begin

374

Pontsyukov Sergey

127

MUTSYNOV, S., polkovnik

Decisiveness. Voen. znan. 41 no.6:12-13 Je '65.   (MIRA 18:5)

MUTSYNOV, Sergey Savel'yevich, polkovnik; VIL'CHINSKIY, I.K., polkovnik, red.; MYASNIKOVA, T.F., tekhn.red.

[Teaching fire under different conditions; from an armored carrier and truck, afloat and at floating targets, in town, woods and mountains] Obuchenie strel'be v razlichnykh usloviiakh; s bro-netransportera i avtomobilia, na plavu i po plavaiushchim tseliam, v naselennom punkte, v lesu, v gorakh. Moskva, Voen.izd-vo M-va obor.SSSR, 1960. 93 p.

(MIRA 13:11)

(Shooting, Military)

SAVCHENKO, S.S., general-mayor; ALEKSANDROV, A.A., polkovnik; GRECHIKHIN,
    A.A.; polkovnik; KOZLOV, A.F.; polkovnik; KOZLOV, A.F., polkovnik;
    LOVI, A.A., polkovnik; LOSHCHILOV, A.A , polkovnik; MOLOCHKOV,A.K.,
    polkovnik; MUTSYNOV, S.S., polkovnik; SEMIKOLENOV, N.P., polkovnik;
    SUDAKOV, S.V., polkovnik; SHINKAREV, C.M., polkovnik; VIL'CHINSKIY,
    I.K., polkovnik, red.; SOLOMONIK, R.L., tekhn. red.

[Methods of preparation to use weapons; firearms and grenade
launchers]Metodika ognevoi podgotovki; strelkovoe oruzhie i grana-
tometry. Moskva, Voenizdat, 1962. 318 p.   (MIRA 16:2)

1. Russia (1923- U.S.S.R.)Armiya. Sukhoputnye voyska. Upravleniye
boyevoy podgotovki voysk svyazi.
    (Russia--Army--Firearms) (Grenades)

LOV1, Aleksandr Abramovich, polkovnik; MUTSYHU\, Sergey Savel'yevich,
        polkovnik; SHEVCHENKO, Nikolay Akimovich, podpolk mik;
        VIL'CHINSKIY, I.K., red.

        [Problem book on the fundamentals of fire from small
        arms and tank, artillery and rocket weapons] Zadachnik po
        osnovam strel'by iz strelkovogo, tankovogo, artilleriyskogo
        i raketnogo oruzhiia. Moskva, Voen izdat, 1964. 283 p.

Mut Tel'shtedt, A A

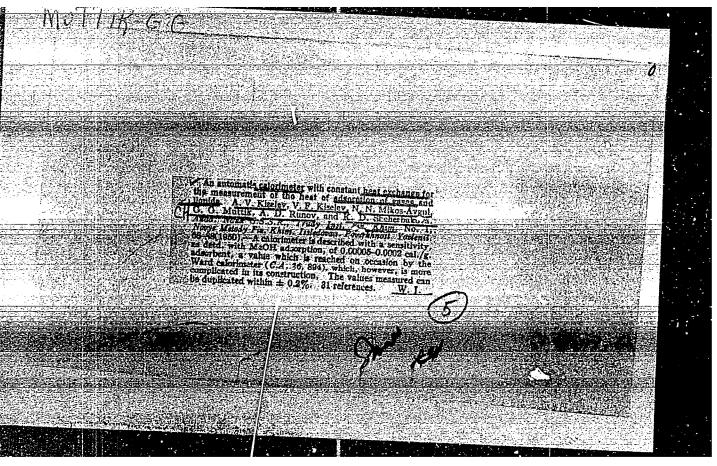KONOVALOV, N.V.; MUTTEL'SHTEDT, A.A.; BAUMAN, L.K.; GOTOVTSEVA, Ye.V.

Copper metabolism in hepatolenticular degeneration and during
treatment of this disease with thiol preparations [with summary in
French]. Zhur.nevr. i psikh. 57 no.1:39-48 '57.   (MLRA 10:3)

1. Institut nevrologii (dir. - prof. N.V.Konovalov) AMN SSSR, Moskva.
     (COPPER, metab.
          in hepatolenticular degeneration during ther. with
          sulfhydryl cpds.)
     (HEPATOLENTICULAR DEGENERATION, metab.
          copper, without & during ther. with sulfhydryl cpds)
     (SULFHYDRYL COMPOUNDS, ther. use
          hepatolenticular degeneration, copper metab. in)

MUTTIK G. G.

An automatic calorimeter with constant heat exchange for the measurement of the heat of adsorption of gases and liquids. A. V. Kiselev, V. F. Kiselev, N. N. Mikos-Avgul, G. G. Muttik, A. D. Runov, and K. D. Scherbakova. *Trudy Inst. Fiz. Khim., Issledovan. Poverkhnost. Yavlenii 68-88(1950).*—A calorimeter is described with a sensitivity as used with MeOH adsorption, of 0.00005-0.0002 cal./g. adsorbent, a value which is reached on occasion by the Ward calorimeter (*C.A.* 36, 894), which, however, is more complicated in its construction. The values measured can be duplicated within ± 0.2%. 31 references.   W. I.

KISELEV, A. V.; KISELEV, V. F.;
MIKOS-AVGUL', N.N.; MUTTIK, G.G.;
RUNOV, F.D.; SHCHERBAKOVA, K. D.

Calorimeters and Calorimetry

Automatic calorimeter with constant heat exchange for measuring heats of absorption of gases and liquids. Trudy Inst. fiz. khimii AN SSSR no. 1, 1952.
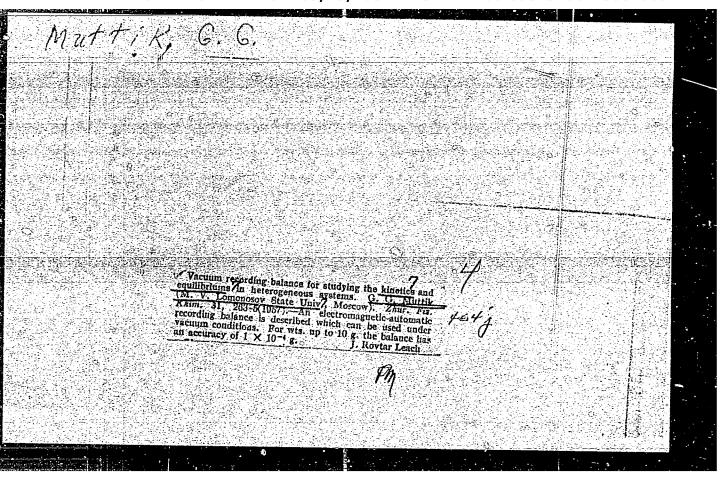
MUTTIK, G.G

KISELEV, A.V.; MUTTIK, G.G.

Adsorption of water vapor by silica and hydration of the surface
of latter [with summary in English]. Koll.zhur. 19 no.5:562-571
S-O '57.

(MIRA 10:10)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova,
Laboratoriya adsorbtsii.

(Adsorption) (Hydration) (Silica)

Muttik, G. G.

Vacuum recording balance for studying the kinetics and equilibriums in heterogeneous systems. G. G. Muttik (M. V. Lomonosov State Univ., Moscow). Zhur. Fiz. Khim. 31, 203-5(1957).—An electromagnetic-automatic recording balance is described which can be used under vacuum conditions. For wts. up to 10 g. the balance has an accuracy of 1 × 10⁻⁴ g.
J. Kovtar Leach

AVGUL', N.N.; BEREZIN, G.I.; KISELEV, A.V.; LYGINA, I.A.; MUTTIK, G.G.

Effect of the porosity of graphite adsorbents on the adsorption and heat of adsorption of hexane vapors [with summary in English]. Zhur. fiz. khim. 31 no.5:1111-1125 My '57.   (MIRA 10:11)

1. AN SSSR, Institut fizicheskoy khimii i Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
                (Adsorption)   (Carbon, Activated)   (Hexane)

S/081/61/000/009/004/015
B101/B205

AUTHORS: Muttik, G. G., Frolov, B. A.

TITLE: Adsorber with automatic calorimeter designed for measuring
             the adsorption heat of vapors

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1961, 154-155,
             abstract 9E35 (9E35) ("Tr. dal'nevost. fil Sib. otd. AN
             SSSR. Ser. khim.", 1960, vyp. 4, 83-87)

TEXT: A description is given of a calorimeter and an adsorber which
are used to determine the isotherms and heats of adsorption of a series
of hydrocarbons on coarse-grained silica gel КСК-2 (KSK-2). The calorim-
eter features constant heat exchange and has an automatically controlled
jacket. The calorimeter, its measuring and control equipment, and the
adsorber are schematically shown. [Abstracter's note: Complete transla-
tion.]

Card 1/1

DZHIGIT, O.M.; KISELEV, A.V.; MUTTIK, G.G.

Heats of adsorption of p-diethyl ether on silica gel [with summary in English]. Koll.zhur. 23 no.4:504-505 Jl-Ag '61.
(MIRA 14:8)

1. Moskovskiy universitet im. M.V. Lomonosova.
(Esther) (Heat of adsorption)

DZHIGIT, O.M.; KISELEV, A.V.; MUTTIK, G.G.

