KOMAROV, D.A.; VERINA, G.P., tekhnicheskiy redaktor.

[Technological specifications for handling and securing loads and utilizing the carrying capacity of freight cars] Tekhnicheskie usloviia pogruzki i kreplenila gruzov i ispol'zovaniia gruzopod"emnosti vagonov. Moskva, Gos.transp.zhel-dor.izd-vo, 1955. 438 p. (MLRA 8:11)
(Railroads--Freight cars)

YUGOSLAVIA

VANDEKAR, M. and KOMANOV, I; Institute for Medical Research and Occupational Medicine (Institut za medicinska istrazivanja i medicinu rada,) Zagreb.

"Percutaneous Toxicity of Organic Phosphates. Part 1. Parathion Toxicity with Regard to Skin Surface Preparation and Mode of Application of Poison."

Zagreb, Arhiv za Higijenu rada i Toksikologiju, Vol 14, No 1, 1963; pp 7-12.

Abstract [English summary modified]: Study in rats painted with parathion solution (on 2 to 2.5 square cm. of shaved skin of back) showed that neither mutual nor self-grooming affected toxicity (i.e. no oral component); if the area was covered after application with either polyethylene film or plasticized adhesive bandage, absorption was decreased by ratio of 2 resp. 3.5. Five tables; 2 Yugoslav and 13 Western references.

1/1

VANDEKAR,M.; KOMANOV,I.

Studies on the percutaneous toxicity of organic phosphate compounds. I. Toxicity of parathion and its relation to the skin surface and the mode of application. Arch. hig. rada 14 no.1: 7-12 '63.

1. Institut za medicinska istrazivanja i medicinu rada, Zagreb.

VANDEKAR,M.; KOMANOV,I.; KOBREHEL.D.

Studies on the percutaneous toxicity of organic phosphate compounds. 2. Effect of the size of the contamined area of the skin and the concentration of the poison on the penetration rate of paraoxon through the skin. Arch. hig. rada 14 no.1: 13-18 '63.

1. Institut za medicinska istrazivanja i medicinu rada, Zagreb.

YUGOSLAVIA

VANDEKAR, M., KOMANOV, I. and KOBREHEL, Dj.; Institute for Medical Research and Occupational Medicine (Institut za medicinska istrazivanja i medicinu rada) Zagreb.

"Percutaneous Toxicity of Organic Phosphates. Part 2. Effect of Extent of Contaminated Area and Concentration of Poison on Speed of Penetration through the Skin of Paraoxone."

Zagreb, Arhiv za Higijenu Rada i Toksikologiju, Vol 14, No 1, 1963; pp 13-18.

Abstract [English summary modified]: Study in rats: appearance of symptoms was slightly earlier and cholinesterase fall sharper when 20 mg./ml. of paraoxone was applied to a 4 X 4 cm. area of shaved skin than when 80 mg./ml. was applied to 2 X 2 cm. Both area and concentration must be considered in such studies and this explains controversial data about percutaneous toxicity of such substances. Table, drawing, 2 graphs; 2 Yugoslav and 6 Western ref's.

PREOBRAZHENSKIY, N.I., kand. fiziko-matematicheskikh nauk; KOMANOV, L.I.

Increasing the service reliability of a transistorized contactless position pickup. Izv. TSKHA no.2:166-172 '63. (MIRA 16:10)

L 11037-66 EWT(1)/EWA(h)

ACC NR: AR6000411 SOURCE CODE: UR/0271/65/000/009/A031/A031

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 9A233

AUTHOR: Preobrazhenskiy, N. I.; Komanov, L. I.

8 B

TITLE: Effect of the component parameter spread and the mounting type upon the operational parameters of a transistorized inductive position sensor

CITED SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 1, no. 3, 1964, 39-45

TOPIC TAGS: position sensor, transistorized position sensor

TRANSLATION: A position sensor is considered whose operation depends on the collapse of oscillations of a transistorized oscillator. Tables are presented which show the effects of temperature, supply voltage, and transistor gain on the operating position. The operating-point shift at a supply voltage variation of -15 +10% remains within 0.3 mm with iron and copper vanes over 1 mm thick and 50 mm wide. The sensor operation is stable at temperatures within -20 +75C. The sensor parameters are reported.

SUB CODE: 13, 09

HW

Card 1/1 UDC: 621.398.694:531.7

L 2650-66 EWT(1)/EWA(h)
ACC NR: AP5026112 SOURCE CODE: UR/0119/65/000/010/0029/0029

AUTHOR: Komanov, L. I. (Engineer); Preobrazhenskiy, N. I. (Candidate of physico-mathematical sciences)

ORG: none

TITLE: Transistorized contactless position sensor 25

SOURCE: Priborostroyeniye, no. 10, 1965, 29

TOPIC TAGS: position sensor

ABSTRACT: An induction sensor consisting of two transistor oscillators and a power transistor is briefly described. The operating 0.3-mm metal vane stops oscillations when it moves into a slot between two coils of one of the oscillators, and causes the final relay to operate. Reliable operation at an ambient temperature of -20 +75C with a supply voltage variation of -15 +10% is claimed. The sensor can be supplied by a 12/24 v unsmoothed d-c voltage taken from a rectifier. Orig. art. has: 2 figures. [03]

SUB CODE: EC, IE/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 000/ ATD PRESS: 4124

Card 1/1 UDC: 62-531.4:621.3.083.8

S/133/61/000/002/012/014
A054/A033

AUTHORS: Spivakovskiy, L.I., Engineer, Komanov, P.Ye, Osadchaya, V.S., Engineer

TITLE: Comparing the Efficiency of Various Steel Tube Production Methods

PERIODICAL: Stal', 1961, No. 2, pp. 174-177

TEXT: The Soviet tube production is increasing at a higher rate than production in other sectors of the metal industry. Before World War I, the output of rolled products was 45 times higher than that of steel tubes. In the first ten years of the Soviet regime the increase in rolled goods production was 13%, that of steel tubes 135%. In 1959, steel tube production was 78 times, and that of iron tubes 8 times the 1913 level. Under the first Five-Year Plan the capital investment in tube production amounted to 193.3 million rubles (inc. 87.5 million for reconstruction), in the seven-year period of 1951-1958: 311.4 million and under Seven-Year Plan 1959-1965 investments totalling 637 million rubles are planned. In view of the increasing demand for tubes and the considerable amounts invested in this line of industry, it is

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S/133/61/000/002/012/014
A054/A033

Comparing the Efficiency of Various Steel Tube Production Methods

important to find the most economic technology. In 1958-59, the Ukrainskiy Nauchno-isslodova-tel'skiy trubnyy institut (Ukranian Scientific Tube Research Institute) studied this problem and developed a method to determine the economic aspects of tube production which is based on technical-economic indices, specific capital investment, production costs and an "index of efficiency" (the relation of profit or loss to specific capital investment). In order to determine the most economic production process, comparisons were made between the indices of rolling general purpose pipes and drive pipes. The latter (219x9.5 mm) were produced both on pilger stands and on automatic stands. Table 1 contains the technical and economic indices for 219x9.5 mm drive pipes which show that when the specific capital investment and the cost of pipes change in the same sense, productivity changes in the opposite direction. According to the comparisons, production of drive pipes on pilger mills is more economical than on automatic mills. The analysis of technical-economic indices of the production of general-purpose pipes of various sizes (102-108 and 114-127 mm) shows that the total cost of 1 ton of piping on the

Card 2/8

Comparing the Efficiency of Various Steel Tube Production Methods

tube drawing mill is 24.28% higher, while the specific capital investment is 40-50% lower than for pipes produced on the automatic mill. When calculating the economic efficiency by the selling prices and taking 115 rubles for 1 ton piping produced on the above mills, (for the same amount of tubes) the automatic mill ensures a profit of 6.5 rubles/ton, while production on rack type draw benches results in a 19-rubles loss for the same quantity of piping. This tube drawing mill should therefore be redesigned or taken out of production (Table 2). Referring to various factors of the efficiency coefficient it is possible to select the most economical technology, and by comparing the coefficients of various tubes, the optimum distribution of various tube types can be established. The parameters of large-diameter tube production for municipal pipelines were investigated in three variants: for the pilger mill production, for the pilger mill production with subsequent treatment on the expander and for electric welding (Table 3). It was found that the production costs of 529-1020 mm diameter drill tubes on 12-24" pilger mills with subsequent treatment on the expander mill (48 rubles 18 kop.) are lower than the cost of welding (with flux) of the same type of tubes, above 720 mm dia-

S/133/61/000/002/012/014
A054/A033

Comparing the Efficiency of Various Steel Tube Production Methods

meter (56 rubles 11 kop.). However, when taking into account the prospects of producing sheets on continuous mills of increasing the welding speed, etc. the calculations show that both methods will involve about the same expenses. There are 5 tables.

ASSOCIATION: UkrNITI

Card 4/8

L 06535-67 EWT(m) IJP(c)

ACC NR: AT6017507 (N) SOURCE CODE: UR/2759/65/000/007/0048/0053

AUTHOR: Komanov, V. V.; Seleznev, V. D.

28
B+1

ORG: none

TITLE: Design of a vacuum system for a linear accelerator 19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Uskoriteli, no. 7, 1965, 48-53

TOPIC TAGS: particle accelerator component, linear accelerator, high vacuum technique

ABSTRACT: The basic equations used in the design of the vacuum system for a linear waveguide accelerator are reviewed. Special attention is paid to the case when the waveguide itself is not vacuum tight but is placed in an external vacuum vessel. Expressions are given for the necessary pumping rate under various conditions. Orig. art. has: 2 figures, 15 formulas.

SUB CODE: 20,18/ SUBM DATE: none/ ORIG REF: 002

Card 1/1 efp

L 45353-66 EWP(j) RM

ACC NR: AP6033609 SOURCE CODE: CZ/0043/66/000/001/0085/0087

AUTHOR: Komanova, Eva (Engineer; Bratislava); Antos, Kamil--Antosh, K. (Docent; Engineer; Candidate of sciences; Bratislava) 24 B

ORG: Department of Organic Chemistry, Slovak Technical University, Bratislava (Katedra organickej chemie Slovenskej vysokoj skoly technickej)

TITLE: Isothiocyanates (XV). The separation of isothiocyanates by thin layer chromatography

SOURCE: Chemicke zvesti, no. 1, 1966, 85-87

TOPIC TAGS: thiocyanate, isomer, chemical separation, chromatography

ABSTRACT: Separation of isothiocyanates of the dimethylaminoazobenzene group was investigated by thin layer chromatography on silicic acid. The separation is possible when one of the benzene rings has a substituting methyl group as well as the NCS group. Orig. art. has: 2 figures and 1 table. [Based on authors' Eng. abst.] [JPRS: 34,805]

SUB CODE: 07 / SUBM DATE: 05Mar65 / ORIG REF: 005 / SOV REF: 001
OTH REF: 005

Card 1/1

KOMANOVA, Eva

Country: Czechoslovakia

Academic Degrees:

Affiliation:

Source: Bratislava, Chemické Zvesti, No 10, Oct 60, p 690

Data:

[redacted] Vaclav

Academic Degrees: Engineer

Affiliation: Department of Technical Microbiology and Biochemistry at the Slovak Technical University in Bratislava.

Data: Co-author of "Quantitative Determination and Analysis of Isc-olaic Acid during Hardening of Sunflower-seed Oil by Means of Paper Chromatography," Source.

[redacted]

Academic Degrees: Engineer

Affiliation: Department of Technical Microbiology and Biochemistry at the Slovak Technical University in Bratislava.

Data: Co-author of "Quantitative Determination and Analysis of Isc-olaic Acid during Hardening of Sunflower-seed Oil by Means of Paper Chromatography," Source.

Page 2 of 2. (1)

KOMANOVSKIY, A.

If you are an engineer... Metallurg 8 no.11:30-31 N '63.(MIRA 16:12)

1. Vneshtatnyy korrespondent zhurnala "Metallurg".

KOMANOVSKIY, A.; SPRIKUT, D.

Main direction of modernization and reorganization. Metallurg 7 no.9:25-27 S '62. (MIRA 15:9)

1. Metallurgicheskiy zavod im. S.Ordzhonikidze.
(Zaporozhye--Iron and steel plants)

DOLMATOV, F.; KOMANOVSKIY, A., inzh.

Slabbing mill operations in the Zaporozhstal' plant. Metallurg 8 no.9:28-30 S '63. (MIRA 16:10)

1. Nachal'nik tsekha slyabinga zavoda "Zaporozhstal'" (for Dolmatov).

(Zaporozh'ye--Rolling mills)

YUDIN, M.I.; KOMANOVSKIY, A.Z.; TROSHCHENKOV, N.A.

Redesign of the 1618 continuous cold rolling mill. Metallurg 8 no.11:28-29 N '63. (MIRA 16:12)

KALUZHSKIY, V.B.; [illegible]

Mastering the production of formed sections in closed passes. Metallurg 10 no.3:26-27 Mr '65. (MIRA 18:5)

1. Zavod "Zaporozhstal'".

KOMANOVSKIY, B.

Secrets of language ("A word about words" by Lev Uspenskii. Reviewed by B.Komanovskii). Znan. sila 33 no.2:41 F '58. (MIRA 11:4)
(Language and languages) (Uspenskii, Lev.)

KOMANOVSKIY, B.

Traveling in a mountain country ("Through Tibet" by V. Ovchinnikov. Reviewed by B. Komanovskii). Znan. sila 33 no.4:43 Ap '58. (MIRA 11:5)
(Tibet--Description and travel)
(Ovchinnikov, V.)

SHEREGAYEV, Nikolay Pavlovich; KOMANOVSKIY, M.L., inzh., retsenzent; KULACHKOV, V.I., inzh., retsenzent; GERB, M.A., inzh., red.; MITARCHUK, G.A., red. izd-va; SPERANSKAYA, O.V., tekhn. red.

[Concise handbook on descriptive geometry and mechanical drawing] Kratkii spravochnik po nachertatel'noi geometrii i mashinostroitel'nomu cherchcheniiu. Moskva, Mashgiz, 1962. 214 p. (MIRA 15:3)

(Mechanical drawing)
(Geometry, Descriptive)

ARONOV, Samuil Grigor'yevich; BAUTIN, Ivan Grigor'yevich; VOLKOVA, Zoya Andreyevna; VOLOSHIN, Arkhip Il'ich; VIROZUB, Yevgeniy Vladimirovich; GARAY, Lev Izrailevich, DIDENKO, Viktor Yefimovich; ZASHKVARA, Vasiliy Grigor'yevich; IVANOV, Pavel Aleksandrovich, KUSTOV, Boris Iosifovich [deceased]; KOTOV, Ivan Konstantinovich; KOTKIN, Aleksandr Matveyevich; KOMAROVSKIY, Maksim Semenovich; LEYTES, Viktor Abramovich, MOROZ, Mikhail Yakovlevich; NIKOLAYEV, Dmitriy Dmitriyevich, OBUKHOVSKIY Yakov Mironovich; RODSHTEYN, Pavel Moiseyevich; SAPOZHNIKOV, Yakov Yudovich, SENICHENKO, Sergey Yefimovich; TOPORKOV, Vasiliy Yakovlevich; CHERMNYKH Mikhail Sergeyevich; CHERKASSKAYA, Esfir' Ionovna, SHVARTS, Semen Aronovich; SHERMAN, Mikhail Yakovlevich; SHVARTS, Grigoriy Aleksandrovich; LIBERMAN, S.S., redaktor izdatel'stva; ANDREYEV, S.P., tekhnicheskiy redaktor

[Producing blast furnace coke of uniform quality; a collection of articles for the dissemination of advanced practices] Poluchenie domennogo koksa postoiannogo kachestva; sbornik statei po obmenu peredovym opytom. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 300 p. (MLRA 9:8)
(Coke industry)

KOMANOVSKIY, Z.I., inzh.

Technical solutions of principal buildings of the Krivoy Rog Central Mining and Ore Dressing Combine. Prom.stroi. 37 no.8:58-62 Ag '59. (MIRA 12:11)

1. Pridneprovskiy Promstroyproyekt.
(Krivoy Rog--Ore dressing) (Factories--Design and construction)

KOMANOVSKIY, Z.Sh., inzhener; SATANOVSKAYA, A.S., inzhener.

Coke bunkers built of precast reinforced concrete elements.
Bet. i zhel.-bet. no.12:425-429 D '56. (MLRA 10:2)

(Precast concrete construction) (Coke--Storage)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020007-8

~~[illegible]~~, KOMANSKI, T.

POLAND/Nuclear Physics - Installations and Instruments. Methods of Measurement and Research C-2

Abs Jour : Ref Zhur - Fizika, No 6, 1958, No 12459

Author : Komanski Tadeusz
Inst : Institute for Nuclear Research, Polish Academy of Sciences, Warsaw, Poland
Title : Slow Neutron Detection in the Presence of Gamma Radiation

Orig Pub : Acta phys. polon., 1956, 15, No 5, 351

Abstract : The measurement is based on the fact that the gamma rays do not cause noticeable scintillations in ZnS (Ag), and knock out electrons directly from the photocathode and the dynodes. As a consequence the pulses at the output of the photomultiplier are very brief. At the same time the α particles of the reaction $B^{10}(n,\alpha)Li^7$ produce in the ZnS (Ag) light pulses of long duration. This makes it possible, using an integrating network and a simple amplitude discriminator, to eliminate practically all the background of the gamma rays.

Card : 1/1

BUZAYEVA, A.I.; POLYAK, E.A.; PERKINA, A.S.; KOMANTSEVA, M.I.

Use of complexometric methods for determining the basic substance in chemical reagents. Prom. khim. reak. i osobo chist. veshch. no.1:22-24 '63. (MIRA 17:2)

BUZAYEVA, A.I.; VELICHKO, E.N.; KOMANTSEVA, M.I.

Spectral determining of impurities in reagents and preparations. Prom. khim. reak. i osobo chist. veshch. no.1:19-22 '63. (MIRA 17:2)

HORN, Dezso; TEMESSZENTANDRASI, Guido; NOHRER, Arpad; VARGA, Gyorgy; BERES, Sandor, dr., buntetobiro; TOTH, Anna, SIMONOVITS, Istvan; KOMAR, Andras; PAL, Ferenc, dr.; SOMOGYI, Miklos; SOMOSKOI, Gabor

The 10th Plenary Session of the National Council of Trade Unions. Munka 11 no.6:1-12,29-30 Je '61.

1. Szakszervezetek Orszagos Tanacsanak titkara, es "Munka" szerkesztobizottsagi tab (for Horn, Varga). 2. Fomernok, Ozdi Kohaszati Muvek (for Temesszentandrasi). 3. Elelmezesipari Dolgozok Szakszervezete elnoke. (for Nohrer). 4. Textilszakszervezet fotikara (for Toth). 5. Egeszsegugyi Miniszter elso helyettese, Budapest. (for Simonovits). 6. Banyaipari Dolgozok Szakszervezetenek titkara (for Komar). 7. Orvos-Egeszsegugyi Dolgozok Szakszervezetenek fotitkara (for Pal). 8. Szakszervezetek Orszagos Tanacsanak elnoke es Magyar Szocialista Munkaspart Politikai Bizottsaganak Tagja (for Somogyi). 9. Epito-,Fa- es Epitoanyagipari Dolgozok Szakszervezete fotitkara (for Somoskoi).

MUNDI, Iozhef; KOMAR, Andrash; VIG, Arnad; VARGA, Iozhef; KANDO, Yanosh

We are proud of your success. Mast. ugl. 8 no.8:30 Ag '59.
(MIRA 12:12)

1. Chleny profsoyuznoy delegatsii gornyakov Vengrii.
(Hungary--Coal miners)

Komar, A.

MALEC J., ZAKRZEWSKI K., KOMAR A.

Oznaczanie olowiu we krwi. [Determination of lead in blood]
Med. dosw. mikrob. 2:3-4 1950 p. 577-85.

1. Of the Institute of Physiological Chemistry of Warsaw Medical Academy and of the Central Institute of Labor, Warsaw.
CIML Vol. 20, No. 10 Oct 1951

KOMAR, A.

PA 20/49T65

USSR/Engineering
Cooling
Coal Tar Products

Nov 48

"A New Type of Cooling Unit for a Coal Tar By-Products Plant," A. Komar, Chief Engr, Dneprotyazhstroy Trust, K. Dembinskiy, Engr, ½ p

DNEPROPETROVSK

"Stroitel' Prom" No 11

Discusses results of experience gained from installation of subject structure by Administration No 2 of the Dneprotyazhstroy Trust, with photograph of the completed project.

[redacted]

20/49T65

KOMAR, Andras

Situation of the socialist competition in the mining. Munka 11 no.1: 30-31 Ja '61.

1. A Banyasz Szakszervezet titkara.

(Hungary—Coal mines and mining)

KOMAR, A. A.

