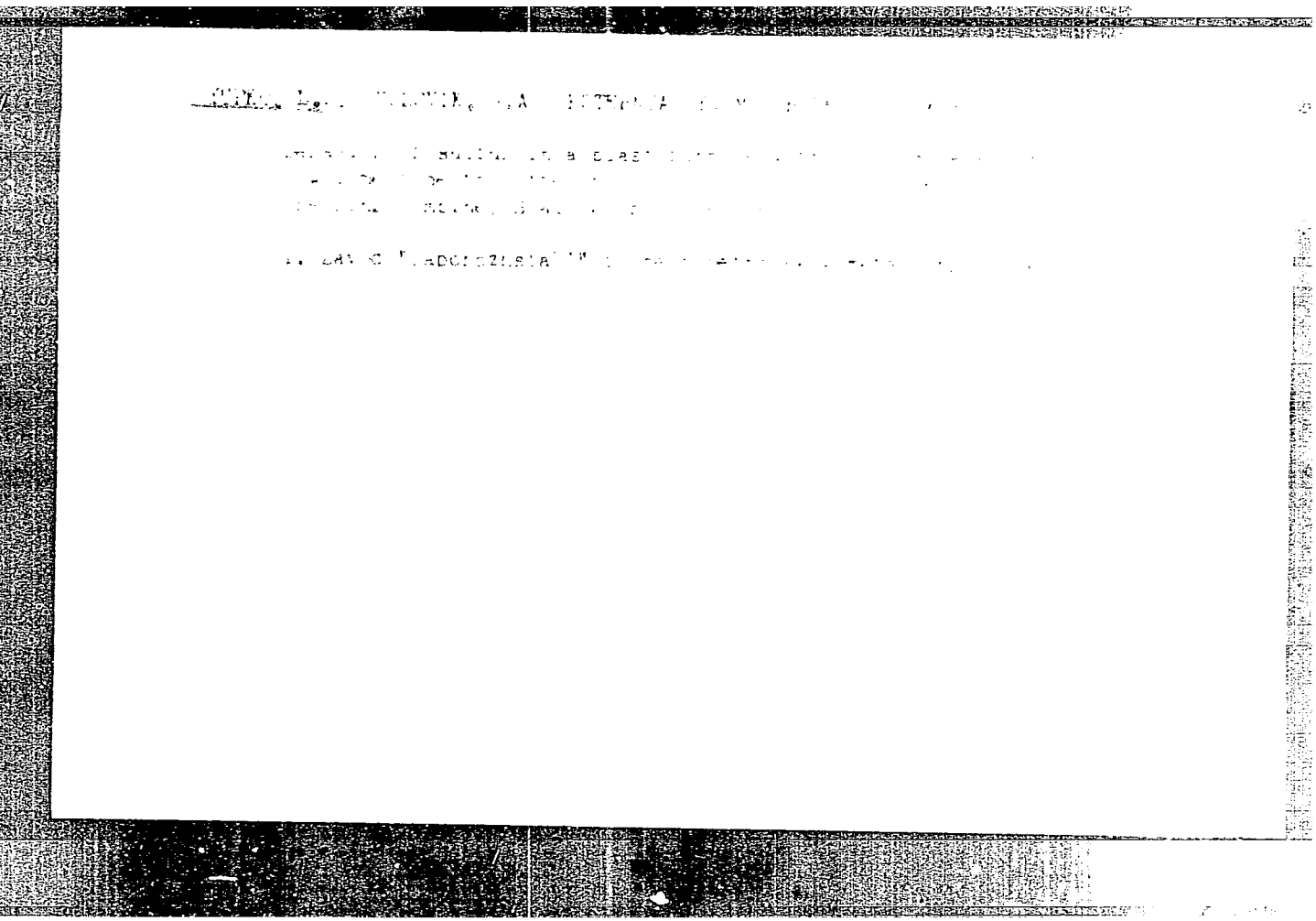
YUPKO, L.D.; BALON, I.D.; KAYSTRO, N.P.; LITVINENKO, V.I.; ONOPRIYENKO, V.P., kand. tekhn. nauk; ROMANENKO, N.T.; TULUYEVSKAYA, T.A.

Arrangement of additional tuyeres, and their effect on blast furnace performance. Sbor. trud. UNIIM no.9:71-98 '64
(MIRA 18:1)



ACCESSION NR: AT4010700 S/2601/63/000/017/0209/0210

AUTHOR: Kocherzhinskiy, Yu. A.; Kobzenko, G. F.; Pan, V. M.; Sviridenko, V. K.; Yupko, L. M.

TITLE: Calibration of the VR-5/20 thermocouple according to critical points up to 3000C. Determination of the melting points of vanadium and niobium of high purity

SOURCE: AN UkrRSR. Insty*tut metalofizy*ky*. Sbornik nauchny*kh trudov, no. 17. 1963. Voprosy* fiziki metallov i metallovedeniya, 209-210

TOPIC TAGS: thermocouple, VR-5/20 thermocouple, thermocouple calibration, vanadium, niobium, vanadium melting point, niobium melting point, tungsten rhenium alloy

ABSTRACT: After calibration studies using the melting points of silver, gold, iron, nickel, palladium, platinum, chromium, molybdenum, and tantalum had shown that the VR-5/20 thermocouple (consisting of electrodes made of tungsten alloys containing 5 and 20% rhenium, respectively) could be used for the accurate determination of temperatures up to 3000C, the authors applied the technique of V. S. Mikheyev to the determination of the melting points of vanadium (1950C) and niobium (2520C). "In conclusion, the authors would like to thank A. M. Gurevich and Ye. I. Pavlova for making the thermocouple available." Orig. art.

Card 1/2

ACCESSION NR: AT4010700

has: 1 figure and 1 table.

ASSOCIATION: Insty*tut metalofizy*ky* AN UkrRSR (Metallophysics Institute, AN UkrRSR)

SUBMITTED: 00	DATE ACQ: 31Jan64	ENCL: 00
SUB CODE: ML	NO REF SOV: 003	OTHER: 001

Card 2/2

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.; YUPKO, L.M.

Chromium - silicon diagram. Stor.nauch.trud. Inst. metallofiz. AN URSR no.19:212-218 '64. (MIRA 18:5)

calibration

ABSTRACT: On the basis of the tungsten - rhenium phase diagram, ... distinguish three types of thermocouples which can be prepared ... system: (1) thermocouples from two solid solutions such as VR-5/..., thermocouples from the pure components (VR-0/100), and (3) thermocouples from pure tungsten and a solid solution of rhenium in tungsten with a ... content (they are used for the measurement of the highest temperatures, 3100-3200C, and are designated VR-0/3, VR-0/5, and VR-0/8 ...

Card 1/2

L 23620-65
ACCESSION NR: AT5002785

calibration graph (thermo-emf versus temperature) of one [illegible] the latter type, the VR-5/20, which they plotted on the basis of points of pure metals and transition points of iron in the course of heating. The VR-5/20 thermocouple may be used to measure temperatures 3000C and has a satisfactory sensitivity. "The authors express [illegible] tion to A. M. Gurevich, S. K. Danishevskiy, and Ye. I. Pevzner [illegible] couples supplied for the study." Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 05Aug64 ENCL: 00

NO REF SOV: 005 OTHER: 001

VR-3
VR-20
VR-8
VR-100

Card 2/2

Card 3/3

ACC NR: AT6036277 SOURCE CODE: UR/0000/66/000/000/0053/0055

AUTHOR: Svechnikov, V. N.; Kocherzhinskiy, Yu. A.; Yupko, L. M.

ORG: Institute of Physics of Metals, AN UkrSSR (Institut metallofiziki, AN UkrSSR)

TITLE: Phase diagram of the $CrSi_2$-$MoSi_2$ system

SOURCE: AN UkrSSR. Struktura metallicheskikh splavov (Structure of metal alloys). Kiev, Izd-vo Naukova dumka, 1966, 53-55

TOPIC TAGS: chromium ~~disilicide~~ alloy, molybdenum ~~disilicide~~ containing alloy, silicon, alloy phase diagram

ABSTRACT: A series of 43 chromium disilicide-molybdenum disilicide alloys have been investigated. The alloys were melted from sintered molybdenum, electrolytic chromium, and commercial or semiconducting silicon. Twenty-one of the alloys contained semiconducting silicon. On the basis of the data obtained by various methods of physicochemical analysis, a phase diagram of $CrSi_2$-$MoSi_2$ system was plotted (see Fig. 1). The diagram is of a [illegible] type with [illegible]

Card 1/2

ACC NR: AT6036277

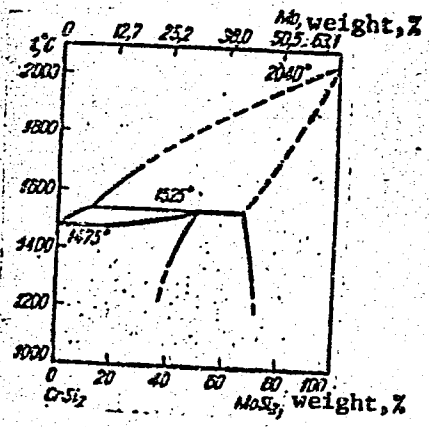


Fig. 1. Phase diagram of the $MoSi_2$-$CrSi_2$ system

ture of 1525 ± 25C. The existence of a double-phase region, between 40.5% and 70% of $MoSi_2$ has been confirmed. Orig. art. has: 3 figures.

SUB CODE: 07,11,20/ SUBM DATE: 22May65/ ORIG REF: 003/ OTH REF: 001/
ATD PRESS: 5106

Card 2/2

Yupko, V.L.

AID Nr. 983-5 5 June

ELECTRIC AND THERMOELECTRIC PROPERTIES OF SILICIDES OF TRANSITION METALS (USSR)

Neshpor, V. S., and V. L. Yupko. Poroshkovaya metallurgiya, no. 2, Mar-Apr 1963, 55-59. S/226/63/000/002/008/014

The temperature dependence of electric resistivity (in the 20-1000°C range) and of the thermal emf (in the 20-600°C range) of silicides of V (15.9, 25.2, and 51.5% Si), Mn (33.4, 23.0, and 51.0% Si), and Fe (14.2, 33.1, and 50.8% Si) and of Co_3Si (13.1% Si), $CoSi_2$ (48.9% Si), Ni_3Si (13.5% Si), Ni_2Si (19.1% Si), $ZrSi_2$ (38.5% Si), $TiSi_2$ (23.9% Si), Re_3Si, and ReSi has been studied at the Institute of Powder Metallurgy and Special Alloys of the Ukrainian Academy of Sciences. Silicides were obtained by the synthesis of components; the sintered specimens were prepared by hot compacting. Microscopic examination and the x-ray diffraction patterns showed the silicides to have a single-phase structure, except for Co_3Si, Ni_3Si, Ni_2Si, and Re_3Si, which had inclusions of a second phase concentrated along grain boundaries. The nature of the temperature dependence of the electric resistivity of $MnSi_2$, Mn_5Si_3, and ReSi showed these silicides to be semiconductors. The Fe_3Si and Co_3Si appeared to be ferromagnetic semimetals. The temperature dependence of the electric resistivity of all other silicides studied

Card 1/2

AID Nr. 983-5 5 June

ELECTRIC AND THERMOELECTRIC PROPERTIES [Cont'd] S/226/63/000/002/008/014

was characteristic for metallic conductors; the increase of resistivity with temperature was linear in V_3Si, Ni_2Si, and $CoSi_2$, but nonlinear in all other silicides. The absolute magnitude of thermal emf and its temperature dependence for most silicides studied were characteristic for compounds with metallic conductivity. In general, the temperature dependence of thermal emf was nonlinear and had maxima, which indicates the presence of positive and negative current carriers. The temperature dependence of thermal emf in $FeSi_2$, $MnSi_2$, and $ReSi_2$ was characteristic for doped semiconductors. In general, with increasing relative content of Si in the intermediate phases of Me-Si systems, the absolute values of thermal emf increased and the nature of their temperature dependence became more complex. This probably was caused by an increasing share of covalent bond in silicides and by their electron energy spectrum becoming more complex with increasing Si content. For Re_3Si the thermal emf in the entire range of temperatures tested was found to be zero, which makes this silicide a prospective material for high-temperature thermocouples. [MS]

Card 2/2

L 9909-63 EWT(q)/EWT(m)/BDS—AFFTC—JD/WW/JG

ACCESSION NR: AP3002705

AUTHOR: Neshpor, V. S.; Yapko, V. L.

