KREYTSER, G.P., [illegible], V.A.

Paleogene of the northern slopes of the Gissar Range. Dokl. AN SSSR 158 no.2:365-368 S '64. (MIRA 17:10)

1. Yuzhno-Tadzhikskaya geologorazvedochnaya ekspeditsiya. Predstavleno akademikom A.L.Yanshinym.

KREYDENKOV, G.P.

Upper boundary of Paleozoic sediments in the Tajik Depression.
Dokl. AN SSSR 159 no.4:799-801 D '64 (MIRA 18:1)

1. Predstavleno akademikom D.V. Nalivkinym.

KRAYDENKOV, G.P.; MELAMED, Ya.B.

Synchronism of the Alpine tectonic phases of Iran and the southern Tien Shan. Dokl. AN SSSR 163, no. [illegible] 1965. (MIRA 18:10)

1. Yuzhno-Tadzhikskaya geologorazvedochnaya [illegible].
Submitted March 9, 1965.

MOROZOVA, V.G., KREYDENKOV, G.P.; DAVIDZON, R.M.

Biostratigraphy of Paleocene sediments in the Tajik Depression.
Biul. MOIP. Otd. geol. 40 no.3:34-56 My-Je '65. (MIRA 18:8)

KREYDICH, A.

"Collection of works on research and preactice by physicians of Minsk Province." Reviewed by A. Kreidich. Zdrav.Belor. 5 no.1: 76-77 Ja '60. (MIRA 13:5)

(WHITE RUSSIA--MEDICINE)

[illegible], [illegible].

Kreyčik, [illegible] "For high and stable harvests of grain and oil seeds", (In Index" [illegible] Kreyčik) Sel. Khoz-vo [illegible] istana, 1949, No. 1, p. [illegible].

SO: [illegible], [illegible], (Letopis 'Zhurnal 'nykh Statey No. [illegible], [illegible])

KREYDIK, B.

20005 KREYDIK, B. Za vysokiye upozhai semyan i sena lyutsesny! sel. khoz-vo tadzhikistana, 1949, No. 3, s. 41-44.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.

K[illegible], [illegible].

33291. O Rezervakh V Povyshenii Urozhaynosti Khlopchatnika Sel. Khoz-vo Tadzhikistana, 1949, No. 5, S. 15-19

SO: Letopis' Zhurnal'nykh Statey Vol. 45, Moskva, 1949

KREYDIK, B.

Cotton Growing - Soviet Central Asia

Reducing inter-row space in cotton planting. Khlopkovodstvo. No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 19521953, Uncl.

KREYDIK, B.M.; MAKSUMOV, A.N.

Alfalfa-Sudan grass mixtures. Zemledelie 4 no.6:95-97 Je '56.
(MLRA 9:8)

1. Tadzhikskaya gosudarstvennaya selektsionnaya stantsiya.
(Tajikistan--Alfalfa) (Sudan grass)

KREYDIK, B.M.

[Tajik State Plant Breeding Station; a brief summary of work done] Tadzhikskaia gosudarstvennaia selektsionnaia stantsiia (kratkie itogi rabot). Stalinabad, Tadzhikgosizdat, 1957. 61 p. (MIRA 11:5)
(Tajikistan--Plant Breeding)

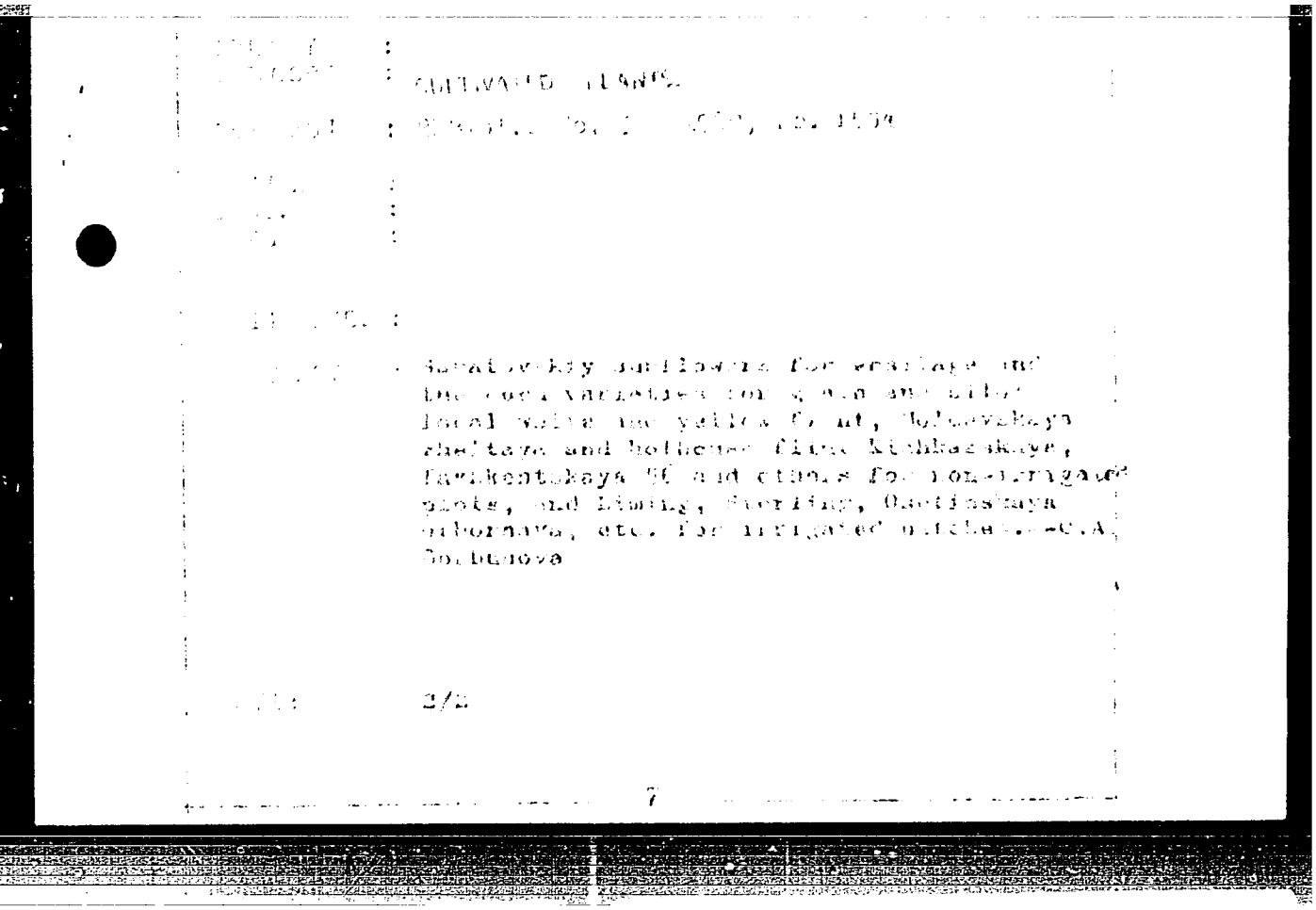
COUNTRY : USSR
CATEGORY : CULTIVATED PLANTS. General Problems.

ABS. JOUR. : RZhBiol., No. 1 1959, No. 1594

[illegible]
[illegible] Research Inst. [illegible]
The Application of [illegible] of the
[illegible] State Selection Station to [illegible]
and Kolkhoz Production.
Byul. nauchno-tekhn. inform. [illegible]
[illegible], 1957, No. [illegible], 3-5
[illegible]-field crop rotation is recommended with
the planting of perennial grasses, together
with the application of herbicides to control
weeds. In the zone provided with precipita-
tion, nonirrigated plots can be cultivated
and yield high harvests of Surkhak 5688 and
[illegible] 10 wheats, [illegible] 3 barley,
[illegible] 473 and other flaxes, Alfalfa
Hybrid No. 1, Odesskaya 55, [illegible] and
Krasnodarskaya [illegible], [illegible] and [illegible]

1/2

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420(



USSR/Cultivated Plants. Fodder Plants. II

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68221

Author : Kreydik, B. N., Maksunov, A. N.
Inst : Tadzhik Scientific Research Institute of Agriculture.
Title : A New Development in Grass Sowing on the Unirrigated Lands of Tadzhikistan.

Orig Pub : Byul. nauchno-tekhn. inform. Tadzh. n.-i. in-t zemled., 1957, No 1, 32-37

Abstract : The results of experiments (1954-1956) are presented in cultivating lucerne mixed with sudan grass on unirrigated lands. When lucerne (12 kg/hectare) and sudan grass (30 kg/hectare were sown in alternate rows, the increase in hay yield for the record year (1956)

Card : 1/2

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68221

was 16.7 percent above the 97.1 centners/ hectare harvested on the control plot (pure lucerne, sown in rows). On the basis of economic utilization of lucerne sowings, recommendations are given. -- V. S. Shmal'ko

KREYDIN B.M.

