

KUZIN, A.A.

M.V. Lomonosov's work in behalf of the Board of Mines. Vop. ist.
est. i tekhn. no.13:114-117 '62. Vop. ist. est. i tekhn. no.13:
114-117 '62. (MIRA 16:5)

(Lomonosov, Mikhail Vasil'evich, 1711-1865)

TROSHIN, Anatoliy Konstantinovich; KUZIN, A.A., otv. red.;
SKACHKOV, S.A., red. izd-va; RYLINA, Yu.V., tekhn. red.

[Ivan Evstaf'evich Vlasov, a Russian voivode and
mineralogist of the 17th century] Ivan Evstaf'evich Vlasov -
voevoda - rudoznatets XVII v. Moskva, Izd-vo AN SSSR, 1963.
45 p. (MIRA 16:11)
(Mineralogists) (Vlasov, Ivan Evstaf'evich, 1628-1710)

KUZIN, Aleksandr Avraamovich; KUZ'MENKO, V.I., redaktor; RODICHOVA, Z.A.,
redaktor; SMIRNOV, G.I., tekhnicheskiy redaktor

[Brief history of the development of drawing in Russia;
manual for teachers] Kratkii ocherk istorii razvitiia chertesha
v Rossii; posobie dlia uchitelei. Moskva, Gos. uchebno-pedagog.
izd-vo M-va prosv. RSFSR, 1956. 107 p. (MLRA 10:4)
(Drawing--History)

KUZIN, A.A.

The history of mechanical drawing in Russia during the second half
of the nineteenth and the beginning of the twentieth century. Trudy
Isnt.ist.est. i tekhn. 8:166-184 '56. (MLRA 9:9)
(Mechanical drawing)

KUZIN, A.A.

Mechanical drawing in Russia during the 18th and the first half
of the 19th century. Trudy Inst.ist.est.i tekhn. 9:235-282 '57.

(MLRA 10:5)

(Mechanical drawing)

KUZIN, A.A.

"History of mechanical drawing in the Ural Mountain region and
Siberia" by A.I. Aleksandrov. Reviewed by A.A. Kuzin. Vop.1st.
est. i tekhn. no.11:168-169 '61. (MIRA 14:11)
(Mechanical drawing)
(Aleksandrov, A.I.)

KUZIN, A. I., Engr

USSR/Metals - Welding

Oct 50

"One-Sided Automatic Welding of Low-Carbon Steel Up to 16 Millimeters Thick," Engineers
N. A. Fedorov, A. I. Kuzin, T. Ya. Shandra

"Avtogen Delo" No 10, pp 17-20

Suggests one-sided welding under flux as most economical method, not requiring preliminary preparation of edges. Describes development of method for welding 900-1,032 mm diameter boilers made of steel 13-16 mm thick and construction of flux-supplying devices for straight and circular joints. Mechanical characteristics are no lower than those of joints welded from both sides.

PA 167T85

1ST AND 2ND CROSS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH CROSS

7

2382* One-Sided Automatic Welding of Low-Carbon Steel of Up to 16-Mm. Thickness. (In Russian.) N. A. Fedorov, A. I. Kuzin, and T. Ya. Shandra. *Avtogennos Delo* (Welding.) v. 21, Oct. 1950, p. 17-20.

The welding of longitudinal or ring seams (as in boilers) on one side of the part being welded, using a flux "pad" on the back of the seam, was investigated. Means of supporting the "pad" against the joint were studied. Strength characteristics of such welds, compared with those welded on both sides, were satisfactory. Data are tabulated.

Common Element
Common Variable's Index

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND CROSS
3RD AND 4TH CROSS

KUZIN, A. I.

USSR/Engineering - Welding, Materials Mar 52

"Electrode Coating BKZ," A. I. Kuzin, Engr

"Avtogen Delo" No 3, p 24

Describes coating which improves slag separability and decreases porosity of weld metal, giving compn: 30% hematite, 29% feldspar, 27.2% low-carbon ferromanganese, 9.2% manganese ore, 4.6% starch and water glass in 30/35 ratio, dry wt. Discusses possibility of using blast-furnace ferromanganese instead of that made in elec furnace.

212T26

KUZIN, A. I.

USSR/Engineering - Welding, Boilers

Apr 52

"Welding in the Fabrication of Low-Power Steam Boilers at Biysk Boiler Plant," A.I. Kuzin, Engr

"Avtogen Delo" No 4, pp 21-25

Describes methods of rapid manual welding, automatic welding under flux and semiautomatic hose welding, and also special stands for holding and turning various parts of boiler during welding operations. Briefly discusses X-ray control of welded seams. Vol of automatic welding executed at plant in 1951 amounts to 80% if production of 1948 is taken as 100%.

212T36

GAYEVY, T.V.; KUZIN, A.I.; ASHIS, A.Ye.; FED'KO, I.V.

Use of electric slag welding for the repair of locomotive
plate frames. Avtom. svar. 14 no.11:42-46 N '61.

(MIRA 14:10)

1. Peltavskiy parovozoremontnyy zavod (for Gayovoy, Kuzin).
2. Ordена Trudovogo Krasnogo Znameni institut elektrosvarki
imeni Ye.O. Patona AN USSR.
(Locomotives Maintenance and repair)
(Electric welding)

KUZIN, A.I., starshiy prepodavatel'

[Testing structures and structural elements] Ispytanie
stroitel'nykh sooruzhenii i konstruktsii; uchebno-
metodicheskoe posobie dlia studentov zaohnogo fakul'teta.
Gor'kii, 1962. 120 p. (MIRA 16:4)

1. Gorki. Inzhenerno-stroitel'nyy institut.
(Building research)

KUZIN, A.I.

Spot welding of ties for the fastening of lumber. Avtom. svar. 16
no.9:83-85 S '63. (MIRA 16:10)

1. Poltavskiy parovozoremontnyy zavod.

GAYEVOY, T.V.; KUZIN, A.I.; ASNIS, A.Ye.; GUTMAN, L.M.

Welding up cracks in locomotive wheels by the electric slag method. Avtom. svar. 16 no.12:73-78 D '63.

(MIRA 17:1)

1. Poltavskiy parovozoremontnyy zavod (for Gayevoy, Kuzin).
2. Institut elektrosvarki imeni Patona AN UkrSSR (for Asnis, Gutman).

CA

157 AND 2ND CROSS

180 AND 4TH CROSS

PROCESSES AND PROPERTIES INDEX

76

The reaction of yeast enzymes on glyoxylic acid. A. STEPANOV AND A. KUZIN. *Ber. 63B*, 1147-53; *J. Russ. Phys.-Chem. Soc.* 62, 267-80(1930).—In a maceration juice obtained from bottom yeast contg. 0.45% glyoxylic acid, pH 8 to 6 at 37°, the products were CO_2 , AcH, glycolaldehyde, glycolic, oxalic, hydroxyketosuccinic and malic acids. No traces of formaldehyde, MeOH or pyruvic acid were found. Oxalic and glycolic acids formed in equimol. masses by oxide reduction from the glyoxylic acid. Their total quantity reached about 18-21% of the used acid. Special study was made of the glycolaldehyde, obtaining its *p*-nitrophenylhydrazine and hydrazone derivs. and the osazone.
MARY K. LEAR