"Bremsstrahlung and Pair Production of Particles of Spin 3/2"
Nuclear Physics, 9, No. 1, 1958, November. (No. Holland Publ. Co., Amsterdam)

P. N. Lebedev, Physical Inst, Acad. Sci. USSR, Moscow,

Abstract: Bremsstrahlung and pair production for spin 3/2 particles are computed in the lowest perturbation theroy approximation. The ultrarelativistic case is considered in detail. Them importance of small impact parameters is demonstrated. For a pure Coulomb nuclear field the cross sections are proportional to E^6 where E isthe incident particle or photon energy. The effect of deviation of the nuclear electric field from that of a point Coulomb source is discussed.

21(7)

AUTHOR: Komar, A. A.

SOV/56-35-3-48/61

TITLE: The Scattering of a Particle of Spin 3/2 in a Coulomb Field (Rasseyaniye chastitsy so spinom 3/2 v kulonovskom pole)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 3, pp 806 - 807 (USSR)

ABSTRACT: The influence exercised by the various values of the spin of the newly discovered elementary particles may be of interest for the investigation of this spin. This influence manifests itself in connection with some effects such as Compton (Kompton) scattering, bremsstrahlung, and pairwise production of particles with spin 0, 1/2, 1, 3/2. The present paper deals with the scattering of particles with spin 3/2 in the Coulomb (Kulon) field of a nucleus. The matrix element of the process in Born's approximation has the form $\mathcal{M} = -e\int \bar{B}^i(x)A_k(x)\gamma_k B^i(x)d^4x$. The spin vector $B^i(x)$ describes a particle with the spin 3/2 and satisfies the following equation: $(\gamma_k \partial/\partial x_k + M)B^i(x) = 0$ and the additional conditions $\gamma_i B^i = 0$, $\partial B^i/\partial x_i = 0$. A_k denotes the four-potential

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of the nuclear field. Next, expressions are written down for the matrix element in p-representation and for the differential cross-section dσ. For a pure Coulomb field the Rutherford (Rezerford) cross-section is obtained. The spin corrections are taken into account by a factor contained in the expression for dσ. For particles with the spins 1 and 3/2 the spin corrections increase with energy; this may be observed with particular distinctness in the case of spin 3/2. If energies are high, this may lead to deviations from the usual form of scattering even if scattering angles are not very large. There are 2 references.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: June 14, 1958

KOMAR, A. A., Candidate Phys-Math Sci (diss) -- "On electromagnetic interactions of particles with a spin of 3/2". Moscow, 1959. 8 pp (Acad Sci USSR, Phys Inst im P. N. Lebedev), 150 copies (KL, No 24, 1959, 125)

24(5),24(3)

AUTHORS: Komar, A. A., Markov, M. A. SOV/56-36-3-31/71

TITLE: On a Variant of the Nonlocal Theory of the Electromagnetic Field (Ob odnom variante nelokal'noy teorii elektromagnitnogo polya)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 854-858 (USSR)

ABSTRACT: Several authors (Refs 1-3) investigated a variant of the nonlocal electromagnetic field theory and used a potential of the Lienard-Wiechert (Liyenar, Vikhert) type

$$A_\mu = -e(u_\mu(r')/R_\nu u_\nu(r'))_{R_\nu^2 + a^2 = 0} \quad \text{with} \quad \Box A_\mu = -\frac{4\pi}{c} j_\mu .$$

The present paper intends to show that this variant leads to unsatisfactory results and that the suggested general potential form and the resulting smearing out of the charge leads to an internal contradiction: to incompatibility of the system of classical equations for charged particles. The correctness of this statement made by the authors, which is mentioned at the beginning of this paper, is proved by means of a consistent

Card 1/2

On a Variant of the Nonlocal Theory of the Electromagnetic Field

SOV/56-36-3-31/71

relativistic treatment, viz. by a transition to the many-time formalism (Ref 4) of the classically electrodynamical description of a system of charged particles.
There are 6 references, 2 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: September 10, 1958

Card 2/2

S/057/61/031/002/012/015
B124/B202

26.2340

AUTHORS: Komar, A. P. and Komar, A. A.

TITLE: Molecules and complexes of molecules and atoms as waveguides for electron waves

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 2, 1961, 231-237

TEXT: When working with a field emission microscope, 2 to 4 light spots consisting of two or four parts frequently appear on the screen of the microscope (Fig. 1). This is mainly the case when the piston walls are poorly degassed or if the vacuum is poor. Sometimes also oval spots, circles, rings and more complex patterns are observed (see Fig. 2), which are thoroughly described in Refs. 1 and 2. On the basis of the papers hitherto published it may be assumed as certain that 1) these patterns are formed by molecules or complexes of molecules and atoms which are adsorbed on the surface of the point; 2) the symmetry and intensity of the patterns are not connected with the symmetry of the molecules; and 3) electron exchange occurs between molecule and metal point. The intensity distribution in the spots is the same as in light which had passed through transparent

threads (Ref. 12) or in amplitudes of ultraviolet vibrations which had passed through elastic rods (Ref. 14). During electron emission of molecules, the electron waves are canalyzed by the molecules. Electron emission mainly takes place from the direction of the free front side of the molecules. It is demonstrated that the molecules are waveguides for electron waves which was also experimentally confirmed. Two boundary conditions

$$\text{I)}\ \psi|_{r=a} = 0$$

$$\text{II)}\ \frac{\partial\psi}{\partial r}\Big|_{r=a} = 0. \qquad (5)$$

are set up. The authors also discuss the order of the occurrence of the various types of vibration and the form of the patterns on the screen as depending on the energy $E = ev$ of the electron, i.e., its dependence on the voltage drop on the waveguide. The critical lower energy at which such patterns appear on the screen is determined from equations

$$\text{I)}\ \frac{2m_e}{\hbar^2}(E + e\bar{v}_i) = \frac{\nu_{ni}^2}{a^2}, \quad (10a) \text{ and II) } \frac{2m_e}{\hbar^2}(E + e\bar{v}_i) = \frac{\mu_{ni}^2}{a^2}. \quad (10b),$$

Card 2/8

which indicate that this order is exclusively determined by the law governing the increase of the roots of Bessel function ν_{ni} and μ_{ni}. Various types of vibration for both boundary conditions are shown in Table I. They indicate that the types of vibration are very similar as to their ψ distribution symmetry under both boundary conditions. The patterns consisting of two and four parts can actually be ascribed to the waveguide properties of the molecules. The order observed in the present paper is in full agreement with the order of the types of vibration at $\psi|_{r=a} = 0$, shown in Table I. Table II shows the types of vibration for a waveguide with square cross section which do not essentially differ from those of Table I. The values m corresponding to the lowest types of vibration are low; however, n may vary in a rather wide range. The patterns shown in Table III may be observed on the projector screen if $m = 3$ and $n = 6$. There are 2 figures, 3 tables, and 15 references: 4 Soviet-bloc and 6 non-Soviet-bloc.

Card 3/8

89166

Molecules and complexes of... S/057/61/031/002/012/015
B124/B202

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe, AN SSSR (Institute of Physics and Technology imeni A. F. Ioffe of the AS USSR) Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: December 14, 1960

Card 4/8

KOMAR, A. A. and MARKOV, M. A.

"Possible evidence of the direct electron-neutrino interaction"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

KOMAR, A. A.

#49

PHASE I BOOK EXPLOITATION SOV/5982

International Conference on High-Energy Physics. 9th, Kiyev, 1959.

Devyataya mezhdunarodnaya konferentsiya po fizike vysokikh energiy, Kiyev 15-25 iyulya 1959 g. (Ninth International Conference on High-Energy Physics. Kiyev, July 15-25, 1959), Moscow, 1961. 739 p. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Mezhdunarodnyy Soyuz chistoy i prikladnoy fiziki.

Contributors not mentioned.

PURPOSE: This book is intended for nuclear physicists.

COVERAGE: The collection contains 30 scientific articles presented at the 9th International Conference on High-Energy Physics, held in Kiyev from 15 to 25 July 1959. The articles presented relate mainly to the progress in nuclear physics achieved in 1959. Subjects discussed are the production of

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Ninth International Conference (Cont.) 807/5982

nucleons, their structure, weak and strong interactions, scattering, and their decay. No personalities are mentioned. References accompany individual articles.

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BALDIN, A.M.; KOMAR, A.A.; SARANTSEVA, V.R.

Hypercharge and degeneracy in respect to isotopic spin. Dubna, Ob"edinennyi in-t iadernykh issledovanii, 1962. 4 p.

1. Lebedev Physical Institute. Moscow (for Komar).
(No subject heading)

KOMAR, A.P.; KOMAR, A.A.

Theory of the wave guide properties of metallike molecules and their complexes. Zhur.tekh.fiz. 32 no.7:867-873 Jl '62. (MIRA 15:8)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad i Fizicheskiy institut imeni P.N.Lebedeva AN SSSR, Moskva.
(Molecular association) (Wave guides) (Field emission)

BALDIN, A.M.; KOMAR, A.A.

Symmetry of strongly interacting systems with hypercharge $Y = 0$. Dubna, Obʿedinennyi in-t iadernykh issledovanii, 1962. 5 p.

(No subject heading)

BALDIN, A.M.; KOMAR, A.A.

Degeneration with respect to isotopic spin, and the hypercharge. Dokl. AN SSSR 146 no.3:574-576 S '62. (MIRA 15:10)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR. Predstavleno akademikom I.Ye.Tammom.
(Nuclear spin) (Isotopes)

KOMAR, A.A.; LEYKIN,Ye.M.; METAL'NIKOV, Yu.N.; MOROZ, Ye.M.; PETUKHOV, V.A.

Physical foundations of experiments on opposing electron-positron beams. Trudy Fiz. inst. 22:222-295 '64. (MIRA 17:9)

KOMAR, A.A.; MAN'KO, V.I.

Some aspects of the physical applications of unitary groups. IAd. fiz. 1 no.4:693-700 Ap '65. (MIRA 18:5)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.

BALDIN, A.M.; KOMAR, A.A.

Fundamental trends of studies in physics of elementary particles (according to materials of the 12th International Conference on High-energy Physics held at Dubna in August 1964). Usp. fiz. nauk 85 no.3:543-564 Mr '65. (MIRA 18:4)

KOZINSKIY, N.F. [Kozyns'kyi, M.F.]; KOMAR, A.F.; KLEPKO, F.K.

High-density refractory after the introduction of bentonites into charges. Dop. AN URSR no.11:1501-1504 '65. (MIRA 18:12)

1. Ukrndipromkul'tpobutvirobiv.

KOMAR, A. G. (Grad Stud)

Dissertation: "An Investigation of Some Questions on the Use of Concrete Pavements for City Streets." Cand Tech Sci, Moscow Order of the Labor Red Banner Construction Engineering Institute imeni V. V. Kuybyshev, 15 Jun 54. (Vechernyaya Moskva, Moscow, 4 Jun 54)

SO: SOK 318, 23 Dec 1954

KOMAR, A.G., kandidat tekhnicheskikh nauk.

Compression joint design for cement concrete surfaces. Avt.dor. 18 no.6:17-18 O '55. (MLRA 9:2)
(Roads, Concrete)

VOROB'YEV, Vasiliy Aleksandrovich, prof., doktor tekhn.nauk, zasluzhennyy deyatel' nauki i tekhniki RSFSR. Prinimali uchastiye: GLYBIN, V.S., starshiy prepodavatel'; DENISOV, A.A., kand.tekhn.nauk, dotsent; KOMAR, A.G., kand.tekhn.nauk, dotsent; FEDOSEV, G.P., starshiy prepodavatel'. MARTYNOV, A.P., red.; VORONINA, R.K., tekhn.red.

[Building materials] Stroitel'nye materialy. Izd.3., rasshirennoe i perer. Moskva, Vysshaia shkola, 1962. 496 p. (MIRA 15:5)

(Building materials)

KOMAR, Aleksey Georgiyevich, kand. tekhn. nauk; GLYBIN, Vasiliy Sergeyevich, inzh.; KOLOKOL'NIKOV, V.S., red.; LIPSKAYA, V.F., red.izd-va; GALAKTIONOVA, Ye.N., tekhn. red.

[Technology of cement concrete for roads] Tekhnologiia dorozhnogo tsementobetona. Moskva, Avtotransizdat, 1963. 222 p. (MIRA 17:3)

KOMAR, Aleksey Georgiyevich, kand. tekhn. nauk; GLYBIN, Vasiliy Sergeyevich, inzh.; KOLOKOL'NIKOV, V.S., red.; LIPSKAYA, V.F., red.izd-va; GALAKTIONOVA, Ye.N., tekhn. red.

[Technology of cement concrete for roads] Tekhnologiia dorozhnogo tsementobetona. Moskva, Avtotransizdat, 1963. 222 p. (MIRA 17:3)

PORUDOMINSKIY, Viktor Vladimirovich; KOMAR, A.M., red.

[Transformers with load switching] Transformatory s perekliucheniem pod nagruzkoi. Moskva, Energiia, 1965. 263 p. (Transformatory, no.15) (MIRA 18:8)

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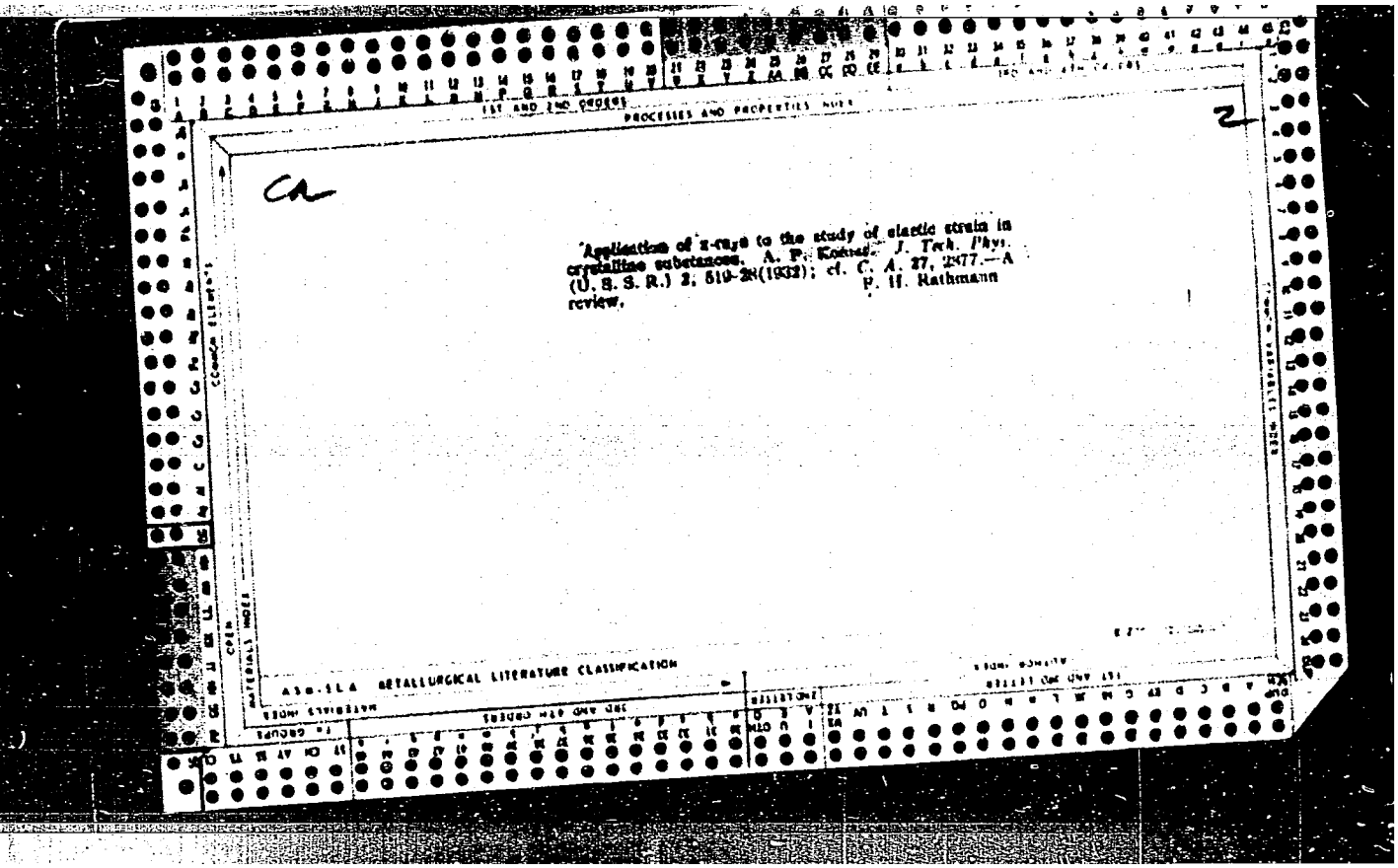
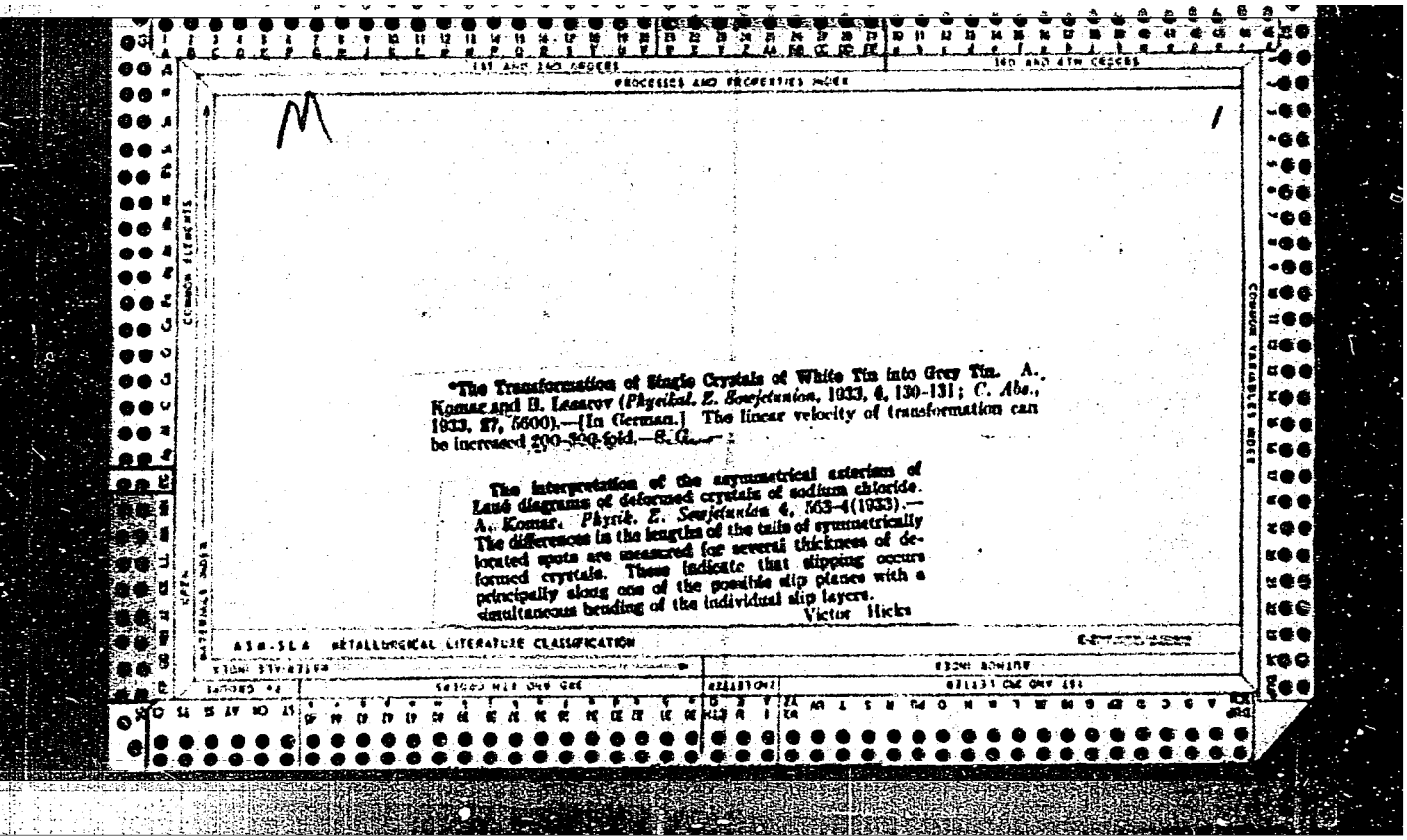
ROKHLIN, Il'ya Aleksandrovich, kand.tekhn.nauk; LUKASHENKO, Ivan Andreyevich, kand.tekhn.nauk; AYZEN, Arkadiy Markovich. Prinimali uchastiye: DRANISHNIKOV, P.I., kand.tekhn.nauk; MINTSKOVSKIY, M.Sh., kand. tekhn.nauk. KOMAR, A.N. [deceased], red.; BERGER, K., red.; GARKAVENKO, L., tekhn. red.

