USSR/Chemistry - Pharmaceuticals Jan 52

"Synthesis of Polycyclic Compounds. XVI. Preparation of Meso Derivatives of Anthracene Using Organic Lithium Compounds," B. M. Mikhaylov, V.P. Bronovitskaya, Inst of Gen and Exptl Path, Acad Med Sci USSR

"Zhur Obshch Khim" Vol XXII, No 1, pp 147-162

Studied reaction of meso-halogen derivs of anthracene with n-BuLi and PhLi, leading to formation of org Li compds of anthracene series. PhLi is recommended due to absence of side reactions which occur in case of n-BuLi. Prepd

207T27

USSR/Chemistry - Pharmaceuticals (Contd) Jan 52

number of meso derivs of anthracene. Replacement of 2 Br atoms in dibromo derivs by 2 Li atoms under action of excess PhLi occurs to inconsiderable extent. Meso-chloro derivs do not react with PhLi. Org Li compds of anthracene series are relatively stable in ether.

207T27

BRONOVITSKAYA, V. P.

Chem Abs
v.48 25 Jan 54

Organic Chem

Orientation phenomena in substitution reactions with participation of organic compounds of the alkali metals. B. M. Mikhailov and V. P. Bronovitskaya. *Zhur. Obshchei Khim.* 23, 129–5(1953).—Refluxing 5 g. 2-methylanthraquinone, 4.5 g. Sn, and 34 ml. AcOH was treated over 2 hrs. with 11.5 ml. concd. HCl, then dild. with H_2O yielding methylanthrone, which was refluxed 3 hrs. with 6 g. Zn dust and 100 ml. 2*N* NaOH yielding 72.7% 2-methylanthracene, m. 208–9°. This (3 g.) in 75 ml. cold CS_2 was treated slowly with 2.5 g. Br in CS_2; after heating on a steam bath until HBr evolution ceased, the reaction mixt. yielded 75% crude or 63% pure *2-methyl-9-bromoanthracene* (I), m. 94.5–5.5° (from EtOH). Addn. of 2 g. 2-methyl-9,10-dibromoanthracene to 0.0058 moles PhLi in Et_2O and hydrolysis of the mixt. after 0.5 hr. with MeOH-Et_2O, and H_2O, gave 24% I, m. 93–5°; the mother liquor gave a mixt. (0.81 g.) of 2-methyl-9(and 10)-bromoanthracenes m. 43–53°. Similarly 0.0037 moles PhLi in soln. treated with 1 g. 2-methyl-9-bromoanthracene, then treated with 1.58 g. MeI gave 69.7% *2,9-dimethylanthracene*, m. 81–2°. BuLi (from 1.4 g. BuCl, 0.21 g. Li, and 30 ml. Et_2O) treated with 2 g I, kept 0.5 hr. then poured on Dry Ice, gave 51.7% *2-methylanthracene-9 carboxylic acid*, m. 197–8° [cf. Liebermann, *Ann.* 212, 35(1882); *CA.* 6, 2602]. This (0.9 g.) treated with 0.63 g. Br in CS_2 at 0°, then heated on steam bath as above, gave 50% *2-methyl-9-brome-10-anthracenecarboxylic acid*, m. 228–30.5° (from C_6H_6). Oxidized with CrO_3 in AcOH it gave 2-methylanthraquinone. To 3 g. 2-methyl-9,10-dibromoanthracene was added 0.729 g. PhLi in EtO-C_6H_6; after 60 min. the mixt. was treated with Dry Ice yielding 59% *2-methyl-9-bromoanthracene-10-carboxylic acid*, m. 235–8° (decompn., from dil. EtOH). Thus organometallic compds. of alkali metals behave as nucleophilic reagents. In such compds. with the metal being in o-position in respect to a neg. substituent there is established a link between the metal and the hetero-atom, that is similar to a H-bond, which apparently controls the orientation phenomena. G. M. K.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 938

Author: Mikhaylov, B. M., and Bronovitskaya, V. P.

Institution: None

Title: Synthesis of Thiazole Derivatives by the Use of Lithium-Organic Compounds

Original Periodical: Zh. obshch. khimii, 1956, Vol 26, No 1, 66-68

Abstract: The synthesis of 2,4-dimethyldiazolyl-5-lithium (I) is described together with its utilization in the synthesis of some 5-substituted 2,4-dimethyldiazoles. The carboxylation of I leads to the formation of 2,4-dimethylthiazole-5-carboxylic acid (II). The reaction of I with ethylene oxide yields 2,4-dimethyl-5-(β-ethoxy)-thiazole (III). Condensation of I with CH_2O and CH_3CHO yields 2,4-dimethyl-5-methoxy- (IV) and 2,4-dimethyl-5-α-ethoxythiazole (V), respectively. From V and CH_3I, 2,4,5-trimethylthiazole (VI) can easily be synthesized. All the reactions with lithium-organic compounds were carried under

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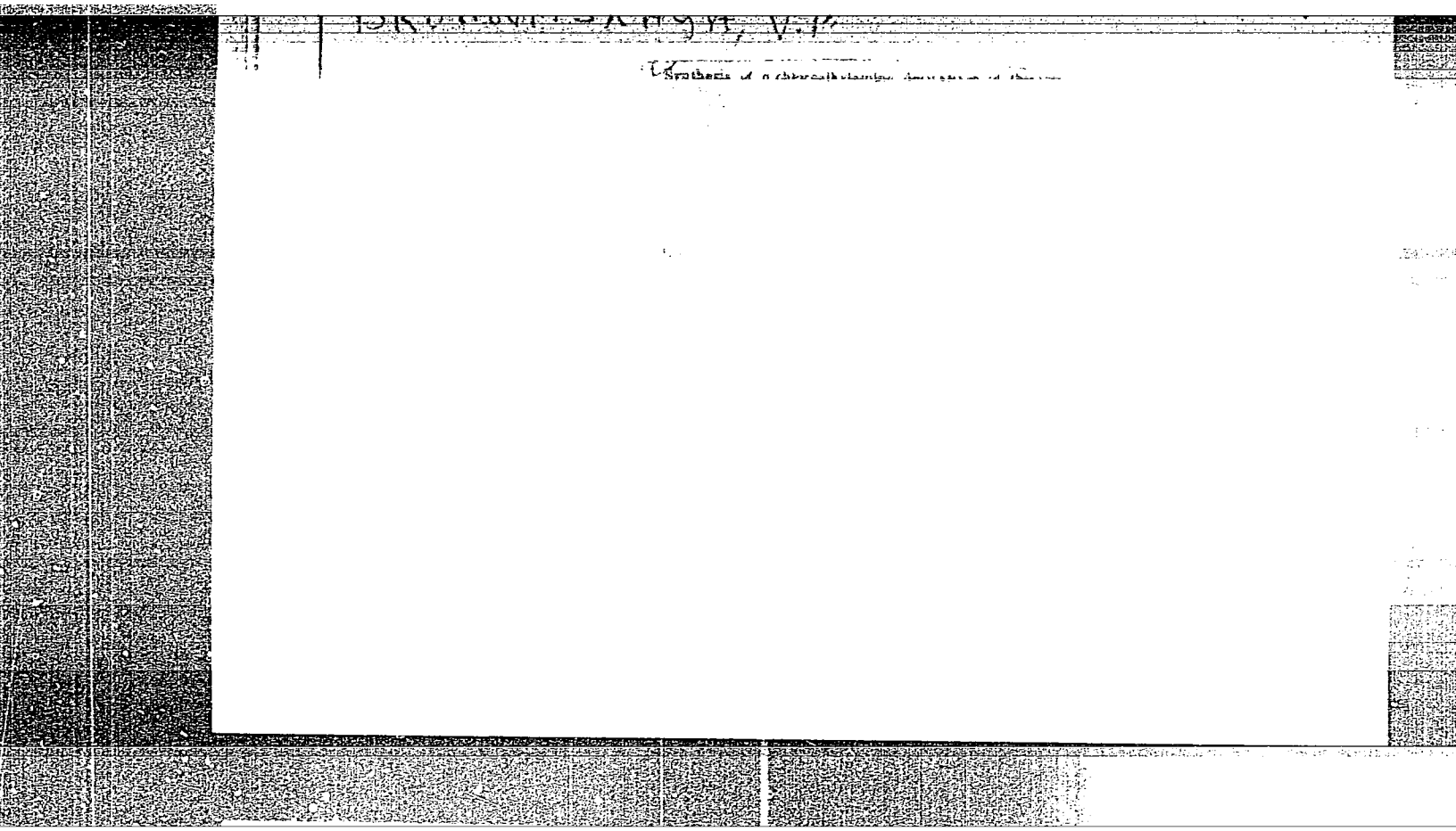
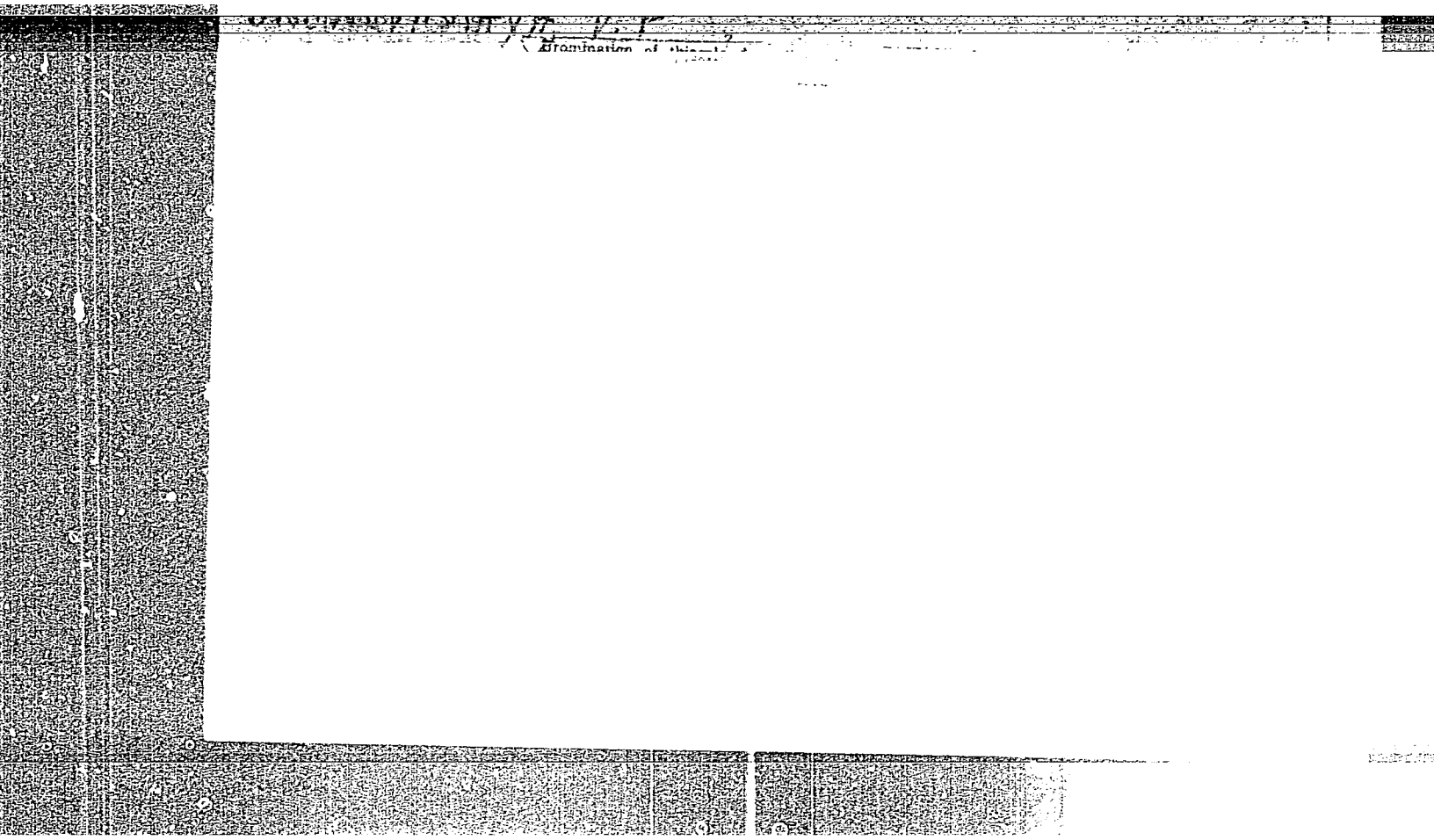
USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 938

Abstract: an atmosphere of N_2. To an ether solution of 0.516 gms C_6H_5Li add (<0°) an ether solution containing one gram of 2,4-dimethyl-5-bromothiazole (VII); after 15 minutes pour the mixture over dry ice, add ether and water, and acidify. II is obtained in yields of 73.5%, mp 230-231° (from water). To a solution of C_6H_5Li (from 24 gms C_6H_5Br and 2.1 gms Li in 90 ml absolute ether) add (<0°) an ether solution containing 20 gms VII, stir for 15 minutes, passing ethylene oxide through the solution, and hydrolyze. III is obtained in yields of 39.2%, bp 130-132°/6 mm. Similarly, if CH_2O vapor is passed through the mixture, IV is obtained (after 12 hours the solution is poured into dilute HCl and ice, neutralized with concentrated NH_4OH, and extracted with $CHCl_3$); the yield is 64%, bp 123-125°/4 mm, mp 43-45°, picrate - mp 106-107° (from alcohol), hydrochloride - mp 151-153° (from absolute alcohol). To I prepared from 20 gms VII add 9.2 gms CH_3CHO, mix at 20°, pour into dilute HCl and ice; V separates as an oil, as described above; yield 41.5%. The product decomposes on standing. From I (30 gms VII) and 66 gms CH_3I, VI is obtained in yields of 68.6%, bp 48-50°/14 mm; picrate, mp 135-136.5° (from alcohol).

Card 2/2





5.3900

77419
SOV/79-30-1-71/78

AUTHORS: Berlin, A. Ya., Bronovitskaya, V. P.

