"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

RUMANIA

CHIRIAC, Irina, MD.

Institute of Hygiene and Labor Protection of the Rumanian People's Republic, Bucharest (Institutul de igiena si protectia muncii al R.P.R., Bucuresti)

Bucharest, Igiena, No 4, Jul-Aug 63, pp 341-352

"New Methods and Techniques in the Study of the Reactivity of the Organism of Children to the Influence of Certain Environmental Conditions."

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

TANASESCU, G.; CHIRIAC, Irina; MIHAILA, I.

Contributions to the physiologic and kinematic study of occupational postures in adolescents. Romanian med. rev. 19 no.2: 13-19 Ap-Je'65.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, Mircea

Outcrops of the Cretaceous and Tertiary deposits west of Ovidiu (region of Dobruja) in the zone of Valea Adinca. Comunicarile AR 12 no.4:467-477 Ap '62.

1. Comunicare prezentata de M.G.Filipescu, membru corespondent al Academiei R.P.R.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

JOJA, T.; CHIRIAC, M.

On the presence of some ammonites in the Hangu strata of the external Flysch at Putna (Suceava region). Studii cerc geol 9 no.1:39-49 '64

1. Chair of Historical Geology of the Petroleum, Gas, and Geology Institute, Bucharest, and the Geological Committee attached to the Rumanian Council of Ministers.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, Mircea

On some appearances of Turonian east of Medgidia. Studii cerc geol geof & ogr 9 no.2:329-339 '64.

1. Geologic Committee attached to the Rumanian Council of Ministers. Submitted June 19, 1964.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, Mircea; LACATUSU, Alecsie

Contributions to the knowledge of the green schists in the southern part of Central Dobruja. Studii cerc geol geof geogr 9 no.2: 277-294 '64.

1. Geologic Committee attached to the Rumanian Council of Ministers. Submitted June 26, 1964.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

RUMANIA

TEODOROVICI, Gr., Conf. Dr.; HOISIE, B., Lieutenant-Colonel, Medical Corps; IVAN, A., Physician; OANA, C., Physician; CHIRIAC, N., Major, Medical Corps; VANCEA, Georgeta, Physician; and HANDRACHE, Ludmila, Biologist.

"Course of Influenza in the Winter and Spring of 1965 in Some Units in the Territory of Moldavia"

Bucharest, Revista Sanitara Militara, Vol. 62, No. 3, May-June 1966; pp 545-550

Abstract: Discription of epidemic of flu in the world since 1960 and in Moldavia in particular, in Winter and Spring of 1965 in several military units there; generally morbidity was about 15% and the disease was running a relatively mild course, presumably due to immune condition from the previous epidemic which was also caused by the influenza strain A_2. 1 Western, 5 Rumanian references. Manuscript received 27 November 1965.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, St., ing.; TEACIUC, M.

Studies on the ways of reducing the production expenses of machine-tractor stations in the Banat region. Mec electrif agric 9 no.3:3-21 '64.

1. Faculty of Agricultural Mechanics, Timisoara.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, St., conf. ing.; BELIGAR, I., conf.; IAVORSCHI, N., asist. Mot, S., asist.

Contribution of the machine-tractor station in the development and economic consolidation of the collective farms of the Banat region. Mec electrif agric 8 no.6:1-10 N-D '63.

1. Institutul politehnic, Timisoara.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC,V., ing.

General considerations on the new installations for biological purification with activated sludge. Meteorologia hidrol. gosp. 8 no.2:55-61 '63

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

MAGERU, V.; BLANARIU, D.; CHIRIAC, V.

Meteorologic conditions and the propagation of radioactive clouds formed after the nuclear test explosions in the Sahara. Studii fiz tehn Iasi 12 no.1:35-44 '61.

1. Academia R.P.R., Filiala Iasi, Sectia de cercetari fizice si Serviciul hidrometeorologic regional Iasi.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

S/169/62/000/008/026/090
E202/E392

AUTHORS: Mageru, V., Blănariu, D. and Chiriac, V.

TITLE: Meteorological conditions and the shift of radioactive clouds formed as a result of nuclear explosions in the Sahara

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 8, 1962, 19, abstract 8B147. (Studii şi cercetari ştiint. Acad. RPR Fil. Iaşi. Fiz. şi ştiinte tehn., v. 12, no. 1, 1961, 35 - 44)

TEXT: Displacement of air masses and the meteorological conditions in the Mediterranean Basin after the nuclear explosions in the Sahara in 1960 are studied. After the first explosion (February 13) radioactive clouds were transferred to the central and eastern parts of Europe after they were caught by the fast eastern stratospheric streams which, in a fortnight, circulated the whole Globe. Radioactive clouds (derived from the second explosion of April 1) did not pass over the Rumanian People's Republic. The products of the third explosion (December 27) again penetrated into the eastern part of the Rumanian People's

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Meteorological conditions S/169/62/000/008/026/090
E202/E392

Republic and the increase in radioactivity caused by these explosions was noted in Iasi between January 1 and 5, 1961.

[Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIAC, V., ing.

Joint epuration of industrial and household waste water. Meteorologia hidrol gosp 6 no.3:248-249 '61.

1. Membru al Colegiului de redactie, "Meteorologia, hidrologia si gospodarirea apelor."

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CHIRIAC, V., ing.

Meteorologic drought in Iasi. Meteorologia hidrol gosp 7 no.3: 221-224 '62.

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PETROVANU, Dan, lector (Iasi); CHIRIAC, V., prof.; ARMEANU, Aurora, prof.; MARINO, Maria; LUCA, E.

Observations on the arithmetic manual for grade 6. Gaz mat fiz 15 no.7:364-372 Jl '63.

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CHIRIAC, V., ing.; TEODORESCU, I., ing.

Aspects of the Conference on the Protection of Water Qualities in Europe, held in Geneva in the framework of the European Economic Community, United Nations Organization. Meteorologia hidrol gosp 6 no.2:178-179 '61.

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CHIRIACESCU, N.

Marginal remarks on the article "Principles for the Danube Delta Development".

P. 785 (REVISTA PADURILOR) (Bucuresti, Rumania) Vol. 71, no. 12, Dec. 1957

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

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIACOPOL, N.

The Working University of artistic culture in Galati. Munca sindic 7 no.3:64 Mr '63.

1. Membru in comisia cultural-educativa a Consiliului local al sindicatelor, Galati.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIACESCU, N. D., ing.

Utilization of lime wood and the standard provisions.
Ind lemnului 14 no. 11: 414 N '63.

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CHIRICA, E.

Thermoscopic colors.

P. 31 (METROLOGIA APLICATA) (Bucuresti, Rumania) No. 4, Apr. 1957

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

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DUCA, M.; TEODOROVICI, Gr.; OANA, C.; POISOR, P.; VANCEA, G.;
IVAN, A.; HANDRACHE, L.; CHIRICA, S.

Epidemic of influenza B in a group of children. Stud. cercet. inframicrobiol. 14 no.3:305-313 '63.
(INFLUENZA)

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CHIRICUTA, A.

Anghel Saligny's achievements in harbor construction. p. 374.

REVISTA TRANSPORTURILOR. (Asociatia Stiintifică a Inginerilor si Tehnicienilor din Rominia si Ministerul Transporturilor Rutiere, Navale si Aeriene) Bucuresti, Romania. Vol. 6, no. 9, Sept. 1959

Monthly List of East European Accessions (EEAI) LC Vol. 9, no. 2, Jan 1960

Uncl.

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CHIRICUTA, Anton, ing.

Use of the first reinforced concrete prefabricated elements in Rumania. Rev constr si mat constr 16 no.10:510-518 O '64.

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CHIRICUTA, I.; SUCIU, T.

Iterative spinal anaesthesia by the anterior route. Rumanian M. Rev. 2 no.1:70-72 Jan-Mar 58.
(ANESTHESIA, SPINAL
iterative anterior route technic in prolonged surg.)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRICUTA,I.; PAPILIAN,C.; SIMU,G.; ROGOZAN,I.

Capillary permeability in burns. (Note) 1. Alterations of the ground substance in experimental shock induced by burns. Rumanian med. rev. 7 no.4:3-8 O-D'63

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CHIRICUTA,I.; POPESCU,V.; CARABAS, I.

Intraduodenal omental plombage, a method of closing the duodenal stump in gastric resection for the exclusion of ulcer. Rumanian med. rev. 7 no.3:53-58 Jl-S'63

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KIRICUTA, I. [Chiricuta, I.]; SUCIU, T.; NEGRU, I.

Evaluation of lymph node excision in the treatment of cervical cancer grade I and II with metastases to the pelvic lymph nodes. Nowotwory 14 no.3:233-235 Ag-S '64.

1. Z Instytutu Onkologii w Bukareszcie i Cluj, Rumunia.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

RUMANIA

CHIRICUTA, I., Dr.; TODORUTIU, Cornelia, Dr.; SIMU, G., Dr., and MULEA, Rodica, Biologist

"Modification of the Reticulo-Endothelial System in Burn Shock"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965, pp 183-187

Abstract: Studies in rats in burn shock injected with dye to determine the adequacy of the reticulo-endothelial system at various times following the burn. Early intensification of the system is followed by total exhaustion of function in 48 hours or so. Causes are discussed: central nervous system, endocrine system; overload by decomposed protein, plasma protein loss. This and other rat studies by authors indicated that the central nervous system and endocrine glands are the first to become exhausted, the reticulo-endothelial system follows.

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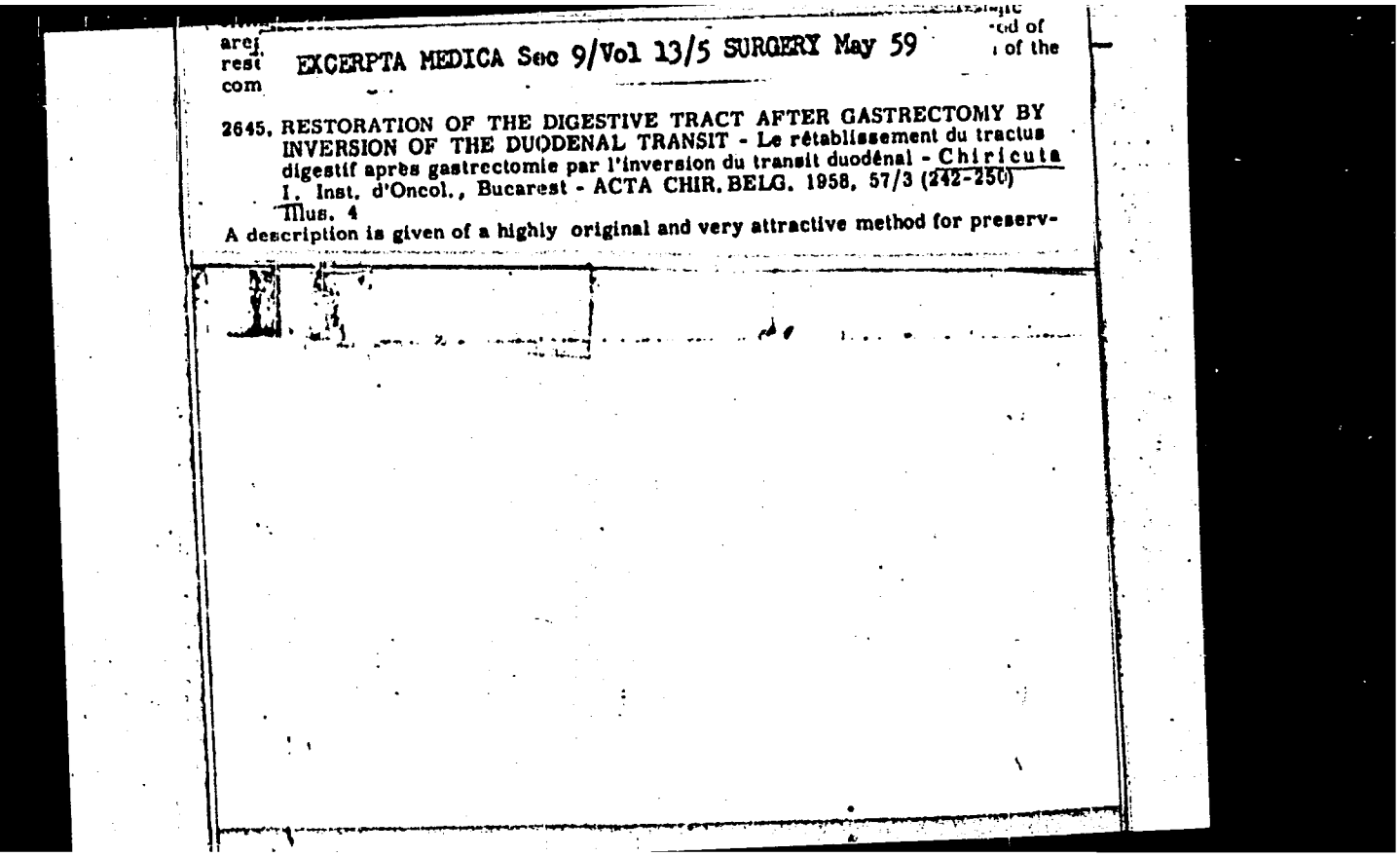

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2645. RESTORATION OF THE DIGESTIVE TRACT AFTER GASTRECTOMY BY INVERSION OF THE DUODENAL TRANSIT - Le rétablissement du tractus digestif après gastrectomie par l'inversion du transit duodénal - Chiricuta I. Inst. d'Oncol., Bucarest - ACTA CHIR. BELG. 1958, 57/3 (242-250) Illus. 4

A description is given of a highly original and very attractive method for preserv-

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2645

ation of the duodenum, or, more accurately, of the duodenal transit, in cases of total or of very large subtotal gastrectomies. After resection of the lesion, the jejunum is divided and its proximal end is sutured to the oesophagus, with an end-to-end anastomosis. The distal end is sutured to the duodenum, also with an end-to-end anastomosis. As a result the food bolus passes throught the duodenum in a direction the inverse of normal. This inversion appears to have no harmful effect on the transit. The procedure is extremely interesting, but has so far been carried out only three times, with one death.