Heat of adsorption of water vapor on silica gel with hydrated
and dehydrated surfaces. Koll.zhur. 23 no.5:553-562 S-O '61.
(MIRA 14:9)

1. Moskovskiy universitet, Khimicheskiy fakul'tet, Laboratoriya
adsorbtsii.
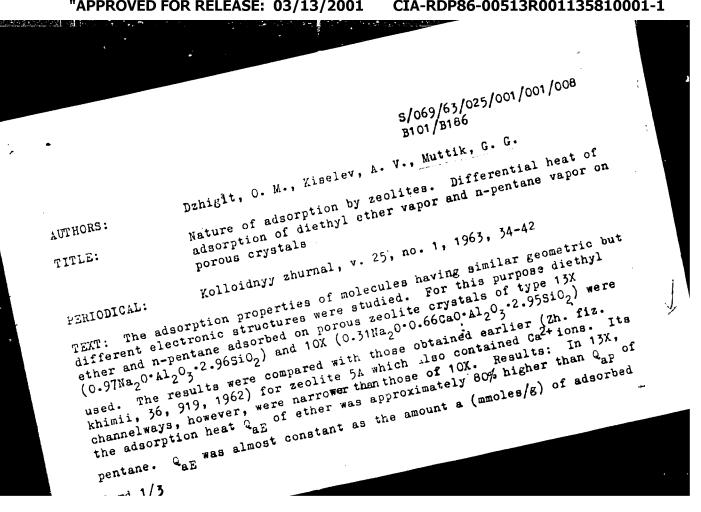(Water vapor) (Silica) (Heat of adsorption)

KISELEV, A.V.; MUTTIK, G.G.

Isothermal calorimeter with constant heat exchange. Zhur.
fiz.khim. 35 no.9:2153-2155 '61. (MIRA 14:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova,
khimicheskiy fakul'tet.
(Calorimeters)

DZHIGIT, O.M.; ZHDANOV, S.P.; KISELEV, A.V.; MUTTIK, G.G.

Differential heats of adsorption of n-pentane a d diethyl ether
by porous crystals of zeolite of type 5A. Zhur. fiz. khim. 36
no.4:919-920 Ap '62.   (MIRA 15:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet i Institut khimii silikatov AN SSSR.
        (Heat of adsorption) (Pentane) (Ethyl ether)
                        (Zeolite crystals)

S/069/63/025/001/001/008
B101/B186

AUTHORS: Dzhigit, O. M., Kiselev, A. V., Muttik, G. G.

TITLE: Nature of adsorption by zeolites. Differential heat of adsorption of diethyl ether vapor and n-pentane vapor on porous crystals

PERIODICAL: Kolloidnyy zhurnal, v. 25, no. 1, 1963, 34-42

TEXT: The adsorption properties of molecules having similar geometric but different electronic structures were studied. For this purpose diethyl ether and n-pentane adsorbed on porous zeolite crystals of type 13X $(0.97Na_2O \cdot Al_2O_3 \cdot 2.96SiO_2)$ and 10X $(0.31Na_2O \cdot 0.66CaO \cdot Al_2O_3 \cdot 2.95SiO_2)$ were used. The results were compared with those obtained earlier (Zh. fiz. khimii, 36, 919, 1962) for zeolite 5A which also contained Ca^{2+} ions. Its channelways, however, were narrower than those of 10X. Results: In 13X, the adsorption heat Q_{aE} of ether was approximately 80% higher than Q_{aP} of pentane. Q_{aE} was almost constant as the amount a (mmoles/g) of adsorbed

1/3

Nature of adsorption by ...

S/069/63/025/001/001/008
B101/B186

1140, 1153, 1961; R. M. Barrer, W. I. Stuart, Proc. Roy. Soc., A249, 464, 1959.

ASSOCIATION: Moskovskiy universitet im. M. V. Lomonosova, Khimicheskiy fakul'tet (Moscow University imeni M. V. Lomonosov, Chemical Division)

SUBMITTED: July 12, 1962

Card 3/3

DZHIGIT, O.M.; KISELEV, A.V.; MIKOS, K.L.; MUTTIK, G.G.

Heat of adsorption of water vapors on zeolite of the Na-faujasite type. Zhur. fiz. khim. 38 no.7:1791-1796 Jl '64.
(MIRA 18:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

Mutule, O.

USSR/General Problems - Problems of Teaching

A-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33612

Author : Mutule, O.

Institution : None

Title : Several Practical Projects in Physics for the Ninth and Tenth Classes

Original
Periodical : Padomju Latvijas Skola, 1956, No 1, 74-77, Latvian

Abstract : None

Card 1/1

ZIYEMELIS, K. [Ziemelis, K.]; MUTULIS, F.; GUDRINIYETSE, E. [Gudriniece, E.];
        VANAG, G. [Vanags, G.], akademik

        2-Arylamino-4-phenyl-5-benzoylthiazoles. Dokl. AN SSSR 164
        no.1:106-109 S '65.   (MIRA 18:9)

        1. Rizhskiy politekhnicheskiy institut. 2. AN Latviyskoy SSR
        (for Vanag).

(A)

ACC NR: AM5027781   Monograph   UR/

Garbuzov, Z. YE.; Il'gisonis, V. K.; Mutushev, G. A.; Naret, G. B.; Podborskiy, L. YE.
Uspenskiy, V. P.

Continuous excavating machines; design and construction (Zemleroynyye mashiny nepreryvnogo deystviya; konstruktsii i raschety) Moscow, Izd-vo "Mashinostroyeniye,"
1965. 275 p. illus., biblio., tables. 3700 copies printed.

PURPOSE AND COVERAGE: The book describes the basic type of continously operating
excavating machines, such as chain and rotor trench excavators, chain bucket
transverse excavators, open-cut excavators, elevating graders, as well as excavating
machines used in irrigation and reclamation construction. The discussion of design
includes determination of the basic parameters of machines, power values of drive
mechanisms, general statistical and dynamic calculations, and load conditions of
units and assemblies. The book is intended for engineering and technical personnel
of design offices and machine building plants. It may also be useful for students
of civil engineering and machine building. There are 54 references, of which 52
are Soviet.

TABLE OF CONTENTS [abridged]:

Card 1/2   UDC: 621.879.4.002.2

ACC NR: AM5027781

SUB CODE: 13   / SUBM DATE: 15Apr65/ ORIG REF: 052/ OTH REF: 002
Card   2/2

MUTUSHEV, G.A., inzhener; SHALMAN, D.A., inzhener.

Foreign one-bucket excavators with hydraulic drive. Stroi.i
dor.mashinostr.   2   no.7:38-39   Jl '57.   (MIRA 10:7)
(Excavating machinery)

GARBUZOV, Z.Ye.; IL'GISONIS, V.K.; MUTUSHEV, G.A.; NARET, G.B.;
       PODBORSKIY, L.Ye., kand. tekhn. nauk; USPENSKIY, V.P.;
       FEDOROV, A.P., inzh., retsenzent

       [Continuous action earth-digging machines; designs and
       calculations] Zemleroinye mashiny nepreryvnogo deistviia;
       konstruktsii i raschety. [By] Z.E.Garbuzov i dr. Moskva,
       Mashinostroenie, 1965. 274 p.   (MIRA 18:7)

MUTUSKIN, A.A.

2612. Distribution of iron-porphyrin enzymes in plant tissue (barley). D. M. Mikhlin and A. A. Mutuskin *Biokhimiia*, 1956, 21, 137—147 (Inst. of Biochem., Acad. Sci., Moscow, U.S.S.R.)—The activity of cytochrome oxidase in an 8-day-old barley seedling is correlated with that of catalase and the chlorophyll content. No such correlation is observed between the above and peroxidase activity. The respiration of tissue homogenates from different parts of the plant shows marked differences in sensitivity to CN due to the presence of different respiratory mechanisms, i.e. those involving the CN-sensitive metalloprotein oxidases (cytochrome oxidase, polyphenol oxidase, and ascorbic acid oxidase) and those depending on flavoproteins which are only slightly susceptible to CN. (Russian)
— A. K. GRZYBOWSKI

20-118-4-42/61

AUTHORS: Mikhlin, D. M., Mutuskin, A. A.

