

MAGNITOV, Aleksey Ivanovich; BOGOSLOVSKIY, L.D., redaktor; LARIONOV, G.Ye.,
tekhnikheskiy redaktor.

[Excavation in the construction of a hydroelectric power station]
Zemlianye raboty na stroitel'stve gidroelektrostantsii. Moskva,
Gos.energ.izd-vo, 1955. 93 p. (V pomeshch' gidroenergeticheskim
stroikam, no.20). (MLRA 8:5)
(Excavation) (Hydroelectric power stations)

11-1
RABOTNOVA, I. L.; ULUBEKOVA, M. V.; MAGNITSKAYA, L. V.

Dentrification at the expense of bitumen and other hydrocarbons. Mikrobiologiya, Moskva 19 no.5:401-409 Sept-Oct 1950. (CMLL 20:1)

1. Moscow State University imeni Lomonosov.

MAGNITSKAYA, N.A.

Growing perennial floral plants. Biol. v shkole no.4:69-71 J1-Ag
'63. (MIRA 16:9)

1. Shkola No.112, Kazan'. (Floriculture) (Perennials)

ROMANOVSKIY, G.V.; KARGOPOLOV, I.D.; MAGNITSKAYA, N.S.

Adjusting a system of control-strip networks. Geod.i kart. no.6:
24-35 Je '61. (MIRA 14:6)

(Aerial photogrammetry)

MAGNITSKAYA, V.D.

Aleksandr Nikolaevich Zhurav. (1903-1963).
Kolesnikova. (1903-1963).
skva, 1963. (1963).
SSSR. Seriya meditsinskaya. (M. 1963)

1. Akademiya Nauk SSSR.

MAGNITSKAYA, V.S.; SEMKIN, V.I.

The "Folaks" Grate Cooler. Sbor.trud. Novorossigiprotsementa
no.1:62-69 '61. (MIRA 16:2)
(Cement plants—Equipment and supplies)

05-06-66 ENT(1) 11/70

ACC NR: AT6006266

(N)

SOURCE CODE: UR/0000/65/000/000/0121/0135

AUTHOR: Kuzivanov, V. A.; Magnitskaya, Ye. I.; Marakhovskaya, L. G.

ORG: None

TITLE: A method for the processing of recordings of overdamped gravimeters mounted on ships and aircraft

SOURCE: AN SSSR. Institut fiziki Zemli. paratura i metody morskikh gravi-metricheskikh nablyudeniy (Apparatus and methods of marine gravimetric observa-tions). Moscow, Izd-vo Nauka, 1965, 121-135

TOPIC TAGS: gravimetry, gravimetric analysis, graphic data processing, RESEARCH
SHIP INSTRUMENTATION, GRAVIMETER

ABSTRACT: Gravimeters designated for use on ships and aircraft are often highly damped in order to reduce the influence of the mobile support. Such operating conditions require special methods for data processing. Consequently, the authors establish and discuss at considerable length four possible methods for the deter-mination of the changes in gravimeter readings between the starting and current observations. A thorough analysis of experimental data gathered by the GAL and Gss-2 gravimeters shows that the error of gravimeter readings using all four methods is within $\pm 1.2-1.8$ mgl. One of the methods requires a processing time

Card 1/2

L 35896-66

ACC NR: AT6006266

of 3.5-4 hr, whereas two other approaches could be accomplished in 10-12 min. The appropriate approaches should be used in dealing with a) not too perturbed graphs, b) perturbed graphs of small period, and c) perturbed graphs with large periods. Orig. art. has: 16 formulas, 11 figures, and 1 table.

ST CODE: 08, 09/ SUBM DATE: 29Oct65/ORIG REF: 003

Card *2/2 mb*

L 32161-66 EWT(1) GW

ACC NR: AP6010065

(N)

SOURCE CODE: UR/0387/66/000/003/0063/0073

AUTHOR: Kuzivanov, V. A.; Kogan, M. G.; Magnitskaya, Ye. I.

37
E

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli, Akademii nauk SSSR)

TITLE: The effect of horizontal and vertical acceleration on the readings of a strongly damped gravimeter

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 3, 1966, 63-73

TOPIC TAGS: gyrostabilized platform, ~~accelerometer~~ gravimeter, ACCELERATION EFFECT

ABSTRACT: A study was made of the effect of horizontal and vertical accelerations on the readings of a pendulum-type gravity meter, mounted on an ideal gyrostabilized platform in an ideal universal joint. The resulting cross-coupling effect was analyzed theoretically, the parameters being related by the differential equation:

$$\ddot{\epsilon} + 2\lambda\dot{\epsilon} + \left(n^2 + \dot{\gamma}^2 - \frac{\ddot{X}}{l}\right)\epsilon = + \frac{\beta_r}{l} + \frac{\ddot{Z}}{l}$$

where ϵ is the angle of deviation of the pendulum from the horizontal, \ddot{X} is the hori-

UDC: 550.831

Card 1/2

L 32161-66

ACC NR: AP6010065

zontal acceleration, n is the natural frequency of the pendulum gravimeter, λ is the damping characteristic, l is the reduced pendulum length and $\dot{\gamma}$ is the angular velocity of the support along the Z axis. A solution of this equation was derived of the form

$$e = e_0 + \delta e_0,$$

where e_0 is the solution of the 'abridged' equation:

$$2\lambda e_0 + \left(n^2 - \frac{\ddot{X}}{l} + \dot{\gamma}^2 \right) e_0 = + \frac{B_r}{l} + \frac{\ddot{Z}}{l}.$$

The solution of e_0 was an expanded integral equation while that of δe_0 was an infinite trigonometric series. The magnitude of the cross-coupling effect was estimated by inserting numerical values for the above parameters and variables; for $\ddot{X} \approx \ddot{Z} \approx 50$ gal this effect reached 50 mgal and higher. The orbital acceleration was calculated at 125 mgal for $\ddot{X} = \ddot{Z} = 50$ gal and $\omega = 1 \text{ sec}^{-1}$. Formulas were also derived for the changes in gravitational field with time using the same parameters. Numerically, this was calculated to be 1.4 mgal for $\partial g / \partial x = 10 \text{ mgal/mile}$, $n^2 = 100 \text{ sec}^{-2}$ and $2\lambda = 5000 \text{ sec}^{-1}$. Orig. art. has: 1 table, 63 formulas.

SUB CODE: 08/

SUBM DATE: 19Feb65/

ORIG REF: 003/

OTH REF: 001

Card 2/2 *AS*

MAGNITSKIY, A. A.

Magnitskiy, A. A. - "windings No. 32 wood yarn for mechanical looms", *Nauchno-issledovatel'skiye raboty (Scientific research. Issued. in 8 kalendarnykh mesyatsakh. 1947-1948)*, Issue 2, 1947, p. 11-26.

SO: 1-110, 17 July 43, (Detmole 'Zurnal 'nykh Statey, No. 17, 1947).

MACNITSEY, A. A.

Spinning Machines - Maintenance and Repair

"Best methods in preliminary inspection of spinning machines."
Tekst. trror.12 no. 6, 1956.

MONTHLY LIST OF RUSSIAN ACQUISITIONS. Library of Congress, October, 1956. UNCLASSIFIED.

НИИ ТЕХНИЧЕСКОГО ТРУДА

~~MAGNITSKIY, A.A.~~; TERYUSHNOV, A.V., redaktor; LIOZNOV, A.G., redaktor;
EL'KINA, E.M., tekhnicheskii redaktor.

[Work organization for the assistant foreman in the sliver-rove shop of a cotton spinning factory.] Organizatsiia truda pomoshchika мастера lentochno-rovnicnogo tsekha khlopkopriadil'noi fabriki. Pod red. A.V. Teriusanova. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva promyshlennykh tovarov shirokogo potrebleniia SSSR. 1954. 10i p. (MIRA 8:3)
(Cotton spinning)

MAGNITSKIY, Aleksandr Aleksandrovich; LIOZNOV, A.G., redaktor; NEKRASO-
VA, O.I., tekhnicheskiy redaktor.

[Organizing the work of assistant foreman in cotton spinning plants]
Organizatsiia truda pomoshchnikov masterov priadil'nykh tsekhov
khlopkopriadil'nykh fabrik. Pod red. A.V.Teriusheva. Moskva, Gos.
nauchno-tekhn. izd-vo Ministerstva promyshlennykh tovarov shirokogo
potrebleniia SSSR, 1954. 154 p. (MLA 7:11)
(Cotton spinning)

MAGNITSKIY, A.A.

Effect of a pneumatic sliver guide on a spinner's workload.
Tekst.prom.15 no.11:11-13 N '55. (MLRA 9:1)

(Spinning machinery)

MAGNITSKIY, A.A.

~~Remarks concerning norms.~~ **Remarks concerning norms. Tekst.prom. 15 no.12:9-11 D '55.**

(MLRA 9:3)

(Spinning machinery)

MAGNITSKIY, A.A.

