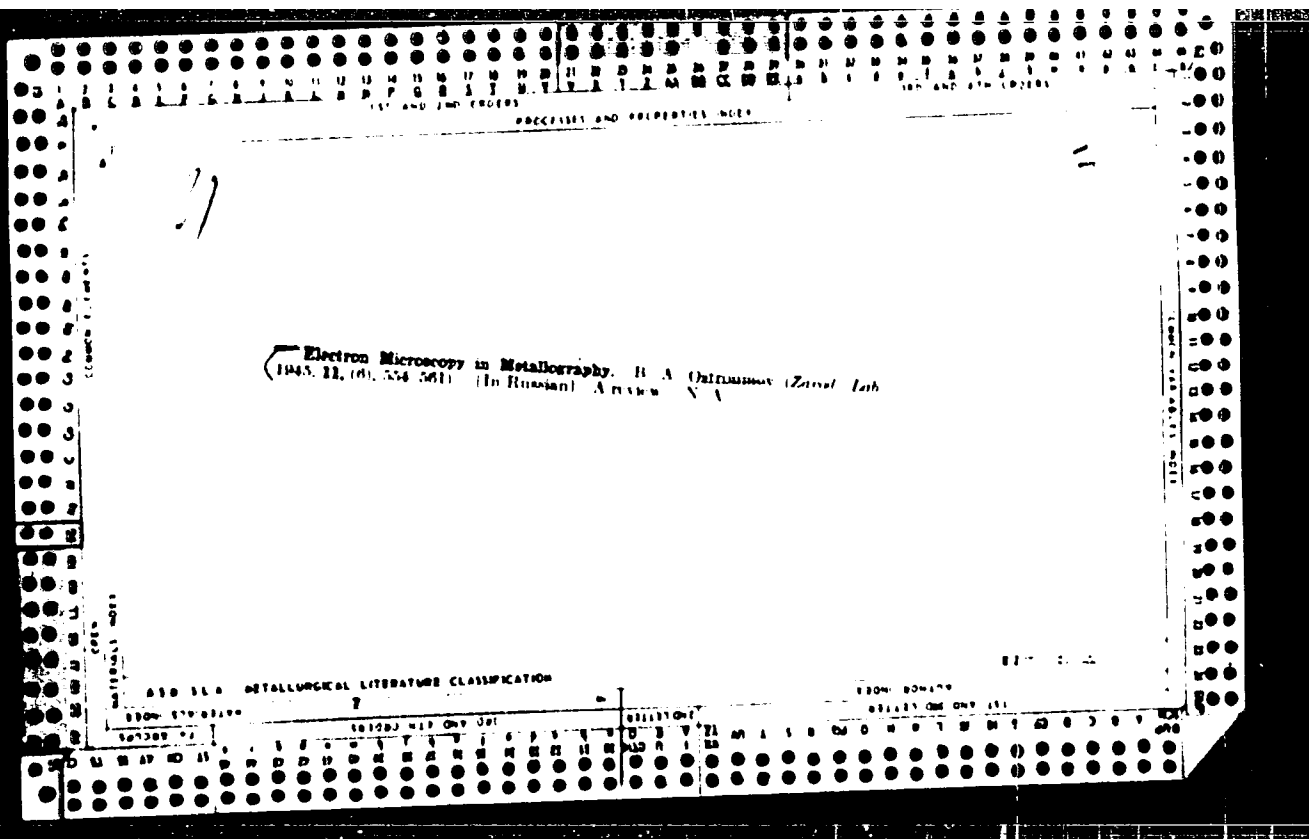


FORM 100 FEB 1958

OSTROMIRSKAYA

Miscellaneous

1470 PHONOTACTIC NUMERICAL PHONES (making Use of the Highly Developed Character of the Ear and the Extremely High Sensitivity (Not Intense to that of the Sense of Touch) of the Rochelle-Salt Crystal) Ostroumova, A. Leposhinskaya. (Comptes Rendus [Doklady] de l'Acad. des Sci. de l'URSS, 1943, Vol. 32, No. 1/3, pp. 81-84, in English)



SHEBEL', B.K.; OSTROUMOV, B.A., prof., red.; YANOVSKIY, B.M., prof.,
otv.red.; DVORAKOVSEAYA, A.A., tekhn.red.

[Studying the equivalent resistance of quartz resonators] Issle-
dovanie ekvivalentnogo soprotivleniia kvartsevogo rezonatora.
Leningrad, Izd. VNIIM, 1948. 56 p. (Leningrad, Vsesoiuznyi nauchno-
issledovatel'skii institut metrologii. Trudy, no.2) (MIRA 11:10)
(Oscillators, Crystal)

KRAMP, L.I.; KUZNETSOV, N.P.; OSTROUMOV, B.A.