TITLE: Proto-Hematin and Respiration in Plants (Protogematin i dykhaniye rasteniy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 4, pp. 778-781 (USSR)

ABSTRACT: At present it cannot be doubted that the oxydative cyto-chromous system is predominating in the first stages of de-velopment of the plants, or perhaps the only system to com-plete the biological oxidation at the cost of the molecular oxygen (reference 1). The respiratory mechanism is, however, also differentiated with the development of the organism in consequence of the anatomic differentiation, as was proved several times for animals (reference 2). In the plants the predominating of the chromoxidase over other oxidases decre-ases gradually with the aging of the plants (reference 3). In various tissues any one of the known completing oxidases be-gins to predominate. The chemical nature of these new fer-ments can, however, not be considered as finally explained. The activity of the cytochromous system is extremely unequal not only for different sections, but even for one and the same

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Proto-Hematin and Respiration in Plants   20-118-4-42/61

organ (references 5,6). In any case the cytochromous system
is a very active catalytic system. Its intensive catalysis
corresponds to the high metabolic activity of the growing
tissue. It was the author's task to determine the iron-por-
phyrine-compounds (haemen) in various tissues of the plant
in connection with the morphological and physiological differ-
entiation (reference 7). It was especially important to de-
termine comparatively the protohematin content in those parts
of the barley germ in which earlier (reference 5) the activ-
ity of the cytochromous oxidase had teen determined. Further-
more the same was to be carried out in 3 zones of the lower
root section with various morphological structure and physi-
ological functions (reference 8); 1) In the tip-meristematic
tissue in a length of 3 mm from the tip, 2) in the cell pro-
liferation zone (4-6 mm from the tip) and 3) in the top sec-
tion (7 - 10 mm from the tip) with completed cell regener-
ation processes. The substance (200 ng) which was treated
with alcohol was pulverized in pyridine in presence of 50 mg
sodium hydrosulfite. After 20 minutes 3 ml n NaOH were added.
After further 20 minutes the material was centrifuged for 5
minutes (1700 revs/min). Protohemochromogen was determined
Card 2/4   with the spectrophotometer SF-4 by measuring the light

Proto-Hematin and Respiration in Plants   20 -118-4-42/61

absorption at 555 mμ. Figure 1 shows the samples of spectra
of hemochromogen from various parts of the leaf of barley.
The comparative distribution of protohem (in γ per 100 mg dry
weight) is very irregular. The highest concentration is bound
to the tip of the leaf, of an approximative length of 1 cm.
The content in the lower centimeter of the root approximates
this value (8γ). Then follows cotyledone (6γ) and the other
leaf- and root parts. These data point to a certain corre-
lation between the content of protohematin and the activity
of the hemoprotein ferments (cytochromoxidase and catalase).
This and the distribution of protohematin in certain root
sections can confirm the assumption (reference 9) that proto-
hem is a predecessor of other iron porphyrine compounds. The
relation of the protohematin content to the protein rises in
the root from the tip up to the 10th millimeter, i.e. from
the meristematic tissue up to the zone of the ripe cells.
Furthermore the content of this hem decreases to the 50th
millimeter. These data are in correlation with the data ob-
tained already earlier by the authors (reference 5) concer-
ning the respiratory intensity of the homogenates from diff-
erent root sections as well as with data (reference 14) on

Card 3/4   the course of the intensity modification of the respiration

Proto-Hematin and Respiration in Plants   20-118-4-42/61

        of undestroyed wheat roots with increasing distance from
        its tip. There are 1 figure and 14 references, 5 of which
        are Soviet.

ASSOCIATION: Institute for Biochemistry imeni A. N. Bakh, AS USSR (Insti-
            tut biokhimii im. A. N. Bakha Akademii nauk SSSR)

PRESENTED: October 12, 1957, by A. I. Oparin, Academician

SUBMITTED: October 10, 1957

AVAILABLE: Library of Congress

Card 4/4

5(3), 17(4)
AUTHORS: Mikhlin, D. M., Mutuskin, A. A.   SOV/20-125-4-66/74

TITLE: Non-mitochondrial Oxidation of Reduced Diphosphopyridine
                Nucleotide in the Root of Plants (Nemitokhondrial'noye okis-
                leniye vosstanovlennogo difosfopiridinnukleotida v korne
                rasteniya)

ABSTRACT: The oxidation of reduced pyridine nucleotides (DPN and TPN)
                mentioned in the title occurs mainly through flavoprotein,
                cytochrome C, and cytochrome oxidase. This is the most ef-
                ficient intra-cellular mechanism of oxidation of the above
                mentioned nucleotides (Ref 1) and through them - of the de-
                composition products of carbohydrates, lipids and proteins in
                the living organism. In non-mitochondrial parts of the cyto-
                plasm this oxidation is effected by other catalysts. Thus,
                cytochrome b_5, which is a selfoxidizing hemoprotein catalyst
                (Refs 2,3), was found in animal microsomes. In vegetable micro-
                somes this role is assumed by cytochrome b_3 besides other
                oxidation systems (Ref 4). These systems are neither bound to
                cytochrome C nor to cytochrome oxidase. Further oxidative

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SOV/20-125-4-66/74

Non-mitochondrial Oxidation of Reduced Diphosphopyridine Nucleotide in the Root of Plants

reductive systems which are able to transfer electrons from DPN directly to molecular or peroxide oxygen function in non-mitochondrial cytoplasm fractions of the vegetable cell. In opposition to the formerly mentioned systems (b_3) they are extremely sensitive to toxins capable of binding heavy metals. The authors have investigated these and other systems in various tissues of barely root, which differ anatomically as well as by their predominant physiological functions. It has been proved before that the activity of hemoprotein ferments may depend on these factors (Ref 7). In that study the comparative activity of a mixture of cytoplasm fractions (microsomes, soluble fraction), obtained by the method described in reference 4, was investigated. The c h e m i c a l n a t u r e o f c a t a l y s t s o x i d i z i n g D P N o u t s i d e o f v e g e t a b l e m i t o c h o n d r i a. As expected (Ref 9) it was proved that at least 2 ferments participate in the non-mitochondrial oxidation of reduced pyridine nucleotide coenzymes: 1) flavoprotein oxidase, which transfers the hydrogen of the coenzyme directly to the oxygen

Card 2/4

Non-mitochondrial Oxidation of Reduced Diphosphopyridine Nucleotide in the Root of Plants   SOV/20-125-4-66/74

and 2) some peroxidase which completes the oxidation at the cost of the hydrogen peroxide produced under the influence of flavoprotein. The effect of inhibiting and activating agents was taken into account. Addition of H_2O_2 multiplies the oxidation rate. Ascorbic acid (as inhibiting agent) strongly inhibits this kind of oxidation in opposition to other systems (Ref 11). As a result of these facts it is justified to assume that the system of DPN-oxidase consists of 2 components (flavo-protein oxidase + peroxidase). On the other hand oxidation outside of the mitochondria can also be effected by peroxidase alone (Ref 12). C o m p a r a t i v e   a c t i v i t y   o f D P N - o x i d a s e   o f   v a r i o u s   p a r t s   o f t h e   r o o t. The non-mitochondrial oxidation of the reduced coenzyme and thereby the oxidation of various metabolites in meristematose tissue, calculated on protein, is much fainter than in differentiated mature tissue. There are 13 references, 3 of which are Soviet.

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii nauk SSSR (Institute of Biochemistry imeni A. N. Bakh of the Academy of
Card 3/4   Sciences USSR)

MUTUSKIN, A. A. (USSR)

"The Biosynthesis of Protonaem by lants (Read by title)."

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

MUTUSKIN, A.A.; PSHENOVA, K.V.; KOLESNIKOV, P.A.

Biological role of the nonhemin iron of wheat germs. Dokl. AN SSSR
150 no.1:184-187 My '63.

(MIRA 16:6)

1. Institut biokhimii im. A.N.Bakha AN SSSR. Predstavleno akademikom
A.I.Oparinym.

(Wheat germ) (Iron) (Hemins)

MUTUSKIN, A.A.

Incorporation of amino acids into plastid proteins of the embryonic
wheat tissue. Dokl. AN SSSR 161 no.6:1458-1460 Ap '65. (MIRA 18:5)

1. Institut biokhimii im. A.N. Bakha AN SSSR. Submitted July 20,
1964.

Mut'yev, M. S.

Obrabotka Metallov Davleniyem, Sbornik Statey, Metallurgizdat, 1952.

AUTHOR: Mut'yev, M.S.

TITLE: Methods of Analysis of Spread in Grooves (Metody rascheta ushireniya v kalibrakh)

ABSTRACT: An analysis of the shortcomings of existing equations and methods of calculation provides the basis for suggesting a new method of calculating spread in simple passes, based on deter- mination of the displaced areas. In this method, not only the factors present in the rolling of rectangular strip over a smooth body are considered, but also: 1) Inequality of breakdown across the width of the pass; 2) slope of groove walls; 3) differ- ences in time of bite of various portions of the strip resulting in the development of zones of deformation outside the contact area and in an increase in spread.

Card 1/1
1. Steel—Processing 2. Rc .ing mills—Performance   S.G.
3. Mathematics

Translation from: Referativnyy zhurnal   Metallurgiya 1958, Nr 12, p 66 (USSR)

SOV/137-58-12-24410

AUTHOR: Mut'yev, M. S.