~~Enlarging yarn packages. Tekst. prom. 17 no.3:24-30 Mr '57.~~
(Cotton spinning) (MLBA 10:4)

VARTANYAN, A.B.; PUSHKINA, I.P.; MAGNITSKIY, A.A., retsenzent;
ORLOVA, L.A., red.; ENAKNIN, M.T., tekhn.red.

[Organizing the labor of workers operating sliver lapping
machines in cotton spinning] Organizatsiia truda rabotnits,
obsluzhivaiushchikh lentsoedinitel'nye mashiny khlopko-
priadil'nogo proizvodstva. Moskva, Gos.nauchno-tekhn.izd-vo
lit-ry po legkoi promyshl., 1959. 26 p. (MIRA 12:6)
(Cotton spinning)

MAGNITSKIY, Aleksandr Aleksandrovich, kand.tekhn.nauk; TERYUSHNOV, A.V.,
retsenzent; SEGAL', N.M., red.; KNAKNIN, M.T., tekhn.red.

[Effect of new techniques on labor productivity and capital
assets in the cotton spinning industry] Vliianie elementov
novoi tekhniki na proizvoditel'nost' truda i osnovnye fondy
v khlopkopriadil'nom proizvodstve. Moskva, Gos.nauchno-
tekhn.izd-vo lit-ry po legkoi promyshl., 1959. 180 p.

(MIRA 13:1)

(Cotton manufacture)

MAGNITSKIY, A.A., kand.tekhn.nauk

Economic effectiveness of adopting the new lint removing
devices. Tekst. prom. 20 no. 11:11-13 N '60. (MIRA 13:12)
(Spining machinery)

TERYUSHNOV, Aleksandr Vasil'yevich, prof.; ARISTOV, P.I., retsenzent;
MAGNITSKIY, A.A., spets.red.; KOPELEVICH, Ye.I., red.; SOKOLOVA,
V.Ye., red.; VINOGRADOVA, G.A., tekhn. red.

[Control of yarn breakage in the cotton spinning industry]
Bor'ba s obryvnost'iu v khlopkopriadil'nom proizvodstve.
Moskva, Gos. izd-vo "Nostekhzdat," 1962. 136 p.

(MIRA 15:4)

(Cotton spinning)

SHABANOV, B.I.; TURCHANINOV, A.A.; MAGNITSKIY, A.A., staryiy nauchnyy
soтрудnik; MIROSHNICHENKO, T.K.; DAVYDOVA, Ye.D.; MIKHINA, A.G.,
prepodavatel'

Communist labor paves the way to a bright future. Tekst prof.
24 no.2:1-10 F '64. (MIRA 17:3)

1. Nachal'nik Upravleniya tekstil'noy promyshlennosti Soveta
narodnogo khozyaystva Moskovskogo gorodskogo ekonomicheskogo
rayona (for Shabanov). 2. Rukovoditel' laboratorii ekonomiki
i organizatsii truda Tsentral'nogo nauchno-issledovatel'skogo
instituta sherstyanoy promyshlennosti (TsNIIShersti) (for
Turchaninov). 3. Tsentral'nyy nauchno-issledovatel'skiy in-
stitut khlopchatobumazhnoy promyshlennosti (TsNIKnBI) (for
Magnitskiy). 4. Nachal'nik pryadil'nogo tsekna kommunisticheskogo
truda kombinata "Trekhgornaya manufaktura" imeni Dzerzhinskogo (for
Miroshnichenko). 5. Rukovoditel' brigady kommunisticheskogo truda
Moskovskoy kamvol'noy ~~fabriki~~ fabriki imeni Kalinina (for
Davydova). 6. Moskovskiy finansovyy institut (for Mikhina).

MAGNITSKIY, A.A.

Economic efficiency of the utilization of the GPM techniques
and equipment. (Economic efficiency of the utilization of the GPM techniques)

MIRA 1971

1. Rukovodstvo i upravleniye ekonomicheskimi i tekhnicheskimi
tekhnicheskimi tsentrami i organizatsiyami. (Economic efficiency of the
utilization of the GPM techniques and equipment.)

MAGNITSKIY, A. M.
5921

Parabiogenic nature of central nervous inhibition and the doctrines of Pavlov
Progress in Contemporary Biology 1948, 26/3 (875-892) Graphs 2

Explanation of the process of Pavlov's internal inhibition in the cerebral
cortex on the basis of Vredenski's parabiosis.

Szabuniewicz - Cracow

SO: EXCERPTA MEDICA, Vol. II, No. 11, Sec. II, Nov. 1949

SERB, Petr Fedorovich; GOLUBEVA, K.A., inzh., retsenzent; MASLIY, K.Ya.,
zuborez, retsenzent; ZHUKOV, P.A., kand.ekon.nauk, red.;
BELYAKOV, M.N., red.; MAGNITSKIY, A.V., red.; ROZENBERG, I.A.,
kand.ekon.nauk, red.; SMIRNITSKIY, Ye.K., kand.ekon.nauk, red.;
SUSTAVOV, M.I., inzh., red.; DUGINA, N.A., tekhn.red.

[Organizational and technical plan in the workshop] Orgtekhplan
na rabochem meste. Moskva, Mashgiz, 1960. 30 p. (Seria "Osnovy
konkretnoi ekonomiki," no.5). (MIRA 14:4)
(Sverdlovsk--Machinery industry)

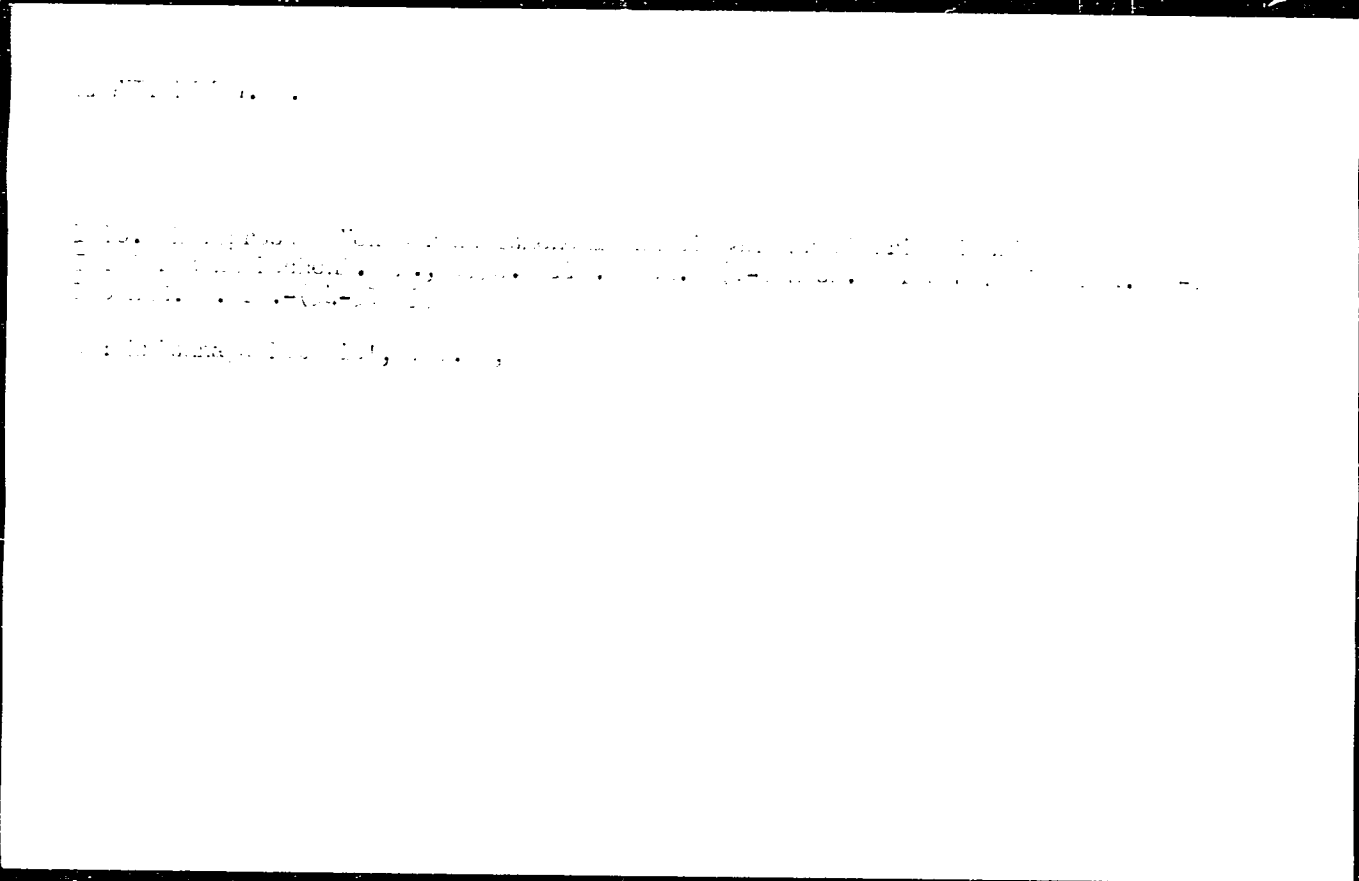
MAGNITSKIY, A.V.