TITLE: Investigation of preparation conditions and properties of barium disilicide

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. [illegible]

TOPIC TAGS: alkaline earth silicides, barium silicide, silicide preparation, semiconductor, refractory, high arc, thermal expansion coefficient, thermal conductivity

ABSTRACT: The preparation and physical properties of BaSi2 have been studied because of its semiconductor properties. BaSi2 was prepared in a vacuum at 1300—1400C by reduction of barium oxide with silicon. X-ray analysis indicated that at 1400C the composition of BaSi2 is stoichiometric; at higher temperatures sublimation of barium occurs. X-ray analysis showed that fine powders of BaSi2 have the BaSi sub 2 crystalline structure. Ultra[illegible]

Card 1/2

L 9[illegible]-65
ACCESSION NR: AP[illegible]

to the crystalline structu[illegible]
Compacted specimens, obtai[illegible]
[illegible]ace with a metallic lustre. Metallograph[illegible]
a composition primarily of [illegible]
[illegible] - [illegible] sup 2. [illegible]
[illegible] 100, and the thermal [illegible]
[illegible] sup -1)cal (mol)(deg)[illegible]. From measurements
temperature dependence at 20[illegible]
[illegible] counter with a resistivity [illegible]
[illegible] impurity to intrinsic conduction [illegible]
[illegible] determined from a plot [illegible] the temperature
[illegible] to be 0.40 ev. Absol[illegible] thermoelectric
[illegible] its [illegible] from temperatures [illegible]
[illegible] refraction, sensitivity [illegible]
[illegible] at 4000 A [illegible]
[illegible] from [illegible] of [illegible]
[illegible] thermal.
ASSOCIATION: none
SUBMITTED: [illegible]
SUB CODE: [illegible]
Card 2/2

L 16904-65 EWP(e)/EWT(m)/EPF(n)-2/EPR/EWP(t)/EWP(b)
AFMD(t)/AEDC(b)/AFWL/AS(mp)-2/ESD/ASD(a)-5/ESD(tp)/
AT/WH
ACCESSION NR: AP4047387

AUTHORS: Andreyeva, T. V.; Baranteeva, I. G.; Dodnik, Yu.

TITLE: Study of some physical properties of aluminum nitride

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 5, 19

TOPIC TAGS: aluminum nitride, specific electrical resistivity, thermal expansion coefficient, dielectric constant, thermocouple, dilatometer/ OMP 010 pyrometer, MGM 4 resistance

ABSTRACT: The temperature dependence of specific electrical resistivity, coefficient of thermal conductivity, coefficient of thermal

ABSTRACT: The temperature dependence of specific electrical resistance, coefficient of thermal conductivity, coefficient of thermal expansion of the dielectric constant, and the dielectric loss angle have been investigated. The measurements were made on ceramics with porosity of 10-20%, obtained by cold pressing and sintering in an atmosphere of nitrogen at 2173K. The specific electrical resistance measurements were made in a temperature range of 300-1073K on specimens with a diameter of 12-15 mm high, using an NOM-4 apparatus. The temperatures were measured with platinum--platinum-rhodium thermocouples. The specific resistance values decrease monotonically from 2.25 x 10^{11} at 673K to [illegible] x 10^{7} [illegible]

Card 1/2

L 16904-63
ACCESSION NR: AP4047387

The thermal conductivity was measured in the range of 30... perature the method described by V. S. Neshpor and I. G. ... Zh. No. 1, 1953) was used, and for high temperatures the ... Pustovalov (Zavodskaya laboratoriya, No. 9, 1093, 1957), ... measured by a pyrometer of the type OMP-019. A monotonic ... conductivity was observed in this regime. The frequency ... tric constant and the dielectric loss angle were measure... kilocycles to 26 megacycles. The dielectric constant drop... of about 300 kilocycles, and thereafter increased very ... of thermal expansion was measured in the range of 300-1... quarts dilatometer. The mean value of this coefficient ... 10^{-6}/C. The specimens were prepared by Yu. D. Ger...

[illegible] 10 /C. The specimens were prepared by Yu. D. Kopkin, Cr...
and 1 table.
ASSOCIATION: Institut problem materialovedeniya, Akademii ...
of Materials Research Problems, Academy of Sciences USSR)

SUBMITTED: 15May64

SUB CODE: MM NO REF SOV: 012

Card 2/2

AUG NR: AT [illegible]

[illegible] were measured and plotted [illegible]
[illegible] is proposed for LaCl3 Pr[illegible]
[illegible] four metal atoms and [illegible]
[illegible] participate in [illegible]
[illegible] and participate [illegible]
[illegible] strongest one in rare [illegible]
[illegible] bond. Orig. art. has: 2 figures and 3 [illegible]

SUBMITTED: 10Dec65 SUBM DATE: [illegible]

L 31877-66 EWT(l)/EWT(m)/ETC(f)/EWP(e)/EWP(t)/ETI IJP(c) WW/JD/JG/GD/AT/WH
ACC NR: AT6013558 (A) SOURCE CODE: UR/0000/65/000/000/0199/0204

AUTHOR: Padermo, Yu. B.; Barantseva, I. G.; Yupko, V. L.

ORG: Institute of Materials Science Problems, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Determination of thermal conductivity and electrical resistance of ZrC, HfC, NbC, and TaC at high temperatures

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soydeineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 199-204

TOPIC TAGS: zirconium, hafnium, niobium, tantalum, carbide

ABSTRACT: The thermal conductivity and the electrical resistance of ZrC, HfC, NbC, and TaC were determined in the 1370°-3270°K range. The measurements were made with an apparatus shown in figure 1. The samples were 8 mm in diameter and 15-18 mm in length. The hole depths were 3.5-3.7 and 1.8-2.0 ohm, their diameter was 0.9 mm, the distance separating them was approximately 5 mm, and the distance between the potential zones was 7-7.5 mm. The coefficient of thermal conductivity (λ) was calculated from the formula

$$\lambda = \frac{IU}{4\pi\Delta Tl} \cdot \frac{r_a^2 - r_b^2}{R^2},$$

Card 1/2

where I is the current in the sample, U is the potential difference on the sample portion of l in length, R is the sample radius, l is distance between potential zones used in potential difference determination, r_a and r_b are radii, $\Delta T=T_b-T_a$ is the temperature difference. The electrical resistance ρ was calculated from the formula

$$\rho=\frac{U}{I}\cdot\frac{\pi R^2}{l}.$$

The carbide samples composition is shown in a table. Orig. art. has: 4 figures, 2 tables, 2 formulas.

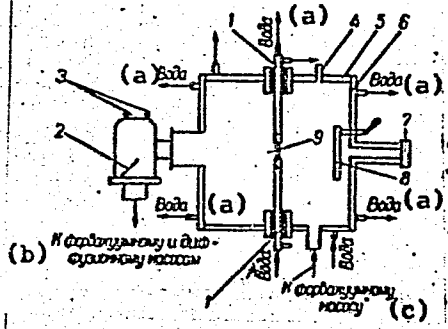


Fig. 1. 1--electrical lead; 2--vacuum valve; 3--vacuum tubes; 4--leak; 5--chamber housing; 6--front cap-flange; 7--visier; 8--visier glass protection plate; 9--sample.

a--water; b--to prevacuum and diffusion pump; c--to prevacuum line

SUB CODE: 11,07/ SUBM DATE: 03Jul65/ ORIG REF: 008/ OTH REF: 007

Card 2/2

L 32675-66 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AT6013567 (A) SOURCE CODE: UR/0000/65/000/000/0293/0296

AUTHOR: Paderno, Yu. B.; Dudnik, Ye. M.; Andreyeva, T. V.; Barantseva, I. G.; Yupko, V. L.

ORG: Institute of Material Science Problems, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Measurement of the thermal expansion coefficients of ZrC, HfC, NbC, and TaC at high temperatures

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 293-296

TOPIC TAGS: zirconium carbide, hafnium compound, tantalum compound, niobium compound, heat expansion, ~~OPN-19 micropyrometer~~ CARBIDE

ABSTRACT: The thermal expansion of zirconium, hafnium, niobium, and tantalum carbides was studied in the 1370°-3170°K range. The object of the work was to fill a gap in the literature. The thermal expansion was measured in a vacuum chamber (10^{-2} mm Hg) in which carbide samples (8 mm in diameter and 15-18 mm in length) were heated electrically. The carbide samples were prepared by hot-pressing technique and the temperature was measured with an OPN-19 micropyrometer. The individual carbide samples had the

Card 1/2

L 32675-66

ACC NR: AT6013567 0

following porosities: ZrC--19 to 24%, HfC--22 to 28%, NbC--13 to 18%, and TaC--27%. The dependence of the relative thermal expansion ($\Delta l/l$) of the carbide samples upon temperature is graphed. A table gives the average values of the thermal expansion coefficients (α) for various carbides. Orig. art. has: 2 figures, 2 tables.

SUB CODE: 07,11/ SUBM DATE: 03Jul65/ OTH REF: 003

Card 2/2 BLG

L 32053-66 EWP(e)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG/AT/WH

ACC NR: AP6013341 (A) SOURCE CODE: UR/0363/66/002/004/0626/0629

AUTHOR: Paderno, Yu. B.; Yupko, V.L.; Rud', B.M.; Makarenko, G.N.

ORG: Institute of Materials Science Problems, Academy of Sciences UkrSSR (Institut problem materialovedeniya Akademii nauk Ukr SSR)

TITLE: Physical properties of certain rare earth dicarbides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiy materialy, v. 2, no. 4, 1966, 626-629

TOPIC TAGS: rare earth metal, carbide, electric property, Hall constant, thermoelectromotive force

ABSTRACT: The temperature dependence of the electrical resistance in the 20 — 1300C temperature range, the coefficient of absolute thermoemf, the Hall coefficient at room temperature, and the melting point were measured on the same samples of Y, La, Ce, Pr, and Nd dicarbides. From these measurements, the charge carrier concentrations and mobilities were calculated. An anomalous temperature dependence of the electrical resistance was observed around 1000C. The high effective carrier concentration in CeC_2 as compared to the other dicarbides studied is explained on the basis of the electronic

Card 1/2 UDC: 546.65'261

L 32053-66

ACC NR: AP6013341

structure of the rare earth atoms and the magnetic susceptibility of the dicarbides. The low effective carrier concentration in the case of YC_2 is due to a change in bond character in the C_2 complex, this being supported by data on the hydrolysis of YC_2. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 11 / SUBM DATE: 28May65 / ORIG REF: 012 / OTH REF: 008

Card 2/2

ACC NR: AP7008531 SOURCE CODE: UR/0363/67/003/002/0395/0397

AUTHOR: Paderno, Yu. B.; Yupko, V. L.; Rud', B. M.; Kvas, O. F.; Makarenko, G. N.

ORG: Institute of Material Science Problems, AN UkrSSR (Institute problem materialovedeniye AN UkrSSR)

TITLE: Electrophysical properties of Gd, Tb, Dy, Er, Tu dicarbides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 3, no. 2, 1967, 395-397

TOPIC TAGS: gadolinium [redacted], terbium [redacted], dysprosium [redacted], erbium [redacted], thulium [redacted], dicarbide [redacted], carbide, resistivity, Hall effect, carrier density

ABSTRACT: The results are presented of an experimental determination of the electrophysical properties of Gd, Tb, Dy, Er, and Tu dicarbides. Initial powder carbides were obtained by the reduction of metal oxides with carbon in vacuum at 1800°C for 25-60 min. The carbide powders were compacted and sintered in argon at 1700—1800°C for 15 min under a pressure of 100 kg/cm^2; the porosity of sintered compacts was 5—13%; finished specimens were annealed at 1650°C for 8 hr. It was found that carbide resistivity changed from 30 μohm.c. for GdC_2 to 515 μohm.cm for

Card 1/2 UDC: 546.65'261:541.12.03

ACC NR: AP7008531

TuC_2; the coefficient of emf from -5.95 μv/°C for ErC_2 to -7.75 μ v/°C for TbC_2; Hall effect from -2.55 cm^3/coul for TbC_2 to +136 cm^3/coul for TuC_2; effective carrier concentration from 0.018 el/atom M for TuC_2 to 1.04 el/atom M for TbC_2; and mobility from 6.75 cm^2/v. sec for ErC_2 to 19.6 cm^2/ v. sec for TuC_2. Melting points ranged from 2180°C for TuC_2 to 2280°C for ErC_2. Orig. art. has: 1 figure and 2 tables. [TD]

SUB CODE: 11/ SUBM DATE: 13Jan66/ ORIG REF: 009/ OTH REF: 008

Card 2/2

ACC NR: AP7008532 SOURCE CODE: UR/0363/67/003/002/0398/0400

AUTHOR: Paderno, Yu. B.; Yupko, V. I.

ORG: Institute of Materials Science Problems, Academy of Sciences, UkrSSR (Institut problem materialovedeniya Akademii nauk UkrSSR)

TITLE: Nature of the change of the effective concentration of current carriers in a series of rare earth dicarbides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 3, no. 2, 1967, 398-400

TOPIC TAGS: carbide, rare earth compound, carrier density, electron structure, transition probability

ABSTRACT: An attempt is made to provide a qualitative explanation for the variation in the experimental values of the effective concentration of carriers n* in a series of rare earth dicarbides from the standpoint of the probability of appearance of d states in the metal atoms and the energetic stability of the f energy states of rare earth atoms for given degrees of their filling. The qualitative dependence of the appearance of the 5-d state, n_{dM}, in the series of rare earth metals is given in Fig. 1. This dependence is shown to be very similar to the nature of the change in the experimental values of n* (see Table 1). This similarity indirectly confirms an earlier hypothesis that the conduction in these rare earth dicarbides is accomplished mainly with 5d electrons. The change in n* and resistivity of the corresponding

Card 1/2 UDC: 546.65'261:541.12.03

hexaborides is also discussed. Orig. art. has: 1 figure and 2 tables.