KREYDIK, B.M., zasluzhennyy agronom Tadzhikskoy SSR; NEVZOROV, V.V., zasluzhennyy agronom Tadzhikskoy SSR

Alfalfa in irrigation and dry farming. Zemledelie 27 no.2:37-41 F '65. (MIRA 18:4)

KREYDIN, M., inzh.

The road to the shops sometimes leads through the design and construction institute. Tekh. mol. 31 no.3:12-13 '63.
(MIRA 16:6)

(Engineering)

SAKHAROV, Mikhail Dem'yanovich; KREYDLIN, L.N., red.; BASINKEVICH, I.R., red.izd-va; AKOPOVA, V.M., tekhn. red.

[Machine production of window units] Mekhanizatsiia proizvodstva okonnykh blokov. Moskva, Goslesbumizdat, 1963. 106 p. (MIRA 16:11)

(Windows)

KREYDLIN, N.N., kand.tekhn.nauk

Specific pressure curves in hot rolling. TSvet.met. 33 no.1: 70-75 Ja '60. (MIRA 13:5)

1. Giprotsvetmetobrabotka.
(Rolling(Metalwork))

MANTUROV, Oleg Vasil'yevich; SOLNTSEV Yuriy Konstantinovich; SORKIN, Yuriy Isaakovich; FEDIN, Nikolay Georgiyevich; PUL'KIN, S.P., doktor fiz.-mat. nauk, retsenzent; KONDRAT'YEV, V.A., kand. fiz. mat. nauk, retsenzent; MISHIN, V.I., kand. ped. nauk, retsenzent; VEYTSMAN, I.B., prepodavatel', retsenzent; KREYDLIN, Ye.G., prepodavatel', retsenzent; PYSHKALO, A.M., prepodavatel', retsenzent; DITKIN, V.A., prof., red.; YAKOVKIN, M.V., red.

[Explanatory dictionary of mathematical terms; textbook for teachers] Tolkovyi slovar' matematicheskikh terminov; posobie dlia uchitelei. Moskva, Prosveshchenie, 1965. 539 p. (MIRA 18:7)

KREYDLIN, Ye.G.; PAZEL'SKIY, S.V., red.; KARPOVA, T.V., tekhn. red.

[Oral tests on mathematics for grades 8-10] Ustnye kontrol'-nye raboty po matematike dlia 8-10 klassov. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1961. 63 p.
(MIRA 15:2)
(Mathematics—Examinations, questions, etc.)

KHRYKIN, M.Ye.

Distribution of Botkin's disease in the suburbs of the Estonian S.S.R. Vop.med.virus. no.9:180-183 '64.

(MIRA 18:4)

1. Institut virusologii imeni Ivanovskogo AMN SSSR, Moskva.

PAKTORIS, Ye.A.; KREYEK, Kh.Ya.; PODSEDLOVSKIY, T.S.; SPOTARENKO, S.S.; FAYYERSHTEYN, S.G.

Results of mass use of gamma globulin during the pre-epidemic season in the prophylaxis of epidemic hepatitis. Vop.med.virus. no.9:392-408 '64. (MIRA 18:4)

KREYER, Kh.Ya.

Materials on gamma globulin prophylaxis for epidemic hepatitis in the Estonian S.S.R. Vop.med.virus. no.9:408-412 '64. (MIRA 18:4)

1. Institut virusologii imeni Ivanovskogo AMN SSSR, Moskva.

[redacted], A. ".

Engines

Russian engines. Vest. mash. 31 No. 11, 1951.

9. Monthly List of Russian Accessions, Library of Congress, September 1952~~1953~~, Uncl.

KREYER, A.M.

On the invention of self-ignition engines in Russia. Trudy po ist.tekh. no.7:67-77 '54. (MLRA 7:7)
(Diesel engines--History)

KREYER, A.M.

[... mixing machinery and equipment; a manual for improving by correspondence courses the qualifications of engineers studying the subject "Present-day construction machinery and equipment"] Novye [illegible] mashiny i [illegible] dlia [illegible] tekhnikum, [illegible] (MIRA [illegible])

APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000826420(

KREIER,; KREYER, G. K.; PASHKEVICH, V. V.

"Kul'tura lekarstvennykh rastenii, Ogiz., Lensel'khoziz., 1934, 270 pp.

KREYER, K.G.

SHILOVA, Ye.I.; KREYER, K.G.

Carbon dioxide of the soil solution and its role in soil formation. [with summary in English]. Pochvovedenie no.7:65-72 Jl '57. (MIRA 10:11)

1. Leningradskiy ordena Lenina gosuniversitet imeni A.A.Zhdanova.
(Soil formation) (Carbon dioxide)

KREYER, R.

For you, employees of the merchant marine. Okhr. truda i sots. strakh. 4 no. 2:52-53 F '61. (MIRA 14:2)

1. Instruktor TSentral'nogo komiteta profsoyuza rabochikh morskogo i rechnogo flota.
(Sailors (Navy))

1. K[illegible], Ye.P.

2. USSR (600)

4. Frost

7. Brief survey of works on the effect of low temperatures on plant destruction, Trudy GGO no. 12, 1948.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

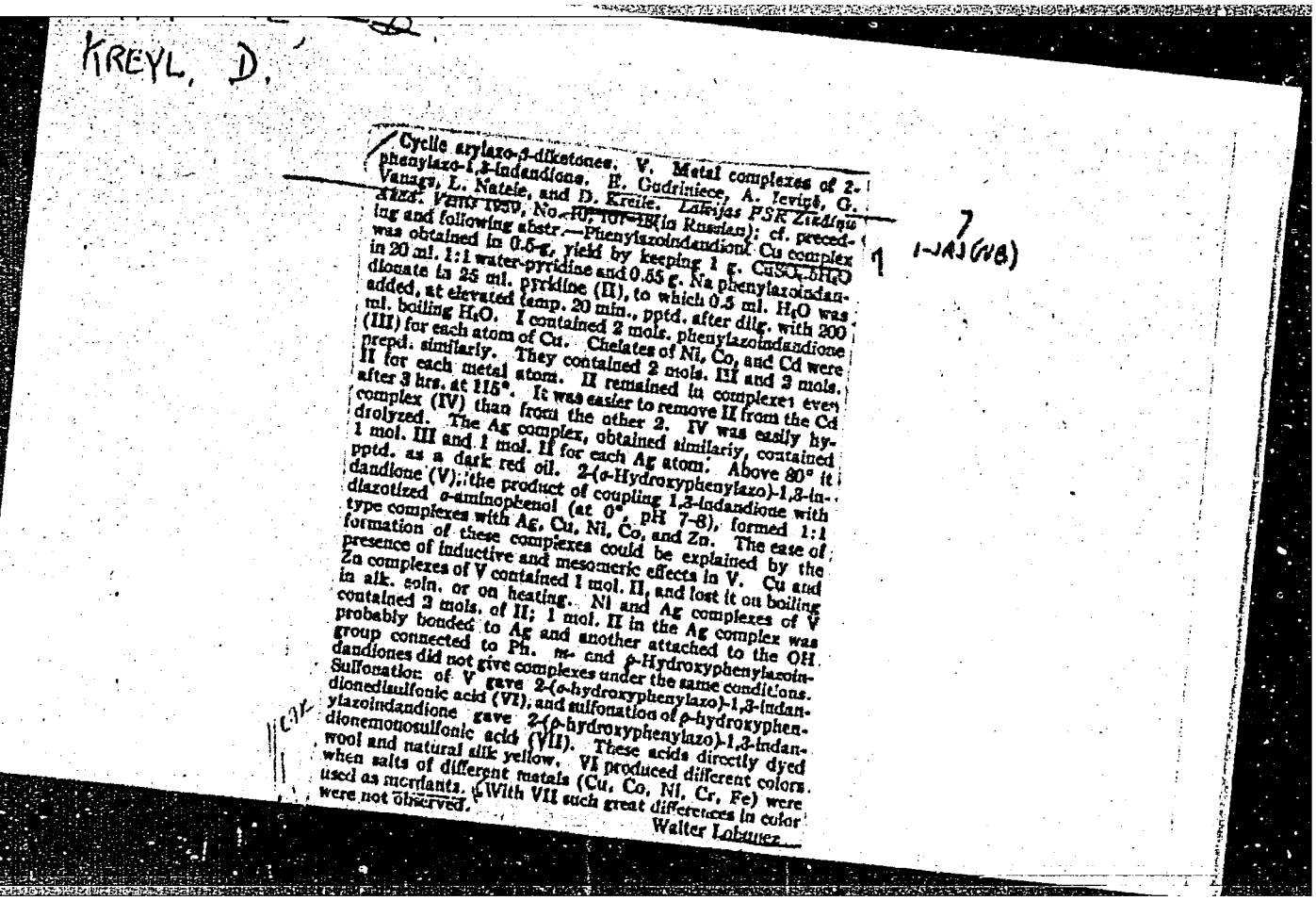
KREYIN, S. E.

Kreyin, S. E., Zaslavskiy, Yu. S. and Voinov, N. F.