[Handbook for construction engineers] Spravochnik konstruktora-stroitelia. Pod red. A.N.Komara. Kiev, Gostroiizdat USSR, 1963. 813 p. (MIRA 16:6)

1. Deystvitel'nyy chlen Akademiy stroitel'stva i arkhitektury SSSR i UkrSSR (for Komar).
(Building)



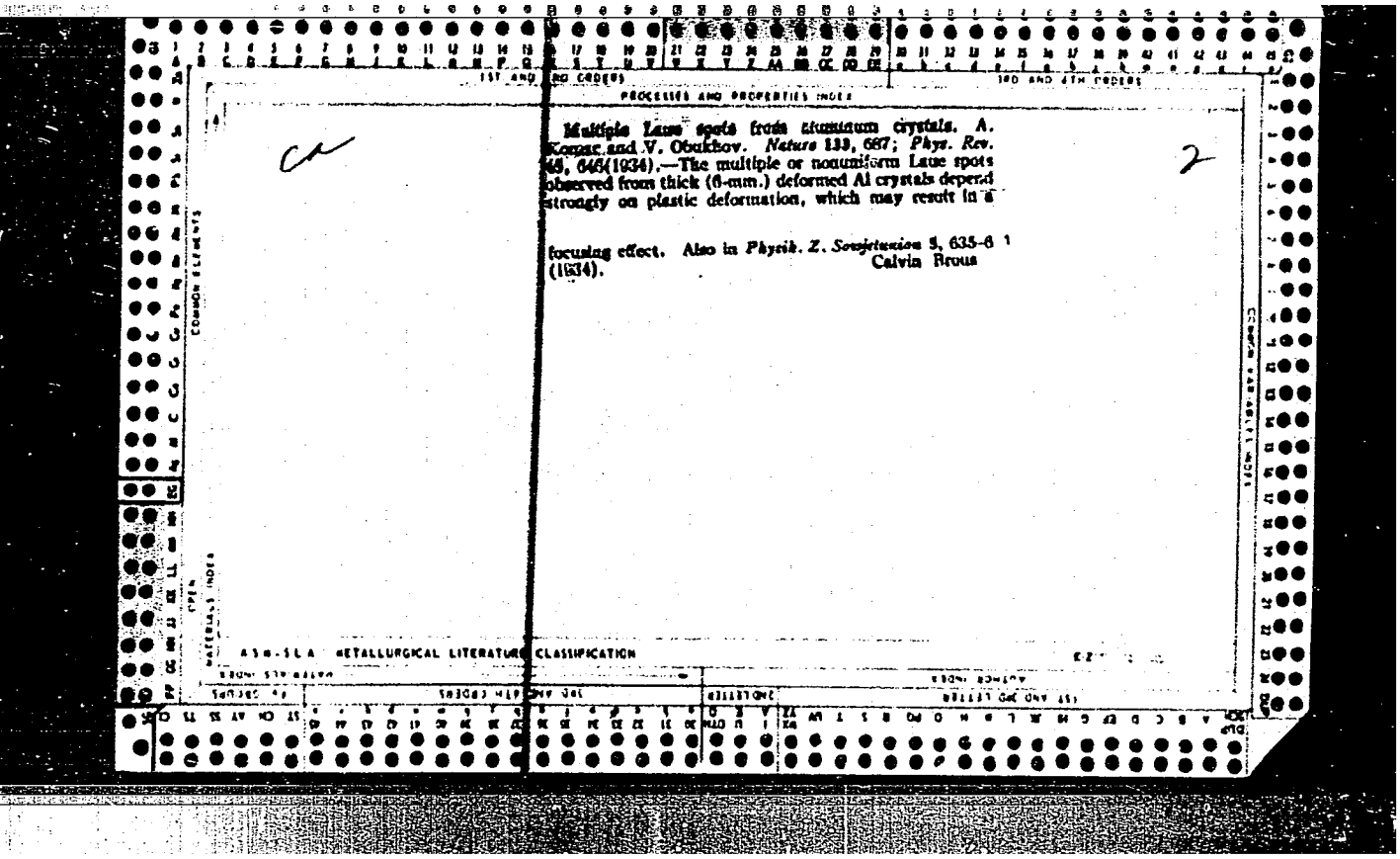


"The Transformation of Single Crystals of White Tin into Grey Tin. A. Komar and B. Lazarov (*Physikal. Z. Sowjetunion*, 1933, **4**, 130–131; *C. Abs.*, 1933, **27**, 5600).—[In German.] The linear velocity of transformation can be increased 200–300-fold.—*S. G.*

The interpretation of the asymmetrical asterism of Laué diagrams of deformed crystals of sodium chloride. A. Komar. *Physik. Z. Sowjetunion* **4**, 563–4(1933).—The differences in the lengths of the tails of symmetrically located spots are measured for several thicknesses of deformed crystals. These indicate that slipping occurs principally along one of the possible slip planes with a simultaneous bending of the individual slip layers.

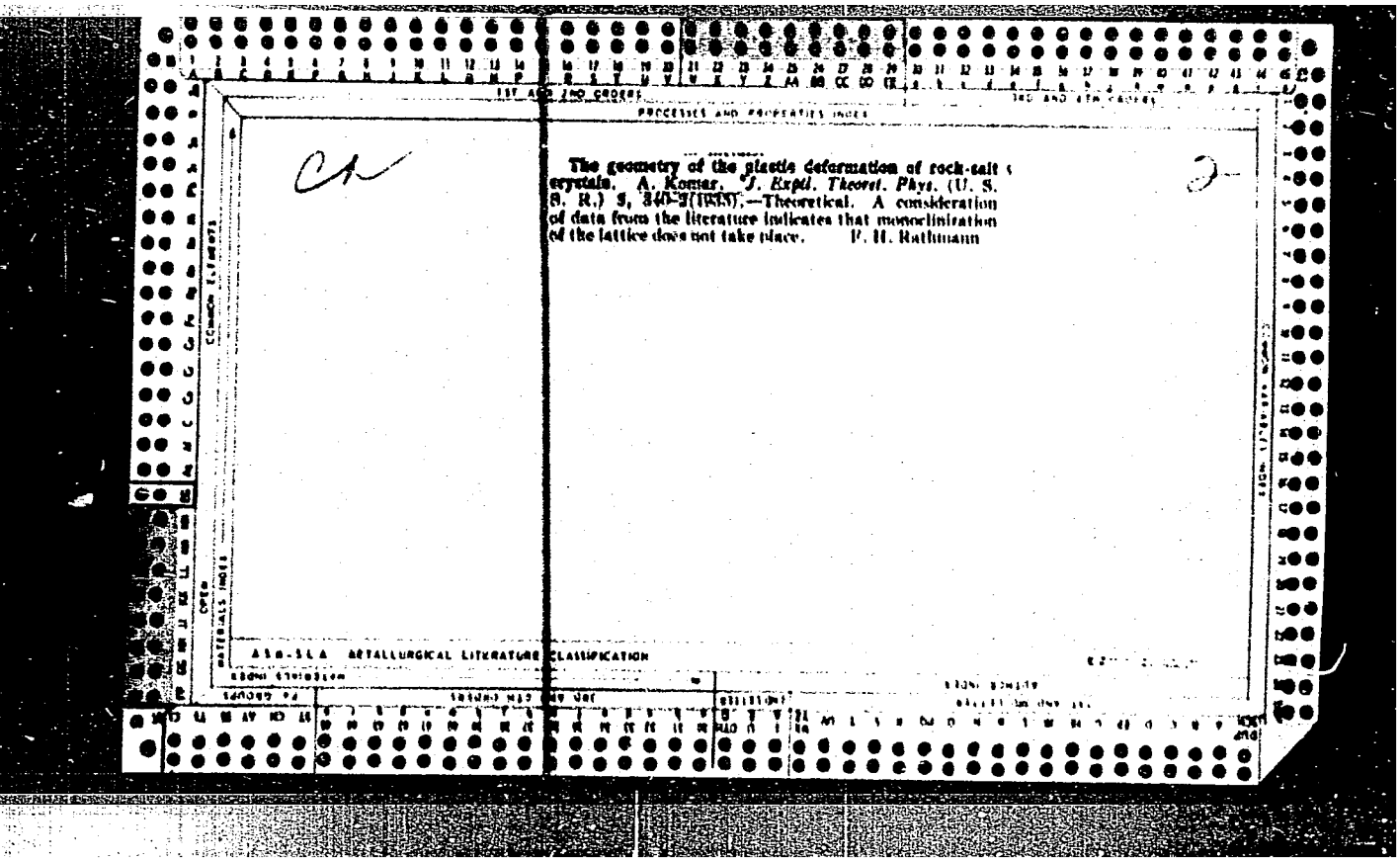
Victor Hicks

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



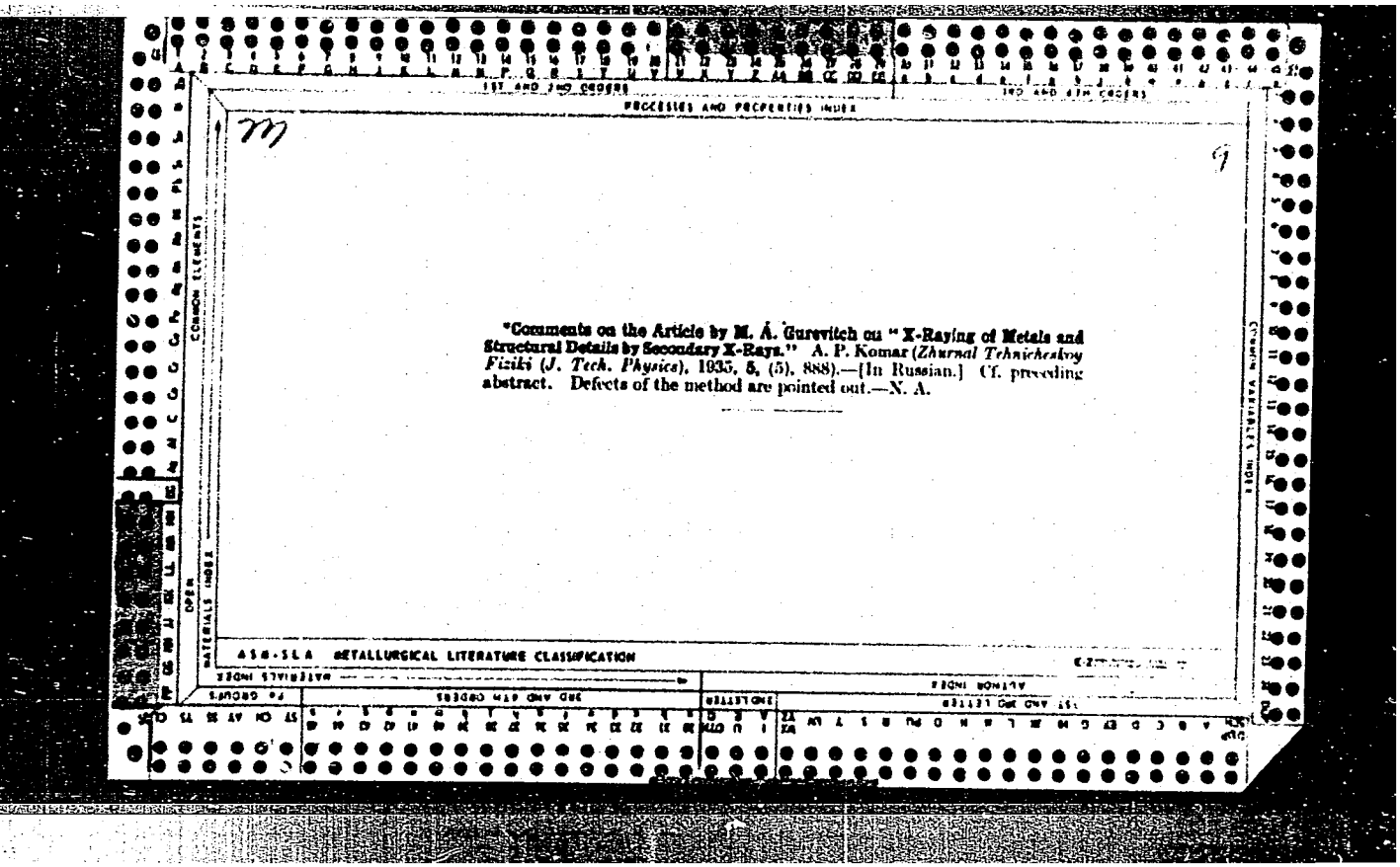
Multiple Laue spots from aluminum crystals. A. Kosmac and V. Obukhov. *Nature* 133, 667; *Phys. Rev.* 45, 646(1934).—The multiple or nonuniform Laue spots observed from thick (6-mm.) deformed Al crystals depend strongly on plastic deformation, which may result in a focusing effect. Also in *Physik. Z. Sowjetunion* 5, 635-6 (1934).

Calvin Brous

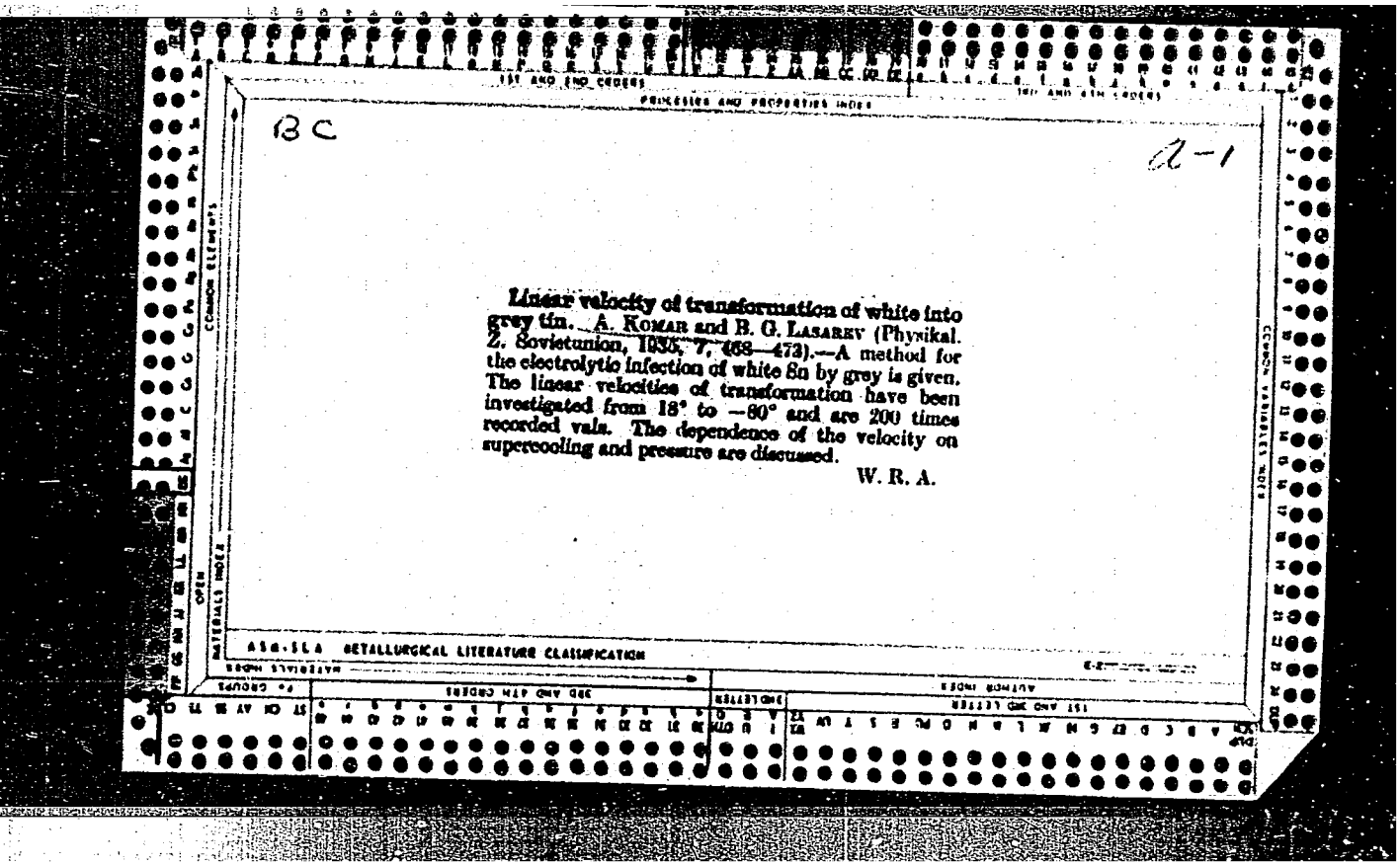


The geometry of the plastic deformation of rock-salt c
crystals. A. Komar. *J. Exptl. Theoret. Phys.* (U. S.
S. R.) 9, 340-3(1939).—Theoretical. A consideration
of data from the literature indicates that monoclinization
of the lattice does not take place. P. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



"Comments on the Article by M. A. Gurevitch on "X-Raying of Metals and Structural Details by Secondary X-Rays." A. P. Komar (*Zhurnal Tehnicheskoy Fiziki* (*J. Tech. Physics*), 1935, **5**, (5), 888).—[In Russian.] Cf. preceding abstract. Defects of the method are pointed out.—N. A.



13C

a-1

Linear velocity of transformation of white into grey tin. A. KOMAR and B. G. LASAREV (Physikal. Z. Sovietunion, 1935, 7, 468—473).—A method for the electrolytic infection of white Sn by grey is given. The linear velocities of transformation have been investigated from 18° to −80° and are 200 times recorded vals. The dependence of the velocity on supercooling and pressure are discussed.

W. R. A.

KOMAR, A. P.

Polymorphous Transformation in Metals. "Roentgenography Applied to the Study of Materials." Collection Edited by G. Kurdyumov. ONTI NKTP, 1936, p. 217.

KOMAR, A.P.

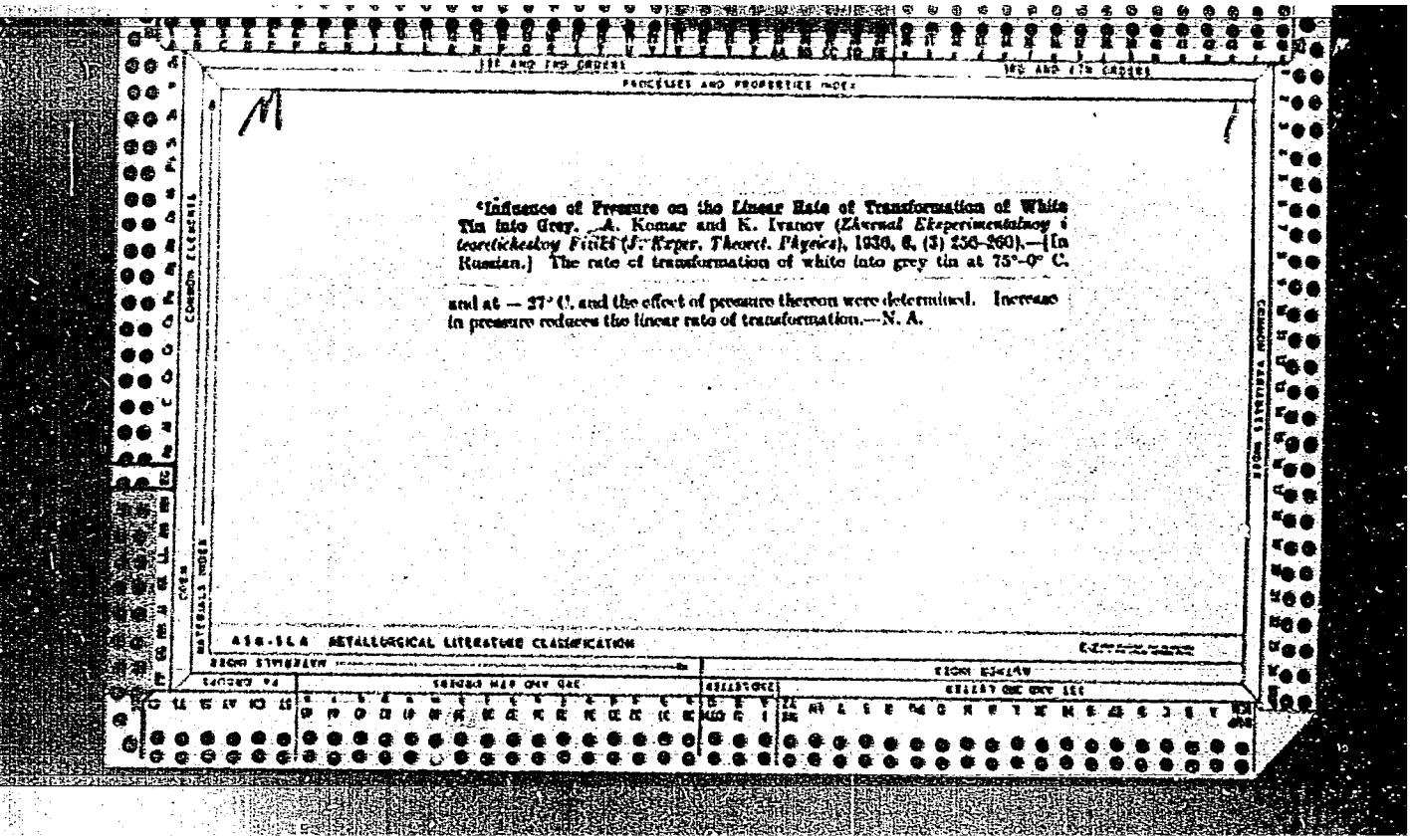
ALEKSEYEVA, K. I., KOMAR, A. P.