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

157 AND 2ND CROSS

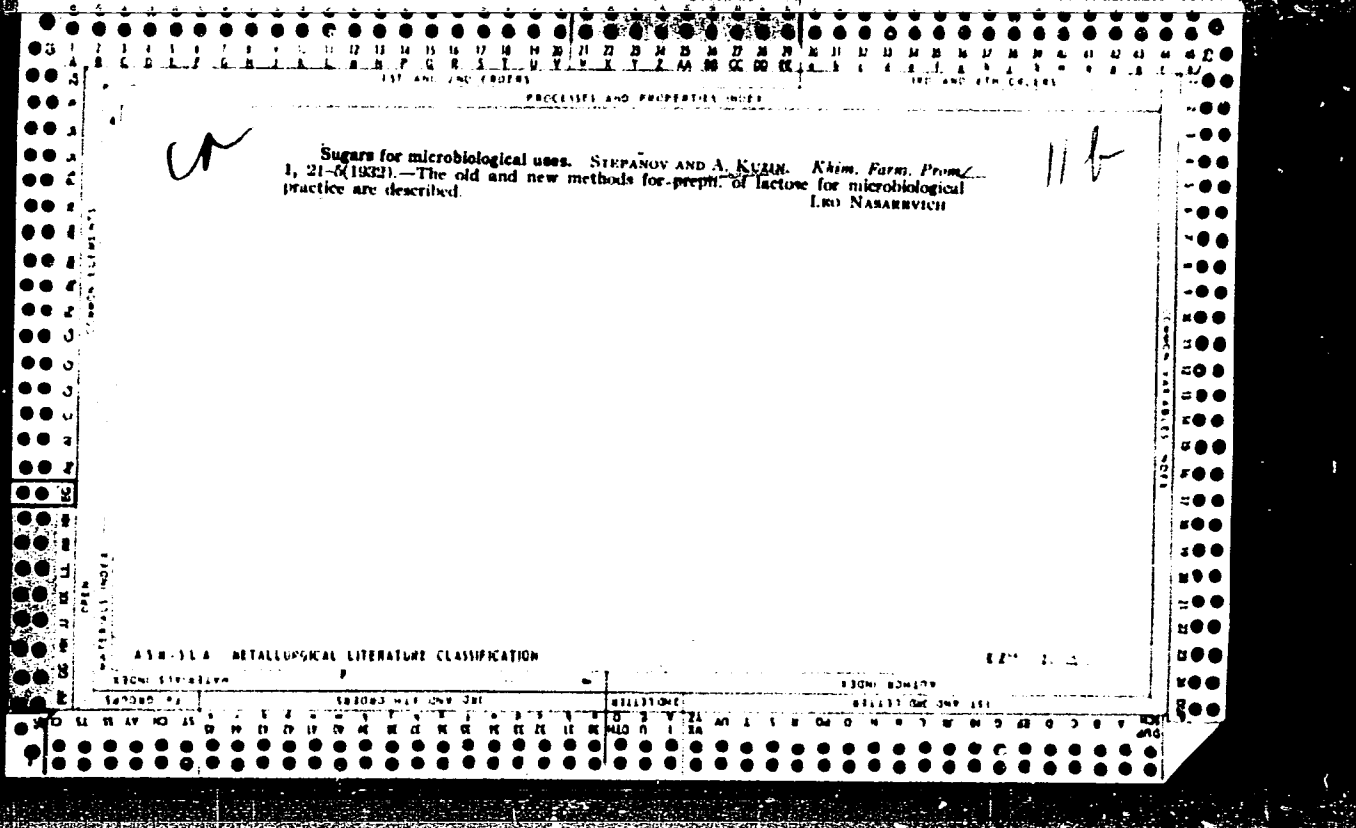
180 AND 4TH CROSS

PROCESSES AND PROPERTIES INDEX

ca *38*

Preparation of soluble starch by enzyme action. A. V. SERPANOV AND A. KUZIN
Sov. Farm. Prom. 1932, 321-5.—Three % starch paste is warmed to 60° with the enzyme (0.4% of the amt. of starch). After 15 min. the temp. is rapidly raised to boiling and kept there for 3 min. The mixt. is filtered on sand with suction and the filtrate treated with alc., filtered, the solid washed with abs. alc. and dried *in vacuo*. The product is very sol. and contains no dextrans or reducing sugars. I. N.

A 38-31 A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

CO *118*

Sugars for microbiological uses. Maltose. A. STEFANOV AND A. KAMARU, *Khem. Farm. Izv.* 1953, No. 2-3, 57-64; cf. C. A. 48, 3273. Numerous methods are cited with the following as the most efficient: 5% starch soln. with 0.8% of enzyme from malt ext. is kept at 37° for 24 hrs. At the end of hydrolysis albumins are coagulated by warming and clear maltose sirup is filtered off. Purification by recrystn. is described and the purity is checked by chem. and biochem. methods. L. NARANEVICH

AS & SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTIES INDEX

28

CA

Sugars for microbiological uses. IV. Fructose. A. Stepanov and A. Kuzin. *Khim. Farm. Prom.* 1933, 267 (4); cf. *C. A.* 28, 5110. —Uncrystallizable brown sirup obtained in the manuf. of cane sugar is treated with technical lime, on the basis of 70% CaO on the fructose.

The sirup is slowly added to the stirred and cooled lime soln. Ca fructoate is filtered and washed by decantation, decomposed by pouring its suspension into 20% H₂SO₄, filtered and the fructose soln. concd. in vacuum evaporators and crystd., best from CH₃OH. The product corresponds to c. p. requirements for microbiological uses.

V. Galactose. A. Stepanov and N. Nevnaeva. *Ibid.* 265-D. —Lactose soln. (25%) is hydrolyzed with 1% H₂SO₄ at 110° in an autoclave in an atmosphere of CO₂. The sulfates are removed with lime, the pH adjusted to 5 with CH₃COOH and glucose removed by fermentation. The galactose is crystd. from 85% alc. and twice from 90% alc. The product (about 64% of the theory) is suitable for microbiological uses. L. Nasarevich

METALLURGICAL LITERATURE CLASSIFICATION

LITERATURE INDEX

PROCESSES AND PROPERTIES

10

The emolization of sugars under the action of various bases. A. Kuzin. *Biochemistry (U. S. S. R.)* 1, No. 1, 101-12 (in English 112) (1959).—A comparative study was made of the action of Ca(OH)₂ and NaOH on glucose and fructose at 25° over 1-24 hrs. With the use of Ca(OH)₂ the sugars showed reducing properties in acid soln. (reduction of dichloroindophenol and I) and gave characteristic color reactions with FeCl₃. Under the same conditions NaOH does not produce such changes. Ca(OH)₂ favors the formation of mannose from glucose, while NaOH tends to form fructose. It is suggested that the differences are due to the tendency of the various bases to give either cyclic or straight chain enolic forms of the sugars. S. A. K.

Lab. of Organic Chem. The 1st. Moscow Med. Inst.

METALLURGICAL LITERATURE CLASSIFICATION

KUZIN, A.

On the active form of simple sugars. II A comparative study of the oxidizability of 6- glucosephosphate and glucose, A. KUZIN and A. KOCHIN
(CARBOHYDRATE LABORATORY, VIEM, MOSCOW) vol. 1, no.6, p.676, 1936.

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND PREFIXES

11a

ca

Enzymic synthesis of carbon chains. VII The existence of carboligase. A. Kuzin, *Biochimica J.* 70: 81 (1957); cf. C. A. 78, 4560. Acetylmethylcarbinol (acetoin) is formed from *Acid* by the action of an enzyme prepn. obtained from yeast maceration juice. The action takes place (contrary to the opinion of Neuberg) when a glycerol-free enzyme prepn. is used, and in the absence of a simultaneous decarboxylation. H. Cohen

Lab. of Carbohydrates, Chem. Sect., Vrem, Mos. cov.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

REGION 83474

REVISION OF QWY 151

PROCESSES AND PROPERTIES INDEX

10

ca

The catalytic action of monoses on the condensation of formaldehyde. IV. Vitamin C as a catalyst for the synthesis of carbon chains. A. Kuzin. *Biochimica 2*, 122-34(1937); cf. C. A. 30, 2172¹.—Ascorbic and isoscorbic acids, in common with substances contg. an ~~active~~ ^{active} group, catalyze the condensation of HCHO to sugar. The addn. of HCHO to isoscorbic acid greatly diminishes the reducing power of the latter; apparently an addn. product is formed. It is suggested that vitamin C, besides regulating oxidation-reduction processes, is also instrumental in catalyzing the building of C chains in the living organism, especially the conversion of HCHO into sugar. H. Cohen

The Carbohydrate Lab. Viem, Moscow

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

REGION ROMANIA

REGION ONE ONE 101

REGION ONE

REGION ONE

30

A-1

Reactivity of formaldehyde in presence of various bases. A. KUZIN (J. Gen. Chem. Russ., 1937, 7, 2954—2963).—Reduction of Cu^{II} by CH_2O in presence of $\text{Ca}(\text{OH})_2$ is $>$ with NaOH . The velocity of the reaction $2\text{CH}_2\text{O} \rightarrow \text{MeOH} + \text{HCO}_2\text{H}$ is greater in presence of $2N\text{-NaOH}$ than of $2N\text{-Ca}(\text{OH})_2$ for 4—20%, but not 40% CH_2O . The reaction $\text{CH}_2\text{O} + \text{MOH} \rightarrow \text{HCO}_2\text{M} + \text{H}_2$ in presence of CuSO_4 or Cu_2O is greater when $\text{M} = 0.3\text{Ca}$ than when $\text{M} = \text{Na}$; this is due to the more rapid formation of Cu , which catalyzes the reaction, in the former case. In the system $\text{CH}_2\text{O}-\text{H}_2\text{O}$ -alkali-Cu the reaction proceeds at the same rate with $\text{Ca}(\text{OH})_2$ as with NaOH . It is supposed that CH_2O reacts with NaOH to yield $\text{OH}\cdot\text{CH}_2\cdot\text{ONa}$, dissociating into $\text{OH}\cdot\text{CH}_2\cdot\text{O}^\cdot$ and Na^\cdot , whilst with $\text{Ca}(\text{OH})_2$ the reaction is $\text{OH}\cdot\text{CH}_2\cdot\text{O}\cdot\text{CaOH} \rightarrow \text{OH}\cdot\text{CH}_2\cdot + \text{Ca}(\text{OH})_2$. R. T.