Public Institute of progressive experience at the Ural Chemical
Machinery Plant, Bll. tekhn.-ekon.inform.Gos.nauch.-issl.inst.nauch.
i tekhn.inform. 17 no.7:85-86 J1 1/2. (MIRA 17:10)

MAGNITSKIY, A.V.

Practices of the [unclear] Plant. Str. 1. pat. ...
no.5:21-22 July 1955. (CIA ID: 9)

1. Starshiy inzhener ...
khimicheskogo mashinostroyeniya.



MAGNITSKIY, G. S.

"Changes in the Blood Circulation During Botkin's Disease and Cirrhosis of the Liver." Cand Med Sci, First Moscow Order of Lenin Medical Inst, 13 Dec 54. (VM, 23 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

MAGNITSKIY, G. S.

"The Problem of Certain Changes in the Blood System During Infectious Hepatitis and Cirrhosis of the Liver." Cand M-d Sci, First Moscow Order of Lenin Medical Inst, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

GUKASYAN, A.G., professor (Moskva); MAGNITSKIY, G.S. (Moskva)

So-called third circulation. Terap.arkh. 28 no.5:69-72 '56.
(HEART, blood supply, (MLRA 9:10)
(Rus))

Magnitskiy, I.

USSR/ Electronics - Polar expedition

Card 1/1 Pub. 89 - 4/30

Authors : Magnitskiy, I.; Rekach, A.; and Romanov, P.

Title : Radio connections on the Antarctic expedition

Periodical : Radio 1, 7 - 8, Jan 56

Abstract : An account is given of the plans for radio connections for the Antarctic expedition, which will require transmission and reception between Moscow and the Antarctic base 14,000 kilometers apart and connections among various bases on the continent of Antarctica itself. Brief description of short-wave apparatus is given. Map; illustration.

Institution :

Submitted :

MAGNITSKIY, K.F., doktor sel'skokhoz. nauk; DOSPEKHOV, B.A., kand.
sel'skokhoz. nauk, dotsent; VASIL'YEVA, D.V., kand. sel'skokhoz.
nauk; GOSUDAREVA, A.G., nauchnyy sotrudnik, BELYAKOVA, N.G.,
nauchnyy sotrudnik

Diagnosis of the conditions of plant nutrition in a controlled
field experiment. Izv. TSKHA no.6:151-161 '63. (MIRA 1963)

19
CA MAGNITSKIY, K.P.

The influence of soil reaction on the leaching of magnesium
K. P. Magnitskiy and V. K. Maikov. *Pochvovedenie*, Petrology, 1949, 507-509. As the acidity of the soil increases more Mg is lost. I. S. Joffe

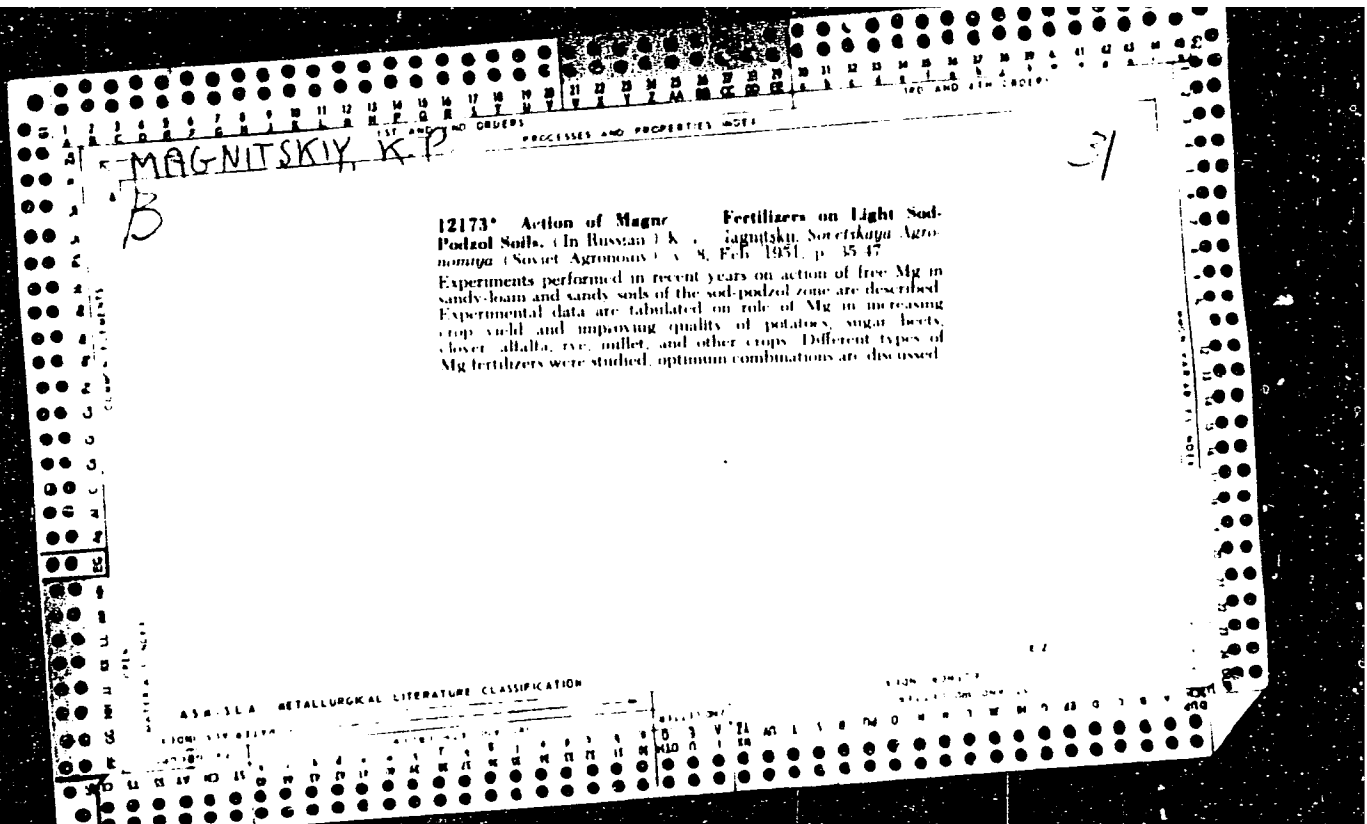
1/1/44 MAGNITSKIY, K. P.

МАГНИТСКУ (К. Р.). Недостаток магния у озимой Ржи на подзолистой супесчаной почве. [Magnesium deficiency in winter Rye on sandy-clay podsol soil.]—Агробиология [Agrbiology], 1950, 1, pp. 96-99, 1950.

During fertilizer experiments from 1946 to 1948 on the Lyuberets experimental plot of the Scientific Research Institute, U.S.S.R., cultivated crops suffered from magnesium deficiency on sandy-clay podsols (4 to 18 mg. magnesium per kg. soil). The symptoms on winter rye [R.A.M., 17, p. 689] developed 15 to 40 days after the appearance of the seedlings in the autumn, and in the spring many plants died.

In 1947-8 rye was sown after potatoes on a plot (pH 4.7) where the yields of various crops had been very low for several years in spite of mineral fertilizers. In plots with no additions of magnesium sulphate (60 kg. magnesium oxide per ha.) rye plants developed marked deficiency symptoms, while those which received magnesium sulphate in the autumn were normal. The yield from untreated plots was only 2 zentner; 1 zentner = 100 kg.) per ha.; for spring-treated it was 6.3 z., and autumn-treated 13.4 z. In treated plots the rye plants ripened 10 to 15 days earlier than in untreated.

The grain yields in 1948 from plots receiving complete fertilizers plus (1) chalk, (2) dolomite, (3) chalk plus magnesium sulphate (30 kg. per ha.), (4) lime, and (5) lime plus magnesium sulphate were, respectively, 3.6, 14.5, 14.6, 6.9, and 13.6 zentner; straw yields were 15.1, 28.6, 32, 19.6, and 32.1. Potato, sugar beet, clover, and lucerne were even more exacting in their magnesium demands, and magnesium applications resulted in even higher yield increases.



CA MAGNITSKIY, K.P.

15

The influence of magnesium fertilization on light and
acidolized soda. K. P. Magnitskiy. *Izv. Vsesoyuzn. nauchn. issled. inst. khim. i tekhn. sel'sk. khoz.*
No. 1, 1961. Report on effectiveness of Mg fertilizers on grain crops, vegetables, industrial crops, grasses, and legumes. It is pointed out that, apart from potash, and some of the manure salts carrying Mg are excellent sources of raw material for use.