Diamant-Berger - Paris

[illegible] OF PATIENTS WITH

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRICUTA, I.; POPESCU, V.; SIMU, Gh.; ROGOZAN, I.

Regeneration of the gastric mucosa and diminution of hydrochloric acid-pepsin secretion following resection of the gastric mucous membrane. Rumanian M Rev. no.1:126-127 Ja-Mr '61.

1. The Laboratory of Experimental Surgery of the Oncological Institute in Cluj. Head of the Laboratory: Dr. I. Chiricuta.
(STOMACH physiology) (MUCOUS MEMBRANES physiology)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

KIRIKUTSE, I. [Chiricuta, I.]; POPESKU, V. [Popescu, V.]; SIMU, G.; ROGOZAN, I.

Regeneration of the mucous membrane of the stomach and decreased secretion after partial excision of the mucosa. Biul. eksp. biol. i med. 52 no.11:115-118 N '61. (MIRA 15:3)

1. Iz Instituta onkologii, Kluzh, Rumynskaya Narodnaya Respublika. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.

(STOMACH--SECRETIONS) (MUCOUS MEMBRANE)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

FELSZEGHY,E.; CHIRICUTA, I.; ABRAHAM, A.; PAPILIAN, C.

Influence of burns on the amino acid metabolism in rats. Pt.I. Studia Univ B-B S Chem 8 no.1:387-390 '63

1. "Babes-Bolyai" University, Cluj, and the Oncologic Institute, Cluj.

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CHIRICUTA,I. FELSZEGHY,E.; KOVACS, V.; PAPILIAN, C.

Influence of burns on the amino acid metabolism in rats. Pt.2.
Studia Univ B-B S Chem 8 no.1:391-393 '63

1. Oncologic Institute, Cluj, and "Babes-Bolyai" University, Cluj.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9"

"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

PREDA, V.; CHIRICUTA, I.; TODORUTIU-PAPILIAN, Cornelia; SIMU, G.
GROSS, I.K.; MIRCIOIU, Anca

Some histochemical and biochemical aspects of the dynamics of experimental hepatoma genesis in the rat. Studii cerc biol s. zool 16 no. 2:145-154 '64.

1. Chair of Biology, Medicopharmaceutical Institute, Cluj.
2. Corresponding Member of the Rumanian Academy (for Preda).

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRICUTSA, I.; URBANOVICH, V.

Utilization of the duodenum for restoring the continuity of the gastrointestinal tract after gastrectomy. Khirurgiia 35 no.8: 43-48 Ag '59. (MIRA 13:12)

(DUODENUM—SURGERY)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

Chiricutza, I.

CHIRICUTZA, I.; MANOLIU-FURNICA, C.; ROSNER, D.

Certain problems of the treatment of hepatic echinococcosis. Polski tygod. lek. 12 no.43:1658-1662 28 Oct 57.

1. Rumunia, Sinaia; str. Lenin 55.
(ECHINOCOCCOSIS, therapy,
liver (Pol))
(LIVER DISEASES, therapy,
echinococcosis (Pol))

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

ZENZIN, Yu.A.; BOBROV, V.P.; GAVRILOV, A.K.; CHIRIK, P.I.; KATOL'NIK, V.M.

Stand for controlling the aerodynamic resistance of cylinders and heads of air-cooled engines. Trakt. i sel'khozmash. no.8: 14-15 Ag '65. (MIRA 18:10)

1. Sibirskiy avtomobil'no-dorozhnyy institut im. V.V. Kuybysheva i Vladimirskiy traktornyy zavod im. A.A. Zhdanova.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

EFROS, V.V., inzh.; CHIRIK, P.I., inzh.

Effect of the degree of compression on the indices of an engine with volumetric film carburation in an open chamber. Trakt. i sel'khozmash. 33 no.3:6-8 Mr '63. (MIRA 16:11)

1. Vladimirskiy traktornyy zavod.

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ACC NR: AP6011246 FDN SOURCE CODE: UR/0413/66/000/006/0090/0090

AUTHORS: Zemsin, Yu. A.; Bobrov, V. P.; Gavrilov, A. K.; Chirik, P. I.; Katol'nik, V. M.

ORG: none

68
B

TITLE: An aerodynamic chamber for inspecting the cylinders and heads of internal combustion engines by their aerodynamic resistance. Class 42, No. 179965

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 90

TOPIC TAGS: aerodynamic test, aerodynamics, internal combustion engine, high pressure chamber

ABSTRACT: This Author Certificate presents an aerodynamic chamber for inspecting the cylinders and heads of internal combustion engines by their aerodynamic resistance. The chamber is connected to a measuring pipe which contains a throttle provided with a device for holding the inspected object and with a U-shaped liquid manometer. The latter records the pressure at the entrance to the measuring pipe, this pressure being indicative of the aerodynamic resistance offered by the inspected object. To provide a means for marking the object being inspected, the device contains a marking equipment with several scribers capable of producing a symbol corresponding to a given aerodynamic resistance. The liquid manometer of the pipe is provided along its

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ACC NR: AP6011246

height with photoresistors responding to the movement of the liquid level. The number of these photoresistors is equal to the number of scribers, and each resistor is electrically connected with one of the markers. To check the pressure in the chamber, a single photoresistor may be placed on the liquid manometer of the chamber and may be electrically connected to the marking device.

SUB CODE: 20,13/ SUBM DATE: 04May64

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 10008-67

ACC NR: AP6036365 SOURCE CODE: UR/0109/66/011/011/1915/1926

AUTHOR: Akhmanov, S. A.; Chirkin, A. S. 13

ORG: none

TITLE: Doubling of frequency of a finite-width spectral line in the case of wave interactions in a nonlinear medium

SOURCE: Radiotekhnika i elektronika, v. 11, no. 11, 1966, 1915-1926

TOPIC TAGS: nonlinear optics, frequency conversion, harmonic generation, second harmonic

ABSTRACT: The theory of generation of the second harmonic in a weakly nonlinear medium is generalized for the case of quasi-monochromatic signals. The correlation function and the spectrum of the second harmonic were calculated under the assumption that the fundamental frequency signal is a stationary narrow-band Gaussian process. Calculations were made for the cases when the dispersion of a medium within the line-width can be neglected and when it is significant. In the latter case new effects occur which are characteristic of processes of the nonlinear interaction of random-modulated waves. It was established that in the case when the group log times of the harmonic with respect to the fundamental are comparable to the correlation time of the fundamental radiation, the rate of growth of harmonics is retarded and the process of harmonic generation appears to resemble a noncoherent nonlinear scattering.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 10008-67

ACC NR: AP6036365

The author introduces the concept of the length of coherent nonlinear interaction of quasi-monochromatic signals. Orig. art. has: 3 figures and 57 formulas.

SUB CODE: 20/ SUBM DATE: 30Jun65/ ORIG REF: 005/ OTH REF: 004/ ATD PRESS: 5105

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

ZAR.POV, M.M.; CHIKIN, G.K.

Electron paramagnetic resonance of ions of the iron group in NH_4Cl single crystals. Fiz. tver. tela 7 no.1:100-102 Ja '65. (MIRA 18:3)

1. Kazanskiy gosudarstvennyy universitet imeni Ul'yanova-Lenina.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIKIN, N.I., inzh.

Depth of draining beds for permanent cultivated pastures. Gidr. i mel. 16 no.10:36-44 O '64.

(MIRA 17:12)

1. Kirovskaya lugobolotnaya opytnaya stantsiya.

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CHIRIKHIN, V.I.

PREYSMAN, A.B., prof.; CHIRIKHIN, V.I., kand.med.nauk

Pathohistological and clinical symptoms of precancerous conditions [with summary in English]. Akush. i gin. 34 no.3:59-62 My-Je '58. (MIRA 11:6)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. A.B.Preysman) Turkmenskogo meditsinskogo instituta.

(CERVIX NEOPLASMS, diag.
pathohistol. & con. sympt. in precancerous cond. (Rus))
(UTERUS NEOPLASMS, diag.
same)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIKHIN, V.I., dotsent

Use of X rays in contrast vaginography in the diagnosis of inflammations of the internal female sex organs. Zdrav. Turk. 7 no.6:24 Je '63. (MIRA 16:8)

1. Iz kafedry akusherstva i ginekologii (zav. - dotsent M.S. Seyradov, nauchnyy konsul'tant - prof. I.T.Mil'chenko) Turkmenskogo gosudarstvennogo meditsinskogo instituta.
(GENERATIVE ORGANS, FEMALE—RADIOGRAPHY)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

Chirikin, V. S.

USSR/Fluid Mechanics. Heat Transfer

Abs Jour: Ref Zhur-Mekhanika, No 6, 1957, 6841

Author : Chirikin, V. S., Yukin, V. P.
Inst :
Title : Critical heat removal in the flow of non-boiling water, for a circular space.

Orig Pub: Zh. tekhn. fiziki, 1956, 26 No 7, 1542-1555

Abstract: The results of the experimental determination of the magnitude of the critical heat flow q_* in cooling by non-boiling water are presented; q_* corresponds to the formation of a vapor film between the cooled solid surface and the flow of fluid. In the experiments, the magnitude of the critical heat flow was determined by the conditions at the point of critical heat removal, corresponding to the transition for active boiling in the boundary layer of film boiling. Two experimental set-ups were used, and these are schematically illustrated. Special emphasis is placed on the arrangement

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

USSR/Fluid Mechanics. Heat Transfer

Abs Jour: Ref Zhur-Mekhanika, No 6, 1957, 6841

Abstract: of the working area, the design of equipment used to distinguish pressures, and the construction of the heat-emitting element. The methods of measurement and calculation of experimental quantities are described, and possible errors in their determination are evaluated. In the experiments, a regulated transformer was used to increase uniformly the voltage and current in the heat-emitting element. At the critical point of heat removal, the heat emitter usually burned out and an open circuit occurred: the desired quantities were measured at that time. The obtained experimental data are presented in the form of graphs and tables, the analysis of which yields empirical relationships determining the dependence of q_* on the velocity of the non-boiling water at the inlet to the working area (in the range of 1.5-15.1 m/sec), on the average value of the temperature of the water at the exit (from 14 to 137°), on the size of the clearance δ between the external tube and the cylindrical heat-emitting

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

USSR/Fluid Mechanics. Heat Transfer

Abs Jour: Ref Zhur-Mekhanika, No 6, 1957, 6841

Abstract: element (varying from 0.5 to 5.6 mm), and on the pressure p (ranging from 1 to 22 atm. abs.). The effect of surface roughness on q_* is studied in detail. The relationship between the critical heat flow q_{*1} for a rough surface and q_{*0} for a technically smooth surface takes the form of $q_{*1} = \varphi q_{*0}$, where φ is an experimental coefficient, determined by the type of surface and the nature of the fluid. The values of φ presented refer to a pipe of 10 mm diameter for width δ = 1.45 ÷ 1.50 mm, with a velocity of water (or mixture) equal to 2.77 ÷ 2.83 m/sec, and at a temperature of 40-45°. Seven titles in bibliography.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

ZASLAVSKIY, G.M.; CHIRIKOV, B.V.

Mechanism of Fermi acceleration in the one-dimensional case.
Dokl. AN SSSR. 159 no.2:306-309 N '64. (MIRA 17:12)

1. Novosibirskiy gosudarstvennyy universitet. Predstavleno akademikom M.A. Leontovichem.

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

AERAMYAN, Ye.A.; BONDARENKO, L.N.; VOLOSOV, V.I.; NAUMOV, A.A.; CHIRIKOV, B.V.