TITLE: Determination of Spread in Plain-bodied Rolls (Opredeleniye ushireni-
ya pri prokatke v prostykh kalibrakh)

PERIODICAL: Tr. Mezhvuz. nauchno-tekhn. konferentsii na temu Sovrem.
dostizh. prokatn proiz-va . Leningrad, 1958. pp 62-65

ABSTRACT. A method of calculating spread in oval, diamond, and square passes,
based on determination of the displaced volumes (areas) going to
longitudinal and lateral deformation with consideration of the influence
of pass-wall taper and zones of deformation beyond the contact area.
An equation of the Petrov-Siebel type is suggested for analysis of
spread in oval passes $\Delta b = K \sqrt{\Delta h \cdot R_r} \cdot \Delta h / C_1$, where $C_1 = h_1$ is
the height of the given square; $\Delta h = C_1 - h_0$; h_{ov} is the mean height
of the oval; R_r is the mean rolling diameter; and K is a coefficient
that comes to 0.4 Spread of an oval strip in a square pass is defined
by the formula
$$\Delta b = K \sqrt{(b_0 - h_2) R_r} \cdot b_0 - h_2 / b_0 ,$$ where $b = Q_{ov} /$
h_{ov} is the mean height of the oval when in the vertical position and

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Determination of Spread in Plain-bodied Rolls (cont.)

SOV/137-58-12-24410

$K = 0.3 - 0.35$. The spread of a square strip in a diamond pass (without rounding) is determined by the equation $\Delta b = (0.2 + 0.08 \ell_x / \bar{b}) b_2 \Delta h / h_1$, where h_1 is the height of the square strip, i.e., the vertical diagonal; b_2 is the spread of the diamond-shaped strip without rounded corners; and ℓ_x is the mean length of the contact area. When diamond strip is rolled in a square pass, $\Delta b = (0.2 + 0.12 \ell_x / \bar{b}) b_2 \cdot \Delta h / h_1$. The deviation of the calculated results from the experimental is $\pm 17\%$.

Ya. G.

Card 2/2

SOV/133/58-9-15/29

AUTHOR: Mut'yev, M. S.

TITLE: The Determination of the Area of an Oval Roll Pass
(Opredeleniye ploshchadi oval'nykh kalibrov)

PERIODICAL: Stal', 1958, Nr 9, pp 823-824 (USSR)

ABSTRACT: Formulae for the above determination are given. There
are 2 figures and 2 references; both of the references
are Soviet.

ASSOCIATION· Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

Card 1/1

S/137/62/000/001/072/237
A060/A101

AUTHOR: Mut'yev, M. S.

TITLE: Determination of the transverse spread deformation at metal upset-
               ting between two flat plates

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 1, abstract 1D3
               ("Nauchn. tr. Dnepropetrovsk. metallurg. in-t", 1958, no. 36,
               114 - 138)

TEXT: The author considers the methods proposed by others for determining
the transverse deformation at upsetting. Experiments which have been carried
out on the upsetting of specimens indicate that at a coefficient of friction
f > 0.2 one can approximately assume the "normal" scheme, where the spread comes
from metal of the triangles formed by the bisectors. If the coefficient of fric-
tion < 0.2, then an increased spread is resulted at upsetting. At a coefficient
of friction f ≈ 0 there occurs a "radial" scheme under which the similarity of
the upset rectangle is preserved (uniform upsetting). Studies of the upsetting
of specimens with a low coefficient of friction f = 0.05 - 0.20 show, that as
the friction decreases the spread increases, since the scheme of the stressed

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Determination of the...

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A060/A101

state approaches the uniform one. At a wide focus of deformation, in the presence of rigid ends, the relative and the absolute spread are reduced. The study of spread under rolling has shown that the formulae for the calculation of spread in that case have the same form as the formulae for spread at upsetting.

N. Yudina

[Abstracter's note: Complete translation]

Card 2/2

SOV/133-59-5-19/31

AUTHORS: Chekmarev, A.P., Academician of the Ac.Sc. Ukr.SSR, Dinnik, A.A., Grudev, A.P., Mut'yev, M.S., Spiridonov,N.P., Candidates of Technical Sciences and Vorotyntsev, Yu.V., Engineer

TITLE: On Maximum Angles of Bite During Rolling (O maksimal'nykh uglakh zakhvata pri prokatke) (I)

PERIODICAL: Stal', 1959, Nr 5, pp 444-445 (USSR)

ABSTRACT: These are remarks on the paper of B.P. Bakhtinov - "Utilisation of Reserve Friction Forces During Rolling on a Blooming Mill" (Stal', 1957, Nr 2) which was discussed during a conference on working of metals by pressure in Dnepropetrovsk. In the original paper, the author attempted to explain why the theoretical relationship $\alpha_e = 2\alpha_b$ (where α_e - maximum angle of bite during the steady state process of rolling, α_b - maximum angle of bite during the initial moment of feeding metal into rolls) is not confirmed by practice. The present authors point out that the work of the Rolling Section of the Academy of Sciences of the Ukrainian SSR established the deciding influence of scale on the coefficient of friction which led to the following conclusions: 1) Scale has little

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On Maximum Angles of Bite During Rolling   SOV/133-59-5-19/31

influence on the initial conditions of bite as during
the moment of feeding the metal into the rolls, the
latter break off the scale from the edges of the specimen
being fed into them, leaving clean metal.
2) The relatively small influence of scale on the friction
coefficient and maximum angle of bite during slipping and
stoppage of metal in rolls is also due to breaking off of
scale from the contact surface of the rolls.
3) The scale reduces considerably (2 - 2.5 times) the
coefficient of friction during the steady state rolling
process, whereupon a wide field of instability of the
process appears - from a bite angle below the friction
angle (at $\alpha_b \approx 24^\circ$ and the ratio of $\alpha_e/\alpha_b \leqslant 1$) up to
friction angles corresponding to complete slipping
(α_b = 39-40°).
4) On rolling specimens from which scale was removed, a
sharp increase of the friction coefficient was observed,
whereupon a stable rolling process is attained at an angle
of bite α_e = 39-40° and a ratio $\alpha_e/\alpha_b \approx 1.7$.

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On Maximum Angles of Bite During Rolling   SOV/133-59-5-19/31

5) On rolling specimens for which no attempt was made to preserve or remove the scale, the ratio of the angles of bite varied within a wide range - from 1.5 to values below unity. Thus, the ratios of angles of bite obtained during rolling α_e/α_b = 1.25 - 1.35 (Ref 4) and occasionally below unity should be explained mainly by a decrease in the friction coefficient on transfer from the initial stage of bite to the steady state process induced by the scale or other causes. With preliminary removal of scale and forced feeding of metal into the rolls, a steady state pro-gress can be obtained at large angles of bite.   In conclusion it is stated that the corrections of Bakhtinov relating to the steady state conditions of rolling are incorrect.
There are 5 Soviet references.

Card 3/3

MUT'YEV, M.S.

S/137/61/000/007/039/072
A060/A101

AUTHOR: Mut'ev, M. S.

TITLE: On dividing a pass into elements for rolling with nonuniform reduction

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1961, 19, abstract 7D-50
            ("Tr. Konferentsii Tekhn. progress v tekhnol. prokatn. proiz-va".
            Sverdlovsk, Metallurgizdat, 1960, 290-303)

TEXT.   To assure the same spread in different elements of a pass, it is
important to have the correct division of the pass into elements in which equal
spreads should ensure the uniformity of spread of the entire profile. The magni-
tude of partial spreads varies depending on the method of division. The division
should be carried out by taking into account the reduction process in each ele-
ment. In grooving rolls for the rolling of tee profiles in rib groovings the
walls in the sheet groovings of the shelf should be separated for the entire
height of the pass, i.e. these passes have a different division of the profile
into elements. In double tee passes the deformation process proceeds in a more
complicated fashion, in which connection it is necessary to pay special attention

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On dividing a pass into elements . .

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to the conditions of deformation in the flanges. The most correct method is the calculation of flange spread according to their entire height.

B. Ilyukovich

[Abstracter's note. Complete translation]

Card 2/2

S/137/61/000/006/028/092
A006/A101

AUTHOR: Mut'yev, M.S.

TITLE: Derivation of a formula of widening during rolling on a smooth barrel

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 2, abstract 6D9
              ("Nauchn. tr. Dnepropetr. metallurg. in-t", 1960, no. 39, 152-172)

TEXT: The suggested derivation of a formula of widening is based on the
calculation of widening zones determined by lines of equal stresses. Longitudi-
nal and transverse stresses are determined on the basis of equilibrium of the
elementary metal rod passing through the deformation seat (according to a method
developed by A.I. Tselikov). Considering the complex nature of the formulae
derived, it is suggested to calculate widening by a simplified formula, taking
into account the non-uniformity of deformation, curvature of rolls and other
factors. The formula derived was experimentally checked.

                                        V. Prspeknov

[Abstracter's note: Complete translation]

Card 1/1

MUT'YEV, M. S.

Doc Tech Sci - (diss) "Study of expansion and mean coefficient
of drawing-out in rolling with uneven reduction in area." Mos-
cow, 1961. 34 pp; (Ministry of Higher and Secondary Specialist
Education RSFSR, Moscow Order of Labor Red Banner Inst of Steel
imeni I. V. Stalin); 200 copies; price not given; list of author's
works on pp 33-34 (13 entries); (KL, 7-61 sup, 230)

MUT'YEV, M. S., kand. tekhn. nauk

Determining the height of the initial billet for rolling in a
closed section groove. Nauch. trudy IMI no.48:192-205 '62.
(MIRA 15:10)

(Rolling(Metalwork))

MUT'YEV, Manuil Stepanovich

[Groving of roughing rolls] Kalibrovka chernovykh valkov.
Moskva. Metallurgiia, 1964. 189 p.   (MIRA 17:10)

SOV/127-59-4-4/27

18(3)

AUTHORS: Kandyba,M.I., Candidate of Technical Sciences, Mutylo, A.V. and Faustov, G.T., Mining Engineers (Krivoy Rog)

TITLE: The Development of New Levels in Mines of the Krivoy Rog Basin. (Podgotovka novykh gorizontov na shakhtakh Krivorozhskogo basseyna.)

