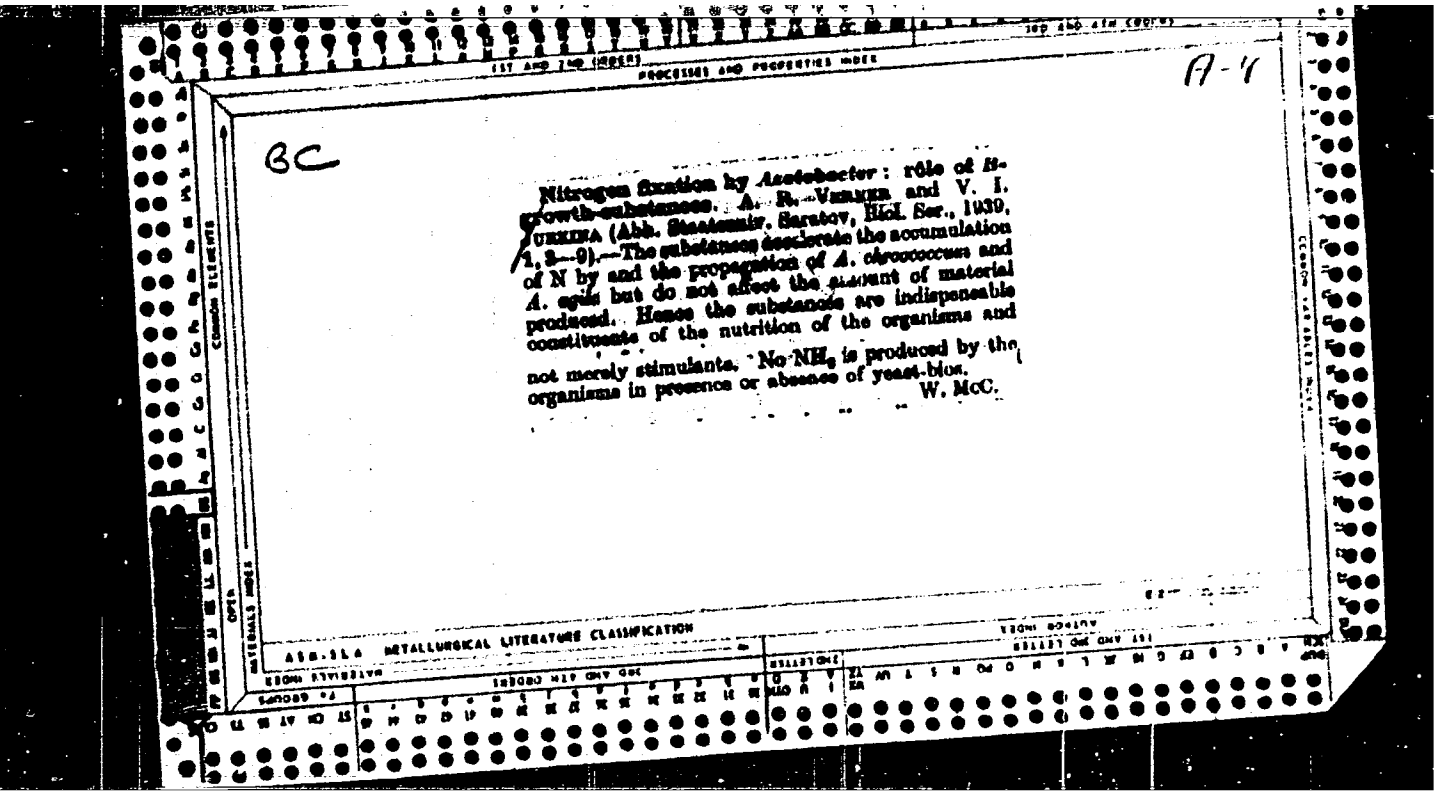


BC

A-4

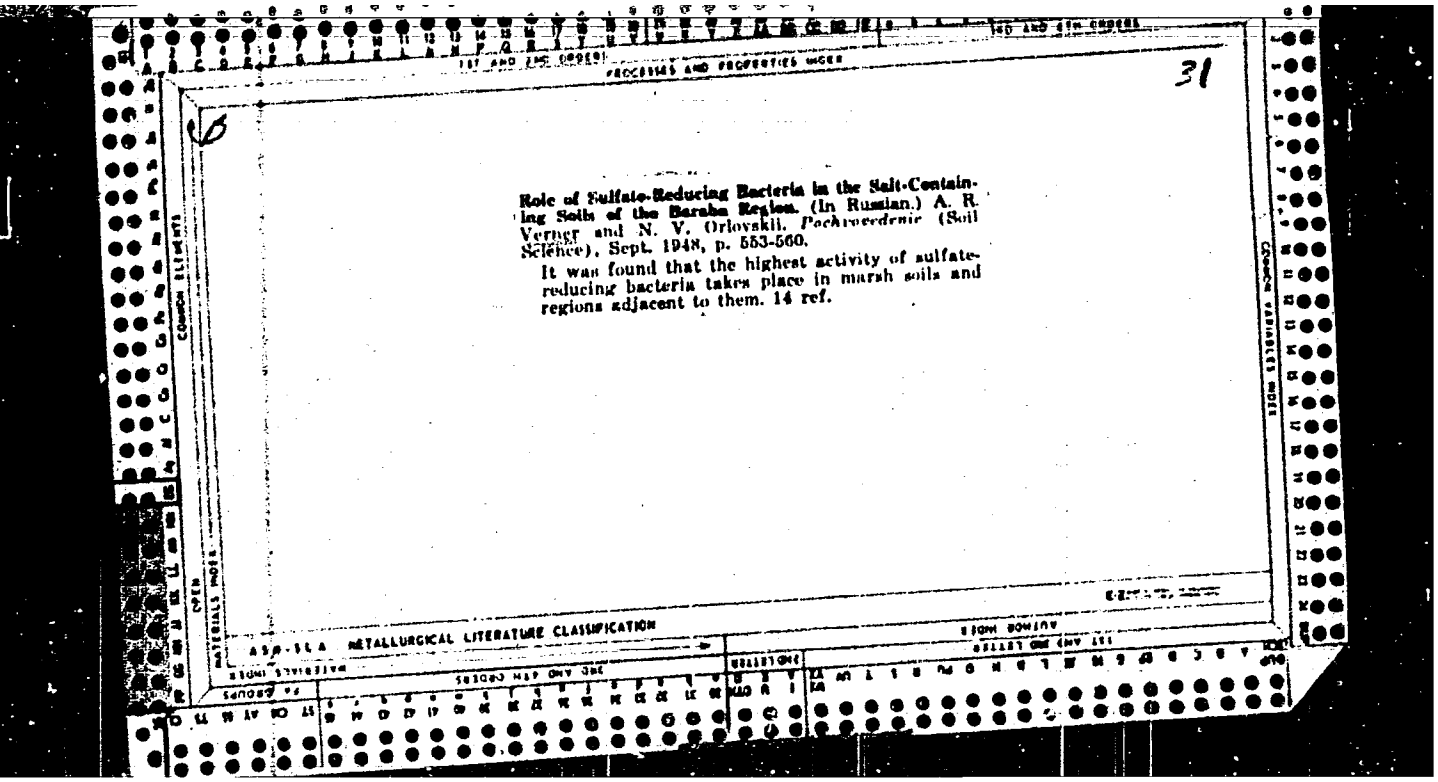
Nitrogen fixation by *Azotobacter*: rôle of *B*-growth-substances. A. R. Vamakra and V. I. Ukrika (Abh. Staatsmisr. Saratov, Biol. Ser., 1939, 1, 3—9).—The substances decelerate the accumulation of N by and the propagation of *A. chroococcum* and *A. agile* but do not affect the amount of material produced. Hence the substances are indispensable constituents of the nutrition of the organisms and not merely stimulants. No NH_3 is produced by the organisms in presence or absence of yeast-biox.

W. McC.

VERNER, A. R.

VERNER, A. R., MALYSHKIN, F. E., and KVIET, N. "Development of Fungi (Fusarium, Verticillium) in the Soil," Comptes Rendus (Doklady) de l'Academie des Sciences de l'URSS, vol. 31, no. 8, 1941, pp. 812-814. 511 P44

SO: SIRA SI-90-53, 15 Dec. 1953



Role of Sulfate-Reducing Bacteria in the Salt-Containing Soils of the Barabe Region. (In Russian.) A. R. Veringr and N. V. Orlovskii. *Pochvovedenie* (Soil Science), Sept. 1948, p. 553-560.

It was found that the highest activity of sulfate-reducing bacteria takes place in marsh soils and regions adjacent to them. 14 ref.

VERNER, A. R.

PA 61/49T1

USSR/Agriculture Sep 49
Soil Science
Microorganisms

"The Role of Sulfate-Reducing Bacteria in the Saline Nature of Baraba Soils," A. R. Verner, M. V. Orlovskiy, 7½ pp

"Pochvoved" No 9

Activity of sulfate-reducing bacteria in soils and surface waters of Central Baraba causes salifying of marshy regions. Therefore, all changes in percentage content and correlation of sulfate and carbon are due chiefly to this biogenic factor. This may explain the widespread

61/49T1

USSR/Agriculture (Contd) Sep 49

prevalence of soda in the Baraba salt formation. Gives four tables.

61/49T1

VERNER, A. R.

Ubinsk Experimental-Meliorative Station.
"Again on the salt stability of the Azobacter."
SOURCE: MIKROBIOLOGIA, Vol. 20, No. 5, September/October 1951

VERNER, A. R.

Reclamation of Land - Baraba Steppe.

Primary working of soil in reclaiming Baraba marshes. Korm. baza, 3, no. 8, 1952.

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

VERNER, A.R.; GORDEYEVA, E.A.

Oxygen and hydrogen sulfide content of the soil water of Baraba.
Pochvovedenie '52, 1012-18. (MLRA 5:12)
(CA 47 no.13:6591 '53)

USSR / Soil Science. Physical and Chemical Properties of Soil. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6076.

Author : Verner, A. R.; Golyakov, N. M.
Inst : Not given.
Title : The Toxicity of Salts in Reclaimed Bog Soils of Baraba.

Orig Pub: Pochvovedeniye, 1956, No 8, 101-104.

Abstract: Tentative data on salt concentrations in a soil solution of peat-bog soil is obtained, and the salt composition toxic to oats, barley, wheat and fodder grasses is determined. A concentration of the soil solution (10 grams per liter and higher) leads to a sharp reduction in oat and wheat sprouts. With a salt concentration

Card 1/2

VERNER, A.R.