Machine Parts

Smazochnoe maslo i dvigatel' . Moscow, Gosudarstvennoe Nauchno-Tekhnicheskoe Izdatel'stvo, Neftyanoy i Gorno-Toplivnoy Literatury, 1952.
pp. 199, illus., diags., 23 x 17.

LXIII-1



KREYL, D.

Cyclic arylazo-β-diketones. V. Metal complexes of 2-phenylazo-1,3-indandione. E. Gudriniece, A. Ievinš, G. Vanags, L. Natele, and D. Kreile. *Latvijas PSR Zinātņu Akad. Vestis 1959*, No. 10, 107–18 (in Russian); cf. preceding and following abstr.—Phenylazoindandionol Cu complex was obtained in 0.5-g. yield by keeping 1 g. $CuSO_4 \cdot 5H_2O$ in 20 ml. 1:1 water-pyridine and 0.55 g. Na phenylazoindandionate in 25 ml. pyridine (II), to which 0.5 ml. H_2O was added, at elevated temp. 20 min., pptd. after dilg. with 200 ml. boiling H_2O. I contained 2 mols. phenylazoindandione (III) for each atom of Cu. Chelates of Ni, Co, and Cd were prepd. similarly. They contained 2 mols. III and 2 mols. II for each metal atom. II remained in complexes even after 3 hrs. at 115°. It was easier to remove II from the Cd complex (IV) than from the other 2. IV was easily hydrolyzed. The Ag complex, obtained similariy, contained 1 mol. III and 1 mol. II for each Ag atom. Above 80° it pptd. as a dark red oil. 2-(*o*-Hydroxyphenylazo)-1,3-indandione (V), the product of coupling 1,3-indandione with diazotized *o*-aminophenol (at 0°, pH 7–8), formed 1:1 type complexes with Ag, Cu, Ni, Co, and Zn. The ease of formation of these complexes could be explained by the presence of inductive and mesomeric effects in V. Cu and Zn complexes of V contained 1 mol. II, and lost it on boiling in alk. soln. or on heating. Ni and Ag complexes of V contained 2 mols. of II; 1 mol. II in the Ag complex was probably bonded to Ag and another attached to the OH group connected to Ph. *m*- and *p*-Hydroxyphenylazoindandiones did not give complexes under the same conditions. Sulfonation of V gave 2-(*o*-hydroxyphenylazo)-1,3-indandionedisulfonic acid (VI), and sulfonation of *p*-hydroxyphenylazoindandione gave 2-(*p*-hydroxyphenylazo)-1,3-indandionemonosulfonic acid (VII). These acids directly dyed wool and natural silk yellow. VI produced different colors when salts of different metals (Cu, Co, Ni, Cr, Fe) were used as mordants. With VII such great differences in color were not observed.

Walter Lobunez

IDAROV, A.N.; LISOGOR, M.M.; KAMELEV, A.M.; KOROVKIN, V.D.; KALASHNIKOV, N.A.; KREYL', F.E.; PETROV, V.V., kand. tekhn. nauk, nauchnyy red.; KHEKHLOVSKAYA, N.S., red.; KARASIK, N.P., tekhn. red.

[Manual for the rural motion-picture operator and mechanic] Spravochnaia kniga sel'skogo kinomekhanika. Moskva, Izd-vo "Sovetskaya Rossiia," 1961. 448 p. (MIRA 15:4)
(Motion-picture theaters--Equipment and supplies)

KREYL, L.

GUDRINIECE, E.(Riga); IEVIN'SH, A. (Riga); VANAG,G. [Vanags,G.] (Riga); NATELIS, L. [Nakele,L.] (Riga); KREILE, L. (Riga)

Research in the field of cyclic arylazo-β- diketones. V. Metal complexes of 2-phenylazoindendiones-1,3. Vestis Latv ak no.10: 107-113 '59. (EEAI 9:10)

1. Akademiya nauk Latviyskoy SSR, Institut organicheskogo sinteza.
(Aryl groups) (Ketones) (Metals)
(Cyclic compounds) (Phenylazoindzndione)
(Complex compounds)

LERNER, I.P., dotsent; KREYLICH, A.M.; ANDRUSHCHENKO, Ye.V., kand.med.nauk.

Blood eosinophilia i some diseases of the digestive organs.
Vrach. delo no.9:133-135 S '63. (MIRA 16:10)

1. Kafedra terapii (zav. - dotsent I.P.Lerner) III Kiyevskogo instituta usovershenstvovaniya vrachey.
(EOSINOPHILIS) (DIGESTIVE ORGANS—DISEASES)

PICHUGIN, Anatoliy Anfinogenovich, dots., kand.tekhn.nauk; KREYMAN, Adol'f Borisovich, inzh.; GORBATOVSKIY, I.V., red.; GOSTISHCHEVA, Ye.M., tekhn. red.

[Machinery and automatic machinery at the construction project] Mashiny i avtomaty na stroike. Novosibirsk, Novosibirskoe knizhnoe izd-vo, 1962. 62 p. (MIRA 15:7)
(Construction equipment) (Automation)

LESNYAK, S.V.; KREYMAN, A.R.

Conditions of testing the tolerance for polyvaccine and the effect of repeated vaccination on the reaction in the vaccinated persons. Vak. i syv. no.1:185-193 '63. (MIRA 18:8)

1. Gosudarstvennyy kontrol'nyy institut im. Tarasevicha.

SHCHUKIN, Petr Dmitriyevich; KREYMAN, S.Ya., red.; BOGOSLAVETS, N.P., tekhn. red.

[Modernization of industrial equipment] Modernizatsiia zavodskogo oborudovaniia, Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1962. 157 p. (MIRA 15:4)

1. Uralvagonzavod, Nizhniy Tagil.
(Nizhniy-Tagil--Industrial equipment--Technological innovations)

KREYMER, A. M. YA.

Kreymer, A. M. Ya.

"On Certain Aspects of Lecturing in Mathematics in the Schools of Working Youth." Min Education Azerbaydzhan SSR. Azerbaydzhan State Pedagogical Inst imeni V. I. Lenin. Baku, 1955. (Dissertation for the Degree of Candidate in Pedagogical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

KREYMER, A.Ya.

Tissue therapy with fish roe. Klin. med., Moskva 30 no. 11:88-89 Nov 1952. (CIML 23:5)

1. Of Krivoy Luk Hospital (Head Physician -- A. Ya. Kreymer), Aleksandrovskiy Rayon, Tomsk Oblast.

KREYMER, A.Ya.

Hypnosis therapy of nocturnal enuresis in children. Pediatriia no.1:74-77 Ja-F '54. (MLRA 7:3)

1. Iz Krivolutskoy bol'nitsy (glavnyy vrach A.Ya.Kreymer) Aleksandrovskogo raiona Tomskoy oblasti.
(Urine--Incontinence) (Hypnotism)

USSR/Medicine - Veterinary, Tissue Therapy; Fish Roe

Card 1/1

Author : Kreymer, A. Ya.

Title : Tissue therapy with fish rce in veterinary practice

Periodical : Veterinariya, 31, 48-49, May 1954

Abstract : Persistent fissure of teats in 15 cows was cured completely within 3-5 days after each of them received a 20-cc injection of suspension of fish roe. Experiments with 20 calves that had paratyphoid proved that fish roe in tissue therapy increases immunobiologic defensive properties of the organism in cases of infectious diseases. Injection of fish roe into the organism of horses resulted in healing of wounds that did not respond well to other methods of treatment. Tissue therapy with fine suspension of fish roe is a simple and convenient method of treatment and can be safely used in veterinary practice.

Institution :

Submitted :

KREYMER, A.Ya.

KREYMER, A.Ya. (Krivolutsk)

Hypnotherapy in hypertension. Klin.med. 32 no.3:65-67 Mr '54. (MLRA 7:5)

1. Iz Krivolutskoy bol'nitsy Aleksandrovskogo rayona Tomskoy oblasti.
(Hypertension) (Hypnotism--Therapeutic use)

KREYMER, A.Ya

Method of differential supravital staining of erythrocytes.
Lab.delo no.1:28-29 Jan-Feb.'55. (MLRA8:8)

1. Iz Krivolutskoy bol'nitsy (glavvrach A.Ya Kerimer) Aleksandrovskogo rayona Tomskoy oblasti.
(ERYTHROCYTES,
staining, differential supravital technic)
(STAINS AND STAINING,
erythrocytes, differential supravital technic)

KREYMER, A.Ya.

Treating nocturnal enuresis in a Pioneer camp. Vop.okh.mat. i det. 1 no.6:81-83 N-D '56. (MLRA 10:1)

1. Iz zheleznodorozhnoy bol'nitsy stantsii Tomsk II (glavnyy vrach M.N.Tuzov); iz kafedry gospital'noy pediatrii (zav. - prof. G.G. Stuks) i kliniki nervnykh bolezney (zav. - dotsent N.V.Shubin) Tomskogo meditsinskogo instituta imeni V.M.Molotova.
(URINE--INCONTINENCE) (HYPNOTISM)

KREYMER, A.Ya.