Fig. 1

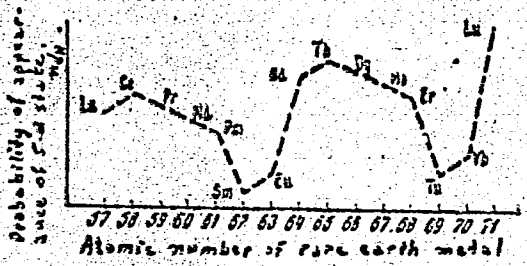


Table 1. Effective carrier concentration n* and parameter $\delta = R/e^2$ of rare earth dicarbides

Phase	LaC_2	CeC_2	PrC_2	NdC_2	GdC_2	TbC_2	DyC_2	ErC_2	TuC_2
n^*, el/at Al	0,63	1,08	0,55	0,68	0,89	1,04	0,86	0,79	$1,8 \cdot 10^{-2}$
$\delta \cdot 10^{-22}$, cm^3/sec^2	−15,5	−4,9	−22,1	−13,9	−23,0	−12,3	−18,4	−14,4	−1,8

SUB CODE: 07/ SUBM DATE: 13Jan66/ ORIG REF: 010/ OTH REF: 007

Card 2/2

YUR, N. V.

YUR, N. V.: "Nest cultivation of pines on the Boyar Teaching and Experimental Leskhoz." Kiev, 1955. Min Higher Education Ukrainian SSR. Ukrainian Order of Labor Red Banner Agricultural Academy. (Dissertation for the Degree of Candidate of Agricultural Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

YURALYAVICHUS, B. Yu. Cand Tech Sci -- (diss) "A Study of the Operating Parts of Machines for the ~~Planting~~ Seeding and ~~Cultivation~~ Care of Vegetable Crops ~~in the~~ under Conditions of the Lithuanian SSR." Kaunas, 1957. 20 pp with diagrams, 22 cm. (Lithuanian Agricultural Academy), 100 copies (KL, 18-57, 96)

YURA

POLAND / General Biology. Individual Development. B-4

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 4918

Author : Yura

Inst : Not given

Title : Controversy on Entoderm in Insects

Orig Pub : Kosmos (Polska), 1956, A5, No 4, 493-500

Abstract : A review of the literature on the controversial question of sources of formation of the middle intestine (MI) in insects. Dorn (1866), Byuchli (1870), Maier (1876), Tikhomirov (1879) and others maintained that insect MI develops from yolk cells, the aggregate of which they accepted as entoderm. Kovalevskiy (1871) and Grassi (1884) maintained that MI is formed from the lower embryo layer, the separation of which Kovalevskiy compared with gastrulation. Vytlachil (1884),

Card : 1/4

POLAND / General Biology. Individual Development. B-4

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963130002-6"

Abs Jour : Ref Zhur - Biol., No 2, 1958, No 4918

: Fel'tskov (1889) and Geimons (1895) came to the conclusion that MI develops from ectoderm (from stomodeal and proctodeal cavities) and that the entoderm serves to form vitellophages. Chuprova (1906) agreed with Geimons, while Esherikh (1900), Noak (1901), Shvangart (1904) and especially Nusbaum and Fulinskiy (1906) sided with a somewhat modified point of view of Kovalevskiy. During the next 50 years the discussion on this theme continued; the appearance of contradictory observations is explained by technical difficulties, an uncertain terminology, and different interpretation of similar facts. Thus, according to Tikhomirov the MI in Calandra granaria forms from yolk cells; according to Inkman (1933) from the lower layer, but according to Sheinert (1933) from the cells of the anterior and middle intestines. The author considers a number of theories which attempted to resolve the

Card : 2/4

YURA, ANATOLIY TERENT'YEVICH.

PHASE I BOOK EXPLOITATION SOV/3735

Hurlyev, Dmytro Stepanovych, and A.T. Yura

Dovidnyk po elektronnykh pryladakh (Reference Book on Electronic Devices) Kyyiv, Derzh. vyd-vo tekhn. lit-ry, 1959. 344 p. 10,000 copies printed.

Ed.: Yu.E. Korsak; Tech. Ed.: K. Husarov.

PURPOSE: This reference book is intended primarily for radio amateurs interested in the construction, adjustment, and maintenance of various radio and television equipment. It may also be of interest to the general reader.

COVERAGE: The book gives information on characteristics, electric data, typical diagrams, and applications of the most common electron tubes used in amateur radio. Some data on semiconductors (transistors) are also given. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

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Reference Book (Cont.) SOV/3735

AVAILABLE: Library of Congress

Card 14/14 JP/jb
6-9-60

YURA, R., kand.istor.nauk

Let's survey an ancient town. Znan. ta pratsia no. 12:18-19 D '60.
(MIRA 14:4)

(Voinskaya greblya—Antiquities)

SHOVKOPLYAS, I.G. [Shovkoplias, I.H.]; YURA, R.O. [IUra, R.O.]

"When and how Kiev was founded" by M. IU. Braichevs'kyi. Reviewed by I.H. Shovkoplias, R.O. IUra. Dop. AN URSR no.3: 418-420 '64. (MIRA 17:5)

L 8991-66

ACC NR: AT5027854 SOURCE CODE: CZ/2503/65

AUTHOR: Yura, S. -- Jura, S.

ORG: Research Institute of Mathematical Machines, [illegible] matematicheskikh mashin)

TITLE: Electrostatic start-stop systems of tape [illegible]

SOURCE: Ceskoslovenska akademie [illegible] Vyzkumny ustav [illegible] zpracovani informaci, no. 11, 1965, 85-106

TOPIC TAGS: magnetic tape, punched paper tape, [illegible] electrostatics

ABSTRACT: This paper is a continuation of the author's [illegible] lished earlier (Sbornik Stroje na zpracovani infor[illegible], [illegible] discusses the principle of electrostatic start-stop systems and brakes for both punched and magnetic tapes. The [illegible] start-stop system (USA patent 3,051,529 Tape transport [illegible] October 1962, Vol. 783, Number 2, p. 420 as well as [illegible] tion is drawn to the advantageous utilization of the [illegible] presents a derivation of relations for the accelerat[illegible] starting or stopping, on the basis of which the starting [illegible]

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L 9291-66

ACC NR: AT5027854

determined. He discusses also controlled supply [illegible] for [illegible] tems. The article concludes with a discussion of the various [illegible] list of advantages and shortcomings of the existing devices [illegible] and 15 figures.

SUB CODE: EE, IE, DP / SUBM DATE: 16Dec63

Card 2/2

KUTIL, I.; KURACHKA, F.; SHIMEK, I.

Use of polyectrolytes for the recovery of gold from waste waters.
Zhur.prikl.khim. 34 no.11:2430-2435 N '61. (MIRA 15:1)

1. Gosudarstvennyy institut blagorodnykh metallov, Praga i Issledovatel'skiy institut sinteticheskikh smol i lakov, Pardubitse.
(Waste products) (Gold)

KALABUKHOV, N.P.; YURACHKOVSKIY, P.A.

Ultraviolet absorption spectra of X-rayed KCl crystals. Opt. i spektr. 7 no.4:523-524 Ap '62. (MIRA 15:5)
(Potassium chloride crystals) (X rays)
(Spectrum, Ultraviolet)

L 19477-63 EWT(l)/BDS AFFTC/ASD/IJP(C)
ACCESSION NR: AT3002219 S/2941/63/001/000/0190/0193

AUTHORS: Kalabukhov, N. P.; Yurachkovskiy, P. A.

TITLE: Effect of hardening on absorption spectra of x-rayed KCl crystals

SOURCE: Optika i spektroskopiya; sbornik statey. v. 1: Lyuminestsentsiya. Moscow, Izd-vo AN SSSR, 1963, 190-193

TOPIC TAGS: temperature hardening, absorption spectra, coloration, V-band

ABSTRACT: The authors have traced the effects of hardening on the absorption spectra after x-ray excitation. They also studied the characteristics of the resulting photochemical transformations in color centers. It is shown that in addition to the enhancement in coloration intensity, x-ray excitation entails a change in the V-absorption band. On the hardened crystal the V_2-band (λ_m = 238 μ) shows a much sharper resolution than the V_3-band (λ_m = 215 μ). The authors contend that this phenomenon could be explained qualitatively by the Varli model for V-centers (Dzh. Varli. Sb. Tsentry okraski, IL, M., 305, 1958). According to the Varli assumption the V_2- and V_3- centers are formed by the double ionization of the negative halogen ions. Furthermore, it is shown that the number of V-

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ACCESSION NR: AT3002219

centers compared to the quantity of F-centers, created by x-rays or F-irradiation of the x-rayed crystal, are less in the hardened KCl crystals (quenched in water after heating to 50C below melting point) than in the specimen prepared by slow cooling(0.7C per min. in the furnace). In the irradiation process with light in the F-band the increase of R-bands is more strongly apparent in the hardened crystal. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 09Apr62 DATE ACQ: 19May63 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 003

Card 2/2

BOGDANOVICH, A.S.; SIKORSKIY, Yu.A.; YURACHKOVSKIY, P.A.

Effect of thermal treatment and plastic deformation on the dielectric losses of $KCL \cdot CaCl_2$ crystals. Fiz. tver. tela 5 no.12:3524-3528 D '63. (MIRA 17:2)

1. Kiyevskiy politekhnicheskiy institut.

YURACHKOVSKIY, V.K.

More about the technical, industrial, and financial plan of a sugar factory. Sakh.prom. 34 no.7:49 Jl '60. (MIRA 13:7)

1. Khmel'nitskiy sakhsveklotrest.
(Sugar industry)

37223
S/051/62/012/004/010/015
E039/E485

24.7000
24.3439

AUTHORS: Kalabukhov, N.P., Yurachkovskiy, P.A.

TITLE: On the ultraviolet absorption of X-rayed KCl crystals

PERIODICAL: Optika i spektroskopiya, v.12, no.4, 1962, 523-524

TEXT: Samples prepared from specially purified crystals of KCl and X-rayed at room temperature for 1 hour (50 kV, 9 mA, copper anode) were used for this investigation. Absorption spectra were also measured at room temperature of a СФ-4 (SF-4) type spectrophotometer. The characteristic V_3 (218 mmk) band was observed and a relatively weak band with a maximum at about 260 mmk. There is also a strong F band at about 550 mmk and a weak M band at about 830 mmk. The absence of the V_2 bands was unexpected and is usually characteristic of crystals containing a significant concentration of Ca, Sr or Ba. It is not thought that the 260 mmk band depends on any new type of V-centre. The experiments of Dorendorf showed that for X-rayed crystals of KCl there is a V_4 absorption band with a maximum at about 255 mmk at - 180°C. Calculations on the possible temperature displacement of the absorption bands show that the 260 mmk band

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S/051/62/012/004/010/015
E039/E485

observed at room temperature is not the same as the V_4 band and is stable in sufficiently pure crystals not containing V_2-centres. Varley's model for V-centres agrees well with the simultaneous occurrence of V_3 and V_4 - centres. The V_3 - centre is a neutral halide atom substituted for an alkali metal ion, which is displaced from its normal position at the internode forming a V_4 - centre. There is 1 figure.

SUBMITTED: August 24, 1961

L 15566-66 SWT(d)/EWI(l)/EEF(n)-2/T IJP(c) JD/JG

ACC NR: AP6004406

AUTHOR: Yurachkovskiy, P. A.; [illegible]

ORG: none

TITLE: Effect of temperature on the formation of F-centers

SOURCE: [illegible]

TOPIC TAGS: potassium chloride, calcium [illegible]
low temperature effect

ABSTRACT: KCl-CaCl crystals were [illegible]
for F-centers. The crystals were [illegible]
pure salts. The [illegible]
them in sodium vapor at [illegible]
measuring the absorption spectra [illegible]
studies was carried in darkness [illegible]
tal was placed [illegible]
[illegible]

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2

UDC: 535.34 : 548.0

ACC NR: AP6[illegible]6

specimen was irradiated simultaneously with [illegible]
F'-band
[illegible] temperature. A weak Z_1-band is formed at 210°K even with [illegible]
ation by F'-light. However, F'-irradiation [illegible]
[illegible]
[illegible] at temperatures above 250°K. Curves for absorption [illegible] form with some [illegible]
function of temperature for the case of F-irradiation [illegible]
peak for the Z_1-band decreases [illegible]

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L 15566-66

ACC NR: AP6004406

Card 3/3

L 45587-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6028714 SOURCE CODE: UR/0185/66/011/008/0917/0918

AUTHOR: Bohdanovych, A. S.; Ivzhenko, M. A.; Koval'ov, V. K.; Sykors'kyy, Yu. A.; Yurachkivs'kyy, P. O.; Bryhynets', V. P.