AFANAS'YEVA, A.L., kand.biol.nauk; BAYERTUYEV, A.A., kand.sel'skokhozyaystvennykh nauk; BAL'CHUGOV, A.V., kand.sel'skokhozyaystvennykh nauk; BELOZEROVA, M.A., agronom; BELOZOROV, A.T., kand.sel'skokhozyaystvennykh nauk; MAKSIMENKO, V.P., agronom; BERNIKOV, V.V., doktor sel'skokhozyaystvennykh nauk; BOGOMYAGKOV, S.T., kand.sel'skokhozyaystvennykh nauk; VOLYNETS, O.S., agronom; BODROV, M.S., kand.sel'skokhozyaystvennykh nauk; BOGOSLAVSKIY, V.P., kand.tekhn.nauk; EHRUPPA, I.F., kand.tekhn.nauk; VERNER, A.R., doktor biol.nauk; VOZBUTSKAYA, A.Ye., kand.sel'skokhozyaystvennykh nauk; VOINOV, P.A., kand.sel'skokhozyaystvennykh nauk; VYSOKOS, G.P., kand.biol.nauk; GALDIN, M.V., inzhener-mekhanik; GERASIMOV, S.A., kand.tekhn.nauk; GORSHENIN, K.P., doktor sel'skokhozyaystvennykh nauk; YELENEV, A.V., inzhener-mekhanik; GERASKEVICH, S.V., mekhanik [deceased]; ZHARIKOVA, L.D., kand.sel'skokhozyaystvennykh nauk; ZHEGALOV, I.S., kand.tekhn.nauk; ZIMINA, Ye.A., agronom; BARANOV, V.V., kand.tekhn.nauk; PAVLOV, V.D.; IVANOV, V.K., kand.sel'skokhozyaystvennykh nauk; KAPLAN, S.M., kand.sel'skokhozyaystvennykh nauk; KATIN-YARTSEV, L.V., kand.sel'skokhozyaystvennykh nauk; KOPYRIN, V.I., doktor sel'skokhozyaystvennykh nauk; KOCHERGIN, A.Ye., kand.sel'skokhozyaystvennykh nauk; KOZHEVNIKOV, A.R., kand.sel'skokhozyaystvennykh nauk; KUZNETSOV, I.N., kand.sel'skokhozyaystvennykh nauk; LAMBIN, A.Z., doktor biol.nauk; LEONT'YEV, S.I., kand.sel'skokhozyaystvennykh nauk; MAYBORODA, N.M., kand.sel'skokhozyaystvennykh nauk; MAKAROVA, G.I., kand.sel'skokhozyaystvennykh nauk; MEL'NIKOV, G.A., inzhener; ZHDANOV, B.A., kand.sel'skokhozyaystvennykh nauk; MIKHAYLENKO, M.A., kand.sel'skokhozyaystvennykh nauk; MAGILEVTSEVA, N.A., kand.sel'skokhozyaystvennykh nauk;

(Continued on next card)

AFANAS'YEVA, A.L.... (continued) Card 2.

NIKIFOROV, P.Ye., kand.sel'skokhozyaystvennykh nauk; NEMASHEV, N.I., lesovod; PERVUSHINA, A.M., agronom; PLOTNIKOV, M.A., kand.biol.nauk; L.G.; kand.sel'skokhozyaystvennykh nauk; PAVLOV, V.D., kand.tekhn. nauk; PRUTSKOVA, M.G., kand.sel'skokhozyaystvennykh nauk; GURCHENKO, V.S., agronom; POPOVA, G.I., kand. sel'skokhozyaystvennykh nauk; PORTYANKO, A.F., agronom; RUCHKIN, V.N., prof.; RUSHKOVSKIY, T.V., agronom; SAVITSKIY, M.S., kand.sel'skokhozyaystvennykh nauk; BOLDIN, D.T., agronom; NESTEROVA, A.V., agronom; SERAFIMOVICH, L.B., kand. tekhn.nauk; SMIRNOV, I.N., kand.sel'skokhozyaystvennykh nauk; SEREBRYANSKAYA, P.I., kand.tekhn.nauk; TOKHTUYEV, A.V., kand. sel'skokhozyaystvennykh nauk; FAL'KO, O.S., iznh.; FEDYUSHIN, A.V., doktor biol.nauk; SHEVLYAGIN, A.I., kand.sel'skokhozyaystvennykh nauk; YUFEROV, V.A., kand.sel'skokhozyaystvennykh nauk; YAKHTENFEL'D, P.A., kand.sel'skokhozyaystvennykh nauk; SEMENOVSKIY, A.A., red.; GOR'KOVA, Z.D., tekhn.red.

[Handbook for Siberian agriculturists] Spravochnaia kniga agronoma Sibiri. Moskva, Gos. izd-vo sel'khoz. lit-ry. Vol.1. 1957. 964 p. (MIRA 11:2)
(Siberia--Agriculture)

VERNER, A.R. (Omsk)

Effect of cultivation on changes in the seasonal freezing of bog soils of the Baraba Steppe [with summary in English]. Pochvovedenie no.1:112-117 Ja '59. (MIRA 12:2)
(Baraba Steppe--Frozen ground)

VERNER, A.R.; TRET'YAKOVA, K.Ye.

Conditions of preservation and viability of corn, strawberry, and apple pollen. Trudy TSSBS no.5:89-97 '61. (MIRA 15:3)
(Pollen)

VERNER, A.R.; DELOVA, G.V.; GONTAR', E.M.

Phytoncidal activity of certain wild onions of Siberia. Izv. Sib. otd. AN SSSR no.7:83-91 '61. (MIRA 14:8)

1. TSentral'nyy Sibirskiy Botanicheskiy sad Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Phytoncides) (Siberia--Onions)

VERNER, A.R.; MAYSTRENKO, G.G.

Root nodules of wild and cultivated sea buckthorn (Hippophae rhamnoides L.). Trudy TSSBS no.7:136-140 '64. (MIRA 17:11)

VAYSBURD, S.Ye.; VERNER, B.F.; KHEYFETS, V.L.

Activity of iron in Fe - Ni - S melts. Izv.vys.ucheb.zav.; tsvet.met. 5 no.1:59-67 '62. (MIRA 15:2)

1. Proyektnyy i nauchno-issledovatel'skiy institut "Gipronikel'". (Activity coefficients) (Iron sulfides) (Nickel sulfides)

137-58-6-11981

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 113 (USSR)

AUTHORS: Baymakov, A.Yu., Verner, B.F., Kostelov, V.V.

TITLE: An Application of the Fuming Process (Metallotermiya v protsesse f'yumingovaniya)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 9, pp 20-21

ABSTRACT: Large quantities of ferrosilicon, a by-product of electrosmelting of Sn concentrates which contains 18-19% of Si, ~30% of Fe, and 3-5% of Sn, have accumulated in various tin-producing plants. In 1956 the Gipromnikel' Institute conducted shop experiments on processing of ferrosilicon by means of fuming of Sn slags containing 1.3-1.5% Sn, 0.5-0.8% Pb, and 2.5-3.5% Zn. After blowing, 0.07-0.08% of Sn remain in the slag, the extraction of Sn attaining 95%. Addition of ferrosilicon is advisable in amounts equivalent to 15% of slag by weight. Experiments dealing with blowing of the ferrosilicon only were also performed.

A.P.

Card 1/1 1. Slags--Processing 2. Iron-silicon alloys--Processing 3. Tin--Separation

BAYMAKOV, A.Yu.; VERNER, B.F.; LARIKOVA, M.G.; DMITRIYEVA, N.K.

Refining tin from admixtures by the method of zonal smelting.
TSvet. met. 29 no.8:51-58 Ag '56. (MLRA 9:10)

(Tin--Metallurgy)

BAZILEVSKIY, V.M.; VERNER, B.F.; KOSTELOV, V.V.

Reprocessing of slags containing zinc, lead, tin and copper. TSvet. met. 29 no.1:82-92 Ja '56. (MLRA 9:6)
(Slag) (Nonferrous metals--Metallurgy)

BAZILEVSKIY, V.M.; VERNER, B.F.; KOSTELOV, V.V.

Reprocessing of slags containing zinc, lead, tin and copper. TSvet. met. 29 no.1:82-92 Ja '56. (MLRA 9:6)
(Slag) (Nonferrous metals--Metallurgy)

KOSTELOV, V.V.; VERNER, B.F.; IVANCHENKO, L.P.

Use of the fuming process for the treatment of complex cobalt-containing raw materials. TSvet. met. 33 no.6:37-42 Je '60. (MIRA 14:4)

(Nonferrous metals—Metallurgy) (Cobalt)

BILAY, V.I.; VERNER, D.A.; ZAKORDONETS, A.I.; LUSHCHEVSKAYA, G.M.

A stimulant of plant growth isolated from Fusarium miliforme Shield. Izv. AN SSSR. Ser. biol. 27 no.1:42-47 Ja-F '62. (MIRA 15:3)

1. Akademiya nauk Ukrainskoy SSR, Kiyev.
(FUSARIUM)
(GROWTH PROMOTING SUBSTANCES)

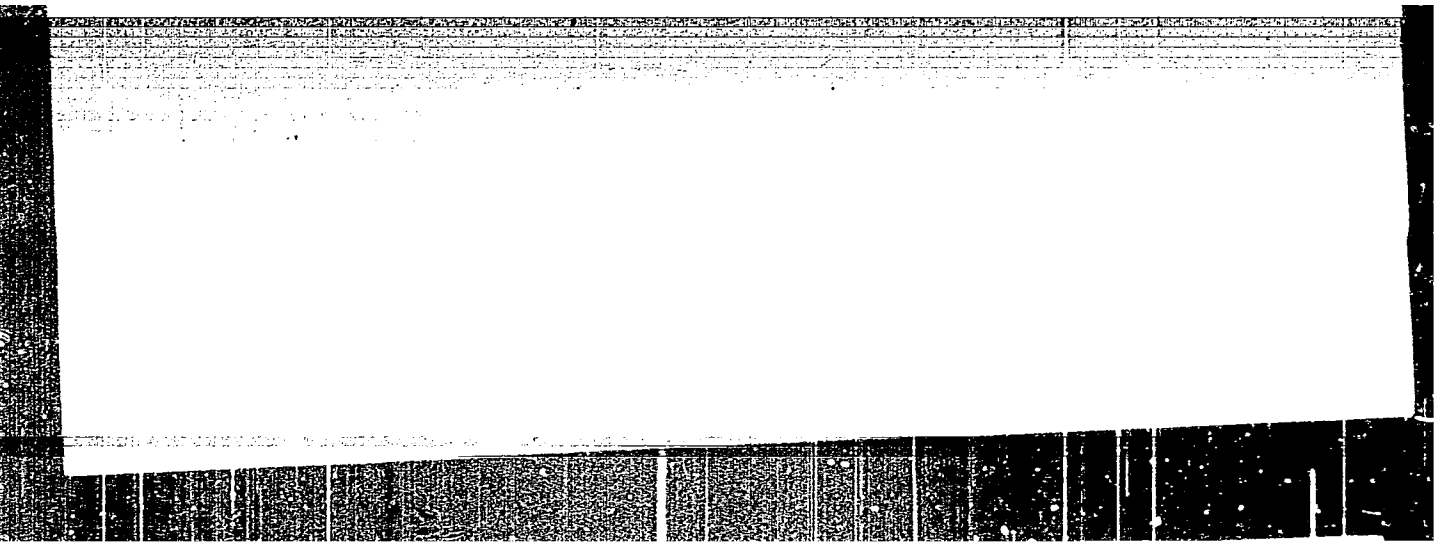
VERNER, D. A.

Sulfurization of fruits and berries Moskva, Pishchepromizdat, 1941. 40 p.

VERNER, D. A.

Verner, D. A. "The use of pectinase preparations in separating out chromoplast pigments", Ukr. khim. zhurnal, Vol. XIV, Issue 2, 1949, p. 101-106, - Bibliog: 9 items.

SO: U-4392, 19 August 53, (Letopis 'Zhurnal 'nykh Statey, No 21, 1949).



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859520002-9"

VERNER D.A

Enriching of the coagula of green plants with vitamin E. D. A. Verner and B. C. Savinov (Inst. Org. Chem., Acad. Sci. Ukr. S.S.R., Kiev). *Vitaminy, Akad. Nauk Ukr. S.S.R.* 1953, 75–81.—Protein coagula, prepd. from the juice of green alfalfa, contained originally dry substance 24.0–27.0%, tocopherols (I) 62.2–76.8 mg.%, carotene (II) 16.4–17.8 mg.%, and total N 3.43–3.81%. On acid hydrolysis (20 g. coagulum, 40 ml. 6% HCl soln., temp. 100°, time 1–1½ hrs.) I and II are liberated from the protein, giving vitamin-enriched prepns. in which the amts. of I and II can be 10–11 and 5–6 times as great as in the original protein prepns., resp.; however, the abs. amt. of II decreases by 20–1%. The protein hydrolysis can be made also in a 10% NaOH soln., but in the alk. medium a great destruction of I and II occurs.