Hypnotherapy in certain skin diseases at a rural hospital. Vest. ven. i derm. no.3:47-48 My-Je '56. (MLRA 9:9)

1. Iz Krivolutskoy bol'nitsy (glavnyy vrach A.Ya.Kreymer) Aleksandrovskogo rayona Tomskoy oblasti.
(SKIN, diseases,
hypnotic technic (Rus))
(HYPNOSIS, therapeutic use,
skin dis. (Rus))

KREYMER, A. Ya. Cand Med Sci -- (diss) "Treatment of nocturnal enuresis by hypnotic sleep." Tomsk, 1957. 13 pp 20 cm. (Tomsk State Med Inst im V. M. Molotov), 200 copies. (KL, 13-57, 100)

KREYMER, A.Ya., kand.med.nauk (Tomsk)

Preventing nocturnal enuresis in children's institutions.
Med.sestra 17 no.6:19-23 Je '58 (MIRA 11:6)
(URINE--INCONTINENCE)

KREYMER, A.Ya., kand.med.nauk (Tomsk).

Therapeutic and pathogenic aspects of verbal communication.
Med.sestra 17 no.9:32-38 S'58 (MIRA 11:10)
(MEDICINE, PSYCHOSOMATIC)

KREYMER, Aleksandr Yakovlevich

[Prevention and treatment of nocturnal enuresis in children] Profilaktika i lechenie nochnogo nederzhaniia mochi u detei. Moskva, Medgiz, 1960. 111 p. (MIRA 14:9)
(URINE--INCONTINENCE)

KREYMER, A.Ya.

Involvement of the nuclear substance in erythrocytes in experimental hemolytic anemias. Biul. eksp. biol. i med. 49 no.3:35-38 Mr '60. (MIRA 14:5)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof. D.I.Gol'dberg) Tomskogo meditsinskogo instituta. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.Chernigovskim.

(ANEMIA) (ERYTHROCYTES)

KREYMER, A.Ya.; PREGER, O.M.; BURNASHOV, I.G.

Use of the oxyhemometer for direct "reading" of electrophoregrams. Lab.delo 7 no.7:58-61 Jl '61. (MIRA 14:6)

1. Tomskiy institut kurortologii i fizioterapii (nauchnyy rukovoditel' - prof. A.S.Saratikov) i kafedra patologicheskoy fiziologii (zav. - prof. D.I.Gol'dberg) Tomskogo meditsinskogo instituta.
(ELECTROPHORESIS)

KREYMER, A.Ya., kand.med.nauk

Treatment of nocturnal enuresis with hypnotic sleep. Sov.med. 25 no.2:130-133 F '61. (MIRA 14:3)

1. Iz kliniki gospital'noy pediatrii (zav. - prof. G.G.Stuks), kliniki nervnykh bolezney (zav. - dotsent N.V.Shubin) Tomskogo meditsinskogo instituta i zheleznodorozhnoy bol'nitsy stantsii Tomsk II (glavnyy vrach M.N.Tuzov).
(URINE—INCONTINENCE) (HYPNOTISM—THERAPEUTIC USE)

KHEYMER, A.Ya.

Changes in the blood serum protein composition in patients with chronic radiculitis during the course of vibratory bath treatment. Vop.med.nauk. 10 no.2:144-148 Mr-Ap '64. (MIRA 18:1)

1. Tomskiy nauchno-issledovatel'skiy institut kurortologii i fizioterapii.

USSR / Pharmacology, Toxicology. Cardiovascular Drugs. V

Abs Jour: Ref Zhur-Biol., No 9, 1958, 42376.

Author : Kreymer, B. Ya.
Inst : Lvov State Ped. Institute.
Title : The Effect of Digitalis Infusion During Intravenous Chloral Hydrate Anesthesia.

Orig Pub: Nauk. zap. Lvivsk. derzh. ped. in-t, 1956, 5, 98-108.

Abstract: It was observed, in experiments on isolated hearts of frogs, that a preliminary perfusion with a digitalis infusion (I) in concentration of 1:250 and 1:300 considerably decreased the toxic action of chloral hydrate upon the heart. In experiments on dogs, preliminary intravenous injection of 8-30 drops of I permitted administration of higher doses of chloral hydrate (10-20 ml of a 10% solution)

Card 1/2

USSR / Pharmacology, Toxicology. Cardiovascular Drugs. V

Abs Jour: Ref Zhur-Biol., No 9, 1958, 42376.

Abstract: for the achievement of prolonged anesthesia, without affecting the work of the heart and the blood pressure. Similar results were obtained in the veterinary clinic, where chloral hydrate was used for anesthesia in horses, previously prepared with I. Preliminary injection of gitalin showed a weak antitoxic effect. -- A. A. Myazdrikova

Card 2/2

KREYMER, B. YA.

UKRAINE/Human and Animal Physiology - Digestion. V-7

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4067

Author : B. Kreymer, T. Boroda
Inst : -
Title : Influence of Copper Ions on the Content of Some Components of the Gastric Juice.

Orig Pub : Nauk. zap. L'vivs'k. derzh. ped. in-t, 1956, 5, 119-126

Abstract : Studies were conducted of the gastric juice of an adult dog with a fistula of the parotic gland and stomach, and of 2 puppies with gastric filtulas; the juice was collected before and after feeding, as well as after the introduction through the filtula of 3 to 20 ml of a 1% solution of $CuSO_4$. The general acidity of the stomach (which was higher in the adult dog than in the puppies) rose intermittently after the administration of $CuSO_4$, than started to gradually decrease, while the Cl contents continued to go up. Half an hour after the administration of $CuSO_4$,

Card 1/2

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4067

the content of Cu ions was high, than started to decrease and was insignificant at the end of one hour and a half. No Cu was found in the saliva.

USSR/Human and Animal Physiology - Excretion. V-6

Abs Jour : Ref Zhur - Biol., No 4, 1958, 18289

Author : B.D. Shraybman and B.Ya. Kreymer

Inst : The Lvov State Pedagogical Institute.

Title : Biochemical Disturbances in the Composition of the Blood in Experimental Kidney Damage. Preliminary Report.

Orig Pub : Dopovidi ta povidomlennya L'vivs'k. derzh. ped. in-t, 1957, No 2, 36-38

Abstract : No abstract.

Card 1/1

KREYMER, B.Ya., KURYLO, S.M.

New method for making a fistula of the common bile duct in dogs [with summary in English]. Biul.eksp. biol. i med. 46 no.7:105-106 Je '58 (MIRA 11:7)

1. Iz laboratorii anatomii i fiziologii cheloveka i zhivotnykh L'vovskogo gosudarstvennogo pedagogicheskogo instituta. Predstavlena dey tvitel'nym chlenom AMN SSSR, V.N. Chernigovskim.
(BILE DUCTS, COMMON, physiology,
exam. through artif. fistula, technic of application (Rus))

L 18287-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RPL/ASD(m)-3 RM
ACCESSION NR: AP5000478 S/0073/64/030/011/1195/1197

AUTHOR: Gershuns, A. L.; Kreymer, G. A.

TITLE: Synthesis and investigation of certain polyazomethines

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 30, no. 11, 1964, 1195-1197

TOPIC TAGS: polyazomethine, polymeric Schiff base, coordination polymer, chelate polymer, polymer

ABSTRACT: Twenty-eight new polymeric Schiff bases containing complex-forming 0,0'-dihydroxy diazomethine groups have been prepared and converted to chelate polymers. The polymeric Schiff bases were prepared by polycondensation of 2,4-, 2,5-, or 2,6-diaminophenol; 2,5- or 2,6-diaminoresorcinol; triaminophloroglucinol; or bis(4-hydroxy-3-aminophenyl) sulfone with phthalaldehyde, terephthalaldehyde, methylenebis(salicylaldehyde), or glyoxal. The polymeric Schiff bases were amorphous, brown-to-yellow powders, insoluble in organic solvents and decomposing at above 300C. The absorption of Cu^{2+}, Co^{2+}, Ni^{2+}, or UO_2^{2+} from acetate solutions to form the chelate polymers was studied.