Magnetic screens admitting the passage of circuital electric fields. Prib. i tekh. eksp. 10 no.1:178-181 Ja-F '65. (MIRA 18:7)

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L 4[illegible] [illegible] TIP(c)

ACCESSION NR: [illegible]053 S/0120/65/000/[illegible]

AUTHOR: [illegible] Ye. A.; Bondarenko, L. N.; Volosov, V. [illegible]
Naum[illegible], B. V.

[illegible] shields passing an eddy electric field

[illegible] eksperimenta, no. 1, 196[illegible]

TOPIC TAGS: magnetic shield

ABSTRACT: [illegible] and design methods of shields [illegible] magnetic [illegible] fields are described. Such a shield [illegible] more open turns of a metal sheet or strip around the magnet. An eddy electric field passes easily through such a shield [illegible] reluctance stands in the way of the magnetic flux. One of the [illegible] "labyrinth") was intended for a betatron accelerator and had a [illegible] 300 at 5 kc. As an exact calculation of emic-field distribution

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ACCESSION NR: AP5007053

practically impossible, design formulas are offered whose [illegible]
on more or less crude models. The shielding factor estimated
at 2.7—75.6 kc is in good agreement with experimental data.
to thank G. I. Babkin and A. M. Stefanovskiy for their useful discussions, and
V. P. Feduloo for developing the methods and building the [illegible]
art has 5 figures, 12 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED [illegible]53 ENCL: 00 SUB

NO REF SOV: 04 OTHER: 002

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 01215-66 EWT(1)/EPA(w)-2/EWA(m)-2 IJP(c) AT UR/0089/65/019/003/0239/0244
ACCESSION NR: AP5023762 533.9

AUTHOR: Chirikov, B. V. 44,55

TITLE: Stability of a partially compensated electron beam 21,44,55

SOURCE: Atomnaya energiya, v. 19, no. 3, 1965, 239-244

TOPIC TAGS: electron beam, electron plasma, particle beam, plasma instability, plasma stability

ABSTRACT: The conditions for stabilizing a partially compensated electron beam against bending were investigated. A beam of particles in a partially or totally compensated accelerator represents a peculiar plasma in which instabilities, linked with the interaction of a large number of charged particles, can appear. The most dangerous of the plasma instabilities is the one associated with beam bending. From previous investigations it was concluded that total stability can be achieved only in a strongly focused external magnetic field, and that Foucault current and weak focusing do not ensure stability. It was found that in a continuous spectrum of wave disturbance vectors, there is always a region of strong (with a relatively large increment) instability. In the case of a discrete spectrum (e.g., when an accelerator beam has a final length), the instability appears only when the beam

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L 01215-66

ACCESSION NR: AP5023762

current is larger than the critical one. Landau attenuation and radiative friction do not stabilize the instability. A weak dissipative instability caused by radiative friction was detected. In some cases, Landau attenuation stabilized this instability while in other cases it intensified it. Orig. art. has: 1 figure and 30 formulas. [JA]

ASSOCIATION: none

SUBMITTED: 13Aug64 ENCL: 00 SUB CODE: NP

NO REF SOV: 008 OTHER: 003 ATD PRESS: 4098

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 1401-66 EWT(1)/EPA(w)-2/EWA(m)-2 IJP(c) AT

ACCESSION NR: AP5021094 UR/0056/65/049/002/0373/0378

AUTHOR: Dubinina, A. N.; Traynin, L. Ya.; Chirikov, B. V.

TITLE: Magnetic mirror trap for prolonged confinement of electrons

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 2, 1965, 373-378

TOPIC TAGS: plasma electron oscillation, plasma containment, plasma injection, magnetic mirror, magnetic trapping

ABSTRACT: The authors describe a magnetic-mirror trap (LM) with a simple system of external injection from an electron gun, designed to operate at ~ 8 x 10^{-10} mm Hg and for an electron containment time up to 40 seconds. The apparatus is intended for a detailed study of prolonged motion of individual electrons in the trap, and to investigate the behavior of a rarefied plasma. A diagram of the trap is shown in Fig. 1 of the Enclosure. The injector used was described by I. M. Samoylov (PTE no. 1, 24, 1959). The electrons were injected into the trap through one of the mirrors along the magnetic field and captured by rapid variation of the electric field produced by a special ring electrode. The degree of electron capture was determined from the current flowing in the collector circuit. The LM apparatus was used to measure the containment time of fast electrons up to 100 kev

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ACCESSION NR: AP5021094

9

energy. The maximum containment time attained was 40 sec at electron energy 20 kev in a vacuum 10^{-9} mm Hg. Under these conditions the number of electron oscillations in the trap reached 5×10^9, and the number of Larmor revolutions reached 10^{11}. "We are deeply grateful to G. A. Ilinov for advice and V. G. Ponomarenko for continuous help in constructing and adjusting the equipment." Orig. art. has: 4 figures. [02]

ASSOCIATION: Institut yadernoy fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Nuclear Physics, Siberian Department, Academy of Sciences, SSSR)

SUBMITTED: 15Jan65 ENCL: 01 SUB CODE: EM,NP

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 1403-66

ACCESSION NR: AP5021094 ENCLOSURE: 01

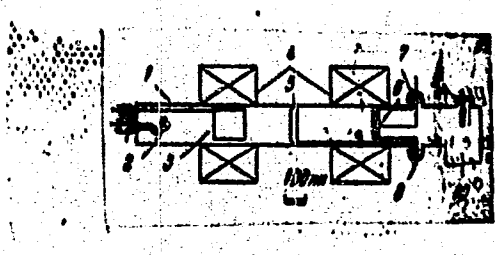

Fig. 1. Schematic section through the magnetic trap (to scale)

1 - Vacuum chamber; 2 - electron gun; 3 - ring; 4 - solenoids; 5 - electrostatic probe; 6 - collector; 7, 8 - collector grids; 9 - manometer; 10 - tu pump.

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L 5173-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS

ACCESSION NR: AT5022586 UR/0000/65/000/000/0001/0022

33
30
B+1

AUTHOR: Meshkov, I. N.; Chirikov, B. V.

TITLE: Focusing of an intense electron beam in an accelerator tube 19

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki. Doklady, 1965. Fokusirovka intensivnogo elektronnogo puchka v uskoritel'noy trubke, 1-22

TOPIC TAGS: electron beam, linear accelerator, focusing accelerator, electron accelerator

ABSTRACT: The passage of an intense electron beam through a linear accelerator tube is being investigated. One of the basic related problems is the need for beam focusing, and although there exist numerous papers devoted to this question, none of them seem to discuss the dynamics of a relativistic beam taking into account its characteristic field and the presence of a longitudinal accelerating field. Consequently, the present authors develop the appropriate relativistic equations of motion, discuss an unaccelerated beam and an accelerated beam in a uniform field, present the theoretical foundations for beam focusing by means of a periodic field, and carry out the actual calculation of the periodic field within the accelerator tube. The authors give numerous diagrams which should be

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L 5173-66

ACCESSION NR: AT5022586

helpful during future accelerator designs, and indicate the stability regions. "The authors thank Ye. A. Abramyan for valuable discussions and I.D. Bagbay and A. G.Boriskin for their help during the investigation." Orig. art. has: 45 formulas and 8 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

IJP(c)

AUTHOR: Chirikov, B.V.

TITLE: Stability of a partly neutralized electron beam

UR/0000/64/000/000/0001/0023

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki. Doklady, 1964. Ustoychivost' chastichno kompensirovannogo elektronnogo puchka, 1-23

TOPIC TAGS: electron beam, particle accelerator, plasma stability

ABSTRACT: The problem of stability of particle beams in accelerator is considered. One of the most troublesome features is the sinuous (bending) instability which is discussed by the author for a case of partly neutralized electron beam. It is shown that the simultaneous action of the polarized and exterior forces can originate the instability which always appears at a definite wave length band. There is always a region of strong (with a relatively large increment) instabilities in a continuous spectrum of perturbation wave numbers. In the case of line spectrum (for instance due to a finite beam length in accelerators) the instability takes place only for the beam current exceeding a certain critical value. Radiation and Landau's damping don't suppress the instability. A weak instability of a dissipation type was discovered as a result of radiation dampings. In some cases Landau's damping suppresses this instability, however, in other cases may intensify it. The investigation was carried out for the beam model having two threads (electron and ion) of fixed dimensions and uniform densities.

Card 1/2

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 9424-66 EWT(1)/EWA(m)-2 IJP(c) AT UR/0000/64/000/000/0054/0055

ACC NR: AT5022449 44,55

AUTHOR: Dubinina, A.N.; Traynin, L.Ya.; Chirikov, B.V. 44,55

TITLE: Magnetic mirror designed for a lasting containment of electrons

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut yadernoy fiziki. Doklady, 1964. Lovushka s magnitnymi probkami, rasschitannaya na dlitel'noye uderzhaniye elektronov, 1-9

TOPIC TAGS: electron capture, electron gun, magnetic mirror machine 21,44,55

ABSTRACT: Design, arrangement and experiments with a magnetic mirror device are described. The device consisted of a vacuum chamber electron gun, solenoid, collector with grids and auxiliary equipment. It was designed for containment of electrons up to a period of 40 sec. An energy of about 100 kev was attained by electrons. Magnetic induction in the mirror was about 2.5 kilogauss with a mirror ratio of 2.5. Dimensions of the cylindrical vacuum chamber were 1600 x 210mm. The pressure was 8 x 10^{-10} mm Hg. Under normal operational conditions the time of electron containment was about 15 sec. This time interval was increased up to 40 sec by doubling or tripling the magnetic field strength after the electron capture. In this case, the number of electron oscillations reached 5 x 10^9 and the number of Larmor revolutions was 10^{11}. Significant decrease of the containment time has been observed for p/R 0.1 where p is the radius of the electron orbit and R is the magnetic line curvature radius. This

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L 9424-66

ACC NR: AT5022449

result demonstrates a non-adiabatic effect of electron motion in magnetic mirror geometry. A simple method of electron injection from external electron gun is described. The capture is the result of fast switching of the electric field of a special form. The authors express their deep gratitude to G.A. Blinov for his numerous advices given on obtaining a super high vacuum as well as to V.G. Ponomarenko for his continuous assistance at the erection and adjustment of the mirror machine. Orig. art. has: 5 figures.

ASSOCIATION: Institut yadernoy fiziki. Novosibirsk (Institute of Nuclear Physics)

SUBMITTED: 00 ENCL: 00 SUB CODE: EC,EM,NP

NO REF SOV: 004 OTHER: 004

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

L 37229-66 EWT(m) IJP(c)
ACC NR: AP6027660 SOURCE CODE: UR/0089/66/020/004/0340/0340

64
B

AUTHOR: Mazepus, V. V.; Chirikov, B. V.

ORG: none

TITLE: Coherent instability of a beam in a chamber with non-conducting walls

SOURCE: Atomnaya energiya, v. 20, no. 4, 1966, 340

TOPIC TAGS: particle accelerator, particle scatter, magnetic field, test chamber, kinetic equation, betatron beam, linear approximation

ABSTRACT: A study is made of the so-called coherent instability in an accelerator related to coherent scattering of particles in the magnetic field of the currents induced by the beam in the walls of the chamber. Instability arises due to the losses in the walls, which cause a shift in the phase of the induced currents with respect to the oscillation of the beam. The test chamber has two rather thick parallel walls made of laminated iron (magnet poles). The space between the walls is 2b. The properties of such a wall are characterized by the effective constants

$$\mu=\frac{\delta+\mu_0\Delta_0}{\delta+d}+i\frac{\mu_0\Delta_0}{\delta+d};\quad \varepsilon=\frac{\delta+d}{\delta}. \qquad (1)$$

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Here $\Delta_0 = c\,(2\pi\omega\sigma\mu_0)^{-1/2}$ is the thickness of the skin layer of the iron; μ_0, σ are the permeability and conductance respectively of the iron; d is the thickness of the laminae; and δ is the distance between them.

Instability was investigated with the aid of a simplified kinetic equation; the field of the beam was determined by the reflected current method.

Neglecting Landau damping, the instability increment is equal to

$$Im\,\omega = 2\Omega_0 \frac{\varphi}{\sqrt{1+\varphi^2}} |\mu|^{\pm 1} \ln |\mu|^{\pm 1}; \qquad (2)$$

$$\Omega_0 = \frac{e^2 N_1 \beta^2}{2m\gamma\omega_0 b^3}; \qquad \varphi = \frac{Im\mu}{Re\mu},$$

where Ω_0 is the frequency shift of betatron oscillations (ω_0) due to reflected currents; N_1 is the linear density of the beam; $v = \beta c$ is particle velocity; $\gamma = (1-\beta^2)^{-1/2}$; the superscripts correspond to $|\mu| \ll 1$, the subscripts to $|\mu| \gg 1$. The thickness of the wall.