E. Wierbicki

VERNER, D.A.

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

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 842

Author: Savinov, B. G., Verner, D. A., and Mikaylovnina, A. A.

Institution: None

Title: On the Monomethylation of Xylene

Original Periodical: Ukr. khim. zh., 1956, Vol 22, No 1, 84-87

Abstract: The conditions for the preparation of pseudocumene (I) from xylene (II) have been investigated. The methylation of II with CH_3Cl for 12-25 hours in the presence of anhydrous Al_2Cl_3 at 80° gives I in yields of 30-38% (based on II charged). The separate methylation of the isomers of II produces no advantage compared to the methylation of the mixture; I and mesitylene are formed in both cases. Mesitylene and II are obtained by the hydrolysis with 20% HCl (30 minutes) followed by steam-distillation for 90 minutes at 80-90°, of the sulfonic acids formed when the fraction of alkylated products boiling at 150-180° is sulfonated with an equal volume of concentrated H_2SO_4

Card 2/ Card 1/2

USSR/Human and Animal Physiology - Blood Circulation. T-5

Abs Jour : Ref Zhur - Biol., No 7, 1958, 31731

Author : Verner, D.D.
Inst : -
Title : Pneumatophotoelectric Plethysmograph.

Orig Pub : Fiziol. zh. SSSR, 1956, 42, No 11, 1002-1003.

Abstract : Sealed with plastilin or plaster a test tube is slipped on the digits of the hand of foot. The end of the test tube extends out and, by means of a rubber tube, connects with a capsule of the transmitter that has a rubber membrane. Changes of the size of the digit in the test tube are transfered to themembrane and, from it, to an operation indicator that regulates the quantity of light falling on photoelement. Changes of the photocurrent are amplified and recorded on an oscillograph in ink.

Card 1/1

EXCERPTA MEDICA Sec.2 Vol.10/10 Phy.Biochem. Oct 57

VERNER D. D.

4355. VERNER D. D. V.M.Bekhterev Psychoneurol. Inst., Leningrad. *A pneumophotoelectric plethysmograph (Russian text) FIZIOL. Z. 1956, 42/11 (1002-1003) Illus. 3

Movements of a membrane of a finger-volume plethysmograph are recorded by means of a photoelectric cell.

Simonson - Minneapolis, Minn

VERNER, D.D.

Pneumophotoelectric plethysmograph [with summary in English].
Fiziol.zhur. 42 no.11:1002-1003 N '56. (MLRA 10:1)

1. Gosudarstvennyy psikhonevrologicheskiy institut im. V.M. Bekhtereva, Leningrad.
(PLETHYSMOGRAPHY, apparatus and instruments,
pneumophotoelectric plethysmograph (Rus))

YEROKHINA, V.N.; VERNER, D.D.

Potentiation of hypnic inhibition by means of a small-sized simplified apparatus for electronarcosis. Trudy Gos. nauch.-issl. psikhonevr. inst. no.24:167-172 '61. (MIRA 15:5)

1. 2-oy psikhiatricheskoye otdeleniye i eksperimental'naya gruppa po razrabotke meditsinskogo oborudovaniya Gosudarstvennogo nauchno-issledovatel'skogo psikhonevrologicheskogo instituta imeni Bekhtereva.
(ELECTRIC ANESTHESIA)

VERNER, E. (Eng.)

Wrote about the repair of automobile and tractor engine bearing with centrifugally poured babbit and the relation between the thickness and microstructure, and the r.p.m. at which the babbit is poured.

Soviet Source: P: Avtomobil, No. 3, Moskva, March 1950

Abstracted in USAF "Treasure Island", on file in Library of Congress, Air Information Division, Report No. 98609

[redacted], E.
G. KLEIN, Maslob Shir Delo, 1935, 11, 542-544

VERNER, E.,
G. KLEIN, Masloboino Zhirovoe Delo 11, 542-4 (1935)

VERNER, M.D., inzh.

Cooling systems for the engine, pressure charged air, and electric machines of modernized TE1 and TE2 diesel locomotives. Sbor. nauch. st. KHIIT no.63:27-41 '62. (MIRA 16:11)

VERNER, Evgenii Georgievich

SAKHAROV, Grigorii Afanas'evich and VERNER, Evgenii Georgievich Torfianiki SSSR; s prilozh. kart rasposlozheniia torf'anikov i bekat'l'nykh f-brik ... Moskva, Ivatorf, 1928. xx, 320 p.

DIC: Unclass.

SO: LC, Soviet Geography, Part I, 1951, Uncl.

GUL'CHAK, G.S.; VERNER, E.O.; SYRKIN, G.Ye.; BUKHARIN, V.V., spetsred.; MURASHEVA, O.I., red.; KISINA, Ye.I., tekhn.red.

[Automatic control devices in the oils and fats industry] Avtomaticheskie reguliruiushchie pribory v maslozhirovoi promyshlennosti. Moskva, Pishchepromizdat. Pt.2. 1957. 31 p. (MIRA 12:1)
(Automatic control) (Oil industries--Equipment and supplies)

YERMAKOV, B.F., inzh.; RABOTA, A.P., inzh.; VERNER, E.O., inzh.

From the work experience of Vinnitsa Oil and Fat Combine. Maslozhir.prom. 28 no.12:27-28 D '62. (MIRA 16:1)

1. Vinnitskiy maslozhirovoy kombinat.
(Hydrogenation oils and fats) (Vinnitsa)

RUDAKOV, A.A.; VERNER, E.O.; IVANOV, M.Ye.; FURMANOV, Z.Z.

Automatic regulation of temperature in thermostating canned foods. Kons.i ov.prom. 15 no.11:35-38 N '60. (MIRA 13:10)

1. Vinnitskiy sovnarkhoz.
(Canning industry--Equipment and supplies) (Thermostat)

VERNER, E.O., inzh.

Remote indicator of the amount of hydrogen in a gas holder and automatic switching off of hydrogen compressors. Masl.-zhir. prom. 27 no.7:42-43 Jl '61. (MIRA 14:7)

1. Vinnitskiy maslozhirovoy kombinat.
(Gasses, Compressed)
(Automatic control)

VERNER, G. [Werner, G.], inzh.

The ADE automatic two-side trimmer. Der.prom. 11 no.12:30 D '62. (MIRA 16:1)

1. Institut stankostroyeniya, Karl-Marks-shtadt, Germanskaya Demokraticheskaya Respublika.
(Germany, East—Woodworking machinery)

VERNER, G., inzhener.

Modernization of circular saws. Der.prom. 6 no.1:30-31 Ja '57. (MLRA 10:2)

1. Narodnoye predpriyatiye Mikhoma v gorode Leyptsige (Germanskaya Demokraticheskaya Respublika).
(Germany, East--Woodworking machinery)

VERNER, I. (Vyborg)

Redesigning a loudspeaker. Radio no.8:50 Ag '60. (MIRA 13:9)
(Loudspeakers)

VERNER, J.

"Air in the Ostrava area."

p. 241 (Nova Technika, No. 6, 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 9, September 1958.

SOV/113-59-6-18/21

12(2)

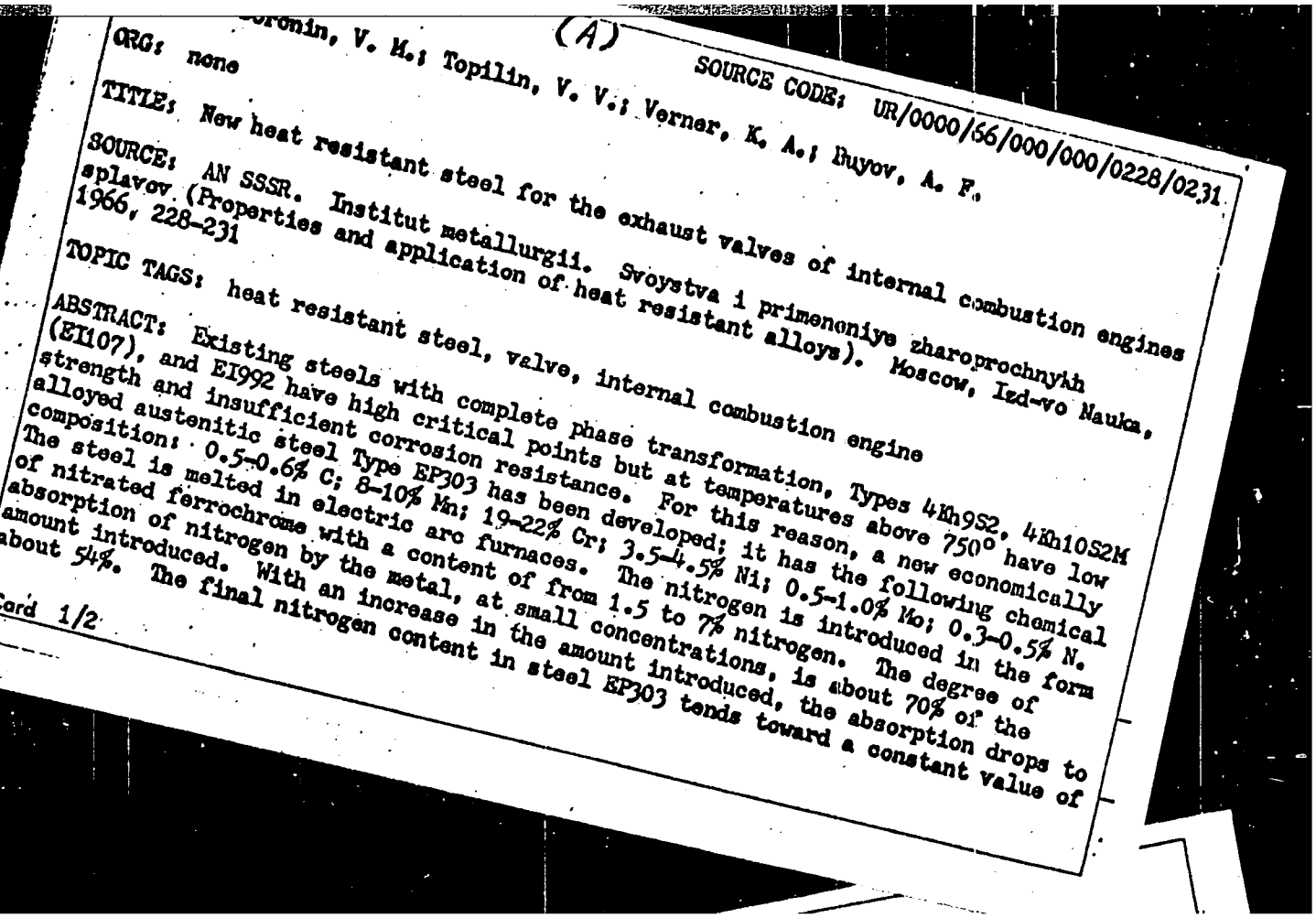
AUTHOR: Pryadilov, V.I., Verner, K.A.

TITLE: Exhaust Valves of Modern Engines

PERIODICAL: Avtomobil'naya promyshlennost', 1959, Nr 6, pp 43-46 (USSR)

ABSTRACT: This article reviews modern exhaust valves, their design, the materials used in their construction, the stresses to which they are exposed and means to combat them. There are 5 diagrams, 4 graphs, 5 tables and 8 English-language references.

Card 1/1



(A) SOURCE CODE: UR/0000/66/000/000/0228/0231

...oronin, V. M.; Topilin, V. V.; Verner, K. A.; Buyov, A. F.