ASD SLA METALLOGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

10

Ca

Catalytic effect of monoses on the condensation of form aldehyde to sugars. V. Course of condensation reaction in the presence of concentrated salt solutions. A. Kuzin. *Biokhimiya* 3, 10-27(1938); cf. *C. A.* 31, 5326².—HCHO can be condensed to sugars at body temp. (37°), and in almost neutral soln. (pH 8.2), by using a supersatd. soln. (75%) of Mg subacetate, in the presence of a small amt. of an ene-diol catalyst (fructose, glyceraldehyde or ascorbic acid). H. Cohen

Chemical Section view from the Lab. of Organic Chemistry at the First Moscow Medical Institute.

ASB-35.6 METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

11A

Reaction capacity of physiologically important substances in mixtures. I. Oxidizability of aldehydes in the presence of amino acids. A. M. Kuzin. *Biokhimiya* 3, 481-9 (1938).—In the presence of glycine, AcH is oxidized to glycolic aldehyde by I in acid soln. This apparent enolizing effect of amino acids may be concerned in the synthesis of sugars from CH_2O in the presence of endiol catalyzers, and also explains the transition from AcH to simple sugars in the resynthesis of carbohydrates in muscle. H. Cohen

Common Elements

Common Properties Index

ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES

(SEE ALSO THE CIPHERS)

10

u

New synthesis of glycolaldehyde and glyceraldehyde.
 A. Kurin, *J. Gen. Chem.* (U. S. S. R.) **8**, 592 (1938);
 cf. *C. A.* **29**, 3987, 7287. -- Previous expts. in the catalytic
 condensation of HCHO to sugars with Ca saccharate have
 been extended to the isolation of the intermediate gly-
 colaldehyde (I) and the prepa. of glyceraldehyde (II).
 A mixt. of 400 ml. of 40% CH₂O, 40 g. Ca(OH)₂ and 10 g.
 glucose in 4 l. water was held at 37° until the reducing
 power of the reaction liquid for cold Fehling soln. had
 reached a max. The cold reaction mixt. was neutralized

with H₂SO₄, the filtrate was acidulated with AcOH and
 evapd. at reduced pressure (5 mm.). The residue was
 extd. with abs. alc. and the filtrate from pentoses and
 hexoses was freed from the alc. by vacuum distn. The
 sirupy residue was dissolved in 300 ml. of abs. alc. contg.
 2% HCl and, after standing for 7 days at room temp., was
 neutralized with crys. Na₂CO₃ and the filtrate was coned.
 to 100 ml. After the removal of unaltered glucose with
 CHCl₃, the alc. was driven off at 25 mm. and the residue
 was fractionated at 5 mm. pressure. The acrial fractn.
 (13 g.), b. 110°, was decampd. with 0.1 N H₂SO₄ and,
 after neutralization with BaCO₃, the hydrolyzate was
 coned. and redistd., giving 4% I (based on CH₂O);
 osazone, m. 160-70°. II was obtained in 75% yield by
 digesting at 35° 4 g. I and an equiv. of CH₂O (2 g.) with
 25 ml. of 5% Ca(OH)₂ until the odor of CH₂O had dis-
 appeared (3-5 min.) and then quickly neutralizing with
 an equiv. of C₂H₅ in H₂O. The filtrate, contg. a slight
 excess of AcOH, was evapd. and redistd. *in vacuo*. II
 with PhNHNH₂ on boiling for 1.5 hrs. gave the osazone,
 m. 135° (alc.). Chas. Blanc

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

PRECISE AND PROPER USE

A-3

Synthesis of sugars from formaldehyde. VI. Mechanism of the reaction. A. Kuzin (*J. Gen. Chem. Russ.*, 1938, 8, 759-766).—Extensive stoichiometric studies of the reaction of condensation of CH_2O in presence of $\text{Ca}(\text{OH})_2$ (A., 1938, II, 68) are published on the grounds that variations in the temperature of the systems were not taken into account. The following reaction mechanism is advanced, as being in accord with the facts: $\text{OH-CH}_2\text{-CH}_2\text{-OH (I) + OH}_2\text{(OH)}_2$, $(\text{II}) \rightarrow \text{OH-CH}_2\text{-CH}_2\text{-CH(OH)-CH}_2\text{-OH} \rightarrow (+\text{MOH}) \text{OH-CH}_2\text{-CH(OH)-CH}_2\text{-OH} \rightarrow \text{OH-CH}_2\text{-CH(OH)-CH(OH)-CH}_2\text{-OH} \rightarrow (+\text{II}) \text{OH-CH}_2\text{-CH(OH)-CH(OH)-CH(OH)-CH}_2\text{-OH} \rightarrow (\text{I}) + \text{OH-CH}_2\text{-CH(OH)-CH(OH)-CH(OH)-CH}_2\text{-OH} \rightarrow (+\text{II}) \text{OH-CH}_2\text{-CH(OH)-CH(OH)-CH(OH)-CH}_2\text{-OH}$. In this reaction $\text{M} = \text{O-SO}_3\text{H}$, (IV) functions as an autocatalyst, and (I) is a monose having the -C(OH)(OH)- group, and functioning as a catalyst. Under conditions of biosynthesis (I) may be fructose or ascorbic acid. R. T.

METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND CODES 3RD AND 4TH CODES

CO

Nevskaya, II

Makayeva

✓ The reaction capacity of physiologically important substances in mixtures. II The reaction capacity of acetone in the presence of glycine. A. M. Kuzin and N. A. Nevskaya. *Biochimiya* 4, 112 (1969); *U.S.S.R.* 33, 650. Addnl. proof that carbonyl compds. are activated by amino acids is shown by the fact that acetone, in the presence of glycine, reacts much more rapidly with I. NaHSO₃ and furfural. III Reaction of simple sugars in the presence of glycine. A. M. Kuzin and Z. Makayeva. *Ibid.* 3:67-72. — Small amts. of glycine accelerate the reduction by glucose of Fehling soln. Larger amts. retard reduction and in a satd. soln. of glycine or other amino acid completely inhibit the reduction. Addn. of 0.7% glycine to Barfoed's reagent will completely prevent reduction by glucose. No reduction by glucose of Ag₂O, picric acid and Indigo Blue will occur when glycine is added to the soln. H. Priestley.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND CODES 3RD AND 4TH CODES

1ST AND 2ND CODES 3RD AND 4TH CODES

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

190 AND 2TH ORDERS

BC

6-3

Reaction velocity of chemically important substances in solution. The reaction of simple gases in presence of water. A. A. Bondar and E. Makarevich (Zhurnal, 1953, 4, 57-58).—The reducing power of monosaccharides is increased in presence of small amounts of glycine (G), but with increase of the latter the reducing power is decreased, becoming zero with a certain addition of (G). Possibly unstable compounds of (G) and the monosaccharides are formed that, in presence of small amounts of (G), are decomposed with liberation of enolized sugar derivatives which cause the activation effect. With some addition of (G), removal of (G) from the compound is inhibited, and no reducing groups are liberated. J. N. A.

Carbohydrate Laboratory, Vinnitsa, Moscow

ASS. I. A. METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Comparative study of the properties of enzymes with
 the same carbon chains: carboligase and aldolase
 V. M. Kurin and E. V. Sukhareva-Budnik-kaya (*Dokl
 Akad. Nauk SSSR* 4, 445 8(1930)). Carboligase and aldolase are
 not identical. Carboligase is inactivated by dialysis and
 by heating to 50°, whereas the activity of aldolase remains
 unchanged. H. Priestley

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

11a

PROCESSES AND PROPERTIES INDEX

11A

la

The reactivity of physiologically important organic substances in mixtures. IV. Reactivity of ethyl ester of glycine in the presence of carbonyl compounds. A. M. Kuzin and O. I. Polyakova. *Biochimija* 5, No. 1, 86-92 (in English, 92) (1940); cf. *C. A.* 34, 10937. The condensation of glycine ester into diketopiperazine was studied in the presence of AcH, HCHO, acetone, fructose, glucose and galactose. AcH, HCHO and acetone do not promote the formation of diketopiperazine, but simple sugars increase the yield by almost 100%. The sugar is not changed during the reaction; this indicates that its effect is catalytic. Compds. analogous to simple sugars, but contg. no carbonyl group (mannitol) are without effect. It is supposed that carbonyl compds. activate the H of the amino group, owing to the formation of an unstable intermediary product, and thus accelerate the condensation of glycine ester. The same activating influence of the simple sugars (or other carbonyl compds.) on the condensation of the amino acid may play a role in the formation of peptides and diketopiperazines under natural conditions. On the basis of the expts. the catalytic effect of simple sugars on the condensation of glycine ester can be expressed by: $2RR'CO + 2NH_2CH_2COOEt \rightarrow 2RR'(OH)NHCH_2COOEt + RR'(HO)CN.CH_2.C(OH)(OEt).N(C(OH)RR').CH_2.C(OH)OR(2H_2O) \rightarrow NH_2CH_2.CO.NH.CH_2.CO + 2RR'CO(OH) \rightarrow RR'CO + 2H_2O$. The character of R in sugars (probably the abundance of OH groups) conditions a considerable mobility of H bound to N. 10 references. W. R. Henn