1. MAGNITSKIY, K. P.
2. USSR (600)
4. Agriculture
7. Magnesium fertilizers. Moskva, Sel'khozgiz, 1952.

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

MAGNITSKIY, K. P.

Potatoes

Determination of nitrogen and potassium requirements of potatoes. Sad i og
no. 1, 1952.

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

MAGNITSKIY, K.P.; MALKOV, V.K.

Phosphorus

Quick method for determining phosphorus in plants. Sov. agron. 10 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952, ~~1953~~. Unclassified.

MAGNITSKIY, K. F.

USSR

The influence of various forms of phosphorus and potassium fertilizer on the yield of alfalfa in light sod-podzolized soils. K. F. Magnitskiy. *Zemledelie*, No. 12, 53-5 (1964). -- Of the following sources of P: acid phosphate, ammoniops, precipitated phosphate, ground rock phosphate, and Thomas slag, the latter gave the highest yield, followed by pptd. phosphate and rock phosphate. In mixtures of grasses and alfalfa the quantity of the latter in the hay was highest with the Thomas slag. As to sources of K there was little difference in yield the first year, but the following year the manure salts proved to be superior. Their effect is attributed to the Mg and Na carried by them.

MAGNITSKIY, K. P.

15135* (Plant Nutrient Control.) Kontrol' za pitaniye rastenii. K. P. Magnitskiy. *Doklady Akad. Nauk SSSR Seriya Biologicheskaya*. Opyta o Sel'skom Khozjaistve, 1954, no. 7, July, p. 21-22.
Analysis of plant sap during growth stages to determine content of N, P, Mg, etc. Table, photographs.

Evaluating the nutrient level of the soil by plant analysis
K. P. Magaitsh *Pochepudnie* 1954, No. 7, 113-26. A
theoretical discussion on the application of plant analysis
to det. nutrient status and data on tests made on potatoes
J. S. Toffe

MAGNITSKIY, Konstantin Pavlovich.

Scientific Inst of Fertilizers and Insect Fungicides of the Min of Chemical Industry USSR. Academic degree of Doctor of Agricultural Sciences, based on his defense, 19 January 1955, in the Council of Soil Inst imeni Dokuchayev, Acad Sci USSR, of his dissertation entitled: "Application of Magnesium Fertilizers on Sandy and Sandy-Clayey Sod-podzolian Soils."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 15, 25 June 55, 'yulleten' MVO SSSR, No. 15, Aug 56, Moscow, pp. 5-24, Uncl. JPRS/NY-537

Country : USSR
Category : Soil Science. Fertilizers. General. J

Abs Jour : RZhBiol., No 6, 1959, No 24642

Author : Magnitskiy, K. P.

Inst : ~~-----~~
Title : Evaluation of Plant Nutrition According to
Their External Appearance.

Orig Pub : Priroda, 1956, No. 7, 61-64

Abstract : Plant indicators may be utilized to expose those regions and districts that suffer from a deficiency or an excess of macro- and micro-elements. As indicators of N deficiency may serve white-head cabbage and cauliflower; of P deficiency - turnip (*Brassica campestris rapifera*) and the turnip kind (*Brassica napus rapifera*); of K deficiency - potato, beet, bean, alfalfa; of Mg deficiency - potato,

Card : 1/2

MAGNITSKIY, K.P., doktor sel'skokhozyaystvennykh nauk.

Symptoms of magnesium deficiency in plants. Nauka i pered. op. v
sel'khoz. no.9:17-18 S '56. (MLRA 9:10)
(Deficiency diseases in plants) (Plants, Effect of magnesium on)

MAGNITSKIY, Konstantin Pavlovich, doktor sel'skokhozyaystvennykh nauk;
KATSHEL'SON, S.M., redaktor; ATROSHCHENKO, L.Ye., tekhnicheskiy
redaktor

[How to determine the fertilizer requirements of plants from their
external appearance] Kak opredelit' po vneshnemu vidu rastenii ikh
potrebnost' v udobreniyakh. Moskva, Izd-vo "Znanie," 1957. 38 p.
(Vsesoyuznoe obshchestvo po rasprostraneniю politicheskikh i
nauchnykh znaniy. Ser.5, nos.13/14) (MIRA 10:7)
(Fertilizers and manures)

USSR, Soil Science - Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 22, 1958, 100083

Author : Magnitskiy, K.P.

Inst :

Title : The Manganese Hunger of Plants.

Orig Pub : Nauka i peredov, opyt v s.-kh., 1957, No 1, 45-47

Abstract : Description of the symptoms of manganese hunger, discovered in the investigations by the Scientific Institute of Fertilizers and of Insecticides and Fungicides on the fields of the state farm "Lyuberets Irrigation Fields in 1955, while experimenting with oats, barley, buck-wheat, beans, sugar and fodder beets, mustard, sunflower, cabbage, radishes, potatoes and apple trees. For the prevention of manganese hunger, it is recommended to introduce into sandy and loamy soils 500-100 kg/ha and into peat soils - 500 kg/ha of manganese sulphate. Fine results were obtained by the use of outside-root feeding

Card 1/2

- 65 -

Travchinyi smet hit po svidetelstvu na osnovu togo zbirannya

USSR/Soil Science - Mineral Fertilizers.

J

Abs Jour : Ref Zhur Biol., No 22, 1958, 100033

of the plants by an 0.2-0.5% solution of manganese sulphate in the amount of 500-1000 l/ha. The fertilization expenditure is 1-5 kg/ha. For the dusting of fruit trees before burgeoning, the solution's concentration should be increased to 5%. It is appropriate to use a mixture of 500 l of the Bordeaux liquid with 1 kg of manganese sulphate. Mobility of the soil manganese may be increased by the introduction of acidifying substances: sulphur, ammonium sulphate, etc. -- B.A. Rudenko

Card 2/2

USSR / Soil Science. Mineral Fertilizers.

J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48643
Author : Magnitskiy, K. P.
Inst : Not given
Title : Control of Plant Nutrition in Field Condition
Orig Pub : Udobreniye i urozhay, 1957, No 8, 29-38

Abstract : For purposes of determining plant requirements of N, P, K, Mg and the harmful excess of Cl samples of cellular fluid were taken for chemical analysis with the aid of a field laboratory proposed by the author according to special instructions, from the leaf petiole (potato, garden beet, cabbage, cucumbers, tomatoes and others), from the veins of leaves of the lower or medium tiers (corn, sorghum), and from the leaf extracts (oats, wheat, and berry fruit

Card 1/2

29

USSR / Soil Science. Mineral Fertilizers. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48643

plants). The critical starvation levels of the elements contained in plant fluid, expressed as mg./kg., are as follows: N 0-100, P for corn 10-20, and for garden beets 25, K 600-1500, Mg 30-60; excess Cl for potatoes is 5 grams. Experimental data is cited on the influence of fertilizers on the element content in plant fluid. -- N. N. Sokolov

Card 2/2

Country : USSR
Category: Cultivated Plants. Fruits. Berries.

M

Abs Jour: RZhBiol., No 22, 1958, No100433

author : Magnitskiy, K.P.

Inst : -

Title : Magnesium Deficiency in Fruit and Berry Cultures.

Orig Pub: Nauka i peredov. opyt v s. kh., 1957, No 8,
46-47

Abstract: Magnesium deficiency on light soils is explained by a low content of available Mg in the soil, and on loamy and clayey soils it is produced by a profuse application of K. When the amount of metabolic Ca exceeds the content of metabolic Mg by more than 10 times, magnesium deficiency

Card : 1/4

The Smith. for metabolic deficiency in a micro taking interest

Country : USSR

M

Category: Cultivated Plants. Fruits. Berries.

Abs Jour: RZhBiol., No 22, 1958, No 100438

ensues. With the liming of acid soils with the customary doses of lime, Ca can, conversely, improve the magnesium nutrition of the plants. In Moscow oblast', the symptoms usually appear in August on the leaves of fruit spurs and one-year shoots. The leaves become yellow, spots appear, the green coloration remains at the base of the leaf near the middle vein. The correctness of the diagnosis of magnesium deficiency is checked by top dressing with magnesium salts and a chemical analysis of the leaves. Supplementary feeding of the plants by top dressing with 2% solution of $MgSO_4$ is effective. This is carried out 2-4 times, after

Card : 2/4

M-151

Country : USSR
Category: Cultivated Plants. Fruits. Berries.