ORG: none

TITLE: New heat resistant steel for the exhaust valves of internal combustion engines

SOURCE: AN SSSR. Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 228-231

TOPIC TAGS: heat resistant steel, valve, internal combustion engine

ABSTRACT: Existing steels with complete phase transformation, Types 4Kh9S2, 4Kh10S2M (EI107), and EI992 have high critical points but at temperatures above 750° have low strength and insufficient corrosion resistance. For this reason, a new economically alloyed austenitic steel Type EP303 has been developed; it has the following chemical composition: 0.5-0.6% C; 8-10% Mn; 19-22% Cr; 3.5-4.5% Ni; 0.5-1.0% Mo; 0.3-0.5% N. The steel is melted in electric arc furnaces. The nitrogen is introduced in the form of nitrated ferrochrome with a content of from 1.5 to 7% nitrogen. The degree of absorption of nitrogen by the metal, at small concentrations, is about 70% of the amount introduced. With an increase in the amount introduced, the absorption drops to about 54%. The final nitrogen content in steel EP303 tends toward a constant value of

Card 1/2

L 40826-66 EWT(d)/EWT(l)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6020976 IJP(c) WW/JD/WB SOURCE CODE: UR/0113/66/000/003/0031/0033

AUTHOR: Verner, K. A.; Doronin, V. M.; Buynov, A. F.; Syrkin, P. E.; Letchford, N. I.

ORG: NAMI; "Elektrodetal'" Plant (Zavod "Elektrodetal'"); Gor'kiy Automobile Plant (Gor'kovskiy avtozavod)

TITLE: Chrome-manganese-nickel steel with nitrogen for internal combustion exhaust valves

SOURCE: Avtomobil'naya promyshlennost', no. 3, 1966, 31-33

TOPIC TAGS: internal combustion engine, valve, high temperature steel, chromium, manganese, nickel, hardness, durability, engine reliability, CHROMIUM STEEL, MANGANESE STEEL, NICKEL STEEL, EP303 HIGH TEMPERATURE STEEL

ABSTRACT: The authors discuss and criticize various grades of steel used for valve production. A comparison of existing grades of steel for valve production shows that EP303 steel is best suited for this purpose. It retains its hardness at temperatures of 700-900°C. This shows that it can withstand temperatures from 50 to 100 degrees higher than EI69 and EP48 steels. EP303 steel was tested for thermal stability to determine its resistance to scale formation in air and corrosion resistance in lead oxide at 900°C. EP303 steel compares favorably with the other grades of steel tested. The test results were used as a basis for trying out this steel in the mass production of valves. The manufacturing process is discussed. Valves made from EP303 and EP48

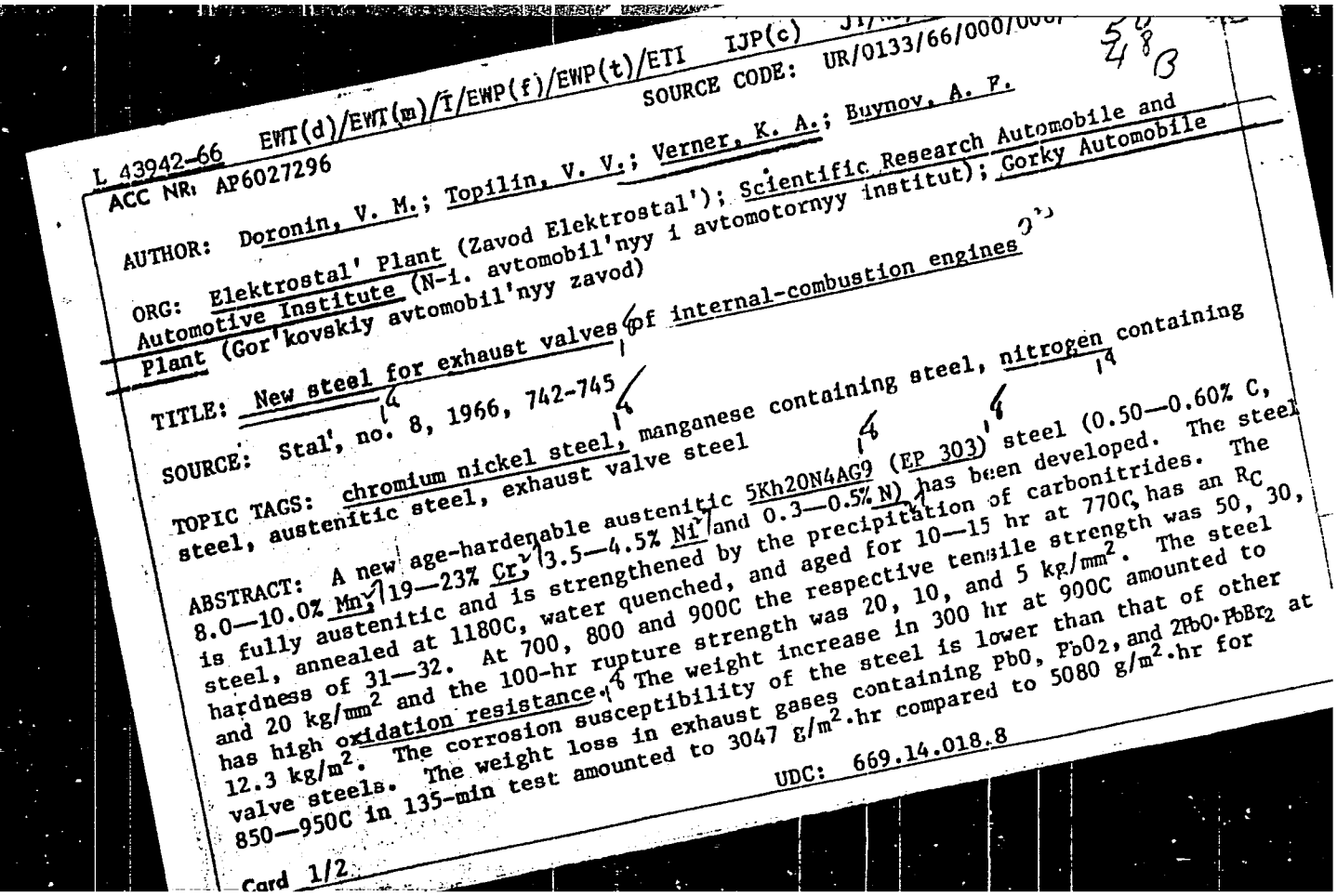
UDC: 621.431.73:62-332.002.2

Card 1/2

steels were then compared on test stands and under operating conditions. These tests were carried out at the Gor'kiy Automobile Plant. The valves were tested in GAZ-51, GAZ-51a and GAZ-21d engines and others. High octane gasoline was used throughout the test since it develops high temperature conditions. Tests showed that valves made from EP303 steel retain their clearances throughout the test pericd in contrast to those made from EP48 steel. The data acquired during stand testing are in agreement with operational data. Valves made from EP303 steel have a hardness of HRC 38. These valves operate very well in GAZ engines and improve engine reliability. The service life of the new valves is triple that of valves with a built up VKhN-1 facing, and more than four times that of valves made from EP48 steel. The production of EP303 steel has been adopted by the Gor'kiy Automobile Plant for making the exhaust valves of GAZ and ZMZ engines. Orig. art. has: 4 figures, 1 table.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 001

Card 2/2 MLP



L 43942-66 EWT(d)/EWT(m)/T/EWP(f)/EWP(t)/ETI IJP(c) JJ/...

ACC NR: AP6027296 SOURCE CODE: UR/0133/66/000/008/0...

AUTHOR: Doronin, V. M.; Topilin, V. V.; Verner, K. A.; Buynov, A. F.

ORG: Elektrostal' Plant (Zavod Elektrostal'); Scientific Research Automobile and Automotive Institute (N-i. avtomobil'nyy i avtomotornyy institut); Gorky Automobile Plant (Gor'kovskiy avtomobil'nyy zavod)

TITLE: New steel for exhaust valves of internal-combustion engines

SOURCE: Stal', no. 8, 1966, 742-745

TOPIC TAGS: chromium nickel steel, manganese containing steel, nitrogen containing steel, austenitic steel, exhaust valve steel

ABSTRACT: A new age-hardenable austenitic 5Kh20N4AG9 (EP 303) steel (0.50—0.60% C, 8.0—10.0% Mn, 19—23% Cr, 3.5—4.5% Ni and 0.3—0.5% N) has been developed. The steel is fully austenitic and is strengthened by the precipitation of carbonitrides. The steel, annealed at 1180C, water quenched, and aged for 10—15 hr at 770C, has an R_C hardness of 31—32. At 700, 800 and 900C the respective tensile strength was 50, 30, and 20 kg/mm^2 and the 100-hr rupture strength was 20, 10, and 5 kg/mm^2. The steel has high oxidation resistance. The weight increase in 300 hr at 900C amounted to 12.3 kg/m^2. The corrosion susceptibility of the steel is lower than that of other valve steels. The weight loss in exhaust gases containing PbO, PbO_2, and $2PbO \cdot PbBr_2$ at 850—950C in 135-min test amounted to 3047 g/m^2.hr compared to 5080 g/m^2.hr for

UDC: 669.14.018.8

Card 1/2

L 43942-66
ACC NR: AP6027296

2

EI69 steel. In tests of dimension stability, the EP303 valve grew by 0.16 mm in 215 hr compared to 0.7 mm for EP48 steel. Under operational conditions, the EP303 valves had 100% longer service life than EP48 valves. Orig. art. has: 9 figures and 2 tables.

[WW]

SUB CODE: 10,11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 004/ ATD PRESS: 506/

precipitation hardening

18

Card 2/2 hs

L 11196-67 EWT(d)/EWT(m)/EWP(k)/EWP(h)/EWP(f)/EWP(v)/EWP(l) FDN/DJ
ACC NR: AR6030391 SOURCE CODE: UR/0273/66/000/006/0028/0028

AUTHOR: Verner, K. A.; Buynov, A. F.; Doronin, V. M.

TITLE: Austenite steel with low nickel concentration for the exhaust valves in internal combustion engines operating at temperatures up to 900°C

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 6.39.188

REF SOURCE: Tr. Tsentr. n.-i. avtomob. i avtomotorn. in-ta, vyp. 81, 1966, 66-68

TOPIC TAGS: engine exhaust system, high temperature valve, internal combustion engine, low alloy steel, austenite steel

ABSTRACT: EP303 low-alloy chrome-manganese-nickel austenite steel has been developed for the exhaust valves in internal combustion engines operating at temperatures up to 900°C. Heat treatment conditions have been worked out for producing high mechanical properties in EP303 steel at high temperatures. The hardness (HRC up to 38) resulting from heat treatment of the valves obviates the necessity for using hard metal surfacing or special caps on the ends of the valve rods. EP303 steel has satisfactory technological properties during steel production and manufacturing of the valves. Exhaust valves made from EP303 steel ensure reliable engine performance, a stable heat gap, lower deformation of the valve plates and an increase in their service life by a factor of 2 compared with EP48 steel valves. The "Elektrostal'" Plant has worked all "bugs" out of the production of EP303 steel throughout the entire metallurgical cycle. EP303 steel has been introduced by the Gorky Automobile Plant in production of exhaust valves for the GAZ and ZMZ engines. [Translation of abstract]

SUB CODE: 21, 11, 13

Card 1/1 jb UDC: 669.14:621.431.73-332

ACC NR: AP7006946 SOURCE CODE: UR/0129/67/000/001/0046/0048

AUTHOR: Verner, K. A.; Zelenova, V. D.; Doronin, V. M.; Buynov, A. F.