ASB-SLA METALLURGICAL LITERATURE

COMMON ELEMENTS

COMMON VARIANTS INDEX

GROUPS

INDEX

157 AND 158 SERIES

140 AND 151 SERIES

CA

10

Formation and properties of addition compounds of amino acids and sugars. A. M. Kazin and O. Polyakova. *Biochimiya* 6, 113-21(1941).—The amino-N content gradually drops when glucose and alkali are present in a concd. glycine soln. A new compd. is formed, through the union of the amino and carbonyl groups. This explains why the amino-N decrease varies with the sugar and alkali concns., and why sucrose, which lacks a free carbonyl group, is without effect on glycine. The Ca salt of the acid compd. (the N-glycoside of glycine) is prepd. thus: To 10 g. of glycine and 48 g. of glucose in 100 cc. of water there is added 10 g. Ca(OH)₂. After the main mass of the Ca(OH)₂ has dissolved, the soln. is filtered and set aside at room temp. A cryst. ppt. appears in about 24 hrs., and in 48 hrs. the entire mass has solidified. The solid is collected by filtration, washed 3 times with water, and then with alc. The yield is 9.2 g., with 12.7-13.0% of Ca and 4.2-5.0% of N. The low Ca and N content is due to the absorption of CO₂, which amounts to 7.3%. Glycine and glucose similarly unite in the presence of Ba(OH)₂, but the resulting salt does not sep. out from soln., and must be pptd. with alc. Other amino acids are also capable of union with glucose, although amino acids of high mol. wt. unite less readily. H. P.

COMMON ELEMENTS

MATERIALS MORE

OPEN

COMMON VARIANTS MORE

ASB. I. I. A METALLURGICAL LITERATURE CLASSIFICATION

FROM SOURCE

FROM SOURCE

FROM SOURCE

FROM SOURCE

117 AND 120 ORDERS

PROCESSES AND PROPERTIES INDEX

140 AND 141 ORDERS

ca

11F

Blood glycogen in the light of investigations of specific blood polysaccharides. A. M. Kuzin and Z. Akabva. *Biokhimiya* 6, 335-40(1941); *C. A. S.*, 4705⁹.—Blood polysaccharides from groups I(O), II(A) and III(B) differ from glycogen in not being attacked by amylase. Only the polysaccharide of group II(A) is not colored by I vapors, whereas the polysaccharides of groups I(O) and III(B) give colorations with I similar to the colorations produced by glycogen itself. The histological methods of detg. glycogen with I, or by coloration with carmine are unreliable, being not specific for glycogen. The main mass of substances sepd. by the classical Pflüger method (*C. A. S.*, 1020) consists not of glycogen but of polysaccharides. Actually, no glycogen can be detected in corpse blood, and only traces of glycogen (3 mg. per 100 cc.) are found in fresh blood. The increase of blood glycogen, so-called, in infectious diseases, cited in the literature, is in all probability an increase in the amt. of blood polysaccharides. The stability of the specific polysaccharides toward amylase makes it highly improbable that they participate in the carbohydrate metabolism of the blood. H. Priestley

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

GENERAL INDEX

117 AND 120 ORDERS

PROCESSES AND PROPERTIES INDEX

140 AND 141 ORDERS

117 AND 120 ORDERS

PROCESSES AND PROPERTIES INDEX

140 AND 141 ORDERS

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS 1ST AND 2ND ORDERS

BC

General determination of glycogen in blood and tissues.

A. J. L. and E. A. Mahoney (*Biochimica*, 1944, 9, 14-21).—

Preparations were made with pure glycogen and salivary diastase, and the following reactions were evolved. Blood (1 c.c.) or tissue (1 g.) is treated with 10% KOH (K₂CO₃ free) for 1 hr. at 100°. The residue is washed with 5% NaCl (5% c.c.) in water (10% c.c.) (10% c.c.). The mixture is centrifuged after 1 hr. and the residue washed with 5% alcohol and dissolved in 0.5% HCl (2.5% c.c.). Alcohol (10 c.c., 5%) is added after 5 min. and after heating 1 hr. the mixture is centrifuged, and the pot. washed with 5% alcohol, dried at 100°, dissolved in 0.1% PO₄ (10% c.c.), and centrifuged (solution A). Commercial diastase (10% c.c.) dissolved in PO₄ (10% c.c.) is centrifuged to give a solution of diastase activity not less than 7. To A (1 c.c.) is added 10% c.c. and the mixture is maintained at 37° for 2 hr. (control) (10% c.c.) with 0.5% K₂Fe(CN)₆. After 15 min. at 100° is added and the heating continued for 15 min. The amount of glycogen in several blood glucose-tension tables both for the control (7) and for the test solution (8), the quantity of glycogen being 0.04-0.10% (0.02-0.05% per 100 ml. can be determined; smaller amounts give less reliable results.

P. H.C.

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

FROM THE BUREAU OF STANDARDS

1930-1940

1940-1950

1950-1960

1960-1970

1970-1980

1980-1990

1990-2000

KUENIN, A.

USSR

Tarasevich Central State Sci.Control Institute (-1944-)
"On Employment of Nicotinic Acid in Producing of Dysenteric Vaccines,"
SO: Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No.12, 1944

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

11A

CA

Role of autocatalysis during the synthesis of polysaccharides. A. M. Kuzki and V. I. Ivanov. *Biochimica* 10, 37-44(1945). — As is known, the synthesis of glycogen from glucose 1-phosphate is speeded up by the action of a little glycogen at the beginning of the process. Similarly, starch synthesis from glucose 1-phosphate is hastened if a little starch is present at the beginning. The synthesis of polysaccharides from glucose 1-phosphate is thus due to 2 factors: the enzyme phosphorylase and the presence at the beginning of the synthesis of traces of polysaccharide. Previously, it had been assumed that the nature of the polysaccharide synthesized was due entirely to the kind of phosphorylase employed. The nature of the traces of the polysaccharide catalyst present at the beginning of the synthesis was ignored. However, the same enzyme may synthesize entirely different polysaccharides, depending on the kind of polysaccharide catalyst initially present. In expts. with potato phosphorylase, 20 mg. of Cori ester in the presence of 2 mg. of starch as catalyst yielded 7 mg. of a polysaccharide scarcely sol. in water and giving a blue coloration with I. When 2 mg. of glycogen was used as the catalyst, 5.6 mg. of a water-sol. polysaccharide was formed, which produced a reddish brown coloration with I.

H. Priestley

Lab. Organic Chem., Moscow Med. Inst.

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON VALENCE STATES

GROUPS

PERIODIC TABLE

116

ca

Specific polysaccharides from *Proteus* X_{10} , X_{11} , and X_{12} . A. M. Kuzin, N. A. Nevrskaya, and E. P. Alsova. (Moscow Inst. Serum Control). *Biochimiya* 10, 269-78 (1945).—The strain of *Proteus* bacilli known as X_{10} is agglutinated in the serums of typhus patients (Weil-Felix reaction). The strain X_{11} is not agglutinated, whereas X_{12} is agglutinated only in the serums of certain types of typhus fever. Since antigen specificity depends on the structure of the polysaccharide, it was of interest to det. just what differences exist in the polysaccharides of the respective organisms X_{10} , X_{11} , and X_{12} . The analysis of the polysaccharides extd. by 3 different methods checked perfectly. Serum agglutinations were obtained when the polysaccharides were used in dilns. up to 1:5,000,000. Chem. analysis shows that the polysaccharide from *Proteus* X_{10} differs from that of X_{11} as follows: The X_{10} polysaccharide contains about 60% glucosamine, whereas the X_{11} polysaccharide yields none. On acid hydrolysis, the X_{10} polysaccharide yields more reducing substances than the X_{11} polysaccharide. Free amino groups are absent in the X_{11} polysaccharide, but are present in the X_{10} polysaccharide. The polysaccharide occupies an intermediate position; it contains about half the glucosamine and a fifth of the free amino groups as X_{10} . Only those *Proteus* polysaccharides which contain glucosamine can act as antigens in typhus infections.

H. Priestley

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION

157 AND 2ND ORDERS 2ND AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

COMMON ELEMENTS

MATERIALS INDEX

COMMON CHARACTERISTICS

RESEARCH AND DEVELOPMENT

SELECT ONE OR MORE

ALPHA BETA GAMMA DELTA Epsilon ZETA ETA THETA IOTA KAPPA LAMBDA MU NUN Xi PI RHO SIGMA TAU Upsilon PHI CHI PSI OMEGA

KUZIN, A. M.