PERIODICAL: Gornyy zhurnal, 1959, Nr 4, pp 28-32 (USSR)

ABSTRACT: Different methods of developing new mining levels in mines of the Krivoy Rog Basin are described in this article. As the exploitation of mines of the region is usually conducted by the method of coupled levels, the cutting of hauling galleries, drift and cross-drifts must be realized keeping in mind that they must serve for hauling, communication and aeration purposes for a very long period of time (up to 22 years). Moreover, the use of larger trolleys (15-20 tons

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SOV/127-59-4-4/27

The Development of New Levels in Mines of the
Krivoy Rog Basin.

capacity) necessitates larger hauling galleries,
more elaborate strengthening and maintenance. The
Krivbassproyekt Institute elaborated two methods
of development by coupled levels. The first
method foresees the cutting of two-way cross-
drifts on each level, and the water-pumping in-
stallation and a bunker on the base-level. The
second method foresees the cutting of cross-
drifts on the base level only. The intermediate
level is then developed through the blind shaft,
and headings are cut from drifts of the base
level. Losses caused by ore stamp are largely
covered by the economies realized in other
capital mining expenditure. Only in the Oktyabr'-
skaya mine are losses in the output of the Mar-
tin ore, larger than the realized economies.

Card 2/3　　The author advises not to apply the above

SOV/127-59-4-4/27

'The Development of New Levels in Mines of the Krivoy Rog
Basin.

methods until an effective and economical method
of caking the crushed Martin ores is found.
There are 3 diagrams, 4 graphs and 1 table.

ASSOCIATION: NIGRI, Krivoy Rog

Card 3/3

MUTYUNIN, N.K.

      Osteosynthesis using metal pins [with summary in English].
      Khirurgiia 34 no.7:106-110 Jl '58   (MIRA 11:9)
          (FRACTURES, surgery
             osteosynthesis with metal pins (Rus))

MUTZOVSKAYA, O. A.

7. Hydrocarbons from gases containing organic sulfur compounds. I. P. Rapoport and O. A. Mutzovskaya. U.S.S.R. 106,575, Aug. 25, 1957. To make unnecessary preliminary purification of the S-contg. gases, Fe-Cu-contg. admixts. of difficultly reducible oxides, such as Al₂O₃, ZnO, or MnO₄, are used as catalysts.   M. Hirsch

MJUCHAIDZE, A.N.

Characteristics of the performance of trucks with pneumatic brakes operating in mountainous areas. Trudy Inst. met. AN Gruz. SSR 10;221-223 '60.   (MIRA 13:12)

(Motor trucks—Brakes)

USSR/Farm Animals - General Problems.   C-1

Abs Jour   :   Ref zhur - Biol., No 13, 1959, 83262

Author   :   Hunga, A.
Inst   :   -
Title   :   Fodder Siloing with Acids.

Orig Pub   :   Sotsialistik pollumajandus, 1957, No 6, 257-258

Abstract   :   After being dissolved in water in proportions of 1 : 15
                to 1 : 20, a 90 percent strong, crude formic acid (o
                German origin, with the trade name of "Amasil") was used
                at the Raadi Farm for Experimental Studies of the Estonian
                Academy of Agriculture, as well as at the Tyakhtvere expe-
                rimental farm. This formic acid solution (30-35 liters
                were used for the spraying of 1 ton of green fodder) as an
                excellent preparation for conservation of unground under-
                grass of clover and of mixed green fodder rich in legumi-
                nous plants, even at late growth stages (pH of silages
                being 4.4-3.8). Good quality silage (pH of 4.4) was also

Card 1/2

MUUGA, August, dots., kand. sel'khoz. nauk; KRUUS, A., red.;
RIDALA, E., tekhn. red.

[Dairy cattle feeding on a scientific basis; scientific
principles of winter feeding and new feed rations] Pi-
imakarja söötmine teaduslikule alusele; talvise söötmise
korraldamise teaduslikke lähtekohti ja uued söötmisnormid.
Tallinn, Eesti Riiklik Kirjastus, 1962.   59 p.
                                        (MIRA 17:1)

MUUGA, August, prof.; KRUUS, A., red.; KOHU, H., tekhn. red.

[General theory of feeds] Üldine söötmisõpetus. Teine, ümbertöötatud trükk. Tallinn, Eesti Riiklik Kirjastus. Vol.1. 1963. 249 p.   (MIRA 17:1)
                    (Feeding and feeds)

S/613/61/000/017/005/011
D051/D113

24.3500 (1137, 1138, 1163)

AUTHORS: Lushchik, N.Ye. and Muuga, I.A.

TITLE: The spectroscopy of crystals activated by mercury-like ions.
          II.   Calcium orthophosphate phosphors

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii.
           Trudy, no. 17, 1961. Issledovaniya po lyuminestsentsii, 67-86.

TEXT: This paper is a continuation of investigations of the spectral
characteristics of alkali halide crystals activated by mercury-like ions,
which were conducted by Ch.B.Lushchik and N.Ye.Lushchik from 1955 to 1960.
The present work describes the simple laboratorial method of preparation and
the spectral features of a group of phosphors based on $Ca_3(PO_4)_2$ and acti-
vated by mercury-like ions. Calcium orthophosphate phosphors were studied
because of the need for economy in cheap luminophores suitable as spectral
transformers in luminescent lamps of ultraviolet emission (λ = 253.7;
185 mμ). The results of the study were satisfactory. The excitation and

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D051/D113

The spectroscopy ...

emission spectra of the impurity centers were measured at 293° and 100° K
and compared with the spectral characteristics of free Ga^+, Ge^{++}, In^+, Sn^{++},
Tl^+ and Pb^{++} ions. The comparison permitted interpreting the electron
structure of the spectra of the studied phosphors. A.V.Moskin, F.M.Pekerman,
A.V.Morozova, E.Männik , and L.I.Karaseva are thanked for help rendered.
There are 7 figures and 1 table. The most important English-language
reference is: K.Butler, J.Electrochem.Soc., 100,250, 1953.

SUBMITTED: April 20, 1961

Card 2/2

S/613/62/000/018/004/013
E039/E120

AUTHORS: Muuga, I.A., and Lushchik, N.Ye.

TITLE: On the sensitized luminescence of $Ca_3(PO_4)_2$-Ga, Mn and $Ca_3(PO_4)_2$-In, Mn

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no.18. 1962. Issledovaniya po lyuminestsentsii. 51-56

TEXT: This work forms part of a program for the development of phosphors for use in mercury discharge tubes. The method of preparation is as described in an earlier paper by the same authors. Mn is added as MnO_2 and fired in air, while Ga and In are activated by firing in an evacuated quartz ampoule. Concentrations are: Mn - 5 mole %; Ga and In - 1 mole %. Examination of the phosphors under an ultraviolet microscope showed that all the phosphor grains luminesced with the same spectral composition. Excitation and emission spectra of $Ca_3(PO_4)_2$-Ga; $Ca_3(PO_4)_2$-Ga, Mn; $Ca_3(PO_4)_2$-In and $Ca_3(PO_4)_2$-In, Mn were obtained. The excitation and emission

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On the sensitized luminescence of ...   S/613/62/000/018/004/013
E039/E120

spectra due to In and Ga centres do not depend on the presence of Mn, while the excitation spectra of Mn practically coincides with the excitation spectra of the sensitizers. The quantum yield of sensitized luminescence due to Mn^{2+} centres in $Ca_3(PO_4)_2$-In, Mn and $Ca_3(PO_4)_2$-Ga, Mn depends on the frequency of the exciting light in the region of the sensitizer excitation band and is related to the electron transitions

$$^1S_0 \rightarrow {}^1P_1 \quad \text{and} \quad {}^1S_0 \rightarrow {}^3P.$$

The migration of energy from In and Ga ions to Mn ions is established and occurs more easily in $Ca_3(PO_4)_2$ than in the alkali halide phosphors. Both $Ca_3(PO_4)_2$-Ga, Mn and $Ca_3(PO_4)_2$-In, Mn are suitable as spectral converters in mercury lamps.
There are 2 figures.

SUBMITTED: December 16, 1961

Card 2/2

ACCESSION NR: AT4020793   S/2613/63/000/023/0022/0037

AUTHOR: Lushchik, Ch. B.; Lushchik, N. Ye.; Muuga, I. A.

TITLE: Band spectra of crystals activated with mercury-like ions. Part I.