ORG: Kiev Polytechnical Institute (Kyyivs'kyy politekhnichnyy instytut)

TITLE: Dislocations and V-centers in KCl crystals

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 8, 1966, 917-918

TOPIC TAGS: potassium chloride, crystal lattice dislocation, x-ray coloring, color center, crystal absorption spectrum

ABSTRACT: This article endeavors to explain the role of dislocations in creating V-centers in KCl crystals subjected to x-rays at room temperatures. Four crystals of "pure" KCl grown from a melt by the Kyropoulos method (two each with dislocation density of 5.10^6 and 5.10^4 cm^{-2}) were colored by x-rays at room temperature and their absorption spectra were then photospectrometrically measured. Comparison of graphs plotted from the results of "hard" and "soft" coloring showed that (1), other coloring conditions being equal, the crystals with more dislocations chiefly formed V_3-centers (218 mμ), while those with fewer dislocations gave only V_2-centers (230 mμ), and (2) the spectral makeup of V-absorption does not

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L 45587-66
ACC NR: AP6028714

depend on "hardness" of crystal coloration, not only refuting the view that "hard" and "soft" x-rays create V_3- and V_2-centers, respectively, but also suggesting that V_3-centers are defects formed either in or near the dislocations themselves, while V_2-centers form in the lattice far from them and require lattice vacancies. Further studies showed that the preceding assumption is true and that the V_2- to V_3-center ratio is stipulated by dislocation density and the number of "frozen" thermal vacancies in the crystal. In conclusion the authors thank Prof. M. P. Kalabukhov for interest in the work and useful discussions. Orig. art. has: 2 figures.

[26]

SUB CODE: 20/ SUBM DATE: 05Mar66/ ORIG REF: 002/ OTH REF: 007 / ATD PRESS: 5082

Card 2/2 pla

YURACHKOVSKIY, V.K.

Planning and accounting of labor productivity in the sugar industry. Sakh.prom. 35 no.7:58-59 Jl '61. (MIRA 14:7)

1. Khmel'nitskiy sakharotrest.
(Labor productivity) (Sugar industry)

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

Author : Yuracka F., Zvonar V.
Inst :
Title : Synthesis of Organic Peroxides.

Orig Pub: Chem. prumysl. 1957, 7, No 4, 192.

Abstract: It is possible to have explosions during the preparation of peroxides according to Zwakha's method (Ref. Zhur-Khimiya, 1958, 61842). The danger of explosion can be eliminated by adding dimethyl-dibutyl phthalate (I) or tricresyl phosphate to the reaction mixture. Thus, a phlegmatized peroxide is obtained in liquid form or as a paste, which is used in polymerizations; for instance a 50% solution of $CH_3COOCCOC_6H_5$ or the peroxide

Card : 1/2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

of methylethyl ketone in I, a 66% paste of the peroxide bis (1-oxycyclohexyl) in I.

YURAN, V.

Transforming of conjugate projections and their application for the mechanization of the designing of the axonometric and perspective representations of objects. In Russian.

P. 191. (ZINATNISKIE RAKST. UCHENYE ZAPISKE) (Riga, Latvia) Vol. 10, 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

SOV/44-58-4-3200

Translation from: Referativnyy zhurnal, Matematika, 1958, Nr 4, p 121 (USSR)

AUTHOR: Yuran, V. Yu.

TITLE: A Transformation of Conjugate Projections and Their Application for the Mechanization of Construction of Axonometric and Perspective Representations of Objects (Preobrazovaniye sopryazhennykh proyektsiy i ikh primeneniye dlya mekhanizatsii postroyeniya aksonometricheskikh i perspektivnykh izobrazheniy ob"yektov)

PERIODICAL: Zinatn. raksti. Latv. univ., Uch. zap. Latv. un-ta, 1957, Nr 10, pp 191-214

ABSTRACT: The work is divided into two parts. In the first part a study is made of two methods of transforming conjugate projections The combination of a perspective and orthogonal projection of objects on the projecting plane is called a conjugate projection.

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SOV/44-58-4-3200

A Transformation of Conjugate Projections (Cont.)

Such a transformation simplifies the solution both for position and metric problems. The second part deals with a method of supplementary projection. It is applied in the solution of problems on intersection. Its essence is the fact that given objects are projected in a parallel manner on the projecting plane in such a direction that a parallel projection of the unknown elements is obtained, and then their conjugate projections. In the second part are given the geometric foundations and kinematic scheme of a device (axo-perspective-graph) by means of which are constructed perspective and axonometric representations of objects by their orthogonal projections and projections with numerical references. The construction of the device is based on a simple system of constructing visual representations derived on the basis of conjugate projections. Constructions of perspectives on vertical and inclined planes and also special forms of oblique and orthogonal axonometry are examined.

V.N. Zhuravleva

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YURAH, V. Yu. Cand Tech Sci -- (diss) "Transformation of ~~oblique~~ conjugated projections and their utilization for the mechanization of construction of perspective and axonometric ~~pictures~~ representations of objects." Len, 1958. 12 pp with ~~diagrams~~ drawings (Min of Higher Education USSR. Len Order of Labor Red Banner Construction Engineering Inst), 150 copies (KL, 52-58, 104)

YURANEK, Yu. [Juranek, J.]

Test operations in Czechoslovakia using a moving intra-reservoir combustion source. Neft. khoz. 43 no.2:74-75 F '65. (MIRA 18:4)

YURANOV, A. P.

A manual on swine diseases, 1st and 2nd editions. (?1920's or 1930's or later)

Is used as a current (1947) textbook for veterinary and zootechnical specialists as well as for directors of state farms (sovkhozes), presidents of agricultural artels, and others.

Veterinariya, Vol. 24, No. 12, Dec 1947 pp 13-15

YURAKOV, A.P.

Viroscopic examination in foot-and-mouth disease in cattle.
Veterinariia 35 no.10:69-71 O '58. (MIRA 11:10)

1.Institut epidemiologii i mikrobiologii imeni Gamaleya.
(Foot-and-mouth disease) (Microscopy--Technique)

153-58-1-6/29

AUTHORS: Komissarova, L. N., Plyushchev, V. Ye., Yuranova, L. I.

TITLE: An Investigation of the Thermal Stability of Zirconium-Sulfate-Tetrahydrate (Izucheniye termicheskoy ustoychivosti tetragidrata sul'fata tsirkoniya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 37 -42 (USSR)

ABSTRACT: The above-mentioned sulfate-tetrahydrate is of great importance amongst the other zirconium-sulfates. Its method of production is given and the crystalline form is mentioned from publications (Reference 1). A survey of the publications on the problem referred to in the title, is given. Details on the condition of the material used for the tests and on the methods applied, are given in the experimental part. The results are summarized in tables 1 and 2. A thermogram covering the range between 20°C and 1100°C is given in figure 1. It shows 3 clear endothermic effects: the two first one between 130° and 215°C, which correspond to the separation of the water of crystallization; the 3rd effect (700 to 740°C) characterizes a complete decay of the sulfate with the separation of SO_3.

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(Figure 2). This figure shows the curve of the change of weight of the tetrahydrate which confirms and accurately defines the destructive character of this salt. The results of investigation of the dehydration- and decomposition-processes obtained by the methods described here, are compared in table 3.

Conclusions: 1) The last mentioned processes of dehydration and decomposition of zirconium-sulfate-tetrahydrate were investigated by means of a) Heating in air up to the attaining of a constant weight at various temperatures, b) Pyrometer by N. S. Kurnakov, and c) a continuous balance. 2) According to the velocity of heating, the dehydration of the tetrahydrate takes place either in 2 or 3 stages. In all cases, 3 water molecules within the range of 100 to 160°C are cracked at a time. One water molecule, on the other hand, is retained more vigorously and escapes slowly at graduate heating; at 190° to 215°C half of the quantity of the water gets lost up to the complete dehydration taking place at 300 to 340°C. 3) The decomposition of the zirconium sulfate is accompanied

by an escape of SO_3 and is gradually completed between 450 to 800°C. 4) The special solidity of the bond of water molecule points to the fact that the properties of tetrahydrate are more correctly expressed by the coordination-formula/$H_2ZrO(SO_4)_2/.3H_2O$. There are 2 figures, 3 tables, and 8 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiyinstitut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova.Kafedra tekhnologii redkikh i rasseyannykh elementov (Moscow Institute for Fine Chemical Technology imeni M. V. Lomonosov, Professorial Chair for Rare and Dispersed Elements)

SUBMITTED: September 16, 1957

89961
S/063/60/005/003/005/011/XX
A051/A029

5.2200 1043, 1273, 1228

AUTHORS: Yuranova, L.I., Komissarova, L.N., Plyushchev, V.Ye.

TITLE: On the Formation of Hexahydrates of Zirconium and Hafnium Oxynitrates

PERIODICAL: Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva im. D.I. Mendeleyeva, 1960, Vol. 5, No. 3, p. 346

TEXT: The authors recently conducted a study on a new method for synthesizing $ZrO(NO_3)_2 \cdot 2H_2O$ and a similar compound of Hafnium, i.e., the dihydrates of zirconium and hafnium oxynitrates. It is possible to obtain individual zirconium and hafnium oxynitrates free of admixtures of any other nitrates. The results could be successfully reproduced several times. Numerous experiments showed that both substances crystallize in a wide range of HNO_3 concentrations and of the zirconium and hafnium concentration, as well as under various temperature conditions. While studying the system

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S/063/60/005/003/005/011/XX
A051/A029

On the Formation of Hexahydrates of Zirconium and Hafnium Oxynitrates

ZrO_2-N_2O_5-H_2O at 25°C by the physico-chemical method of analysis, the existence of another compound was established, viz., the hexahydrate of zirconium oxynitrate with the composition: $ZrO(NO_3)_2 \cdot 6H_2O$. The compound crystallizes from solutions containing from 21.35 weight % ZrO_2 and 1.93 weight % of N_2O_5 to 4.50 weight % of ZrO_2 and 40.00 weight % of N_2O_5. The hexahydrate of hafnium oxynitrate can be formed in the same way. The formation of the latter two compounds also takes place when a small excess of $ZrO(NO_3)_2 \cdot 2H_2O$ and $HfO(NO_3)_2 \cdot 2H_2O$ is introduced into a saturated solution of these compounds, or by mixing the dihydrate of zirconium and hafnium oxynitrates with a given amount of water, which is insufficient for the complete dissolution of the initial salts (the molecular ratio of the water and the dihydrates changed from 2:1 to 8:1). In the first case, the crystallization of the hexahydrates, carried out in glass containers for studying the solubility, continued for 8-10 hours in the entire volume of the solution, so that a completely solidified mass was obtained, which was

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89961

S/063/60/005/003/005/011/XX
A051/A029

On the Formation of Hexahydrates of Zirconium and Hafnium Oxynitrates

difficult to crush and which resembled magnesium cement. In the second case mixtures were obtained in the form of a gruel, which after a certain time hardened into a non-transperent, white, enamel-like mass. The obtained preparations were thoroughly ground, dried in air to a constant weight and were analyzed for MeO_2, N_2O_5 and H_2O content. The MeO_2 content was determined by calcinating the corresponding hydrates to MeO_2 at 900°C. The Devard method was used for determining N_2O_5. The amount of water was calculated from the difference. The results of the analysis are given in the table and represent the average values of 5 determinations. It is pointed out that in repeated experiments the results were systematically and favorably reproduced. Thus, the composition of the obtained compounds is expressed by: $ZrO(NO_3)_2 \cdot 6H_2O$ and $HfO(NO_3)_2 \cdot 6H_2O$. X-ray findings were also obtained, which confirmed the formation of new phases. The hexahydrates were found to be well soluble in water and stable in air. Their densities at 20°C were estimated pycnographically and found to be 2.08 ± 0.02 and 2.66 ± 0.02, respectively. There is 1 table and 3 non-Soviet references.

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89961

S/053/60/005/003/005/011/XX
A051/A029

On the Formation of Hexahydrates of Zirconium and Hafnium Oxynitrates

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova (Moscow Institute of Fine Technology, im. M.V. Lomonosov)

SUBMITTED: December 28, 1959

Tables:

Preparation	Content, weight %			Molar ratio
	MeO_2	N_2O_5	H_2O	$MeO_2:N_2O_5:H_2O$
zirconium nitrate	36.30	31.85	31.85	1.0:1.02:6.1
hafnium nitrate	50.00	25.11	24.89	1.0:0.98:5.9

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S/020/61/136/002/020/034
B016/B060

AUTHORS: Komissarova, L. N., Yuranova, L. I., and Plyushchev, V. Ye.