TITLE: p-Bis-(2-Chloroethyl)-Aminophenylalanine (Sarcolysin) and Its Derivatives. V. Heterocyclic Amides of Sarcolysin

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 324-327 (USSR)

ABSTRACT: Some of the p-bis-(2-chloroethyl)aminophenylalanylpeptides have, like sarcolysin, anticancerous properties, without having its toxicity. In view of this, N-acetylsarcolysin (thiazolyl-2)amide (I), N-acetylsarcolysin (4-methylthiazolyl-2)amide (II), N-acetylsarcolysin (piperidyl)amide (III), N-acetylsarcolysin (morpholyl) amide (IV), and N-formylsarcolysin (thiazolyl-2)amide (V) were synthesized by successive addition of equimolar quantities of 1,3-dicyclohexylcarbodiimide and corresponding heterocyclic amine in chloroform to a chloroform suspension of 0.01 mole of N-acylsarcolysine

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(method of Sheehan (Sheehan, J. C., Hess, G., J. Am. Chem. Soc., 77, 1067 (1955)). The reaction mixture was left at room temperature for 5 hr (except in preparation of compound V, when only 30 min was necessary) and filtered to separate the amide solution from the 1,3-dicyclohexylurea. The amide separated on the second day from the filtrate (or crystallized out after distilling the chloroform and adding absolute alcohol with subsequent cooling) and was recrystallized from absolute alcohol. Table A gives the yields and melting points of the compounds along with the preparation scheme for the first four. Since, according to F. Bergel and J. A. Stock (J. Chem. Soc., 1957, 4563; Proc. Roy. Soc., 1957, 60), a free amino-group in the sarcolysin compound is essential for anticancerous properties, the authors synthesized sarcolysin (thiazolyl-2)amide (VI) (by hydrolysis of N-formylsarcolysin (thiasolyl-2)amide (V)).

p-Bis-(2-Chloroethyl)-Aminophenylaline (Sarcolysin) and Its Derivatives. V. Heterocyclic Amides of Sarcolysin

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SOV/79-30-1-71/78

Table A. Heterocyclic amides of sarcolysin.

COMPOUND	EMPIRICAL FORMULA	YIELD (%)	MELTING POINT	FOUND (%)				CALCULATED (%)			
				C	H	N	Cl	C	H	N	Cl
(I) N-ACETYLSARCOLYSIN (THIAZOLYL-2) AMIDE (II)	$C_{18}H_{23}O_2N_4Cl_2S$	52.2	165.5–166.5°	50.35	5.04	12.62	16.53	50.35	5.13	13.05	16.55
(III) N-ACETYLSARCOLYSIN-(4-METHYLTHIAZOLYL-2)-AMIDE (IV)	$C_{19}H_{25}O_2N_4Cl_2S$	62.2	183–184	51.42	5.52	12.29	16.04	51.46	5.41	12.60	16.00
(V) N-ACETYLSARCOLYSIN (PIPERIDYL) AMIDE (VI)	$C_{20}H_{29}O_2N_3Cl_2$	57.4	148–149	57.95	7.02	10.45	16.89	57.97	7.00	10.14	17.15
(VII) N-ACETYLSARCOLYSIN (MORPHOLYL) AMIDE (VIII)	$C_{19}H_{27}O_3N_3Cl_2$	65.2	155–156	54.28	6.66	10.17	17.11	54.80	6.49	10.09	17.08
(IX) N-FORMYLSARCOLYSIN (THIAZOLYL-2) AMIDE	$C_{17}H_{20}O_2N_4Cl_2S$	80.5	170–171	49.15	4.81	12.93	16.86	49.15	4.82	13.49	17.10

(cont. next card)

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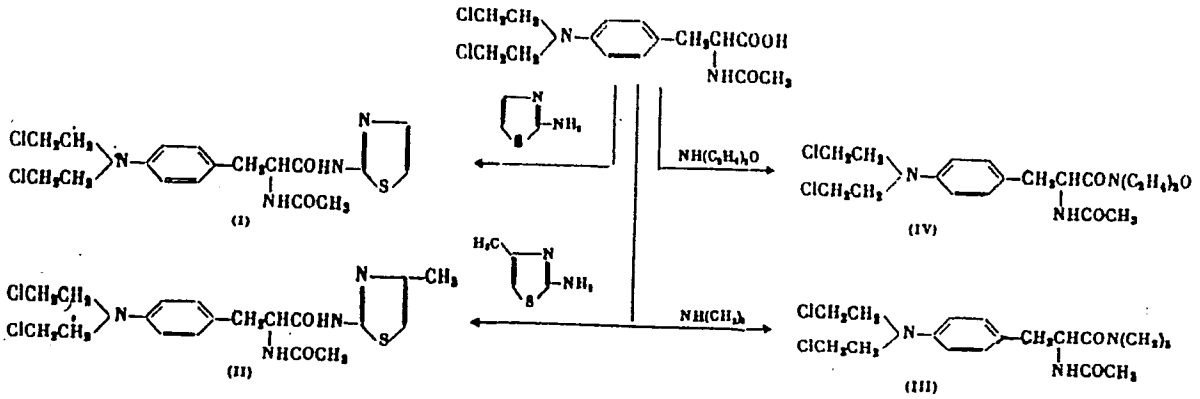
TABLE A (cont.)



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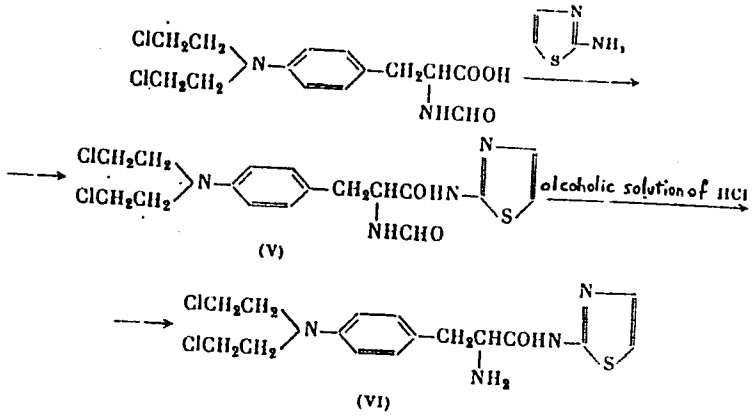
p-Bis-(2-Chloroethyl)-Aminophenylaline (Sarcolysin) and Its Derivatives. V. Heterocyclic Amides of Sarcolysin

77410
SOV/79-30-1-71/78

Preparation scheme for V and VI is shown below:



Card 5/6

p-Bis-(2-Chloroethyl)-Aminophenylaline (Sarcolysin) and Its Derivatives. V. Heterocyclic Amides of Sarcolysin

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SOV/79-30-1-71/78

Compound VI was prepared by dissolving 2.2 g of V in 300 ml of an alcoholic solution of 1N HCl and, after letting the solution stand at room temperature for 1 hr, concentrating it under vacuum to a small volume. The precipitate was filtered off and recrystallized from absolute alcohol (Yield 68%; mp 226-227°). The results of biological study of the synthesized preparates will be published elsewhere. There are 1 table; and 6 references, 3 Soviet, 2 U.K., 1 U.S. The U.S. and U.K. references are: J. C. Sheehan, G. Hess, J. Am. Chem. Soc., 77, 1067 (1955); F. Bergel, J. A. Stock, J. Chem. Soc., 1957, 4563; Pr. Roy. Soc., 1957, 60; S. Waley, Chem. and Ind., 1953, 107.

SUBMITTED: November 3, 1958

Card 6/6

BERLIN, A. Ya.; BRONOVITSKAYA, V.P.

ρ-Di(2-chloroethyl)-aminophenylalanine ("sarcolysin") and its derivatives. Part 6: Amides from N-acetylsarcolysine and some amines of the thiazole series. Zhur. ob. khim. 31 no.4:1356-1361 Ap '61. (MIRA 14:4)

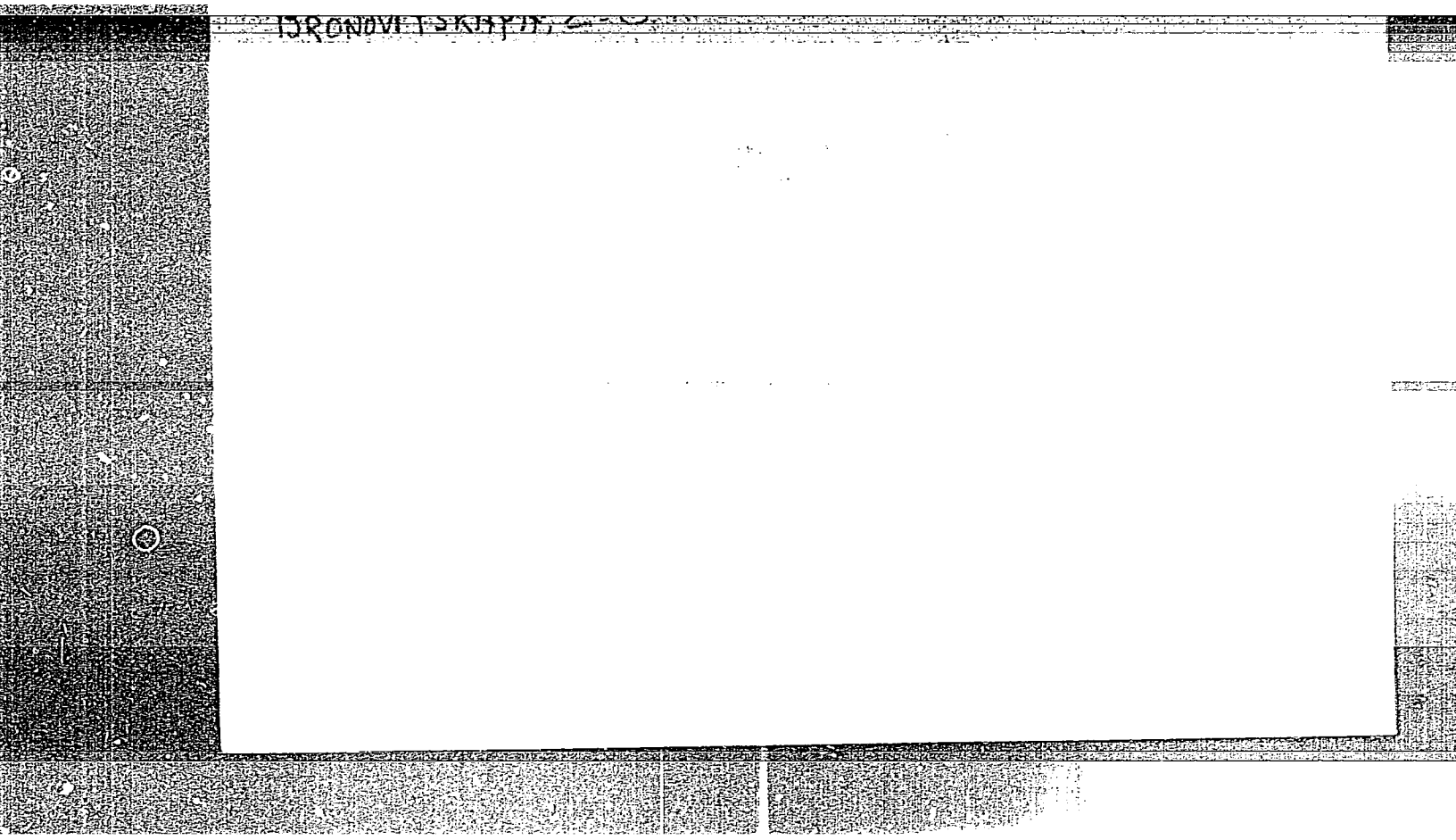
1. Institut eksperimental'noy i klinicheskoy onkologii Akademii meditsinskikh nauk SSSR.
(Amines)
(Sarcolysin)

BERLIN, A.Ya.; BRONOVITSKAYA, V.P.

Synthesis of β-[p-di(2-chloroethyl)aminophenyl]-β-hydroxypropionic acid. Zhur.ob.khim. 32 no.2:600-603 F '62. (MIRA 15:2)

1. Institut eksperimental'noy i klinicheskoy onkologii AMN SSSR.

(Propionic acid)



BRONOVITSKAYA, Z. G.

USSR / Human and Animal Physiology. Metabolism. Carbohydrate Metabolism. T

Abs Jour: Ref Zhur-Biol., No 22, 1958, 101674.

Author : Bronovitskaya, Z. G.
Inst : Rostov on-the-Don University.
Title : The Activity of Succindehydrogenase of Tissues Under Increased Oxygen Pressure.

Orig Pub: Uch. zap. Rostovsk. n/D un-ta, 1957, 28, 133-140.

Abstract: Guinea pigs were subjected to O_2 action under a pressure of 8 atm. After 24-57 min., the animals were taken out from the chamber and the general dehydrogenizing activity and activity of succindehydrogenase was determined in the brain and liver. The general dehydrogenizing activity of the brain tissue under increased O_2 pressure increased by 18.8%, and the activity of succindehydrogenase decreased by 20.6% compared to the control. In the liver, the general dehydrogenizing activity decreased by 28%; the activity of succindehydrogenase did not change. -- V. I. Rozengart.

Card 1/2

USSR / Human and Animal Physiology. Metabolism. Carbohydrate Metabolism. T

Abs Jour: Ref Zhur-Biol., No 22, 1958, 101674.

Abstract: creased by 20.6% compared to the control. In the liver, the general dehydrogenizing activity decreased by 28%; the activity of succindehydrogenase did not change. -- V. I. Rozengart.

UKRAINE/Human and Animal Physiology. The Nervous System. T

Abs Jour: Ref Zhur-Biol., No 8, 1958, 36851.

Author : Bronovitskaya, Z.G., Shapovalova, N.S.
Inst :
Title : The Glucose and Glycogen Values of the Brain in Animals Under Raised Oxygen Pressure.

Orig Pub: Ukr. Biokhim. zh. 1957, 29, No 1, 20-24.

Abstract: Rabbits were subjected during 1 hour to the action of O_2 under pressure of 4 atm. This produced an elevation of glycogen values by 65%, glucose by 21%. Subjection of the animals to 4 atm. pressure of O_2 during a period of 2 hours still more increased the glucose content without changing the glucogen content. Action of O_2 under 6 atm. pressure increased the value of glucose only by 15%, of glucogen by 53%.