Card 1/2

L 18287-65
ACCESSION NR: AP5000478

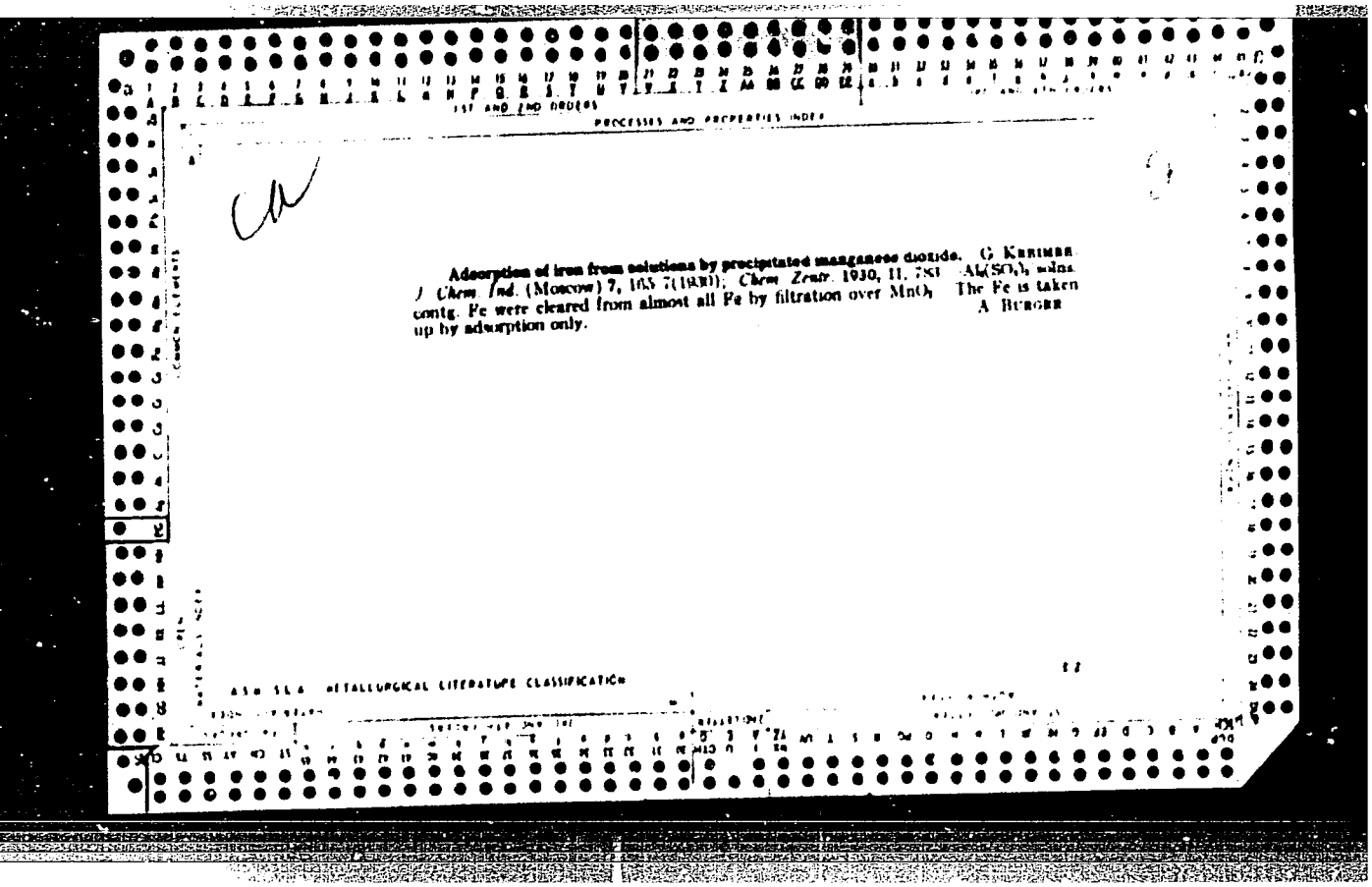
The polymeric Schiff bases from glyoxal and triaminophloroglucinol or 2,4-diaminoresorcinol had the greatest absorption capacity. The chelate polymers from glyoxal and triaminophloroglucinol or 2,4-diaminoresorcinal also showed the greatest resistance to the removal of the metal ion by dilute acids. Orig. art. has: 1 table and 1 formula.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kovo (Kharkov State University)

SUBMITTED: 21Oct63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 007 OTHER: 016 ATD PRESS: 3156

Card 2/2

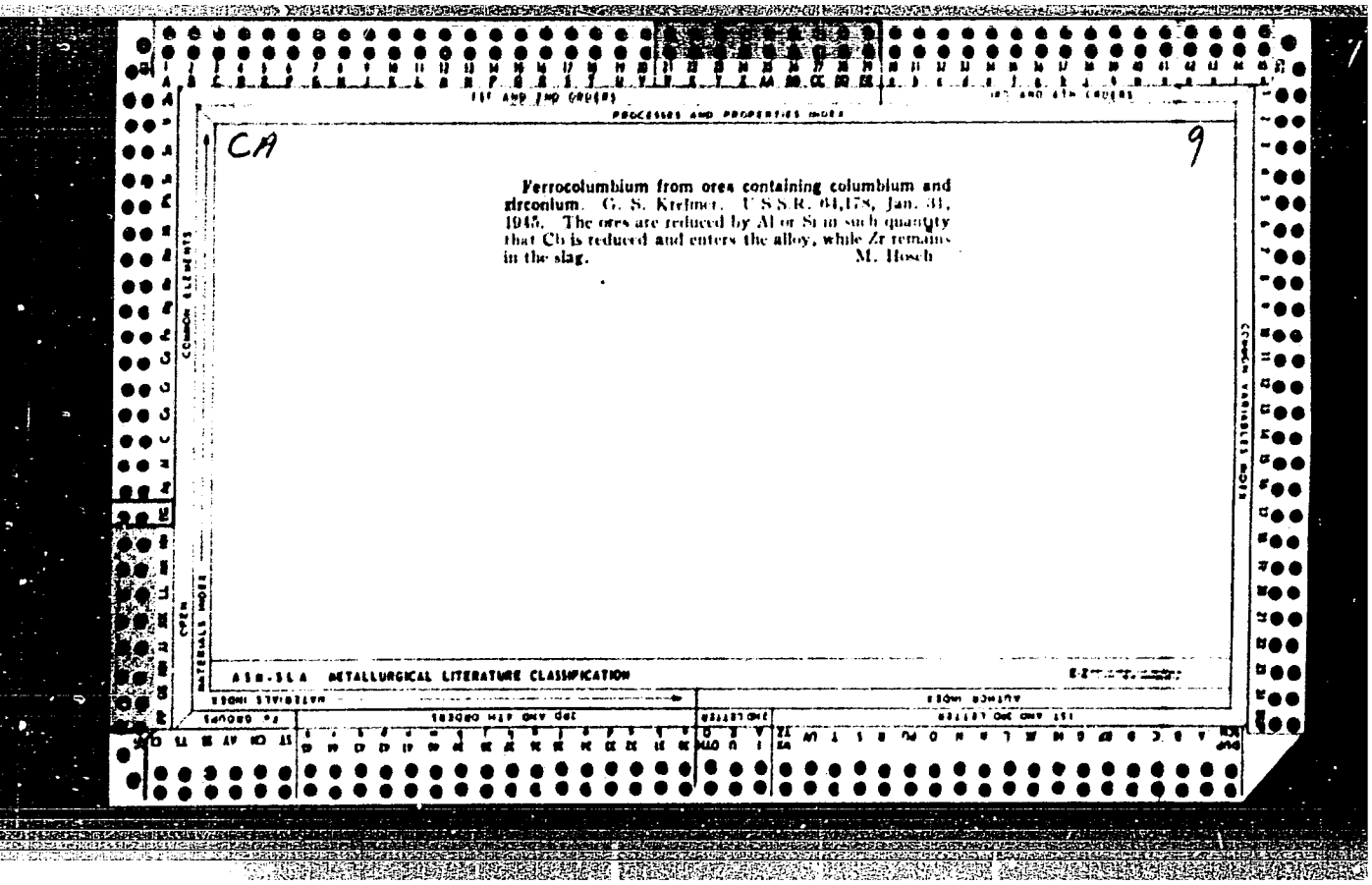


PROCESSES AND PROPERTIES INDEX

Adsorption of iron from solutions by precipitated manganese dioxide. G KRIMER. *J Chem Ind.* (Moscow) 7, 105 7(1930); *Chem Zentr.* 1930, II, 785. $Al_2(SO_4)_3$ solns. contg. Fe were cleared from almost all Fe by filtration over MnO_2. The Fe is taken up by adsorption only. A BUTGER

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

Simultaneous reduction of oxides of iron, titanium and columbium with aluminum. G. S. Kreimer. *J. Applied Chem.* (U. S. S. R.) 13, 1267-70 (in French, 1271) (in Russian). —A preliminary report. In thermal reduction of oxides of Fe, Cb and Ti with Al, the yield of Ti was considerably lower than that of Cb. This selective process became more pronounced in the presence of Al in amts. necessary for the reduction of Fe and Cb oxides to metals and TiO_2 to TiO. The reduction of TiO_2 with Al presumably proceeded in stages: the first $TiO_2 \rightarrow TiO$ is exothermic and the second $TiO \rightarrow Ti$ is endothermic. The equil. of the second reaction is shifted to the left and its equil. const. is of a higher order than the equil. const. for the reduction of Cb_2O_5. A. A. Podgorny



CA 9

Ferrocolumbium from ores containing columbium and zirconium. G. S. Krefmer. U.S.S.R. 64,178, Jan. 31, 1945. The ores are reduced by Al or Si in such quantity that Cb is reduced and enters the alloy, while Zr remains in the slag. M. Hosch

M

***Methods for the Determination of the State of Dispersion and the Specific Surface of Tungsten and Tungsten Carbide Powders.** G. S. Kreimer, M. R. Vakhovskaya, O. S. Safonova, and E. E. Bogino (*Zavod. Lab.*, 1949, **15**, (2), 159-167).—[In Russian]. Experiments were carried out which were based on: (1) the rate of adsorption by the powder of methylene blue from aq. solutions, (2) the rate of oxidation of the powder by HNO_2, (3) the rate of catalytic decomposition of H_2O_2 by the powder, (4) the degree of volume contraction in sintering compressed powder specimens. The first method is not very reliable; the second and fourth give concordant results for both tungsten and tungsten carbide; the third is applicable to metallic tungsten only.—T. O. L.