ORG: NAMI; GAZ; "Elektrostal'" Factory (Zavod "Elektrostal'")

TITLE: The effect of phosphorus on the structure and properties of 5Kh20N4AG9 steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1967, 46-48

TOPIC TAGS: austenitic steel, steel structure, precipitation hardenable steel, phosphorus, ~~containing steel~~, chromium, ~~containing steel~~, manganese, ~~containing steel~~, molybdenum, ~~containing steel~~, nickel, ~~containing steel~~, nitrogen, steel property, phase composition, valve, exhaust valve, ~~steel~~ mechanical property/ 5Kh20N4AG9 steel

ABSTRACT: The effect of phosphorus on the mechanical properties, structure, phase composition, and dispersion strengthening of austenitic 5Kh20N4AG9 steel (0.51–0.60%C, 0.36–0.86%Si, 8.61–8.95%Mn, 20.2–21.2%Cr, 3.95–5%Ni, 0.68–0.73%Mo, 0.24–0.36%N, 0.016–0.42%P), used for engine exhaust valves, has been investigated. Ingots were forged at 1160–950°C

Card 1/2 UDC: 669.14.018.8:620.17:620.18

ACC NR: AP7006946

rolled to bars 20—25mm in diameter, and made into valves which were austenitized at 1150—1200°C, quenched, and aged at 700—800°C. Alloying 5Kh20N4AG9 steel with phosphorus increased the mechanical properties at room and high temperatures. For instance, at 20 and 800°C, steel with 0.16%P and 0.72%Mo (Mo added up to 1% retards grain growth which is increased by P) has, respectively, a tensile strength of 133, and 44 kg/mm^2, an elongation of 6 and 10%, a reduction of area of 10 and 18%, notch toughness of 1.38 and 3.63 kgm/cm^2, and a Brinell hardness of 393 and 124 compared to 103 and 34 kg/mm2, 8 and 25%, 10 and 28%, an undetermined notch toughness, and an HB hardness of 302 and 109, at 20 and 800°C respectively, for 5Kh20N4AG9 steel containing 0.04%P. Steel containing 0.2%P and up to 1% Mo had the best combination of mechanical properties. Up to 0.2%P intensifies dispersion strengthening. After quenching, the phosphorus, disolved in austenite, increases the lattice parameter, brings about strain and stress in the lattice, and increases the rate of precipitation of chromium carbide ($Cr_{23}C_6$) and nitride (Cr_2N), but P itself remains in the solid solution. Orig. art. has: 1 figure and 1 table.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001 [WW]

Card 2/2

VERNER, M.

Psychical experiences of injured patients. Bratisl. lek. listy 34 no.9:1065-1075 Sept 54.

1. Z Ortopedickej kliniky LFSU v Bratislave, prednosta prof. dr J.Cervenansky.
(PATIENTS,
psychol. state of hospitalized patients)

VERNER, M.; HALUZICKY, M.

Role of mental factors in supplementary cure following meniscectomy. Bratisl. lek. listy 42 no.8:476-481 '62.

1. Z Ortopedickej kliniky Lek. fak. Univ. Komenskeho v Bratislave, prednosta clen koresp. SAV J. Cervenansky.

(KNEE surg) (POSTOPERATIVE CARE)

VERNER, ,M.

(24)

(268).

Bratislava, Bratislavske Lekarske Listy, Vol 1, No 5, 1962
Copyright by the Publishing House of the Slovak Academy of Sciences (Vydavatelstvo Slovenskej akademie vied), 1962.

1. "On the Vasoconstriction in Acral Skin Regions Induced by Deep Breathing, and the Possibilities of Its Practical Application," I. [illegible], Institute of Experimental Medicine of the Slovak Academy of Sciences (Ustav experimentalnej mediciny Slovenskej akademie vied); director (riaditel) of the Institute: J. ANTAL, Dr of Sciences and corresponding member of the Slovak Academy of Sciences; pp 457-464 (English summary).

2. "On the Dynamic Changes of Transaminase Activity in Toxic Injury to the Liver," by J. HRUZEK, A. JAVORKY and J. LAUGER. From the No 1 Clinic of Internal Medicine (I. interna klinika) at the Medical Faculty of Comenius University (Lekarska fakulta University Komenskeho) in Bratislava headed by (prednosta) Professor M. CHORVATHOVA, MD; and from the Institute of Pathological Anatomy (Ustav patologickej anatomie) at the Medical Faculty of Comenius University in Bratislava headed by Docent M. [illegible], MD. Pp 465-475 (English summary).

3. "The Role of Psychic Factors in the After-Treatment of Meniscectomy," M. VERNER and M. [illegible] of the Clinic of Orthopedics (Ortopedicka klinika) at the Medical Faculty of Comenius University in Bratislava, headed by J. [illegible], corresponding member of the Slovak Academy of Sciences; pp 476-481 (English summary).

4. "On the Importance of the Psychosomatic Component in Buerger's and Raynaud's Disease," V. ZIKMUND of the Department of Clinical Physiology (Oddelenie klinickej fyziologie) at the Institute of Experimental Medicine of the Slovak Academy of Sciences; director J. ANTAL, corresponding member of the Slovak Academy of Sciences; pp 481-491 (English summary).

5. "Late Results of the Surgical Treatment of Pulmonary Tuberculosis by Thoracoplasty," N. VAGAC, J. LABUS and S. KORAC. From the Kraj Tuberculosis Hospital (Krajska nemocnica tuberkulozy) in Podunajske Biskupice; the Department of Phthisiology (Ftizeologicka katedra) of the SUDL (Slovensky ustav pre doskolovanie lekarov; Slovak Institute for Post-Graduate Medical Training), director K. VIRSIK, MD; and from the TB Department of the Polyclinic in Partisansko (TBC oddelenie polikliniky v Partisanskom) headed by Docent S. KORAC, MD. Pp 492-499 (English summary).

6. "The Adrenogenital Syndrome," Docent Z. DLHOS, MD, chief (prednosta), and T. VRBEL, of the Obstetrics and Gynecology Clinic (Porodnicko-gynekologicka klinika [illegible]) of the [illegible] Institute for Post-

VERNER, M.

Czechoslovakia

Institute of Poliomyelitis -- Bratislava (Liečební ústav poliomyelitída -- Bratislava); Director: V. LÁNIK, MUDr.

Bratislava, Bratislavské lekárske listy, No 6, 1962, pp 348-351

"Psychic Repercussions of Post-Poliomyelitis States in School Age Children. Preliminary Report."

VERNER, M.; SPISSAK, L.

Disorders of sociability in physically defective pubescent youths during institutional care. Bratisl. lek. listy 45 no.2:97-102 31 Ja '65

1. I. detska klinika lek. fak. Univerzity Komenskeho v Bratislave (veduca prof. MUDr. I.Jakubcova) a Detsky ustav pre telesne chybnych v Bratislave (veduci primar MUDr. L. Spissak).

VERNER, M.; BIRCAK, J.; STEINER, J.

Some psychological problems of adolescents. Cesk. pediat. 17 no.7/8: 638-641 Ag '62.

1. I. detska klinika Lekarskej fakulty Univerzity Komenskeho v Bratislave, prednosta doc. dr. I. Jakubcova.
(ADOLESCENCE) (CHILD PSYCHOLOGY)

AKIM, I.Ye.; RUBINA, N.A.; VERNER, M.A.; LOTKOVA, L.I.

Production of highly refined woodpulp for processing to acetyl-cellulose. Trudy LTITSBP no.12:167-172 '64.

(MIRA 18:8)

VERNER, M.A., inzh.

Controlling the condition of steampipe metal at electric power stations. Bezop.truda v prom. 5 no.10:24-26 O '61. (MIRA 14:10)

(Steampipe--Testing)

VERNER, M.A., inzh.; AKSEL'ROD, M.A., inzh.

Study of the work capacity of the output block of a convectional steam superheater. Teploenergetika 12 no.2:52-55 F '65.
(MIRA 18:3)

1. Ural'skoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii rayonnykh elektrostantsiy i setey.

VERNER, M.A., inzh.

Inspection of metal in high-pressure steam pipes. Elek. sta. 29 no.4:81-82 Ap '58. (MIRA 11:8)
(Metals at high temperatures) (Pipes)

VERNER, M.A., inzh.; GORBUNOV, A.M., inzh.

Preventing the breaking of springs in centrifugal governors for AP-25-1 turbines manufactured by the Leningrad Metalworking Plant. Energetik 6 no.7:23-25 Jl '58. (MIRA 11:10)
(Governors (Machinery))

VERNER, M.A.

91-58-7-10/27

AUTHORS: Verner, M.A., and Gorbunov, A.M., Engineers

TITLE: Exchange of Experience (Obmen opytom). The Elimination of Spring Breaks of the Centrifugal Regulator of the "AP-25-1 LMZ" Type Turbine (Ustraneniye polomok pruzhin tsentrobezhnogo regulyatora turbiny AP-25-1 LMZ).

PERIODICAL: Energetik, 1958, Nr 7, pp 23-25 (USSR).

ABSTRACT: The article describes the causes of spring breakage of the above regulator and gives the results of laboratory research. The top of the fatigue destruction zone seemed to be the origin of cracks. Pulsations of 2 to 3 mm amplitude were stated in the levers of the regulator, from where they were transmitted to the springs. Some measures taken to eliminate these pulsations, lowering them to 1 mm. Later it was stated, that the vibrations of the regulator were influenced by the operation of the worm gear between the turbine axle and the regulator shaft. The side-gap in the worm gear was about 1.3 mm. It did not influence the operation of the worm gear, but it caused periodical pulsations in the regulator shaft and in the levers and springs. After having carefully adjusted the new worm gear and centered the shaft of the regulator with that of the oil pump, the pulsations completely disappeared and spring breakage was stop-

Card 1/2

Exchange of Experience. The Elimination of Spring Breaks of the Centrifugal Regulator of the "AP-25-1 LMZ" Type Turbine.