"Khimiya i biokhimiya patogennykh mikrobov (Chemistry and Biochemistry of Pathogenic Microorganisms)", Medgiz, 1946

KUZIN, A. K., S. Z. SHAIKO, AND S. YA. PEYDIA

"The Nature of the Cholera Antigen Prepared by Digestion with Trypsin,"
1, 83-89, 1947

Zhurn. Mikrobiol.,
Zhurn. i
Epidem. i Immu-
Nobiol.,

KUZIN, A. M., Prof.

Fa 36T41

USSR/Medicine - Antigens and Antibodies Nov 1947
Medicine - Immunity

"The Chemistry of Antigens," Prof A. M. Kuzin, 4½ pp

"Zhur Mikrobiol, Epidemiol i Immanobiol." No 11

One of the basic questions of the chemistry of antigens is that of the development of effective methods of extracting pure antigens from microbe cells. This presents itself as a purely chemical problem of isolating a substance, studying its chemical structure, and establishing the connection between their properties and the structural properties of these substances. Article is largely a historical account of the work done on antigens by Russian scientists.

LC

36T41

KUZIN, A.M., NEVRAJEVA, N.A.

"The Formation of Antibodies in Vitro"
SO: Biokhimiya, Vol. XII, No. 1, Jan 1947
W-326; 24 Mar 48

USSR/ Medicine - Antibodies
Medicine - Microbiology

Jan 1947

Experiments on antibody formation in vitro with methylene blue, polysaccharides derived from *Shigella dysenteriae* and *paradys Flexner*, full antigens derived from *Shigella dysenteriae* and *paradys Flexner*, etc., as antigens. Results largely negative.

KUZIN, A. M.

PA 21T99

USSR/Medicine - Saccharides
Medicine - Proteins

Jun/Aug 1947

"The Specific Polysaccharide Complexes of Macro-organisms," A. M. Kuzin, I. S. Buyanovskaya, A. M. Rykaleva, N. I. Kuzina, Laboratory of Immunology, Institute of Biological Prophylaxy of Infections, Moscow, 10 pp

"Biokhimiya" Vol ¹²~~11~~, No 4 *Abit*

Polysaccharide complexes are isolated by special methods, from tissues of guinea pigs, white mice and human tissues. Investigation shows: Polysaccharide-protein complexes amount to 0.2 - 1.0% of weight of dry tissue; they have antigenic properties; dilutions of even 2:10⁵ can be tested by senologic reactions, for the presence of such complexes. 21T99

ROBIN, R. P.
"Modern Antigen Chemistry and the Genesis of the Antibodies," in the book:
5-ya Sessiya AN SSSR, Moscow, 1948

USDA/Chemistry - Pyruvic Acid
Chemistry - Condensation, Chemical Jan/Feb 1948

"Condensation of Pyruvic Acid in the Presence
of Glycol," A. M. Kuzin, Inst of Biochem (Imeni
A. N. Belzh, Acad Sci USSR; A. R. Guseva, Moscow
Lab of Chem of Plant Matter, 4 1/2 pp
"Biochim" Vol XIII, No 1

Important position occupied by pyruvic acid in
the process of the metabolism of carbons, makes it
clear that in the living organism it can serve as
those the more complex materials having longer carbon
chains and possessing acyclic or cyclic structures.
Brief description of tests conducted. Submitted
28 Apr 1947.

64127

LIST AND END ORDERS
PROCESSES AND PROPERTIES INDEX

CA

Enzymic activity of the virus from the jaundiced silkworm *Bombyx mori* L. A. M. Kuzin and R. V. Kravchukova. *Biokhimiya* 13, 623 (1968). This virus accumulates in the lymph of diseased silkworms, in the form of crystal-like polyhedral bodies; these possess only a slight adsorptive surface. The following enzymes were tested for and found to be absent: lipase, lecithinase, hexose-diphosphatase, nuclease, amylase, carboxylase, phenoloxidase, dehydrogenase, catalase, and protease. The virus does not reproduce itself. It penetrates the host cell and so modifies the synthetic processes that the cell begins to produce not only its own proteins but also the virus protein. H. Priestley

Min. Public Health, Moscow
Chair Organic Chem., Med. Inst RSFSR.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

GROUP NO. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSES AND PROPERTIES INDEX

11-0

Labile substances of acyl phosphate type in green plant leaves. A. M. Kuzin and M. Ya. Shkol'nik. *Doklady Akad. Nauk S.S.R.* 29:941-1 (1948). Substances of acyl phosphate type are detectable in green leaves by using the Lipsann-Tottle hydroxamic acid test with NH_4OH (C.A. 39, 3210). The fresh leaves were ground in acetate buffer (pH 5.4) in the presence of 0.5 ml. NH_4OH soln. (made by mixing 20% NH_4OH -HCl soln. with 14% NaOH) and a little ground glass; after 10 min. at room temp., proteins and pigments were removed with trichloroacetic acid, and 1 ml. of the filtrate was treated with 0.5 ml. 5% FeCl_3 in 0.1 N HCl and the soln. examd. photometrically. The highest amt. of the active material was found in leaves of *Potamogeton perfoliatus* (300 micromoles per 100 g.), *trifolium* gave 150-100, sugar beet 52, nasturtium 60, tomato 54, and wheat sprouts 42. If the specimens were heated 5 min. to 100° after grinding almost all of the active matter was absent (0-3 units). Similar but slower effect was observed in allowing the ground preps. to stand up to 2 hrs. The intact leaves, however, appear to preserve the labile matter intact. The behavior of the material substantiates the acyl phosphate hypothesis.

G. M. Kosolapoff

Lab. Growth Substances, Inst. Biochem. in Bak's

METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROCEDURES INDEX

No. 2

110

CA

Oxidation of dihydroxymaleic acid in the green plant leaf. A. M. Kuzin and N. G. Doman. *Doklady Akad. Nauk. S.S.S.R.* 62, 255-8 (1948).—Vacuum infiltration of dihydroxymaleic acid into tradescantia leaf leads to its rapid disappearance, which was followed by $TiCl_4$ reaction, in the presence of gum arabic as the stabilizing colloid, which enabled the color to be stable enough for detn. with standard solns. for reference. Dihydroxymaleic acid soln. (0.2%, pH 6.5 by $NaHCO_3$) was infiltrated and 5 min. later the leaves were ground with 4% trichloroacetic acid, filtered, and the detns. run immediately. The ext. of ground leaves as such gives very slow disappearance of added dihydroxymaleic acid (still present after 3 hrs.); the result was similar when the entire leaf macerate was used. Hence, the reaction is caused by some unstable substances present only in a living leaf, which was confirmed by grinding fresh leaves with dihydroxymaleic acid soln. and using rapid detn. immediately; 100% disappearance was observed. Isolation attempts of the resulting product(s) by grinding the leaf with dihydroxymaleic acid soln. followed by Cl_2COOH , filtration and addn. of $2,4-(O_2N)_2C_6H_3NH_2$ gave an orange osazone; treatment with warm Ac_2O gave a red solid, m. $251-2^\circ$, contg. 39.9% C, 1.95% H, 21.3% N, corresponding to a pyrazolone deriv. of diketosuccinic acid, identified with an authentic specimen. The leaf substances which cause the conversion of dihydroxymaleic acid to diketosuccinic are very unstable, for heating a freshly cut leaf 3 min. at 100° destroys them completely; the same occurs on mere grinding of an intact leaf.

G. M. Kosolapoff

A S B - 5 L A METALLURGICAL LITERATURE CLASSIFICATION

E-2

PA 45/49T58

KUZIN, A. M.

USSR/Medicine - Helminths and Helminthiasis
Medicine - Antigens and Antibodies, Analysis
Jan/Feb 49

"Chemical Nature of the Complete Antigens of Certain Helminths," A. M. Kuzin, S. N. Baidat-zhanov, O. I. Polyakov, Chair of Org Chem, Med Inst, MZ RSFSR, Moscow, Uzbek IEM, Tashkent, 2 pp

"Biokhimiya" Vol XIV, No 1

Describes experiments on helminths *Taenia saginata* and *Ascaris lumbricoidea*. Concludes that antigen evolved. From helminths is a specific polysaccha-ride containing glucose and also glucosamine and
45/49T58

USSR/Medicine - Helminths and Helminthiasis (Contd) Jan/Feb 49

combined with amino acids. Ascarid and ox liver antigens have similar chemical compositions. Submitted 3 Jul 48.