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 23, 1963, Issledovaniya po lyuminestsentsii (Research in luminescence), 22-37

TOPIC TAGS: luminescence, luminescence spectru, band spectrum, phosphor, phosphor luminescence, crystalline phosphor, mercury-like luminescence activator, crystal vibration

ABSTRACT: The method of luminescent probes may be successfully used for the study of physical phenomena in solid bodies. Rare-earth ions, which give off a linear emission of complex structure, are most frequently employed as the probes. The author also notes that the so-called mercury-like ions (Ga^+, Ge^{2+}, In^+, Sn^{2+}, Sb^{3+}, Tl^+, Pb^{2+}, Bi^{3+}) may be used in investigating the physical processes in alkali halide crystals. A detailed study of the spectral characteristics of alkali halide crystals, activated with mercury-like ions, has demonstrated that in these phosphors the absorption and emission spectra at 100K (for KCl–Tl even at 4.2K) are continuous bands without an oscillating structure. The sharp difference in spectra for mercury-like centers in crystals of the types AIIBVI and AIBVII,

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which are structurely similar, deserves careful attention. The purpose of the present work was to determine the conditions necessary for the observation of a vibrational structure in the spectra of mercury-like centers. The authors have attempted to utilize luminescent ions for an experimental investigation of the vibrational processes in the crystals. The shapes of the emission and excitation spectra of KCl-Bi, $Ca_3(PO_4)_2$-Bi, CaO-Bi and CaS-Bi phosphors were investigated at 295 and 100K. The phosphors with large Stokes losses (KCl-Bi) have continuous emission and excitation spectra. In the case of phosphors having relatively small Stokes losses (CaO-Bi), at 100K a series of clearly marked equidistant bands were observed against the background of the continuous emission and excitation spectra. The authors discuss the characteristic features of the continuous and band spectra, and their electronic ($1S_0 \rightleftarrows 3P_1$ and $3P_0 \rightarrow 1S_0$ transitions in Bi^{3+} centers) and vibrational structure. The hypothesis is advanced that the band spectra arise as the result of the interaction of the electrons with the localized modes of vibration which, in turn, interact with the crystal vibrations. The authors found, in conclusion, that mercury-like centers with small Stokes losses may serve as convenient luminescent probes for the investigation of vibrational processes in solid bodies. "We are grateful to N. Kristofel', V. Khizhnyakov and G. Zavt for their discussion on the theoretical work in electron-phonon interaction in crystals and to K. K. Rebane for critical remarks." Orig. art. has: 1 table and 3 figures.

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ACCESSION NR: AT4020793

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 21Jan63

DATE ACQ: 07Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 023

OTHER: 013

Card   3/3

MÜÜRISEPP, Aleksei; TURONOK, G., red.

[25th anniversary of Soviet Estonia] 25- letie Sovetskoi
Estonii. Tallinn, Eesti Raamat, 1965. 176 p.
(MIRA 18:8)

1. Predsedatel' Prezidiuma Verkhovnogo Soveta Estonskoy
SSR (for Müürisepp).

AALOE, A., nauchnyy sotr.; MARK, E., nauchnyy sotr.; MANNIL, R.,
nauchnyy sotr.; MUURISEPP, K., nauchnyy sotr.; ORVIKU, K.,
nauchnyy sotr.; KIVILA, H., red.; TOOMSALU, E., tekhn. red.

[Stragigraphic review of the Paleozoic and Quaternary deposits
of Estonia] Ulevaade Eesti aluspohja ja pinnakatte stratigra-
afiast. Tallinn, Eesti NSV Teaduste Akadeemia Geoloogiia
Instituut, 1960. 61 p.

(MIRA 15:1)

1. Geologicheskiy institut Akademii nauk Estonskoy SSR (for
Aaloe, Mark, Mannil, Muurisepp, Orviku).
(Estonia—Geology, Stratigraphic)

MÜÜR, MT, .

A conference on the History of technology and the natural sciences. p. 219.

EESTI LOOD'IS (Esti NSV Teaduste Akadeemia) Tartu, Estonia. Vol. 8, nr. 3, 1959.

Monthly List of East European Access : : : (EEAI), LC, no. 4, July, 1959.
Uncl.

MUURSEPP, P.

3rd Conference of the Baltic Republics on the History of Science and Technology. Eesti tead akad tehn fuus 9 no.1:90 '60.   (EEAI 9:9)
(Baltic States--Science)

10 9100
16 7300

21992
S/023/61/000/001/002/003
D203/D305

AUTHOR: Müürsepp, P.

TITLE: Evaluating the critical load of a circular, cone-shaped shell

PERIODICAL: Akademiya nauk Estonskoy SSR. Izvestiya, Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 1, 1961, 28 - 32

TEXT: This paper develops, by a perturbation method, a simple calculating formula for evaluating the critical load of a circular, truncated cone of average length, with transversal external pressure linearly distributed along the cone generating line. As a special case, the formula is obtained for a critical load of uniform transversal pressure. The solution of the problem is reduced to solving Eq. (2.1) given by P.V. Müürsepp (Ref. 1: Ob ustoychivosti krugovogo usechennogo konusa pod deystviyem ravnomerno raspredelennogo vneshnego davleniya (On the Stability of a Circular Truncated Cone

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Evaluating the critical ...

Under the Influence of Uniformly Distributed External Pressure) Iz-vestiya AN ESSR Seriya tekhn. i. fiz.-mat. nauk, v. VII, No. 2, 1958) and which is represented as

$$w'''' + \frac{6\sin\varphi}{\varrho}w''' + \frac{6\sin^2\varphi}{\varrho^2}w'' - \left(\frac{qs^4}{\varrho^3\cos^3\varphi} - \frac{\lambda^2s^6}{\varrho^6\cos^2\varphi}\right)w = 0, \qquad (1)$$
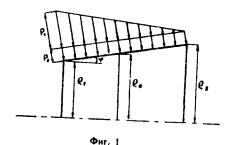
(1)

where $q = \frac{p}{Eh}$, w = set (deflection), φ = cone angle, ϱ = shell distance from the axis, p = the intensity of transversal pressure, s = number of waves on circumference, E = Young's modulus $\lambda^2 = h^2/12(1 - v^2)$ where v = Poisson's ratio, h = shell thickness. The pressure, linearly distributed along the cone generating line, may be expressed in the following way

$$q = q_1\frac{\varrho_2 - \varrho}{\varrho_2 - \varrho_1} + q_2 = q_1\left(\frac{\varrho_2}{\varrho_2 - \varrho_1} + q_2' - \frac{1}{\varrho_2 - \varrho_1}\varrho\right) = q_1(c - d\varrho). \qquad (2)$$

(2)

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Evaluating the critical ...

Fig. 1.

Фиг. 1

Let $a = \frac{q_1 s^2}{\cos^3 \varphi}$, $\beta^2 = \frac{\lambda^2 s^4}{\cos^2 \varphi}$, $a = \frac{l}{2} \sin \varphi$, where l – the relative shell length.

The variable $\xi_0 = 2 \frac{\xi - 1'}{1}$, introduced where 1' – the distance measured along the generating line from the narrow end to the section of radius $\rho_0 = \sqrt{\rho_1 \rho_2}$. The coordinates to the left are assu-

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med to be negative and, to the right, to be positive. The distance from the ends to the section $\rho_0 = 1$ are $\xi' = -2\frac{l}{7}$, $\xi'' = 2\frac{l}{7}$; their difference is $\xi'' - \xi' = 2$. In addition ($1 + a\xi'$) and ($1 + a\xi''$) = = 1. From these conditions

$$\xi' = -\left(1 - \frac{a}{2}\right), \; \xi'' = 1 + \frac{a}{2}, \; l' = \frac{l}{2}\left(1 - \frac{a}{2}\right), \; l'' = \frac{l}{2}\left(1 + \frac{a}{2}\right). \quad (3) \qquad (3)$$

are obtained. Assuming that a is a small parameter terms to a^2 only are kept in the expression. The change of variables, $\xi_0 = 2\frac{\xi - 1}{1}$, corresponds to the relation between the operators $D = \frac{2}{1} D_0$, where $D = \frac{d}{d\xi}$ and $D_0 = \frac{d}{d\xi_0}$. Eq. (1) will then become

$$\left\{ D_0^4 + \frac{6a}{\varrho} D_0^3 + \frac{6a^2}{\varrho^2} D_0^2 - \frac{l_1^4}{\varrho^3} \left| \alpha(c - d\varrho) - \frac{\beta^2}{\varrho^3} \right| \right\} w = 0. \quad (4) \qquad (4)$$

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Here $l_1 = \frac{ls}{2}$. Now the new variable $x = \frac{1}{a} \ln \rho$ is introduced, where $\rho = 1 + a\zeta_0$. This change corresponds to the relation $D_0 = \frac{1}{\rho} D_x$, giving

$$\left\{ D_x^4 - a^2 D_x^2 - l_1^4 \left[\alpha(c - d\rho)\rho - \frac{\beta^2}{\rho^2} \right] \right\} w = 0 \qquad (5)$$

$\rho = e^{ax}$ is expanded into a series

$$e^{ax} = 1 + ax + \frac{a^2 x^2}{2} + \ldots, \quad e^{-2ax} = 1 - 2ax + 2a^2 x^2 + \ldots,$$

$$\alpha = \alpha_0 + a\alpha_1 + a^2 \alpha_2 + \ldots \qquad (6)$$

Eq. (5) will then have the form

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Evaluating the critical ...

$$D_x^4 w - a^2 D_x^2 w - l_1^{\prime\prime}\Big[(a_0 + aa_1 + a^2 a_2)\Big[c\Big(1 + a_1 + \frac{a^2 x^2}{2}\Big) -$$
$$- d(1 + 2ax + 2a^2 x^2)\Big] - \beta^2(1 - 2ax + 2a^2 x^2)\Big] w = 0. \qquad (7) \qquad\qquad (7)$$

The case is then discussed when $w = 0$, $D_x w = 0$ at both ends. The limits of variation of x are

$$\ln(1 + a\xi_0) = a\xi_0 - \frac{a^2 \xi_0^2}{2} + \frac{a^3 \xi_0^3}{3} - \cdots, \quad x = \xi_0 - \frac{a}{2}\xi_0^2 + \frac{a^2}{3}\xi_0^3 - \cdots$$

If $\xi_0 = \xi'$, then $x = -1 + \frac{a^2}{6}$. If $\xi_0 = \xi''$, then $x = 1 - \frac{a^2}{6}$. Remembering that a is small, $-1 \leqslant x \leqslant 1$ is assumed as a range of variations. In Eq. (7) a is assumed to be a perturbation parameter. The parameter β^2 maintains its value in all approximations. The Eigen values α_0, α_1, α_2 are found consecutively according to the pertur-

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Evaluating the critical ...

