PYATAKOV, GEORGIY LEONIDOVICH, DEFENDANT.

N/5
135.21
.P91

WHY DID THEY "CONFESS"? A STUDY OF THE RADEK-PIATAKOV TRIAL BY JAMES BURNHAM.

NEW YORK, PIONEER PUBLISHERS, 1937.

31 P.

COVER TITLE

COPY IN HIC

135.21	N/5
114.651	N/5
114.64	N/5
861.21	N/5
115	N/5
132	N/5

PYATAKOV, L.V., inzh.

Peat industry of the Moscow Province Economic Council. Torf.prom. 37 no.3:14-16 '60. (MIRA 13:9)

1. Upravleniya toplivno-energeticheskoy promyshlennosti Mosoblsovnarkhoza.

(Moscow Province --Peat industry)

KARAKIN, F.F.; RODICHEV, A.F.; PUTIY, G.P.; BASOV, A.P.; PYATAKOV, L.V.; RAUTSEP, A.P. [Rautsepp, A.]; BLAGONRAVOV, S.I.; GRECHIKHO, A.M.; DRUZHININ, N.N.; SHUKHMAN, D.I.; BAUSIN, A.F.; LOYKO, P.G.; CHERNAKOV, B.A.; SHORNIKOV, F.M.; SOPIN, P.F.

Remarks of the members of the Conference. Torf. prom. 37 no.5: 22-28 '60. (MIRA 14:10)

1. Ivanovskiy gosudarstvennyy torfotrest (for Karakin). 2. Sverdlovskiy torfotrest (for Rodichev). 3. Gosplan USSR (for Putiy). 4. Leningradskiy gosudarstvennyy trest torfyanoy promyshlennosti (for Basov). 5. Moskovskiy oblastnoy sovnarkhoz (for Pyatakov). 6. Gosudarstvennyy nauchno-tekhnicheskiy komitet Estonskoy SSR (for Rautsep). 7. Gor'kovskiy sovnarkhoz (for Blagonravov). 8. Belorusskiy sovnarkhoz (for Grechikho, Shukhman). 9. Yaroslavskiy sovnarkhoz (for Druzhinin). 10. Bobruyskaya mashinno-meliorativnaya stantsiya (for Loyko). 11. Gipromestprom Gosplana RSFSR (for Chernakov). 12. Mezhkolkhoznoye torfopredpriyatiye "Volosovskoye" Leningradskoy oblasti (for Shornikov). 13. Vsesoyuznyy nauchno-issledovatel'skiy institut torfyanoy promyshlennosti (for Sopin).
(Peat industry)

PYATAKOV, L.V., inzh.

Peat industry of the Moscow Province Economic Council from 1959 to 1965. Torf.prom. 36 no.3:1-3 '59. (MIRA 12:7)
(Moscow Province--Peat industry)

PYATAKOVA, G.M.

Niphargoides derzhavini, a new species of amphipods of the Caspian Sea. Dokl. AN Azerb. SSR 18 no.11:71-73 '62. (MIRA 17:2)

1. Institut zoologii AN AzerSSR. Predstavleno akademikom AN AzSSR A.N. Derzhavinym.

PYATAKOVA, L.L., inzh.; ZHIZHAKINA, O.D.

Effect of boron on grain size in steel. Metalloved. i obr. met. no.5:27-30 My '58. (MIRA 11:5)
(Boron steel) (Metals, Effect of temperature on)

PYATAKOV, N. I.

S/120/60/000/005/048/051
E192/E382

AUTHORS: Polivanov, V.V., Il'in, V.V., Izbyurov, A.V., Pogudina, N.V. and Pyatakov, N.I.

TITLE: Power-supply Equipment for the Electron-Microscope, Type УЭМВ-100 (UEMV-100)

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5, pp. 147 - 151

TEXT: The new electron microscope, type UEMV-100 (Ref. 3), and its power supplies can be regarded as a further development of the microscope type УЭМБ-100 (UEMB-100). In particular, the high voltage supplies have the same three stages, i.e. 50, 75 and 100 kV and the lenses operate with the same number of ampere-turns. However, the new microscope is provided with improved power supplies. All the five lenses of the microscope are supplied from current stabilisers which are based on a single-stage circuit in which the anodes of the amplifier tubes are fed from a stabilised source. In this way, an increased stability of the lens currents was achieved. A further increase in the stability was secured by employing new tubes, types 6H13C (6N13S) and 6C19C (6S18S). The use of the new
Card 1/4

tubes permitted the successful solution of a number of problems such as achieving a wide control of the lens currents, which is necessary for various operating conditions of the microscope. The mains voltage (220 V) is first stabilised by means of two series-connected ferroresonant stabilisers (Fig. 2). Small batteries, type 70-АМЦГ-У-1,3 (70-AMTsG-U-1.3), having a useful life of 15 months, are employed in the rectified stabilised supply sources. The supply sources for the lenses are provided with stepwise voltage control, which is achieved by means of multiple switches. Constructionally, the switches are assembled in blocks, each consisting of 3 wafers. Each wafer is provided with 25 contacts and has an independent control knob. The problem of providing the supply to the stigmators was solved in a novel manner (Fig. 3). Instead of using a number of rectifiers, a common rectifier, giving 300 mA, is used for all the stigmators. 5 potentiometers corresponding to the number
Card 2/4

of the stigmator coils are connected in series across the stabiliser output. The voltage necessary for the stigmators is taken from these potentiometers. Since the resistance of the stigmators is very low, the change of current in one stigmator does not cause any variation of the current in the stabiliser network and so the current control of the stigmators is independent. The stabilisation of the high voltage in the new microscope is done in the same way as in the old one, except that instead of the four control tubes, type 6H5C (6N5S), only two new tubes, type 6S18S, are employed, while the cathode follower is based on the tube type 6H8C (6N8S), instead of 6П3C (6P3S). There are two versions of the high-voltage stabiliser. One of these uses a battery as the voltage reference source, while the other employs a gas-discharge tube, type СГ-201C (SG-201S), as the reference source. The circuit for connecting a gas-discharge stabiliser is shown in Fig. 5. It was found that the latter type of stabiliser was quite satisfactory. It was found experimentally
Card 3/4

that the new microscope, fitted with the newly developed stabilised supply sources, has a resolution of 10 Å. There are 4 figures and 3 Soviet references.

SUBMITTED: July 4, 1959

Card 4/4

SOV/126-6-2-23/34

AUTHORS: Pyatakova, L. L. and Gol'dshteyn, Ya. Ye.

