium-germanium diodes were used for the test in which germanium of the DM (DM) type, as well as a germanium single crystal with p-n transition were applied. The samples were embedded in epoxy resin and ground at a right angle to the In-Ge contact plane. They were then polished and after etching in H_2O_2 they were anodically polarized in 0.1 N NaOH or

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Anodic Dissolution of Germanium With a p-n Transition

0.1 N H_2SO_4 at room temperature and in dispersed daylight. The positive pole of the circuit was connected to the indium. The potential distribution was measured with a capillary detector, the depth of the solution (the profile of the surface) with a Linnik double microscope. The width of the zone of p-type germanium was determined by the precipitation of copper with cathodic polarization of the p-n transition in pyrophosphate solution. Fig. 1 shows the curve of the anodic polarization of indium, p- and n-type germanium in 0.1 N NaOH. A strong polarization occurs in In and n-Ge. In contrast to In the high degree of polarization of n-type germanium is not due to passivity but to the low degree of hole concentration. Fig. 2 shows the potential distribution on the surface of the diode at an anode current of 0.05 - 4.00 ma, Fig. 2b shows the surface profiles after 60 min and Fig. 2v gives the amperages obtained. The current density of n-Ge is greater than that of the anode current on the boundary of the solution. In the authors' opinion this is due to the injection of holes in n-Ge above the p-n transition. This is confirmed by Fig. 3 which shows that the anodic polarization of the n-Ge surface decreases as the distance from the

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AUTHORS: Paleolog, Ye. N., Korotkova, K. S., Tomashov, N. D.

TITLE: The Kinetics of the Electrode Processes on a Silicon Electrode in Acid and Alkaline Solutions

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1 pp. 170 - 173

TEXT: The authors investigated the discharge rate of hydrogen ions on silicon and the anodic dissolution rate of silicon in 0.2 N H_2SO_4, 1.0 N HF, and 5.0 N KOH at 25°C. n- and p-type single crystals of silicon with different resistivity (0.2, 10.0, and 23.0 ohm.cm) and a diffusion length of 0.5 mm were used for the investigation. The samples had the same crystal orientation. The surface was mechanically ground by means of boron carbide or etched at 80°C with a KOH-solution. Contact was established by means of rhodium electrolytically deposited on the sample and a soldered-on copper wire. Fig. 1 shows the curve of the cathodic polarization of n-type Si. In H_2SO_4 a considerable inhibition of the

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The Kinetics of the Electrode Processes on a Silicon Electrode in Acid and Alkaline Solutions

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H-ion discharge was observed also on Si with a ground surface. The presence of a semiconductive oxide layer is assumed, which proved that by means of a partial reduction of the layer with current reversal, and further by etching the KOH, polarization is considerably reduced. In 5.0 N KOH the oxide layer is soluble, the discharge rate of the H-ions depends only little on the resistivity of the Si-electrode, and the n-type Si behaves like a metal electrode. Fig. 2 shows the curve of the cathodic polarization of p-type silicon. Polarization is stronger than in n-type Si, the nature of the solution exerts little influence upon the kinetics of H-ion discharge. The anodic polarization is shown in Fig. 3. In H_2SO_4, the oxide layer is not soluble and has a high degree of ohmic resistivity. Si is highly polarized, and oxygen is separated. The presence of the oxide layer is proved by grinding-off the silicon electrode during the experiment. In this case, the slope of the polarization curve was considerably flattened up to a current density of 15 ma/cm^2. In the case of higher current densities, the oxide layer could not be completely removed. In 1.0 N HF, a different behavior of n- and p-type Si was observed. p-type Si was not passivated up to a current density of

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The Kinetics of the Electrode Processes on a Silicon Electrode in Acid and Alkaline Solutions

30 ma/cm^2. In the case of n-type Si, a hindrance of the anodic process occurred already at 1.0 ma/cm^2, which is explained by the hole limiting current being attained. The electrochemical behavior of silicon thus in electrolytes is in principle similar to that of germanium, and is determined by the type of conductivity. Silicon, however, differs from germanium by the formation of the chemically inactive SiO_2-layer with high ohmic resistivity which hinders the cathodic and anodic reactions. There are 3 figures and 6 references: 2 Soviet, 3 British, and 1 German.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

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