TITLE: Synthesis and Thermal Stability of Dihydrates of Oxynitrates of Zirconium and Hafnium

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 350-353

TEXT: A study has been made of the synthesis of zirconium and hafnium oxy-nitrate dihydrates and their thermal stability. While data available in the literature on the former dihydrate are insufficient and contradictory, the latter is as yet undescribed. Zirconium (hafnium-) oxychloride octohydrate, which contains a constant amount of crystal water, has proved to be the only usable initial substance for the synthesis of these compounds. A weighed-in portion of these salts was treated with 100% HNO_3 (MeO_2 : HNO_2 = 1 : 3 to 1 : 6). 1 : 4.5 was found as the optimum ratio. Air was blown through the solutions until the yellow color disappeared, and at 60°C they were vaporized. On the basis of the analysis,

Synthesis and Thermal Stability of Dihydrates of Oxy-nitrates of Zirconium and Hafnium

S/020/61/136/002/020/034
B016/B060

the following formulas are ascribed to the compounds synthesized: $ZrO(NO_3)_2 \cdot 2H_2O$ and $HfO(NO_3)_2 \cdot 2H_2O$. They are white crystalline substances. The data obtained for equilibrium displayed certain differences between the zirconium and hafnium compounds regarding the stability and decomposition on heat treatment. They are, however, both thermally unstable and decompose completely at 400°C, when monoclinic ZrO_2 results from zirconium oxy-nitrate dihydrate with a 54.1% loss of weight. The hafnium compound displays a greater thermal stability, especially the monohydrate forming in between. Both substances decompose stepwise (the stages are less marked in the zirconium compound). There are 2 figures, 2 tables, and 9 non-Soviet references: 3 French, 1 British, and 4 German.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

PRESENTED: June 24, 1960, by V. I. Spitsyn, Academician

SUBMITTED: June 22, 1960

Card 2/2

29018

5.2100

S/020/61/140/004/019/023
B106/B110

AUTHORS: Yuranova, L. I., Komissarova, L. N., and Plyushchev, V. Ye.

TITLE: New data on the behavior of zirconium and hafnium oxynitrates in aqueous solutions and organic solvents

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 4, 1961, 855-858

TEXT: Almost all studies described in the literature with regard to the chemistry of zirconium nitrate solutions concerned microquantities of zirconium and highly diluted solutions (Ref. 3: V. I. Paramonova, ZhNKh, 1, 1905 (1956); Refs. 4-6, see below). In practice, the behavior of zirconium and hafnium oxynitrates in more concentrated solutions is interesting, particularly when studying extraction methods for separating zirconium from hafnium. Therefore, the authors investigated the dependence of pH value, specific electrical conductivity, density, and viscosity of zirconium and hafnium oxynitrate solutions on the concentrations of these compound in aqueous solutions. Moreover, the solubility of oxynitrates in organic solvents was studied. The compounds $ZrO(NO_3)_2 \cdot 2H_2O$, $ZrO(NO_3)_2 \cdot 6H_2O$, and $HfO(NO_3)_2 \cdot 2H_2O$, $HfO(NO_3)_2 \cdot 6H_2O$ were

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New data on the behavior of ...

tested. Figs. 1 and 2 show results obtained for pH value and specific electrical conductivity of aqueous solutions of these compounds. Since the hydrolysis of oxynitrates decreases with increasing concentration, the decrease of the pH value is only due to the increasing absolute quantity of dissolved salts. Hydrolysis of zirconium and hafnium oxynitrates in aqueous solutions was found to depend on time. The state of equilibrium is attained only two weeks after the solutions have been prepared. A rise in temperature effects stronger hydrolysis. As expected, oxynitrates of hafnium proved to be stronger bases than those of zirconium. The density and viscosity values measured for aqueous solutions of the oxynitrates concerned are shown in Figs. 3 and 4. 15 organic compounds of different classes were selected to study the solubility of zirconium and hafnium oxynitrates in organic solvents. Measurements were made at 20 and 30°C; temperature fluctuations were ± 0.1°. In all cases, solution equilibrium was established only after a week. Results are shown in Table 5. It is evident that zirconium and hafnium oxynitrates dissolve only slightly, or not at all, in slightly polar or nonpolar organic solvents. The compounds studied are unsoluble in acetophenone, dibutyl and benzyl ethers, chloroform, carbon tetrachloride, and dichloro ethane. The solubility of oxynitrates decreases with increasing chain length and

29018

New data on the behavior of ... S/020/61/140/004/019/023
B106/B110

branching of the saturated alcohols used as solvents. Under equal conditions, oxynitrates of zirconium are better soluble in organic solvents than those of hafnium. There are 4 figures, 5 tables, and 7 references: 4 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Ref. 4: B. Lister, L. McDonald, J. Chem. Soc., 1952, 4315; Ref. 5: R. Connick, W. McVey, J. Am. Chem. Soc., 71, 3182 (1949); Ref. 6: R. Connick, N. McVey, J. Am. Chem. Soc., 73, 1171 (1951).

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

PRESENTED: April 25, 1961, by V. I. Spitsyn, Academician

SUBMITTED: April 22, 1961

Card 3/3

YURANOVA, L.I.; KOMISSAROVA, L.N.; PLYUSHCHEV, V.Ye.

Solubility and thermal stability of zirconium and hafnium oxynitrates hexahydrates. Zhur.neorg.khim. 7 no.5:1062-1067 My '62. (MIRA 15:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.
(Zirconium nitrate) (Hafnium nitrate)

PLYUSHCHEV, V.Ye.; MURANOVA, L.I.; KOMISSAROVA, L.N.

Basic oxynitrates of zirconium and hafnium. Zhur. neorg. khim. 10 no.3:643-646 Mr '65. (MIRA 18:7)

KHARITONOV, Yu.Ya.; YURANOVA, L.I.; PLYUSHCHEV, V.Ye.; PERVYKH, V.G.

Infrared absorption spectra of zirconium (IV) and hafnium (IV) nitrate compounds. Zhur.neorg.khim. 10 no.4:741-744 Ap '65.
(MIRA 18:6)

1. Institut obshchey i neorganicheskoy khimii AN SSSR imeni Kurnakova i Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

YURAS, I. A.

USSR/Medicine - Virus Diseases, Influenza Mar 53

"Etiology and Laboratory Diagnosis of Influenza," A. A. Smorodintsev, N. S. Klyachko, T. Ya. Luzyanina, M. A. Morozenko, Ye. S. Shikina, I. A. Yuras, V. P. Korotkova, Div of Virology, Inst of Exptl Med, Acad Med Sci USSR; Inst of Epidemiol imeni Pasteur

"Zhur Mikrobiol, Epidemiol, i Immunobiol" No 3, pp 69-78

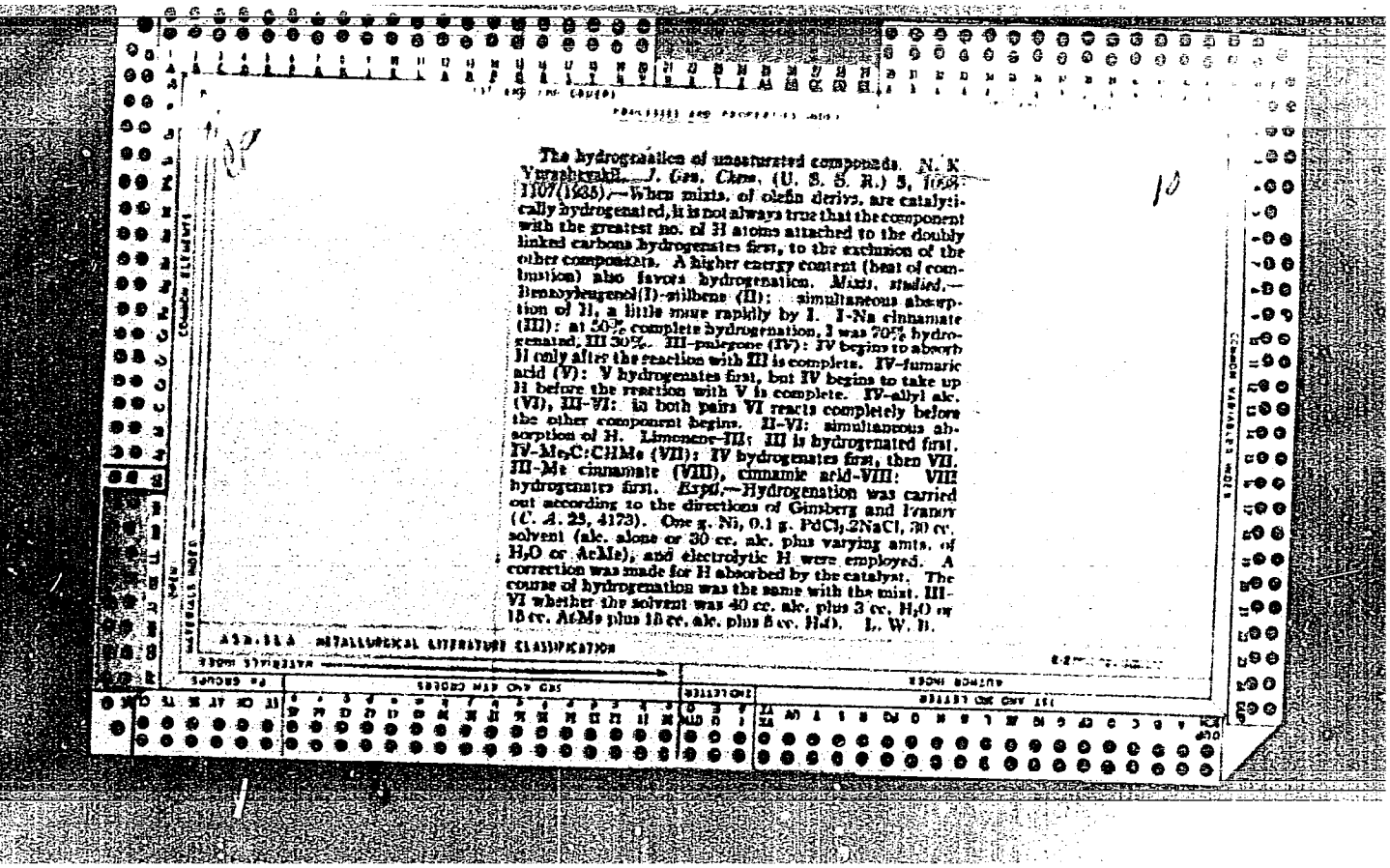
At present, the subtype A_1 predominates in the USSR. The antigenic structure of A_1 isolated during the past few years is polymorphic: it is necessary to supplement cross-neutralization by cross-adsorption of antibodies according to a new method developed by the authors. Smorodintsev's rapid method of diagnosing influenza by the reaction of complement fixation is effective in 50% of the cases on sputum examined during the first week after infection; it is less effective on serum. The reaction of hemagglutination is effective in 40% of the cases when carried out under proper conditions with the use of human erythrocytes of the O group. It is necessary to produce and supply diagnostic preparations [literally "Diagnostica"] equally suitable for hemagglutination and complement fixation (dry A, A_1, and B diagnostics from eluates or infected chicken embryos); to prohibit dry purified anti-influenza horse sera suitable for both hemagglutination and complement fixation; to supply from a central point through donor stations, human O-erythrocytes.

PA 244T44

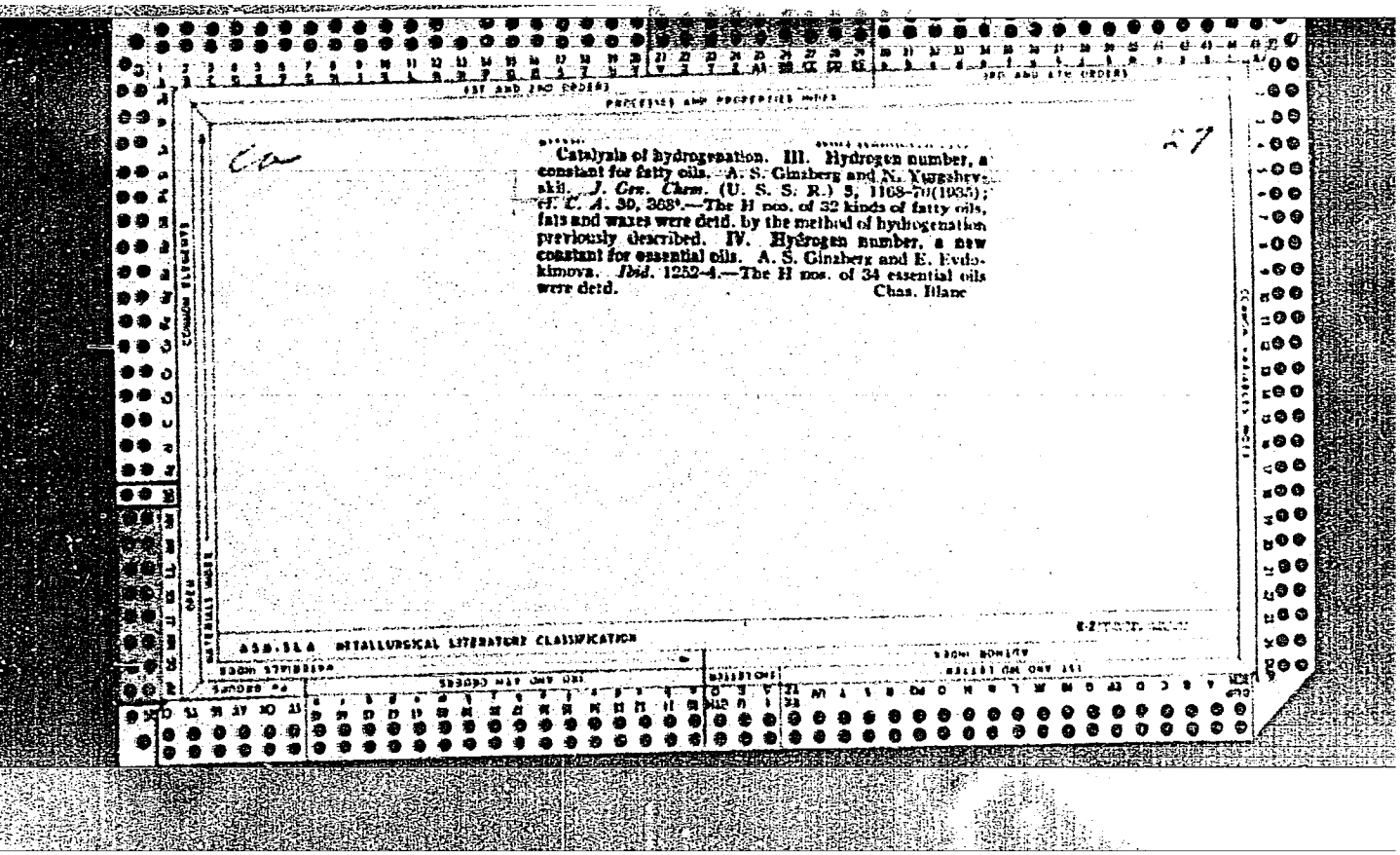
STRADYN', Ya. [Stadyn, J.]; YURASHEK, A. [Jurasek, A.]; REYKHMANIS, G. [Reihmanis, G.]