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D >> b; in the opposite case the following evaluation is valid:

$$Im\omega \sim \Omega_{eff}\left(|\mu|\frac{D}{b}\right)^{\pm 1}. \qquad (3)$$

The necessary condition for removing the instability with the aid of Landau damping has the form

$$\Delta(ku-\omega_0) \geqslant \Omega_n \times \begin{cases} 1-\left(\frac{\gamma a}{b}\right)^2, & \mu \gtrsim 1; \\ 1-\left(\frac{a}{b}\right)^2, & |\mu| \ll 1; \end{cases} \qquad (4)$$

$$\Omega_n = \frac{e^2 N_1}{\gamma^3 m \omega_0 a^2}.$$

Here a is the beam radius; Δ is the scattering with respect to velocities (Δv) or due to nonlinearity ($\Delta\omega_0$); w, k are the frequency and wave vector of the Fourier component of beam perturbation; and Ω_n is the shift of frequency ω_0 due to the space charge of the beam.

Note that when $\mu \gtrsim 1$, stabilization becomes much easier for a given particle energy.

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The following inequality, as a basic condition, must be satisfied for the calculations to be applicable:

$$\frac{\omega b}{c}\sqrt{\mu\varepsilon} \ll 1. \qquad (5)$$

Instability arises only in the direction of the magnetic field. All of the calculations were carried out by a linear approximation. Orig. art. has: 5 formulas. [JPRS: 36,456]

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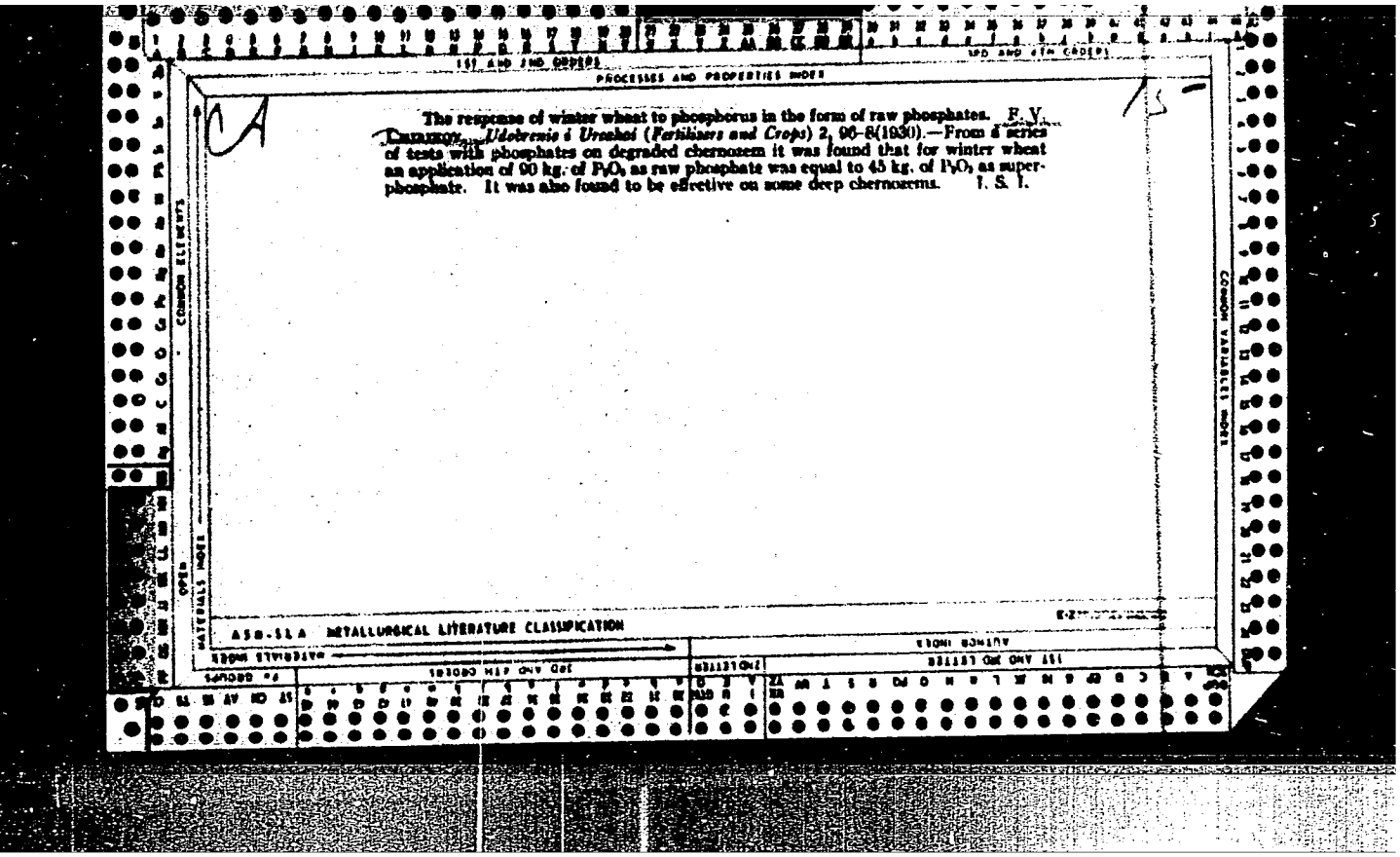

PROCESSES AND PROPERTIES INDEX

A

The response of winter wheat to phosphorus in the form of raw phosphates. F. V. Cannon. *Udobrenie i Urozhai* (*Fertilizers and Crops*) 2, 96–8(1930).—From a series of tests with phosphates on degraded chernozem it was found that for winter wheat an application of 90 kg. of P_2O_5 as raw phosphate was equal to 45 kg. of P_2O_5 as superphosphate. It was also found to be effective on some deep chernozems. T. S. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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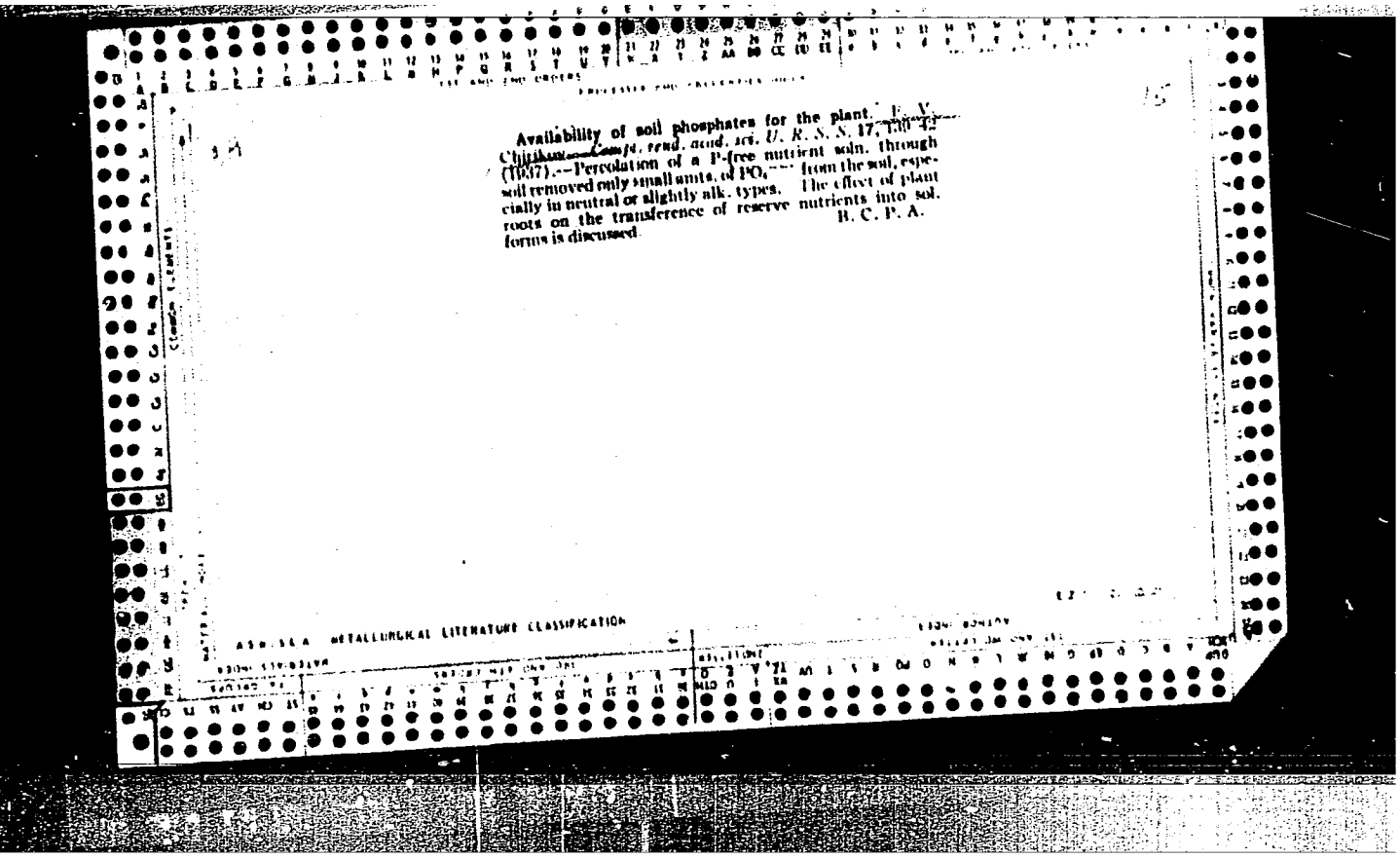

Availability of soil phosphates for the plant. I. V. Chirikov. *Compt. rend. acad. sci. U. R. S. S.* 17, 139-42 (1937).—Percolation of a P-free nutrient soln. through soil removed only small amts. of PO_4^{---} from the soil, especially in neutral or slightly alk. types. The effect of plant roots on the transference of reserve nutrients into sol. forms is discussed. B. C. P. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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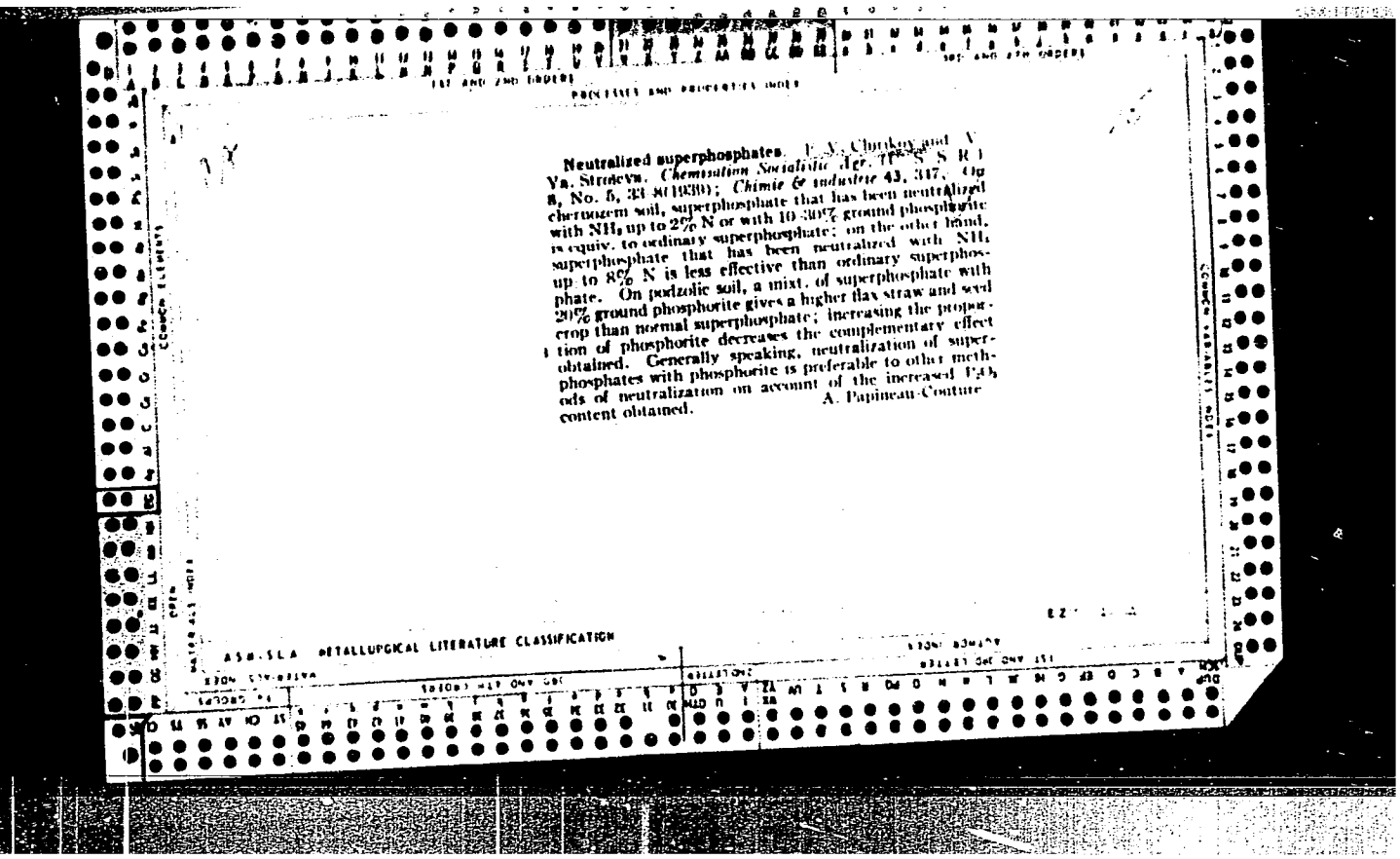
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX



Neutralized superphosphates. F. V. Chirikov and V. Ya. Stroieva. *Chemisation Socialistic Agr.* (U. S. S. R.) 8, No. 5, 33-8(1939); *Chimie & industrie* 43, 317. On chernozem soil, superphosphate that has been neutralized with NH_3 up to 2% N or with 10-30% ground phosphorite is equiv. to ordinary superphosphate; on the other hand, superphosphate that has been neutralized with NH_3 up to 8% N is less effective than ordinary superphosphate. On podzolic soil, a mixt. of superphosphate with 20% ground phosphorite gives a higher flax straw and seed crop than normal superphosphate; increasing the proportion of phosphorite decreases the complementary effect obtained. Generally speaking, neutralization of superphosphates with phosphorite is preferable to other methods of neutralization on account of the increased P_2O_5 content obtained. A. Papineau-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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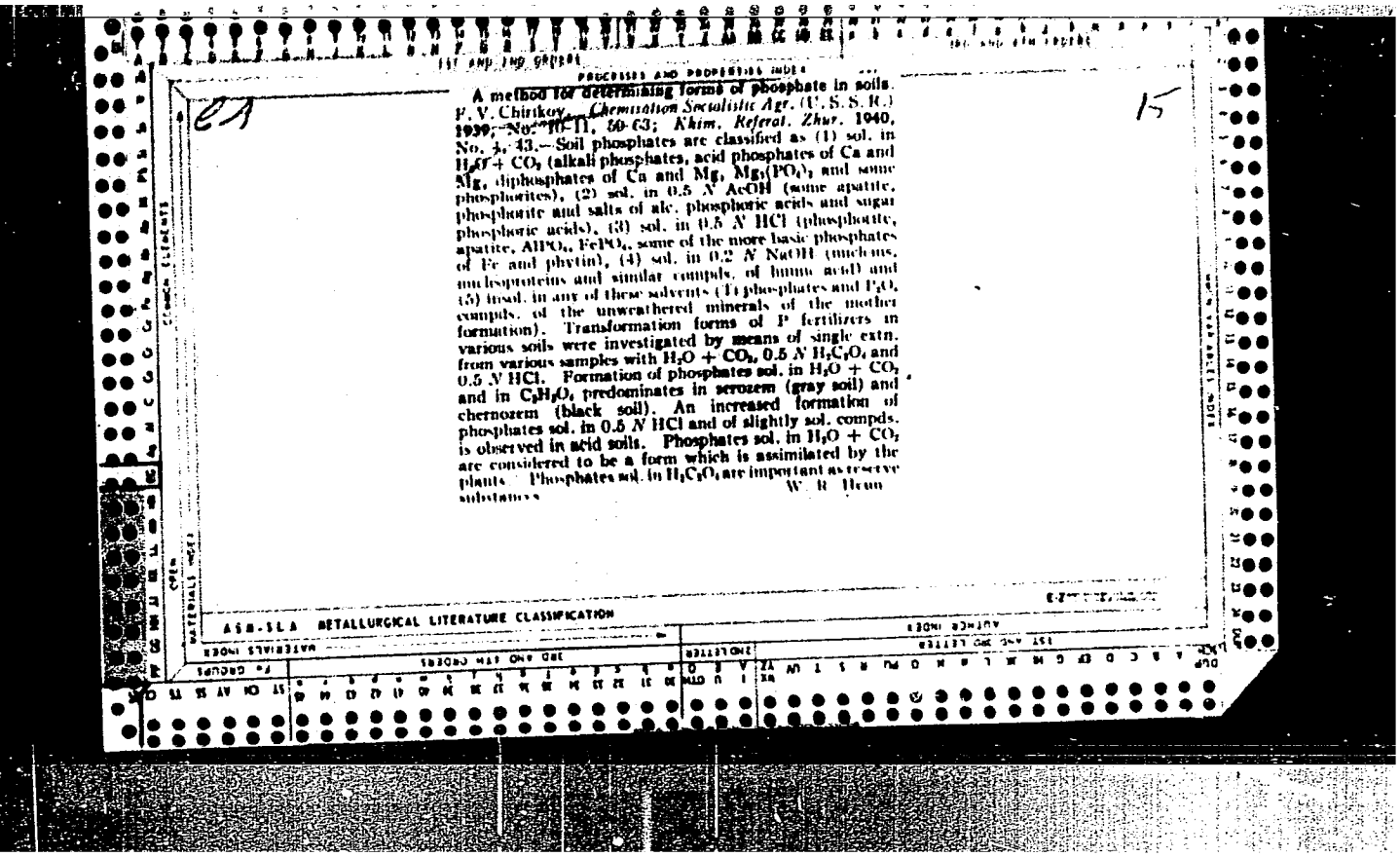

A method for determining forms of phosphate in soils. P. V. Chirikov. *Chemisation Socialistic Agr.* (U. S. S. R.) 1939, No. 10-11, 50-63; *Khim. Referat. Zhur.* 1940, No. 3, 43.—Soil phosphates are classified as (1) sol. in $H_2O + CO_2$ (alkali phosphates, acid phosphates of Ca and Mg, diphosphates of Ca and Mg, $Mg_3(PO_4)_2$ and some phosphorites), (2) sol. in 0.5 *N* AcOH (some apatite, phosphonite and salts of alc. phosphonic acids and sugar phosphonic acids), (3) sol. in 0.5 *N* HCl (phosphonite, apatite, $AlPO_4$, $FePO_4$, some of the more basic phosphates of Fe and phytin), (4) sol. in 0.2 *N* NaOH (nucleins, nucleoproteins and similar compds. of humic acid) and (5) insol. in any of these solvents (Ti phosphates and P_2O_5 compds. of the unweathered minerals of the mother formation). Transformation forms of P fertilizers in various soils were investigated by means of single extn. from various samples with $H_2O + CO_2$, 0.5 *N* $H_2C_2O_4$ and 0.5 *N* HCl. Formation of phosphates sol. in $H_2O + CO_2$ and in $C_2H_2O_4$ predominates in serozem (gray soil) and chernozem (black soil). An increased formation of phosphates sol. in 0.5 *N* HCl and of slightly sol. compds. is observed in acid soils. Phosphates sol. in $H_2O + CO_2$ are considered to be a form which is assimilated by the plants. Phosphates sol. in $H_2C_2O_4$ are important as reserve substances. W. R. Horn

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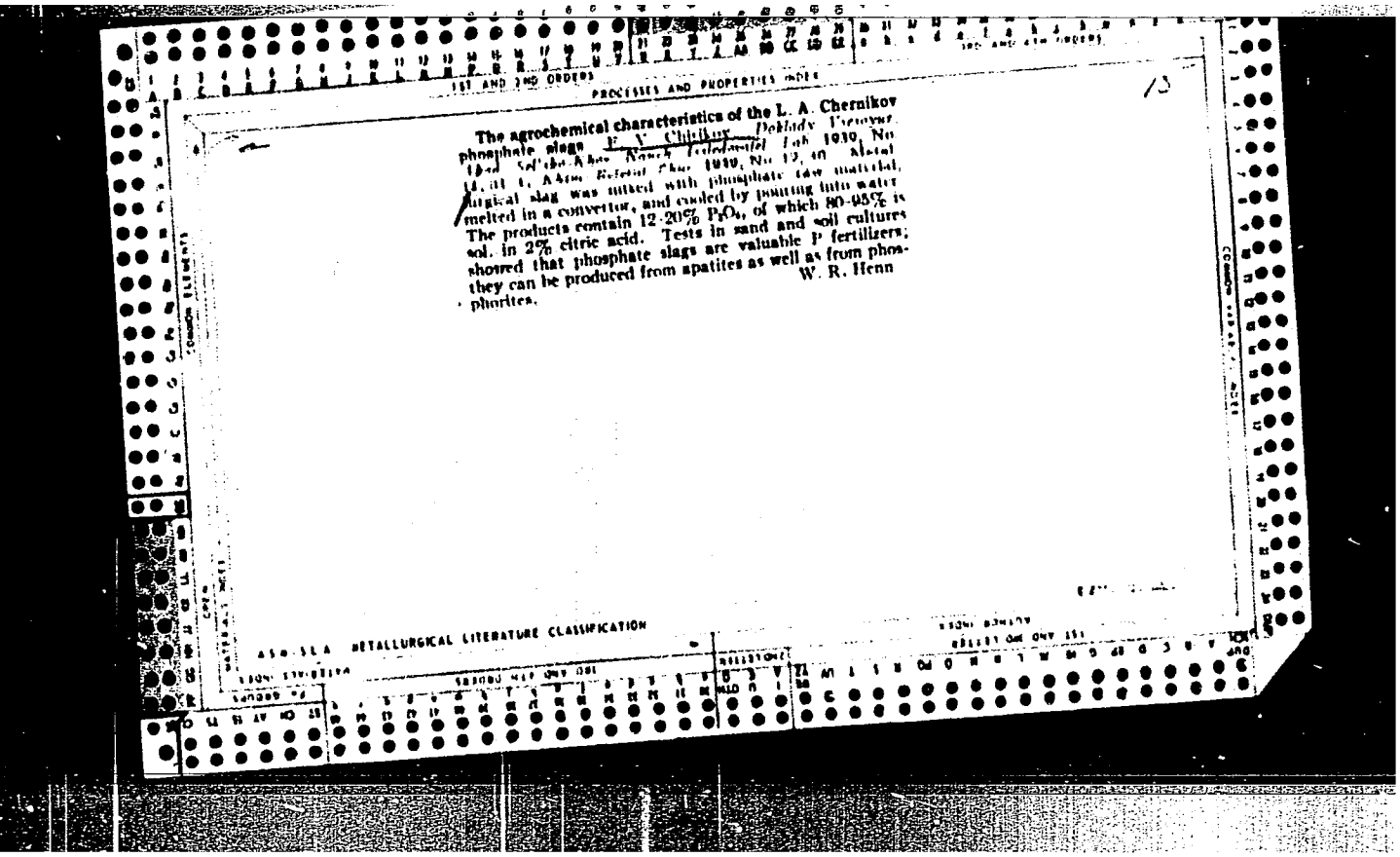
1ST AND 2ND ORDERS



PROCESSES AND PROPERTIES INDEX

15

The agrochemical characteristics of the L. A. Chernikov phosphate slags F. V. Chirikov. *Doklady Vsesoyuz. Akad. Sel'skokhoz. Nauk Lenin Akad. Sel'skokhoz. Nauk* 1939, No 12, 40. Metallurgical slag was mixed with phosphate raw material, melted in a convertor, and cooled by pouring into water. The products contain 12-20% P_2O_5, of which 80-95% is sol. in 2% citric acid. Tests in sand and soil cultures showed that phosphate slags are valuable P fertilizers; they can be produced from apatites as well as from phosphorites. W. R. Henn