Card : 1/1

Adenosinetriphosphoric acid (ATP), creatine phosphate (CP), and the activity of adenosinetriphosphatase (ATP-ase) of the brain under high-oxygen-pressure atmospherer. Z. S. Gershenovich and Z. G. Bronovitskaya (V. M. Molotov State Univ., Rostov-on-Don). *Biokhimiya* 20, 425-30 (1955); cf. *C.A.* 49, 10470d.—Rats and guinea pigs were divided into two groups each, the control groups were kept under normal conditions; the exptl. animals were placed in a special chamber of pure O under pressure of 6-8 atms. Animals so treated suffer four-stage effects: the excitement stage, when the test animals scurry around in the chamber, keep sniffing and exhibit motions of body washing; a short period of immobility; a period of intermittent convulsions of the muscles of the neck and later of the entire body, the intensity and frequency of which increase with the rise in the pressure; the convulsions cease, the animal falls on its side, respiration becomes arrhythmic and less frequent, and bloody foam appears at the mouth. In this terminal stage the animals die. After decompression animals were decapitated, the brains were quickly removed and placed in liquid air in which they froze within 1-1.5 min. The brain was then ground to a powder and extd. with 4 % CCl_3COOH for 10 min. at 2-4°. In the protein-free filtrate detns. were made for inorganic P (IP), ATP, and CP. No CP was demonstrated because it disappeared between the time of decapitation and freezing of the brain. In control animals ATP varied between 4.87-7.09 with an average of 6.44 mg. %; in exptl. animals it was 6.06-9.10 with an av. of 8.02 mg. %. In instances of extreme O intoxication IP diminished and ATP rose by 24.0%. No such changes in IP and ATP were detected in either the liver or heart, pointing to the brain-specificity of O intoxication effects. In control animals CP varied between 2.68-5.76 with an av. of 4.1 and in exptl. animals between 2.03-6.14 with an av. of 4.47 mg. %. The level of the easily hydrolyzed P of ATP varied between 4.17-9.40 with an av. of 6.70 mg. %. In rats subjected to acute O intoxication the ATP level remained unchanged. The activity of ATP-ase *in vitro* under O influences is reduced by an av. of 26%. *In vivo* ATP-ase activity is increased by an av. of 3%. B. S. Levine

17(3)
AUTHOR: Bronnitskaya, Z. G. SOV/20-124-6-41/55

TITLE: Oxidation-Phosphorylation in the Liver When Subjected to High Oxygen Pressure and on the Introduction of J^{131} (Okislitel'noye fosforilirovaniye v pechени pri deystvii vysokogo davleniya kisloroda i vvedenii J^{131})

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1331-1334 (USSR)

ABSTRACT: The content of adenosin-triphosphoric acid (ATPh) in the liver of rats and rabbits decreases rapidly on the influence of pure oxygen at 6 atmospheres excess pressure, until a severe post-convulsive state is attained (Ref 1). This problem required explanation. Either the intensity of ATPh synthesis decreased or its consumption increased, or both took place. The intensity of phosphorylation processes (with which respiration as well as the inclusion of inorganic phosphorus in the metabolic processes and, among other things, of the ATPh formation are related) is expressed in terms of the phosphorylation coefficient P/O (= ratio of the quantity of esterified phosphorus to the oxygen consumption during respiration). The author investigated the effect of the hyperoxia on the intensity

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of ATPh phosphorylation by means of the coefficient P/O under conditions mentioned in the title (1st experimental series). The method was described previously (Refs 1, 5). Table 1 gives the results obtained with rats. It may be seen from them that the respiration intensity of the hepatic tissue of animals being subjected to an oxygen pressure of 6 atmospheres excess pressure actually does not differ from the intensity in the animals used for checking. The capability of test animals of binding inorganic phosphorus was, however, greatly reduced. ATPh was also synthesized by their liver to a much lesser degree. Thus the phosphorylation processes and the accumulation of compounds rich in energy, which is related with them, are irreversibly disturbed by the O_2 influence mentioned in the title. Furthermore, the processes of ATPh consumption are affected. Thyroxine or 3-iodine-thyronine are able to reduce the P/O value in the liver as well (Refs 3, 4, 6, 7). The author further studied the interaction of both factors mentioned in the title. A radiation disease of the thyroid gland was produced by J^{131} in addition to the said O_2 pressure (2nd experimental series).

Oxidation-Phosphorylation in the Liver When Subjected to High Oxygen Pressure and on the Introduction of J^{131} SOV/20-124-6-41/55

The results are presented in table 2. In contrast with the results of the first experimental series (O_2 under pressure reduced the P/O value at unchanged O_2 consumption) the P/O value was increased by an oxygen 6 atmospheres excess pressure in animals previously iodized. In this case the O_2 influence was similar to that in vitro. The correlation detected requires further investigations. There are 2 tables and 10 references, 3 of which are Soviet.

ASSOCIATION: Rostovskiy-na-Donu gosudarstvennyy universitet (Rostov-on-Don State University)

PRESENTED: October 14, 1958, by A. I. Oparin, Academician

SUBMITTED: February 3, 1958

Card 3/3

BRONOVITSKAYA, Z. G., GERSHENOVICH, Z. S., (USSR)

"Participation of Hexosamine in the Ammonia Dynamics of the Brain."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug. 1961.

BRONOVITSKAYA, Z.G.; GERSHENOVICH, Z.S.

Oxidative phosphorylation of the brain exposed to oxygen under increased pressure. Biokhimiia 25 no.6:981-986 N-D '60. (MIRA 14:5)

1. State University, Rostov-on-Don.
(BRAIN) (PHOSPHORYLATION) (OXYGEN—PHYSIOLOGICAL EFFECT)

S/898/62/000/000/001/001
D296/D307

AUTHORS: Bronovitskaya, Z.G. and Gershenovich, Z.S.

TITLE: Glucosamine in the brain during exposure to high pressure oxygen

SOURCE: Uglevody i uglevodnyy obmen; materialy II Vsesoyuznoy konferentsii po probleme 'Khimiya i obmen uglevodov', 24-27 yanvarya 1961 g. Moscow, Izd-vo AN SSSR, 1962, 141-150

TEXT: Numerous metabolic processes in animal tissues including the brain tissue are connected with the liberation of ammonia. Ammonia metabolism and carbohydrate metabolism are closely interrelated and glucosamine is an important intermediate product of metabolism. Exposure to oxygen under high pressure (6 atmospheres) in pressure chambers leads to intoxication, convulsion and death. In this state the ammonia level of the brain exceeds the normal level by a factor of 10. To establish the tole of the intermediate product glucosamine in this process the authors exposed rabbits to high pres-

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sures of oxygen and investigated: 1) the synthesis of glucosamine by brain slices in a state of hyperoxia, 2) the glucosamine level in the brain under normal conditions and after exposure of the animals to oxygen, 3) the glucosamine levels in the serum, and 4) the activity of the enzymes participating in the synthesis of glucosamine. It was found that the synthesis of glucosamine in vitro by brain slices was not influenced by oxygen under high pressure. The glucosamine levels in the cortex of rabbits exposed to oxygen remained unchanged, but this does not necessarily mean that the rate of synthesis and the rate of utilization have increased to the same degree. The latter view was confirmed by the fact that high pressure oxygen leads to higher serum glucosamine levels and suppresses the activity of the transferase systems which participate in the synthesis of glucosamine. This means that less ammonia can be utilized in the brain to form glucosamine and this fact may serve as explanation for the disorders of ammonia metabolism observed during hyperoxia. There are 2 figures and 3 tables.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

BRONOVITSKAYA, Z.G. [Bronovyts'ka, Z.H.]; GERSHENOVICH, Z.S. [Hershenovych, Z.S.]

Enzymatic synthesis of glucosamine in the brain during hypercxia. Ukr.biokhim.zhur. 34 no.1:81-85 '62. (MIRA 17:5)

1. Department of Biochemistry of Rostov-na-Donu State University.

ACCESSION NR: AP4010766 S/0020/64/154/001/0220/0222

AUTHOR: Bronovitskaya, Z. G.; Gershenovich, Z. S.; Pisarenko, N.

TITLE: Enzyme synthesis of glucosamine in liver under hyperoxidation

SOURCE: AN SSSR. Doklady*, v. 154, no. 1, 1964, 220-222

TOPIC TAGS: glucosamine, glucosamine synthesis, enzyme, enzyme synthesis animal tissues, in vivo analysis, in vitro analysis, fructose 6-phosphate, ammonium ions, hyperoxidation, liver preparation, brain preparation

ABSTRACT: The possibility of the synthesis of glucosamine by enzymic liver preparation from fructose 6-phosphate and ammonium ions is investigated. Glucosamine could be synthesized in a system containing an enzyme, hexophosphate and glutamine or ammonium chloride. The experimental conditions are given and it is established that the synthesis is most intensive during the first 30 minutes. The volume of glucosamine synthesis from glutamine is 0.22 μ mole/hour ml, from

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ACCESSION NR: AP4010766

ammonium chloride about 0.16μ mole/hour ml. The experiments consist of two parts: (1) exposure of the animal to an increased oxygen pressure, (2) preparation of an enzymic preparation and the determination of its activity under usual gas conditions. It is found that after the action of oxygen the glucosamine content is 49% lower than in the control sample. The enzyme is affected by hyperoxidation and a comparison of the metabolisms in the liver and brain shows that the liver synthesizes glucosamine predominantly and the brain consumes it.

ASSOCIATION: none

SUBMITTED: 27May63	DATE ACQ: 10Feb64	ENCL: 00
SUB CODE: CH	NO REF SOV: 004	OTHER: 009

Card 2/2

ACCESSION NR: AT3013142 S/3018/63/000/000/0475/0481

AUTHOR: Bronovitskaya, Z. G.; Rumyantseva, L.

TITLE: Glucosamine deamination in brain sections under hyperoxia

SOURCE: Tret'ya Vsesoyuznaya konferentsiya po biokhimii nervnoy sistemy*. Sbornik dokladov. Yerevan, 1963, 475-481

TOPIC TAGS: glucosamine, glucosamine deamination, brain cortex, hyperoxia, brain cortex respiration intensity, free ammonia, glucose, glutamic acid

ABSTRACT: In the first of 2 series of experiments respiration intensity and ammonia formation in brain cortex sections of rats were determined under the following conditions: with no substrate added, with glucose added, with glucosamine added. In the second series deamination of glucosamine was investigated in brain cortex sections of rats incubated in a pressure chamber at 6 atm pure oxygen pressure at 37°C for 1 hr. Brain sections incubated in air served as a control. Animals were decapitated, brains removed, and brain sections prepared. Before the brain sections were incubated, their containers were saturated with oxygen for 5 min. Oxygen consumption of brain

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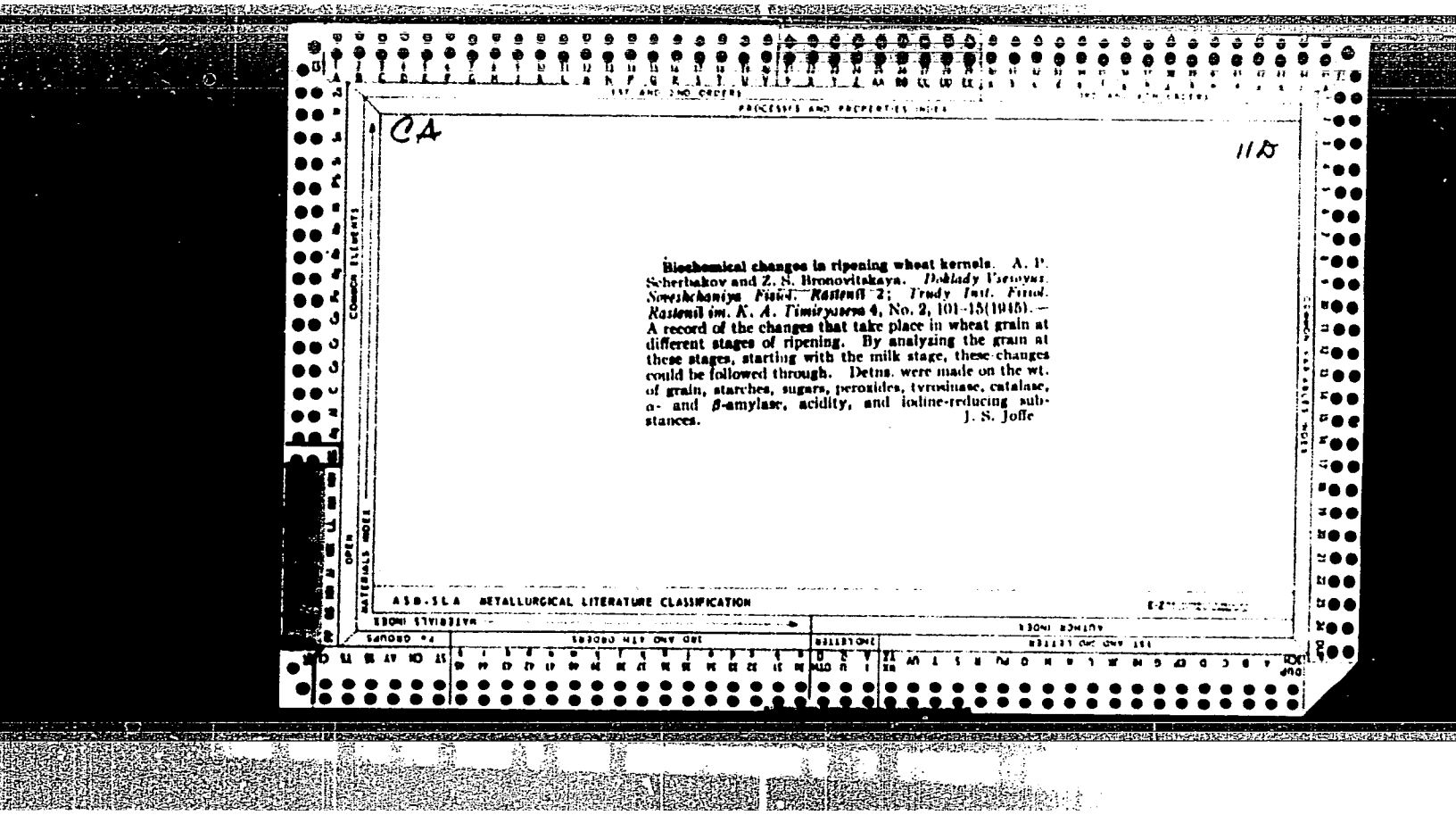
ACCESSION NR: AT3013142

sections was recorded every 20 min during the first hour of incubation and at the end of the second hour. Brain sections were fixated with cooled trichloroacetic acid after incubation and made into extracts. Ammonia was diffused for 20 hrs by Seligson's method, dyed with Nessler's reagent, and measured with a TEK-11 colorimeter. In separate experiments glucosamine and glutamic acid were determined by electrophoresis. Findings show that respiration intensity of brain cortex sections increases with addition of glucosamine the same as with the addition of an equimolecular quantity of glucose. Glucose sharply reduces accumulation of free ammonia in the brain sections and increases glutamic acid level. Free ammonia level rises with glucosamine deamination, which increases sharply with incubation of brain sections at 6 atm pure oxygen pressure. Glucosamine synthesis in the brain is inhibited by hyperoxia and its deamination is activated. Orig. art. has: 3 figures, 1 table.