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I203/D305

bation method. The expansion of the solution for w is $w = w_o + aw_1$ + $a^2 w_2 + \ldots$ The differential equation for zero approximation is obtained from (7) in the form of

$$\{D_i^4 - l_i^4[\alpha_0(c-d) - \beta^2]\}w_0 = 0.$$ (8)   (8)

Let $u^4 = \alpha_0(c - d) - \beta^2$. The symmetrical function

$$w_o = A\cos ul_1 x + B\, ch\, ul_1;$$ (9)

satisfies Eq. (8). To satisfy the boundary values at x = 1 the quantity $ul_1 = \frac{x}{2}$ must satisfy $tg\, ul_1 + th\, ul_1 = 0$. The least Eigen value is for $ul_1 = 2.365$ or $\mathcal{H}_0 = 4.730$. From the definitions of α_0 and β^2, the author obtains for the zero approximation of the load q_{10}, the expression

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$$q_{10} = \frac{a_0 \lambda \cos^2 \varphi}{\beta}.$$ (10)   (10)

Whence the zero approximation of the minimum critical load is

$$q_{10\,min} = \frac{4}{3} \sqrt[4]{3} \frac{1}{c-d} \frac{x_0}{l} (\lambda \cos \varphi)^{n_1},$$ (11)   (11)

to which corresponds

$$s^2 = \frac{x_0}{l} \sqrt[4]{\frac{3\cos^2\varphi}{\lambda^3}}, \quad B = 0,1329A.$$ (12)   (12)

To find the first correction for the deflection function w, the author designates $ul_1 x = x_1$ then $D_x = ul_1 D_{x1}$ and from (7) he obtains

$$(D^4_{x_1} - 1)w_1 = \frac{1}{u^4}\left\{(c-d)a_1 + [(c-2d)a_0 + 2\beta^2]\frac{x_1}{ul_1}\right\}w_0.$$ (13)   (13)

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In this equation, the Eigen value α is zero because it has a cor-responding, odd Eigen function. The boundary value must be satis-fied at one end only. From the definition β^2, u^4 and from (12) it follows that $\beta^2/u^4 = 3$; in addition, as long as $\alpha_0 = \frac{u^4 + \beta^2}{c - d}$, then (13), one may write

$$(D_{x1}^4 - 1) \, w_1 = (4 \, \frac{c - 2d}{c - d} + 6) \, \frac{x_1}{ul_1} \, w_0 . \qquad (14)$$

Let $b = 4 \, \frac{c - 2d}{c - d} + 6$. After integrating and evaluating constants one obtains

$$w_1 = \frac{1}{8} \frac{b}{ul_1} [x_1^2 - (ul_1)^2] D_{x_1} w_0 - \frac{3}{8} \frac{b}{ul_1} x_1 w_0 . \qquad (15) \qquad (15)$$

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In the same way the second correction w_2 and Eigen value is obtained

$$a_2 = (-0.054 \frac{(c-2d)^2}{(c-d)^3} + \frac{-0.20c+0.50d}{c-d} + 0,035) a_0 \qquad (16)$$

(16)

Then the required critical load in dimensional form is

$$p_1 = \frac{\sqrt{6}}{9(c-d)} \frac{x_0 Eh^{7/3}}{l(1-\nu^2)^{7/6}} \left(\frac{\cos\varphi}{\varrho_0}\right)^{7/6} \left[1 + a^2 \left(-0,054 \frac{(c-2d)^2}{(c-d)^2} + \right.\right.$$
$$\left.\left. + \frac{-0,20c+0,50d}{c-d} + 0,035\right)\right].$$

(17)

where

(17)

$$c = \frac{\varrho_2}{\varrho_0 - \varrho_1} + \frac{p_2}{p_1}, \quad \iota = \frac{\varrho_0}{\varrho_2 - \varrho_1}.$$

The comparison with experimental results is given in Table 1.

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Table 1.

Таблица 1

№ оболочки (1)	Материал оболочки (2)	Длина по образующей (3)	Средний радиус (4)	Толщина (5)	Угол α° = 90° – φ° (6)	Число волн по окружности (7)	Критическое давление по испытании (8)	Расчетное минимальное давление p_2 (9)
			мм					кг/см² (10)
1	Сталь	176	28,65	0,3	86	4	5,33	4,70
2	Сталь	140	28,58	0,3	85	4	5,33	4,72
3	Дюраль	140	28,58	0,3	85	4	2,5	1,68
4	Сталь 40X	203	27,50	0,6	81	3	21,33	23,67
5	Сталь 45	203	35,13	0,6	85	4	17	19,47

Legend: 1 – No. of shell; 2 – shell material; 3 – length of generating line; 4 – average radius; 5 – thickness; 6 – angle $\alpha^0 = 90^0$ –
– φ^0; 7 – no. of waves on circumference; 8 – critical pressure from
test; 9 – calculated minimum in pressure p_2; 10 – kg/cm²;
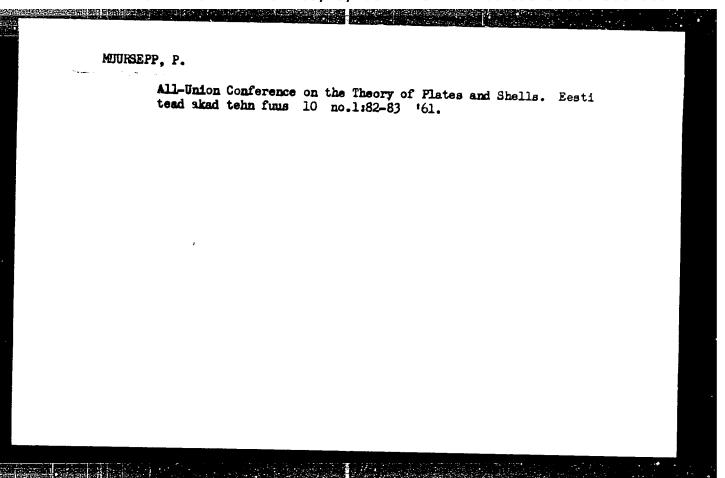
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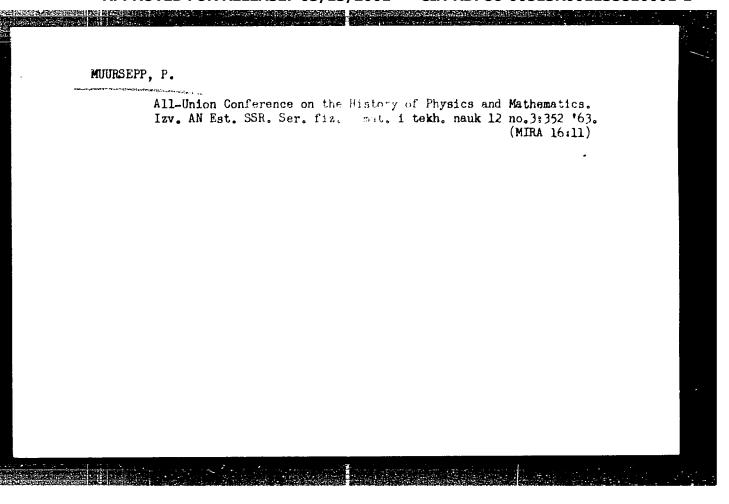Evaluating the critical ...   S/023/61/000/001/002/003
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11 - steel; 12 - steel; 13 - dural; 14 - steel 40X; 15 - steel 45.
There are 1 table, 1 figure and 2 Soviet-bloc references.

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Card 12/12

MJURSEPP, P.

All-Union Conference on the Theory of Plates and Shells. Eesti
tead akad tehn fuus 10 no.1:82-83 '61.

MUURSEPP, P.