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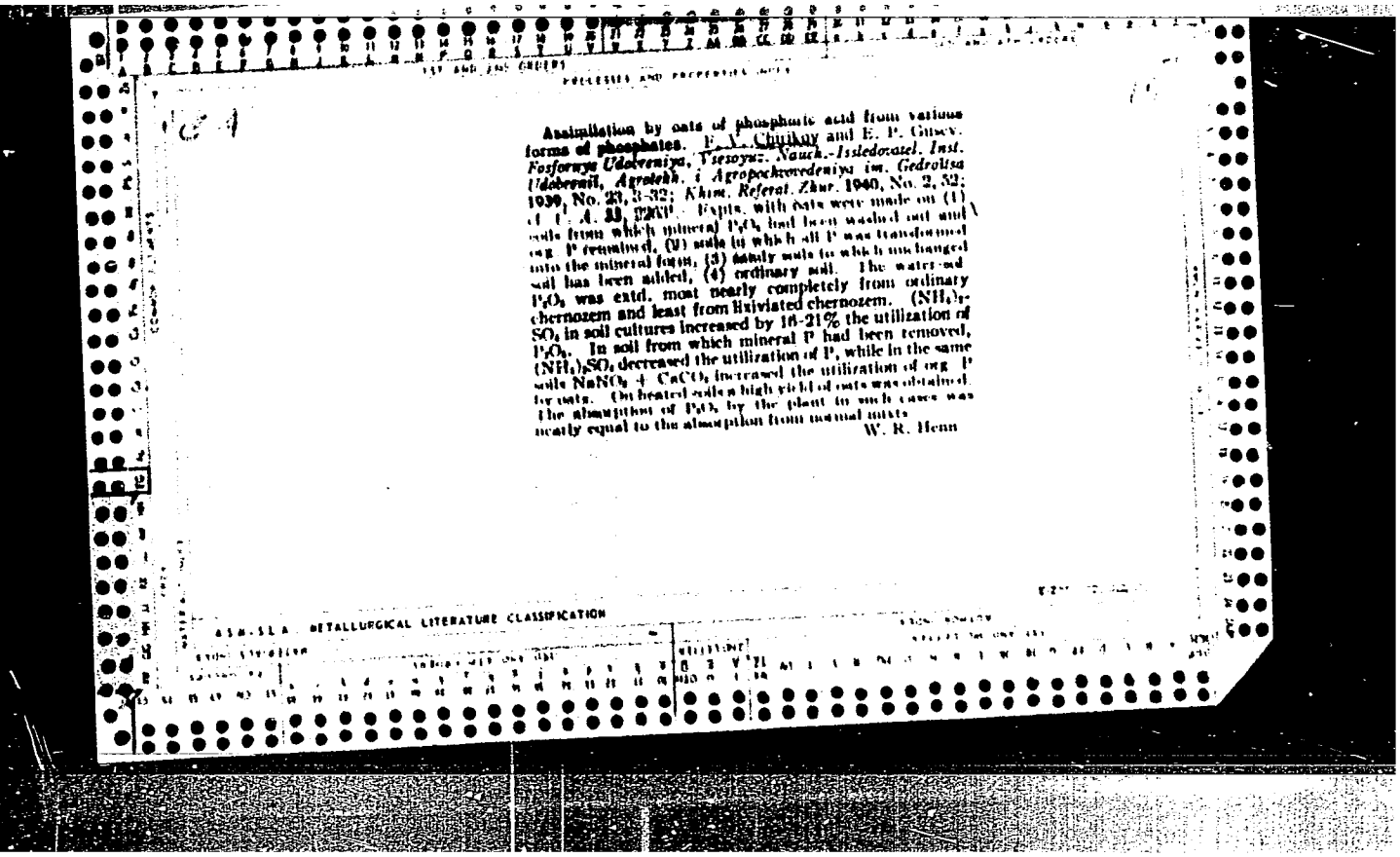

Assimilation by oats of phosphoric acid from various forms of phosphates. E. V. Chuikov and E. P. Gusev. *Fosfornye Udobreniya, Trudy Vses. Nauch.-Issledovatel. Inst. Udobrenii, Agrotekh. i Agropochvovedeniya im. Gedroitsa* 1939, No. 23, 3-32; *Khim. Referat. Zhur.* 1940, No. 2, 32; C. A. 33, 7200. Expts. with oats were made on (1) soils from which mineral P_2O_5 had been washed out and org. P removed, (2) soils in which all P was transformed into the mineral form, (3) sandy soils to which unchanged soil has been added, (4) ordinary soil. The water-sol P_2O_5 was extd. most nearly completely from ordinary chernozem and least from lixiviated chernozem. $(NH_4)_2SO_4$ in soil cultures increased by 16-21% the utilization of P_2O_5. In soil from which mineral P had been removed, $(NH_4)_2SO_4$ decreased the utilization of P, while in the same soils $NaNO_3 + CaCO_3$ increased the utilization of org. P for oats. On heated soils a high yield of oats was obtained. The absorption of P_2O_5 by the plant in such cases was nearly equal to the absorption from normal soils.

W. R. Henn

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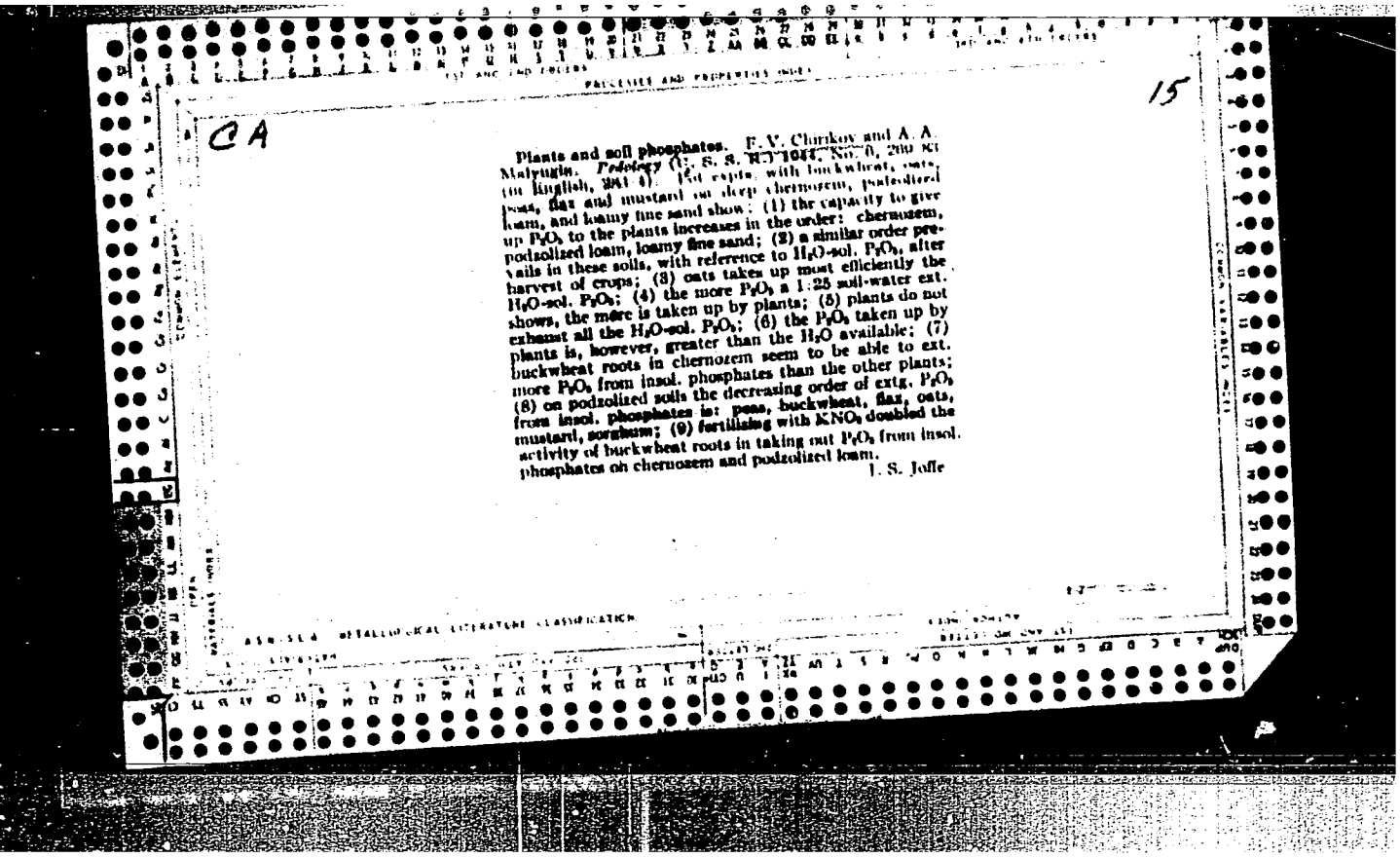

CA

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Plants and soil phosphates. F. V. Churkov and A. A. Malyugin. *Pedology* (U. S. S. R.) 1941, No. 6, 200-8 (in English, 208-9). Pot expts. with buckwheat, oats, peas, flax and mustard on deep chernozem, podzolized loam, and loamy fine sand show: (1) the capacity to give up P_2O_5 to the plants increases in the order: chernozem, podzolized loam, loamy fine sand; (2) a similar order prevails in these soils, with reference to H_2O-sol. P_2O_5 after harvest of crops; (3) oats takes up most efficiently the H_2O-sol. P_2O_5; (4) the more P_2O_5 a 1:25 soil-water ext. shows, the more is taken up by plants; (5) plants do not exhaust all the H_2O-sol. P_2O_5; (6) the P_2O_5 taken up by plants is, however, greater than the H_2O available; (7) buckwheat roots in chernozem seem to be able to ext. more P_2O_5 from insol. phosphates than the other plants; (8) on podzolized soils the decreasing order of extg. P_2O_5 from insol. phosphates is: peas, buckwheat, flax, oats, mustard, sorghum; (9) fertilising with KNO_3 doubled the activity of buckwheat roots in taking out P_2O_5 from insol. phosphates on chernozem and podzolized loam.

I. S. Joffe

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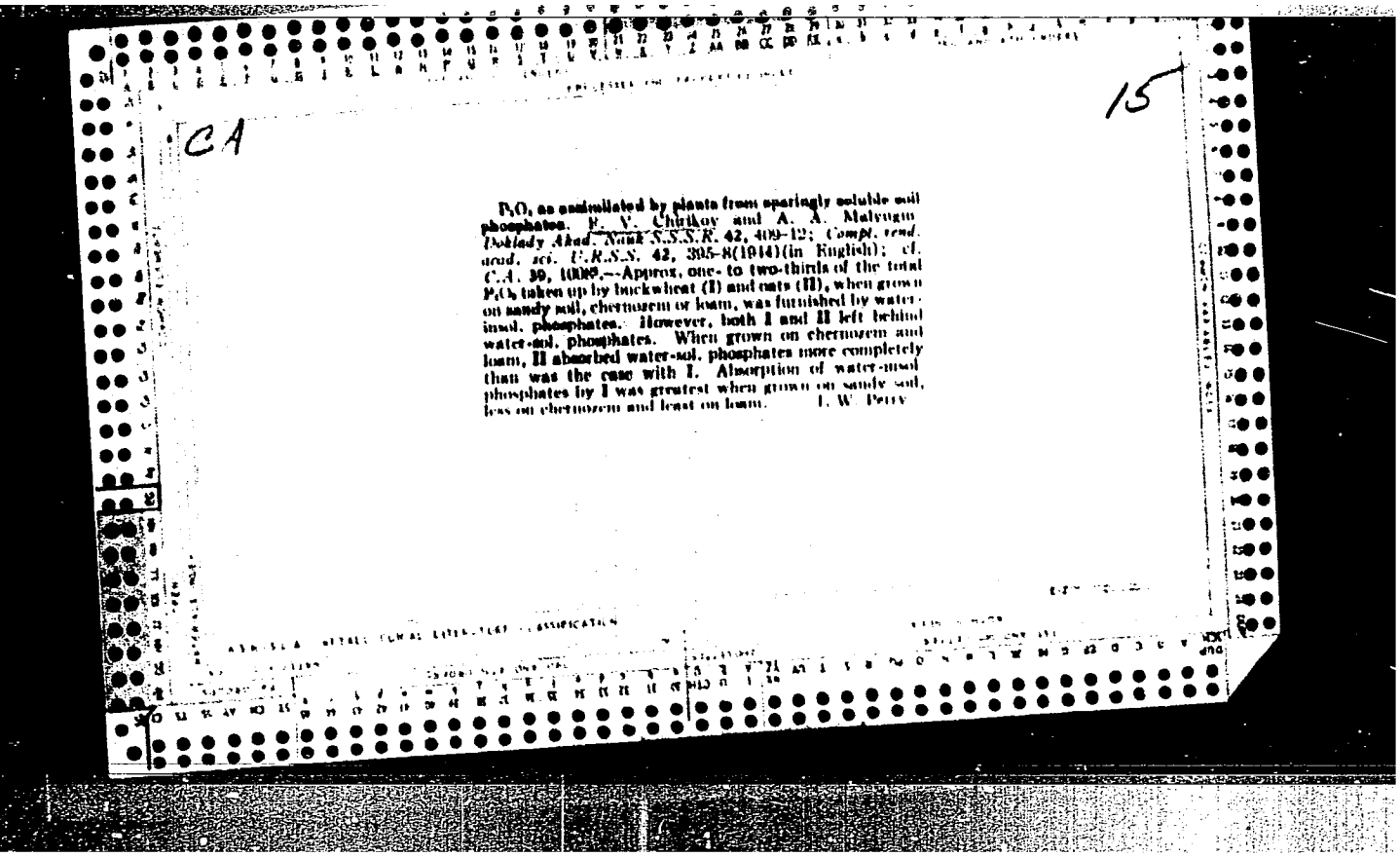

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P_2O_5 as assimilated by plants from sparingly soluble soil phosphates. P. V. Churikov and A. A. Malyugin. *Doklady Akad. Nauk S.S.S.R.* 42, 409–12; *Compt. rend. acad. sci. U.R.S.S.* 42, 305–8(1944)(in English); cf. *C.A.* 39, 1089.—Approx. one- to two-thirds of the total P_2O_5 taken up by buckwheat (I) and oats (II), when grown on sandy soil, chernozem or loam, was furnished by water-insol. phosphates. However, both I and II left behind water-sol. phosphates. When grown on chernozem and loam, II absorbed water-sol. phosphates more completely than was the case with I. Absorption of water-insol phosphates by I was greatest when grown on sandy soil, less on chernozem and least on loam. I. W. Perry