ASSOCIATION: Kafedra biokhimii Rostovskogo n/D gosuniversiteta (Biochemistry Department of Rostov-on-Don State University)

SUBMITTED: 00 DATE ACQ: 28Oct63 ENCL: 00

Card 2/2 SUB CODE: AM NO REF SOV: 005 OTHER: 014

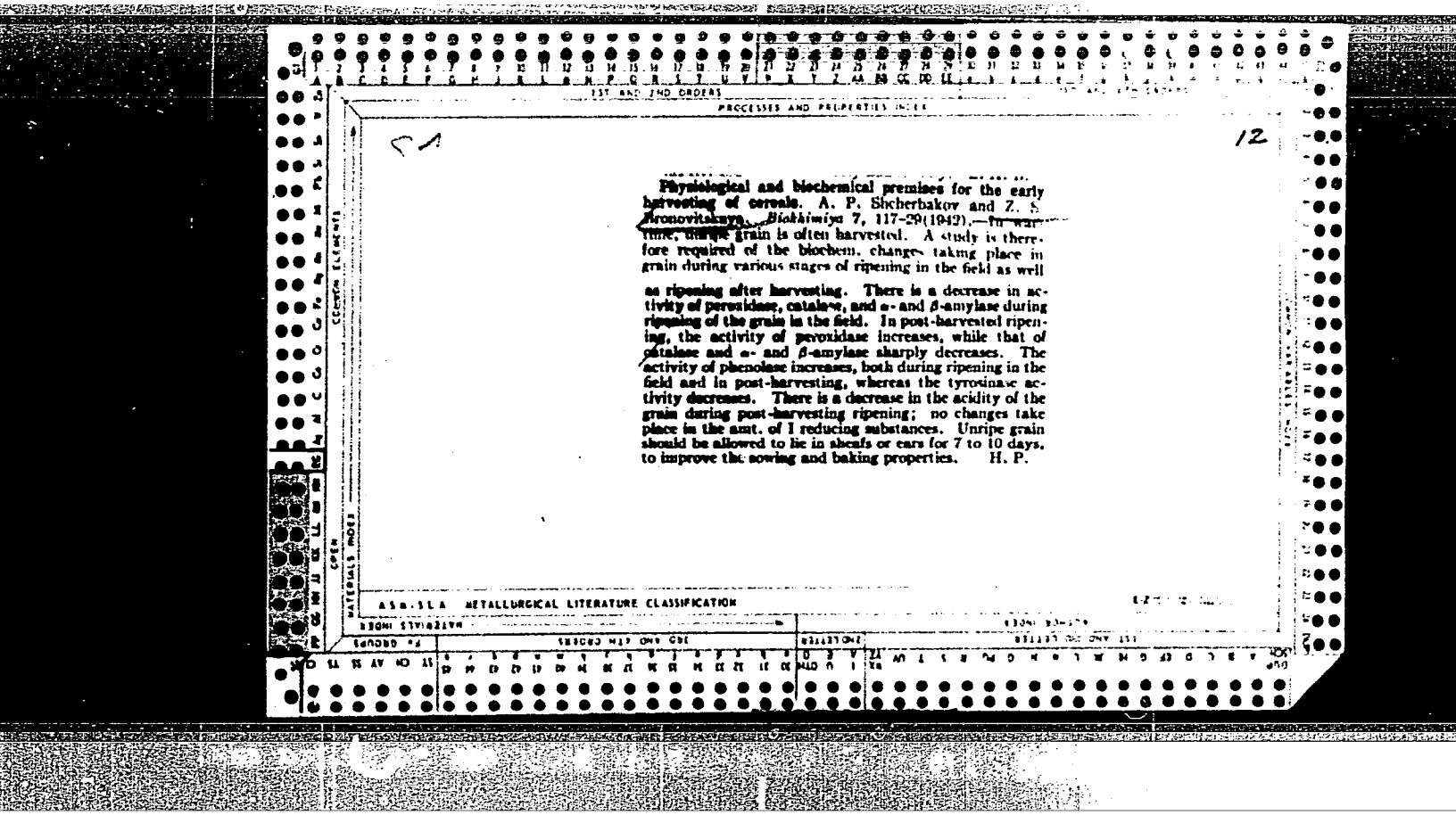

CA

11D

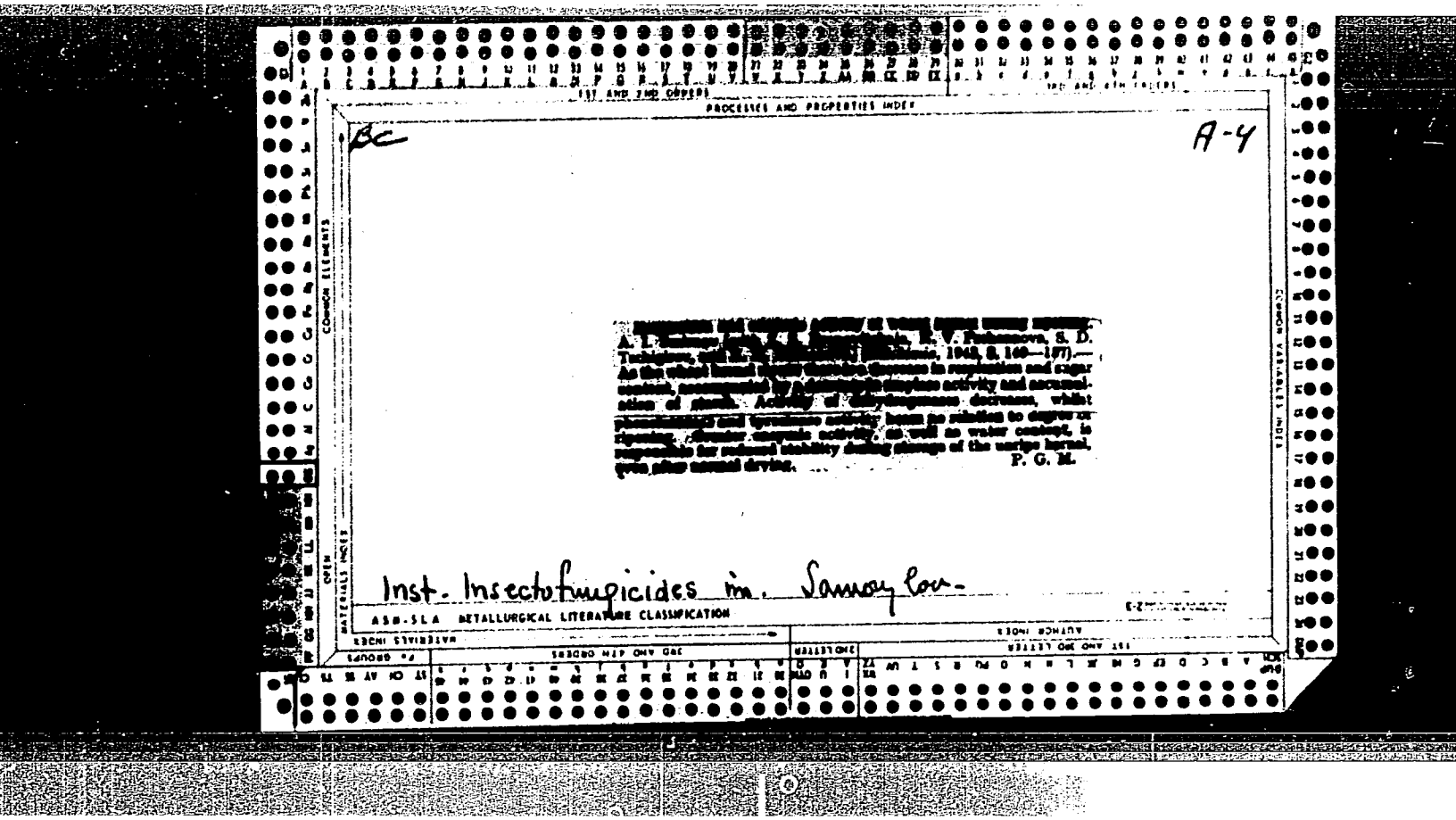
Biochemical changes in ripening wheat kernels. A. P. Scherbakov and Z. N. Bronovitskaya. *Doklady Vsesoyuz. Sovesh. Fiziol. Rastenii* 2; *Trudy Inst. Fiziol. Rastenii im. K. A. Timiryazeva* 4, No. 2, 101–15(1946).—A record of the changes that take place in wheat grain at different stages of ripening. By analyzing the grain at these stages, starting with the milk stage, these changes could be followed through. Detns. were made on the wt. of grain, starches, sugars, peroxides, tyrosinase, catalase, α- and β-amylase, acidity, and iodine-reducing substances.

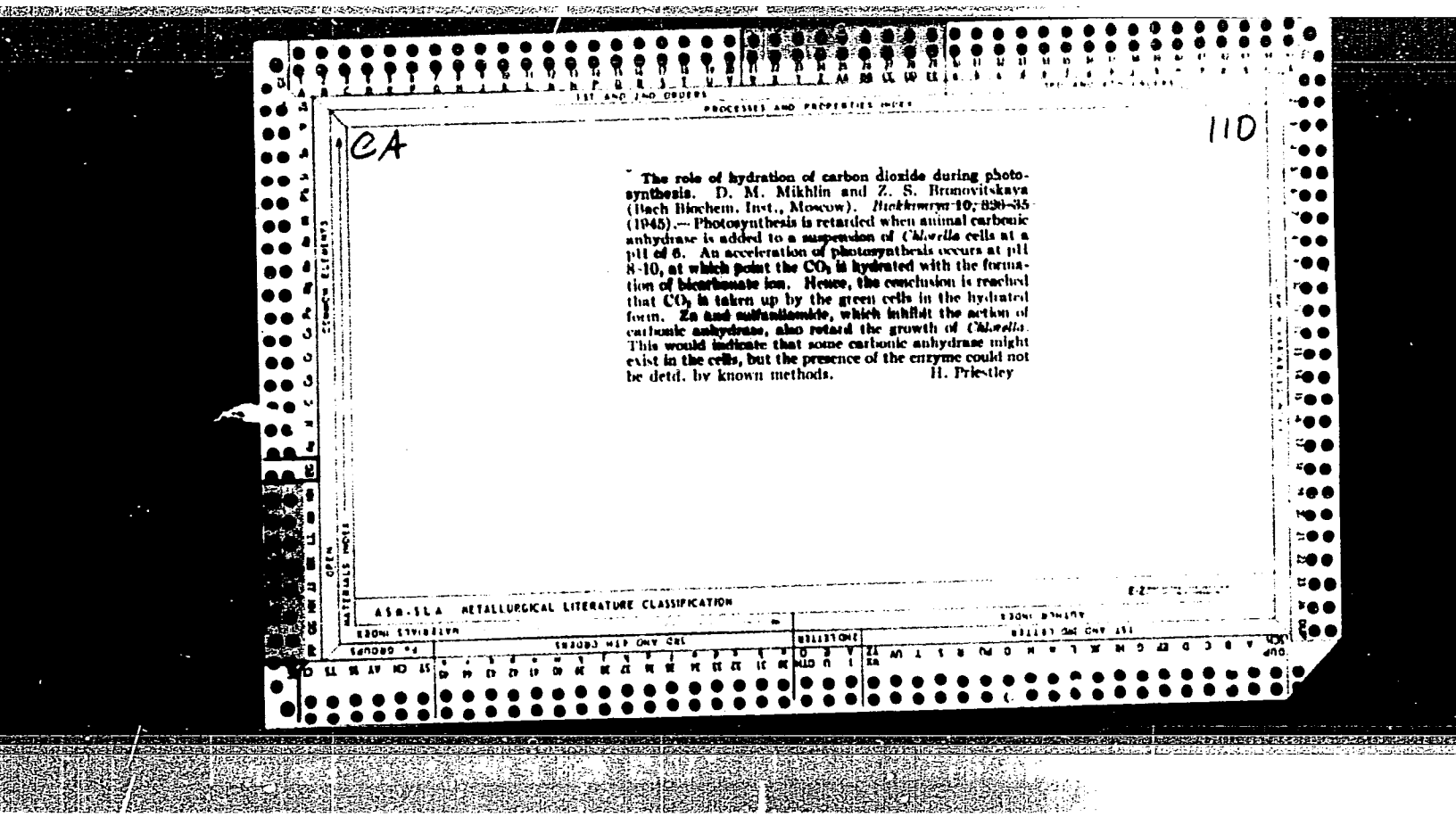
J. S. Joffe

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION



Physiological and biochemical premises for the early harvesting of cereals. A. P. Shcherbakov and Z. S. Bronovitskaya. *Biokhimiya* 7, 117-29(1942).—In wartime, unripe grain is often harvested. A study is therefore required of the biochem. changes taking place in grain during various stages of ripening in the field as well as ripening after harvesting. There is a decrease in activity of peroxidase, catalase, and α- and β-amylase during ripening of the grain in the field. In post-harvested ripening, the activity of peroxidase increases, while that of catalase and α- and β-amylase sharply decreases. The activity of phenolase increases, both during ripening in the field and in post-harvesting, whereas the tyrosinase activity decreases. There is a decrease in the acidity of the grain during post-harvesting ripening; no changes take place in the amt. of I reducing substances. Unripe grain should be allowed to lie in sheafs or ears for 7 to 10 days, to improve the sowing and baking properties. H. P.



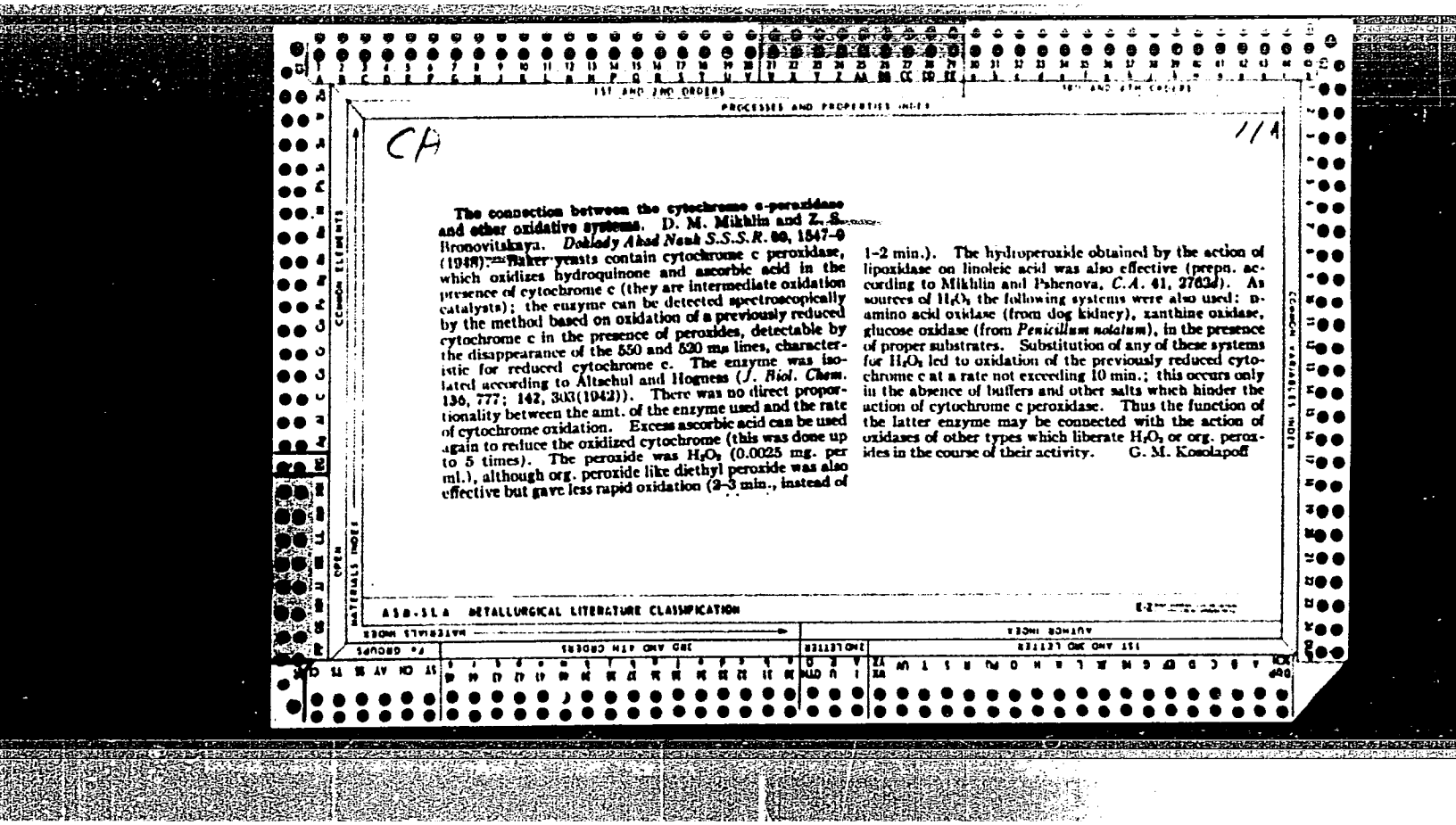


CA

11D

The role of hydration of carbon dioxide during photosynthesis. D. M. Mikhlin and Z. S. Bronovitskaya (Bach Biochem. Inst., Moscow). *Biokhimiya* 10, 830–35 (1945).—Photosynthesis is retarded when animal carbonic anhydrase is added to a suspension of *Chlorella* cells at a pH of 6. An acceleration of photosynthesis occurs at pH 8-10, at which point the CO_2 is hydrated with the formation of bicarbonate ion. Hence, the conclusion is reached that CO_2 is taken up by the green cells in the hydrated form. Zn and sulfanilamide, which inhibit the action of carbonic anhydrase, also retard the growth of *Chlorella*. This would indicate that some carbonic anhydrase might exist in the cells, but the presence of the enzyme could not be detd. by known methods. H. Priestley