M

Abs Jour: RZhEcol., No 22, 1958, No 100438

blossoming, with intervals of 10 days.
To supply plants with Mg through the soil,
one of the following fertilizers can be
used: 2-4 centners/ha of potassium-magnesium,
2-4 of $MgSO_4$, 4-10 of unslaked dolomitic flour
or 5-10 centners/ha of ashes. Fertilizers
should be applied in summer when magnesium
deficiency in plants was noted, or in fall
during the spading of the orchard over. In
starting an orchard on acid soils, the soil
has to be limed with dolomitic flour at the
rate of 10-40 centners/ha. Application of

Card : 3/4

Country : USSR
Category: Cultivated Plants. Fruits. Berries.

Abs Jour: FZhBiol., No 22, 1958, No 100438

manure lowers the doses of magnesium fertili-
zers. -- Dr. V. Kolesnikov

Card : 4/4

M-152

MAGNITSKIY, Konstantin Pavlovich, doktor sel'skokhozyaystvennykh nauk;
KATSHNEL'SON, S.M., red.; STRELETSKIY, I.A., tekhn. red.

[Field control of plant nutrition] Polevoi kontrol' pitaniia
rastenii. Moskva, Izd-vo "Znanie," 1958. 38 p. (Vsesoiuznoe
obshchestvo po rasprostraneniю politicheskikh i nauchnykh znanii.
Ser.5, no.15). (MIRA 11:7)

(Plants--Nutrition)

MAGNITSKIY, K.
MAGNITSKIY, K., doktor sel'skokhozyaystvennykh nauk

Boron and iron in the nutrition of plants. Nauka 1 pered. op.
v sel'khoz. 8 no.1:49-52 Ja '58. (MIRA 11:2)

1. Nauchnyy institut po udobreniyam in insektofungisida.
(Plants, Effect of boron on)
(Plants, Effect of iron on)

~~MAGNITSKIY, K.~~ doktor sel'skokhozyaystvennykh nauk

Microelements in plant nutrition. Nauka i pered. op. v sel'khoz.
8 no.9:32-34 S '58. (CR-11:10)

1. Nauchnyy institut po udobreniyam i insektofungitsidam.
(Plants--Nutrition) (Trace elements)

MAGNITSKIY, K.^P doktor sel'skokhozyaystvennykh nauk

Effect of soil acidity on the growth and development of plants.
Nauka i pered.op. v sel'khoz. 8 no.11:49-51 № '58. (MIRA 11:12)

1. Nauchnyy institut po udobreniyam i insektofungitsidam.
(Growth (Plants)) (Soil acidity)

MAGNITSKIY, Konstantin Pavlovich, doktor sel'skokhozyaystvennykh nauk;
SHUGAROV, Yu.A., starshiy nauchnyy sotrud.; MALKOV, V.K., nauchnyy
sotrud.; prinimali uchastiye: ZUYEVA, N.P., nauchnyy sotrud.;
GOSUDAREVA, A.G., laborant; FEDORENKO, M.G., laborant; KAVUN, P.K.,
red.; BACHURINA, A.M., tekhn.red.; PROKOF'YEVA, L.N., tekhn.red.

[New methods of plant and soil analysis] Nove metody analiza
rastenii i pochv. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1959.
239 p. (MIRA 14:5)
(Soils--Analysis) (Botanical research)

MAGNITSKIY, K. ^P doktor sel'skokhozyaystvennykh nauk

Prevent and eliminate nitrogen and phosphorus deficiency in plants.
Nauka i pered. op v sel'khoz. 9 no.6:46-50 Je '59.

(MIRA 12:9)

1. Nauchnyy institut po udobreniyam i insektofungitsidam.
(Deficiency diseases in plants) (Plants, Effect of nitrogen on)
(Plants, Effect of phosphorus on)

MAGNITSKIY, K.P.

Talking to a plant. Un. nat. no.7:34-35 JI '61. (MIRA 14:7)
(Plants--Chemical analysis)

MAGNITSKIY, Konstantin Pavlovich, doktor sel'khoz. nauk;
STAROSEL'SKIY, Ya.Yu., kand. biol. nauk; LEONOVA, T.S.,
red.; NAZAROVA, A.S., tekhn. red.

[Chemistry in the service of agriculture; new fertilizers and
herbicides] Khimiia idet na polia; novye udobreniia i gerbi-
tsidy. Moskva, Izd-vo "Znanie," 1962. 47 p. (Novoe v zhizni,
nauke, tekhnike. V Serii: Sel'skoe khoziaistvo, no.12)
(MIRA 15:7)

(Fertilizers and manures) (Herbicides)

MAGNITSKIY, K.P., doktor sel'skokhozyaystvennykh nauk

Problem of using magnesium in agriculture in the U. S. S. R.
Zemledelie 24 no.7:55-60 Ji '62. (MIRA 15:12)

1. Nauchnyy institut po udobreniyam i insektofungisidam
imeni prof. Ya.V. Samoylova.
(Plants, Effect of magnesium on)

MAGNITSKIY, K.P., doktor sel'skokhoz.nauk

Chlorine-free potassium fertilizers. Priroda 51 no.7:64-67 JI '67.
(MIRA 15:9)

1. Nauchnyy institut po udobreniyam i insektofungisidam im. Ya.V. Samoylova, Moskva.
(Potassium) (Fertilizers and manures)

MAGNITSKIY, Konstantin Pavlovich. Prinimali uchastiye: GOSUDAREVA, A.G.; PANITKIN, I.A.; BELYAKOVA, N.G.; KAPUSTYANSKIY, A.N.; ZHUKOV, S.M.; NIKULINA, P.F.; BALABANOV, E.G.; VISHNYAKOVA, Ye., red.; KUZNETSOVA, A., tekhn. red.

[Control of the nutrition of field and vegetable crops. Kontrol' pitaniya polevykh i ovocheynykh kul'tur. Moskva, Mosk. rabochii, 1964. 302 p. (MIRA 17:2)

1. Nauchnyye sotrudniki laboratorii Yuliya Nauchnogo instituta po udobreniyam i inzheneri i. i. i. (for Gosudareva, Panitkin, Belyakova, Kapustyanskiy, Zhukov, Nikulina, Balabanov).

MAGNITSKIY, K.P., doktor sel'skokhoz. nauk

Nitrogen, phosphorus, and potassium requirements of
plants in Podzolic soils. Zhur.VKHO 10 no.4:386-392
'65. (MIRA 18:11)

1. BUKHARIN, V. V., Eng.; MAGNITSKIY, L. A., Eng.
2. USSR (~~60~~)
4. DDT (Insecticide)
7. DDT soap, Masl. zhiv. ;rom., 17, No. 7, 1952.

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

BESPYATOV, M.P., kand.tekhn.nauk; BAYKOV, S.F.; MAGNITSKIY, L.A., inzh.;
DERYABINA, A.Ye., inzh.; SHMIDT, A.A., kand.tekhn.nauk; BELYAYEV, I.P.,
inzh.

Operational experience with the TNB-2 unit. Masl.-zhir.prom.
25 no.1:39-41 '59. (MIRA 12:1)

1. Khar'kovskiy politekhnicheskii institut im. V.I.Lenina (for
Bespyatov) 2. Moskovskiy zavod "Novyy mylovar" (for Baykov,
Magnitskiy, Deryabina). 3. Tsentral'naya nauchno-issledovatel'-
skaya laboratoriya Upravleniya meditsinskoy i parfyumernoy
promyshlennosti Mosgorsovnarkhoza (for Shmidt, Belyayev).
(Moscow--Oil industries--Equipment and supplies)
(Saponification)

Magnitskiy, O. N.

Date: 12/1/1956

On the solidification of alloys. B. B. Gulynev and O. N. Magnitskiy. *Trudy Vsesoyuznogo Nauchno-Issledovatskogo Instituta Mashinostroyeniya* (USSR Acad. Sci. Ser. Engng. Technol. Machin. Constr.), No. 12, 1956, 121-123. Studies were conducted by the thermal method on the solidification of alloys of various composition: solid solutions of Al with 8.7, 23.9, and 42.4% Zn; alloys with α -eutectic of Al with 3.8, 7.5, 10.9, and 12.2% Si; alloys with α -peritectic of Al with 23.1, 43.5, and 83.0% Ni. The alloys melted and formed into cylinders 25-75 mm in diam. and 0.5 m. high. Chromel-constantan thermocouple junctions were inserted at the surface in the center of the ingot, and also spaced 20, 50, 75, and 100 mm. from the center. A record of the temp. was made by using a 6-point electronic potentiometer. From the graphically constructed cooling curves, the time of passage through the separate stages (crit. points) is characterized at different points in the cross section of the casting. For Al-Zn alloys, solidification is characterized by 2 curves (for liquidus and for solidus); for Al-Si alloys, 3 (liquidus, beginning and end of eutectic transformation); for Al-Ni, 5 (liquidus, beginning of sept. of Al₃Ni, end of the conversion Al₃Ni \rightarrow Al₂Ni, and of the sept. of Al₂Ni from the melt and solidus). In all cases solidification was strictly sequential, i.e. each stage of solidification, in whatever layer of the ingot, was recorded later than that of the neighboring layer if the latter was closer to the surface. Solidification of ingots of pure Al conforms to the parabolic law for the first 1/2 of its radius. The alloys show sharply different graphs. Thus, e.g., the curves for the Al-Zn alloys show continuous slowing down of "spread" of the liquidus in the depth of the ingot and continuous acceleration of spread of the solidus. Thus also does the solidification of the eutectic alloy Al + 12.31% Si depart from the parabolic law, however it also crystallizes at a const. temp., as does pure Al.