45/49T58

CA

// G

Specific polysaccharide complexes in malignant tissues.
A. M. Kuzin and N. I. Kuzina. *Biokhimiya* 14, 432-5 (1949); cf. *C.A.* 32, 6322^a; 42, 1345c. — The polysaccharides isolated from cancerous human tissues with CCl_4 - CO_2H are almost identical chemically to those from healthy people. The cancerous tissue polysaccharides, however, do not possess the specific serological reactions of the particular blood group. The polysaccharide fractions from healthy and cancerous tissues obtained by decomposition of the complexes with phenol, according to Morgan and King (*C.A.* 30, 2385^b) also differ serologically. The polysaccharide fraction from cancerous tissue is incapable of checking the hemisoagglutination reaction, whereas the normal tissue polysaccharide can do so in a diln. of 1:250,000. The serological difference can also be proved by immunizing rabbits and testing the serum for complement fixation; the reaction is pos. for the polysaccharide from normal tissue, and neg. in the case of malignant tissue.
H. Priestley

C 4

Investigation on the condensation of dihydroxyacetone, glyceraldehyde, and dihydroxyacetone phosphate in the green leaves of plants. A. M. Kuzin and N. G. Danan (Nach Biochem. Inst., Moscow). *Biochimya* 14, 480 (1949). - Some theories on photosynthesis postulate the formation of low-mol. carboxyl compds. as intermediates in the synthesis of carbohydrates. Green leaves do not possess enzymic systems for the condensation into simple sugars of either dihydroxyacetone phosphate, free dihydroxyacetone, or glyceraldehyde. H. Priestley

(BA-1111 M₄ '53:726)

KUZIN, A. M.

USSR/Medicine - Plant Physiology
Medicine - Hydroxylamines Apr 49

"The Chemical Nature of Certain Unstable Substances in the Green Leaves of Plants," A. M. Kuzin, R. Ya. Shkol'nik, Lab Chem of Plant Substances, Inst Biochem imeni A. N. Bakh, Acad Sci USSR, 4 pp

⁶⁵
"Dokl Ak. Nauk SSSR," Vol LXV, No 4-p. 527-30

Experimentally established that unstable peroxides are present in green leaves of plants. These unstable peroxides set up the reaction of hydroxamic acid formation during action of hydroxylamine on

41/49T51

USSR/Medicine - Plant Physiology Apr 49
(Contd)

the leaf. Submitted by Acad A. I. Oparin,
2 Feb 49.

PA 41/49T51

41/49T51

KUZIN, A. M.

PA 39/49T84

USSR/Medicine - Plant Physiology
Medicine - Photosynthesis

Apr 49

"The Importance of Unstable Peroxides From the
Green Leaves of Plants for Photosynthesis,"
A. M. Kuzin, R. Ya. Shkel'nik, Lav Plant Chem,
Inst Biochem imeni A. N. Bakh, Acad Sci USSR,
4 pp

"Dok Ak Nauk SSSR" Vol LXV, No 5 p. 719-722

Used reaction of hydroxamic acid formation to
experimentally verify A. N. Bakh's supposition
that unstable peroxides participate in photo-
synthesis. Submitted by Acad A. I. Oparin,
2 Feb 49.

39/49T84

USSR/Medicine - Immunology

Apr 50

"Contemporary Chemistry of Antigens and the Genesis of Antibodies," Prof A. M Kuzin

"Trudy 5-oy Sessii, Ak Med Nauk SSSR" pp 112-119. Conference held 23 - 27 Dec 48, in Moscow, on problems of immunity and influenza.

Work at author's laboratory showed that pathogenic bacteria contain a phosphorylase which synthesizes polysaccharides not only from dextrose-1-phosphate, but also from 1-phosphates of other monoses occurring in sp polysaccharides of these bacteria. Helminths also contain antigens of the polysaccharide

206787

USSR/Medicine - Immunology (Contd)

Apr 50

type. The high stability of sp polysaccharides to enzymatic hydrolysis indicates that one of their functions must be protection of the microorganism. I. Pauling's views on the formation of antibodies are too mechanistic: Antibodies are synthesized in the organism. From the standpoint of USSR health protection, isolation of immunologically full-valued antigens from brucella, and causative agents of tularemia, anthrax, whooping cough, etc., is of importance.

206787

KUZIN, A. M., PROF

C.A.

11 7

Distribution of easily hydrolyzable compounds containing hexosamine in different tissues of animals and man. A. M. Kuzin and B. N. Gladyshev (Moscow Med. Inst.). *Biochimiya* 15, 316-20 (1950). - The defatted, dry, powd. tissue was heated on the water bath with *N* HCl for 4 hrs. The hydrolyzate was neutralized with dry NaHCO₃ and the ppt. removed by centrifugation. Hexosamine was detd. colori-

metrically in the slightly colored but clear hydrolyzate by the method of Kilson and Morgan (*C.A.* 28, 3330⁹). This yielded the hexosamine of such compds. as specific polysaccharides, hyaluronic acid, and glycoproteins. Difficultly hydrolyzable substances like heparin, mucopolysulfuric and chondroitinsulfuric acids require concd. HCl or 20% HCl at 135° in order to liberate hexosamine. The tissues investigated were from 4 rabbits, 2 pigs, and 6 corpses. The easily hydrolyzable compds. contg. hexosamine were found in practically every tissue of the animal organism. The hypothesis regarding the protective function of these substances was borne out by the high content of hexosamine in the human stomach lining (1000-1135 mg. %), mucous membrane of the uterus (700-1750 mg. %), the inner layer of the aorta (870-1050 mg. %), lymphatic nodes (430-870 mg. %), and lung tissue (400-800 mg. %). A high content of hexosamine was found in the gray matter of the brain (700-1140 mg. %) and in the cortex of the cerebellum (430-970 mg. %), and less in the white brain matter (330-500 mg. %). A high content of hexosamine was also found in the thyroid gland (735-1765 mg. %), suprarenals (565-900 mg. %), and salivary glands (565-1300 mg. %). The amt. of hexosamine in the thyroid and in the ovaries decreased with the age of the organism. H. P.

CA

75

Study of photosynthesis by ionophoresis. A. M. Kuzin and N. G. Doman. *Doklady Akad. Nauk S.S.S.R.* 72, 77-80 (1950).—Ionophoretic expts. were performed in a glass plate vessel, vertically partitioned, irradiated with a 500-w. lamp and equipped with slow water input and outflow. The exptl. middle chamber, filled with the leaves under study was sept. from the electrode chambers by cellophane and the electrode plates were kept at 0 v. drop with 0.5 ma. current flowing through the system over a 24-hr. exptl. period. From *Potamogeton pectinatus* leaves ionophoresis exts. photosynthetic active substances which differ from those extd. in dark states. These substances are acidic (found in anode compartment) and give reactions of keto acids, reduce ammoniacal Ag₂O and HgCl₂ but react weakly with Fehling soln. until hydrolyzed by acids. The results indicate that acid derivs. of carbohydrates participate in photosynthesis. Participation of phosphate is rejected as easily hydrolyzed P is absent, while tightly bound P is present equally in light and dark reaction products. Pyruvic acid was absent, but glyoxalic acid was present as were peroxides. Possibly CO₂ is fixed on the mols. of carbohydrates forming alduronic acids.
G. M. Kosolapoff

CA

110

Participation of alduronic acids in photosynthesis.
A. M. Kuzin and R. Ya. Shkol'nik. *Doklady Akad. Nauk SSSR*, 73, 355-8(1950).—Extn. of leaves of various plants with hot H₂O and extrn. of the latter with iso-AmOH, followed by pptn. of the coned. aq. layer by means of EtOH yielded, in all cases, ppts. giving pos. tests for uronic acids, neg. tests for pyruvic acid or glyoxylic acid. These alduronic acids are invariably present when the leaves are stored in darkness, but vanish totally or partially upon irradiation in the absence of CO₂ in the atm. (CO₂-free air or H atm.). Wheat sprouts grown in total darkness failed to show uronic acids in the above technique, although sprouts grown with exposure to light readily gave pos. tests. The results are similar with isolated chloroplasts. It is suggested that part of the photosynthesis reaction chain involves formation of peroxides of carbohydrates having the structure RC(O₂)OH, with CO₂ adding between the C atom and the OH; this forms substances capable of uronic acid tests and capable of being reduced to ketoaldehydes. G. M. Kosolapoff

C.A

116

Content of specific polysaccharides in human saliva in healthy and virus gripe subjects. A. M. Kuzin, G. P. Nikoljevskij, and B. Lesin (Moscow Med. Inst., Ministry of Health, R.S.F.S.R.). *Doklady Akad. Nauk S.S.S.R.* 73, 767-79(1959); cf. C.A. 42, 1345c. --In gripe the specific polysaccharides (detd. by the technique of retardation of hemisoagglutination) either vanish completely or are greatly reduced in concn. in human saliva. On convalescence normal values are attained. Possibly the polysaccharides are combined with the virus protein during the disease, thereby losing their specific pptn. properties. This contention is supported by *in vitro* expts. G. M. K.