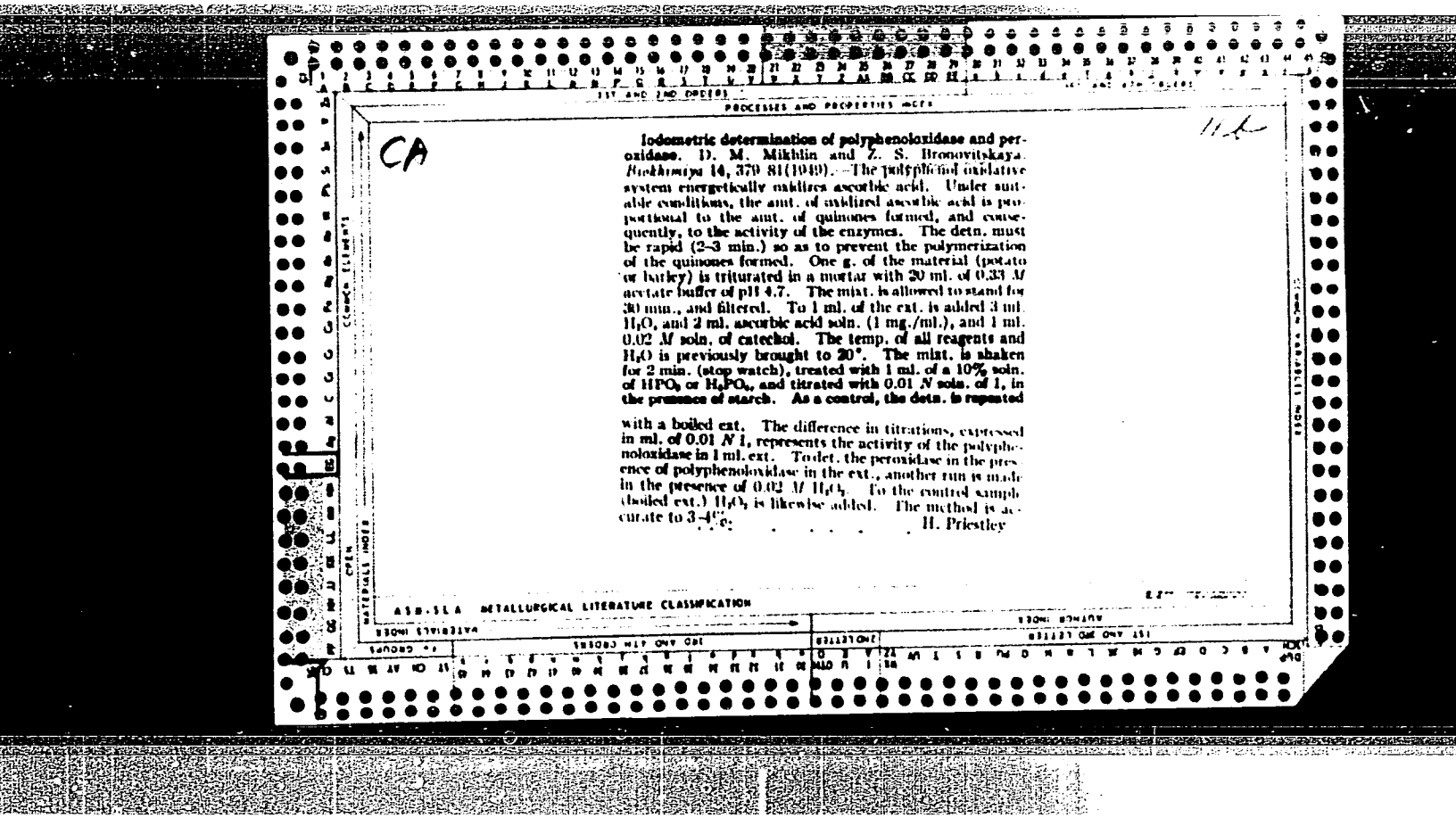
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CH

1/1

The connection between the cytochrome c-peroxidase and other oxidative systems. D. M. Mikhlin and Z. S. Bronovitskaya. *Doklady Akad Nauk S.S.S.R.* 60, 1547–9 (1948). Baker yeasts contain cytochrome c peroxidase, which oxidizes hydroquinone and ascorbic acid in the presence of cytochrome c (they are intermediate oxidation catalysts); the enzyme can be detected spectroscopically by the method based on oxidation of a previously reduced cytochrome c in the presence of peroxides, detectable by the disappearance of the 550 and 520 mμ lines, characteristic for reduced cytochrome c. The enzyme was isolated according to Altschul and Hogness (*J. Biol. Chem.* 136, 777; 142, 303(1942)). There was no direct proportionality between the amt. of the enzyme used and the rate of cytochrome oxidation. Excess ascorbic acid can be used again to reduce the oxidized cytochrome (this was done up to 5 times). The peroxide was H_2O_2 (0.0025 mg. per ml.), although org. peroxide like diethyl peroxide was also effective but gave less rapid oxidation (2–3 min., instead of 1–2 min.). The hydroperoxide obtained by the action of lipoxidase on linoleic acid was also effective (prepn. according to Mikhlin and Pshenova, *C.A.* 41, 2763d). As sources of H_2O_2 the following systems were also used: D-amino acid oxidase (from dog kidney), xanthine oxidase, glucose oxidase (from *Penicillum notatum*), in the presence of proper substrates. Substitution of any of these systems for H_2O_2 led to oxidation of the previously reduced cytochrome c at a rate not exceeding 10 min.; this occurs only in the absence of buffers and other salts which hinder the action of cytochrome c peroxidase. Thus the function of the latter enzyme may be connected with the action of oxidases of other types which liberate H_2O_2 or org. peroxides in the course of their activity. G. M. Kosolapoff



CA

Iodometric determination of polyphenoloxidase and peroxidase. D. M. Mikhlin and Z. S. Bronovitskaya. *Biokhimiya* 14, 379-81(1949).—The pulpfficial oxidative system energetically oxidizes ascorbic acid. Under suitable conditions, the amt. of oxidized ascorbic acid is proportional to the amt. of quinones formed, and consequently, to the activity of the enzymes. The detn. must be rapid (2–3 min.) so as to prevent the polymerization of the quinones formed. One g. of the material (potato or barley) is triturated in a mortar with 20 ml. of 0.33 *M* acetate buffer of pH 4.7. The mixt. is allowed to stand for 30 min., and filtered. To 1 ml. of the ext. is added 3 ml. H_2O, and 2 ml. ascorbic acid soln. (1 mg./ml.), and 1 ml. 0.02 *M* soln. of catechol. The temp. of all reagents and H_2O is previously brought to 20°. The mixt. is shaken for 2 min. (stop watch), treated with 1 ml. of a 10% soln. of HPO_3 or $H_4P_2O_7$, and titrated with 0.01 *N* soln. of I, in the presence of starch. As a control, the detn. is repeated with a boiled ext. The difference in titrations, expressed in ml. of 0.01 *N* I, represents the activity of the polyphenoloxidase in 1 ml. ext. To det. the peroxidase in the presence of polyphenoloxidase in the ext., another run is made in the presence of 0.02 *M* H_2O_2. To the control sample (boiled ext.) H_2O_2 is likewise added. The method is accurate to 3–4%.

H. Priestley

CA

11,3

Action of nitrate and other ions on peroxidase activity. D. M. Mikhlin and Z. S. Brouovitskaya (A. N. Bakh Biochem. Inst., Acad. Sci. U.S.S.R.). *Doklady Akad. Nauk S.S.S.R.* 65, 329-31(1949).—Peroxidase prepns. studied at pH 4.7 and optimum H_2O_2 concn. (0.002 *M*) are almost unaffected by concn. of acetate buffer (to 0.6 *M*). Addn. of other ions to such medium gave sharp reduction of activity: formate is most active, giving a 75% decline in 0.6 *M* soln., NO_3^- and Cl^- are somewhat less effective (40 and 50%, resp.). Na_2SO_4 gives a weak activation. The results are explained by ionic affinity for the hemin Fe atom, confirmed by spectrographic examn. of the products of such treatments, which show a moderate decline of extinction coeffs. at 640, 500, and 402 mμ, after formate or NO_3^- treatment.

G. M. Kosolapoff

USSR/Medicine - Oxidase and Peroxidase Mar 49
Medicine - Enzymes

"Influence of the Nitrate Anion and Other Anions Upon the Activity of Peroxidase," D. M. Mikhlin, Z. S. Broncvitskaya, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXV, No 3

Uses spectrum observations to confirm conclusion that, in certain conditions, some organic and inorganic anions exert a retarding action on peroxidase and that, as with catalysis, this negative influence may be explained by the blocking of one of the coordinate valencies of hemoglobin.

39/49766

USSR/Medicine (Contd) Mar 49

which has decided significance for the catalytic function of ferment. Table shows influence of formate and nitrate on peroxidase spectrum. Submitted by Acad A. I. Oparin, 27 Jan 49.

39/49766

BRONSVITSKAYA, Z. S.

Oxidising ferments and the degree of polymerisation of vegetable caoutchouc. D. N. MICHLIN and Z. S. BRONOVITSKAYA. *Doklady Akad. Nauk U.S.S.R.*, 1950, 71, 1089-91. Although isoprene has not been detected in living plants, the hypothesis according to which natural rubber is built up from isoprene must stand pending more definite data on the mechanism of its synthesis in nature. Investigation was proposed into the connection between the activities of enzymes liberating molecular or peroxidic oxygen and the intensity of the formation of rubber in kok-saghiz, the enzymes studied being polyphenoloxidase, peroxidase, and catalase. Since catalase proves to be the enzyme releasing molecular oxygen, it no doubt influences the size of the rubber molecule. The presence of small quantities of oxygen is necessary for the polymerisation of olefins, but abundance of oxygen may cause decomposition of the polymer. Peroxides should favour the growth of rubber molecules, but peroxidase plays a big part in decomposing peroxide even when catalase is present. Hence peroxidase tends to limit the size of the growing rubber molecule. Polyphenoloxidase also checks the polymerising process. 1228.32

Inst Biochem, im. A.N. Bakh, AS USSR

STEPANYAN, N. M. - BRONOVITSKAYA, Z. S. - DEMYANOVSKAYA, N. S.

2. USSR (600)

4. Vegetables

7. Stability of vitamin C in dried vegetables and potatoes during storage. Biokhimiia 17 no. 6, 1952

CA

The proposed accelerating action of latex catalase on isoprene polymerization. D. M. Mikhlin and Z. S. Ilmovetskaya (A. N. Bakh Biochem. Inst., Moscow). *Doklady Akad. Nauk SSSR* 82, 113-14(1952).--Investigation of the views expressed by Ambros (*C.A.* 31, 8933[illegible]) concerning the action of catalase in latex in the lab., indicated that the presence of even very active catalase failed to alter the order of synthesis of polyisoprene significantly. The expts. were done with kok-saghyz latex and emulsions of isoprene, H_2O_2, and Na oleate. Very active catalase from ox liver was employed. G. M. Kosolapoff

SISAKYAN, N.M.; BRONOVITSKAYA, Z.S.; DEMYANOVSKAYA, N.S.

Resistance of vitamin C in preserved dehydrated vegetables and potatoes. Biokhimiia, Moskva 17 no.6:701-703 Nov-Dec 1952. (CIML 25:1)

1. Institute of Biochemistry imeni A. N. Bakh of the Academy of Sciences USSR, Moscow.

BRONOVITSKAYA, Z. S.

USSR/Chemistry - Rubber, Accelerators 1 Jan 52

"The Suggested Accelerating Action of Latex Catalase on Isoprene Polymerization," D.M. Mikhlin, Z.S. Bronovitskaya, Inst of Biochem imeni A.N. Bakh, Acad Sci USSR

DAN SSSR, Vol 82, No 1, pp 113-114

Expt showed that the serum obtained from the latex of kok-saghyz roots has no appreciable effect on the rate of emulsion synthesis of caoutchouc from isoprene. Additions of catalase also had no effect on this synthesis. Presented by Acad A.N. Oparin 2 Nov 51.

252T8

BRONOVITSKAYA, Z. S.