Polarographic behavior of 5-substituted furfuryl thiocyanates. Zhur. ob. khim. 35 no.5:768-773 My '65. (MIRA 18:6)

1. Institut organicheskogo sinteze AN Latviyskoy SSR i Slovatskiy politekhnicheskiy institut, khimicheskiy fakul'tet, Chekhoslovatskaya SSR, Bratislava.



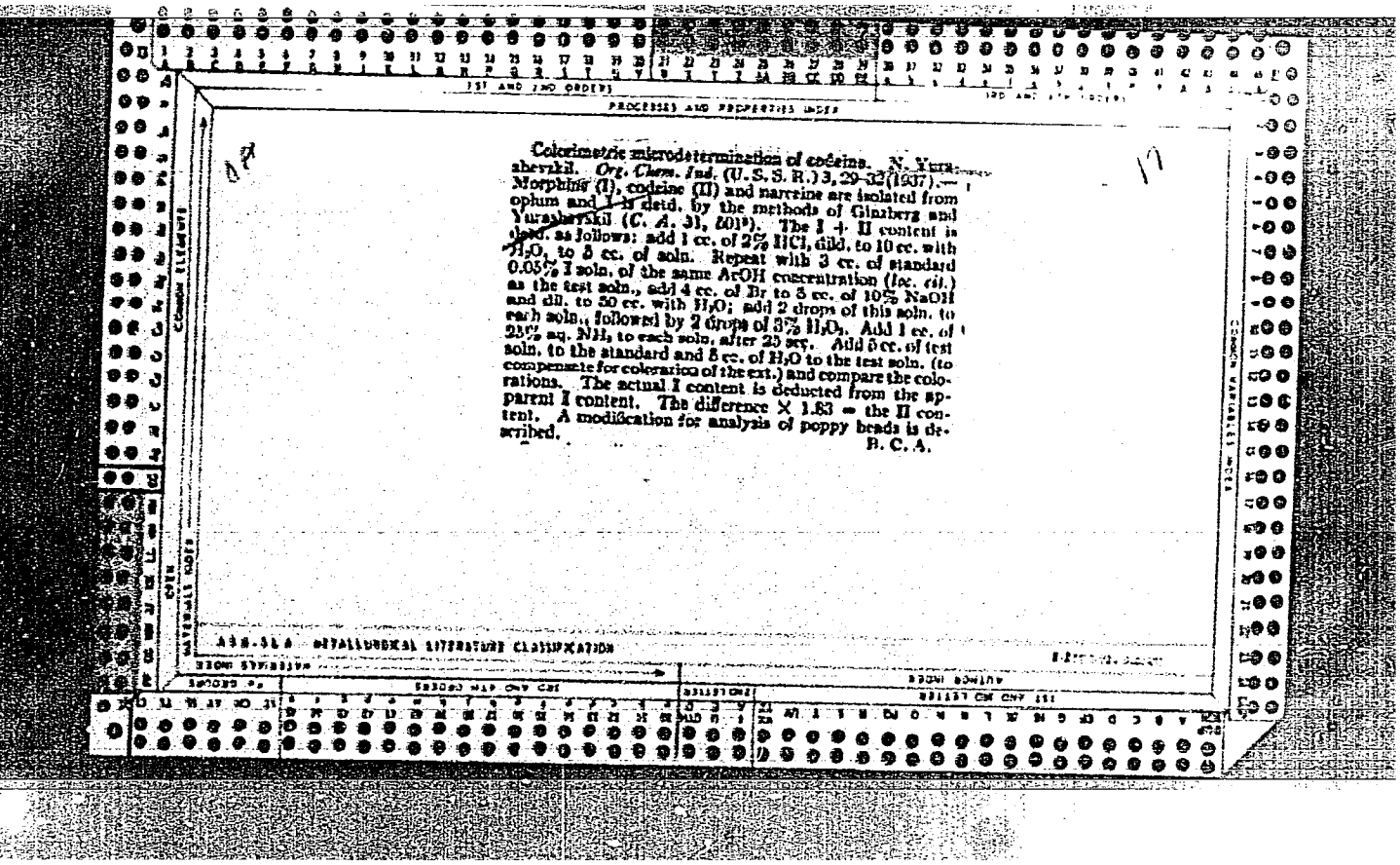
The hydrogenation of unsaturated compounds. N. K. Yavgakyrakli. *J. Gen. Chem.* (U. S. S. R.) 5, 1099-1107(1935).—When mixts. of olefin derivs. are catalytically hydrogenated, it is not always true that the component with the greatest no. of H atoms attached to the doubly linked carbons hydrogenates first, to the exclusion of the other components. A higher energy content (heat of combustion) also favors hydrogenation. *Mixts. studied.*—Benzoylcrotonal (I)-stilbene (II): simultaneous absorption of H, a little more rapidly by I. I-Na cinnamate (III): at 50% complete hydrogenation, I was 70% hydrogenated, III 30%. III-palegone (IV): IV begins to absorb H only after the reaction with III is complete. IV-fumaric acid (V): V hydrogenates first, but IV begins to take up H before the reaction with V is complete. IV-allyl alc. (VI), III-VI: in both pairs VI reacts completely before the other component begins. II-VI: simultaneous absorption of H. Limonene-III: III is hydrogenated first. IV-$Me_2C{:}CHMe$ (VII): IV hydrogenates first, then VII. III-Me cinnamate (VIII), cinnamic acid-VIII: VIII hydrogenates first. *Expt.*—Hydrogenation was carried out according to the directions of Ginsberg and Ivanov (*C. A.* 29, 4173). One g. Ni, 0.1 g. $PdCl_2$.2NaCl, 30 cc. solvent (alc. alone or 30 cc. alc. plus varying amts. of H_2O or AcMe), and electrolytic H were employed. A correction was made for H absorbed by the catalyst. The course of hydrogenation was the same with the mixt. III-VI whether the solvent was 40 cc. alc. plus 3 cc. H_2O or 18 cc. AcMe plus 18 cc. alc. plus 5 cc. H_2O. L. W. B.



Catalysis of hydrogenation. III. Hydrogen number, a constant for fatty oils. A. S. Ginzberg and N. Yavgashevskii. *J. Gen. Chem.* (U. S. S. R.) 5, 1168–70(1935); cf. *C. A.* 30, 368⁹.—The H nos. of 32 kinds of fatty oils, fats and waxes were detd. by the method of hydrogenation previously described. IV. Hydrogen number, a new constant for essential oils. A. S. Ginzberg and E. Evdokimova. *Ibid.* 1252–4.—The H nos. of 34 essential oils were detd.