Methodology of "Debaegram" Photometric Evaluation. "Roentgengraphy in its Application to the Study of Materials." Collection Edited by G. Kurdyumov, ONTI, 1936, p. 510, ZhTF 5, 342, 1935.

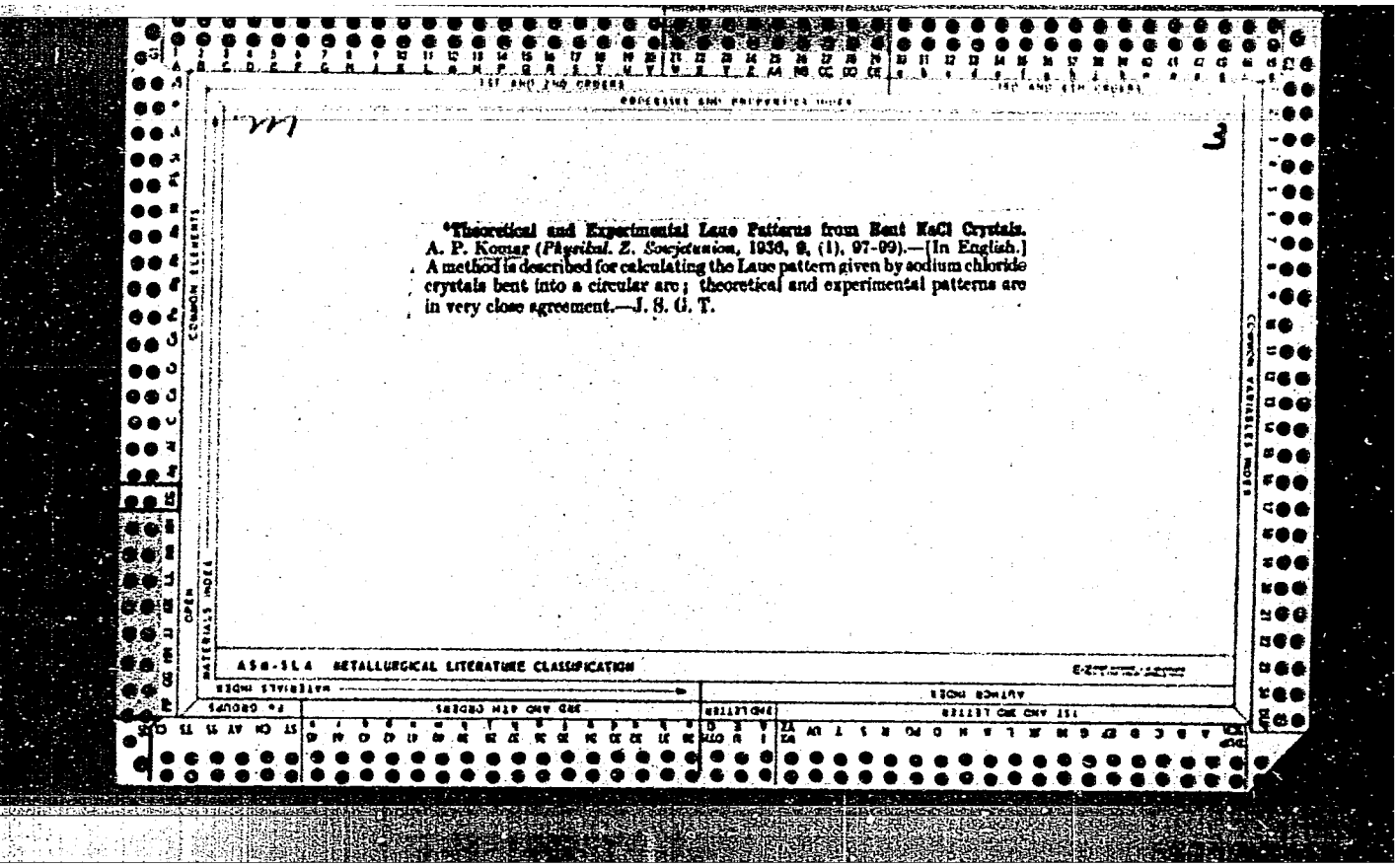
KOMAR, A., TERMINASOV, Yu.

The X-Ray Study of Transformer Steel.

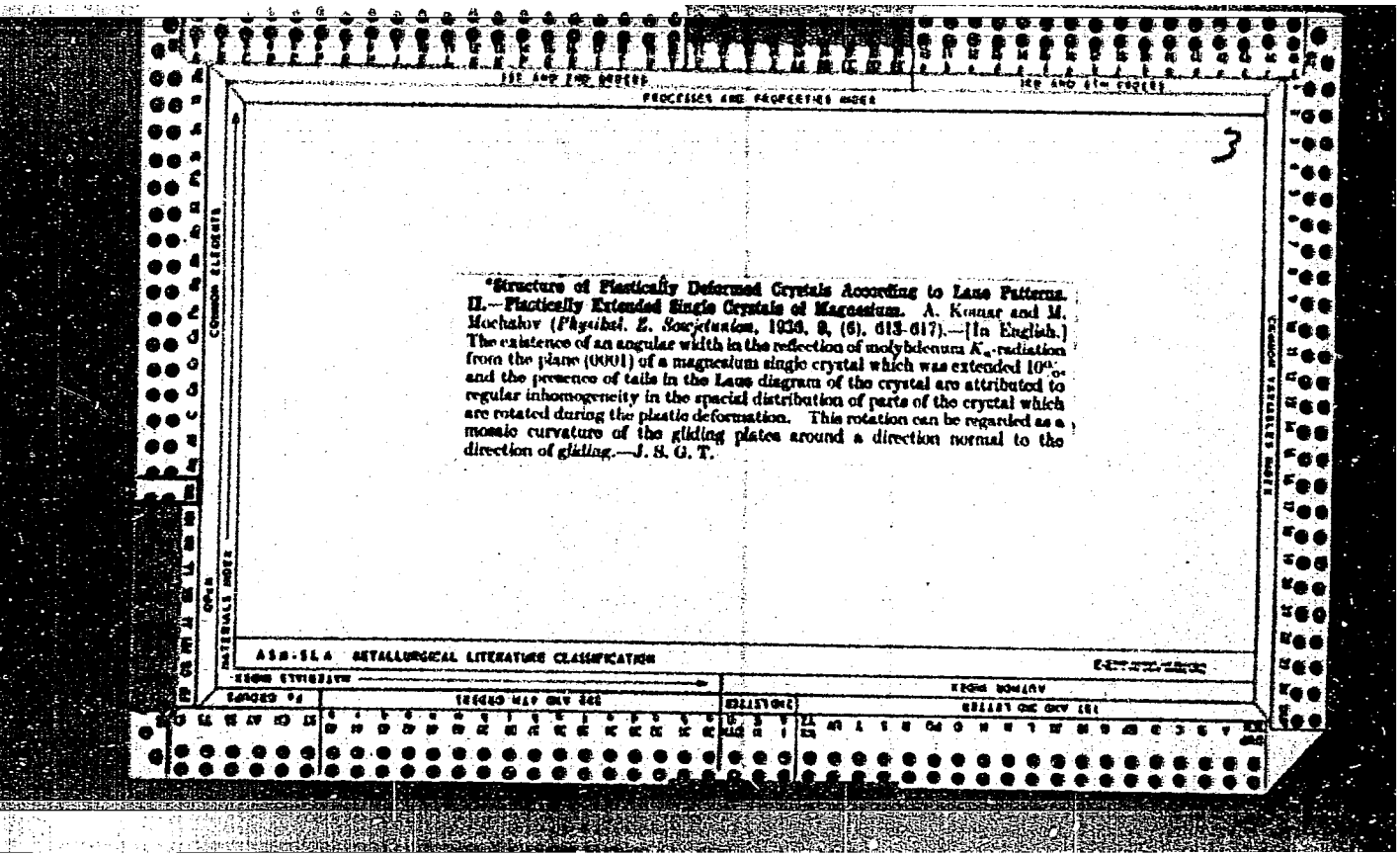
ZhTF 6, 254, 1936.



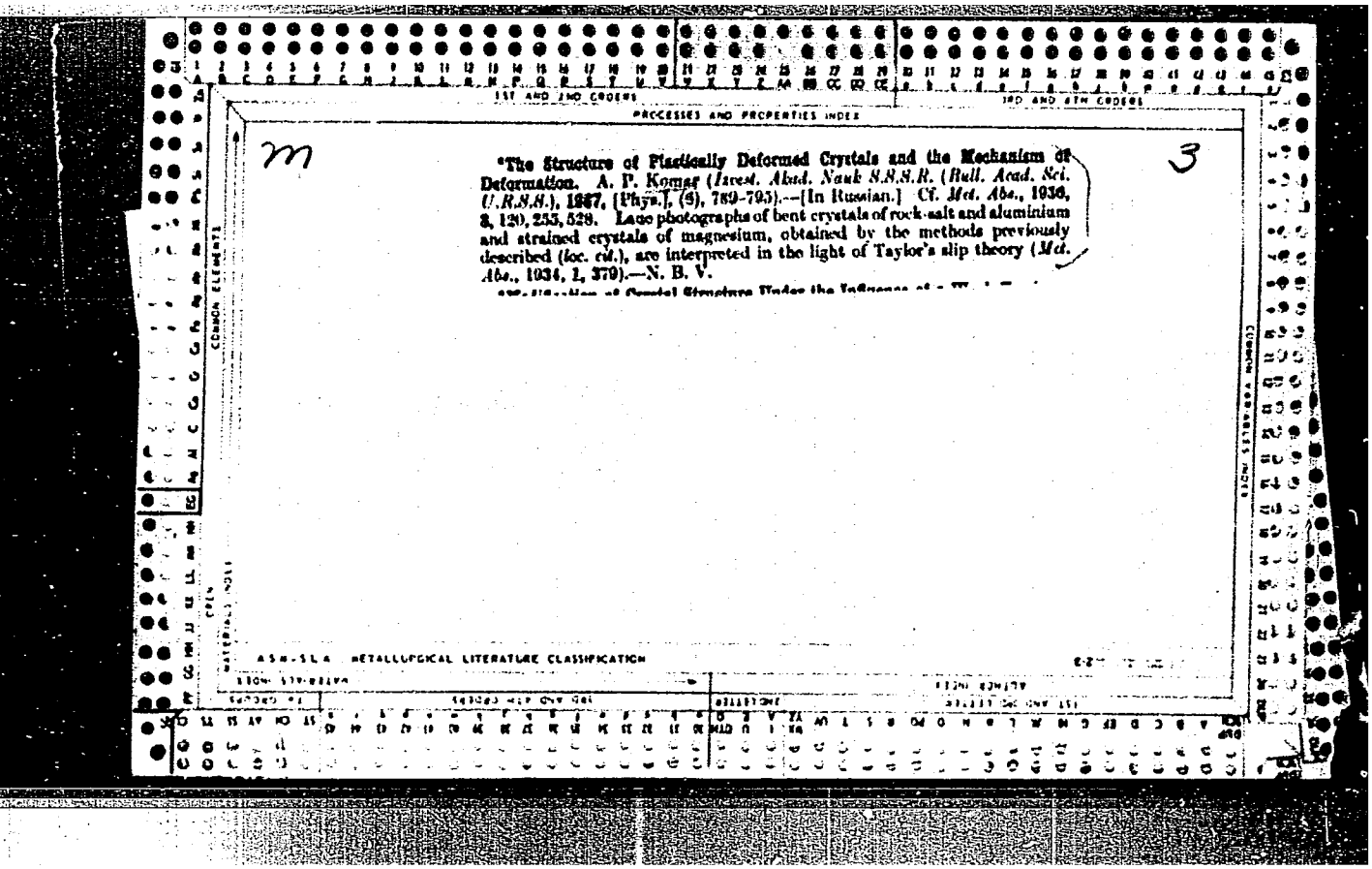
'Influence of Pressure on the Linear Rate of Transformation of White Tin into Grey. A. Komar and K. Ivanov (*Zhurnal Eksperimentalnoy i teoreticheskoy Fiziki* (*J. Exper. Theoret. Physics*), 1939, 9, (3) 256-260).—[In Russian.] The rate of transformation of white into grey tin at 75°-0° C. and at — 27° C. and the effect of pressure thereon were determined. Increase in pressure reduces the linear rate of transformation.—N. A.



"Theoretical and Experimental Laue Patterns from Bent KaCl Crystals. A. P. Komar (*Physikal. Z. Sowjetunion*, 1936, 9, (1), 97-99).—[In English.] A method is described for calculating the Laue pattern given by sodium chloride crystals bent into a circular arc; theoretical and experimental patterns are in very close agreement.—J. S. G. T.



"Structure of Plastically Deformed Crystals According to Laue Patterns. II.—Plastically Extended Single Crystals of Magnesium. A. Kochar and M. Mochalov (*Physikal. Z. Sowjetunion*, 1936, 9, (6), 613-617).—[In English.] The existence of an angular width in the reflection of molybdenum K_α-radiation from the plane (0001) of a magnesium single crystal which was extended 10% and the presence of tails in the Laue diagram of the crystal are attributed to regular inhomogeneity in the spacial distribution of parts of the crystal which are rotated during the plastic deformation. This rotation can be regarded as a mosaic curvature of the gliding plates around a direction normal to the direction of gliding.—J. S. G. T.



PROCESSES AND PROPERTIES INDEX

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"The Structure of Plastically Deformed Crystals and the Mechanism of Deformation. A. P. Komar (*Izvest. Akad. Nauk S.S.S.R. (Bull. Acad. Sci. U.R.S.S.)*, 1937, (Phys.), (5), 789–795).—[In Russian.] Cf. *Met. Abs.*, 1936, 3, 120, 255, 528. Laue photographs of bent crystals of rock-salt and aluminium and strained crystals of magnesium, obtained by the methods previously described (*loc. cit.*), are interpreted in the light of Taylor's slip theory (*Met. Abs.*, 1934, 1, 379).—N. B. V.

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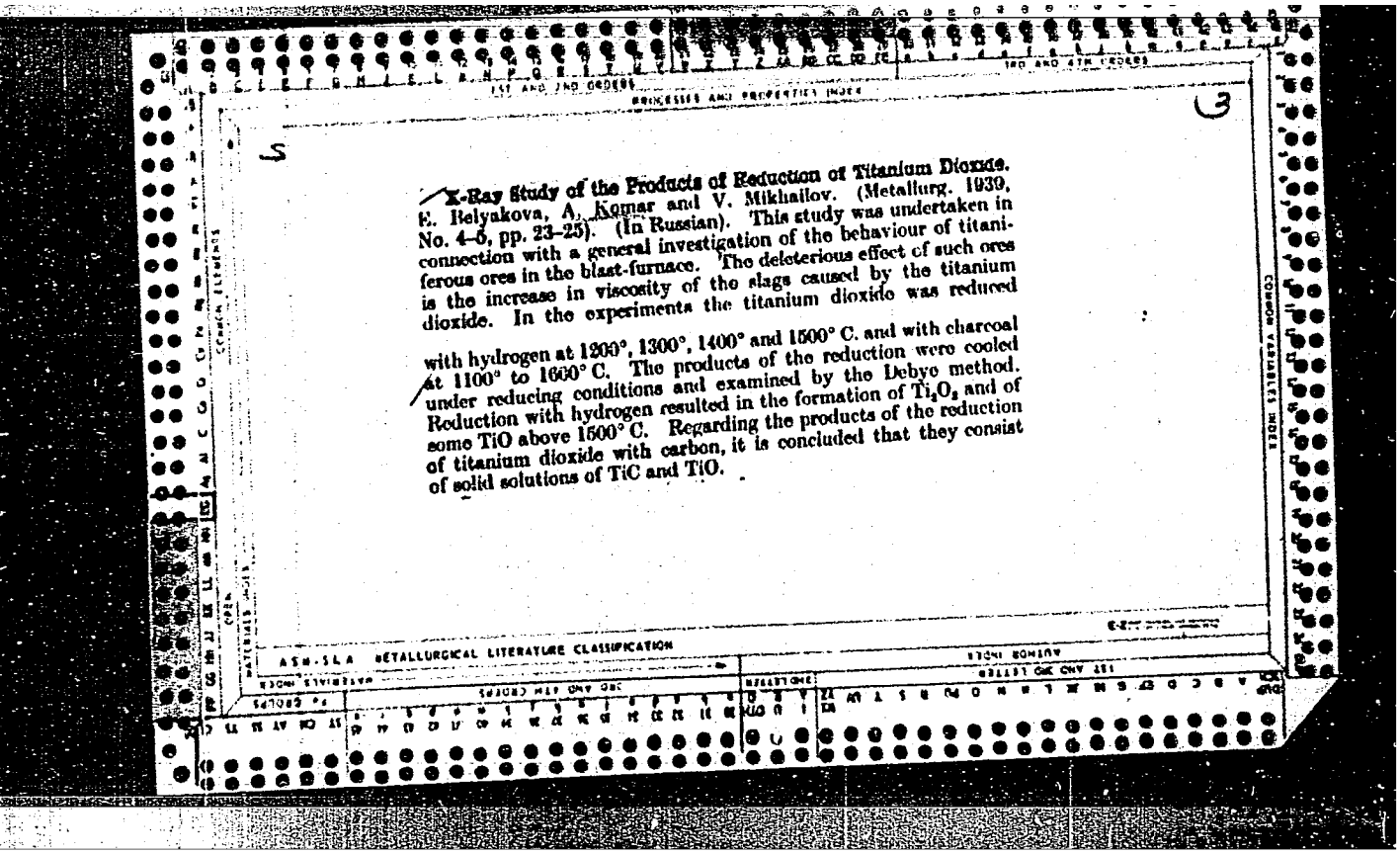
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

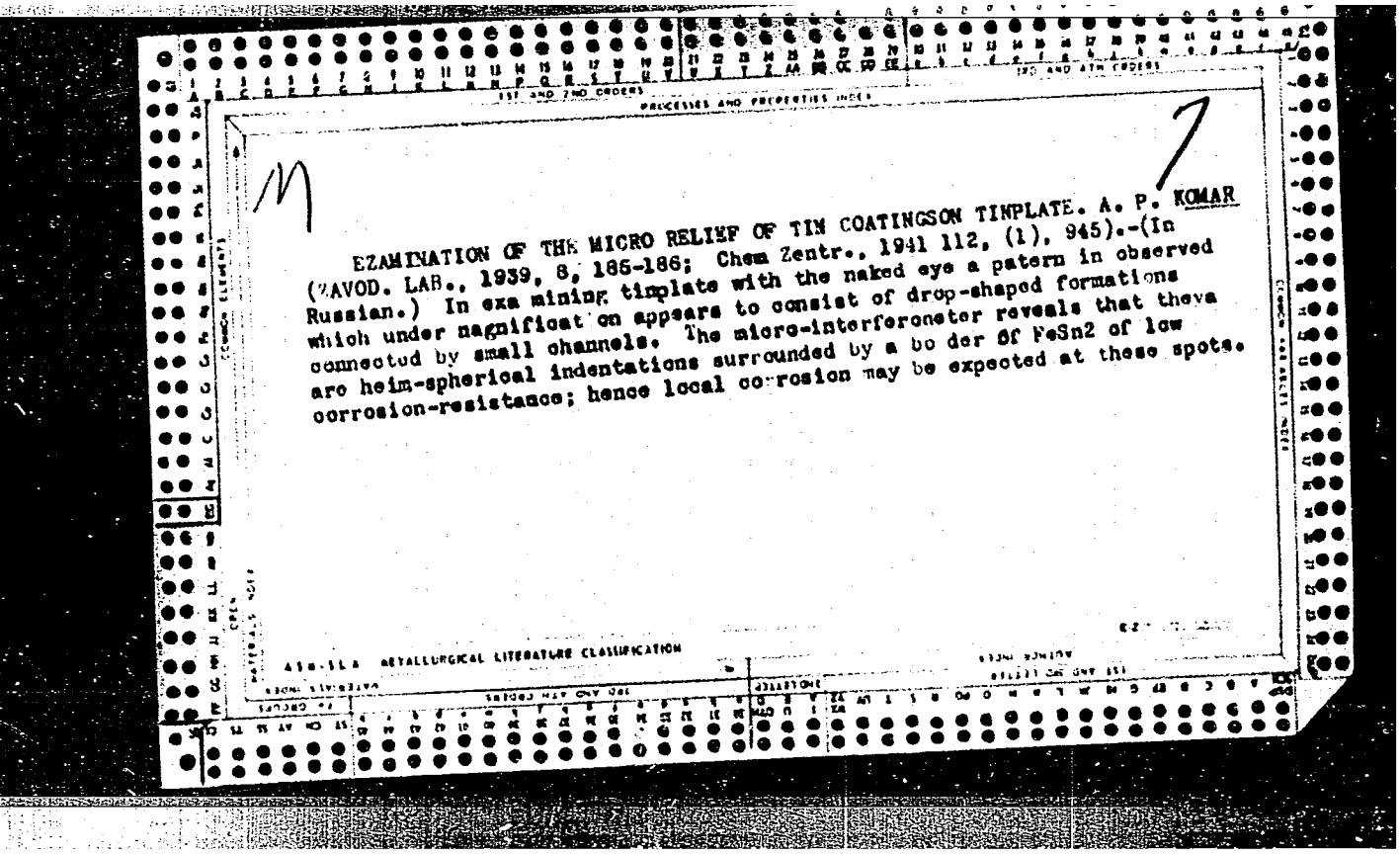
KOMAR, A. P.; MOCHALOV, M. D.