KREYMER, G. S.

USSR/Metals - Tungsten May 52

"Reactive Diffusion of Carbon Into Tungsten. Part I," G. S. Kreymer, L. D. Efros, Ye. A. Voronkova

"Zhur Tekh Fiz" Vol XXII, No 5, pp 858-873

Diffusion of carbon into tungsten produces new carbide phases, 1st WC and thereafter W_2C, contrary to data by Andrews and Dushmann (cf. J. Phys Chem, 29, 1925) and by Pirani and Sandor (cf. J. Inst of Metals, 73, 385, 1947). Relation to time of isothermal growth of W_2C layer is given.

222T30

The coeff of diffusion could be computed. Indebted to Prof Ya. S. Umanskiy and to help by the laboratory of the hard alloys combine. Received 10 Feb 51.

222T30

KREYMER, G. S.

USSR/Metals - Tungsten May 52

"Reactive Diffusion of Carbon Into Tungsten. Part II. Investigation of Carbon Diffusion in Unstrained Tungsten," G. S. Kreymer, L. D. Efros, Ye. A. Voronkova

"Zhur Tekh Fiz" Vol XXII, No 5, pp 874-876

Authors prove experimentally that the diffusion coeff is not affected by the previous treatment of tungsten. This is probably due to the fact that tensions vanish at the temp (1,500-1,800°) of the test. Even if some tensions remain in the recrystd material they are without effect on the speed of diffusion. Received 8 Aug 51.

222T31

KREYMER, G.S.

Strength of cemented tungsten carbide-cobalt alloy as a function of temperature and grain size. G. S. Kreĭmer, O. S. Safonova, and A. I. Baranov. *Zhur. Tekh. Fiz.* 25, 117-24(1955).—A no. of 5 × 5 × 35-mm. bars of 94% WC-6% Co alloy with carefully graded grain size of 1, 1-1.5, 1-2, and 2-4 μ were fractured in a machine (described) at 20-800° and their breaking strength plotted and tabulated. The strength decreases with the temp. for the finest alloy from 118.6 kg./sq. mm. to 40.1/sq. mm. and for the coarsest from 129.0 to 74.0 kg./sq. mm. It increases to a max. at around 200° and then declines in all cases. Grain size and the thickness of Co mesh were estd. in finished alloys by measuring their coercive force which drops with larger grain and thicker mesh. The possibility of plastic microscopic slips is reduced with thinner mesh as well as redistribution of local stresses permitting them to reach their tensile strength earlier. The initial strengthening with the increasing temp. is increased with higher microplasticity of Co layer, though above 200° the softening effect overbalances the influence of the plasticity changes. Macroplasticity was observed only with finest grain and at 1000°, in all other cases specimens broke with no deflection at all.

J. D. Sist

(2)

KREYMER, G. S.

25(1) PHASE I BOOK EXPLOITATION SOV/2446

Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii

Title: Izgotovleniye izdeliy metodami poroshkovoy metallurgii (The Manufacture of Products by the Methods of Powder Metallurgy) Moscow, Filial Vsesoyuznogo instituta nauchnoy i tekhnicheskoy informatsii, 1957. 23 p. (Series: Peredovoy nauchno-tekhnicheskiy i proizvodstvennyy opyt. Tema 4, No. M-57-320/3) 1,400 copies printed.

Ed.: A. N. Malov, Candidate of Technical Sciences; Exec. Ed.: L. Ye. Shobik, Engineer; Tech. Ed.: T. M. Sorokina.

PURPOSE: This booklet is intended for specialists in the field of powder metallurgy.

COVERAGE: The three articles in this brief collection deal with several aspects of the manufacture of sintered-metal and cemented-carbide products. The first article is concerned with the effect of various factors (chemical composition, surface treatment, carbide grain size, and temperature) on the fatigue

Card 1/3

limit of cemented tungsten-cobalt carbides at normal and elevated temperatures. The remaining two articles deal with centrifugal mixers for cermet compositions and with a four-cavity compacting die for iron-ceramic bushings. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

The Manufacture (Cont.) SOV/2446

Nikolayev, N. N. Four-cavity Die for Compression-molding of Iron-Ceramic Bushings 23

AVAILABLE: Library of Congress

GO/jb
10-27-59

Card 3/3

126-2-22/35

AUTHORS: Kreymer, G. S., Baranov, A. I., and Safonova, O. S.

TITLE: Static and cyclic strength of metallocermic hard alloys consisting of tungsten carbide and cobalt. (Staticheskaya i tsiklicheskaya prochnost" metallokeramicheskikh tverdykh splavov karbid vol'frama-kobal't).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 361-364 (USSR).

ABSTRACT: Thin cobalt layers enclosed between tungsten carbide grains of very high hardness and very high values of the modulus of elasticity are in a blocked state and the ability of such layers to plastic deformation is braked and, consequently, their strength is increased and their plasticity reduced, as was found in earlier work of the authors of this paper (Ref.17). The thinner the cobalt layer the larger will be the degree of blocking and the higher should be the strength and the brittleness. However, with increasing brittleness the local stress concentration increases and this reduces considerably the nominal strength. Experimental proof of this point of view is contained in an earlier paper of the authors (Ref.17) in which the bending strength of the tungsten carbide BK6 containing 6% Co was investigated as a function

Card 1/4

Static and cyclic strength of metalloceramic hard alloys consisting of tungsten carbide and cobalt.

the test temperature and the grain size. It was found that for any of the investigated grain sizes (1 to 4μ) the curves "temperature-strength" had a clearly pronounced maximum at 200°C. Since the only variable factor in the given case was the plasticity of the cobalt inter-layers, the results revealed the influence of plasticity on the strength in the above mentioned sense. Independently of the authors of this paper, V. V. Baron and Savitskiy, Ye. M. (Ref.18) detected a maximum in the "temperature-strength" curves of a number of brittle metals and alloys, particularly of inter-metallic compounds, whereby the hardness decreased monotonously with increasing temperature. The authors of this paper considered it of interest to carry out tests in new directions which would directly or indirectly confirm the here expressed point of view and these comprised the study of the cyclic strength of tungsten carbides with cobalt as a function of the thickness of the cobalt inter-layers and, consequently, as a function of the plasticity. It was anticipated that in the case of cyclic loading the degree of plasticity should have an

126-2-22/25

Static and cyclic strength of metalloceramic hard alloys consisting of tungsten carbide and cobalt.

influence at least as large on the strength as in the case of static loading since in this case the stress concentration is of greater importance. The tests consisted of bending rotating specimens which were fixed on one side, whereby the specimens consisted of the investigated carbide and mild steel, the shape and dimensions of which are indicated by the sketch, Fig.1, p.362. The tests were based on five million loading cycles. Furthermore, the bending strength and the hardness were measured. The results are entered in a table, p.362, and four photographs of the microstructure of the specimens are reproduced in Fig.2. The obtained data confirm the view that the reduction in plasticity of the cobalt inter-layers with a decrease in thickness leads to a decrease in the strength and thus also to a decrease in the strength of the material as a whole.
There are 2 figures, 1 table and 19 references, 9 of
Card 3/4 which are Slavic.

SUBMITTED: June 8, 1956.

ASSOCIATION: All-Union Research Institute for Hard Alloys. (Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Tverdykh Splavov).

126-2-22/35

Static and cyclic strength of metalloceramic hard alloys consisting of tungsten carbide and cobalt.

AVAILABLE: Library of Congress.

Card 4/4

SOV/180-59-3-16/43

AUTHORS: Alekseyeva, N.A., Baranov, A.I. and Kreymer, G.S. (Moscow)

TITLE: Strength, Hardness and Impact Toughness of Hard Tungsten-Cobalt Alloys in Relation to their Composition, Structure and Temperature of Investigation

PERIODICAL: Izvestiya Akademii nauk, SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 92-98 (USSR)

ABSTRACT: Three series of alloys were investigated with grain sizes of 1.64, 3.3 and 4.95 microns. Alloys in each series containing 2,4,6,10,15,20 and 25% Co were made. The characteristics of the alloys are given in Table 1. Figures 1, 2 and 3 show the relation between bending strength and cobalt content. With increase in cobalt content the strength increases to a maximum. For series 1 and 2 the maximum is at about 20% cobalt and for the coarser grained series 3, at 15% cobalt contents. With lower cobalt contents the coarser grained alloys had higher strengths. Fig 4 shows that there is a linear relationship between hardness and cobalt content. With increase in cobalt content the hardness decreases. The hardness also decreases with increasing grain size. Values for impact strength are given in Fig 5 and the

Card 1/2

Strength, Hardness and Impact Toughness of Hard Tungsten-Cobalt Alloys in Relation to their Composition, Structure and Temperature of Investigation

effects of temperature and grain size are given in Fig 6. With low cobalt content and fine grain size, the material shows a brittle fracture which does not depend on the temperature. With increase in cobalt content and increase in tungsten carbide grain size, there is an increase in impact strength because of an increase in elastic deformation. The investigation showed that in the bending test, the deformation takes place at the cobalt cementing films and the decisive factor in the strength is the microplasticity of the cobalt phase. It is shown that a continuous network of cobalt phase is required to give alloys which are tough and strong. There are 6 figures, 1 table and 11 references, 1 of which is German, 3 English and 7 Soviet.