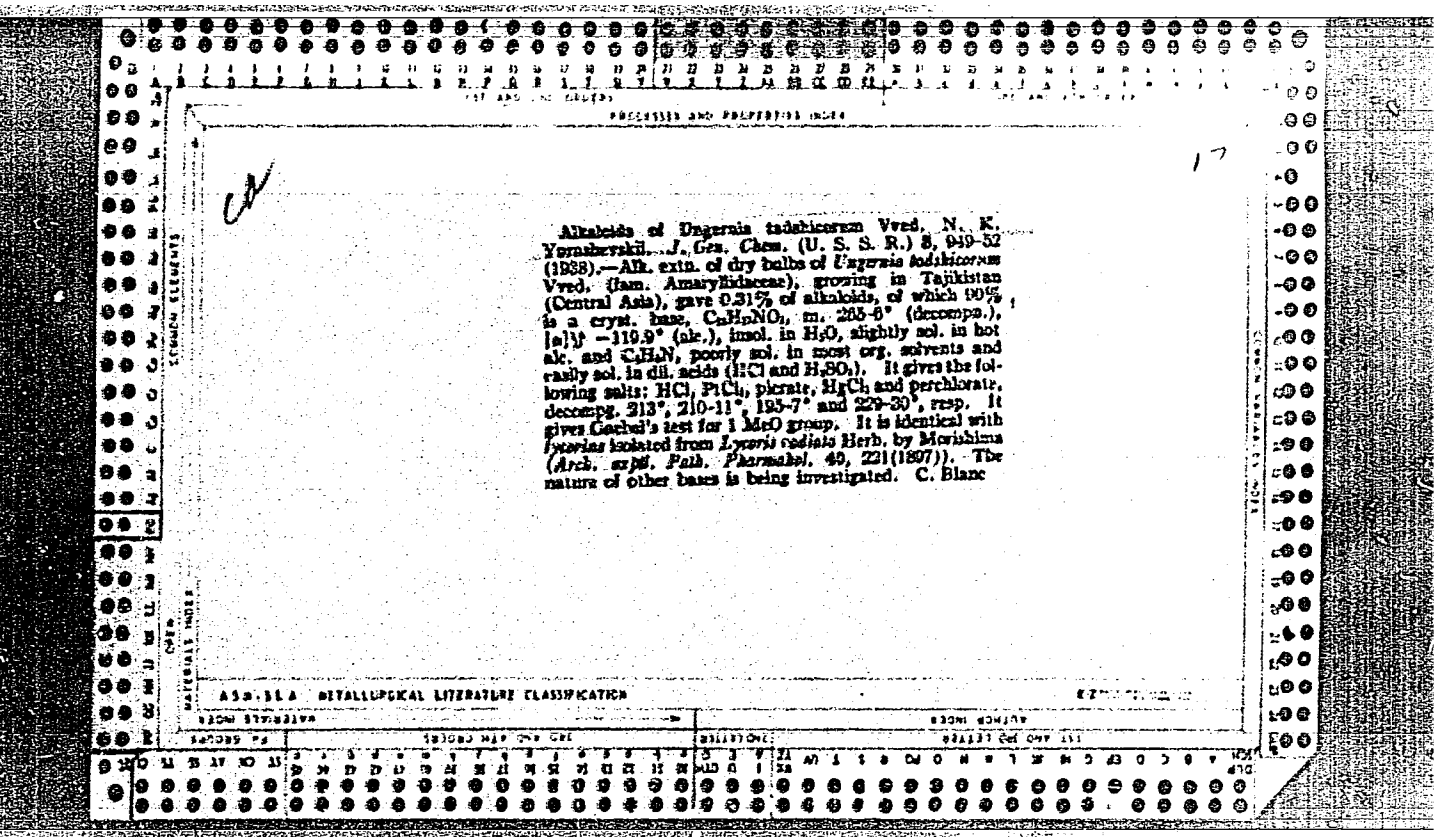
Chas. Blanc

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

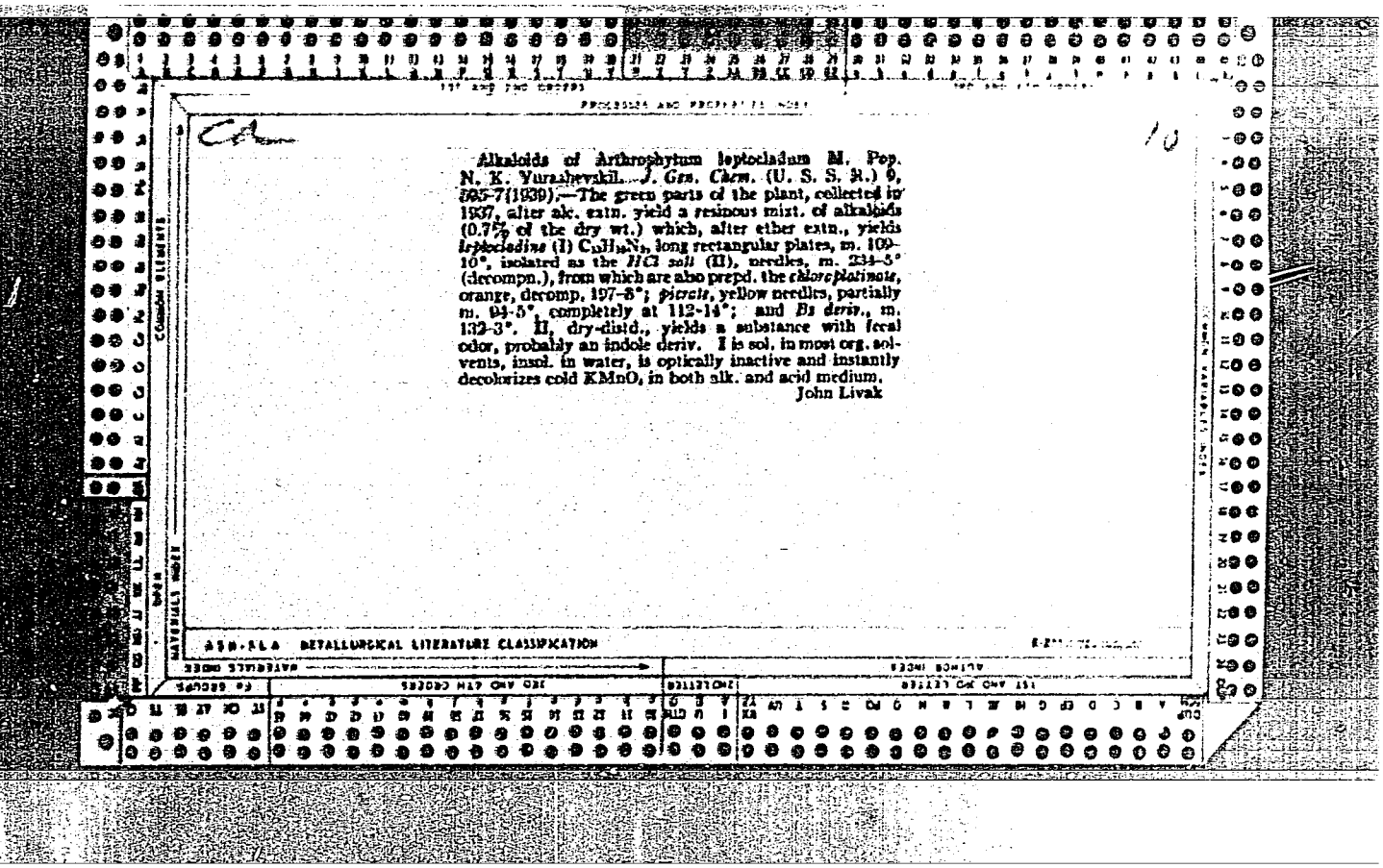


Colorimetric microdetermination of codeine. N. Yuratshevskii. *Org. Chem. Ind.* (U. S. S. R.) 3, 29–32 (1937).—Morphine (I), codeine (II) and narceine are isolated from opium and I + II detd. by the methods of Glazberg and Yuratshevskii (*C. A.* 31, 801[9]). The I + II content is detd. as follows: add 1 cc. of 2% HCl, dild. to 10 cc. with H_2O, to 5 cc. of soln. Repeat with 3 cc. of standard 0.05% I soln. of the same AcOH concentration (*loc. cit.*) as the test soln., add 4 cc. of Br to 5 cc. of 10% NaOH and dil. to 50 cc. with H_2O; add 2 drops of this soln. to each soln., followed by 2 drops of 3% H_2O_2. Add 1 cc. of 25% aq. NH_3 to each soln. after 25 sec. Add 5 cc. of test soln. to the standard and 5 cc. of H_2O to the test soln. (to compensate for colorarica of the ext.) and compare the colorations. The actual I content is deducted from the apparent I content. The difference × 1.83 = the II content. A modification for analysis of poppy heads is described.

B. C. A.

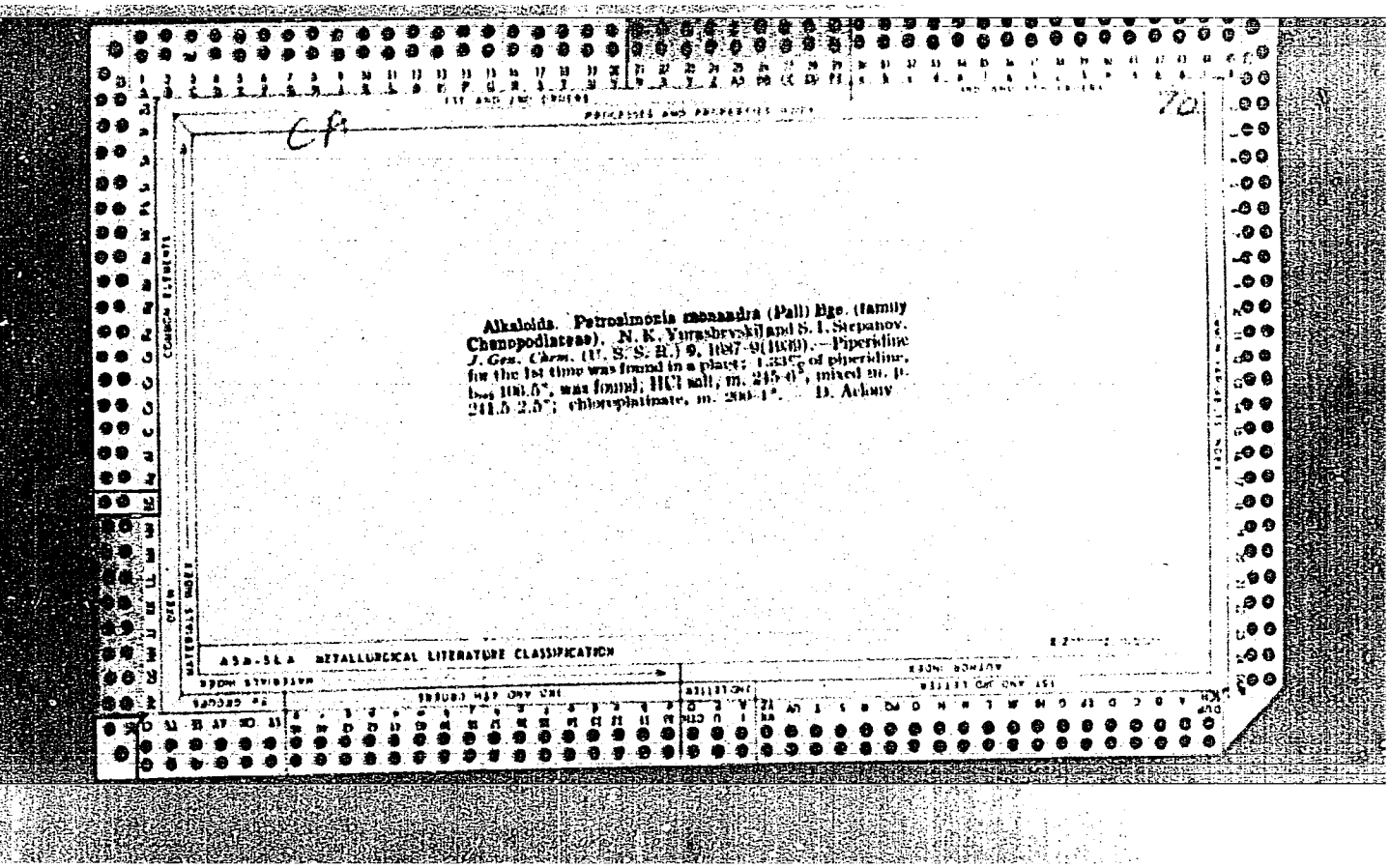


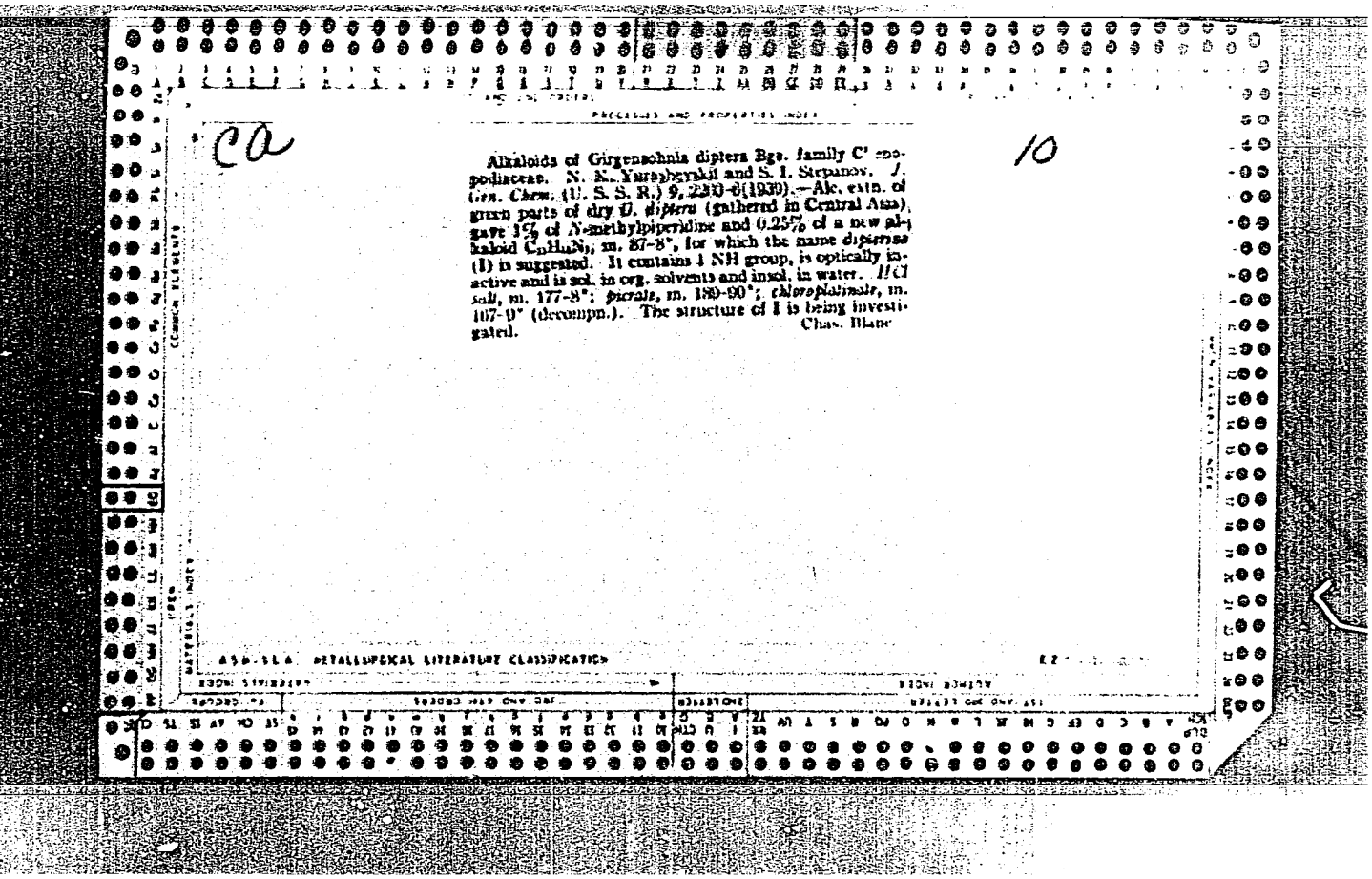
Alkaloids of Ungernia tadshicorum Vved. N. K. Yermakovskii. *J. Gen. Chem.* (U. S. S. R.) 8, 949-52 (1938).—Alk. extn. of dry bulbs of *Ungernia tadshicorum* Vved. (fam. Amaryllidaceae), growing in Tajikistan (Central Asia), gave 0.31% of alkaloids, of which 90% is a cryst. base, $C_{18}H_{23}NO_4$, m. 265-6° (decompn.), $[\alpha]_D^{18}$ −119.9° (alc.), insol. in H_2O, slightly sol. in hot alc. and C_5H_5N, poorly sol. in most org. solvents and readily sol. in dil. acids (HCl and H_2SO_4). It gives the following salts: HCl, $PtCl_4$, picrate, $HgCl_2$ and perchlorate, decompg. 313°, 210-11°, 195-7° and 229-30°, resp. It gives Cechal's test for 1 MeO group. It is identical with *lycorine* isolated from *Lycoris radiata* Herb. by Morishima (*Arch. exptl. Path. Pharmakol.* 49, 221(1897)). The nature of other bases is being investigated. C. Blanc



Alkaloids of Arthrophytum leptocladum M. Pop. N. K. Yurashevskii. *J. Gen. Chem.* (U. S. S. R.) 9, 505-7(1939).—The green parts of the plant, collected in 1937, after alc. extn. yield a resinous mixt. of alkaloids (0.7% of the dry wt.) which, after ether extn., yields *leptocladine* (I) $C_{10}H_{14}N_2$, long rectangular plates, m. 109-10°, isolated as the *HCl salt* (II), needles, m. 234-5° (decompn.), from which are also prepd. the *chloroplatinate*, orange, decomp. 197-8°; *picrate*, yellow needles, partially m. 94-5°, completely at 112-14°; and *Bz deriv.*, m. 132-3°. II, dry-distd., yields a substance with fecal odor, probably an indole deriv. I is sol. in most org. solvents, insol. in water, is optically inactive and instantly decolorizes cold $KMnO_4$ in both alk. and acid medium.