Remote Control Regulator of the Vacuum for the Ionic X-Ray Tube

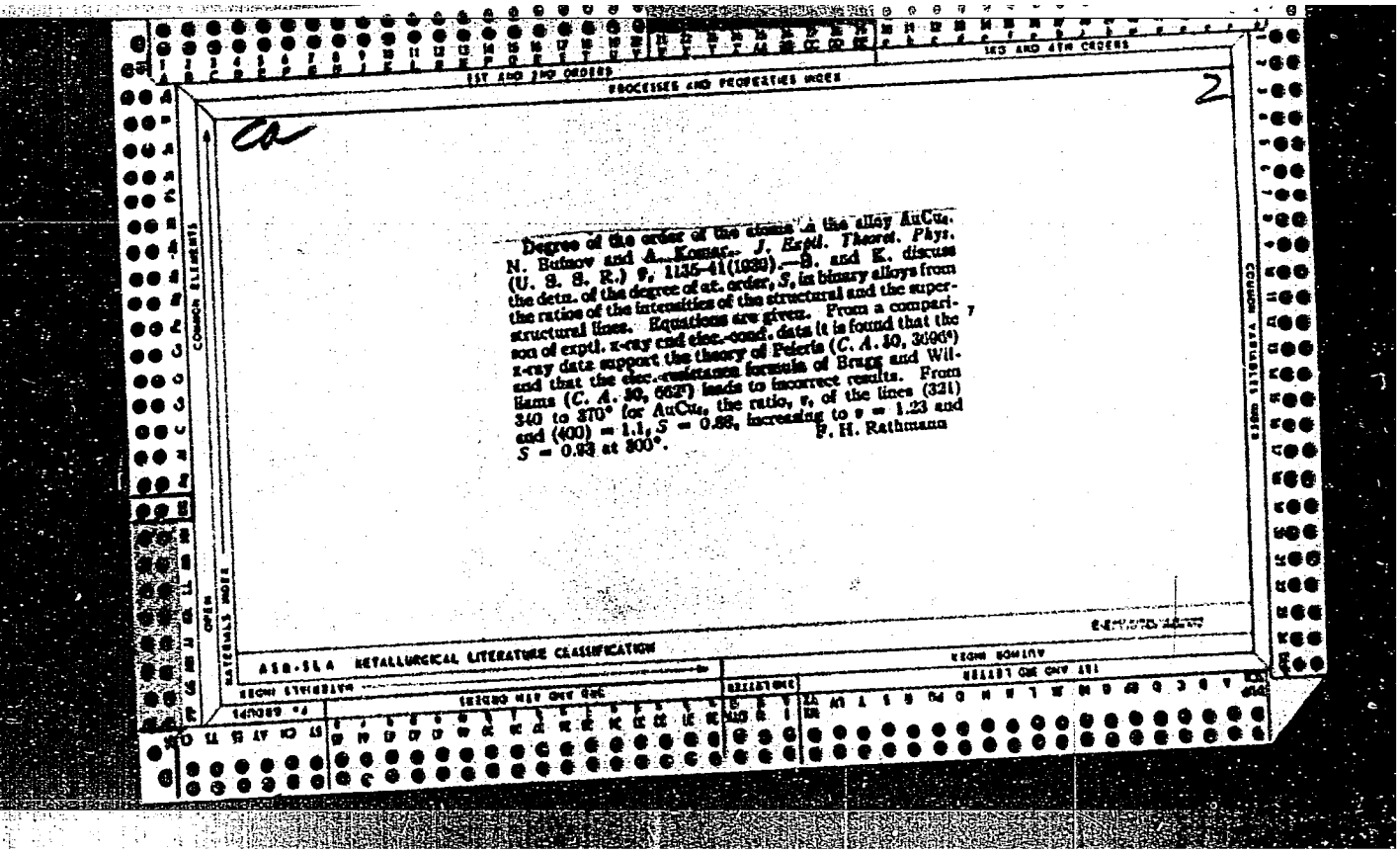
Zav. Labor. 7, 881, 1938



X-Ray Study of the Products of Reduction of Titanium Dioxide. E. Belyakova, A. Komar and V. Mikhailov. (Metallurg. 1939, No. 4–5, pp. 23–25). (In Russian). This study was undertaken in connection with a general investigation of the behaviour of titaniferous ores in the blast-furnace. The deleterious effect of such ores is the increase in viscosity of the slags caused by the titanium dioxide. In the experiments the titanium dioxide was reduced with hydrogen at 1200°, 1300°, 1400° and 1500° C. and with charcoal at 1100° to 1600° C. The products of the reduction were cooled under reducing conditions and examined by the Debye method. Reduction with hydrogen resulted in the formation of Ti_2O_3 and of some TiO above 1500° C. Regarding the products of the reduction of titanium dioxide with carbon, it is concluded that they consist of solid solutions of TiC and TiO.

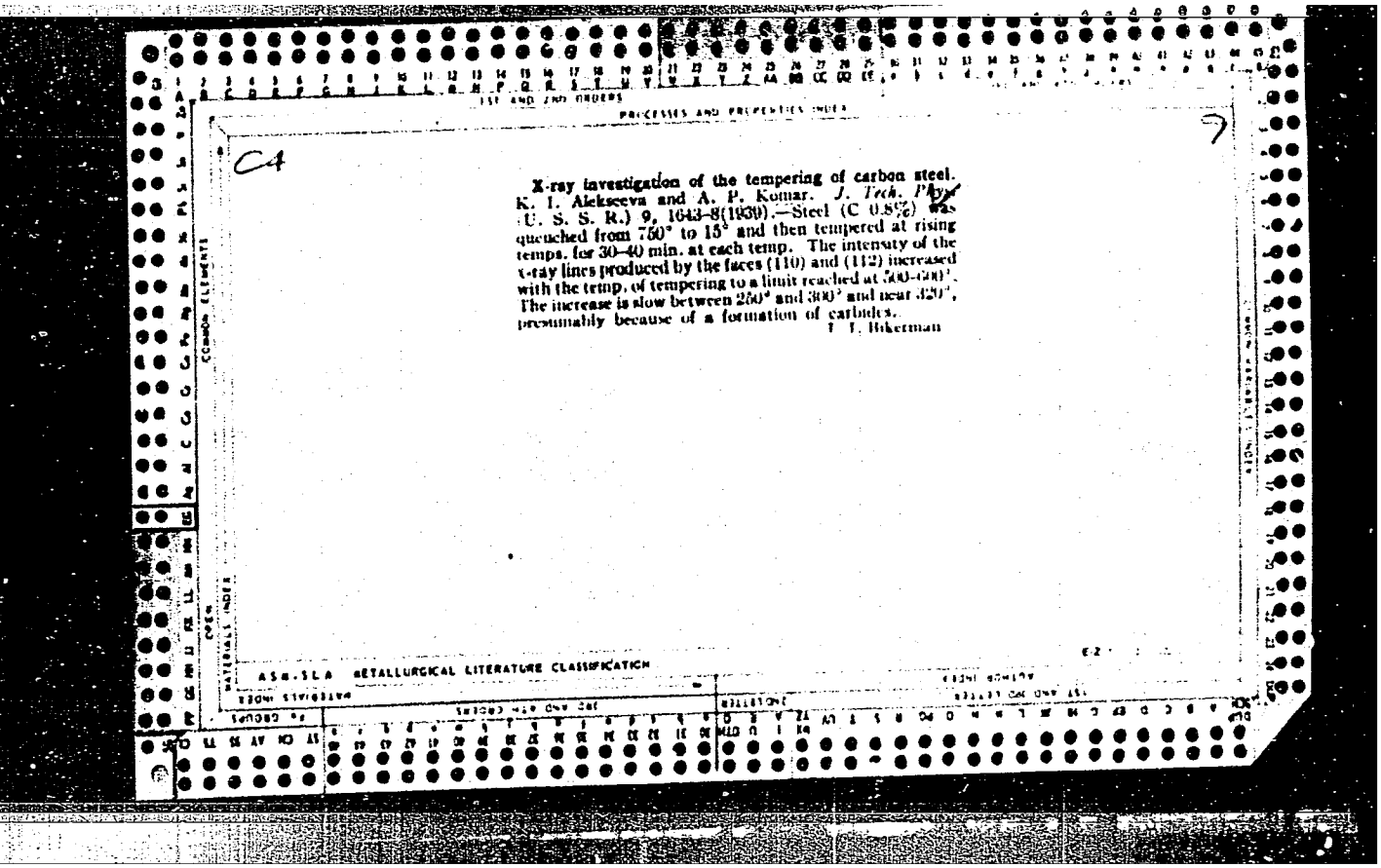


EZAMINATION OF THE MICRO RELIEF OF TIN COATINGSON TINPLATE. A. P. KOMAR (ZAVOD. LAB., 1939, 8, 185-186; Chem Zentr., 1941 112, (1), 945).-(In Russian.) In exa mining tinplate with the naked eye a patern in observed which under nagnificat on appears to consist of drop-shaped formations connected by small channels. The micro-interferometer reveals that theva are heim-spherical indentations surrounded by a bo der of FeSn2 of low corrosion-resistance; hence local co rosion may be expected at these spots.



Degree of the order of the atoms in the alloy AuCu. N. Bufaov and A. Konias.. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 1135-41(1939).—D. and K. discuss the detn. of the degree of at. order, *S*, in binary alloys from the ratios of the intensities of the structural and the superstructural lines. Equations are given. From a comparison of exptl. x-ray and elec.-cond. data it is found that the x-ray data support the theory of Peierls (*C. A.* 30, 3096[6]) and that the elec.-resistance formula of Bragg and Williams (*C. A.* 30, 662[2]) leads to incorrect results. From 340 to 370° for AuCu, the ratio, *r*, of the lines (321) and (400) = 1.1, *S* = 0.88, increasing to *r* = 1.23 and *S* = 0.93 at 300°.

P. H. Rathmann

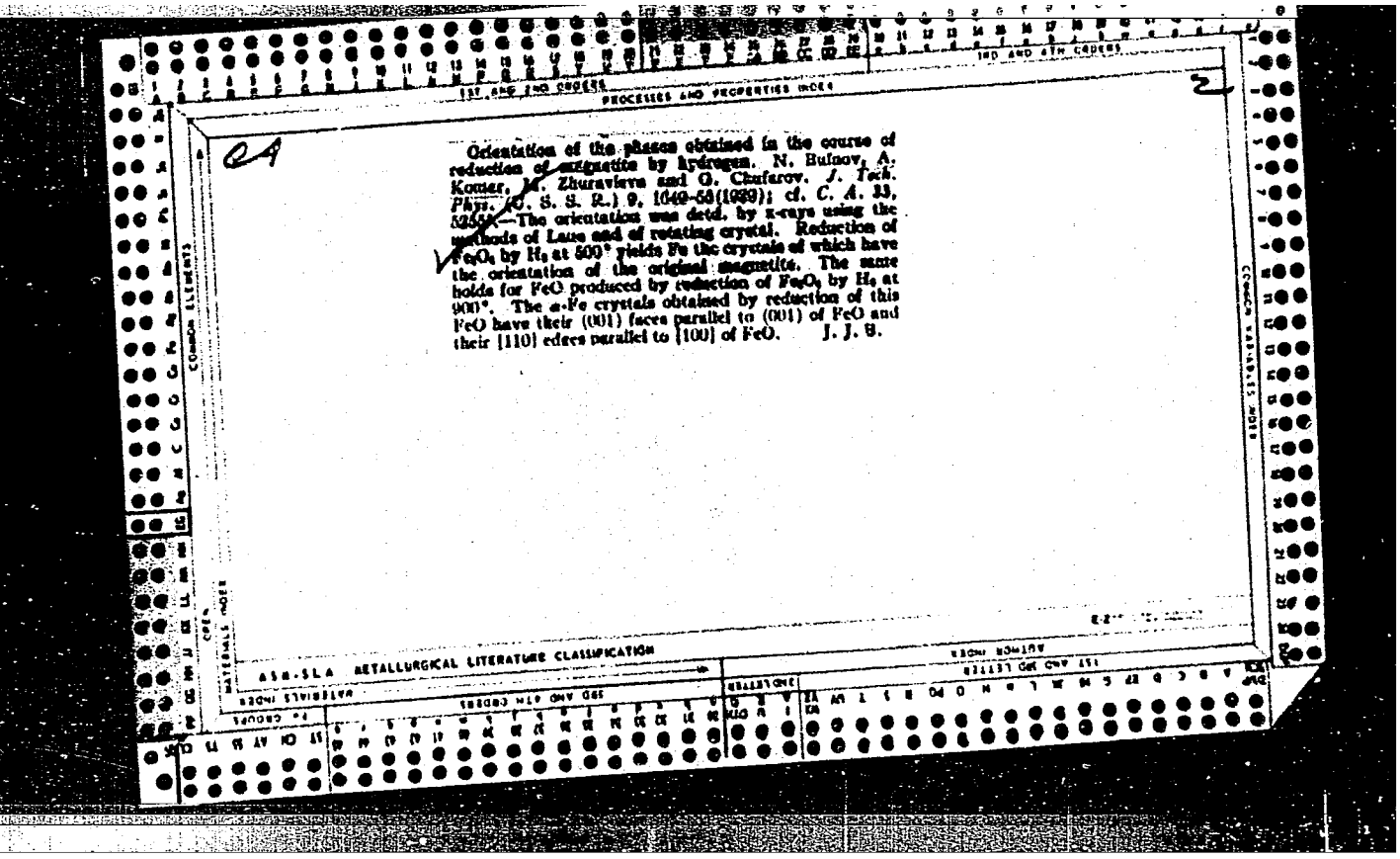


C4

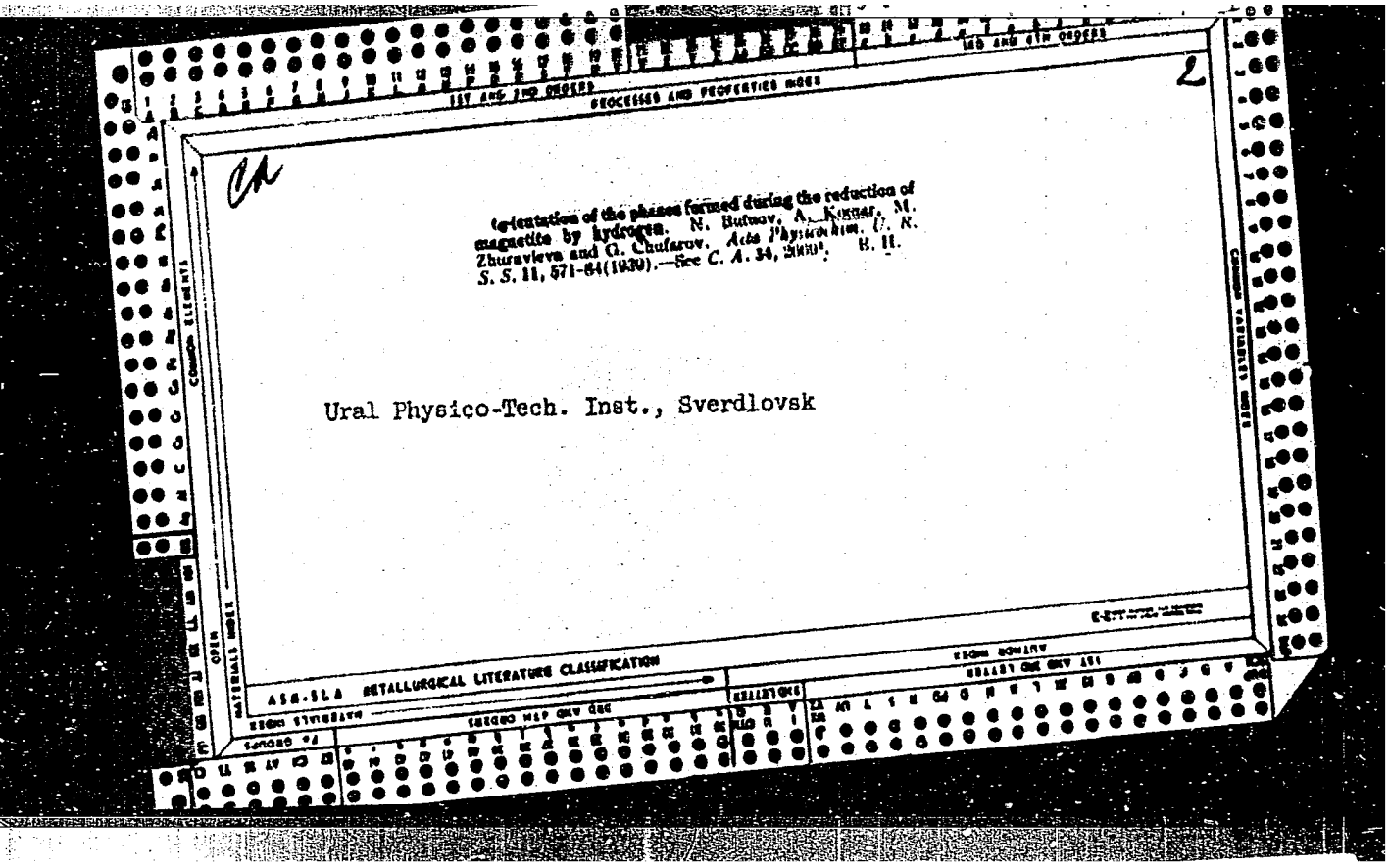
7

X-ray investigation of the tempering of carbon steel. K. I. Alekseeva and A. P. Komar. *J. Tech. Phys.* (U. S. S. R.) 9, 1643–8(1939).—Steel (C 0.8%) was quenched from 750° to 15° and then tempered at rising temps. for 30–40 min. at each temp. The intensity of the x-ray lines produced by the faces (110) and (112) increased with the temp. of tempering to a limit reached at 500–600°. The increase is slow between 250° and 300° and near 420°, presumably because of a formation of carbides.
I. I. Bikerman

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION



Orientation of the phases obtained in the course of reduction of magnetite by hydrogen. N. Bulnov, A. Komar, M. Zhuravleva and G. Chuferov. *J. Tech. Phys. (U. S. S. R.)* 9, 1049-58(1939); cf. *C. A.* 33, 5255⁸.—The orientation was detd. by x-rays using the methods of Laue and of rotating crystal. Reduction of Fe_2O_3 by H_2 at 500° yields Fe the crystals of which have the orientation of the original magnetite. The same holds for FeO produced by reduction of Fe_2O_3 by H_2 at 900°. The α-Fe crystals obtained by reduction of this FeO have their (001) faces parallel to (001) of FeO and their [110] edges parallel to [100] of FeO. J. J. S.

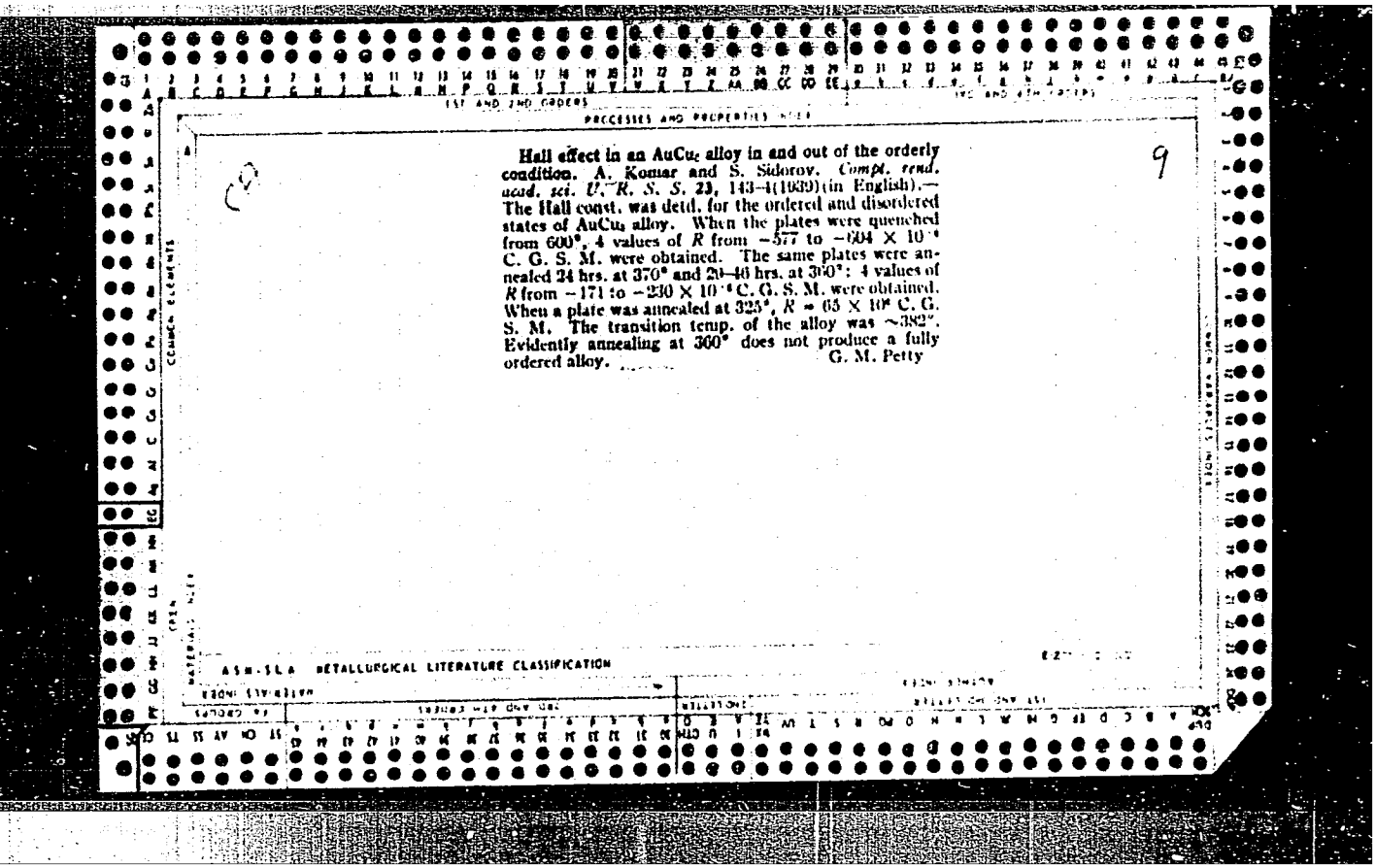


KOMAR, A.
BUYNOV, N. ; ZHURAVLEVA, M.; KOMAR, A.; CHUFAROV, G.