KUZIN, A. K.; LEVSHIN, V. L.

Photosynthesis

Careless work "Nourishment of plants by light (photosynthesis)." D. I. Sapozhnikov. Reviewed by A. M. Kuzin, V. L. Levshin)., Vest. AN SSSR, 21, no. 12, 1951.

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

CA

110

The action of phenylurethan on photosynthesis. A. M. Kozin and R. Ya. Shkol'nik. *Doklady Akad. Nauk S.S.S.R.* 78, 849-51(1951).—Immersion of cuttings of *Potamogeton perfoliatus* in 0.05 and 0.1% phenylurethan decreases respiration rate in immersions up to 2 hrs.; a 12-hr. immersion drops respiration to 50% of normal. Photosyn-

thesis is affected much more and 2 hrs. in 0.03% soln. stops it completely. Substances pptd. by BaCl₂ from 50% EtOH ext. drop sharply after such immersions. The EtOH exts. some coloring matter from the plants. This material shows reducing properties and is increased by hydrolysis with 0.5 N HCl; uronic acid test is weakly pos. and methyl-pentose test is pos. with indications of the presence of rhamnose. G. M. Kosolapoff

USSR/Biology - Radioactive Tracers;
Carbonate Fertilizers 1 Aug 51

"The Possibility of Assimilation by Plants of Carbonates From the Soil," A. L. Kurzanov, Corr Mem, Acad Sci USSR, A. M. Kuzin, Ya. V. Mamul', Inst of Biochem Imeni A. N. Bakh and Lab of Biophysics, Isotopes, and Radiations, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXIX, No 4, pp 685-688
In view of the fact that supplementary feeding of plants with CO₂ through the roots may improve yields, the question of the assimilation of

211710

carbonate solns from the soil was investigated on *Phaseolus vulgaris* by using a Knop soln contg K_2HCO_3 with C^{14} . The evaluation of the contact photographs ("radioautographs") shows (1) that the carbonate is assimilated; (2) that assimilated CO_2 ions from the soil are utilized by the plant in the same manner as CO_2 resorbed from the air, because assimilation occurs only in the light.

211710

K. J. V. M.

~~Radioactive Isotopes and their Use in~~

Ph

History and Methods

Am

Translation D-131917, Dec. 54

KUZIN, A. N. Prof.

Biological Physics

Tasks and prospects for the development of
Soviet biophysics. Vest. AN SSSR 22, no. 3, 1952.

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

KUZIN, A.M.

USSR/Chemistry, Biological - Isotopes 1 Jul 52

"Biosynthesis of Glutamine, Hydrocarbons, and Proteins
Containing Radioactive Carbon," A. M. Kuzin, V. I
Merenova, Lab of Biophys, Isotopes, and Radiation,
Dept of Biol Sci, Acad Sci USSR

"Dok Ak Nauk SSSR, Vol LXXXV, No 1, pp 181-183

Describes procedure for prep of glutamine, glucose
fructose, proteins, and pentosans contg C^{14} by the
method of biol photo synthesis. Presented by Acad
A. I. ~~Oparin~~ 24 Apr 52.

224T25

Translation in /M -

211

History 11-10

Biosynthesis of nicotine labeled with carbon¹⁴ and the processes of transmethylation in tobacco leaves. A. M. Kuzin and V. I. Meresova. *Doklady Akad. Nauk S.S.S.R.* 23, 303-3 (1952). -- Tobacco leaves (on the plant) were kept in the dark 2 days, cut, placed in a vessel with CO₂ labeled with ¹⁴C, and subjected to illumination for 24 hrs. with elec. bulb; inactivation with hot water, mixing with ordinary tobacco leaves, mech. mincing of the mixt., and steam distn. from 2% NaOH gave the alkaloidal distillate, which was pptd. with silicotungstic acid; the ppt. showed radioactivity (60 counts/min./mg.). Steam distn. again after decoupa. with NaOH and sepi. of nicotine as picrate gave material with 31 impulses/min./mg., indicating introduction of ¹⁴C into the alkaloid. If the leaves after irradiation are kept in the dark 8 hrs. the activity of isolated nicotine rises to over 100. Oxidation of the product with SeO₂ showed that the ¹⁴C is located in the N-Me group of the pyridine of nicotine. Leaves of *Nicotiana* thus carry on transmethylation with participation of nicotine.

G. M. Kosolapoff

235T6

USSR/Biology, Agriculture - Assimilation 21 Jul 52
of Carbon Dioxide

"Assimilation of Carbon Dioxide by Plant Roots,"
A. M. Kuzin, V. I. Merenova, Ya. V. Mamul', Lab of
Biophysics, Isotopes, and Radiation, Dept of Biol Sci,
Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 85, No 3, pp 645-647

By using CO₂ or carbonate solns tagged with radio-
active carbon, established that CO₂ is resorbed
through the roots of Phaseolus vulgaris and reaches
the leaves. When there is no transpiration of the
leaves, or the roots have been detached, CO₂ is
assimilated by the roots rather than the green
235T6

parts of the plant. Assimilation of CO₂ by de-
tached roots of Primula obconica (thus eliminating
the effect of any nodule bacteria which may have
been present on Phaseolus vulgaris) was also es-
tablished. Presented by Acad A. I. Operin
29 Apr 52.

KUZIN, A. M.

235T6

KUZIN, A. M., MAMUL', Ya. V.: KHUDYAKOVA, R. I., DOMAN, N. G.
Photosynthesis

Problem of diversity of primary products of photosynthesis in different species of plants. Dokl. AN SSSR 86 no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, December, 1952.
Unclassified.

KUZIN, A.M.:GARZUNOVA, G.A.

Early hydrolysing compounds containing hexosamine in the human
brain. Doklady Akad. nauk SSSR 87 no. 5:833-835 11 Dec 1952.

(GLML 23:5)

1. Presented by Academician A. I. Oparin 18 October 1952. 2. Ry-
san' Medical Institute imeni I. P. Pavlov.

A.M.

The chemical characteristics of whole liver fluke antigens.
B. N. Babadshyanov and A. M. Kazim. *Doklady Akad. Nauk Uzbek S.S.R.* 1955, No. 11, 44-7 (in Russian); *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 6027. MD
The dry product of the ground helminths was digested by 0.1% pepsin at pH 7.5. The undigested portion was pptd. with CCl_3CO_2H and the ppt. centrifuged down. The supernatant was neutralised with $NaOH$, dried, and the antigen pptd. with acetone. It was redissolved in H_2O and reprecipitated, first with acetone and then with alc. Glycogen was then eliminated by salivary amylase, and the antigen pptd. twice with alc. A N-free antigen was thus prepd. which contained a small amt. of carbohydrate (18.8-17.8% reducing substances (data not given) after 2 hrs. hydrolysis in $N H_2SO_4$) and 45-60% inorg. material. B. S. Levine

①

KUZIN, A. M.

USSR/Medicine - Morphology

Nov/Dec 53

"Plenary Session of All-Union Scientific Society of Anatomists, Histologists, and Embryologists, in Leningrad," D. A. Zhadanov and E. Sh. Gerlovir

Usp Sov Biol, Vol 36, No 3(6), pp 380-389

This session was held 23-27 Jun 53 in Leningrad to discuss the role of morphology in the USSR, new methods and techniques of morphological research, and plans for making anatomical and histological work in higher institutes of learning serve a more practical purpose. The key speech was made by A. N. Studitskiy and "The Tasks of Soviet Morphology." He only mentioned the existence of tasks and then launched into a theoretical discussion of the Soviet concept of morphology. This speech was discussed, then other reports were read, among them "Electron Microscopy in Cytohistological Research" by Prof. G.M. Frank (Moscow), and a report on Radioautography by A.M. Kuzin (Moscow). The article does not disclose any new organizational plans.

Kuzin A.M.

USSR.

Assimilation of carbon through the roots of the plant from organic fertilizers. A. M. Kuzin and V. I. Merenova. *Doklady Akad. Nauk S.S.S.R.* 90, 677-6(1953); cf. *C.A.* 46, 1134c. — Green plants cultivated in $C^{14}O_2$ -labeled atm. were used as green fertilizer labeled with C^{14} , which was mixed into soil in which wheat sprouts were grown. The growing plants were then radiographed at intervals. It is shown that the C of the soil fertilizer is energetically used by the plant roots, especially in the first days after introduction. Over 2 months the soil lost some 55% C introduced as org. fertilizer. In the first days when the soil is rich in CO_2 the latter rapidly enters the leaves and stems of the growing plants; after 30-60 days the process is much slower.

G. M. Kosolapoff

KUZIN, A. M.

11 Aug 53

USSR/ Biology - Radiation Effects Isotopes.