Rubber Abst.
Vol. 32 No. 1
Jan. 1954
Planting

(CA 47 no. 19:10261 '53)

14. Dehydrogenases of kok-saghyz. V. M. MIKULIN and Z. S. BRONOVITSKAYA. *Doklady Akad. Nauk S.S.S.R.*, 1953, 89, 503-6; *Chem. Abs.*, 1953, 47, 10201. Kok-saghyz latex possesses reducing properties which are destroyed by boiling. The latex, however, does not usually contain a sufficiency of co-enzymes for full activation of its enzyme content. The latex itself can reduce methylene blue, and the process is accelerated by the addition of succinate, glutamate, fumarate, and maleate ions, and also ethyl alcohol and glyceraldehyde. Citric acid is ineffective. In the absence of cyanide, sprouts of kok-saghyz do not display the enzymic activity shown by the latex, the activity being developed in the presence of 0.05 *N* potassium cyanide. Addition of a suspension of sprouts to the solution extracted from wheat sprouts hinders the action of dehydrogenases of the latter. This inhibition is caused by the presence in kok-saghyz of an enzymic inhibitor system, possibly ions of heavy metals, whose concentration in the latex is low. The greatest dehydrogenase activity of kok-saghyz latex is in the fresh preparation stabilised by 0.87% of potassium hydrogen phosphate. Young sprouts show some alcohol dehydrogenase, malcic dehydrogenase, and glutamic dehydrogenase only after treatment with potassium cyanide; fumarase can also be detected. Roots of kok-saghyz show no dehydrogenases even in the presence of potassium cyanide. 1C32

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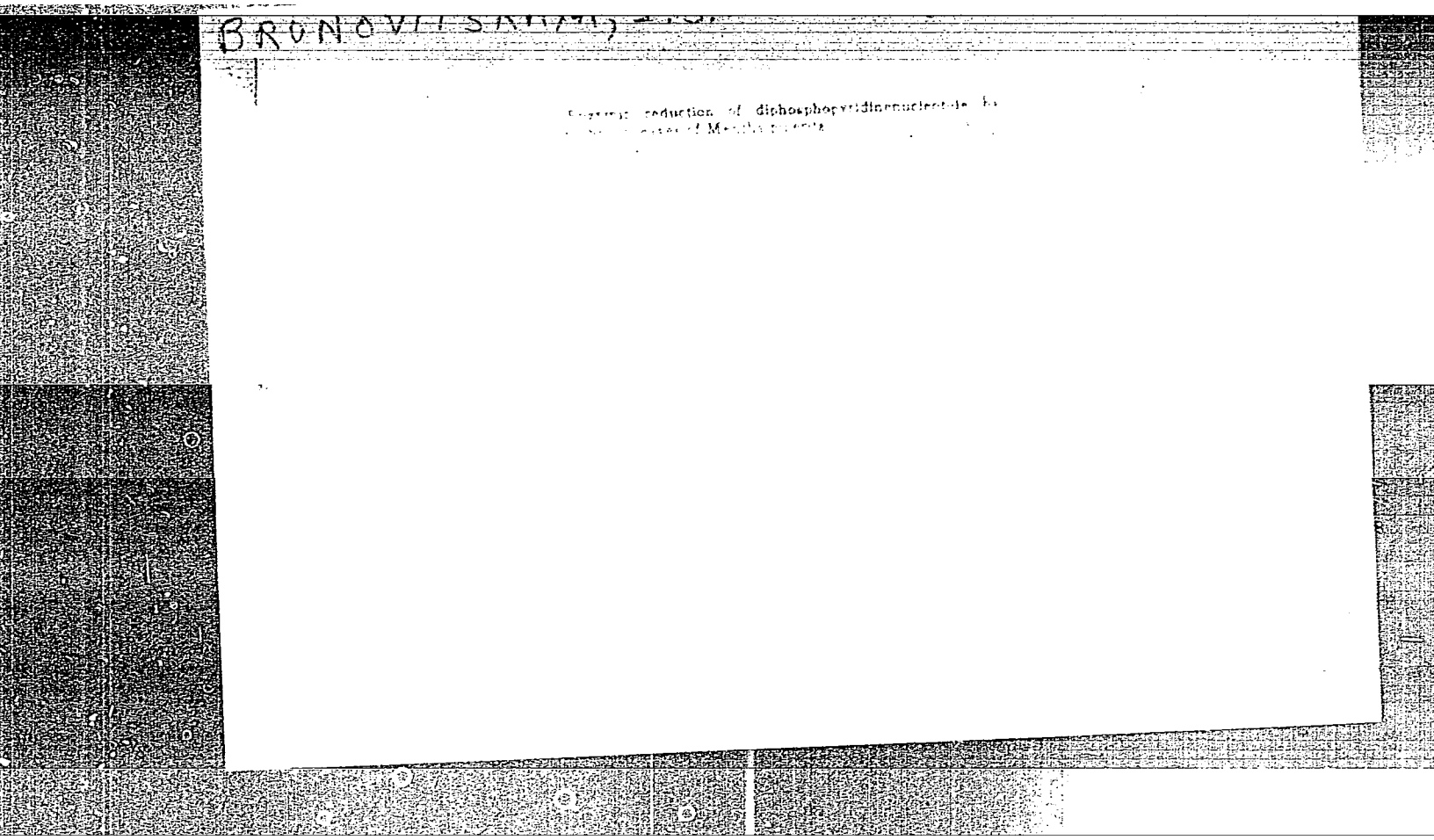
A. N. Bakh Biochem. Inst., AS USSR



BRONOVITSKAYA, Z. S., KRAUZE, E., and KRETOVICH, V. L. (USSR)

"The Biosynthesis of Alanine and Alanine Dehydrogenase in Yeast."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 Aug 1961

KRETOVICH, V.L.; BRONOVITSKAYA, Z.S.; KARYAKINA, T.I.

Reductive amination of pyroracemic, oxalacetic and oxypyroracemic acids in plants. Dokl. AN SSSR 152 no.5:1247-1249 O '63. (MIRA 16:12)

1. Institut biokhimii im. A.N.Bakha AN SSSR. 2. Chlen-korrespondent AN SSSR (for Kretovich).

KRETOVICH, V.L.; BRONOVITSKAYA, Z.S.; KARYAKINA, T.I.

Reduction amination of glyoxylic acid in plants. Dokl. AN SSSR 159 no.6:1419-1420 D '64 (MIRA 18:1)

1. Institut biokhimii im. A.N. Bakha AN SSSR. 2. Chlen-korrespondent AN SSSR (for Kretovich).

L 40157-66 EWT(1) SCTB DD

ACC NR: AP6025929 SOURCE CODE: UR/0301/66/012/004/0418/0424

AUTHOR: Bronovitskaya, Z. G.; Gershenovich, Z. S.; Koloushek, Ya.; Zikh, B.

ORG: Chair of Biochemistry, State University, Rostov-na-Donu (Kafedra biokhimii Gosudarstvennogo universiteta); Institute of Biophysics, Medical School, Karlov University, Prague (Institut biofiziki pri meditsinskom fakul'tete Karlova universiteta)

TITLE: Oxidative phosphorylation of the brain and liver during the action of L-methionine-sulfoximin and increased oxygen pressure

SOURCE: Voprosy meditsinskoy khimii, v. 12, no. 4, 1966, 418-424

TOPIC TAGS: brain metabolism, liver metabolism, combined stress, hyperoxia, phosphorus metabolism, oxidative phosphorylation, LIVER, RAT, BIOLOGIC RESPIRATION, BRAIN, BIOLOGIC METABOLISM, PHOSPHATE, OXYGEN

ABSTRACT: L-methionine-sulfoximin (MSI) alters the content of adenylic components in the liver of rats. Six hr after MSI injection, the ADP and ATP content increases (30%), oxidative phosphorylation increases, and respiration is unaltered. Twelve hr after MSI injection there is an increase in the total content of adenylic system components. MSI does not alter the intensity of brain metabolism but depresses esterification of inorganic phosphates (34%). Exposure to oxygen under pressure (4 atm) for an hour increases both respiratory intensity and brain phosphorylation. MSI and increased oxygen pressure together caused an activation of brain phosphoryla-

Card 1/2 UDC: 616.831+616.36]-008.921.8-02:[615.777.818+612.274

ACC NR: AP6025929

tion compared to the action of MSI alone. The sensitivity of animals injected with MSI to increased oxygen pressure is elevated compared to controls. Apparently, one reason for this is altered phosphorus metabolism. It was concluded that despite the ability of increased oxygen pressure and MSI to precipitate convulsive attacks, their mechanism of action on the phosphorus metabolism of individual tissues differs. Orig. art. has: 4 tables.

[CD]

SUB CODE: 06/ SUBM DATE: 10Feb65/ ORIG REF: 010/ OTH REF: 005/ ATD PRESS: 5049

Card 2/2 MLP

VASSOYEVICH, N.B.; BRONOVITSKIY, A.V.

Letter to the editor of the journal "Prikladnaia geofizika." Prikl. geofiz. no.32:248-252 '62. (MIRA 15:7)
(Rocks, Sedimentary)

VASSOYEVICH, N.B.; BRONOVITSKIY, A.V.

Studying density and porosity of rocks. Trudy VNIGRI no.190: 478-484 '62. (MIRA 16:1)
(Petrology)

BRONOVITSKIY, A.Ya.

The most important achievements and the most urgent tasks of medical science in the White Russian S. S.R. Zdrav. Belor. 5 no.1:5-12 Ja '59. (MIRA 12:7)

1. Predsedatel' Uchenogo meditsinskogo soveta Ministerstva zdravookhraneniya BSSR.
(WHITE RUSSIA--MEDICINE) (WHITE RUSSIA--PUBLIC HEALTH)

BRONOVITSKIY, A.Yu., prof.

Plan for the development of medical science in the White Russian S.S.R. in 1960. Zdrav.Belor. 5 no.12:3-7 D '59. (MIRA 13:4)

1. Chlen-korrespondent AN BSSR, predsedatel' Uchenogo meditsinskogo soveta Ministerstva zdravookhraneniya BSSR.
(WHITE RUSSIA--MEDICINE)

BRONOVITSKIY, A.Yu.

NESTEROV, A.I. (Moskva); TUSHINSKIY, M.D. (Leningrad); GOREV, N.N.(Kiyev); DOLGO-SABUROV, B.A. (Leningrad); ZAKUSOV, V.V. (Moskva); MUROMTSEV, S.N. (Moskva); CHUMAKOV, M.P. (Moskva); ZHDANOV, V.M., prof. (Moskva); NEGOVSKIY, V.A., prof. (Moskva); BIRYUKOV, D.A. (Leningrad); LITVINOV, N.N., prof. (Moskva); SOKOLOVA-PONOMAREVA, O.D. (Moskva); KUPALOV, P.S. (Leningrad); BATKIS, G.A. (Moskva); KOSYAKOV, P.N., prof. (Moskva); SHMELEV, N.A. (Moskva); BUSALOV, A.A., prof. (Moskva); MOLCHANOVA, O.P. (Moskva); STRASHUN, I.D.; BLOKHIN, N.N. (Moskva); PREOBRAZHENSKIY, B.S. (Moskva); VISHNEVSKIY, A.A. (Moskva) CHERNIGOVSKIY, V.N. (Moskva); PAVLOVSKIY, Ye.N., akademik (Leningrad); MYASNIKOV, A.L. (Moskva); VINOGRADOV, V.N. (Moskva); MAYEVSKIY, V.I.: DAVYDOVSKIY, I.V. (Moskva); IOFFE, V.I. (Moskva); KURASHOV, S.V.: ANOKHIN, P.K. (Moskva); BOGDANOV, I.D. (Kiyev); ZIL'BER, L.A. (Moskva); BRONOVITSKIY, A.Yu.; CHEBOTAREV, D.F., prof.

Debate on the address by Professor V.V.Parin, academician secretary of the Academy of Medical Sciences of the U.S.S.R.; abridged comments by members of the Academy of Medicine and the directors of institutes. Vest.AMN SSSR 14 no.8:19-31 '59. (MIRA 12:11)

1. Deystvitel'nyye chleny AMN SSSR (for Nesterov, Tushinskiy, Gorev, Zakusov, Kupalov, Strashun, Preobrazhenskiy, Vishnevskiy, Chernigovskiy, Myasnikov, Vinogradov, Anokhin, Zil'ber).

(Continued on next card)

NESTEROV, A.I.---(continued) Card 2.

2. Chleny-korrespondenty AMN SSSR (for Dolgo-Saburov, Chumakov, Zhdanov, Biryukov, Sokolova-Ponomareva, Batkis, Shmelev, Molchanova, Blokhin, Ioffe, Bogdanov). 3. Direktor Instituta gerontologii AMN SSSR (for Gorev). 4. Direktor Instituta farmakologii i khimioterapii AMN SSSR (for Zakusov). 5. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (VASKhNIL); direktor Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR (for Muromtsev). 6. Direktor Instituta po izucheniyu poliomiyelita AMN SSSR (for Chumakov). 7. Direktor Instituta eksperimental'noy meditsiny AMN SSSR (for Biryukov). 8. Direktor Instituta obshchey i kommunal'noy gigiyeny AMN SSSR (for Litvinov). 9. Direktor Instituta pediatrii AMN SSSR (for Sokolova-Ponomareva). 10. Direktor Instituta virusologii AMN SSSR (for Kosyakov). 11. Direktor Instituta tuberkuleza AMN SSSR (Shmelev). 12. Direktor Instituta grudnoy khirurgii AMN SSSR (for Busalov). 13. Direktor Instituta pitaniya AMN SSSR (for Molchanova). 14. Direktor Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR (for Blokhin). 15. Direktor Instituta khirurgii AMN SSSR (for Vishnevskiy).

NESTEROV, A.I.---- (continued) Card 3.

16. Direktor Instituta fiziologii AMN SSSR (for Chernigovskiy). 17. Direktor Instituta terapii AMN SSSR (for Myasnikov). 18. Direktor Gosudarstvennogo izdatel'stva meditsinskoy literatury (for Mayevskiy). 19. Vitse-prezident AMN SSSR (for Davydovskiy). 20. Ministr zdravookhraneniya SSSR (for Kurashov). 21. Direktor Instituta infektsionnykh bolezney AMN SSSR (for Bogdanov). 22. Chlen-korrespondent AN BSSR: predsedatel' Uchenogo meditsinskogo soveta Ministerstva zdravookhraneniya BSSR (for Bronovitskiy). 23. Predsedatel' Uchenogo meditsinskogo soveta Ministerstva zdravookhraneniya USSR (for Chebotarev).

(MEDICINE)

BRONOVITSKIY, A.Yu.; GOLUB, D.M.; MOGILEVCHIK, Z.K.

Stancho Milenkovich Milenkov; on his sixtieth birthday. Arkh.anat. gist.i embr. 37 no.12:119-121 D '59. (MIRA 13:5)
(BIOGRAPHIES)

ACCESSION NR: AT4040809 S/3099/62/000/001/0215/0219

AUTHOR: Israilov, D., Abduvaliyev, A. A., Bronovitskiy, V. Ye., Sultanov, A. S.