TITLE: Influence of the Character of the Interaction of Aluminium, Nitrogen, Boron and Titanium on Certain Properties of Steel (Vliyaniye kharaktera vzaimodeystviya alyuminiya, azota, bora i titana na nekotoryye svoystva stali)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 2, pp 347-353 (USSR)

ABSTRACT: The aim of the work described in this paper was to establish in the first approximation the character of the interaction in steel of boron, nitrogen and aluminium and the influence of their interactions on the properties of medium alloy steel. The influence was investigated of the sequence of introduction into the liquid steel of nitrogen and boron on the character of their interactions and thus on certain properties of boron-containing steels. The range of useful application of titanium in such steels is outlined. For the experiments two basic and one reference group of castings were made; the metal was smelted in a 50 kg electric furnace with an acidic bottom. Prior to tapping the metal was deoxidised with aluminium. Each variant of the castings was produced by the

Influence of the Character of the Interaction of Aluminium, Nitrogen, Boron and Titanium on Certain Properties of Steel

fractional method. Enrichment of the steel with nitrogen was effected by introducing chemically pure sodium cyanide (in sealed iron capsules) into the liquid metal. The metal for producing the first group of castings was prepared in such a way that the boron was added to the nitrogen-enriched steel, whilst the castings of the second group were produced from metal into which nitrogen (NaCN) was added after the final deoxidation of the steel and after the boron has been introduced. The boron was introduced in the form of a 6% ferroboral. The third, reference group, of castings was cast in the same way as the second group. The chemical compositions of the investigated steels and the sequence of introducing nitrogen and boron are entered in Table 1, p 348. In Figs. 1 and 2 the influence on the hardenability of the "Steel 30" of boron and nitrogen additions is graphed; in Fig.5 the influence of nitriding on the hardenability of the boron-containing steel 45R is graphed. In Figs.3 and 4 micro-structure photographs are reproduced. Fig.6 shows fractures of the Steel 45R after over-heating at 1275°C

and subsequent heat treatment. The impact strength values are entered in Table 2, p 349. On the basis of the obtained results the following conclusions are arrived at:

1. The combined influence of boron, aluminium and nitrogen on the properties of the steel depends to a considerable extent on the sequence of their introduction into the steel.
2. The established dependence of the influence of boron, aluminium and nitrogen on the sequence of their introduction into the steel is due to differing mechanisms of their interaction.
3. On introducing boron into liquid steel after deoxidation with aluminium, boron nitrides no longer form (or form in insignificant quantities), since the nitrogen which is dissolved in the steel is combined in stable aluminium nitrides; this ensures that the boron is maintained in the solid solution and explains its influence on the properties of the steel.
4. On introducing or absorbing nitrogen in boron-

Influence of the Character of the Interaction of Aluminium, Nitrogen, Boron and Titanium on Certain Properties of Steel

containing steel a partial or a total removal of the boron from the solid solution takes place due to the preferential formation of nitrides (carbonitrides).
5. The lower inclination to over-heating of boron-containing steel in presence of titanium can be explained for the first stage of over-heating by the fact that the titanium carbides are braking the growth of the austenite grain, and for the range of high temperatures by the fact that it influences the boron distribution in the boundary zones.
There are 6 figures, 2 tables and 18 references, 9 of which are Soviet, 8 English, 1 German.

ASSOCIATION: Chelyabinskiy traktornyy zavod, Chelyabinskiy politekhnicheskiy institut (Chelyabinsk Tractor Works, Chelyabinsk Polytechnical Institute)

SUBMITTED: November 28, 1956

Card 4/4 1. Steel--Properties 2. Aluminum--Metallurgical effects 3. Boron--Metallurgical effects 4. Nitrogen--Metallurgical effects 5. Titanium--Metallurgical effects

S/277/63/000/001/007/017
A052/A126

AUTHORS: Lyakhovich, L. S., Pyatakova, L. L.

TITLE: Some specific effects of boron on structural steel properties

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 48. Mashinostroitel'nyye matorialy, konstruktsii i raschet detaley mashin, no. 1, 1963, 7, abstract 1.48.53 (In collection: "Novoye v metalloved. i tekhnol. term. obrabotki stali". Chelyabinsk, 1962, 48 - 95)

TEXT: The effect of B on annealability, austenite grain size and the tendency of steel to overheating was studied. It is pointed out that micro-alloying with B raises the annealability of structural steel. B can be used as a substitute for a number of alloying elements and also for improving the properties of carbon or low-alloy steel grades in a low-tempered state. When using B-containing steels it is necessary to take into account the negative effect of B on steel properties (tendency to grain growth, overheating, stony fracture, reduction of notch toughness, etc.). There are 32 references.

[Abstracter's note: Complete translation]

Card 1/1

S/137/63/000/001/014/019
A006/A101

AUTHORS: Pyatakova, L. L., Iskhakov, S. S., Shitov, A. P., Miroshnikova, K. Ye.

TITLE: On the mechanism of the effect of some elements upon the properties of carburized steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1963, 50, abstract 1I283 (In collection: "Novoye v metalloved. i tekhnol. term. obrabotki stali", Chelyabinsk, 1962, 7 - 23)

TEXT: The authors investigated the Si-Mn steel system containing in %: C 0.15 - 0.24, Si 0.80 - 1.30, Mn 1.5 - 2.00 with admixtures of V, Cu, W, B, Ti, Cr and Mo. The steel is intended for the production of gears. The effect of alloying elements upon martensite transformation was studied. M_s is most strongly reduced by Mn and Cr; less by Ni, V, Mo, and is almost not reduced by Si and Cu. Due to alloying with Si (1.0 - 1.3%) it is possible to prevent, during carburizing, oversaturation of the surface C layer and to obtain a necessary depth of the carburized layer at an optimum C content (0.85 - 0.9%). Si-Mn

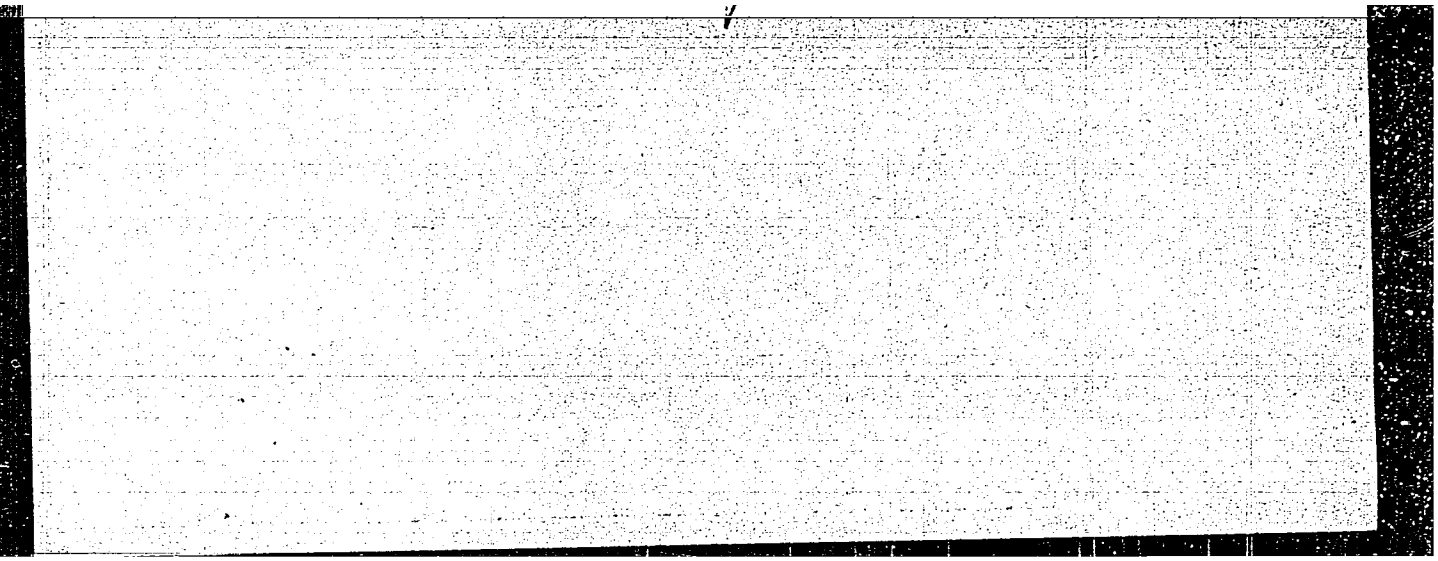
Card 1/2

On the mechanism of the effect of...