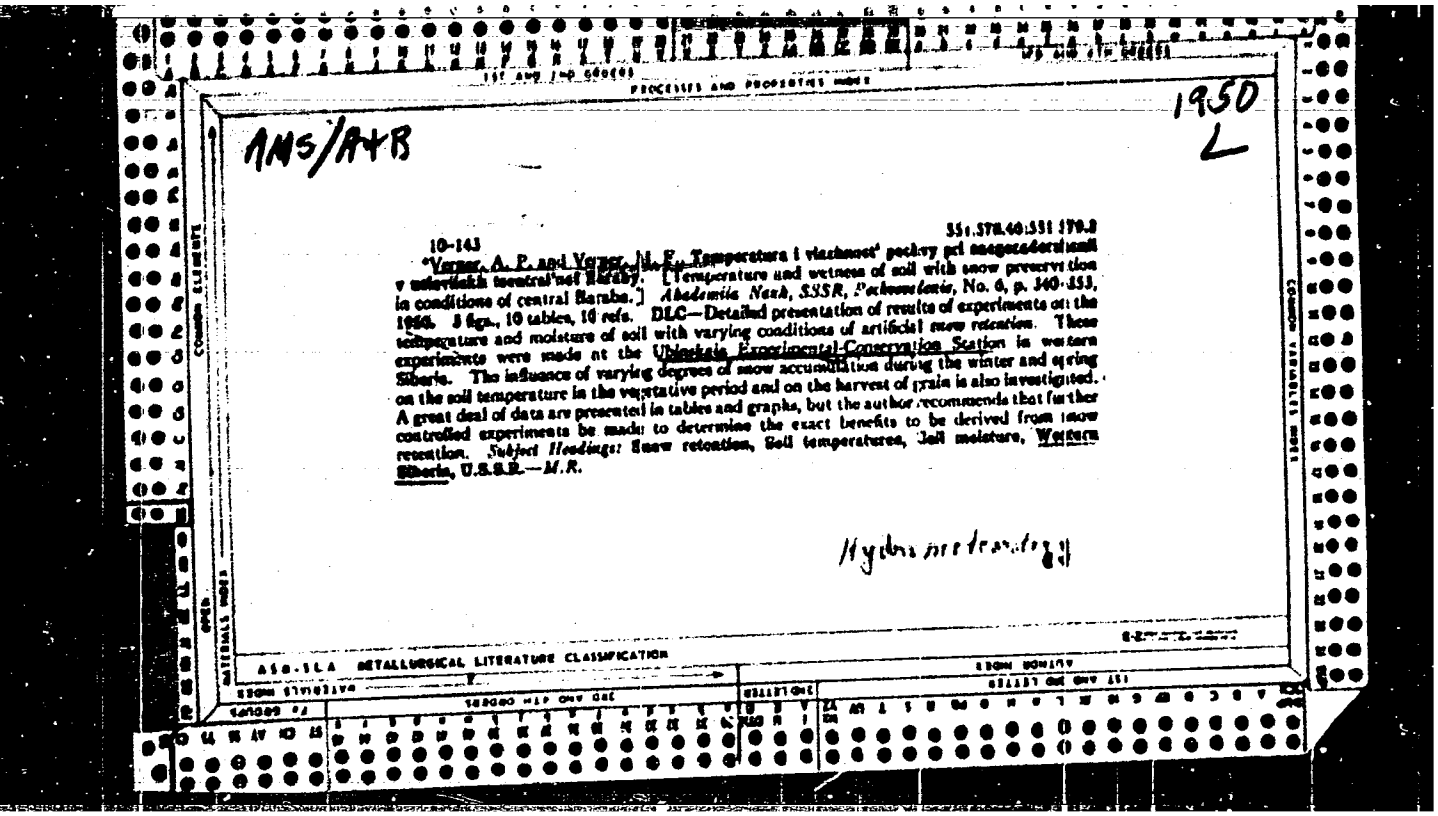
ped. This resulted from research. The permissible value of the side-gap in the worm gear must not exceed 0.5 to 0.6 mm. The recommendations of the "LMZ" for replacing the 4-mesh worm gear by a 3-mesh one to increase its strength are not justified. According to the experience of the author, a 4-mesh worm gear is sufficiently reliable if carefully adjusted. There is 1 diagram and 1 photo.

1. Springs--Failure 2. Turbine regulators--Maintenance

Card 2/2

VERNER, M.A.

Increasing the efficiency of high-frequency-current units. Stan.i instr. vol. 24 no.9:35-36 S '53. (MLRA 6:10)
(Electric transformers)



1MS/AYB

1950
L

551.578.46:551.579.2

10-143

*Verner, A. P. and Verner, M. F. Temperatura i vlazhnost' pochvy pri snegozaderzhanii v severnykh rayonakh tsentral'noi Baraby. [Temperature and wetness of soil with snow preservation in conditions of central Baraba.] *Akademiia Nauk, SSSR, Pochvovedenie*, No. 6, p. 340-353, 1950. 5 figs., 10 tables, 16 refs.

DLC—Detailed presentation of results of experiments on the temperature and moisture of soil with varying conditions of artificial snow retention. These experiments were made at the Ubinskaia Experimental-Conservation Station in western Siberia. The influence of varying degrees of snow accumulation during the winter and spring on the soil temperature in the vegetative period and on the harvest of grain is also investigated. A great deal of data are presented in tables and graphs, but the author recommends that further controlled experiments be made to determine the exact benefits to be derived from snow retention. *Subject Headings:* Snow retention, Soil temperatures, Soil moisture, Western Siberia, U.S.S.R.—*M.R.*

Hydrometeorology

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KURITS, A., kand.tekhn.nauk; VERNER, N., inzh.; SIMSON, A., kand. tekhn.nauk

Modernization of diesel locomotive engines. Zhel.dor.transp. 36 no.3:51-53 Mr '55. (MIRA 12:5)
(Diesel locomotives)

VERNER, N.; SIMSON, A.

3 D 50 marine engines of higher capacity. Mor. i rech.flot 14 no.10:23-25 O '54. (MLRA 7:11)
(Marine engines)

VERNER, N.D., inzh.

Design of coolers for the pressure-charging air of internal-combustion engines. Trudy KHIIT no.35:62-69 '60. (MIRA 13:10)
(Diesel engines--Fuel systems)
(Fuel pumps--Cooling)

VERNER, N. D.

High-sensitivity protection friction clutch. Mashinostroenie no.5:114 S-O '62. (MIRA 16:1)

(Clutches(Machinery))

VERNER, V.D.

Internal friction produced by the diffusion of nitrogen atoms, 880-889 in a field of elastic stresses in γ-soled solutions of iron alloys. Fiz.met.i metalloved. 14 no.6:880-889 D '62. (MIRA 16:2)

1. Moskovskiy institut stali i splavov.
(Iron alloys—Thermal properties)
(Internal friction)

CHIRKIN, A. P., doktor tekhn. nauk, prof.; GAVRILENKO, M. K., kand. tekhn. nauk; VERNER, N. D., inzh.

Investigating the characteristics of fuel feed by the fuel pump of the 2D100 engine with modified cutting-off edges of the pump piston. Trudy KHIIT no.52:5-15 '61. (MIRA 15:10)

(Diesel engines—Fuel systems)
(Pistons—Testing)

VERNER, M.D.

Improving the performance of D50 and D100 diesel engines under idling and small load conditions. Trudy KHIIT no.46:133-140 '61. (MIRA 15:12)

1. Rukovoditel' raschetno-konstruktorskoy gruppy laboratorii teplovoznykh dvigateley Khar'kovskogo instituta inzhenerov zheleznodorozhnogo transporta.
(Diesel locomotives—Performance)

S/263/62/000/014/012/016
I007/1207

AUTHORS: Vodolazhchenko, V. V., Simson, A. E. and Verner, N. D.

TITLE: Investigations on the gas-turbine supercharging system in four-strokes engines

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 14, 1962, 54, abstract 42.14.323 (Tr. Khar'kovsk. in-ta inzh. zg.-d. transp., no. 43, 1961, 29-38)

TEXT: Results are reported of investigations on exhaust systems with a single, common exhaust-manifold and with supercharging by means of the kinetic energy of exhaust gases. The system described was used in 2- and 4- stroke engines and ensures increase in turbine power by 20% as compared with reaction turbines; it may be applied to all types of internal combustion engines and requires the installation of a single turbine only regardless the cylinder number and dimension of the engines involved.

[Abstracter's note: Complete translation.]

Card 1/1

ZASLAVSKIY, G.N., inzh.; VERNER, N.D., inzh.

Increasing the economic efficiency of the D50 engines. Mashinostroenie no.2:84-85 Mr-Ap '62. (MIRA 15:4)

1. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta. (Diesel engines)

VERNER, N.D., inzh.; TARASOV, A.M., kand.tekhn.nauk

Investigating the causes of the destruction of pins fastening the D50 engine to the foundation frame. Trudy KHIIT no.50:5-13 '61. (MIRA 15:12)

(Diesel engines)

CHIRKIN, A.P., doktor tekhn.nauk, prof.; VERNER, N.D., inzh.; GAVRILENKO, M.K., inzh.; DROBYAZKO, S.I., kand.tekhn.nauk, dotsent

By-pass system for the pressure-charging air of 2D100 locomotive diesel engines. Trudy KHIIT no.35:138-143 '60. (MIRA 13:10)
(Diesel engines)

VERNER, O.

TECHNOLOGY

Periodical: SDELOVACI TECHNIKA. Vol. 6, no. 11, Nov. 1958.

VERNER, O.; PRAGR, J. A precise electric-bridge torque meter. p. 429.

Monthly List of East European Accession (EEAI) LC, Vol. 8, no. 3
March 1959 Unclass.

PETROVSKIY, V.V., kand.tekhn.nauk; VASANOVA, L.K., inzh.; VERNER, P.F., inzh.

Use of jalousie ash traps in the fuel bed burning of high ash content coal. Elek.sta. 31 no.5:79-81 My '60. (MIRA 13:8)
(Ash disposal) (Furnaces)

VERNER, Petr H.; PULPAN, Jan

Hard cheese mites. Prum potravin 16 no.4:202-204 Ap '65.

1. Central Research Institute of the Food Industry, Prague.
Submitted August 22, 1964.

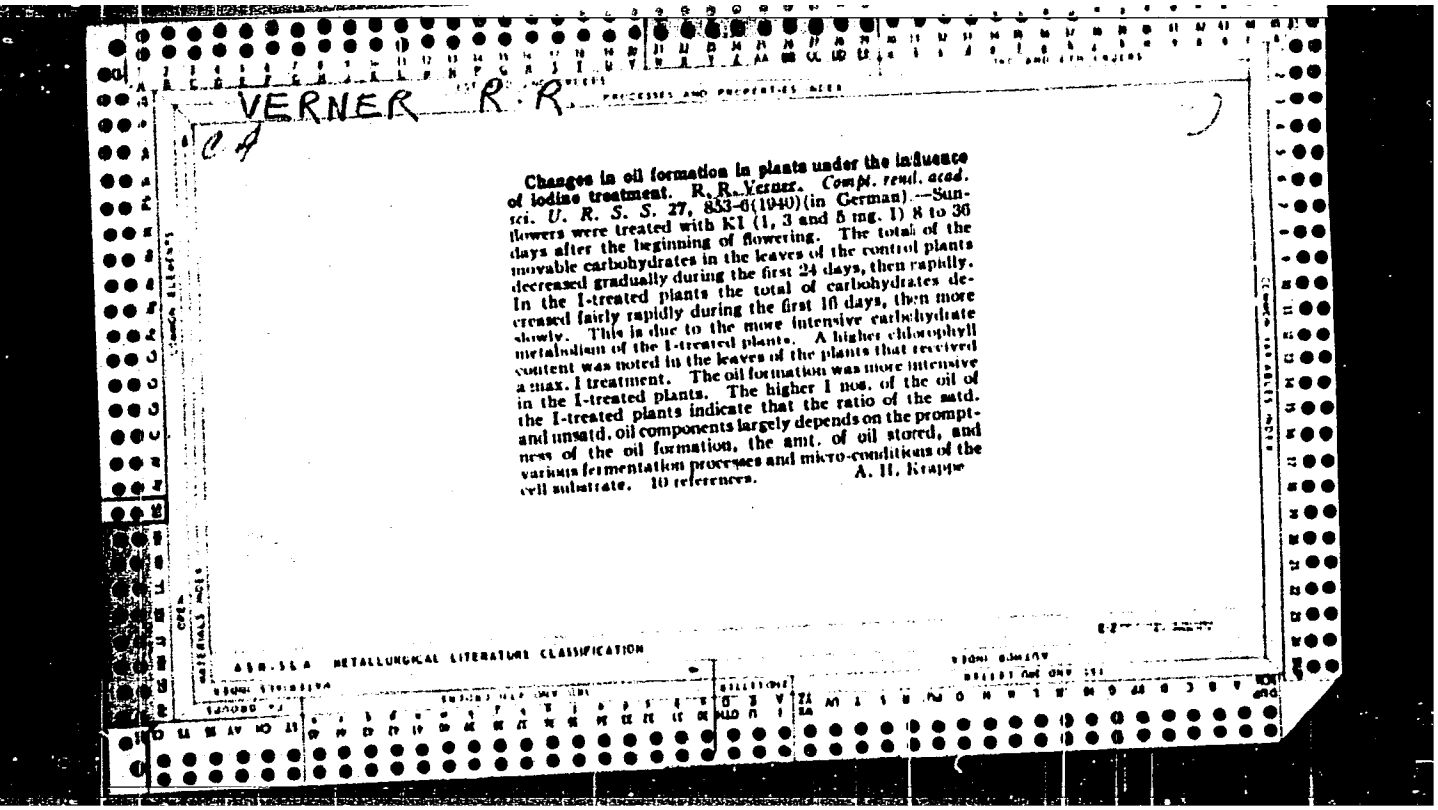
VERNER, P.H.