TITLE: Conversion of polytetrafluoroethylene into films by mixing with polysylvan

SOURCE: AN UzSSR. Institut khimii polimerov. Fizika i khimiya prirodny*kh i sinteticheskikh polimerov, no. 1, 1962, 215-219

TOPIC TAGS: teflon, polytetrafluoroethylene, polysylvan, polymer film, teflon film, polymer mechanical property, dimethyldichlorosilane, polymer electrical resistivity

ABSTRACT: Polysylvan, obtained by the polymerization of sylvan in the presence of $ZnCl_2$ and dimethyldichlorosilane in N_2 at 50C, was then used for the preparation of teflon films by two methods: (1) Mixing of powdered polytetrafluoroethylene with polysylvan in ratios of 1:1 to 1:5, and heating in reactors at 280-300C; however, homogeneous products could not be obtained at any intervals of temperature and polymer ratios. (2) Mixing various proportions of the polymers in rollers at a roller friction of 1:1.2 and temperatures of 30-80C. In both cases, films of various thickness with different physico-mechanical indices were

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ACCESSION NR: AT4040809

obtained. The best conditions were rolling at 50-60C for 40 minutes. Part of the films were baked in presses at 280-300C and the rest were extracted with acetone to remove the excess polysylvan and then baked at 300C. When 1:1 mixtures of polytetrafluorethylene and polysylvan were rolled at 50-60C for 10, 20, 40 and 60 minutes, the rupture strength of the films obtained was 85, 130, 162 and 105 kg/cm^2, respectively. To study the effect of the presence of silicon in the polymer on the blending of polytetrafluoroethylene, experiments were carried out with polysylvan containing silicon on one or both ends of the chain. The rupture strength of these films was 51 and 170 kg/cm^2, respectively. The authors also studied the electrical resistance of the films, with or without removal of excess polysylvan. The results showed a decrease in electrical resistivity with increasing temperature (20-150C), and an increase after extraction with acetone. When films containing excess polysylvan were baked on an hydraulic press with a pressure of 20 kg/cm^2 at 280-300C, dark colored films were obtained with holes from the leakage of the excess polysylvan. To eliminate this problem, the quantity of bound and free polysylvan in the film at a 1:1 ratio of polytetrafluoroethylene to polysylvan was studied. An average of 18% of the original polysylvan remained in the film after washing. Films from which the excess polysylvan had been removed were highly

ACCESSION NR: AT4040809

resistant to all solvents, including concentrated nitric acid. Orig. art. has: 2 tables.

ASSOCIATION: Institut khimii polimerov AN Uz SSR (Institute of Polymer Chemistry, AN Uz SSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: OC, MT NO REF SOV: 004 OTHER: 001

Card 3/3

BR

ACCESSION NR: AT4040810 S/3099/62/000/001/0234/0241

AUTHOR: Bronovitskiy, V. Ye.; Usmanov, Kh. U.; Dudnikova, L. G.

TITLE: The production of liquid lignin-furfural resin and pressed materials based thereon

SOURCE: AN UzSSR. Institut khimii polimerov. Fizika i khimiya prirodny*kh i sinteticheskikh polimerov, no. 1, 1962, 234-241

TOPIC TAGS: pressed polymer, fibrous polymer, synthetic fiber, lignin, hydrolyzed lignin, lignin furfural resin, resin, furfural resin, cotton lignin, phenolic resin, phenolic formaldehyde resin

ABSTRACT: The natural polymer lignin has many possible industrial uses, but its structure is still not completely understood. In the present paper, the authors discuss the hydrolysis of cotton lignin with 15% alkali, the possibility of obtaining liquid and solid meltable resins, suitable for the manufacture of pressed materials, and the technique for pressing products from lignin-furfural resin and fibrous fillers. The authors found that hydrolysis of cotton lignin with 15% NaOH at a lignin: alkali ratio of 1:8 for 1.5-2 hours at 170C produced the highest amount of water-soluble compounds and small amounts of sediment. Prolongation of this

Card 1/3

ACCESSION NR: AT4040810

process caused polycondensation of the water-soluble products. After alkali hydrolysis the material was cooled to 70C, followed by addition of furfural to a lignin: furfural ratio of 1:5 based on the dry weight of lignin. The polycondensation of the mixture lasted 65-90 minutes, after which it was cooled to 45 - 50C and acidified with 20% HCl to a weakly acid solution. The precipitated resin was washed with water, and after cooling it was ready for the preparation of fibers. The technology developed for the preparation of a compressible product was as follows: resin with a moisture content of 23-27% was put in rollers and mixed with a saturated solution of urotropine. A cryanide-impregnated foam was then added and the mixture was rolled to a thickness of 4-5 mm at 5-60C for 10-15 minutes. If there was more than 3% moisture, the mixture was dried for 2-3 hours at 60C. To decrease the water-absorbing properties and improve the physico-mechanical properties, the mixture was mixed with rubber or phenolic and urea-formaldehyde resins. The best results were obtained with the addition of 15% (calculated on the basis of dry weight) of phenolic-formaldehyde resin No. 18. This decreased the water absorbing properties from 0.85 to 0.5 and increased the compressive strength from 1250 to 1500 kg/cm^2. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AN UzSSR)

Card 2/3

ACCESSION NR: AT4040810

SUBMITTED: 00 DATE ACQ: [illegible] ENCL: 00

SUB CODE: OC, MT NO REF SOV: 013 OTHER: 005

Card 3/3

ACCESSION NR: AR4015703 S/0081/63/000/023/0594/0594

SOURCE: RZh. Khimiya, Abs. 23T250

AUTHOR: Bronovitskiy, V. Ye; Volochkovich, M. A.

TITLE: Production of foam plastic from lignin-furfural resin

CITED SOURCE: Sb. Fizika i khimiya prirodn. i sintetich. polimerov. Vy*p. I. Tashkent, AN UzSSR, 1962, 231-233

TOPIC TAGS: foam plastic, plastic, polymer, resin, lignin, furfural, lignin furfural resin

TRANSLATION: In order to obtain foam plastic from lignin-furfural resin, dried lignin was ground for 5-6 hrs. on a ball grinder, sifted through a sieve with 900 openings/cm^2 and placed in an autoclave, where it was activated for 2 hrs. at 170C and 9-10 atm. with a 15% solution of NaOH (8 liters of alkali per kg of lignin). After cooling the activated lignin to 70-75C, furfural was added in a ratio of 1:4 and the mixture was placed in an autoclave (with a reflux condenser), where polycondensation was carried out at 96-100C

Card 1/2

ACCESSION NR: AR4015703

for 2.5-3 hrs. The resin obtained was neutralized with 20% HCl, washed with water and dried by pressing out the excess water with rollers. The resin has a black color, dissolves in alcohol and acetone, the dropping temperature according to Ubellod is 62C, moisture content $\leq$ 3%, rate of hardening of a plate at 150C $\leq$ 90 sec., life $\leq$ 2 months. Foam plastic based on lignin-furfural resin was obtained by mixing the following components (parts by wt.) for 30 minutes on water-cooled rollers: 100 lignin-furfural resin, 8 porofor ChKhZ-5 and 5 ammonium sulfate, added in that order. Foaming of the mixture was accomplished in 1-1.2 min. for 1 mm without pressing in a special hermetic mold at 150-160C. Foam plastic from lignin furfural resin has a density of 0.2-0.06 g/cc, a working temperature of 140-150C, ultimate compressive strength of 3.3 kg/cm^2, coefficient of thermal conductivity of 0.063 kcal/m·hour·degree, and water absorption in 20 days of 0.17 g/cm^2. It is noted that foam plastic from lignin-furfural resin can be used for thermal insulation in construction. L Kotlyarevskaya.

DATE ACQ: 09Jan64 SUB CODE: MT ENCL: 00

Card 2/2

BRONOVITSKIY, V. Ye.; USMANOV, Kh.U.; GUTNIK, M. Ya.

Chip borads from lignin- furfurole resins. Khim. i fiz.-khim. prirod. i sint. polim. no.1:242-252 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

ISRAILOV, D.; ABDUVALIYEV, A.A.; BRONOVITSKIY, V. Ye.; SULTANOV, A.S.

Processing of polytetrafluoroethylene into films by mixing with polysylvan. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 215-219 '62 (MIRA 18:1)

BRONOVITSKIY, V. Ye.; VOLOCHKOVICH, M.A.

Preparation of foam plastic from lignin-furfurole resins. Khim. i fiz.-khim. prirod. i sint. polim. no.1:231-233 '62
(MIRA 18:1)

BRONOVITSKIY, V. Ye.; USMANOV, Kh.U.; DUDNIKOVA, L.G.

Production of liquid lignin-furfurole resin and molding materials based on it. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 234-241 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

BRONOVITSKIY, V. Ye.; SHAKIROVA, R.

Preparation of molding powders based on lignin-furfurole resins. Khim. i fiz.-khim. prirod. i sint. polim. no.1:253-256 '62
(MIRA 18:1)

ACCESSION NR: AP5015944 UR/0167/65/000/003/0063/0066

AUTHOR: Rakhimov, A.; Bronovitskiy, V. Ye.

TITLE: Graphite-based lubricating materials made from Central-Asian graphites

SOURCE: AN UzSSR. Izvestiya. Seriya tekhnicheskikh nauk, no. 3, 1965, 63-66

TOPIC TAGS: natural graphite, graphite containing polymer, antifriction layer, graphite lubricant, resin lubricant

ABSTRACT: The production of graphite films from natural graphite mined in certain Central-Asian cites, as well as their mechanical and anticorrosion properties, were discussed earlier by the present authors (Uzb. khim. zh., 1964, no. [illegible]). they describe the lubricating properties of these films (produced by means of phenol-formaldehyde No. 18, epoxy ED6, and lignin-furfural [illegible] resins) MI-1M "roller-bushing" friction machine. Tests showed [illegible] satisfactory properties for dry friction operation. The maximum [illegible] exceeded 50-55C, and wear was moderate. Samples with 80% carbon [illegible] lubricating properties. The friction coefficient was 0.11-0.13. Consequently, phenol-formaldehyde resin containing graphitic materials can be [illegible]

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ACCESSION NR: AP5015944

practical applications. Orig. art. has: 3 figures.

ASSOCIATION: Tashkentskiy politekhnicheskiy institut (Tashkent Polytechnic Institute)

SUBMITTED: 26Jan65 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 000

Card 2/2

L 29132-66
ACC NR: AP6018689 SOURCE CODE: UR/0114/65/000/003/0032/0034

AUTHOR: Bronovskiy, G. A. (Engineer); Gal'perin, M. I. (Engineer) 38 B

ORG: none

TITLE: Some aspects of the production of turbines for the Krasnoyarskaya Hydroelectric Station

SOURCE: Energomashinostroyeniye, no. 3, 1965, 32-34

TOPIC TAGS: hydroelectric power plant, metal casting, welding, turbine

ABSTRACT: The construction of the world's first 508 thousand kilowatt turbines raised numerous new problems. The authors list and describe in detail basic peculiarities of the construction process. The Novo-Kramatorsk Machine Factory had to develop new procedures for casting the 36.8 t half-sections of the outer rim, exceeding in size those made for the Bratskaya hydroelectric station. Special methods have been developed also for the casting of the 8,000 kg vanes by the joint effort of the Central Scientific-Research Institute for Technical Machine-Building, the Nevskiy Machine-Building Factory im. V. I. Lenin, and the Leningrad Metallurgical Factory im. XXII Congress of the CPSU. The Novo-Kramatorsk Machine Factory had to solve the problems of producing the extremely large shaft (2300/1900 mm in diameter) with a comparatively thin wall of the shaft (200 mm). Further problems were

Card 1/2 UDC: 621.224:65.011.56

L 29132-66

ACC NR: AP6018689

encountered in connection with welding, need for new stronger materials, and transportation. New welding methods were designed and tested by the Institute for Welding im E. O. Paton; parts were made of three types of steel, while the working wheels of the new turbine had to be transported by ship rather than by rail. The article is packed with technical data and descriptions of new technological and engineering solutions, down to a description of the loading of the wheel on the ship and its voyage along the Northern route. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 13, 10 / SUBM DATE: none / ORIG REF: 003

Card 2/2

BRONOVSKIY, G.A., inzh.; GAL'PERIN, M.I., inzh.

Preparation for the construction of the turbines of the Krasnoyarsk Hydroelectric Power Station. [Trudy] LMZ no.10:24-28 '64. (MIRA 18:12)

BRONOVSKIY, G.A., inzh.

Experience in manufacturing welded and cast runners for the hydraulic turbines of the Bratsk Hydroelectric Power Station. [Trudy] LMZ no.10:359-375 '64.
(MIRA 18:12)

BRONOVSKI, J.

The greatness of Albert Einstein; in commemoration of his 75th birthday. Tr. from the English. p. 1542

TEHNIKA, Beogard, Vol 10, No. 11, 1955

SO: EEAL, Vol 5, No. 7, July 1956

B. T. R.
Vol. 3 No. 4
Apr. 1954
Heat Power

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5085* Practical Test of Hydroturbines With Carbon Steel Vanes. (Russian.) S. S. Astaf'ev and G. A. Bronovitskii. *Vestnik Mashinostroeniia*, v. 33, no. 9, Sept. 1953, p. 24-27.

Describes operation of turbine and composition of steel. Tables, micrograph, photographs, diagram.

6/3/54 LM

BRONOVSKIY, G.A., inzh.; GAMZE, Z.M., dots.; GOL'DSHER, A.Ya., inzh.

Technical analysis of different designs of runners and shafts for hydraulic turbines at the Bratsk Hydroelectric Power Station. [Trudy] LMZ no.4:337-356 '57. (MIRA 11:4)
(Hydraulic turbines)

S/114/60/000/007/008/009
E194/E455

AUTHOR: Bronovskiy, G.A., Engineer

TITLE: Welded and Cast Runners for the Large Radial-Axial Water Turbines of the Bratsk Hydro Electric Station

PERIODICAL: Energomashinostroyeniye, 1960, No.7, p.34

TEXT: The Leningrad Metal Works, for the first time in the Soviet Union, is mastering the production of welded runners for the water turbines of the Bratsk Station, which are rated at 230 MW per set. Each runner weighs about 100 tons, has a maximum diameter of 6100 mm and is 2723 mm high. It consists of two parts which are bolted together at the rim on erection and welded below. Each half-wheel is itself a welded structure consisting of upper and lower rims and seven blades. All the parts are of low-alloy steel 20ГС-Л (20GS-L). The separate parts are joined by electro-slag welding using a flame mouthpiece; the procedure is described. To protect the blades against cavitation, appropriate portions of the first experimental runner are protected by deposition of austenitic steel 1Х18Н9Т (1Kh18N9T) as weld metal. The weld metal is deposited automatically with a strip electrode. In developing the methods of manufacture

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S/114/60/000/007/008/009
E194/E455

Welded and Cast Runners for the Large Radial-Axial Water Turbines of the Bratsk Hydro Electric Station

appropriate to these very large wheels, the factory has received considerable assistance from the Institute of Electric Welding imeni Paton and the Central Scientific Research Institute of Engineering Technology. Special equipment has been made for casting and heat-treating the blades and for inspecting their shape; also for the assembly, welding and intermediate machining of runner parts. By welding the wheels their hydraulic properties have been improved, through greater accuracy of configuration of the flow path and a higher degree of surface finish. In their technical and economic properties, these welded runners compete with fully cast runners and once the method of manufacture has been fully developed they will cost 10 to 15% less.

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5460

Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Nekotoryye voprosy tekhnologii proizvodstva turbin (Certain Problems in the Manufacture of Turbines) Moscow, Mashgiz, 1960. 398 p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies printed.