steels have a martensite transformation temperature as high as 300 to 365°C. Admixtures of Mo, V, Cr (0.5 - 0.7%) or B (0.001 - 0.002%) to Si-Mn steel secure high roasting ability and satisfactory properties on large-size parts, up to 100 mm in diameter. Si-Mn steels have σ_b 132 - 167 kg/mm^2, σ_s 122 - 145 kg/mm^2, δ 10 - 15%, ψ 53.5 - 66.6%, a_k 10.3 - 13.8 kgm/cm^2; grain size is 2.9 - 3.2. Additional alloying of the steel with V, Cu and Mo prevents grain growth, strengthens the grain boundaries and increases roasting ability. Alloying affects the failure resistance of the steel due to its increased ductility (in martensite state). Grade 17СГ2М (17SG2M) steel, developed on the basis of the investigations, offers high fatigue contact and operational strength. The use of this steel instead of 12Х2Н4 (12Kh2N4) steel yields savings of about 70 rubles per 1 ton. There are 12 references.

L. Koblikova

[Abstracter's note: Complete translation]



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001343720010-0"

PYATAKOVA, L.L.

GOL'DSHTEYN, Ya.Ye., kandidat tekhnicheskikh nauk; LYAKHOVICH, L.S., kandidat tekhnicheskikh nauk; PYATAKOVA, L.L., inzhener; TRUSKNEV, G.M., inzhener.

Properties of 45 steel with boron. Stal' 17 no.5:449-452 My '57.
(Steel--Testing) (Boron) (MLRA 10:6)

18(3) PHASE I BOOK EXPLOITATION SOV/1703

Gol'dshteyn, Ya.Ye., Candidate of Technical Sciences, L.S. Lyakhovich, Candidate of Technical Sciences, L.L. Pyatakova, Engineer, and G.M. Trusenev, Engineer

Mikrolegirovaniye stali 45 dobavkoy bora (Boron Additives for Micro-alloying of 45 Steel) Moscow, AN SSSR, 1956. 13 p. (Series: Informatsiya o nauchno-issledovatel'skikh rabotakh. Tema 1, no.I-56-217) 870 copies printed.

Sponsoring Agencies: USSR. Gosudarstvennyy komitet po novoy tekhnike, and Akademiya nauk SSSR. Institut nauchnoy i tekhnicheskoy informatsii. Filial.

Exec. Ed.: A.I. Okuneva, Engineer; Ed.: L.M. Gopman, Engineer; Tech. Ed.: V.A Ponomarev.

PURPOSE: This book is intended for scientists and engineers working in the field of metallurgy.

Card 1/2

COVERAGE: The booklet gives the results of an investigation of the properties of boron-containing 45R steel developed by the Central Laboratory of the Chelyabinsk Tractor Plant in cooperation with the Department of Metallurgy of the Chelyabinsk Polytechnical Institute. At present, this steel finds wide application in the manufacture of critical parts of S-80 tractors. Active participation in the investigations was taken by TsNIIChERMET (Central Scientific Research Institute of Ferrous Metallurgy), and this organization was responsible for introducing 45R steel to industry. There are 5 references, of which 3 are Soviet and 2 English.

TABLE OF CONTENTS: None given. This book is divided into the five following sections:

AVAILABLE: Library of Congress

Card 2/2

GO/ad
6-18-59

129-58-5-8/17

AUTHORS: Pyatakova, L. L., Engineer and Zhizhekina, O. D.

TITLE: On the Influence of Boron on the Grain Size of Steel (K voprosu vliyaniya bora na velichinu zerna stali)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 5, pp 27-30 + 2 plates (USSR)

ABSTRACT: Most authors arrive at the conclusion that the addition of 0.001 to 0.005% boron increases the effective size of the austenite grain and increases its tendency to growth. Vinarov, S.M. (Ref.3) points out the variable influence of various quantities of boron on the grain size. Corbett, R. and Williams, A. (Iron Age, No.15,1945) expressed the view that addition of boron does not bring about increase in the size of the austenite grain. Very little is published in literature on the influence of boron and of the conditions of preliminary deoxidation on the dimensions of the austenite grain. Kafedra Metallovedeniya ChPI (Metallurgy Chair of ChPI) and Tsentral'naya Laboratoriya ChKZ (Central Laboratory of the ChKZ) carried out studies of the influence of various quantities of boron and of preliminary deoxidation with ferrotitanium on the size of the austenite grain which is obtained in the case of heating of boron containing steel.

Card 1/3

A melt of the steel L35 (Ref.5) micro-alloyed with boron has been cast and investigated. The smelting was done in a 6 ton electric arc furnace with an acidic bottom. The influence of boron additions on the austenite grain size was studied during fractional casting of melts with various quantities of boron. After reaching the desired chemical composition the metal was tapped into a 5.5 ton ladle. After tapping off the slag, aluminium (0.8 kg per ton) and 18% ferrotitanium (2 kg per ton of metal) were introduced. From the large ladle the metal was poured into a smaller casting ladle of 600 kg, at the bottom of which ferroboral was placed containing 6.75% B, 4.85% Si, 5.48% Al, 0.06% C, 0.044% S, rest Fe. Prior to introducing boron into the metal in the small ladle, additional deoxidation was effected using 1 kg of aluminium per 1 ton of metal. From the small ladle ingots weighing 60 kg were cast. The chemical composition of one of the investigated melts is entered in Table 1. Details are also given of the tests relating to the influence of preliminary deoxidation of boron containing steels with ferrotitanium on the grain size of the austenite. The

results confirm the great influence of micro-additions of boron on the growth of the grain size during heating of cast and forged steel. The temperature of the beginning of an appreciable growth of the austenite grain during heating of boron containing steel can be increased by preliminary deoxidation and degasification of steel by means of ferrotitanium. The results confirm that deformation in the hot state has an influence of lowering the temperature threshold of the growth of the austenite grain. The experiments have shown that a non-uniformity in the grain size is a characteristic feature of boron containing steels, particularly in the as-cast state and this is attributed to the non-uniform distribution of small quantities of boron along the grain boundaries. If it is necessary to ensure a fine grain structure, boron containing steel should contain residual titanium to be introduced after deoxidation with aluminium.
There are 4 figures, 2 tables and 6 references, 3 of which are Soviet and 3 English

AVAILABLE: Library of Congress.
Card 3/3

1. Grains (Metallurgy)-Effects of boron 2. Austenitic steel-Metallurgy 3. Boron-Metallurgical effects

PYATAKOVA, L.L.