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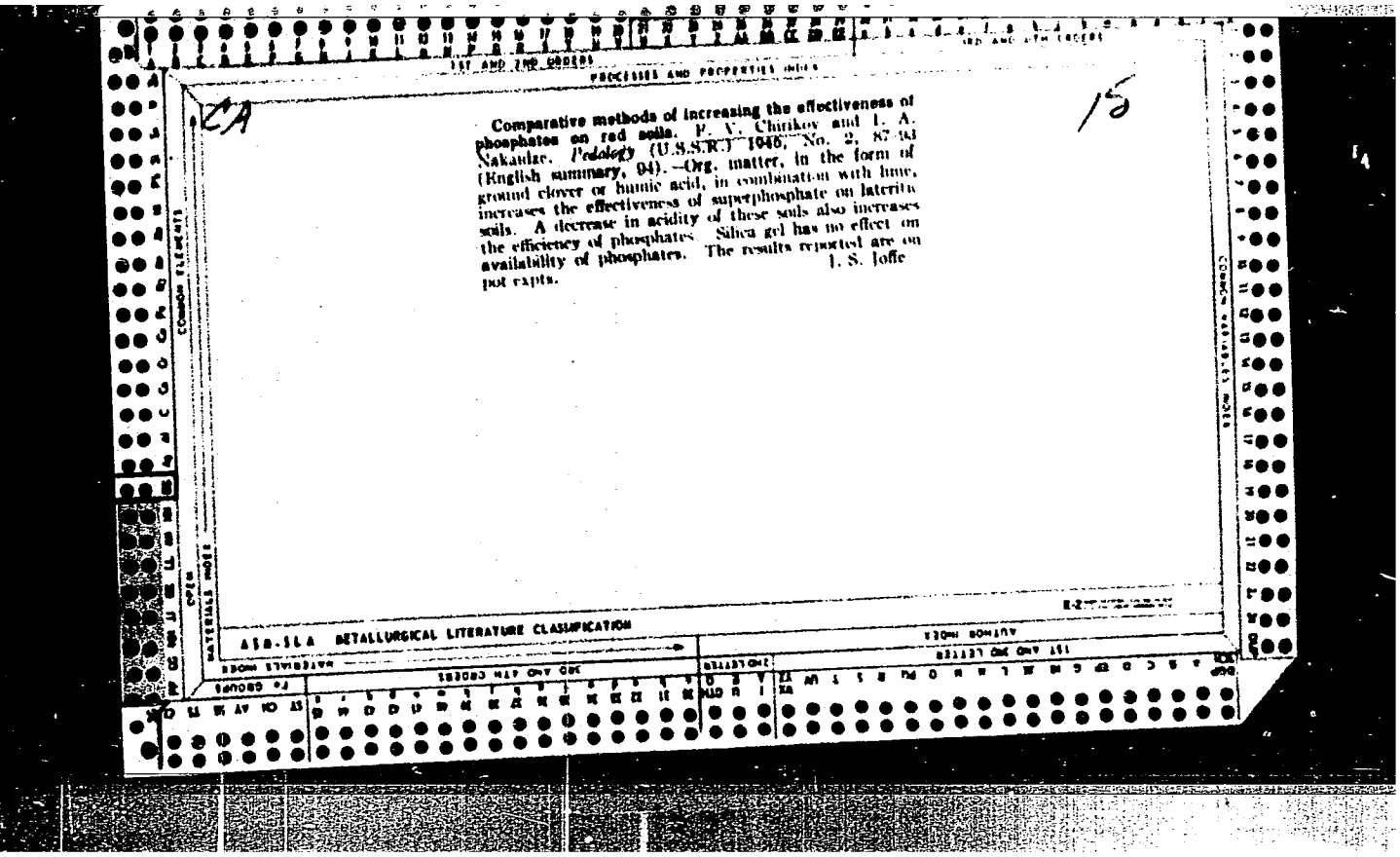

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15

Comparative methods of increasing the effectiveness of phosphates on red soils. P. V. Chirikov and I. A. Nakadze. *Pedology* (U.S.S.R.) 1946, No. 2, 87-93 (English summary, 94).—Org. matter, in the form of ground clover or humic acid, in combination with lime, increases the effectiveness of superphosphate on lateritic soils. A decrease in acidity of these soils also increases the efficiency of phosphates. Silica gel has no effect on availability of phosphates. The results reported are on pot expts.

I. S. Joffe

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIKOV, F. V.

25049. CHIRIKOV, F. V. Prevrashcheniye fosfatov fosfornykh udobreniy V Podzolistykh Pochvakh. Trudy Yubileynoy Sessii, Posvyashch. Stoletiyu So Dnya Rozhdeniya Dokuchayeva. M.-L., 1949, S. 274-80. — Bibliogr: S. 280.

SO: Letopis' No. 33, 1949

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

C.A.

15

Increasing the residual effects of phosphates. F. V. Chirikov. *Agrobiologiya* 1951, 104–13.—Following up the discussion on the various forms of phosphates, as detd. by their soly. in different reagents (*C.A.* 45, 7733h.) C. presents data on the residual effects of phosphates in different soils. He shows that the newly formed phosphates, resulting from the reactions between the soil and added phosphates, are available. Their residual effect can be measured when N or NK is added to the succeeding crop. J. S. J.

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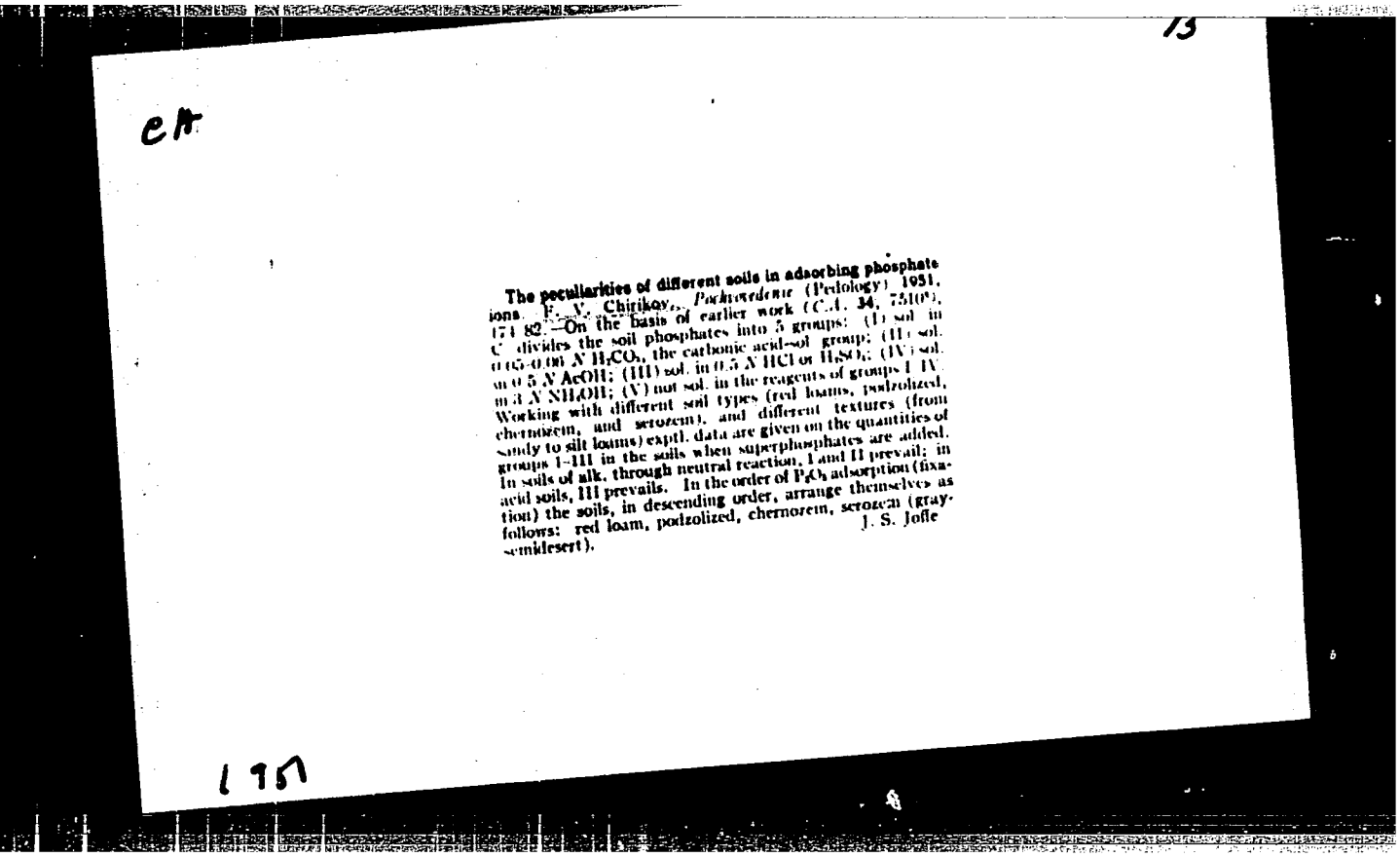

13

CA

The peculiarities of different soils in adsorbing phosphate ions. F. V. Chirikov. *Pochvovedenie* (Pedology) 1951, 174–82.—On the basis of earlier work (C.A. 34, 7510⁹), C. divides the soil phosphates into 5 groups: (I) sol. in 0.05–0.01 *N* H_2CO_3, the carbonic acid-sol. group; (II) sol. in 0.5 *N* AcOH; (III) sol. in 0.5 *N* HCl or H_2SO_4; (IV) sol. in 3 *N* NH_4OH; (V) not sol. in the reagents of groups I–IV. Working with different soil types (red loams, podzolized, chernozem, and serozem), and different textures (from sandy to silt loams) exptl. data are given on the quantities of groups I–III in the soils when superphosphates are added. In soils of alk. through neutral reaction, I and II prevail; in acid soils, III prevails. In the order of P_2O_5 adsorption (fixation) the soils, in descending order, arrange themselves as follows: red loam, podzolized, chernozem, serozem (gray-semidesert).

J. S. Joffe

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CA

Assimilation of potassium, that had been absorbed by the soil, by roots of plants. P. V. Chirikov. *Izvest. Akad. Nauk S.S.S.R., Ser. Biol.* 1951, No. 6, 106–10.—The percolation method used in sand cultures of oats, peas, and barley showed that for assimilation of K that had been absorbed by the soil it is unnecessary to maintain a phys. contact between the roots and the soil particles and exchanges (ionic) that occurs between the soil-bound inorg. salts and those in the percolating soln. serve to transfer K into soln. and make it available for the plant (of 209 mg. soil-absorbed K_2O about 200 mg. was assimilated by typical plants). The actual contact merely reduces the length of the essential diffusion path. The usual Pryanishnikov nutrient soln. was used, expect for KCl, which was supplied as needed by the soil.

G. M. Kosolapoff

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CHIRIKOV, Fedor Vasil'yevich, professor, doktor sel'skokhozyaystvennykh nauk; RIVKIND, T.L., redaktor; SOKOLOVA, N.N., tekhnicheskiy redaktor

[Agricultural chemistry of potassium and phosphorus] Agrokhimiia kaliia i fosfora. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 463 p. (MLRA 9:11)
(Potassium)
(Phosphates)