"The Problem of the Mechanism of the Action of Penetrating Radiation on the Synthesis of Nucleoproteids in the Spleen," A.M.Kuzin, Ye.V.Dudilova, Inst of Biol Physics, Acad Sci USSR

DAN SSSR, Vol 91, No 5, pp 1183-1186.

Max inclusion of P³² into the protein fraction of the rat spleen and max suppression of this inclusion by irradiation immediately preceding injection of P³² phosphate occurred 19-20 hrs after the injection. Irradiation of the head of rats with X-rays (1000 r) had little effect on the inclusion of P³² into spleen nucleoproteids. Suppression of P³² inclusion by 60-65% occurred when the spleen was irradiated directly with X-rays (1000 r), but the rest of the body shielded with lead. Suppression by 20% occurred when the spleen was shielded with lead, but the rest of the body irradiated. Presented by Acad A.I. Oparin 18 Jul 53.

266T1

KUZIN, A. M.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
biological Chemistry

Participation of complex polysaccharides in carbohydrate metabolism. A. M. Kuzin, G. A. Garunova, and Ya. V. Mamul. *Doklady Akad. Nauk S.S.S.R.* 92, 637-40 (1953).
—White rat injected intravenously with C¹⁴-labeled glucose (obtained photosynthetically) shows a rapid increase of C¹⁴ activity in its tail venous blood after 1 hr., after which the activity declines steadily over 0.5 hrs. to almost 0. The activity of tissues (per 100 g.) was in the following declining order: intestine, kidney, spleen, brain, liver, blood, heart, muscle. Most carbohydrate in the C¹⁴-contg. fraction is in low-mol.-wt. form in these organs and may contain the glucose formed from degradation of glycogen during the isolation of the tissues. The femoral bone shows considerable uptake of C¹⁴ from the glucose. The gray matter of the brain is much more active in accumulation of C¹⁴ than the white matter.
G. M. Kosolapoff

KUZIN, A.M.

The Committee on State Prizes of the Council of Ministers of the USSR in the field of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for State Prizes for the years 1942 and 1943. (Sovetskaya Kultura, Moscow, No. 27-28, 29 Feb - 4 Apr 1944)

<u>Name</u>	<u>Title of Work</u>	<u>Submitted by</u>
Kursanov, A.L.	"Plant Utilization of Soil	Institute of Biochemistry
Kuzin, A.M.	Carbon Dioxide Entering	Imeni A.N. Bakh, Academy of
Kryukova, N.H.	Through the Roots"	Sciences USSR
Merenova, V.I.		

СССР - 1943/44. 7 July 1944

KUZIN, A. M.

Radioactive tracers in agricultural research Moskva, Izd-vo Akad. nauk SSSR, 1954.
100 p. (Akademii nauk SSSR. Nauchno-populiarnaiia seriia) (55-40921)

S507.K87

KUZIN, A. M.

Excerpta Medica sec 16 3/3 Mar 55 Cancer

863. KUZIN A. M. and DAVIDOVA S. Ya. Inst. of exp. Path. and Therap. of Tumours, Acad. of med. Sci., Moscow *The metabolism of nucleic acid and its nitrogen bases in rabbits subject to neoplastic growth (Russian text)* Biokhimija 1954, 19/2 (184-188)
Tables 3

The investigations were made on male rabbits with Brown-Pearce tumours, divided into: (1) controls, (2) testis-inoculated positive animals and (3) animals immune after 3-fold inoculation. Assays of the nucleic acids (RNA and DNA) and the nitrogen bases (adenine, guanine and thymine) in the liver, lung, kidney, spleen and testis are presented in 3 tables. The nucleic acids in the organs were low in both the positive inoculated and in the immune animals, as compared with the controls. This shows that the same changes occur in the organs when the tumour does not 'take' as when a growing tumour is present. No notable changes in the adenine and guanine content of the organs were observed with growing tumours, but the thymine level of DNA, particularly in the liver, was higher in tumour rabbits.

Brandt - Berlin

KUZIN, H M.

Kuzin, A. M.

USSR:

A method for the determination of aminosaccharides of easily hydrolyzed hexosamine-containing compounds in plant material. A. M. Kuzin and B. N. Gladyshev (A. N. Bakht Inst. Biochem. Acad. Sci. U.S.S.R., Moscow). *Biokhimiya* 19, 666-9 (1964). It was shown that the method of Eison and Morgan (*C.A.* 28, 3339) produces artifacts which simulate hexamines in plant material, and is therefore not suited for the purpose intended when plant material is studied. A new method is described which enables the detn. of the relative content of high mol. hexoamine-contg. easily hydrolyzed compds. in plant material. R. S. L.

KUZIN, A.M. (Moskva)

Biologically active polysaccharides. Usp.biol.khim. 2:256-276 '54.
(MIRA 12:12)

(POLYSACCHARIDES,
biol.active)

KUZIN, A.M., doktor biologicheskikh nauk.

Agriculture and problems of biological physics. Vest, AN SSSR 24 no.4:
45-51 Ap '54. (MLRA 7:5)
(Biophysics)

KUZIN, A. M.

Direct assimilation of carbon from organic fertilizers by a plant. V. I. Merenova and A. M. Kuzin. *Doklady Akad. Nauk S.S.S.R.* 94, 573-6(1954); cf. *ibid.* 90, 977(1953).— Radioactively labeled org. compounds of water-sol. and in-sol. types were administered from culture soil to wheat and tobacco plants and the plant sprouts were subjected to radio-autophotography in the conventional manner. Thus tobacco plants readily assimilate C from water-sol. sugars, amino acids, and org. acids (AcOH, glycine). The plants show relatively slow assimilation of C from water-insol. materials. Generally the assimilation proceeds at the expense of CO₂ liberated by bacterial action of the soil from its org. content as well as by direct utilization of the org. matter by the plant. G. M. Kosolapoff

KUZIN, A.M.

USSR/Medicine - Physiology

Card 1/1 : Pub. 22 - 20/44

Authors : Kuzin, A. M.; and Budilova, E. V.

Title : Effect of ionizing radiation on the structural viscosity of nucleic acid of the brain and a spleen

Periodical : Dokl. AN SSSR 98/6, 961-964, October 21, 1954

Abstract : Experiments, which were intended to determine how ionizing radiation effects the change in the structural viscosity of nucleic acid taken from the brain and spleen of live animals, are described. Four references; 1-U.S.S.R. (1915-1953). Graphs.

Institution : Institute of Biological Physics of the Acad. of Scs. of the USSR.

Presented by: Academician L. S. Shtern, June 7, 1954.

Translation M-479, 31 May 55

KUZIN, A.M.

USSR/ Chemistry - Biochemistry

Card 1/1 Pub. 22 - 22/40

Authors : Kuzin, A.M., and Eydus, L. KH.

Title : Deuteration of acetone in the presence of amino acids

Periodical : Dok. AN SSSR 99/3, 421-422, Nov 21, 1954

Abstract : The rate of penetration of deuterium into the acetone molecule and the effect of amino acid - glycocoll - on the process of acetone deuteration, were investigated. The rate of acetone deuteration in the absence of glycocoll was found to be low, and less than 1% of the total number of hydrogen atoms in the acetone underwent a change. The accelerating effect of glycocoll was proven. The formation of an enol form in the acetone under the effect of glycocoll was established. Seven references: 5-USSR and 2-German (1934-1951). Table; graph.

Institution : Academy of Sciences USSR, Institute of Biophysics

Presented by : Academician A.I. Oparin, September 11, 1954

KUZIN, A. M.

"The Utilization of Ionizing Radiation in Agriculture," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

KUZIN, A.M., [REDACTED], and SHAPIRO, N. I.

copy

"The Role of the Physiological Condition of an Organism on Use of Agents Which Protect Against the Harmful Action of Penetrating Radiations." in the book : "Collection of Works on Radiobiology" edited by N.I.N. Publ. House of AS USSR, Moscow 1955.

Nuzhdin

KUZIN, A. M., ██████████, SHAPIRO, N. I.

"The Effect of Estrogens on the Radiation Reaction of Mice."
in the book, "Collection of Works on Radiobiology" edited by N.I.N. Publ.
House of AS USSR, Moscow 1955.

Muzhkin

USSR/General Biology. Physical and Chemical Biology.

D-1

Abs Jour: Ref Zhur-Biol., No 20, 1958, 90270.

Author : Luzin, A.M.

Inst :

Title : Tasks of Biophysics in Agriculture (Preface)

Orig Pub: V sb.: Tr. nauchnoy sessii, posvyashchennoy dostizheniyam
i zadacham sov. biofiziki v s. kh. M., Izd-vo VNI SSSR,
1955, 3-7.

Abstract: No abstract.

Card : 1/1

10-30 days culture reaction...
of protein...
a weaker...
20 days...
substance...
reaction...
volume...
and the...
injection...
substance...
that the...
activity...