GOL'DSHTEYN, Ya.Ye., kand.tekhn.nauk; LYAKHOVICH, L.S., kand.tekhn.nauk; PYATAKOVA, L.L., inzh.; TRUSHNEV, G.M., inzh.; OKUNEVA, A.I., inzh., vedushchiy red.; GOPMAN, L.M., inzh., red.; PONOMAREV, tekhn.red.

[Boron additives for microalloying of 45 steel] Mikrolegirovanie stali 45 dobavkoi bora. Moskva, Filial Vses.in-ta nauchnoi i tekhn. inform., 1956. 13 p. (Informatsiia o nauchno-issledovatel'skikh rabotakh. Tema 1, no.I-56-217) (MIRA 11:1)
(Boron steel)

GOL'DSHTEYN, Yakov Yefimovich; GORBUL'SKIY, Il'ya Yakovlevich; PYATAKOVA, Lyudmila Leonidovna; KUDRYAVTSEV, I.V., doktor tekhn.nauk,retsenzent; BEZUKLADNIKOV, M.A., inzh., red.; DUGINA, N.A., tekhn.red.

[Increasing the wear of tractor parts] Povyshenie dolgovechnosti traktornykh detalei. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1956. 225 p. (MIRA 11:1)
(Tractors--Maintenance and repair)

ALEKSEYEV, Ye.T.; APENCHENKO, S.S.; BASOV, A.P.; BAUSIN, A.F.; BERSHADSKIY, L.S.; VELLER, M.A.; GINZBURG L.N.; GUSEV, S.A.; DANILOV, G.V.; DOLGIKH, M.S.; DRUZHININ, N.N.; YEFIMOV, V.S.; ZAVADSKIY, N.V.; IVASHECHKIN, N.V.; KARAKIN, F.F.; KUZHMAN, G.I.; LOBANOV, S.P.; MERKULOV, Ya.V.; NIKODIMOV, P.I.; PANKRATOV, N.S.; PYATAKOV, L.V.; RODICHEV, A.P.; SMIRNOV, M.S.; STRUKOV, B.I.; SAVOCHKIN, S.M.; SAMSONOV, N.N.; SINITSYN, N.A.; SOKOLOV, A.A.; SOLOPOV, S.G.; CHELYSHEV, S.G.; SHCHEPKIN, A.Ye.

Fedor Nikolaevich Krylov; obituary. Torf. prom. 35 no.6:32 '58.
(MIRA 11:10)

(Krylov, Fedor Nikolaevich, 1903-1958)

GRANITOV, I.I.; PYATAYAVA, A.D.

Harmony between organism and environment. Trudy TashGU no.187: 87-94 '61. (MIRA 15:3)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.
(Evolution)

PYATAYEV, A.D., inzh. po elektromekhanicheskomu oborudovaniyu

This prevents damage of the tachometer generator. Elek. i tepl. tiaga no.5:30 My '63. (MIRA 16:8)

1. Depo Ayaguz Kazakhskoy dorogi.
(Diesel locomotives)
(Electric generators)

PYATAYEV, M.; OSTAPCHUK, V.

Building hollow walls with adobe blocks. Sel'.stroi. 11 no.10: 17-18 O '56. (MLRA 9:12)

1. Nachal'nik stroyuchastka no.11 tresta "Dzhaksystroy." (for Pyatayev) 2. Prorab uchastka no.11 tresta "Dzhaksystroy" (for Ostapchuk).
(Walls) (Building, Adobe)

RAYKOVA, I.; PYATAYEVA, A., dotsent

Ippolit Ivanovich Granitov; on his 60th birthday. Uzb. biol. zhur. no.3:72 '60. (MIRA 13:7)

1. Chlen-korrespondent Akademii nauk UzSSR (for Raykova).
(GRANITOV, IPPOLIT IVANOVICH, 1900-)

PYATAYEVA, A.D.; LINCHEVSKIY, I.A.

Cherry Tree- Tien Shan

New species of small-fruited cherry tree from western Tien Shan. Bot. mat. Gerb. 14, 1951.

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

SOVETKINA, M.M.[deceased]; PYATAYEVA, A.D.; ZAKHIDOV, T.Z., redaktor; KOROVIN, Ye.P., redaktor.

[Aristida as a source of fiber and its cultivation] Selin kak istochnik fibry i vvedenie ego v kul'turu. Tashkent, Izd.Sredneaziatskogo gos. univ. 1952. 45 p.(Taskent. Universitet. Trudy Sredneaziatskogo gosudarstvennogo universiteta, no.26, Biologicheskie nauki, no.11) (MLRA 9:2)

1.Deystvitel'nyy chlen AN UzSSR (for Zakhidov, Korovin)
(Grasses)

GORSHKOVA,S.G.; PYATAYEVA,A.D.

New species of Perovskia from western Tien Shan. Bot.mat. Gerb. no.16:290-292 '54. (MLRA 8:9)
(Tien Shan--Herbs)

PYATAYEVA, A.D.

New plants of Turkmenia. Bot.mat.Gerb. 17:43-44 '55. (MLRA 9:5)
(Turkmenistan--Botany)

ПЯТАЕВА, А.Д.

GRANITOV, I.I.; PYATAYEVA, A.D.

Vegetation, natural pastures, and meadows in Kashka-Darya Province. Izv. Uzb. fil. Geog. ob-va 2:134-149 '56. (MIRA 11:4)
(Kashka-Darya Province--Plants)
(Kashka-Darya Province--Pastures and meadows)

DYATLOVA, A.D.

GRANITOV, I.I.; [illegible] A.D.

Main features of the vegetation cover of Kashka-Dar'ya Province.
Trudy SAGU no.80:85-91 '56. (MLRA 10:4)
(Kashka-Dar'ya Province--Phytogeography)

PYATAYEVA, A.D.; GRANITOV, I.I.

On the nature of ephemerial plants. Nauch. trudy TashGU no.193: 141-153 '62. (MIRA 16:7)

(Soviet Central Asia—Desert flora)

GUSHCHIN, P.O.; PYATAYEVA, A.D., dotsent, otv. red.

[Dynamics of the development and morphology of cotton; juvenile period]. Dinamika razvitiia i morfologiia khlopchatnika; iuvenil'nyi period. Tashkent, Izd-vo Sam GU, 1962. 67 p. (Tashkent. Universitet. [Nauchnye trudy], no.196. Biologicheskie nauki, no.39). (MIRA 16:6)

(Cotton)

PYATAYEVA, A.D.

Historical basis for the present state of Scorzonera tau-saghyz Lipschiz et Bosse in the mountains of Kara-Tau. Trudy TashGU no.187:42-46 '61. (MIRA 15:3)

1. Tashkentskiy gosudarstvennyy universitet imeni V.I.Lenina.
(Kara-Tau--Scorzonera)

PYATCHIN, N.F.

First results of regional seismic prospecting in the southern part of the Irkutsk amphitheater. Geol.nefti 2 no.9:64-67 S '58.
(MIRA 11:10)

1.Vostochno-Sibirskiy neftyanoy institut geofizicheskikh metodov razvedki.
(Irkutsk Province--Prospecting--Geophysical methods)
(Seismic waves)

PYATENKO, E. L.