John Livak





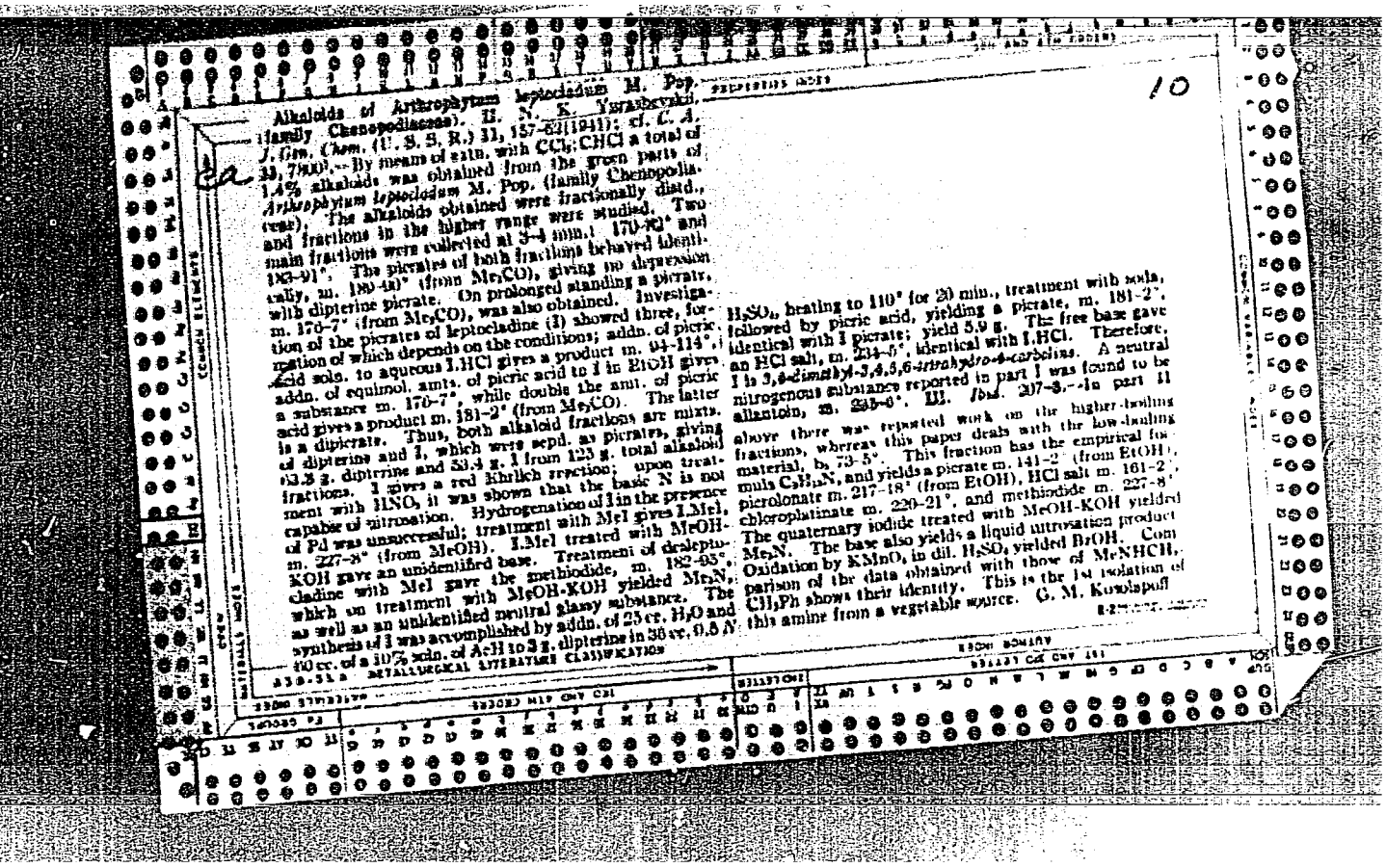
Ca

10

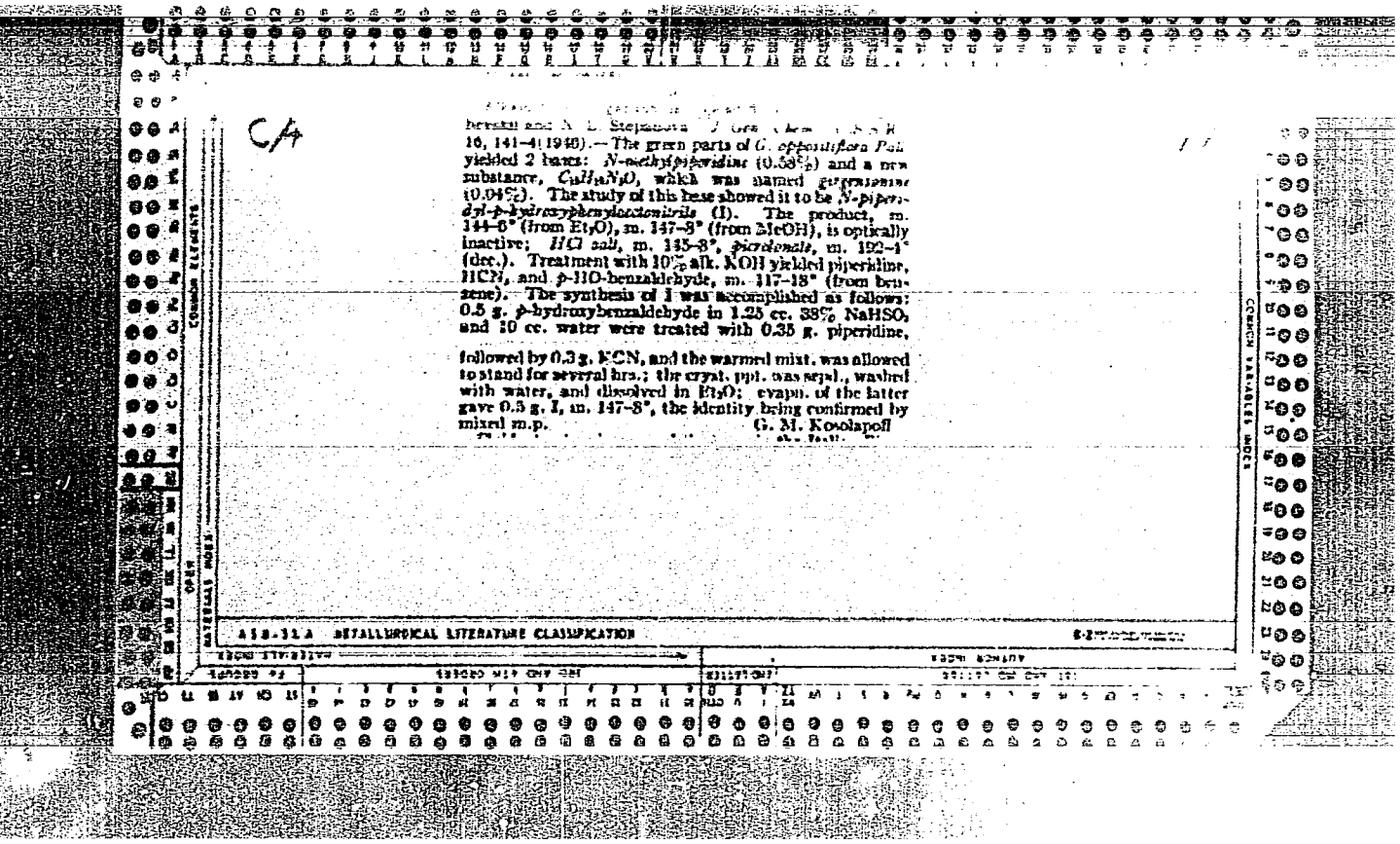
Alkaloids of Girgensohnia diptera Bge. family Chenopodiaceae. N. K. Yarashevskii and S. I. Stepanov. *J. Gen. Chem.* (U. S. S. R.) 9, 2330-6(1939).—Alc. extn. of green parts of dry *G. diptera* (gathered in Central Asia) gave 1% of *N*-methylpiperidine and 0.25% of a new alkaloid $C_{11}H_{16}N_2$, m. 87-8°, for which the name *dipterine* (I) is suggested. It contains 1 NH group, is optically inactive and is sol. in org. solvents and insol. in water. *HCl salt*, m. 177-8°; *picrate*, m. 189-90°; *chloroplatinate*, m. 107-9° (decompn.). The structure of I is being investigated.

Chas. Blanc

A56-51A METALLURGICAL LITERATURE CLASSIFICATION



Alkaloids of Arthrophytum leptocladium M. Pop. (family Chenopodiaceae). II. N. K. Yarashevich. *J. Gen. Chem. (U. S. S. R.)* 11, 157–62(1941); cf. *C. A.* 33, 7900⁹.—By means of satn. with CCl_4–$CHCl_3$ a total of 1.4% alkaloids was obtained from the green parts of *Arthrophytum leptocladium* M. Pop. (family Chenopodiaceae). The alkaloids obtained were fractionally distd., and fractions in the higher range were studied. Two main fractions were collected at 3–4 mm.: 170–80° and 183–91°. The picrates of both fractions behaved identically, m. 180–81° (from Me_2CO), giving no depression with dipterine picrate. On prolonged standing a picrate, m. 170–7° (from Me_2CO), was also obtained. Investigation of the picrates of leptocladine (I) showed three, formation of which depends on the conditions; addn. of picric acid sols. to aqueous I.HCl gives a product m. 94–114°, addn. of equimol. amts. of picric acid to I in EtOH gives a substance m. 170–7°, while double the amt. of picric acid gives a product m. 181–2° (from Me_2CO). The latter is a dipicrate. Thus, both alkaloid fractions are mixts. of dipterine and I, which were sepd. as picrates, giving 93.5 g. dipterine and 53.4 g. I from 123 g. total alkaloid fractions. I gives a red Ehrlich reaction; upon treatment with HNO_2 it was shown that the basic N is not capable of nitrosation. Hydrogenation of I in the presence of Pd was unsuccessful; treatment with MeI gives I.MeI, m. 227–8° (from MeOH). I.MeI treated with dry KOH gave an unidentified base. Treatment of dehydroleptocladine with MeI gave the methiodide, m. 182–93°, which on treatment with MeOH-KOH yielded Me_3N, as well as an unidentified neutral glassy substance. The synthesis of I was accomplished by addn. of 25 cc. H_2O and 40 cc. of a 10% soln. of AcH to 3 g. dipterine in 36 cc. 0.5 *N* H_2SO_4, heating to 110° for 20 min., treatment with soda, followed by picric acid, yielding a picrate, m. 181–2°, identical with I picrate; yield 5.9 g. The free base gave an HCl salt, m. 234–6°, identical with I.HCl. Therefore, I is 3,6-*dimethyl*-3,4,5,6-*tetrahydro*-β-*carbolina*. A neutral nitrogenous substance reported in part I was found to be allantoin, m. 235–6°. III. *Ibid.* 207–8.—In part II above there was reported work on the higher-boiling fractions, whereas this paper deals with the low-boiling fractions, whereas this fraction has the empirical formula $C_9H_{13}N$, and yields a picrate m. 141–2° (from EtOH), material, b. 73–5°. This fraction has the empirical for picrolonate m. 217–18° (from EtOH), HCl salt m. 161–2°, chloroplatinate m. 220–21°, and methiodide m. 227–8°. The quaternary iodide treated with MeOH-KOH yielded Me_3N. The base also yields a liquid nitrosation product. Oxidation by $KMnO_4$ in dil. H_2SO_4 yielded BzOH. Comparison of the data obtained with those of $MeNHCH_2Ph$ shows their identity. This is the 1st isolation of this amine from a vegetable source. G. M. Kosolapoff



C/4

Bersin and A. L. Stejskalova ... 16, 141–4 (1948).—The green parts of *G. officinalis* Pall. yielded 2 bases: *N-methylpiperidine* (0.58%) and a new substance, $C_{13}H_{16}N_2O$, which was named *geranamine* (0.04%). The study of this base showed it to be *N-piperidyl-p-hydroxyphenylacetonitrile* (I). The product, m. 144–6° (from Et_2O), m. 147–8° (from MeOH), is optically inactive; *HCl salt*, m. 185–8°, *picrolonate*, m. 192–4° (dec.). Treatment with 10% alk. KOH yielded piperidine, HCN, and *p*-HO-benzaldehyde, m. 117–18° (from benzene). The synthesis of I was accomplished as follows: 0.5 g. *p*-hydroxybenzaldehyde in 1.25 cc. 38% $NaHSO_3$ and 10 cc. water were treated with 0.35 g. piperidine, followed by 0.3 g. KCN, and the warmed mixt. was allowed to stand for several hrs.; the cryst. ppt. was separ., washed with water, and dissolved in Et_2O; evapn. of the latter gave 0.5 g. I, m. 147–8°, the identity being confirmed by mixed m.p.

G. M. Kosolapoff

A 58.31 A METALLURGICAL LITERATURE CLASSIFICATION