SUBMITTED: December 9, 1958

24-58-3-15/38

AUTHORS: Kreymer, G.S., Sidorin, I.I. and Tishchenkova, Ye.F.

TITLE: Fatigue Strength of Hard Sintered Tungsten Carbide-and-Cobalt Alloys (Ustalostnaya prochnost' metallokeramicheskikh tverdykh splavov karbid vol'frama-kobal't)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 113-118 (USSR)

ABSTRACT: Tests were carried out upon specimens of sintered tungsten-carbide cobalt compositions mounted as simply supported centrally loaded bent beams in a special yoke fixture adapted to a Schenck resonance fatigue machine for tension-compression loading. A non-symmetrical loading cycle with a constant dissymmetry co-efficient was applied five million times. The specimens, ground by a chemical-mechanical method, were surface lapped with boron carbide. The same set-up was used at elevated temperatures, when the specimen was surrounded with an externally heated chamber containing argon or helium. The tests were designed to establish the relations between the fatigue strength and the composition (cobalt content) or the grain size at both room and elevated temperatures. The fatigue strength closely follows the regularities of static

Card 1/2

24-58-3-15/38

The Fatigue Strength of Sintered Compositions of Tungsten Carbide and Cobalt.

strength in relation to cobalt content, grain size and temperature. Some discussion of these relations, common to static and fatigue strength, is given alongside graphs of mechanical properties and fatigue strength over a range of the above variables. The practical conclusion is reached that under conditions of metal cutting, alloys with a lower cobalt content may not only have a greater wear resistance, but also a larger fatigue strength. This effect, verified under production conditions, increases with the cutting speed, i.e. the temperature of the cutting edge. In fatigue theory, the part played by initial plasticity as a measure of fatigue resistance has been emphasized. There are 4 tables, 9 figures and 5 references, 2 of which are Soviet, 2 English and 1 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov MVTU im. Baumana (All-Union Research Institute for Hard Alloys MVTU im. Bauman)

SUBMITTED: June 18, 1957.

Card 2/2 1. Alloys--Fatigue

34701
S/137/62/000/002/044/14
A006/A101

15.2410

AUTHORS: Kreymer, G. S., Khudosovtsev, S. A., Safonova, O. S., Bogino, E. M.

TITLE: Research for new sintered carbide grades for pneumatic impact drilling

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 32, abstract 2G258 ("Sb. tr. Vses. n.-i. in-t tverdykh splavov", 1960, no. 2, 3-14)

TEXT: From 4 initial W-powders, 8 series of experimental WC-Co sintered carbides were prepared containing 8, 11, 15 and 20% Co. The W-powders were produced by H_2 reduction at 650 - 820; 720 - 800; 900 and 1,200°C with conventional and intensified grinding of the mixtures. The sintered carbides obtained were subjected to perforating drilling tests on a stand at 7 atm, on rocks of 16 - 18 class strength (according to Protod'yakonov). The absence of breakdowns of the plates and wear resistance were taken as criteria of suitability in selective laboratory-scale tests. Highest strength in pneumatic impact drilling was shown by coarse-grained WC-Co sintered carbides, prepared on the base of tungsten that was reduced at 1,200°C. A decrease of the grain size by intensified grinding of the mixtures, caused a decrease in a_K and the operational

Card 1/2

Research for new sintered carbide grades ...

strength of the sintered carbide, in spite of maintained and even slightly increased σ_1. From sintered carbides BK 8 (VK 8), BK 11 (VK11), BK 115 (VK11V) and standard BK 15 (VK15), tested under industrial conditions, the latter proved unsuitable for drilling on БА 100-П1 (BA100-P1) unit under conditions of the Tyrny-Auz and similar deposits. VK11V showed the best results of all the sintered carbides tested; its operational strength factor was by 1.5 times higher than that of VK15 and the advance per 1 bit was twice as high.

I. Brokhin

[Abstracter's note: Complete translation]

Card 2/2

34699
S/137/62/000/002/040/144
A006/A101

15.2240

AUTHORS: Kreymer, G. S., Baranov, A. I., Alekseyeva, N. A.

TITLE: Strength, hardness and ductility of cermet WC-Co sintered carbides as functions of their composition, structure and test temperature

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 29, abstract 29231 ("Sb. tr. Vses. n.-i. in-t tverdykh splavov, 1960, no. 2, 57-78)

TEXT: The authors investigated strength characteristics of WC-Co sintered carbides as a function of the Co-content, grain size and test temperature. Tests were performed with 3 series of sintered carbides with 2, 4, 6, 10, 15, 20, and 25% Co with different grain size of the WC-phase: 1) 1 - 1.64μ; 2) 2 - 3.3μ; 3) 3 - 4.95μ at 20, 300, 400, 600 and 800°C. Curves are plotted showing the dependence of σ_{b_1} on the aforementioned factors. On the basis of experiments performed the authors prove the decisive effect of ductility (micro-ductility) of Co-layers on the strength (σ_{b_1}) of sintered carbides; in these layers stresses and deformations are concentrated when external loads are applied. A certain effect on σ_{b_1} is also exerted by the strength of carbide grains whose softening (for instance with a greater deficiency of coarse grains) causes initial cracks.

4

Strength hardness and ductility ...

S/137/62/000/002/040/144
A006/A101

At impact load, sintered carbides with low Co content and small grain size are subjected to brittle failure (by tearing off); in this range a_k does not depend on temperature, but increases with a higher C content and greater WC grain size, on account of higher elastic deformation. At a sufficiently high Co content and increased WC grain size, the ductile properties of the Co-layer appear (in connection with reduced obstruction of the Co layers by WC grains) and a dependence of a_k on temperature manifests itself; a_k increases rapidly with a higher Co amount, greater grain size and raised temperature. The authors believe that the experimental results prove the continuity of Co-phase in WC-Co sintered carbides. There are 17 references.

T. Brokhin

[Abstracter's note: Complete translation]

Card 2/2

18.6100
18.8200

82626
S/180/60/000/004/021/027
E193/E483

AUTHOR: Kreymer, G.S. (Moscow)

TITLE: Transverse Rupture Strength, Hardness and Structure of Cobalt-Bonded Sintered Tungsten Carbides

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No.4, pp.129-135

TEXT: The object of the present paper was critically to review work of other investigators who have studied the effect of various factors on mechanical properties of hard alloys, to correlate their results with those obtained in the past by the present author and to discuss certain specific features by which the variation of the properties of hard metals is characterized. It is pointed out that curves, illustrating the effect of the binder content, grain size of the WC phase, and temperature on the transverse rupture strength of cobalt-bonded sintered tungsten carbides, all pass through a maximum; the temperature dependence of fatigue of these alloys is also characterized by a maximum and the same applies to the relationship between compressive strength and the binder content of these alloys. At the same time, hardness of these alloys

Card 1/4

S/180/60/000/004/021/027
E193/E483

Transverse Rupture Strength, Hardness and Structure of Cobalt-Bonded Sintered Tungsten Carbides

linearly decreases with increasing cobalt content, rising temperature and increasing grain size of the WC phase. If the data on the dependence of strength and hardness of hard alloys on their cobalt content are combined in the form of strength/hardness relationship, a curve reproduced in Fig.5 is obtained which also passes through a maximum. A decrease in the transverse rupture strength with increased cobalt content and increasing grain size of the WC particles (represented by the branches on the right side of the maxima of the corresponding curves) has been shown to be associated with the increase in thickness of the cobalt layers separating the tungsten carbide grains. The results of many investigations of similar structures, consisting of two phases with widely differing hardness and resistance to deformation, have shown that the ability of the softer phase to deform plastically is reduced by the presence of grains of the hard phase. Whatever is the explanation of this effect, it becomes less pronounced with increasing distance between the hard phase particles, i.e. with

S/180/60/000/004/021/027
E193/E483

Transverse Rupture Strength, Hardness and Structure of Cobalt-Bonded Sintered Tungsten Carbides

increasing content of the softer phase. The constitution of most hard alloys of practical importance is such that the variation of their strength and other properties are represented by the left branches of the appropriate curves, this relationship being the reverse of that discussed above and for this reason referred to sometimes as anomalous. The present author discusses the results of a number of investigations and shows that simultaneous increase in strength and plasticity in inherently brittle materials is not confined to hard metals but is a characteristic common to all metals and alloys of low plasticity. This effect has its origin in the mechanism of brittle fracture. Theoretical considerations, based on the Griffith-Orowan theory of brittle fracture, led the present author to the conclusion that the formation and growth of cracks in tungsten carbide/cobalt hard alloys takes place in the cobalt layers separating the WC grains, this view being supported by the findings of Pavlov and Yakutovich (Ref.28) who have found that in the case of a steel

82626
S/180/60/000/004/021/027
E193/E483

Transverse Rupture Strength, Hardness and Structure of Cobalt-Bonded Sintered Tungsten Carbides

consisting of hard martensitic grains embedded in ferritic matrix, formation of cracks takes place in ferrite. There are 6 figures and 31 references: 17 Soviet, 7 English and 7 German.