Respiration and loss of dry substance by grains during storage. N. Ya. Festa, V. N. Delidovich, and E. L. Pyatenko. *Trudy Vsesoyus. Nauch. Issledovatel. Inst. Zerna i Produkt. Pererabotki* 1953, No. 25, 129–38; *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 2783.—Wheat grains with original moisture content of 18.5–18.6% lost on the av. 0.16% of the dry matter in 13 days' storage at 25°; wheat grains with a 13.3–13.8% moisture lost 0.001–0.002% of the dry substance in 90 days' storage. At lower storage temp. rate of respiration and loss in dry substance are reduced. The same is true of oats. B. S. Levine

PYATENKO, V., polkovnik

Were the hopes of the readers justified? Voen. vest 42 no.2:124-127 F '63. (MIRA 17:2)

PYATENKO, V., polkovnik; SHISHOV, V., podpolkovnik; OLESHKO, S., mayor

Solution for the problem published in No.7 of "Voennyi Vestnik."
Voen. vest. 40 no.11:22 N '60. (MIRA 14:11)
(Tactics--Problems, exercises, etc.)

MYASNIKOV, L.A., kand.med.nauk; PYATENKO, V.I.

Effect of anticoagulants on the blood lipid level in coronary atherosclerosis. Sov.med. 25 no.7:31-35 Jl '61. (MIRA 15:1)

1. Iz gospital'noy terapevticheskoy kliniki (dir. - prof. P.Ye. Lukomskiy) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(CORONARY HEART DISEASE) (LIPIDS)
(ANTICOAGULANTS (MEDICINE))

MYASNIKOV, L. A., kand. med. nauk; PYATENKO, V. I.

Thyrotoxicosis and atherosclerosis. Terap. arkh. 34 no.4:57-61 '62. (MIRA 15:6)

1. Iz gospital'noy terapevticheskoy kliniki (dir. - prof. P. Ye. Lukomskiy) II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova.

(HYPERTHYROIDISM) (ARTERIOSCLEROSIS)

L 14159-66 EWT(m)

ACC NR: AP6001313 SOURCE CODE: UR/0248/65/000/009/0026/0032

AUTHOR: Tsarapkin, L. S.; Poryadkova, N. A.; Labzina, N. G.; Alekseyeva, S. I.; Pyatenko, V. S. 43 B

ORG: Institute of Medical Radiology, AMN SSSR, Obninsk (Institut meditsinskoy radiologii AMN SSSR)

TITLE: A study of the processes of cell restoration after primary cytogenetic injuries 19

SOURCE: AMN SSSR. Vestnik, no. 9, 1965, 26-32

TOPIC TAGS: radiation damage, cytology, ionizing radiation, radioprotective agent, mitosis

ABSTRACT: Irradiation induces potential injuries in chromosomes that are capable of restoration. Irreparable injuries take place at the time of chromosome reduplication. The nature--conservative (impaired) or semiconservative (normal)--of the chromosome aberrations varies with the type of fracture undergone by the chromatids in reduplication of the chromosomes. The type of chromosomes formed after redupli-

UDC: 612.014.482.4 : [612.014.24 : 612.6.03

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L 14159-66

ACC NR: AP6001313

cation depends on a number of conditions, e. g., the irradiation dose. The conservative type of chromosome formation is a reversible phenomenon and the transition to the normal, semiconservative type occurs mainly during the first mitosis after irradiation. The results of tests of five groups of chemical compounds for their radioprotective or radiosensitizing effect on pea seeds and shoots are briefly described and tabulated. Most of the agents were able to accelerate or inhibit the spontaneous processes of cell restoration when used after irradiation. The authors also tested the effect of various concentrations of oxidized oleic acid on unirradiated and irradiated cells of Ehrlich's ascites carcinoma. In unirradiated cells, an increase in the concentration of the acid up to a certain point, increased the number of cells with chromosome aberrations. Irradiated cells also exhibited a relationship between the effect and the concentration of the acid. Orig. art. has: 2 figures, 3 tables.

SUB CODE: 06/ SUBM DATE: 05Jun65/ ORIG REF: 004/ OTH REF: 013

Card 2/2

PYATENKO, V. I., TARUSOV, B. N.

Catode luminescence of normal and cancerous cells. Biofizika 9 no. 1:134-135 '64. (MIRA 17:7)

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Metrics of $CaZrTi_2O_7$ crystal lattices. Kristallografiia 9 no.1:98-100 Ja-F '64. (MIRA 17:3)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR.

PYATENKO, Yu.A.

Quantitative relations in structures deriving from the fluorite type. Zhur.strukt.khim. 4 no.5:708-713 S-O '63. (MIRA 16:11)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.

PYATENKO, Yu.A.; VORONKOV, A.A.

Formula of gagarinite. Zhur.strukt.khim. 3 no.6:720-721 '62.
(MIRA 15:12)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.

(Minerals) (Crystallography)

VORONKOV, A.A.; SHUMYATSKAYA, N.G.; PYATENKO, Yu.A.

Crystalline structure of gagarinite. Zhur.strukt.khim. 3 no.6:691-698 '62. (MIRA 15:12)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.
(Minerals) (X-ray crystallography)

KOGAN, B.I.; KAL'ZHANOVA, Ye.G.; SAL'TINA, L.V.; SOLODOV, N.A.; DMITRIYEVA, O.P.; Prinimali uchastiye: UKHANOVA, N.I.; PERVUKHINA, A.Ye.; KAZANTSEVA, V.G.; ULANOVSKAYA, V.D.; VLASOV, K.A., glav. red.; LIZUNOV, N.V., otv. red.; PYATENKO, Yu.A., otv. red.; SALTYKOVA, V.S., otv. red.; SLEPNEV, Yu.S., otv. red.; FABRIKOVA, Ye.A., otv. red. PODOSEK, V.A., red. izd-va; GOLUB', S.I., tekhn. red.

[Rare alkali metals (lithium, rubidium, and sesium); a bibliography on their geochemistry, mineralogy, crystal chemistry, geology, the analytic methods of their determination, and their economics]Redkie shchelochnye metally (litii, rubidii i tsezii); bibliografiia po geokhimii, mineralogii, kristallokhimii, geologii, analiticheskim metodam opredeleniia i ekonomike. Sost. B.I.Kogan i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 327 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. 2. Chlen-korrespondent Akademii nauk SSSR (for Vlasov).

(Bibliography--Alkali metals)

PYATENKO, YU A.

PYATENKO, UY. A. -- "The Crystallochemistry and Mineralogy of Chkalovite." Moscow Order of Lenin and Order of Labor Red Banner State U imeni M. V. Lomonosov. Geological Faculty. Moscow, 1955. (Dissertation for the Degree of Candidate in Geologicomineralogical Sciences)

SO: Knizhnaya Letopis', No 1, 1956, pp 102-122, 124

Pyatenko, Yu. A.