7
2

Handwritten initials and signatures at the bottom of the page.

MAGNITSKIY, O.N., inzhener; POSTNOV, L.M., inzhener.

Conference on problems of metal solidification. Lit.proizv. no.9:
30-31 S '56. (MLRA 9:11)
(Founding) (Solidification)

SOV/137-58-9-18674

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 75 (USSR)

AUTHORS: Gulyayev, B.B., Magnitskiy, O.N.

TITLE: Physicochemical Processes in the Solidification of an Ingot
(Fiziko-khimicheskiye protsessy zatverdevaniya slitka)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow. AN SSSR,
1957, pp 659-682. Diskuss. pp 781-791

ABSTRACT: This is a description of the results of an investigation of the processes occurring in the solidification of Al and of various alloys thereof with Zn, Si, and Ni. The methods used involved measurement of temperature and pouring the metal out of the mold; comparison of the parameters of the crystallization process with phase diagrams of the corresponding alloys was also employed. Ingots measuring 250x710 mm made by rising (bottom) pouring were subjected to temperature measurement by means of 6 chromel-alumel thermocouples arranged along a radius of the middle cross section of the ingot. Temperature curves were derived for alloys forming solid solutions (with Zn), with eutectic transformations (with Si) and with peritectic transformations (with Ni). At the instant when the metal

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SOV/137-58-9-18674

Physicochemical Processes in the Solidification of an Ingot

reached the level of the thermocouples, reheating was stopped completely and the process of solidification began practically at the liquidus temperature. No supercooling of the metal was observed. The liquidus and the peritectic and eutectic transformation points were recorded. The solidus point is weakly defined in Al-Zn alloys. The pouring experiments were run with ingots of 105x260 mm diam. The resultant ingot bodies were cut open and investigated. Gamma photography of the cut ingots was performed, and their wall thicknesses were compared with the results of analyses of prior temperature measurements by the method of similarity. Some inconsistency was found in the data obtained. This was explained by the fact that when the metal was poured into ingots, a pourability limit comes into being that does not agree with the front of crystallization of the metal, since some of the crystals are removed from the two-phase layer while a portion of the liquid remains between the growing dendrites. Curves of solidification were drawn in dimensionless coordinates for all of the alloys investigated. These determined all the phases of solidification of the metal of alloys as one of the components is varied. It is asserted that both pure Al and all the alloys are subject to the law of successive crystallization. The concept that ingots solidify from a deeply supercooled state is refuted. The process of solidification of ingots from pure metals and eutectic alloys is defined as one of removal of the heat

Card 2/3

SOV/137-58-9-18674

Physicochemical Processes in the Solidification of an Ingot

of crystallization through the metal previously solidified, while in the case of alloys hardening over a temperature interval this occurs via a liquid phase. It is noted that the mechanism of solidification is the same for all metals and alloys. A law of successive crystallization is formulated: All processes of transformation occurring in the solidification of ingots or castings of metals and their alloys begin at the surface and gradually progress toward the axis. The boundary of each transformation moves at its own speed, but in a rigorous order of succession.

V.N.

1. Metals--Processing 2. Metals--Crystallization 3. Metals--temperature factors
4. Thermocouples--Performance 5. Metals--base alloys

Card 3/3

AUTHOR: Gulyaev, B.B.
 TITLE: Conference on Crystallization of Metals (Soveschaniye po Kristallizatsii Metallov)
 PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1956, Nr 4, pp 153 - 155 (USSR)
 -ABSTRACT: This conference was held at the Institut Mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the Ac.Sc. USSR) on June 28-31, 1958. About 400 people participated and the participants included specialists in the fields of foundry, metallurgy, crystallography, physics, welding, heat, physical chemistry, mathematical physics and other related subjects. In addition to Soviet participants, foreign visitors included Professor D. Czika (East Germany) and M.I. Chvorinov (Czechoslovakia). This conference on crystallization of metals was the fourth conference related to this general problem of the theory of foundry processes.

SCV/24-58-4-37/39

Conference on Crystallization of Metals

General Problems of Crystallization of Metals
 Member of the Ac.Sc. of the USSR V.M. Strata, in his paper "On the Mechanism of the Process of Crystallization", proposed a general kinetic-mathematical theory of germination and the growth of crystals and described its application to problems of crystallization.

Corresponding Member of the Ac.Sc. of the USSR K.P. Buzin and Yu.M. Ivanov in their paper "Kinetic Crystallization of Gray Irons" considered the features of formation of graphite separations in eutectic alloys from the point of view of the general theory of crystallization of iron.

B.M. Lyubov, in his paper "Calculation of the Speed of Solidification of Metals in Large Volumes", proposed a synthesis of the molecular-kinetic and of the thermodynamic theories of crystallization of metallic castings.

A.G. Spasskiy, in the paper "Fundamental Factors Influencing the Structure of Castings" and M.V. Mal'tsev in the paper "Methods of Improving the Quality of Cast Metal" described results of their investigations of crystallization of castings from various alloys and considered methods of controlling such processes.

I.L. Markov in his paper "Influence of Fluctuations in the Concentration of Nuclei on the Formation of Crystallization Nuclei and Formation of Crystals in Complex Alloys" G.P. Ivanov gave a review of the latest concepts on germination and the growth of crystals.

O.N. Mikhlin, A.A. Pamlidova and B.B. Gulyaev considered the influence of the speed of crystallization and the composition of the alloys on the quantitative characteristics of the structure and the mechanical properties of castings of the systems iron-carbon and aluminum-silicon.

D.S. Kamenetskiy, B.P. Kabanova and Ye.Z. Spletter dealt with the results of investigation of the kinetics of crystallization of iron and its alloys.

G.F. Saladin proposed a mathematical theory of germination of the structure of castings and applied it to analysis of the features of crystallization of iron.

Ya.V. Gochayev dealt with the features of crystallization of binary alloys of various types.

Card#10

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Sovesheniya po eksperimental'noy tekhnike i metodam vyzokotemperaturnykh issledovaniy, 1956

Ekspiremental'naya tekhnika i metody issledovaniy pri vyzokikh temperaturakh; trudy soveshchaniya [Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures] Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii; Komissiya po fiziko-khimiicheskoi osnovnoy proli'rustva stali) 2,200 copies printed.

Resp. Ed.: A. M. Samarin. Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A. L. Bankvitsaer.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and alloys 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Magnitskiy, O. M. Methods of Measuring Temperature During the Solidification of Steel Ingots 669

It was established that three types of motion take place in the molten steel: a) molecular diffusion b) turbulent motion limited by significant changes in magnitude and direction c) motion over small distances (this motion being estimated by the effective coefficient of turbulent diffusion whose magnitude under the experimental conditions amounted to 100-1200 cm²/sec), and c) directed convection currents, moving over large distances in the surface layers of the metal (the speed of these currents during the boil varying within the limits of 1-5 m/min). Studies were made of agitation of the bath at various periods during the production of (25-370 metric tons). Optimum boil periods for the various furnace positions of the steel were determined for the uniform composition of the steel. Auxiliary agitation by means of a compressed air blast or agitator is recommended for accelerating the metalization process during the boil. Data were also obtained on the rate of solution of ferrochrome in the steel bath, conditions for uniform distribution of chrome throughout the metal, and the motion of metal in a 25-t acid open-hearth furnace.

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ANOF/AN 01

1506

Translation from: Referativnyy zhurnal, Metallurgiya, No. 1, p. 21.
21628

AUTHORS: Gulyayev, B.B., Shapranov, I.A., Magnitskiy, I.N., Nevzorova, Z.D.

TITLE: The Effect of Rare-Earth Elements on Crystallization and Mechanical Properties of Cast Steel

PERIODICAL: V sb.: Redkometal'n, elementy v stalyakh i splavakh, Moscow, Metallurgizdat, 1959, pp. 93-117

TEXT: The authors studied the effect of rare earth elements introduced into the steel in the form of misch metal in an amount of 0.01 - 1.0% on the structure, macrostructure and mechanical properties (σ_s , σ_b , S_{ak}) of ferritic Fe and steel with 0.04 - 0.40% C, alloyed with various admixtures (including Cu, Ni, Cr, Si, Mo, Ti, Nb) and also of steels of the following grades: 20Л (20Л), 12 (U12), 40ХЛ (40ХЛ), 30ХН3М (30ХН3М), 1Х19Н9 (1Х19Н9), 1Х19Н9 (1Х19Н9). It was established that treatment with misch metal, with an average content of non-alloyed Fe, increases the plasticity and stability of alloyed Fe and steel.