"Order Pseudoscorpionidea; books for determining the soil fauna of Europe" by [prof. dr.] Max Beier. Reviewed by P.H. Verner. Cas entom 61 no.1:83-84 '64.

PULPAN, Jan (Praha 2, Vinicna 7); HURKA, Karel, dr. (Praha, Vinicna 7); VERNER, Petr H., dr. (Praha 2, Vinicna 7)

Three ground-beetle species, new in Czechoslovakia: Nebria fuscipes Fuss, Deltomerus carpathicus (Mill.) and Amara pseudostremua Kult. (Coleoptera). Cas entom 59 no.2:124-130 '62.

1. Tschechoslowakische Entomologische Gesellschaft und Lehrstuhl fur Systematische Zoologie der Karls-Universitat, Praha.



VERNER R. R.

C4

Changes in oil formation in plants under the influence of iodine treatment. R. R. Verner. *Compt. rend. acad. sci. U. R. S. S.* 27, 853-6(1940)(in German).—Sunflowers were treated with KI (1, 3 and 5 mg. I) 8 to 36 days after the beginning of flowering. The total of the movable carbohydrates in the leaves of the control plants decreased gradually during the first 24 days, then rapidly. In the I-treated plants the total of carbohydrates decreased fairly rapidly during the first 16 days, then more slowly. This is due to the more intensive carbohydrate metabolism of the I-treated plants. A higher chlorophyll content was noted in the leaves of the plants that received a max. I treatment. The oil formation was more intensive in the I-treated plants. The higher I nos. of the oil of the I-treated plants indicate that the ratio of the satd. and unsatd. oil components largely depends on the promptness of the oil formation, the amt. of oil stored, and various fermentation processes and micro-conditions of the cell substrate. 10 references. A. H. Krappe

VERNER, S. - Strojirenstvi - Vol. 5, no. 2, Feb. 1955.

Determining the optimal degree in a type series. p. 140.

SO: Monthly list of East European Accessions, (EEAL), LC, Vol. 4, No. 9, Sept. 1955 Uncl.

VERNER, S.

Tolerances for finishing castings. p.125.
(Normalisace, Vol. 6, No. 6, June 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

VERNER, S.

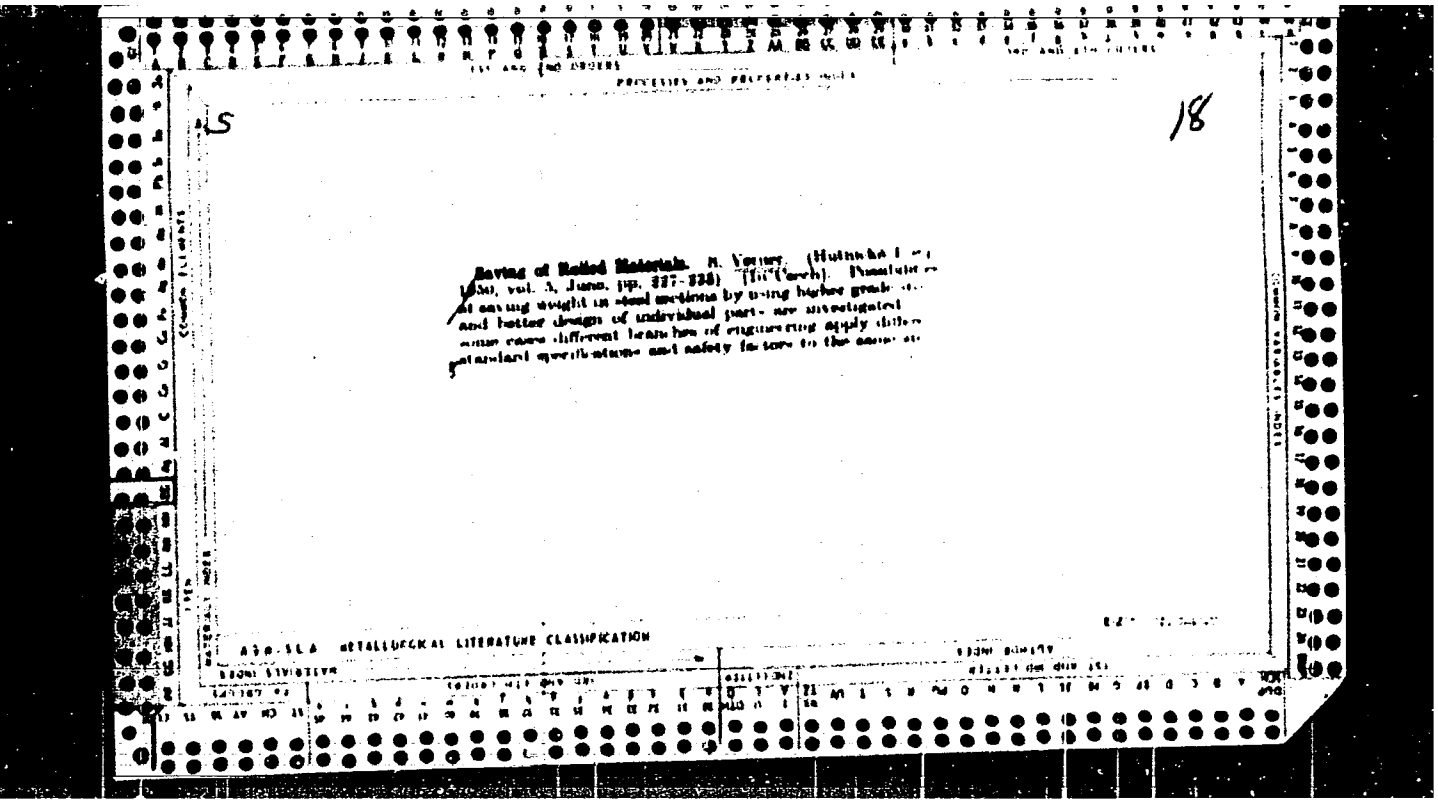
Reduction of overhead costs by standardization and consistent preparation of production, p. 164, STROJIRENSKA VYROBA (Ministerstvo strojirenstvi) Praha, Vol. 3, No. 4, Apr. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 4, No. 12, December 1955

VERNER, S.

"Application of Established Standards and Criteria for Estimating Preparedness of Productions", P. 628, (STROJIRENSTVI, Vol. 4, No. 8, Aug. 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.



18

Saving of Rolled Materials. R. Varner. (Hütte [illegible] 1938, vol. 3, June, pp. 337–338) [In German]. [illegible] of saving weight in steel sections by using higher grade [illegible] and better design of individual parts are investigated. [illegible] cases different branches of engineering apply differ[illegible] [illegible] equivalent overstresses and safety factors to the same st[illegible]

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VERNER, T.B.; GOROBINCHENKO, V.M., inzh., nauchn.-tekhn.red.; BERMANT, A.I., ved.red.

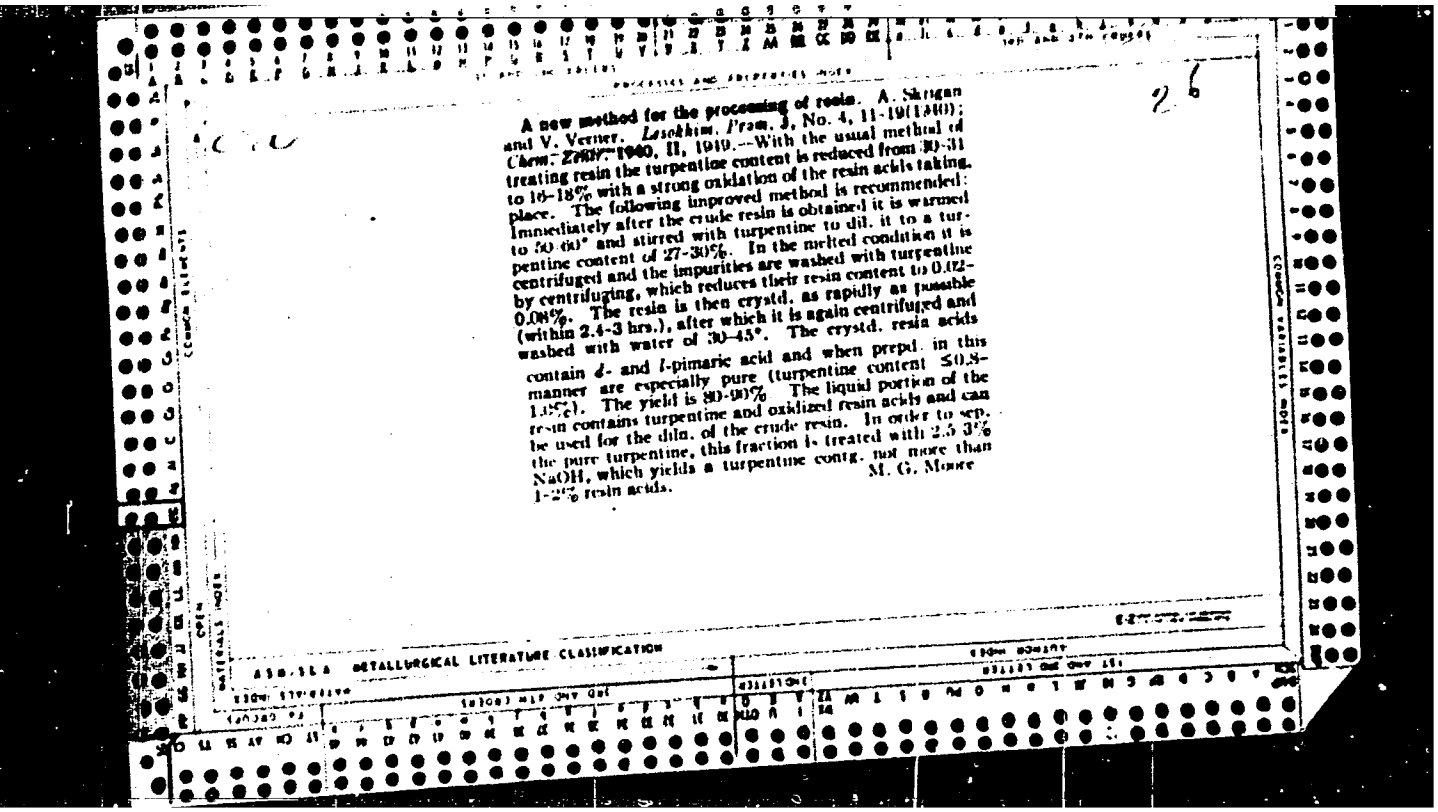
[Continuous mills of hot and cold rolling; a bibliography] Nepreryvnye stany goriachei i kholodnoi prokatki; bibliograficheskii ukazatel'. Moskva, TsIINChM, 1963. 114 p. (MIRA 17:8)