SUBMITTED: July 28, 1959

Card 4/4

85963

18.6100 1417

S/126/60/010/005/010/030
E021/E406

AUTHORS: Kreymer G.S., Vakhovskaya, M.R. and Baranov, A.I.

TITLE: Strength, Toughness and Hardness of Two-Phased Cermet Titanium Carbide - Tungsten Carbide - Cobalt Hard Alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.5, pp.698-709

TEXT: Alloys containing 4, 6, 9, 15, 20 and 25% cobalt and a titanium carbide - tungsten carbide ratio of 1 : 1 were prepared in three series with average grain sizes of 0.9, 2.6 and 5.6 microns. The bending strength was determined on a P-5 (R-5) machine (Ref.1) at 20, 200, 500, 800 and 1000°C. The impact strength and the Vickers hardness were also determined. Microstructures of the samples were examined. Fig.1 shows the relation between the bending strength and cobalt content at various temperatures. Differences were found from the results obtained on tungsten carbide - cobalt alloys (Ref.5). Increasing cobalt content up to 15% in TiC - WC - Co alloys had no effect on the strength at temperatures from 20 to 500°C. The cobalt content - bending strength curves passed through a maximum at a cobalt content greater

Card 1/3

Strength, Toughness and Hardness of Two-Phased Cermet Titanium Carbide - Tungsten Carbide - Cobalt Hard Alloys

than 15% at 20 to 500°C, and at approximately 15% at 800 and 1000°C. The alloys with a grain size of 5.6 microns, however, showed practically constant strength with increase in cobalt content at 800 and 1000°C; similar curves were obtained for the impact strength - cobalt content relationship. The fact that an increase in cobalt content up to 15% had no effect on the bending strength and impact strength in the region 20 to 500°C was explained by the poor wetting properties of cobalt on the TiC - WC grains. This formed a continuous network of carbide when less than 15% cobalt was present. Thus cracks which were nucleated could propagate, in the main, along the brittle carbide network (see Fig.3). With greater than 15% cobalt or at temperatures higher than 500°C, the cobalt phase retarded the development of the cracks. A linear relationship was found between the strength and $D^{-1/2}$ where D is the mean grain size of the TiC - WC solid solution. The hardness decreased with increase in cobalt content (Fig.9), increase in temperature (Fig.11) and decrease in the grain size of

85963
S/126/60/010/005/010/030
E021/E406

Strength, Toughness and Hardness of Two-Phased Cermet Titanium Carbide - Tungsten Carbide - Cobalt Hard Alloys

the carbide phase (Fig.10) because of an increase in plasticity. The difference in hardness of the samples with different grain sizes decreased with increase in temperature (Fig.11). There are 11 figures, 1 table and 15 references: 11 Soviet and 4 Non-Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (All-Union Scientific Research Institute of Hard Alloys)

SUBMITTED: January 7, 1960 (initially)
June 24, 1960 (after revision)

Card 3/3

PHASE I BOOK EXPLOITATION SOV/5566

Zorev, N.N., Doctor of Technical Sciences, Professor, and G.S. Kreymer, Candidate of Technical Sciences

Vysokoproizvoditel'naya obrabotka stali tverdosplavnymi reztsami pri preryvistom rezanii (High-Productivity Machining of Steel With Hard-Alloy Tools in Intermittent Cutting) Moscow, Mashgiz, 1961. 78 p. 6,500 copies printed.

Reviewer: M.N. Larin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: I.I. Lesnichenko; Tech. Ed.: L.P. Gordeyeva; Managing Ed. for Literature on Metalworking and Machine-Tool Making: V.V. Rzhavinskiy, Engineer.

PURPOSE: This book is intended for process engineers in machine-building plants and technical personnel in mechanical shops and laboratories.

COVERAGE: The book gives a concise account of the complete machining of steel parts by intermittent cutting with coarse cuts. The suggested methods are based on the efficient use of recently developed hard alloys with high resistance to cyclic thermal and mechanical loads. Concrete practical recommendations are given for reducing, by 2 to 3 times, cycle time in machining complex-shaped

Card 1/3

forgings, steel castings, and weldments on large planers, lathes, boring mills, and machines. The following persons carried out the testing of hard alloys at the machine-building plants indicated in parentheses: V.S. Serebrovskiy (UZTM); V.F. Mordvinova and Ya. V. Fidyuk (NKMZ); and Z.M. Fetisova, B.G. Chizov, and V. Yu. Katsnel'son (EZTM). The results of investigations conducted by VNIITS, TsNIITMASh, and various factories, as well as practical recommendations on the introduction of hard-alloy tools in reciprocating cutting and in other cases of intermittent coarse-chip cutting, are briefly discussed. There are no references.

TABLE OF CONTENTS:

KREYMER, G.S.

Strength theory of tungsten carbide-cobalt ceramic metal hard alloys. Poroshk. met. 1 no.5:33-41 S-O '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov.

(Ceramic metals--Testing)

S/180/62/000/003/012/016
E193/E192

AUTHORS: Kreymer, G.S., and Safonova, O.S. (Moscow)

TITLE: The effect of the rate of cooling during sintering or heat treatment on the properties of the tungsten carbide-cobalt solid solutions

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.3, 1962, 94-97

TEXT: The fact that solid solubility of WC in Co varies with temperature suggests that the structure of Co-bonded cemented carbides and, consequently, their mechanical and other properties, may depend on their thermal history, in particular on the rate of cooling after sintering or heat treatment; hence the present investigation, conducted on alloys BK 4 (VK4) (4% Co), BK8B (VK8V) and BK 8 (VK8) (8% Co). The effect of the duration of heat treatment and of subsequent rate of cooling was studied on alloys VK4 and VK8V. Specimens of these alloys were moved in a stream of hydrogen first through the heating chamber of a furnace at

Card 1/3

1000 °C, and then through its cold, water-cooled zone; by varying the rate of travel, annealing times of 30, 60 and 110 minutes were attained, the corresponding cooling rates being 25, 13 and 7 °C per minute. Before and after each test the following properties were measured: Vickers hardness, transverse bending strength, reduction of area, coercive force, wear resistance, and the WC grain size. The effect of cooling after sintering was studied on alloys VK8 and VK8V; these were sintered in hydrogen at 1430 or 1480 °C, respectively, and then cooled to room temperature at a rate of 2 or 40-80 °C/min. In this case, in addition to the properties listed above, the impact strength of the alloys and the lattice parameter of the Co-rich matrix were determined. The results can be summarized as follows. 1) Neither the grain size of the WC phase, nor the mechanical properties of alloys VK4 and VK8V, were affected by the duration of heat treatment at 1000 °C, or by the variation of subsequent cooling rate. 2) The rate of cooling after sintering had no effect on the coercive force, hardness, bending strength and impact strength of VK8 and VK8V alloys; it was found, however, that the wear-resistance of either

alloy could be approximately doubled by slowing the cooling rate down to 2 °C/min from 40-80 °C/min. 3) Increasing the rate of cooling after sintering brought about an increase in the lattice parameter of the Co matrix which indicated that a large quantity of WC was retained in the solid solution under these conditions. 4) The presence of free carbon in the alloys studied had no effect on the changes brought about by the variation of the cooling rate.
There are 1 figure and 2 tables.

SUBMITTED: November 25, 1961

Card 3/3

41897

S/180/62/000/005/009/011
E071/E535

15 2405

AUTHORS: Kreymer, G.S., Alekseyeva, N.A. and Baranov, A.I. (deceased), (Moscow)

TITLE: Creep of tungsten carbide-cobalt cermets

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.5, 1962, 163-166

TEXT: The creep in bending of ВК6 (VK6) alloy (6% Co, remainder WC) was studied at 800°C on 5 x 5 x 35 mm specimens prepared from two grain sizes of WC powder, applying loads of 10, 15, 20 and 25 kg/mm^2. The results, presented as creep curves, show that the specimens pass through two stages of creep: steady-state and transient-state creep. The test time was up to 6 hours. The nature of the creep curves obtained indicates that the deformation of specimens increases with decreasing grain size of the WC powder. The extent of this effect is much greater than that usually observed in homogeneous alloys; this evidences the importance of the processes occurring in grain boundaries during the creep of cermets. The acceleration of the creep rate when the

Card 1/3