Card 1/2

3/23/68 / 3/23/68 / 2/1/68
ACCE 7405.1

The Effect of Rare-Earth Elements on Crystallization and Mechanical Properties of Cast Steel

Addition of 0.2 - 0.5% misch metal to 30KhN3Mn steel raises plasticity and ductility of cast steel almost to the level of forged steel. Properties of these steels, however, are scarcely affected by the introduction of rare earths.

I.F.

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

PHASE I BOOK EXPLOITATION

SOV/4543

11-10-60
Izveshchaniye po teorii liteynykh protsessov, 3d

Sobremennyye protsessy v metallakh; trudy soveshchaniya (Shrinkage Processes in Metals, Transactions of the Third Conference on the Theory of Casting Processes) Moscow AN SSSR, 1960. 281 p. Errata slip inserted. 3,000 copies printed

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya Komissiya po tekhnologii mashinostroyeniya.

Ed.: B. B. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V. S. Rzhiznikov; Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for scientific workers, engineers, technicians of scientific research institutes and industrial plants, and for faculty members of schools of higher education.

COVERAGE: The collection contains technical papers presented at the Third Conference on the Theory of Casting Processes, organized by Liteynaya sektsiya Komissii po tekhnologii mashinostroyeniya Instituta mashinovedeniya AN SSSR (Casting Section of the Commission for Machine-Building Technology of the Institute of Science of Machines, Academy of Sciences USSR) and by Institut metallurgii imeni Baykova
Card 1/5

Shrinkage Processes (Cont.)

SOV/4343

AN USSR (Institute of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR) The most serious defects in castings, ingots, and welds as a result of metal shrinkage are reviewed. Factors contributing to the formation of shrinkage cavities porosity, cracks fissures, distortion, and internal stresses are analyzed along with measures taken to prevent and remedy them. The hydrodynamics of molten metals and the process of solidification of metals are discussed. Also presented are resolutions adopted at the Conference with regard to the problem of shrinkage in metals. No personalities are mentioned. Most papers are accompanied by bibliographic references, the majority of which are Soviet.

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<u>Magnitskiy, O.N.</u> , and B. B. Gulyayev. Influence of Solidification Conditions on the Formation of Shrinkage Cavities in Steel Castings	10
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PHASE I BOOK EXPLOITATION

SOV/4344

Soveshchaniye po teorii liteynykh protsessov, 4th

Kristallizatsiya metallov: trudy soveshchaniya (Crystallization of Metals; Transactions of the Fourth Conference on the Theory of Casting Processes) Moscow, izd-vo AN SSSR, 1960. 325 p. 3,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: B. B. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V. S. Rzhaznikov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This book is intended for metallurgists and scientific workers. It may also be useful to technical personnel at foundries.

COVERAGE: The book contains the transactions of the Fourth Conference (1958) on the Theory of Casting Processes. [The previous 3 conferences dealt with hydrodynamics of molten metals (1955), solidification of metals (1956), and shrinkage processes in castings (1957)]. General problems in the crystallization of metals, including the crystallization of constructional steels,

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Crystallization of Metals (Cont.)

SOV/4344

alloy steels with special properties, cast iron, and of nonferrous alloys, are discussed. Recognition is given to D. K. Chernov and N. T. Gudtsov and their students, B. B. Gulyayev and A. G. Spasskiy, for their contributions to the understanding of the basic problems involved in the theory of crystallization of ferrous and nonferrous metals and alloys. Academician A. V. Shubnikov is also mentioned in connection with his work on the planning of research on crystal formation. References accompany several of the articles.

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Crystallization of Metals (Cont.)

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- Magnitskiy, O. N., A. A. Demidova, and B. B. Gulyayev. Influence of Alloy Composition on Conditions of the Primary Crystallization of Castings 49
- Kamenetskaya, D. S., E. P. Rakhmanova, and Ye. Z. Spektor. Investigation of the Crystallization of Iron and Its Alloys 57
- Girshovich, N. G. On the Interrelation Between Solidification and Crystallization Processes 62
- Salli, I. V. Crystallization of Binary Alloys Subjected to Deep Supercooling 69
- Ovsiyenko, D. Ye. Influence of Insoluble Admixtures on the Crystallization and Structure of Metals 76
- Neymark, V. Ye. Influence of the Modifying Agent on the Distortion of Crust and Rate of Crystallization of an Ingot 86

Card 3/8.

PHASE I BOOK REPLICATION SOV/1199

Leningrad. Politehnicheskii Institut

Sovremennye dostizheniya literarnogo proizvodstva; trudy nauchnykh nauchno-tekhnicheskoy konferentsii (Recent Achievements in Founding: Transactions of the Scientific and Technical Conference of Schools of Higher Education) Moscow, Mashgtz, 1960. 336 p. Errata slip inserted. 1,000 copies printed.

Resp. Ed.: Yu. A. Nekhendzi, Doctor of Technical Sciences, Professor; Eds.: N. G. Girshko, Doctor of Technical Sciences, Professor, and A. Lebedev, Docent; Managing Ed. for Literature in Heavy Machine Building (Leningrad Department, Mashgtz): Ya. P. Naumov, Engineer; Tech. Eds.: Ya. A. Dlugobanovskaya, and L. V. Shchetlinina.

PURPOSE: This book is intended for the technical personnel of foundries. It may be used by students of the field.

COVERAGE: This collection of articles discusses problems in founding processes. Individual articles treat the melting of metals and their alloys, mechanization and automation of casting processes, aspects of the manufacture of steel, cast iron, and nonferrous metal castings. No personalities are mentioned. References accompany individual articles.

- 4. Mezhitak, O. N., and B. M. Dubitskiy. Investigation of the Mechanism of Solidification in Castings 25
- 5. Ilkumnyi, M. V. Behavior of Suspended Admixtures During Crystallization. 32
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Card 3/9

GULYAYEV, Boris Borisovich. Primalni uchastnye: SHAPRANOV, I.A., kand.tekhn. nauk; MAGNITSKIY, O.N., kand.tekhn.nauk; POSTNOV, L.M., kand.tekhn. nauk; BOROVSKIY, Yu.F., kand.tekhn.nauk; KOLACHEVA, O.V., kand. tekhn.nauk. BERG, P.O., prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; PROZHOGIN, A.A., nauchnyy red.; CHEFAS, M.A., red.izd-va; KONTOROVICH, A.I., tekhn.red.; SPERANSKAYA, O.V., tekhn.red.

[Founding processes] Liteinye protsessy. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 415 p. (MIRA 13:7)

(Founding)

S/123/61/000/003/014/003
A004/A104

AUTHORS: Magnitskiy, O. N., and Gulyayev, B. B.

TITLE: The effect of solidification conditions on the formation of shrinkage cavities in steel castings

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 3, 1961, 21, abstract 3G177 (V sb. "Usadochn. protsessy v metallakh". Moscow, AN SSSR, 1960, 19-31)

TEXT: The authors have investigated the solidification conditions and the nature of shrinkage cavity formation in castings of stearine and palmitic acid alloys, alloys of the Al-Si and Al-Zn systems, iron-carbon alloys and 35Л (35L) steel. By adding radioactive isotopes and by X-raying the basic regularities of the kinetics of shrinkage defect formation were found, depending on the solidification conditions and chemical composition of the castings, and the processes of the formation of shrinkage cavities in foundry heads were investigated. A dimensional foundry head-to-casting ratio is recommended. The investigation of the formation of shrinkage defects in X-, T- and L-shaped wall unions of various thickness by the method of pouring off the liquid residue made it possible to

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find calculation dependencies to determine the diameter of internal and external coolers. There are 12 figures and 4 references.

Yu. Stepanov

[Abstractor's note. Complete translation]

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ACCESSION NR: AT4016064

S/2698/63/000/000/0172/0176

AUTHOR: Magnitskiy, O. N.

TITLE: The influence of technological factors in improving the properties of stainless non-magnetic steel castings

SOURCE: Soveshchaniye po teorii liteyny*kh protsessov. 8th, 1962. Mekhanicheskiye svoystva litogo metalla (Mechanical properties of cast metal). Trudy* soveshchaniya. Moscow, Izd-vo AN SSSR, 1963, 172-176

TOPIC TAGS: stainless steel, cast stainless steel, steel Kh10N20T2, non-magnetic steel, steel casting, steel, steel Kh20N4G10

ABSTRACT: Up to now, only forgings and rolled stock have been made of stainless, non-magnetic steel, the most commonly used being grades Kh10N20T2 and Kh20N4G10. Depending on the flow process, castings of these steels may vary considerably, with low yield points and a tendency to intercrystalline corrosion. Since Nb forms undesirable carbides, grade Kh20N4G10 steel may be used for casting only when up to 1% vanadium is added. Grade Kh10N20T2 steel may be used for casting without any changes. However, the plasticity of this metal decreases when it is melted in a large furnace.