All-Union Conference on the History of Physics and Mathematics.
Izv. AN Est. SSR. Ser. fiz. mat. i tekh. nauk 12 no.3:352 '63.
(MIRA 16:11)

MUYEV, V.V., inzh.(poselok Voy-Vozh, Komi ASSR); CHERNETSOV, P.P., kand.tekhn.
nauk (Moskva)

Protection of ground-level gas pipelines from corrosion in the Komi
A.S.S.R. Stroi. truboprov. 7 no.11:20-21 N '62.   (MIRA 15:12)
                (Komi A.S.S.R. - Gas, Natural— Pipelines
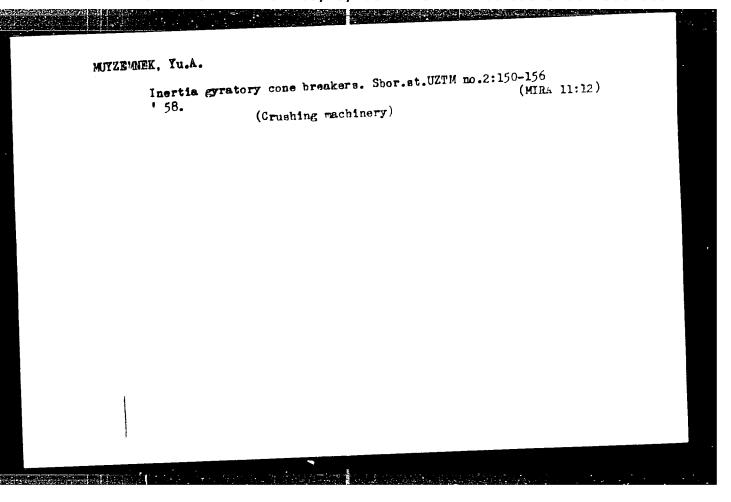   (Protective coatings)

. . , ... (diss) "Study of

fir-tree plantings of artificial origin of **the**

south east Estonia." Tartu, 1958, 27 pp (Acad Sci

ESSR. Inst of Zoology and Botany) 160 co ies
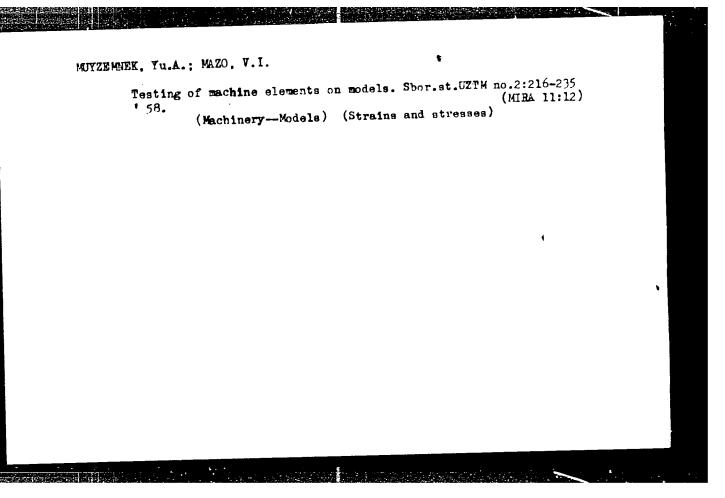
(KL, 42-58, 114)

- 25 -

MUYZEMNEK, Yu. A.

"Inertia Forces of Gyratory Crushers," p. 150

with Mazo, V. I., "Model Testing of Machine Components," p. 216

Design of Ore Beneficiation Equipment, Moscow, Mashgiz, 1958. 234p. Sbornik statey, vyp. 2, Ural'skiy zavod tyazhelogo mashinostroyeniya, Sverdlovsk

MUTZE'MEK, Yu.A.

Inertia gyratory cone breakers. Sbor.st.UZTM no.2:150-156
'58.   (MIRA 11:12)

(Crushing machinery)

MUYZEMNEK, Yu.A.; MAZO, V.I.

Testing of machine elements on models. Sbor.st.UZTM no.2:216-235
' 58.   (MIRA 11:12)
(Machinery—Models) (Strains and stresses)

MUYZEMNEK, Yu.A., inzh.

Design and operation of the overhead suspension of gyrating conic crushers for coarse crushing. Stroi. i dor.mashinostr. 4 no.6:22-25 Je '59.   (MIRA 12:8)
                (Crushing machinery)
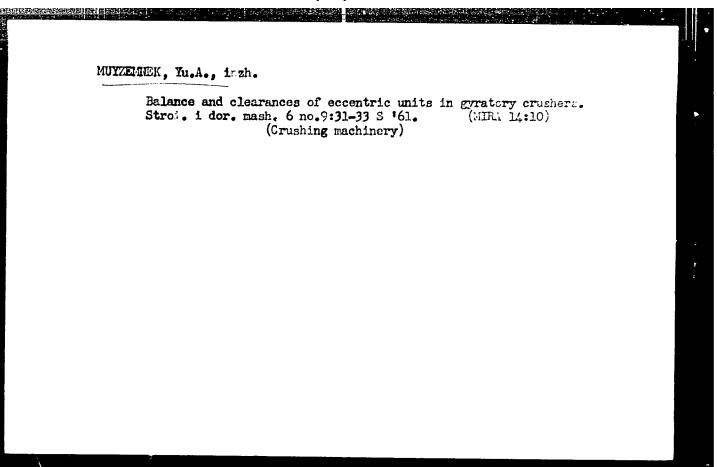
MUYZEMNEK, Yu.A.; GABOV, O.A.; YEGOROV, M.V.
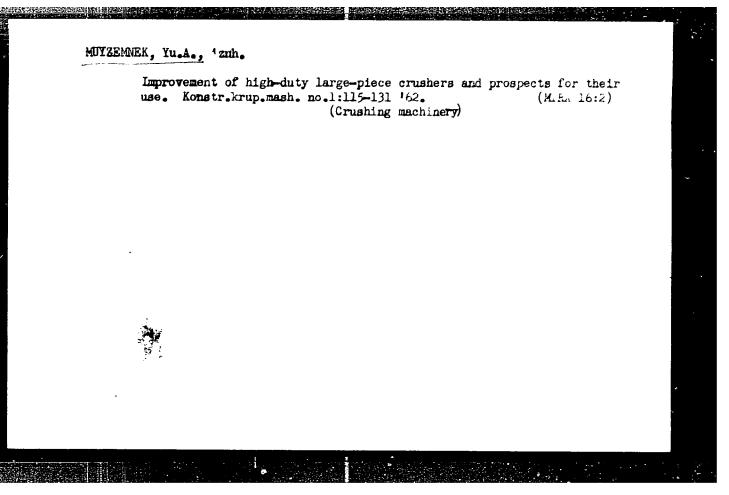
Testing the model of a ball mill. Obog. rud 6 no.5:39-42 '61.
(MIRA 15:1)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni S. Ordzhonikidze.

(Crushing machinery—Models)

MUYZEMEK, Yu.A., inzh.

Balance and clearances of eccentric units in gyratory crushers.
Stroi. i dor. mash. 6 no.9:31-33 S '61.   (MIRA 14:10)
                    (Crushing machinery)

MUYZEMNEK, Yu.A., 'znh.

Improvement of high-duty large-piece crushers and prospects for their use. Konstr.krup.mash. no.1:115-131 '62.   (M.R. 16:2)
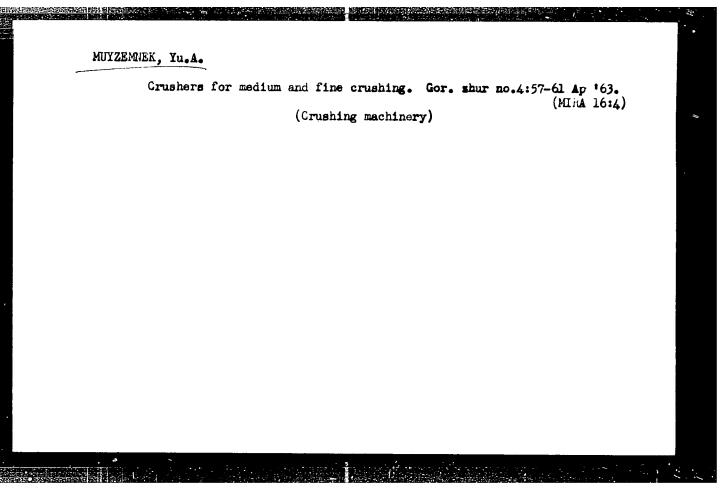(Crushing machinery)

MUYZEMNEK, Yu.A.; GABOV, O.A.

Crusher for coarse crushing. Gor. zhur no.4:54-57 Ap '63. (MIRA 16:4)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo Ordzhonikidze, Sverdlovsk.
                    (Crushing machinery)

MUYZEMNEK, Yu.A.

        Crushers for medium and fine crushing. Gor. zhur no.4:57-61 Ap '63.
                                           (MIRA 16:4)
               (Crushing machinery)

MUTSEMNEK, Yu.A. (Sverdlovsk), OL'KHOVIKOV, B.V. (Sverdlovsk)

Operation of the electric drives of cone-type No.2200 crushing machines with medium and fine outputs. Elektrichestvo no.3: 12-14 Mr '64.   (MIRA 17:4)