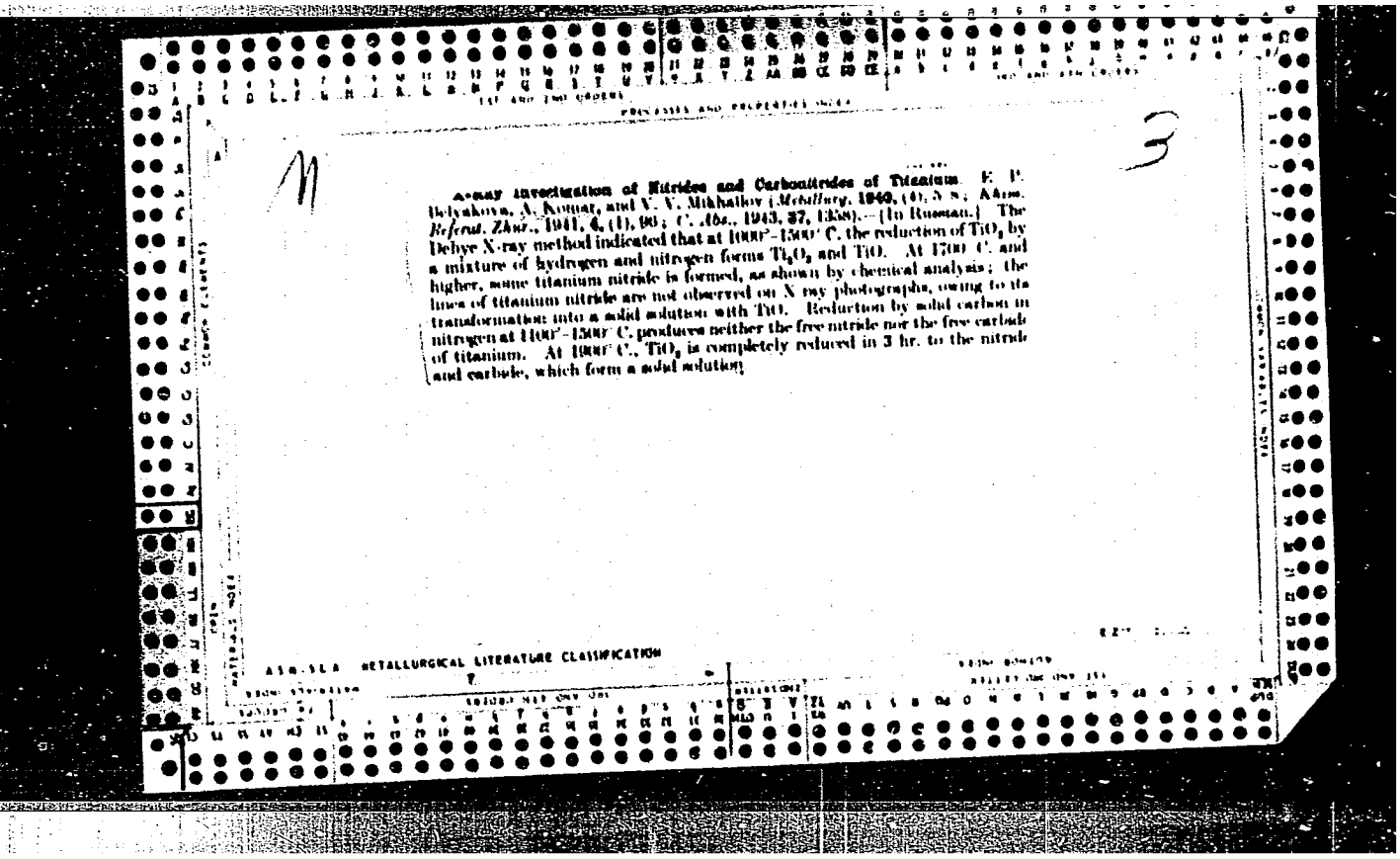
Orientation of Iron Crystals on Magnetite during the Reduction of Magnetite with Hydrogen.

DAN SSSR 22, 27, 1939

Also Dok. AN 22, No. 1, 1939
Physico-Tech. Inst. of the Ural. Sverdlovsk

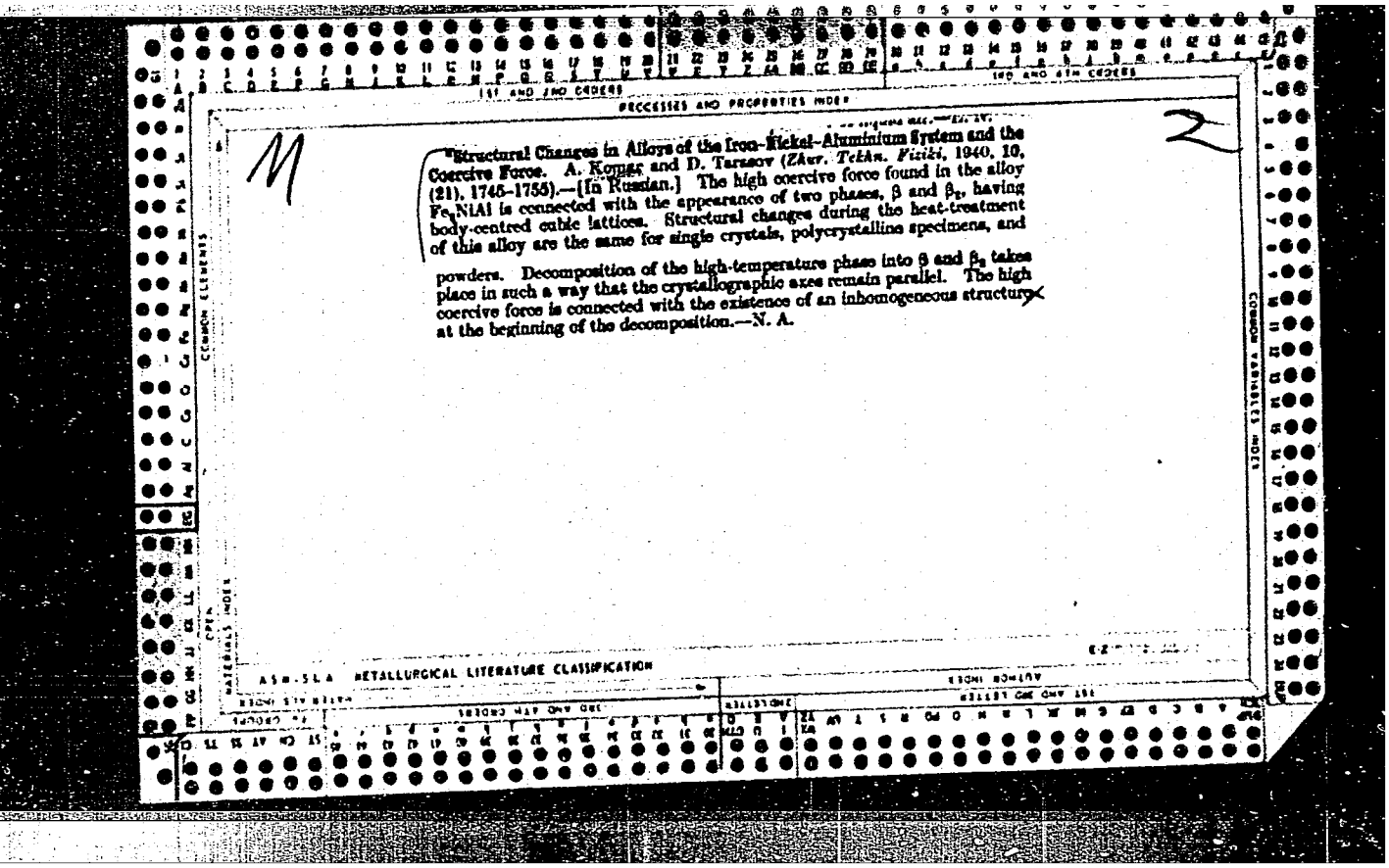


Hall effect in an $AuCu_3$ alloy in and out of the orderly condition. A. Komar and S. Sidorov. *Compt. rend. acad. sci. U.R.S.S.* **23**, 143–4(1939)(in English).—The Hall const. was detd. for the ordered and disordered states of $AuCu_3$ alloy. When the plates were quenched from 600°, 4 values of R from -577 to -604×10^{-6} C. G. S. M. were obtained. The same plates were annealed 24 hrs. at 370° and 20–46 hrs. at 360°: 4 values of R from -171 to -230×10^{-6} C. G. S. M. were obtained. When a plate was annealed at 325°, $R = 65 \times 10^{-6}$ C. G. S. M. The transition temp. of the alloy was ~382°. Evidently annealing at 360° does not produce a fully ordered alloy. G. M. Petty

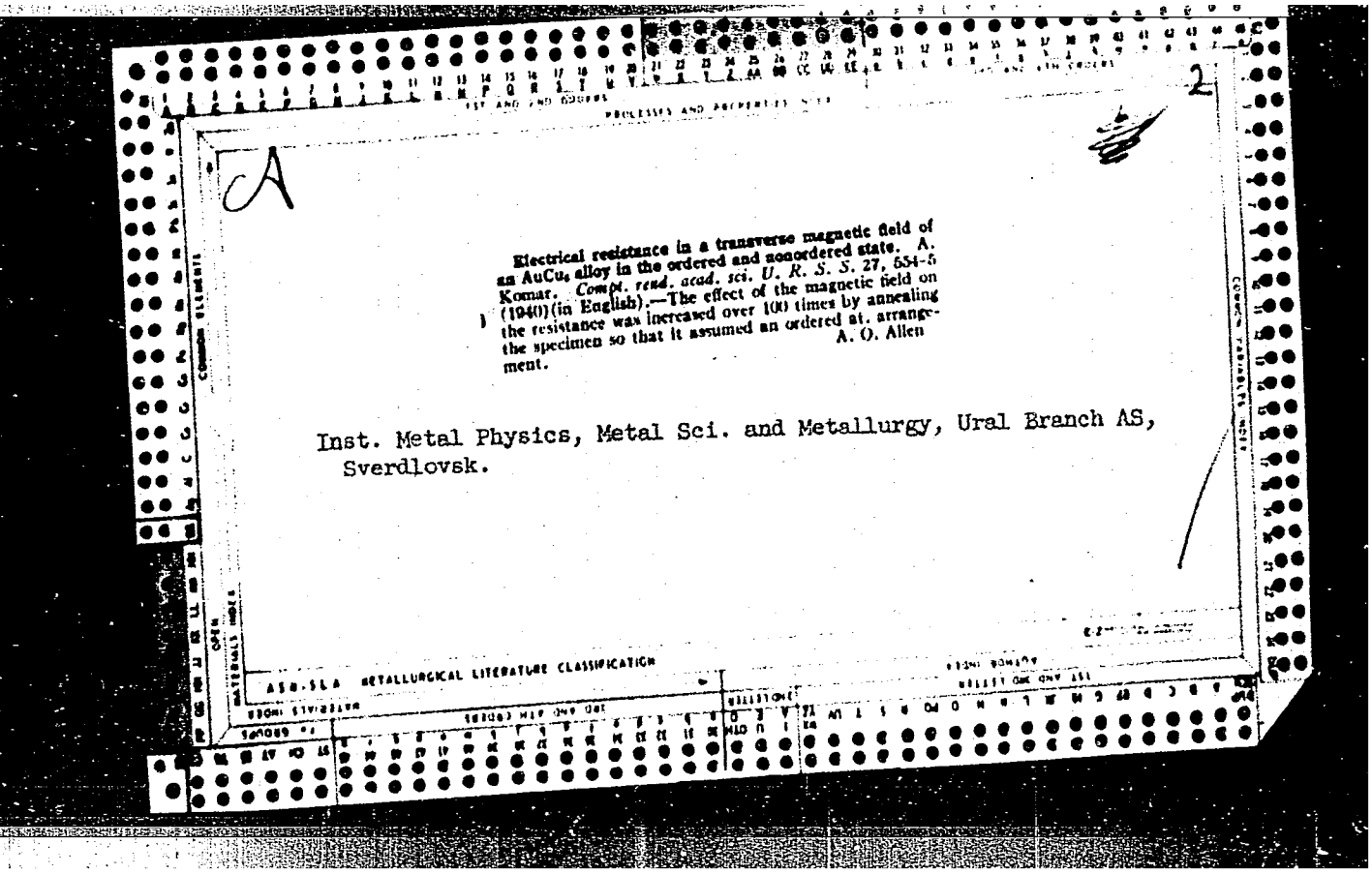


X-ray investigation of Nitrides and Carbonitrides of Titanium. F. P. Bolyakova, A. Kornat, and V. V. Mikhailov (*Metallurg*, 1940, (4), 5–8; *Aluminium Referat. Zhur.*, 1941, **4**, (1), 98; *C. Abs.*, 1943, **37**, 1338).—[In Russian.] The Debye X-ray method indicated that at 1000°–1500° C. the reduction of TiO_2 by a mixture of hydrogen and nitrogen forms Ti_2O_3 and TiO. At 1700° C. and higher, some titanium nitride is formed, as shown by chemical analysis; the lines of titanium nitride are not observed on X-ray photographs, owing to its transformation into a solid solution with TiO. Reduction by solid carbon in nitrogen at 1000°–1500° C. produces neither the free nitride nor the free carbide of titanium. At 1000° C., TiO_2 is completely reduced in 3 hr. to the nitride and carbide, which form a solid solution.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



"Structural Changes in Alloys of the Iron-Nickel-Aluminium System and the Coercive Force. A. Kornev and D. Tarasov (*ZAvr. Tekhn. Fiziki*, 1940, 10, (21), 1745–1755).—[In Russian.] The high coercive force found in the alloy Fe_2NiAl is connected with the appearance of two phases, β and β_2, having body-centred cubic lattices. Structural changes during the heat-treatment of this alloy are the same for single crystals, polycrystalline specimens, and powders. Decomposition of the high-temperature phase into β and β_2 takes place in such a way that the crystallographic axes remain parallel. The high coercive force is connected with the existence of an inhomogeneous structure at the beginning of the decomposition.—N. A.

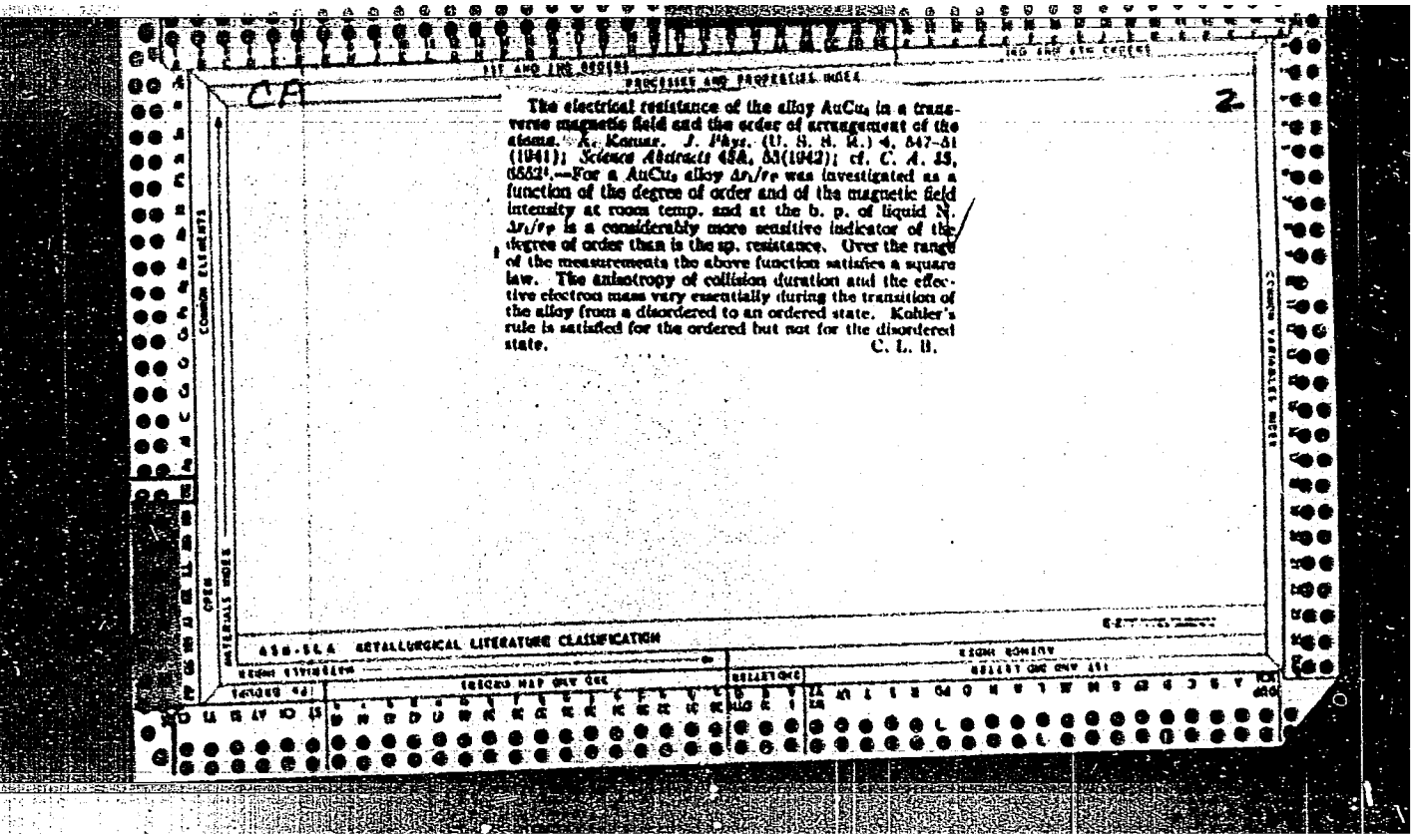


A

Electrical resistance in a transverse magnetic field of an $AuCu_3$ alloy in the ordered and nonordered state. A. Komar. *Compt. rend. acad. sci. U. R. S. S.* 27, 654-5 (1940)(in English).—The effect of the magnetic field on the resistance was increased over 100 times by annealing the specimen so that it assumed an ordered at. arrangement.
A. O. Allen

Inst. Metal Physics, Metal Sci. and Metallurgy, Ural Branch AS, Sverdlovsk.