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The metallographic analysis of grade Kh10N20T2 steel melted in a 5-ton electric oven showed the presence of coarse nitrides and carbides at the grain boundaries and a gradual decrease in impact strength with time (see Figure 1 of the Enclosure). The decrease in plasticity is explained by contact with the atmosphere. Attempts were therefore made at the "Bol'shevik" plant to isolate the metal from the air using argon. However, this did not change the properties of the casting, probably because of deficiencies in the method. The author suggests that vacuum ovens should be used. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 27Dec63

ENCL: 01

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

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ACCESSION NR: AT4016064

ENCLOSURE: 01

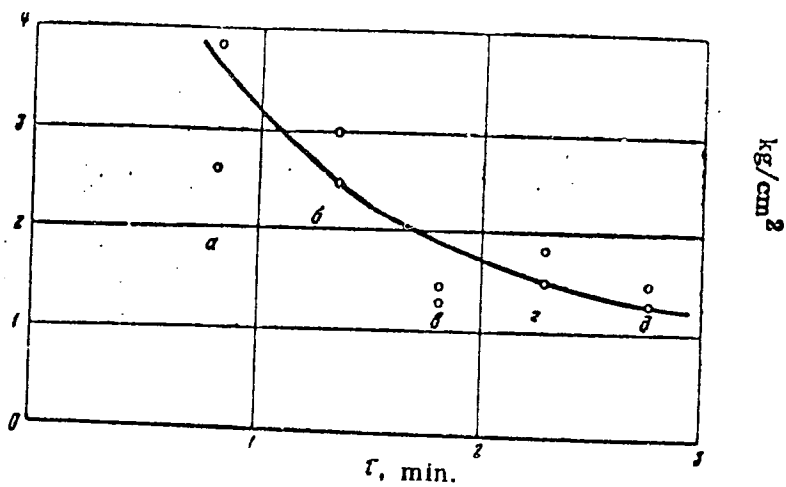


Fig. 1 - The effect of the duration of casting on the impact strength of Kh10N20T2 steel.

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ACCESSION NR: AT4016066

S/2698/63/000/000/0223/0228

AUTHOR: Kukkonen, E. Ya.; Kaplunovskiy, G. A.; Magnitskiy, O. N.; Gulyayev, B. B.

TITLE: Effect of the characteristics of the technological process on the properties of heat-resistant metal castings

SOURCE: Soveshchaniye po teorii liteynykh protsessov. 8th, 1962. Mekhanicheskiye svoystva litogo metalla (Mechanical properties of cast metal). Trudy* soveshchaniya. Moscow, Izd-vo AN SSSR, 1963, 223-228

TOPIC TAGS: refractory metal, heat resistant alloy, alloy casting, molybdenum alloy, tungsten alloy, carbon containing alloy, titanium alloy, cast metal property

ABSTRACT: The lack of industrial flow processes for manufacturing heat-resistant metals has led to insufficient knowledge of the properties of these castings. The authors investigated the influence of the methods of melting, casting parameters and other features on the properties of alloy castings containing titanium and molybdenum. The metals were cast in a DVP-15 vacuum electric oven with an electric arc in a carbon crucible. Parts are currently made of molybdenum by plastic bending of castings obtained by electric arc fusion of special packs of molybdenum and crystallization in water-cooled copper molds. Melting of molybdenum with a tungsten electrode and casting in centrifugal copper molds ensures the highest quality of dense molybdenum castings with fine structures. Orig. art has: 6 figures and 3 tables.

GULYAYEV, B.B.; MAGNITSKIY, O.N.; DEMIDOVA, A.A.; Prinitali
uchastiye: KAFUNOVSKIY, G.A.; KUKKONEN, E.Ya.; SUTALOV,
L.V., kand. tekhn. nauk, retsenzent

[Castings of high-melting metals] Lit'e iz mugoplavkikh me-
tallov. Moskva, Izd-vo "Mashinostroenie," 1964. 291 p.
(MIRA 17:5)

L 39740-55 EWP(e)/EWP(m)/EWP(y)/EWP(t)/EWP(b) IJP(c) JD/MLK

ACCESSION NR: AT4048343

S/0000/64/000/000/0150/9153

AUTHOR: Kukkonen, E. Ya.; Kaplunovskiy, G. A.; Demidova, A. A.; Magnitskiy, O. K.

TITLE: The effect of gases on the quality of titanium alloy castings

SOURCE: AN SSSR. Komissiya po tekhnologii mashinostroyeniya. Gazy v litom ²⁷ ¹⁸
metalle (Gases in cast metals). Moscow, Izd-vo Nauka, 1964, 150-153

TOPIC TAGS: cast titanium, titanium alloy casting, blowhole formation, gas saturation, titanium porosity, oxygen adsorption, nitrogen adsorption, hydrogen adsorption, mold material, mold temperature

ABSTRACT: The authors note that the principal requirement in the production of titanium castings is to safeguard the metal against contamination, particularly by oxygen, hydrogen and nitrogen. This requirement predetermines the basic specifications of the entire technological process of the production of titanium alloy castings. As mold materials only the most chemically stable oxides can be used: zirconium dioxide, electrocorundum and magnesite. The binding materials must contain a minimum amount of those components which react actively with titanium. The metal is melted in a vacuum in a cooled crucible with a lining of the same alloy as that which is being melted. Particularly attention was paid in this article to:
1) the effect of the mold materials and the mold temperature during teeming on
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the gas content and the mechanical properties of the metal of the castings; 2) the effect of the metal of the consumed electrode and of other factors on the development of blowholes in thin-walled titanium castings. The effect of the mold materials was studied on the basis of castings prepared by the melted model method, with the gas content in the castings determined by the vacuum-smelting method. The basic titanium contained 0.0150% oxygen. The mold material of lowest quality, from the point of view of minimal oxygen contamination of the metal, was found to be zirconium dioxide and melted magnesite. The higher the temperature at the metal - mold boundary, the more intensive the interaction, the increase in the oxygen content in the casting metal as the temperature of molds of different refractory materials was increased being extremely significant. The authors give 150 - 250C as the optimal mold temperature. The distribution of gases throughout the section of the casting was investigated by measuring the microhardness, with the discovery that the surface layers of the casting showed the highest degree of contamination. A study was made of the effect of different technological factors on the susceptibility of the casting to the development of blowholes by means of casting disks of varying thickness, with the disks so obtained checked for the presence of blowholes by X-ray. Thin-walled castings were found to be especially vulnerable to this type of gas-originated surface flaw. This statement is developed in detail in the article. A comparison of disks obtained from metal smelted in a vacuum at $1 \cdot 10^{-1}$ and at $1 \cdot 10^{-3}$ mm Hg or from metal which had undergone special

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vacuum degasification indicated that the basic charge has a considerable effect on the formation of blowholes in the castings: with degasified metal, the quantity of blowholes decreases noticeably. In disks without blowholes, defects in the form of shrinkage porosity are observed, while this type of defect is absent when blowholes are present. The authors also state that the number of blowholes in the casting depends on the configuration of the casting and the method employed in filling the mold. Those factors were found to be favorable which promote an upward direction in the filling of the mold and the crystallization of the metal. Still further details are discussed in the article. "I. P. Bashkov took part in the work." Orig. art. has: 2 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 20May64

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

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WH/WV/JD/MLK
ACCESSION NR AT4048344 S/0000/64/000/000/0154/0159

AUTHOR: Magnitsky, O. N.

7
B+1

TITLE: Conditions for the formation of gas porosity in titanium castings

SOURCE: AN SSSR. Komissiya po tekhnologii mashinostroyeniya. Gazy v litom metalle
(gases in cast metals). Moscow, Izd-vo Nauka, 1964, 154-159

SYNOPSIS TAGS: cast titanium, gas saturation, titanium porosity, titanium pouring, gas
blister, mold material, centrifugal teeming

ABSTRACT: The author notes that gas porosity is one of the most common defects encountered in titanium casting. This defect is caused by the high chemical activity of the titanium and its ability to absorb a considerable amount of gas. Thin-walled castings are particularly subject to the effects of gas-originated defects. The author finds, moreover, that the specific peculiarities in the production of titanium castings greatly limit the possibility of employing effective means of combatting gas-originated defects, and that, while certain techniques commonly employed in the pouring of ferrous and non-ferrous metals (allowances, lapping, directional crystallization, mold ventilation, rational method of metal feed, etc.) are of some aid in reducing porosity, experience shows that the complete elimination of gas defects requires the elaboration of special measures which involve, as a rule, the creation of new casting

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