USSR/ Physical Chemistry - Crystals B-5

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7269

Author : Pyatenko, Yu.A., Bokiy, G.B., and Belov, N.V.
Inst : Academy of Sciences USSR
Title : Radiographic Investigation of the Structure of Chkalovite

Orig Pub : Dokl. AN SSSR, 1956, Vol 108, No 6, 1077-1080

Abstract : Radiographic methods (X-ray goniometer and oscillation method, using Fe-K_α, Cu-K_α, and Mo-K_α radiation) have been applied to the investigation of the structure of Chkalovite $Na_2(BeSi_2O_6)$. The crystals are rhimbic (pseudotetragonal) with lattice parameters: a 21.1, b 21.1, c 6.87A, d (exper.) 2.66, Z = 24.; the space group notation is F2dd. The structure was determined by the interpretation of the P(uw) and P(vw) projections and cross-sections P(uv0) and P(uv$\frac{1}{4}$) (assuming the structure to be analogous to β-cristobalite and using crystal structure analysis); the results were refined by the

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Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7269

application of successive approximations in carrying out a Fourier analysis. The structure of chkalovite appears to be derived from that of β-cristobalite. The filling of 2/3 of the total number of Lavsov polyhedra by Na atoms and the substitution of 1/3 of the Si atoms by Be atoms lead to a tripling of the a and b periods in chkalovite compared with the edge lengths of β-cristobalite. This leads to a small displacement of the atomic coordinates from their ideal positions.

VORONKOV, A.A.; PYATENKO, Yu.A.

Crystal structure of vlassovite. Kristallografiia 6 no.6:937-943 N-D '61. (MIRA 14:12)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.

(Silicates)
(Crystallography)

PYATENKO, Yu.A.

Numerical characteristics in X-raying by the powder method.
Trudy Inst. min., geokhim. i kristallokhim. red. elem. no.6:
86-88 '61. (MIRA 15:3)
(X-ray crystallography)

PUDOVKINA, Z.V.; PYATENKO, Yu.A.

Crystal structure of non-metamict orthite. Dokl. AN SSSR 153 no.3:695-698 N '63. (MIRA 17:1)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR. Predstavleno akademikom N.V. Belovym.

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystal structure of narsarsukite. Kristallografiia 4 no.4:563-573 Jl-Ag '60. (MIRA 13:9)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.
(Narsarsukite)

BORODIN, L.S.; BYKOVA, A.V.; KAPITONOVA, T.A.; PYATENKO, Yu.A.

Recent data on zirconolite and its niobium variety. Dokl. AN SSSR 134 no.5:1188-1191 O '60. (MIRA 13:10)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov Akademii nauk SSSR. Predstavleno akademikom N.V.Belovym.
(Afrikanda region--Zirconolite)
(Aldan Plateau--Zirconolite)

PYATENKO, Yu.A.

Normal and defective structures of the pyrochlore type. Zhur. strukt.khim. 2 no.5:591-596 S-O '61. (MIRA 14:11)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.

(Pyrochlore) (Crystallography)

PYATENKO, Yu.A.; VORONKOV, A.A.

Vlasovite, a zirconium silicate with a new type of silicon-oxygen radical. Dokl. AN SSSR 141 no.4:958-961 D '61. (MIRA 14:11)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR. Predstavleno akademikom N.V. Belovym.
(Lovozero tundras--Zirconium silicates)
(Minerals)

ALEKSANDROV, V.B.; PYATENKO, Yu.A.

Roentgenometric examination of metamict titanium niobates. Dokl. AN SSSR 124 no.1:179 Ja '59. (MIRA 12:1)

1.Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR. Predstavleno akademikom N.V. Belovym.
(Euxenite) (Polycrase) (Betafite)

3(8) SOV/20-124-1-51/69

AUTHORS: Aleksandrov, V. B., Pyatenko, Yu. A.

TITLE: X-Ray Examination of Some Metamict Titano-Niobates (Rentgenometricheskoye issledovaniye nekotorykh metamiktnykh titanoniobatov)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 179-182 (USSR)

ABSTRACT: Among the complex oxides of Y, TR, Ti, Nb and Ta, two isomorphic series of rhombic minerals can at present be designated: a. the euxenite-polycrase series and b. the priorite-blomstrandine series. The two series have a very closely related chemical composition, which, however, is often hidden by the large compositional deviation of particular members. The formula AB_2X_6 expresses the composition, where A — Y and TR as well as Th, U and Ca; B — Nb, Ti and Ta; X — O and OH. The position of the mineral in the series is determined by the components of B. The primary basis for distinguishing the minerals of this series, aside from a few significant chemical differences, is the morphological characteristic (Ref 1). The possibility of membership in an isomorphic series for these minerals is contended in

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the literature. This contention instigated the authors' X-ray studies of these minerals. For this purpose, 18 samples were used (from the Mineralogy Museum, AS USSR, the Moskovskiy geologorazvedochnyy institut = Moscow Geologic Prospecting Institute, and the authors' own collection). The place of single minerals in this or that series was verified. All the samples showed a completely similar diffraction pattern with the exception of an isometric phase (of the CaF_2 structural type or its derivatives) derived by roasting metamict euxenite, poly and blomstrandine at 1100°. The complete reflection which th_ pattern showed was well indexed on the basis of the rhombic cell. The parameters for these samples are given in Table 1.
The results of this study confirm earlier conclusions in regard to the restoration of the original structure of euxenite by roasting at 1100° (Ref 4). Thus the lines of the rhombic phase found in samples roasted at 1100° are characteristic of the minerals concerned. The rhombic phase itself corresponds to the structure up to the metamict breakdown. The unity of structure and of chemical composition signifies that all the studied minerals belong in the same isomorphic series. On the basis of priority, the names euxenite and poly were kept for the whole series. The X-ray diagram of samples roasted for one hour

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is a reliable diagnostic means for determining the minerals in question. There are 1 table and 5 references, 1 of which is Soviet.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov Akademii nauk SSSR
(Institute for Mineralogy, Geochemistry, and Crystallochemistry of Rare Elements, Academy of Sciences, USSR)

PRESENTED: July 30, 1958, by N. V. Belov, Academician

SUBMITTED: July 30, 1958

IVANOV, V.V.; PYATENKO, Yu.A.

About the so-called kësterite. Zap.Vses.min.ob-va 88 no.2: 165-168 '59. (MIRA 12:8)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR, Moskva.
(Stannite)

SOV/70-4-2-23/36

AUTHORS: Pyatenko, Yu.A. and Aleksandrov, V.B.

TITLE: On the Recrystallisation Texture of a Metamict Mineral (O teksture rekristallizatsii metamiktnogo minerala)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 2, pp 248 - 249 + 1 plate (USSR)

ABSTRACT: It was found that certain specimens of one of the polycrases, $Y(Ti,Nb)_2(O,OH)_6$, both those with faces and those without, gave, after annealing at 500° Laue photographs with sharp spots. This is unusual as attempts to re-establish the monocrystallinity of a metamict mineral usually fail. The sharp spots here, however, are due not to a single crystal but to an axial recrystallisation texture. This was confirmed by the lack of change when the specimen was rotated about the texture axis, here perpendicular to the beam. Lauegrams show the symmetry C_l (line symmetry perpendicular to the texture axis).