Sponsoring Agency: RSFSR. Sovet narodnogo khozyaystva Leningradskogo ekonomicheskogo administrativnogo rayona, Upravleniye tyazhelogo mashinostroyeniya, and Leningradskiy dvazhdy ordena Lenina metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Ed. (Title page): G. A. Drobilko; Editorial Board: Resp. Ed.: G. A. Drobilko, B. A. Glebov, A. M. Mayzel', and M. Kh. Mernik; Tech. Ed.: A. I. Kontorovich; Managing Ed. for Literature on Machine-Building Technology: Ye. P. Naumov, Engineer, Leningrad Department, Mashgiz.

PURPOSE: This collection of articles is intended for technical personnel in turbine plants, institutes, planning organizations, as well as for production innovators.

Card ~~1/12~~

57

Certain Problems (Cont.) SOV/5460

COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy zavod - Leningrad Metalworking Plant) in the manufacture of modern large-capacity turbines is presented. Methods for the rationalization of basic manufacturing processes and for the mechanization and automation of manual operations are given. Descriptions of attachments and tools designed by LMZ for improving labor productivity and product quality are provided, and advanced inspection methods discussed. References accompany some articles. No personalities are mentioned. There are 26 references: 25 Soviet and 1 English.

TABLE OF CONTENTS:

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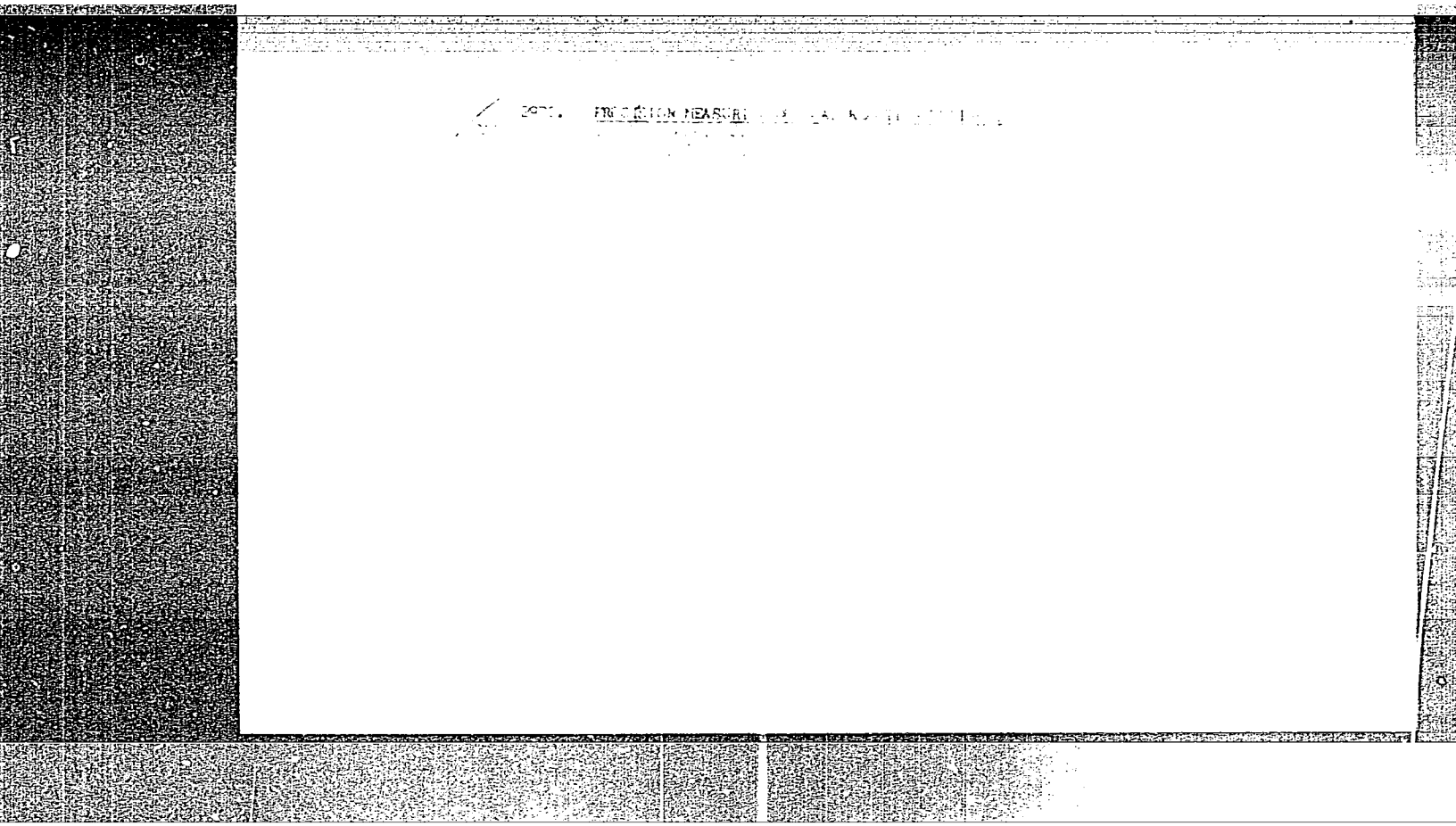
BRONOVSKIY, G.A., inzh.; GAL'PERIN, M.I., inzh.

Some special features of the manufacture of turbines for the Krasnoyarsk Hydroelectric Power Station. Energomashinostroenie 11 no.3:32-34 Mr '65. (MIRA 18:6)

BRONOVSKI, Khaynts [Bronowski, Heinz]

Advantages of thin-layer films. Sov.foto 20 no.4:37 Ap '60.
(MIRA 13:8)

1. Chlen tsentral'noy fotograficheskoy komissii.
(Germany, East--Photography--Films)



CHEVRENIDI, S.Kh; BRONOVITSKIY, V.Ye.

Some data on the study of Dzungarian iris. Trudy Inst.bot.AN Uz.SSR no.3:201-207 '55. (MLRA 10:1)
(Kermine--Iris) (Brooms and brushes)

CHEVRENIDI, S.Kh.; BRONOVITSKIY, V.Ye.

Roots of the orchard grass Dactylis glocrata L. as material for manufacturing brushes. Trudy Inst.bot.AN Uz.SSR no.3:209-214 '55. (MLRA 10:2)

(Orchard grass) (Brooms and brushes)

RAKHIMOV, A.; BRONOVITSKIY, V.Ye.; NIZAMUTDINOV, Kh.

Preparation of graphite plastics from graphite ores in Central Asia. Uzb. khim. zhur. 8 no.6:72-78 '64. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut khimii i tekhnologii khlopkovoy tsellyulozy Gosudarstvennogo komiteta khimicheskoy promyshlennosti pri Gosplane SSSR.

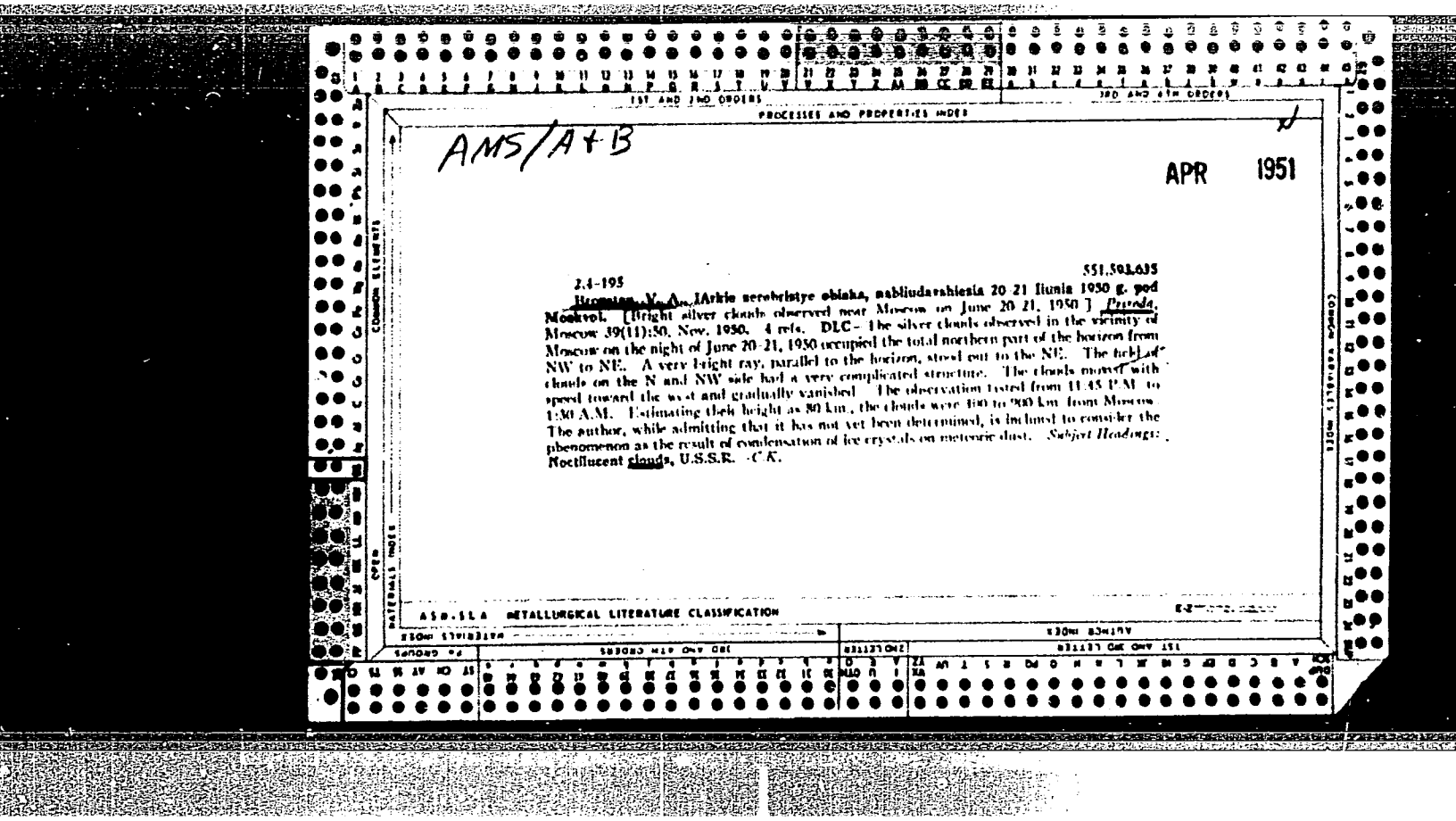
BRONSHTEYN, V.A.

Investigating eclipsing variable RV Ophiuchi. Per. zvezdy 6 no.5: 246-255 Mr '48. (MIRA 12:7)
(Stars, Variable)

BRONSHTEN, V.A.

33862. Konfyereyentsya Po Fizikye Planyet. (Khar'kov. May 1949 G.) Byullyetyen', Vsyesoyuz. Astronom.-Gyeodyez. O-va, No 1, 1949, C 45-46.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.



AMS/A+B

APR 1951

2.4-195 551.593.035

Imshenetskii, V. A., [Arkhiv serebristye oblaka, nabliudavshiesia 20-21 iiunia 1950 g. pod Moskvoi. [Bright silver clouds observed near Moscow on June 20-21, 1950.] *Pravda*, Moscow 39(11):50, Nov. 1950. 4 refs. DLC– The silver clouds observed in the vicinity of Moscow on the night of June 20-21, 1950 occupied the total northern part of the horizon from NW to NE. A very bright ray, parallel to the horizon, stood out to the NE. The tich[?] of clouds on the N and NW side had a very complicated structure. The clouds moved with speed toward the west and gradually vanished. The observation lasted from 11:45 P.M. to 1:30 A.M. Estimating their height as 80 km, the clouds were 100 to 900 km from Moscow. The author, while admitting that it has not yet been determined, is inclined to consider the phenomenon as the result of condensation of ice crystals on meteoric dust. *Subject Headings:* Noctilucent clouds, U.S.S.R. –C.K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ASTAPOVICH, I.S.; BRONSHTEN, V.A.; BUGOSLAVSKAYA, Ye.Ya.; BUGOSLAVSKAYA, N.Ya; VSEKHSVYATSKIY, S.K.; MIKHAYLOV, A.A.; SIVKOV, S.I.; TER-OGANEZOV, V.T.; RAKHLIN, I.Ye., red.; NEGRIMOVSKAYA, R.A., tekhn. red.

[Solar eclipse of February 25, 1952, and its observation] Solnechnoe zatmenie 25 fevralia 1952 g. i ego nabliudenie. Sost. I.S.Astapovich i dr. Pod red. A.A.Mikhailova. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1951. 175 p. (MIRA 15:4)

1. Vsesoyuznoye astronomo-geodezicheskoye obshchestvo. 2. Chlen-korrespondent Akademii nauk SSSR (for Mikhaylov).
(Eclipses, Solar--1952)

BRONSHTEN, V. A.

USSR/Astronomy - Solar Eclipse Nov/Dec 52

"Sky Luminosity During Total Eclipse of Sun," V. A. Bronshten

"Astron Zhur" Vol 29, No 6, pp 718-729

Author expounds his theory on auroral ring and sky light during total eclipse. Considers agreement between his computed data and observed ones as good. Submitted 10 Sep 51.

239T82

USSR/Geophysics - Meteors and Comets Nov 51

"Plenary Commission on Comets and Meteors," V. A. Bronshten

"Priroda" No 11, pp 87, 88

An extensive plenary commission on comets and meteors, of the Astro-Soviet of Acad Sci USSR, was held 24-25 Mar 51 in Moscow. Reports were heard from the following: K. P. Stanyukovich and V. V. Fedynskiy (on cosmogony); Ye. L. Krinov (meteorites); E. K. Gerling (age of Earth by argon method); V. A. Bronshten (solar system); V. F. Solyanik (formation of solar system and distribution of momentum); B. Yu. Levin (criticism of

207T49

USSR/Geophysics - Meteors and Comets (Contd) Nov 51

O. Yu. Shmidt's theory of cosmogony); N. N. Sytinskaya (Leningrad U Chair of Gen Astr and Meteor Astr); I. S. Astapovich (work of the Astrophys Lab in Ashkhabad); A. M. Bakharev (work of Stalinabad Obs).

Astronomical Council, AS USSR

Translation 568462

207T49

BRONSHTEN, V. A.

BRONSHTEN, V.A.

Plenary session of the Committee on Comets and Meteors. Biul.VAGO no.11: 37-39 '52. (MLRA 6:6)

1. Komissiya po kometam i meteoram Astrosoveta Akademii Nauk SSSR. (Astronomy)

BUGOSLAVSKAYA, Ye. Ya.; [redacted]

Eclipses, Solar - 1952

Observations of the total solar eclipse of February 25, 1952 by the expedition of the All-Union Society of Astronomy and Geodesy, Astron. tsir. No. 125, 1952.

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

BRONSHTEN, V.A.

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PUTILIN, I.I.; BRONSHTEN, V.A., redaktor.

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(Planets, Minor)