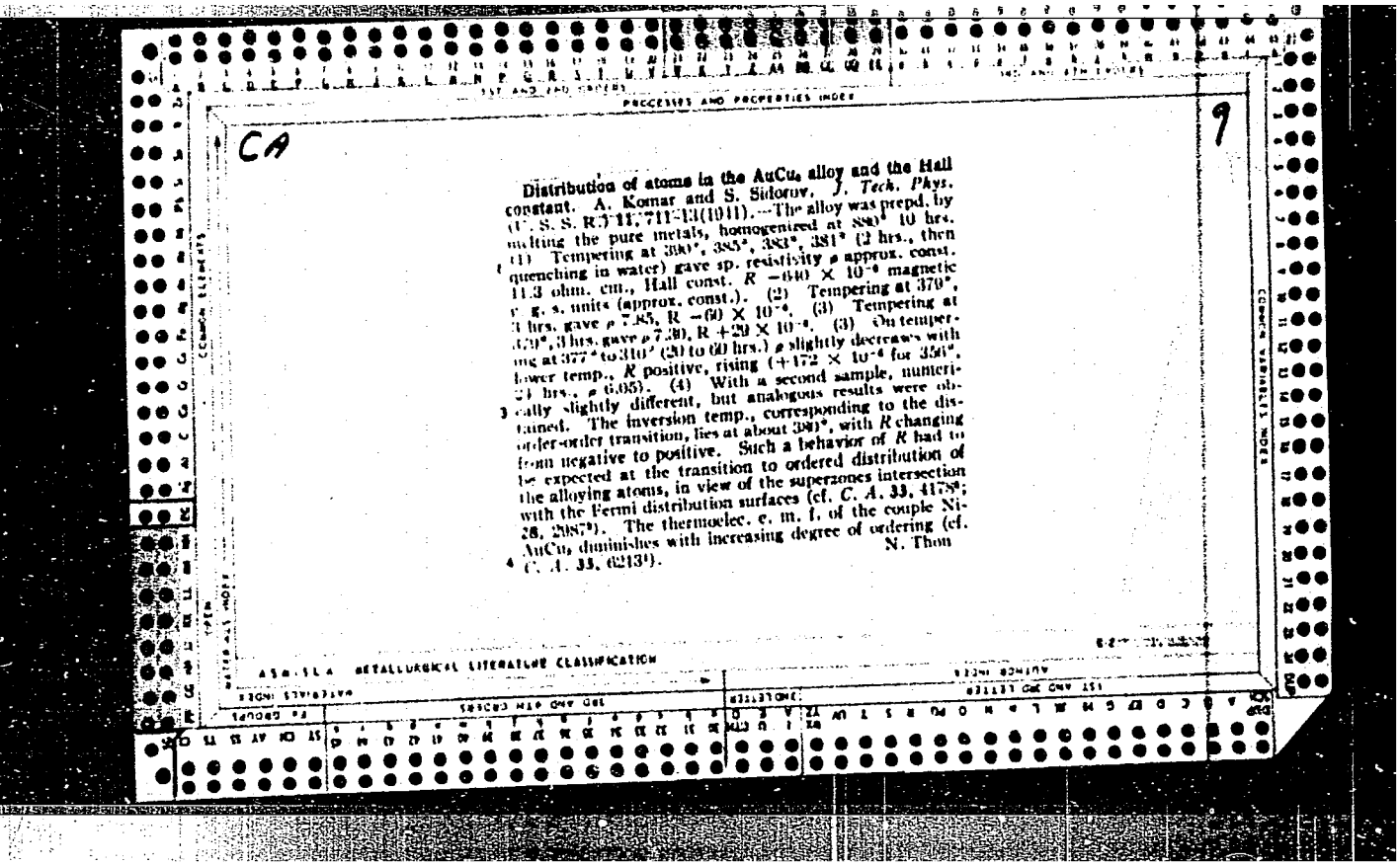
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

2

The electrical resistance of the alloy $AuCu_3$ in a transverse magnetic field and the order of arrangement of the atoms. A. Kussur. *J. Phys.* (U. S. S. R.) 4, 547–51 (1941); *Science Abstracts* 45A, 53(1942); cf. *C. A.* 35, 6552⁴.—For a $AuCu_3$ alloy $\Delta\rho/\rho_0$ was investigated as a function of the degree of order and of the magnetic field intensity at room temp. and at the b. p. of liquid N_2. $\Delta\rho/\rho_0$ is a considerably more sensitive indicator of the degree of order than is the sp. resistance. Over the range of the measurements the above function satisfies a square law. The anisotropy of collision duration and the effective electron mass vary essentially during the transition of the alloy from a disordered to an ordered state. Kohler's rule is satisfied for the ordered but not for the disordered state. C. L. B.

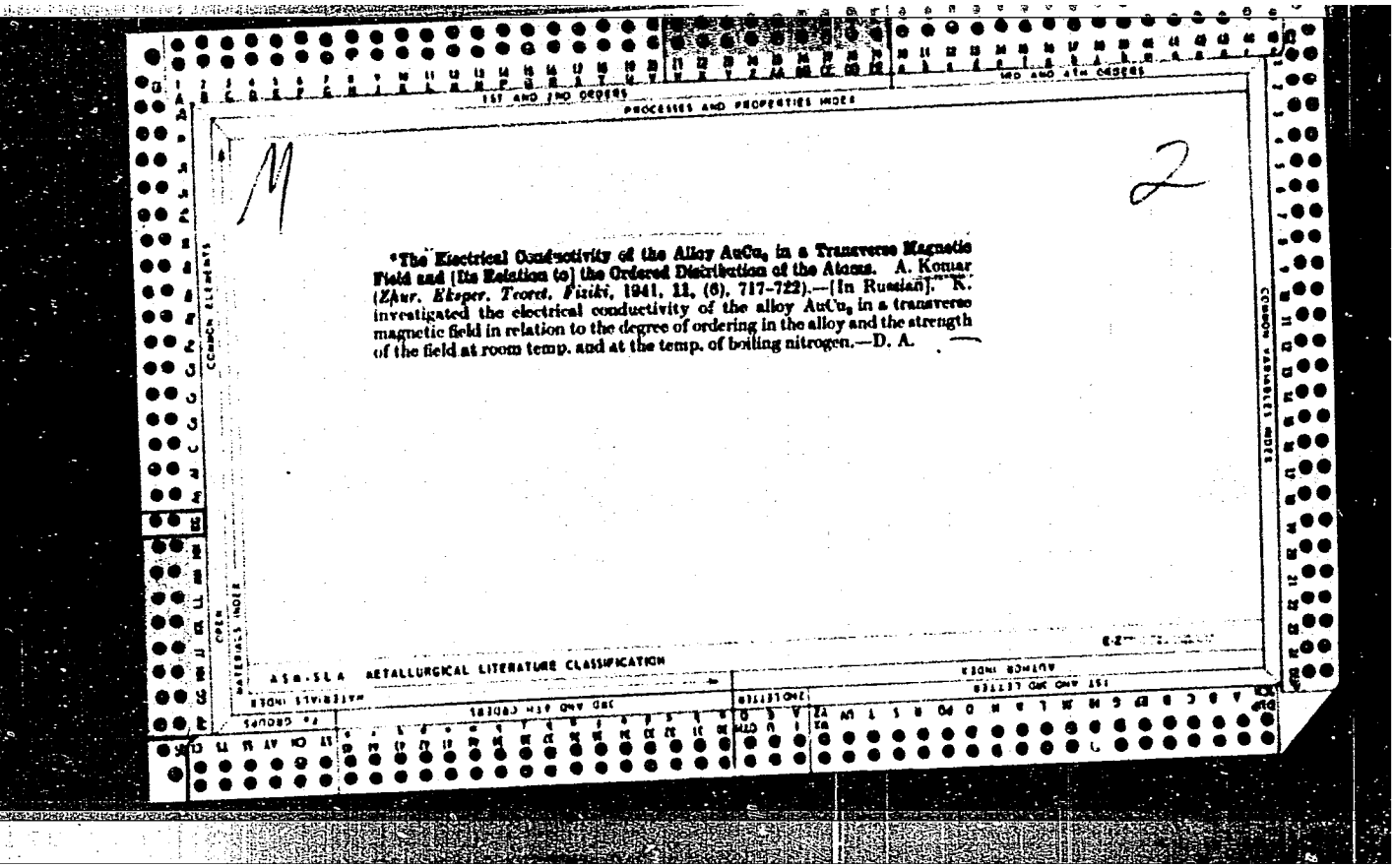


CA

9

Distribution of atoms in the $AuCu_3$ alloy and the Hall constant. A. Komar and S. Sidorov. *J. Tech. Phys.* (U. S. S. R.) 11, 711-13(1941).—The alloy was prepd. by melting the pure metals, homogenized at 880° 10 hrs. (1) Tempering at 390°, 385°, 383°, 381° (2 hrs., then quenching in water) gave sp. resistivity ρ approx. const. 11.3 ohm. cm., Hall const. R −640 × 10^{-6} magnetic c. g. s. units (approx. const.). (2) Tempering at 370°, 3 hrs. gave ρ 7.85, R −60 × 10^{-6}. (3) On tempering at 370°, 3 hrs. gave ρ 7.30, R +20 × 10^{-6}. ρ slightly decreases with ing at 377° to 310° (30 to 60 hrs.) lower temp., R positive, rising (+172 × 10^{-6} for 350°, 2) hrs., ρ 6.05). (4) With a second sample, numerically slightly different, but analogous results were obtained. The inversion temp., corresponding to the disorder-order transition, lies at about 381°, with R changing from negative to positive. Such a behavior of R had to be expected at the transition to ordered distribution of the alloying atoms, in view of the superzones intersection with the Fermi distribution surfaces (cf. *C. A.* 33, 4178⁸; 28, 2087⁸). The thermoelec. e. m. f. of the couple Ni-$AuCu_3$ diminishes with increasing degree of ordering (cf. *C. A.* 33, 6213⁴).

N. Thon



PROCESSES AND PROPERTIES INDEX

M

2

*The Electrical Conductivity of the Alloy $AuCu_3$ in a Transverse Magnetic Field and [Its Relation to] the Ordered Distribution of the Atoms. A. Komar (*Zhur. Eksper. Teoret. Fiziki*, 1941, 11, (6), 717-722).—[In Russian]. K. investigated the electrical conductivity of the alloy $AuCu_3$ in a transverse magnetic field in relation to the degree of ordering in the alloy and the strength of the field at room temp. and at the temp. of boiling nitrogen.—D. A.

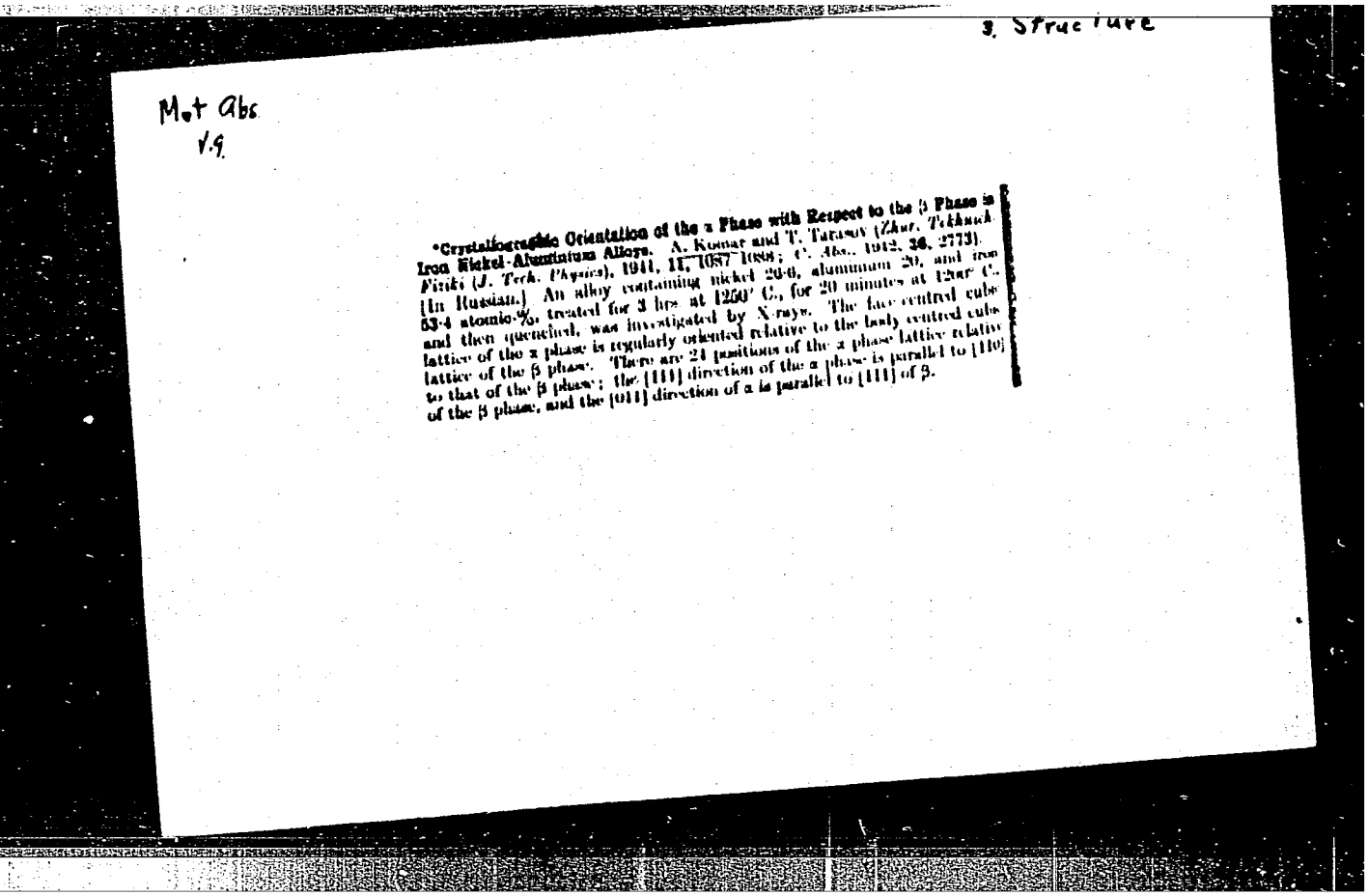
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Met. Geb.

*Coercive Force and the Magnetic Saturation of Ni,Mn Alloy in Relation to the Order of Atomic Arrangement. N. Vol'kenshtein and A. Kondr (Zhur. Eksper. i Teoret. Fiziki (J. Exper. Theoret. Physics), 1941, 11, 723-724; C. Abs., 1943, 37, 1008).—(In Russian.) The magnetic saturation and the magnetomotive force were studied in relation to the temperature of heat-treatment of the alloy. The values of H, $4\pi I_\infty$, and specific resistivity are presented graphically. The curve of resistivity indicates the temperature of ordering to be about 520° C. The course of all curves corresponds to the known data for alloys of the type AB_3. The sensitivity of H to changes at large distances is shown to be greater than that of the resistivity or the magnetomotive force.

Ural Affiliate, Acad. Sci. Sverdlovsk

1943



3. Structure

Met Abs
V.9

***Crystallographic Orientation of the α Phase with Respect to the β Phase in Iron Nickel-Aluminium Alloys.** A. Kumar and T. Tarasov (Zhur. Tekhnich. Fiziki (*J. Tech. Physics*), 1941, 11, 1087–1088; *C. Abs.*, 1942, **36**, 2773). [In Russian.] An alloy containing nickel 20·6, aluminium 20, and iron 53·4 atomic-%, treated for 3 hrs. at 1250° C., for 20 minutes at 1200° C., and then quenched, was investigated by X-rays. The face-centred cube lattice of the α phase is regularly oriented relative to the body-centred cube lattice of the β phase. There are 24 positions of the α phase lattice relative to that of the β phase; the [111] direction of the α phase is parallel to [110] of the β phase, and the [011] direction of α is parallel to [111] of β.

KOMAR, A. P.

Thermochemical Method of Making a Substitute for Nichromium. Vestnik Elektroprom. 13, 15, Sixth Edition, 1942.

KOMAR, A. P.

Order of Distribution of Atoms in Binary Alloys and Certain Physical Properties of these Alloys.

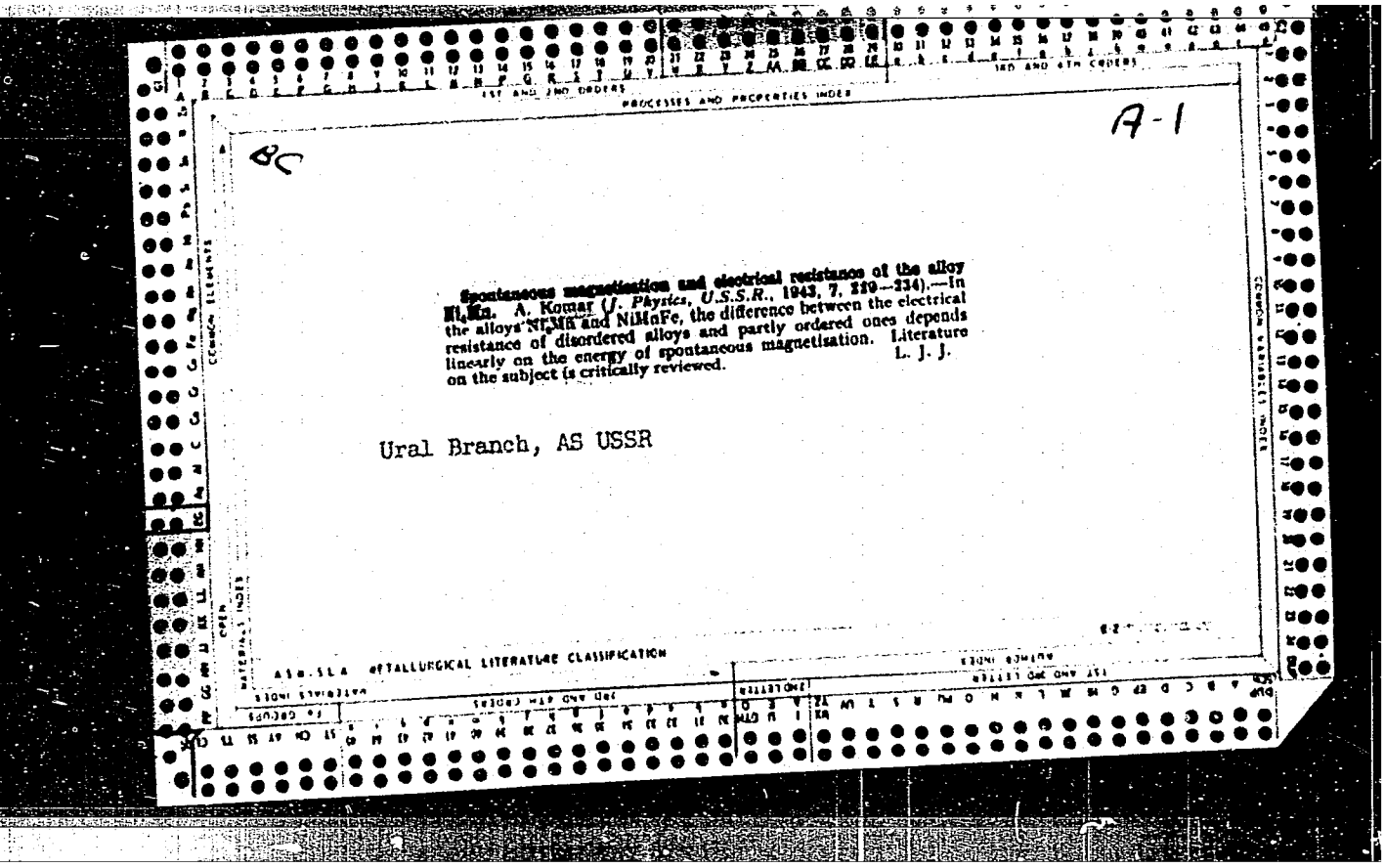
Leningrad Physico-Technical Institute, 1943.

So: U-1837, 14 April 52.

KOMAR, A. P.; GERTERIKEN, S.; BUYNOV, N. N.

Aluminization of Copper and Brass.