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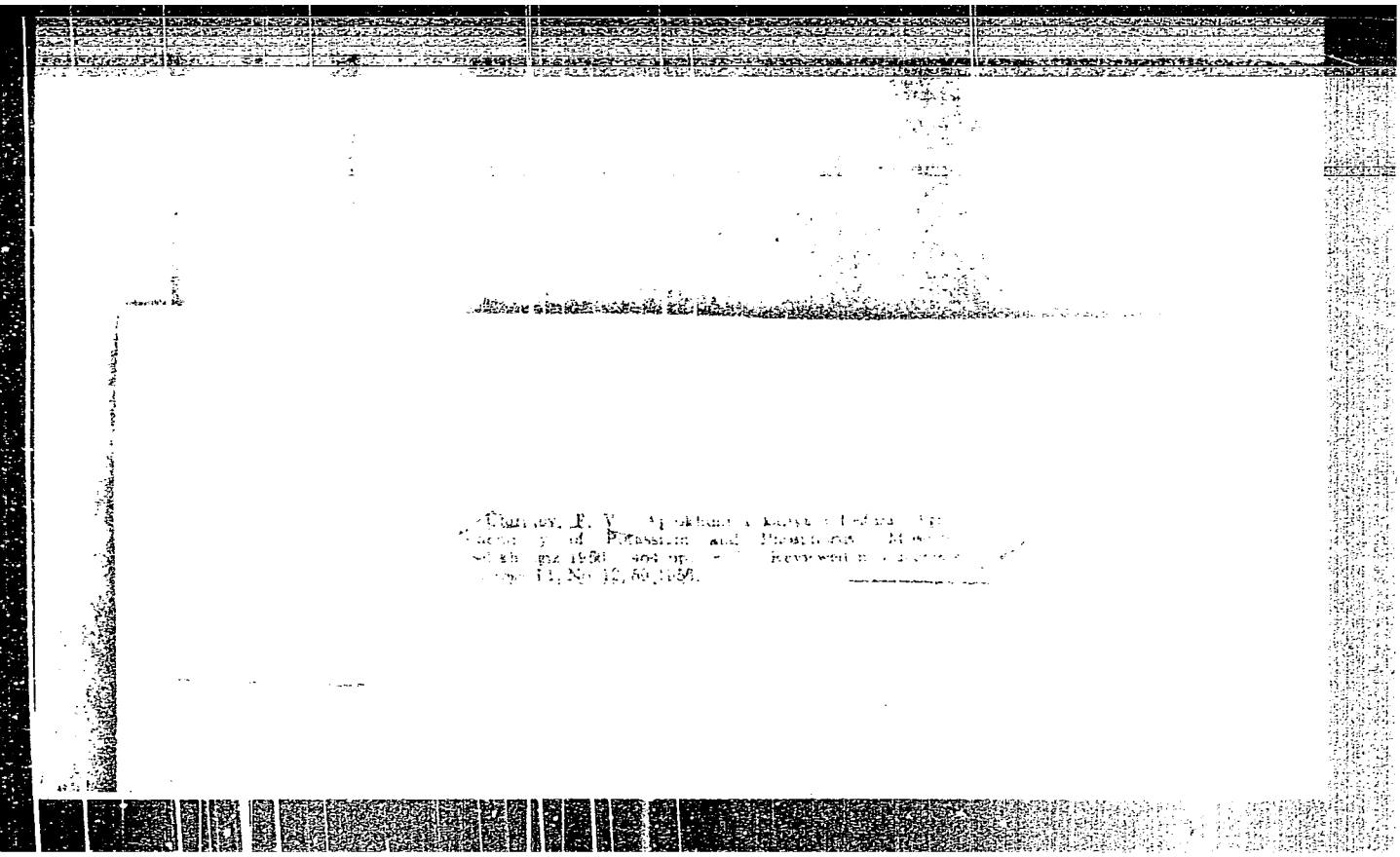

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CHIRIKOV, F.V.

Effect of plants on phosphate dynamics in soils. Izv. AN SSSR. Ser. biol. no.5:707-716 S-O '60. (MIRA 13:9)

1. The Union Institute of Fertilizers and Soil Science, Moscow.
(PLANTS—ASSIMILATION) (SOILS—PHOSPHORUS CONTENT)

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CHIRIKOV, F.V.

In memory of Sh.R.TSintsadze. Pochvovedenie no.3:122-123 Mr '63.
(MIRA 16:3)

(TSintsadze, Sh.R.)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIKOV, L.

Quantity and quality. Prof.-tekh. obr. 18 no.8:29 Ag '61.
Prof.-tekh. obr. 18 no.8:29 Ag '61. (MIRA 14:9)

1. Master proizvodstvennogo obucheniya uchebno-kursovogo kombinata "Arlanneft'", Bashkirskaya ASSR.
(Bashkiria--Vocational education)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

KARTSEVA, A.V.; CHIRIKOV, L.I.

Economic efficiency in the use of various methods for stimulating the recovery of oil in the Arlan field. Nefteprom. delo no. 3: 22-25 '64. (MIRA 17:5)

1. TSekh nauchno-issledovatel'skikh i proizvodstvennykh rabot nefteprom yslovogo upravleniya "Arlanneft'".

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ACC NR: AP6027242 SOURCE CODE: UR/0109/66/011/008/1516/1518

AUTHOR: Kravtsov, N. V.; Chirkov, L. Ye.

ORG: none

TITLE: Optical modulator based on the Michelson interferometer

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966, 1516-1518

TOPIC TAGS: interferometer, optic modulator

ABSTRACT: Experiments with a Michelson-interferometer-type optical modulator are briefly reported. ADP-crystal (40x4x2-mm) cuts were used. The half-wave displacement was 820 v with one, and 410 v with two crystals. A control-voltage amplitude of 410 v produced a 100% modulation in the single-crystal scheme. The modulator passband, limited by the capacitance of electro-optical cells (28 pF), was about 100 Mc. The above interferention modulator has these advantages: it

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ACC NR: AP6027242

requires a much lower control voltage than other types; it does not require rigid monochromaticity of light (a radiation band of 100 Å is acceptable); its operation depends only slightly on the ambient-temperature variations. Disadvantages: high sensitivity to mechanical vibration; no use of TW line is possible. Orig. art. has: 2 figures and 8 formulas.

SUB CODE: 20 / SUBM DATE: 11Nov65 / ORIG REF: 002 / OTH REF: 002

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L 08827-67 EWT(d) IJP(c)
ACC NR: AT6022620 SOURCE CODE: UR/3040/65/000/004/0100/0103

AUTHOR: Chirkov, M. K.

ORG: none

TITLE: Analysis of probabilistic automata

SOURCE: Leningrad. Universitet. Kafedra vychislitel'noy matematiki i Vychislitel'nyy tsentr. Vychislitel'naya tekhnika i voprosy programmirovaniya, no. 4, 1965, 100-103

TOPIC TAGS: finite automaton, probability, random process

ABSTRACT: Given a deterministic finite automaton A having M states and N inputs, and its binary realization R with l internal and q input cells, it is required to find a probabilistic finite automaton A_{pr}, the binary realization R_{pr} of which is obtained from R by replacing the deterministic cells with probabilistic ones. The following expression was obtained in a previous article by M. K. Chirkov entitled "Probabilistic Finite Automata," in *Vychislitel'naya tekhnika i voprosy programmirovaniya*, No 3, LGU, 1964:

$$P_{IIUQ} = \sum_{V=0}^{V=2^Q-1} \left[\prod_{\nu=1}^{\nu=l} \left(p_{\nu h_\nu b_{IIV}^{(\nu)}}\right)^{z_\nu}\right]\left[\prod_{\sigma=1}^{\sigma=q} \left(p_{\sigma z_\sigma}\right)^{z_\sigma}\right],$$

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L 08827-67
ACC NR: AT6022620

A theorem is presented stating that the elements P_{HUG} of the transition matrices of R_{pr} may be decomposed into conditional probabilities of any of its m internal and n input cells. A second theorem is stated concerning the minimum probability of correct operation of the binary automaton. Orig. art. has: 15 formulas.

SUB CODE: 09,12/ SUBM DATE: 18Dec64/ ORIG REF: 001/ OTH REF: 001

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

CHIRIKOV, M.V.

History of the theory of asymptotic series. Ist.-mat. issl. no.13:441-472 '60. (MIRA 14:8)
(Mathematics—History)
(Series, Divergent)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

MEDVEDEV, F.A.; CHIRIKOV, M.V.

Work of the seminar on the history of mathematics at the Moscow State University. Vop.ist.est.i tekh. no.12:251-252 '62.
(MIRA 15:4)

(Mathematics)

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"APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308820010-9

S/126/61/011/002/023/025
E073/E335

AUTHORS: Kalikhman, V.L., Umanskiy, Ya.S. and Chirikov, N.V.

TITLE: Study of the Diffusion Porosity Occurring During Distillation of Chromium From Single Crystals of the Alloy ЭИ437Б (EI437B)

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 2, pp. 314 - 316

TEXT: As shown in other work by the authors (to be published in Metallovedeniye i termicheskaya obrabotka metallov) diffusion porosity occurs during distillation of chromium from the alloy Х20Н80 (Kh20N80), whereby the pores are equally oriented within the limits of 1 grain. By means of a method described in an earlier paper (Ref. 3), the authors attempted to determine the orientation of the pores in the initial stages of their growth with respect to the crystal lattice of the alloy. Since they did not manage to grow sufficiently large crystals of the alloy Kh20N80 by recrystallisation, the authors used large crystals obtained accidentally in scrap material from the alloy EI437B, the composition of which is similar to that of

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Study of ....

Kh20N80. The single-crystal film which is required for investigating the pores by the method of small-angle X-ray scattering was obtained by mechanical grinding to a thickness of 150 μ, followed by electropolishing to a thickness of 60 μ. The electrolytic thickness-reduction did not ensure total removal of the work-hardened layer and the Laue pattern is blurred (Fig. 1 - pertaining to a single-crystal film of the alloy EI437B, the surface plane of which is near to the plane (100)).However, specimens produced from thicker sheet by electrolytic polishing were considerably nonuniform as regards thickness. The Cr distillation was effected in a quartz ampule (which was connected continuously to a pre-vacuum pump) at 1 330 °C for 2.5 hours. Shorter distillation times did not produce porosities. After terminating the distillation process, the specimen was rapidly thrown into the cooled part of the ampule to eliminate falling-out of the ordered phase. Some of the specimens crystallised during distillation and broke up into a number of small grains, whilst others remained single crystals. Curves of the drop in intensity of

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Study of ....

the small-angle scattering as a function of the distance from the edge of the primary beam were plotted by photometering the X-ray diffraction patterns which were obtained by means of slot equipment built as described by Kratky (Ref. 4). The slot was located in differing crystallographic directions. Specimens were investigated, the surfaces of which were near to the plane (111) and (100) . The photometric curves were standardised in such a way that the intensities at a distance of 1' from the edge of the primary beam were equal for all the X-ray diffraction patterns taken from the same specimen. Following that, lines of equal intensity were plotted in the polar coordinates (angles-intensity). The thus obtained graphs are plotted in Figs. 2a and b (curves of equal intensity of low-angle scattering in various directions: Fig 2a. - specimen surface near to the plane (111), 1, 2, 3, ...8 min; Fig. 2b - specimen surface near to the plane (100), 1, 2, 3, ..6 min). It can be seen that the intensity of low-angle scattering of X-rays drops more slowly for a specimen, the surface plane of which is near to the plane (111) if the

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slot is in the direction {211} (corresponding to the photometering direction {110}). This means that in the direction {110} the dimension of the pore nucleus is at a minimum (Ref. 3). The anisotropy of the drop in intensity for specimens with the surface plane near to the plane (100) confirms these conclusions. It is pointed out that the anisotropy of low-angle scattering for the alloy EI437B is not as pronounced as it is for brass. This is attributed to the fact that the alloy is strongly contaminated with nonmetallic inclusions with irregular boundaries, which can be clearly seen in unetched polished cuts. They can serve as a basis for forming arbitrarily oriented pores.
There are 2 figures and 4 Soviet references.

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E073/E335

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Fig. 1:

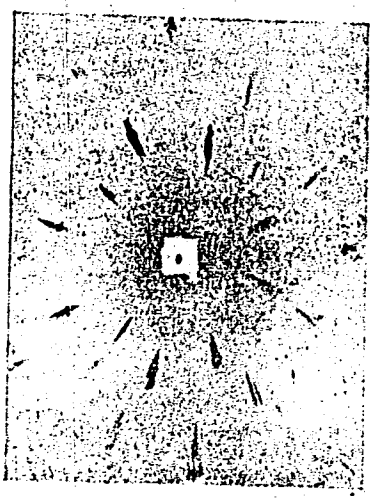

Рис. 1. Лауэграмма, снятая с монокристальной пленки сплава ЭИ437Б. Поверхность образца близка к плоскости (100).

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Fig. 2a:

Fig. 2b:

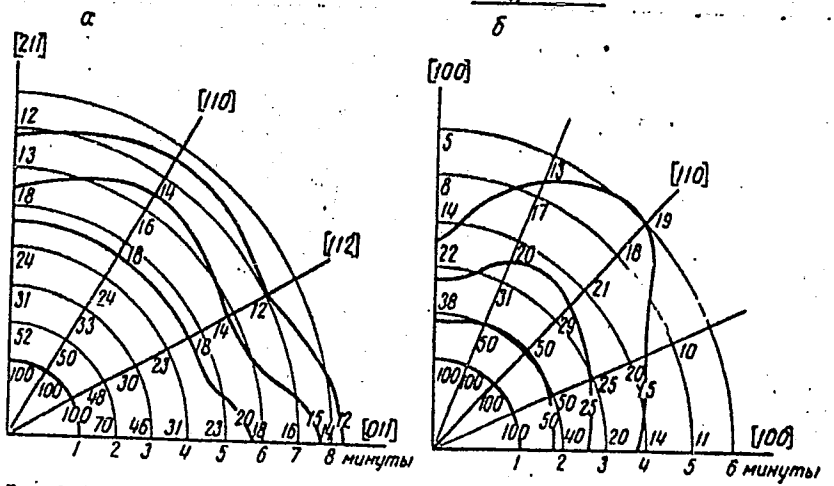

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Рис. 2. Кривые одинаковой интенсивности малоуглового рассеяния в различных направлениях:
а — поверхность образца близка к плоскости (111); б — поверхность образца близка к плоскости (100).

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