The texture axis must coincide with one special direction of the crystallites. The texture axis was measured as $t_1 = 5.50$ and $t_2 = 5.1$ kX in agreement with the cell

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dimensions - a = 5.55, b = 14.62, c = 5.19 kX of the orthorhombic cell of polycrase obtained by indexing the powder photograph. In this way it was confirmed that it is in principle possible to index the X-ray diagrams of annealed specimens of the euxinite - polycrase series using the morphological values of a:b:c as annealing (at 1100 °) re-establishes their former structure. Texture formation is seen as one of the stages passed through by minerals in metamict breakdown. There are 3 figures and 2 references, 1 of which is Soviet and 1 English.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov (Institute of the Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements)

SUBMITTED: August 29, 1958

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystalline structure of calcium zirconium titanate - a new derivative of the structural type CaF_2 - CeO_2. Kristallografiia 6 no.2:196-199 Mr-Ap '61. (MIRA 14:9)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov.
(X-ray crystallography) (Calcium zirconium titanate)

24.7100

77125
SOV/70-4-6-26/31

AUTHORS: Pyatenko, Yu. A., Pudovkina, Z. V.

TITLE: Concerning the Crystal Structure of Narsarsukite. Brief Communications

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, p 929 (USSR)

ABSTRACT: The structural study of $Na_2(Ti,Fe)(O,OH)[Si_4O_{10}]$ crystals by X-ray diffraction methods confirmed their tetragonal symmetry, a = 10.72 A, c = 7.99 A, and 4 molecular weights per unit cell. The space group proved to be I 4/m. Determination of the atomic coordinates and precision of the 14 parameters (by interatomic vector synthesis and electron density analysis) is still in process. The structure as a whole is formed of two types of chains. (Ti,Fe) atoms, each developed by 6 O atoms which form an octahedron, are linked into infinite chains along the fourfold rotor. The $(Ti,Fe)O_6$ octahedra are linked laterally by rings of 4 tetrahedrally coordinated Si atoms. One

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vertex of each two opposite tetrahedra in the ring is up and of the two others down, and the O atoms at these vertices, being shared by the rings above and below, link the rings into infinite quadruple chains along the same fourfold rotor. The spaces between the two types of chains are occupied by Na atoms situated at two different positions. In both positions Na atoms are in body centers of trigonal prisms formed by the adjacent O atoms. There is 1 figure; and 2 references, 1 German, 1 U.S. The U.S. reference is: B. E. Warren, C. R. Amberg, Am. Miner., 19, 546, 1934.

ASSOCIATION: Institute of Mineralogy, Geochemistry, and Crystal Chemistry of Rare Elements (Institut mineralogii, geokhimii i kristallokhimii redkikh elementov)

SUBMITTED: September 25, 1959

PYATENKO, Yu. F.

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PHASE I BOOK EXPLOITATION SOV/5740

Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov

Voprosy mineralogii, geokhimii i genezisa mestorozhdeniy redkikh elementov (Problems in Mineralogy, Geochemistry, and Deposit Formation of Rare Elements) Moscow, Izd-vo AN SSSR, 1960. 253 p. (Series: Its: Trudy, vyp. 4) Errata printed on the inside of back cover. 2,200 copies printed.

Chief Ed.: K. A. Vlasov, Corresponding Member, Academy of Sciences USSR;
Resp. Ed.: V. V. Lyakhovich; Ed. of Publishing House: L. S. Taranov;
Tech. Ed.: P. S. Kashina.

PURPOSE: This book is intended for geologists, mineralogists, and petrographers.

COVERAGE: This is a collection of 23 articles on the formation, geology, mineralogy, petrography, and geochemistry of deposits of rare elements in Siberia and [Soviet] Central Asia. The distribution and characteristics of rare elements found in these areas as well as some quantitative and qualitative methods of investigating the rocks and minerals in which they are found,

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Problems in Mineralogy (Cont.) SOV/5740

or with which they are associated, are discussed. Two articles present an economic investigation of the possibilities of industrial extraction and utilization of selenium, tellurium, and hafnium. No personalities are mentioned. Each article is accompanied by references.

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Problems in Mineralogy (Cont.) SOV/5740

MINERALOGY AND PETROGRAPHY

Problems in Mineralogy (Cont.) SOV/5740

Problems in Mineralogy (Cont.) 807/5740

ECONOMICS OF RARE ELEMENTS

AVAILABLE: Library of Congress

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11-14-61

S/192/61/002/006/003/004
D228/D304

AUTHOR: Pyatenko, Yu. A.

TITLE: Structures derived from the cubic type CaF_2- CeO_2

PERIODICAL: Zhurnal strukturnoy khimii, v. 2, no. 6, 1961, 746-748

TEXT: The author discusses certain structures derived from the cubic type CaF_2- CeO_2, a problem, whose conception was somewhat augmented by his discovery in previous research of the mineral calcirtite-$Ca_2Zr_5Ti_2O_{16}$. According to N. V. Belov the general formula for this type of derived structure is M_4X_{8-x}; the derivatives include pyrochlore-type minerals with an equal number of cubes and octahedra when x = 1, and Sb_2O_3, As_2O_3, Y_2O_3, and other structures, in which octahedral forms are solely developed, when x = 2. Calcirtite, however, has a tetragonal symmetry and is the first

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Structures derived from ...

non-cubic representative of this class. It forms cubes, octahedra, and heptahedra (Abstractor's note: Literally "hepta-apices"), which are respectively occupied by all the Ca atoms, all the Ti atoms, and 4/5 of the Z atoms. The essential features of the derived structures examined by the author include: The preservation of the three-dimensional staggered sequence in the distribution of the Pauling polyhedra; the equivalence in the number of filled and vacant polyhedra; the deformation of the ideal cubic packing of the anions which, however, does not alter the cation coordination-numbers; the tendency for the ratio p of the number of cations to anions to lie within the limits $1/2 \leq p < 2/3$; and the relatively high valency of the cations. A new formula--$(M'M''...)_4X_7$, and not $A_2B_2X_7$-- is proposed to explain the formation of a particular derived structure. All Pauling octahedra are empty in the new structure, the number of occupied cubes and heptahedra amounting to 8 and 64 respectively. Such a structure is considered to be character-

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Structures derived from ...

istic of those compounds containing an excess of 7-coordination Zr atoms and cations with a valency of < 4. The compound $(Zr,Ca)_4O_{8-x}$, formed in calcinating ZrO_2 in the presence of small quantities of CaO, may correspond to one of the theoretically possible structures. Hence, the stabilization of cubic ZrO_2 represents the formation of an independent structure, only formally related to the fluorite-cerianite type, to which the high-temperature modification of ZrO_2 belongs. In conclusion the author notes that $Ca_2Zr_2Ti_2O_{16}$--the synthetic analog of calcirtite--has not been distinguished in the cubic-ZrO_2 region of structural diagrams for the system CaO-ZrO_2-TiO_2 in previous research. There are 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: A. E. Van Arkel, Physica 4, 286 (1924); L. W. Coughanow et al, J. Res. Mat. Bur. Standards 54, 4,

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Structures derived from ...

191 (1955).

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov (Institute of the Mineralogy, Geochemistry, and Crystal-chemistry of Rare Elements)

SUBMITTED: August 5, 1961

Card 4/4

SOV/70-4-2-10/36

AUTHOR: Pyatenko, Yu.A.