1. Moscow. TSentral'naya nauchno-tekhnicheskaya biblioteka chernoy metallurgii.

VERNER, V., starshiy inzh.; YUSUPOV, M., starshiy instruktor

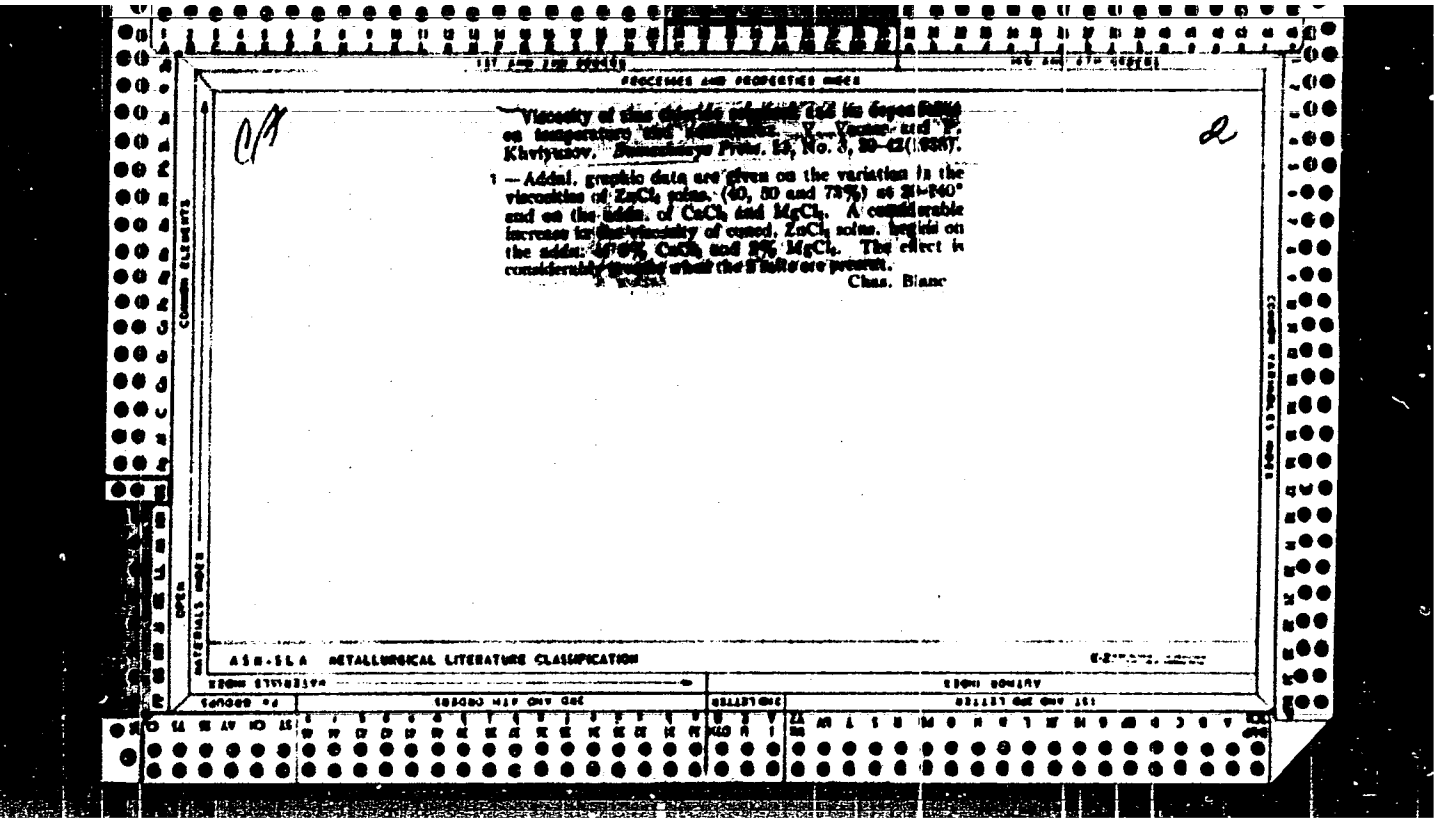
Precast slabs of tiles for walls and floors. Sel'. stroi. 15 no.4: 16-17 Ap '61. (MIRA 14:6)

1. Byuro tekhnicheskoy pomoshchi upravleniya stroitel'stva Ministerstva sovkhozov RSFSR.
(Tile construction)



A new method for the processing of resin. A. Skrigan and V. Verner. *Lesokhim. Prom.* 3, No. 4, 11-19(1940); *Chem. Zentr.* 1940, II, 1919.—With the usual method of treating resin the turpentine content is reduced from 30-31 to 16-18% with a strong oxidation of the resin acids taking place. The following improved method is recommended: Immediately after the crude resin is obtained it is warmed to 50-60° and stirred with turpentine to dil. it to a turpentine content of 27-30%. In the melted condition it is centrifuged and the impurities are washed with turpentine by centrifuging, which reduces their resin content to 0.02-0.08%. The resin is then crystd. as rapidly as possible (within 2.4-3 hrs.), after which it is again centrifuged and washed with water of 30-45°. The crystd. resin acids contain *d*- and *l*-pimaric acid and when prepd. in this manner are especially pure (turpentine content ≤0.8-1.5%). The yield is 80-90%. The liquid portion of the resin contains turpentine and oxidized resin acids and can be used for the dilu. of the crude resin. In order to sep. the pure turpentine, this fraction is treated with 2.5 3% NaOH, which yields a turpentine contg. not more than 1-2% resin acids.

M. G. Moore



PROCESSES AND PROPERTIES INDEX

Viscosity of zinc chloride solutions [illegible] on temperature and composition. V. Viscosity and [illegible] Khvoyinov. *Zhurnal Prikl. Khim.* 15, No. 3, 39-42(1942).

1 — Addnl. graphic data are given on the variation in the viscosities of $ZnCl_2$ solns. (40, 50 and 73%) at 21–140° and on the addn. of $CaCl_2$ and $MgCl_2$. A considerable increase in the viscosity of concd. $ZnCl_2$ solns. results on the addn. of 10% $CaCl_2$ and 8% $MgCl_2$. The effect is considerably greater when the 2 salts are present.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VERN[illegible], V. I.

Nature of internal friction peaks in interstitial solid solutions with face-centered cubic lattice. Fiz. tver. tela 7 no.8:2318-2326 Ag '65. (MIRA 18:9)

1. Moskovskiy institut stali i splavov.

L 4545-66 EWT(m)/EWP(w)/EPF(c)/EPF(n)-2/T/EWP(t)/EWF(z)/EWP(b)/EWA(c) IJP(c)
ACCESSION NR: AP5019842 JD/EM/JG/GG UR/0181/65/007/008/2318/2326

AUTHOR: Verner, V. D.

TITLE: On the nature of the peak internal friction in interstitial solid solutions with face-centered cubic lattice

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2318-2326

TOPIC TAGS: nickel alloy, manganese alloy, chromium alloy, cobalt alloy, internal friction, metal diffusion, solid solution, radiation damage

ABSTRACT: The author investigated the internal friction of alloys of nickel, manganese, chromium, carbon, nitrogen, and cobalt with varying compositions. Wire samples 0.7 -- 0.8 mm in diameter were nitrided or carburized from the gas phase and quenched after homogenizing annealing in water. The internal friction was measured by a torsion pendulum method using an instrument of the RKF-MIS type. The dependence of the diffusion peak on the concentration of the solid solution, on the number of radiation defects, and on the grain size

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was investigated. An analysis of the experimental results shows that the nature of the relaxation mechanism which leads to an internal-friction peak in institial solid solutions with face-centered cubic lattice should be the same in alloys having different compositions. The relaxation is connected with the reorientation of the interstitial atom pairs located in 3-5 coordination spheres. A theoretical estimate yields for these spheres an energy of 0.4 -- 0.6 ev per pair of atoms. It is shown that the binding energy of the atom pairs can be determined from measurements of the internal friction. The experimental value of the binding energy was found to be 0.2 -- 0.3 ev, which was in agreement with the theoretical estimate. 'The author thanks A. G. Khachaturyan for help and a discussion of the results.'
Orig. art. has: 5 figures, 19 formulas, and 4 tables.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 04Dec64 ENCL: 00 SUB CODE: SS, MM
NR REF SOV: 005 OTHER: 007

Card 2/2

S/181/61/003/011/018/056
B125/B104

AUTHORS: Verner, V. D., Finkel'shteyn, B. N., and Shalimova, A. V.

TITLE: Study of behavior of nitrogen in Fe alloys having face-centered lattice by using the method of internal friction

PERIODICAL: Fizika tverdogo tela, v.3, no. 11, 1961, 3363-3366

TEXT: The authors investigated the internal friction of Fe + 30% Ni, Fe + 20% Ni + 9% Mn, Fe + 28% Mn alloys and of electrolytic iron as a function of temperature. Wire-type samples of 0.7 mm diameter were annealed before testing in moisture-laden hydrogen in order to remove carbon and nitrogen. K. M. Rozin and B. N. Finkel'shteyn (DAN SSSR, 91, no. 4, 811, 1953) discovered a carbon peak of internal friction in type 25-20 austenite steel. Ke-Ting-sui, Wang Chi-men (Scientia Sinica, 4, 501, 1955) found similar peaks in nickel and alloys with face-centered lattices. The internal friction was measured as a function of temperature by employing a vacuum-type torsion pendulum of type РКФ-МИС (RKF-MIS). The samples investigated were nitrided to a depth of 0.20 - 0.25 mm. After tempering from the nitriding temperature, the surface layer consists of

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the nitride phase (ε and γ') and of solid nitrogen solutions in martensite, the rest consists of austenite and ferrite. The interior of the sample consists of ferrite. The peak a of internal friction (Figs. 1 and 2) is caused by nitrogen found in the ferrite. The peak c is caused by martensite. Alloys of iron with nickel and manganese after nitriding showed a layer with the structure of austenite with nitrides. The interior of samples consisted of pure austenite. The temperature dependence of internal friction showed a maximum at 260 - 280°C for all samples investigated. Raising the hardening temperature increases the peaks and annealing lowers them. According to tests, these peaks are caused by solid solution of nitrogen. The activation energy of the relaxation process caused by the peak of internal friction was determined by shift of the maximum on the temperature axis at variable vibration frequency and also by the method of K. Vert (Sb. "Sovremennyye fizicheskiye metody issledovaniya v metallovedenii." Metallurgizdat, str. 265, M. 1958). Results agree within limits of error. The activation energy of iron agreed well with the activation energy for nitrogen diffusion in γ-iron. The diffusion coefficient at peak temperature (523°K) was $0.928 \cdot 10^{-15}$ cm^2/sec,

at 950°C it is given as $D = 1.26 \cdot 10^{-8}$ cm^2/sec. Peaks found by the authors are caused by diffusion of nitrogen atoms in face-centered lattices under the action of elastic stresses. There are 5 figures, 1 table, and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The three most recent references to English-language publications read as follows: J. L. Snoek. Physica, 8, 711, 1941.; C. Wert. Phys. Rev., 79, No. 4, 601, 1950.; J. D. Fast, M. V. Verripr. J. Iron and Steel Inst., 176, 24, 1954.

ASSOCIATION: Moskovskiy institut stali im. I. V. Stalina (Moscow Steel Institute imeni I. V. Stalin)

SUBMITTED: June 5, 1961

Fig. 1. Temperature dependence of internal friction of nitrided iron. After quenching from 700°C: (1) Heating, (3) cooling; after quenching from 700°C and cold treatment, (2) heating, (4) cooling; after a third quenching from 700°C; (5) heating.

S/126/62/014/006/010/020
E193/E383

AUTHOR: Verner, V.D.

TITLE: Internal friction due to diffusion of nitrogen atoms to the elastic-stresses field in the γ solid solution of iron alloys

PERIODICAL: Fizika metallov i metallovedeniye, v. 14, no. 6, 1962, 880 - 889

TEXT: The object of the present investigation was to explore the possibility of using internal-friction measurements for studying the diffusion of nitrogen in iron and iron alloys. The chemical analysis of the experimental materials is given in Table 1. Specimens with various nitrogen contents were obtained from these materials by surface nitriding, followed by homogenizing annealing. Attempts were made to prevent losses of nitrogen during the latter treatment by using surface-diffusion barriers formed by oxidising nitrided steel specimens or by coating them with tin, nickel or glass. Although this expedient was fully effective in preventing losses of nitrogen, only in the case of alloys 5 and 6, coated with tin and homogenized at 700-750 °C,