"Texco," 1943

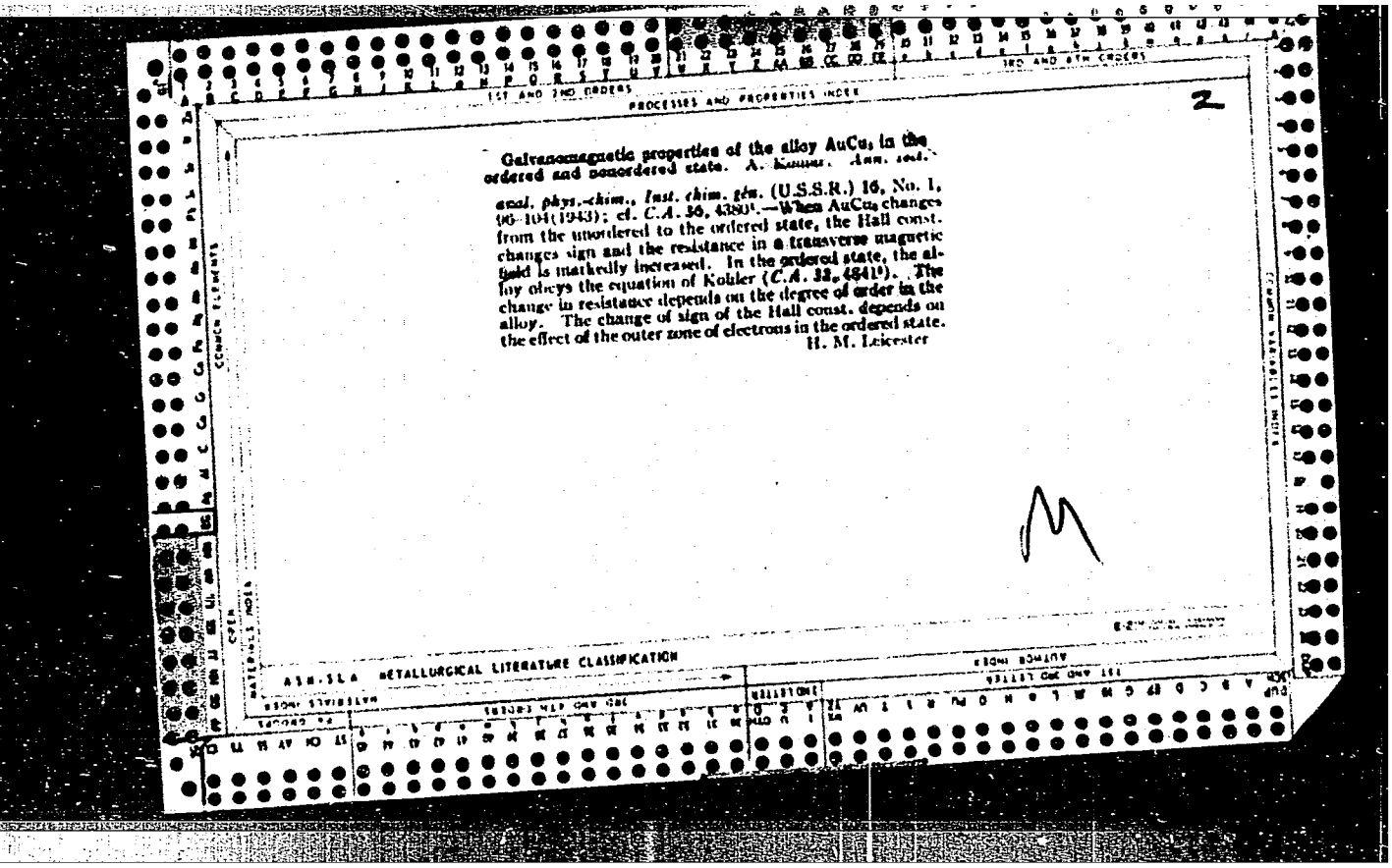


A-1

BC

Spontaneous magnetisation and electrical resistance of the alloy Ni$_4$Mn. A. Komar (*J. Physics, U.S.S.R.*, 1943, 7, 219—234).—In the alloys Ni$_3$Mn and NiMnFe, the difference between the electrical resistance of disordered alloys and partly ordered ones depends linearly on the energy of spontaneous magnetisation. Literature on the subject is critically reviewed. L. J. J.

Ural Branch, AS USSR



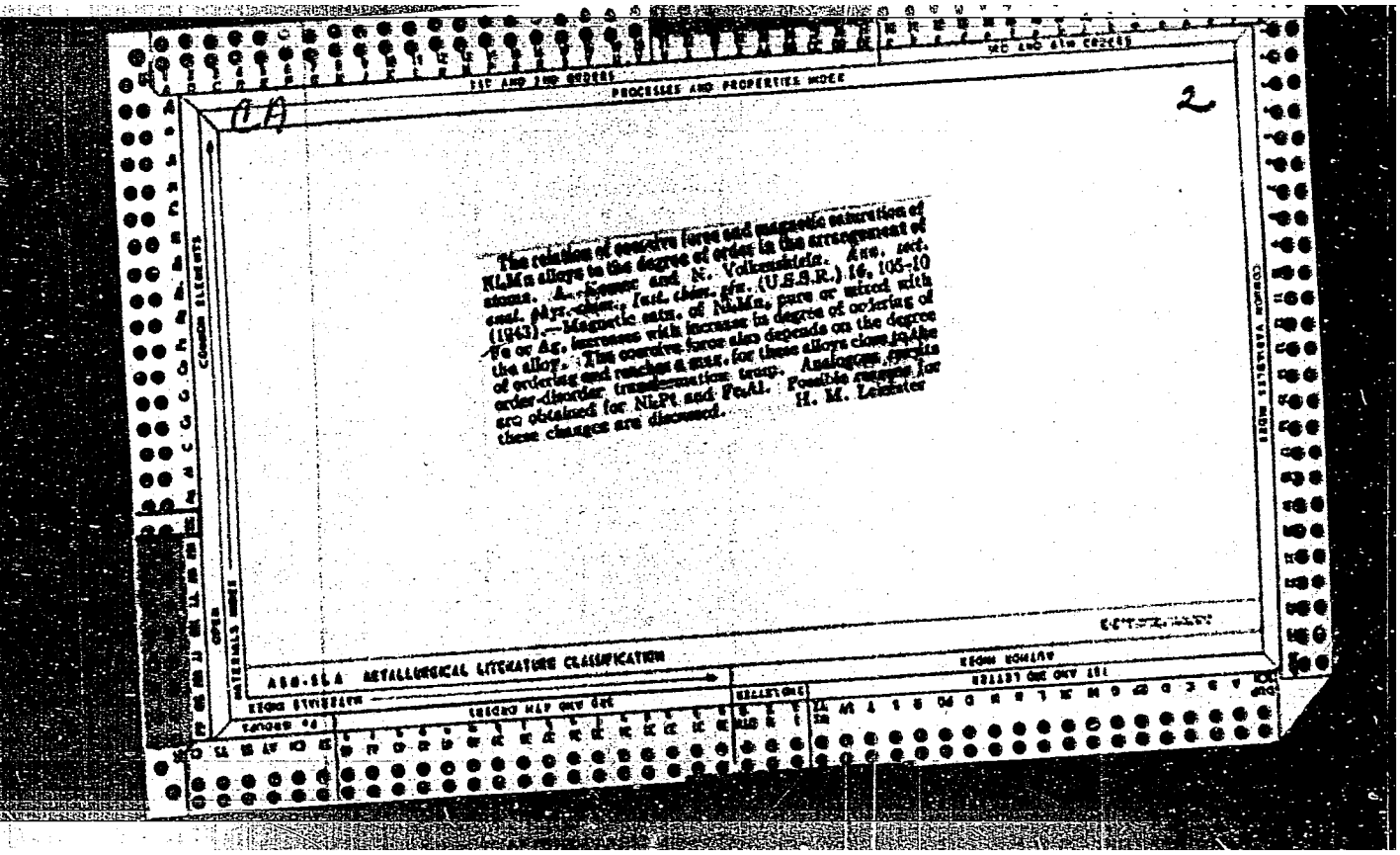
PROCESSES AND PROPERTIES INDEX

2

Galvanomagnetic properties of the alloy AuCu, in the ordered and nonordered state. A. [illegible]. *Ann. sci. anal. phys.-chim., Inst. chim. gén.* (U.S.S.R.) 16, No. 1, 96–104(1943); cf. *C.A.* 36, 4380⁵.—When AuCu changes from the unordered to the ordered state, the Hall const. changes sign and the resistance in a transverse magnetic field is markedly increased. In the ordered state, the alloy obeys the equation of Kohler (*C.A.* 33, 4841⁵). The change in resistance depends on the degree of order in the alloy. The change of sign of the Hall const. depends on the effect of the outer zone of electrons in the ordered state.
H. M. Leicester

M

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



USSR/Physics Sep/Oct 1947
Alloys
Ferromagnetism

"Ferromagnetic Characteristics of Alloys and the Outer Orbit of Atoms," A. P. Komar, Institute of Physics of Metals, Ural Branch, Academy of Sciences of the USSR, 10 pp

"Izv Ak Nauk, Ser Fizich" Vol XI, No 5

Discusses various concepts in the subject field. Submits brief descriptions of the structure of stable alloys and the possibilities of studying the ferromagnetic properties of these alloys, the dependence of the magnetic saturation of some alloys to the outer

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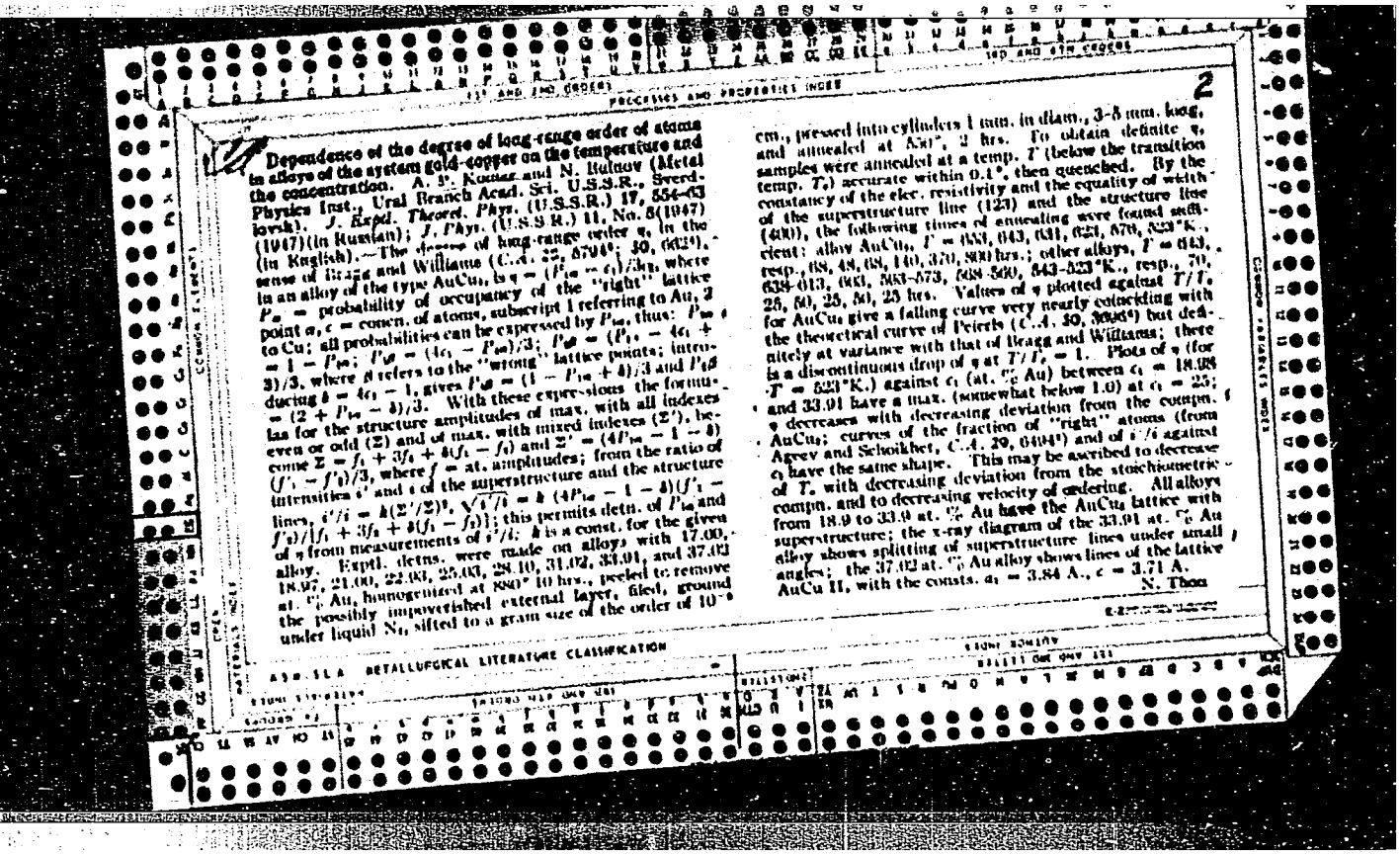
USSR/Physics (Contd) Sep/Oct 1947

orbit of atoms, the dependence of Curie point of stable alloys to the outer orbit and concentration of components (here the author discusses the theoretical analysis and experimental confirmation of the theory), and the structure of stable alloys and the coercive force of these alloys.

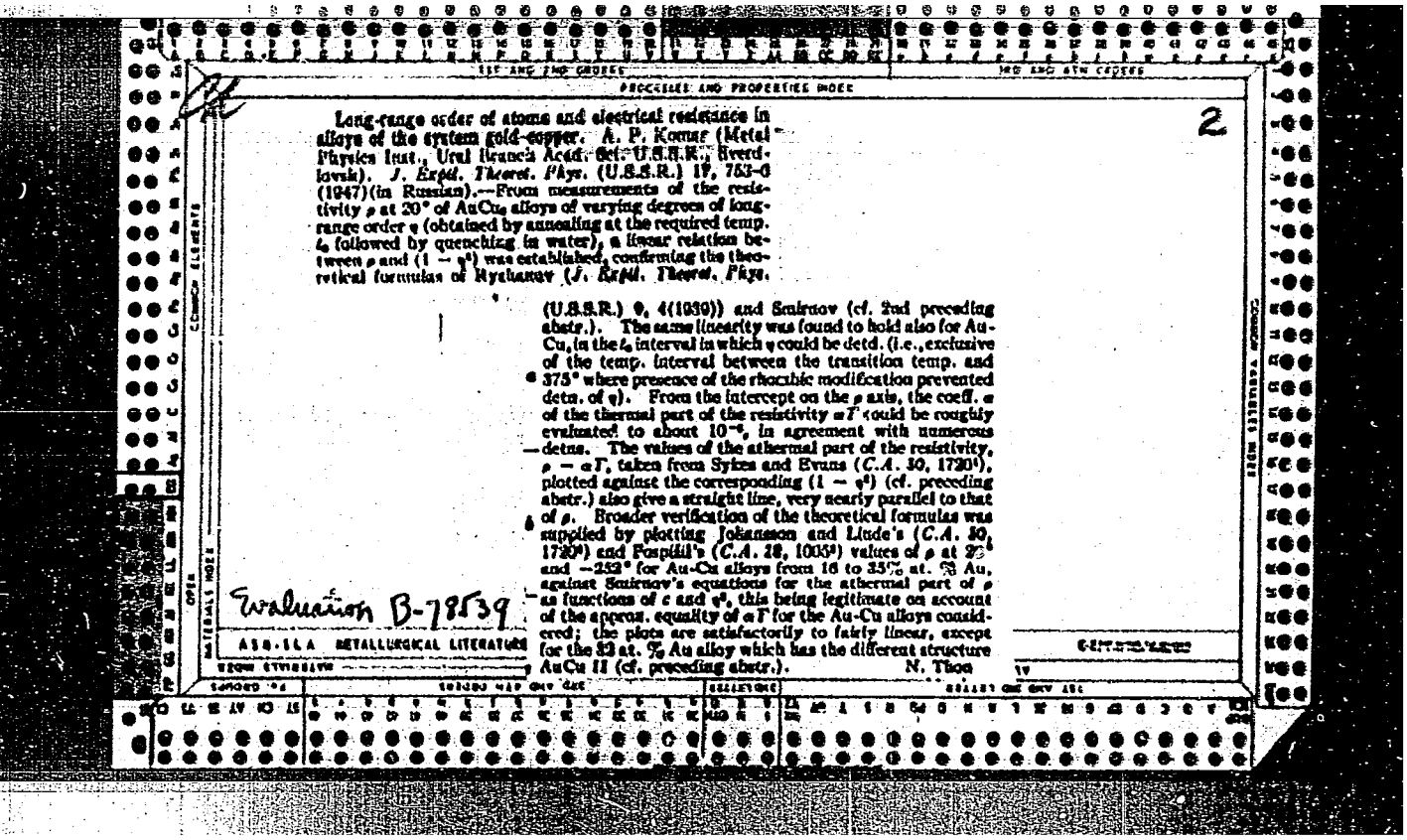
36786

KOMAR, A. P.



Dependence of the degree of long-range order of atoms in alloys of the system gold-copper on the temperature and the concentration. A. V. Kumar and N. Ilukov (Metal Physics Inst., Ural Branch Acad. Sci. U.S.S.R., Sverdlovsk). *J. Exptl. Theoret. Phys.* (U.S.S.R.) 17, 554-63 (1947)(in Russian); *J. Phys.* (U.S.S.R.) 11, No. 5(1947) (in English).—The degree of long-range order η, in the sense of Bragg and Williams (*C.A.* 32, 8704; 30, 6624), in an alloy of the type AuCu, is $\eta = (P_{11} - c_1)/c_2$, where point a, c = concn. of atoms, subscript 1 referring to Au, 2 to Cu; all probabilities can be expressed by P_{11}, thus: P_{11} = $1 - P_{12}$; $P_{21} = (4c_1 - P_{11})/3$; $P_{22} = (P_{11} - 4c_1 + 3)/3$, where δ refers to the "wrong" lattice points; introducing $\delta = 4c_1 - 1$, gives $P_{22} = (1 - P_{11} + \delta)/3$ and $P_{12} = (2 + P_{11} - \delta)/3$. With these expressions the formulas for the structure amplitudes of max. with all indexes even or odd (Σ) and of max. with mixed indexes (Σ'), become $\Sigma = f_1 + 3f_2 + \delta(f_1 - f_2)$ and $\Sigma' = (4P_{11} - 1 - \delta)(f'_1 - f'_2)/3$, where f = at. amplitudes; from the ratio of intensities i' and i of the superstructure and the structure lines, $i'/i = k(\Sigma'/\Sigma)^2$, $\sqrt{i'/i} = k\{4P_{11} - 1 - \delta)(f'_1 - f'_2)/[f_1 + 3f_2 + \delta(f_1 - f_2)]\}$; this permits detn. of P_{11} and of η from measurements of i'/i; k is a const. for the given alloy. Exptl. detns. were made on alloys with 17.00, 18.97, 21.00, 22.03, 25.03, 28.10, 31.02, 33.91, and 37.02 at. % Au, homogenized at 880° 10 hrs., leveled to remove the possibly impoverished external layer, filed, ground under liquid N_2, sifted to a gram size of the order of 10^{-6} cm., pressed into cylinders 1 mm. in diam., 3–5 mm. long, and annealed at 430°, 2 hrs. To obtain definite η, samples were annealed at a temp. T (below the transition temp. T_0) accurate within 0.1°, then quenched. By the constancy of the elec. resistivity and the equality of width of the superstructure line (123) and the structure line (400), the following times of annealing were found sufficient: alloy AuCu, T = 653, 643, 631, 623, 573, 523°K., resp., 48, 48, 68, 140, 370, 800 hrs.; other alloys, T = 643, 638–613, 603, 583–573, 568–560, 543–523°K., resp., 70, 25, 50, 25, 50, 25 hrs. Values of η plotted against T/T_0 for AuCu give a falling curve very nearly coinciding with the theoretical curve of Peierls (*C.A.* 30, 8064°) but definitely at variance with that of Bragg and Williams; there is a discontinuous drop of η at $T/T_0 = 1$. Plots of η (for T = 523°K.) against c_1 (at. % Au) between c_1 = 18.03 and 33.91 have a max. (somewhat below 1.0) at c_1 = 25; η decreases with decreasing deviation from the compn. AuCu; curves of the fraction of "right" atoms (from Agrev and Schoikbet, *C.A.* 29, 6404°) and of i'/i against c_1 have the same shape. This may be ascribed to decrease of T_0 with decreasing deviation from the stoichiometric compn. and to decreasing velocity of ordering. All alloys from 18.9 to 33.9 at. % Au have the AuCu$_3$ lattice with superstructure; the x-ray diagram of the 33.91 at. % Au alloy shows splitting of superstructure lines under small angles; the 37.02 at. % Au alloy shows lines of the lattice AuCu II, with the consts. a_1 = 3.84 A., c = 3.71 A.

N. Thon



PROCESSES AND PROPERTIES INDEX

2

Long-range order of atoms and electrical resistance in alloys of the system gold-copper. A. P. Komar (Metal Physics Inst., Ural Branch Acad. Sci. U.S.S.R., Sverdlovsk). *J. Exptl. Theoret. Phys.* (U.S.S.R.) 17, 753-6 (1947)(in Russian).—From measurements of the resistivity ρ at 20° of $AuCu_3$ alloys of varying degrees of long-range order η (obtained by annealing at the required temp. t_a followed by quenching in water), a linear relation between ρ and $(1 - \eta^2)$ was established, confirming the theoretical formulas of Rytchanov (*J. Exptl. Theoret. Phys.* (U.S.S.R.) 9, 4(1939)) and Smirnov (cf. 2nd preceding abstr.). The same linearity was found to hold also for Au-Cu, in the t_a interval in which η could be detd. (i.e., exclusive of the temp. interval between the transition temp. and 375° where presence of the rhombic modification prevented detn. of η). From the intercept on the ρ axis, the coeff. α of the thermal part of the resistivity αT could be roughly evaluated to about 10^{-4}, in agreement with numerous detns. The values of the athermal part of the resistivity, $\rho - \alpha T$, taken from Sykes and Evans (*C.A.* 30, 1720[1]), plotted against the corresponding $(1 - \eta^2)$ (cf. preceding abstr.) also give a straight line, very nearly parallel to that of ρ. Broader verification of the theoretical formulas was supplied by plotting Johansson and Linde's (*C.A.* 30, 1720[2]) and Pospišil's (*C.A.* 28, 1005[2]) values of ρ at 25° and −252° for Au-Cu alloys from 16 to 35% at. % Au, against Smirnov's equations for the athermal part of ρ as functions of c and η^2, this being legitimate on account of the approx. equality of αT for the Au-Cu alloys considered; the plots are satisfactorily to fairly linear, except for the 25 at. % Au alloy which has the different structure $AuCu$ II (cf. preceding abstr.). N. Thon

Evaluation B-78539

ASM-SLA METALLURGICAL LITERATURE