TITLE: On the Crystal Chemistry and Certain Peculiarities of Minerals of the Pyrochlore Group (O kristallokhimii i nekotorykh osobennostyakh mineralov gruppy pirokhlora)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 2, pp 204-208 (USSR)

ABSTRACT: Pyrochlore minerals are cubic with the general formula $A_2B_2X_7$, where A = Na, Ca, Th, U, TR^{3+} B = Nb, Ta, Ti and $X^{2-} = O^{2-}$, OH, F . A cations are sometimes deficient by (for example) replacement of $2Ca^{2+}$ by U^{4+} (primary deficit) or O^{2-} by OH^{1-} (secondary deficit). The metamict state is characteristic, one of the peculiarities leading to this state being anion defects. The structure is related to that of fluorite, as are also the structures of CeO_2, ThO_2 and UO_2. Regarded as linked polyhedra fluorite is made up (doubled cell) of 32 CaF_8 cubes linked by their edges. If some of the F (or O) atoms are removed, half of all cubes are deprived of two opposite corners and thus turned into compressed octahedra: this gives the idealised

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On the Crystal Chemistry and Certain Peculiarities of Minerals of the Pyrochlore Group

structure of pyrochlore. The symmetry becomes $Fd\bar{3}m$ instead of the $Fm\bar{3}m$ of fluorite. Each corner of any polyhedron belongs simultaneously to 3 polyhedra (a common point of two cubes and two octahedra -- the numbers of cubes and octahedra being equal). Hence, to a cation at the centre of a cube belong $1/4 \cdot 8 = 2$ anions (X) and for a cation in an octahedron $1/4 \cdot 6 = 3/2$ X. This gives for the whole structure a formula A_4X_7 or, differentiating between cubes and octahedra, $A_2^{cube}B_2^{oct}X_7$.

In CaF_2 Paulings's rules on the local compensation of valency are fulfilled. Removing some of the cations leads to a different level of stability. Belov has shown the anion pattern of pyrochlore to be halfway between the all-cubes structure of CaF_2 and senarmonite-arsenolite where all polyhedra are squashed octahedra. But pyrochlores need not be exactly halfway between these, depending on

the O content. It is thought that there are usually more octahedra than cubes in pyrochlores. Removal of O disturbs the continuity of the close-packing of the anions. Substitution of U^{+4} for $2Ca^{+2}$ makes the structure still less stable. If there is U^{+4}, Th^{+4} or TR^{+3} the minerals are often metamict. X-ray diffraction distinguishes various types of pyrochlores, particularly by the number of reflexions. Microlites and pyrochlores show most reflexions and are often non-metamict, pyrochlores giving a CaF_2 type of pattern but with more reflexions. There is a somewhat closer resemblance to CeO_2. As the relative scattering of the cations is large in comparison with the total scattering power in pyrochlore there is the peculiarity that all strong reflexions have even indices. Other reflexions indicate the degree of order in the structure. For full order the space group is $Fd\bar{3}m$ and for full disorder $Fm\bar{3}m$. In X-ray photographs from many annealed metamict

minerals groups of lines with odd indices are weakened or even disappear and there is a transition to a smaller cell a = 5.1-5.2. This is observed sometimes on annealing orthorhombic metamict minerals (for example, euxenite). There are 2 figures and 5 Soviet references.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov (Institute for the Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements)

SUBMITTED: October 6, 1958

TIKHONENKOV, I.P.; KUKHARCHIK, M.V.; PYATENKO, Yu.A.

Wadeite from the Khibiny Massif and the conditions of its formation.
Dokl. AN SSSR 134 no.4:920-923 O '60. (MIRA 13:9)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov Akademii nauk SSSR. Predstavleno akad. N.V.Belovym.
(Khibiny Mountains--Wadeite)

PYATENKO, Yu.A.; PUDOVKINA, Z.V.

Crystal structure of narsarsukite. Kristallografiia 4 no.6:929 N-D '59. (MIRA 14:5)

1. Institut mineralogii, geokhimii i krisallokhimii redkikh elementov.
(Narsarsukite)

VORONKOV, A.A.; BATALIYEVA, N.G.; PYATENKO, Yu.A.

Crystalline structure of stilwellite. Kristallografiia 9 no.4: 553-554 Jl-Ag '64. (MIRA 17:11)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR.

PYATENKO, Yu.A.

Some aspects of the crystallochemical approach to the derivation of chemical formulas of minerals. Zap. Vses. min. ob-va 94 no.6:655-664 '65. (MIRA 18:12)

PYATENKO, Yu.A.

Isomorphism of atoms and some of its mineralogical consequences. Geokhimiia no.4:414-420 Ap '65. (MIRA 18:7)

1. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov, Moskva.

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Mechanized placement of concrete into mobile molds of round silos.
Muk.-elev. prom. 27 no.1:14-15 Ja '60. (MIRA 14:1)

1. Gosudarstvennyy institut Promzernoproyekt.
(Concrete construction) (Grain elevators)

SHUKHMAN, Z.; SHTAMM, V.; SHLEYMOVICH, S.; KALMYKOV, P.; RAL'TSEVICH, V.; PYATENKOV, V.; POTEMIN, I.; SOKRATOV, Yu.

There are all conditions for building strong and good elevators. Muk.-elev. prom. 29 no.8:18-19 Ag '63. (MIRA 17:1)

1. Zamestitel' upravlyayushchego trestom TSentroelevatormel'stroy (for Shtamm). 2. Nachal'nik sektora organizatsii stroitel'nykh rabot Gosudarstvennogo instituta Promzernoproyekt (for Ral'tsevich). 3. Starshiy inzh. TSentral'nogo konstruktorskogo byuro tresta Spetselevatormel'montazh (for Potemin). 4. Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdeleniya tresta Petropavlovskelevatormel'stroy (for Sokratov).

POZIN, A.A.; TOKAREVA, T.Ye.; KOCHKIN, K.I.; PYATETSKAYA-SHAPIRO, I.P.

Mechanized method for the manufacture of warm rubber boots. Kauch. i rez. 24 no.4:32-35 Ap '65. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy.

USSR

200/116(NA) 621.919 + 621.94

Broaching Attachment on a Lathe

Stanki i Instrum. (5),24 May,1954 U.S.S.R.

B.G. Pyatetskiy

The technological features and operational characteristics of a broaching attachment used on the thread cutter D62M are described. Broaching with this new attachment is carried out at 120-150 rpm of the spindle, which corresponds to a linear rate of broaching of 0.96 - 1.2 m/min. The high productivity and the simplicity in the construction of the attachment open new usages for this device.

PYATETSKIY, B.

Execution of special kinds of lathe work. Tekhsov.MTS 15 no.3: 1-15 F '54. (MLRA 7:2)
(Turning)

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Final grinding of tempered cast iron. Sel'khozmashina no.4: 3 of cover Ap '56. (MLRA 9:7)

1.Moskovskiy mekhanicheskiy zavod Ministerstva sel'skogo khozyaystva RSFSR.
(Grinding and polishing)

Pyatetskiy, B G

AID P - 5199

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 21/24

Author : Pyatetskiy, B. G.

Title : Screwdriver for difficult-to-reach places

Periodical : Stan. i instr., 7, 44, Jl 1956

Abstract : A screwdriver with two spring-blades is used at the Moscow Machine Plant for spots which are difficult to reach. Two drawings.

Institution : As above

Submitted : No date

PYATETSKIY, B.G.; ZELENETSKAYA, L.V., red.; LEVINA, L.G., tekhn.red.

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(Lathes)

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