Equipment for studies in the infrared regions of spectra. Trudy
VNIIM no.16:23-41 '51. (MIEA 11:6)
(Spectrum, Infrared) (Optical instruments)

IOSEY, O. V., OSTROUMOV, B. (Prof.) SHLYAKHTER, I. (Engineer)

Losev, Oleg Vladimirovich, 1900-1942

Inventor of "crystodine." Radio no. 5, 1952.

9. Monthly List of Russian Accessions. Library of Congress, August 195~~8~~². Incl.

Category : USSR/Electronics - Semiconductor devices and photoelements

H-0

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1744

Author : Ostroumov, B.A., Roginskiy, V.Yu.

Title : Semiconductor Devices.

Orig Pub : 60 let radio. M., Svyaz'izdat, 1955, 32-100

Abstract : Survey article on the theory and technology of manufacture of semiconductors and semiconductor devices. The latest types of semiconductor devices such as the laminated transistor with electric-field control and the semiconductor tetrode are briefly described and mention is made of a germanium triode with photoelectric control. The accomplishments of Soviet scientists in the development and application of photocells and photoresistors to radio engineering and automation are mentioned. The advantages of the use of semiconductors in certain circuits are briefly examined.

Card : 1/1

BONCH-BRUYEVICH, Mikhail Aleksandrovich, inzhener; PISTOL'KORS, A.A.;
VOLOGDIN, V.P. [deceased]; KUGUSHEV, A.M., professor; SIKITIN, N.A.,
professor; ~~OSTROUDNOY, B.A.~~, professor; OSTRYAKOV, P.A., professor
[deceased]; BONCH-BRUYEVICH, A.M., dotsent; ZENDEL', P.Ye.,
tekhnicheskiy redaktor

[A collection of works] Sobranie trudov. Moskva, Izd-vo Akademii nauk
SSSR, 1956. 526 p. (MLRA 9:10)

1. Chlen-korrespondent AN SSSR (for Bonch-Bruyevich, M.A., Pistol'kors,
Vologdin)

(Radio)

(Bonch-Bruyevich, Mikhail Aleksandrovich, 1888-1940)

OSTROUMOV, B.A.

The V.I. Lenin Nizhni Novgorod Radio Laboratory as the cradle of
Soviet radio engineering. Radiotekhnika 13 no.5:76-80 My '58.

(MIRA 11:6)

1. Deystvitel'nyy chlen Vsesoyuznogo nauchno-tekhnicheskogo obshche-
stva radiotekhniki i elektrosvyazi im. A.S. Popova.
(Gorkiy--Radio)

OSTROUMOV, B. A.,

[Transactions of the] Conference on the Occasion of the SOV/108-13-8-11/12
40th Anniversary of the Nizhniy-Novgorod Radio Laboratory imeni
V. I. Lenin (22-24 May, at Gor'kiy) (Radiotekhnika, 1308, 71-9, 1958)

K. M. Kosikov reported in short on two important discoveries of M. A. Bonch-Bruyevich in the field of the propagation of radio waves (1932-1933).-

A. A. Pistoikovs, B. A. Ostroumov, N. N. Izotov, and V. I. Ge spoke about the Tver' radio station as well as of the Nizhniy-Novgorod Radio Laboratory.

The participants in the conference visited the laboratory establishments of the NIRFI at Gor'kiy State University where they became acquainted with the observations made according to the program of the International Geophysical Year.

Aboard the motor ship "Ukraine" by which the participants in the conference sailed to Gor'kiy a readers' conference of the periodical "Radiotekhnika" was held. It was arranged by the Chief Editor M. R. Reznikov and the First Editor R.D.Mel'nikovskaya. M. R. Reznikov spoke about the activity of the editorial staff. Ya. M. Sorin (Moscow) stressed the fact that the periodical supplies only little information on the problems turning up in industry. I. M. Kogan (Moscow) was of opinion that more articles concerning applied theory should be dealt with. A. V. Bogdanov (Leningrad) suggested to publish a special

Card ~~4~~

DOLINSKIY, Ye.F.; AGALETSKIY, P.N.; GAYEVSKIY, N.A.; LASSAN, V.L.; OSTROUMOV, B.A.;
SMOLICH, S.A.; STEPANOV, L.P.; YANOVSKIY, B.M.

Metrological activities in the field of mechanical measurements.
Trudy.VNIIM no.33:39-59 '58. (MIRA 11:11)

1. Rukovoditel' otдела mekhanicheskikh izmereniy Vsesoyuznogo nauchno-
issledovatel'skogo instituta metrologii imeni D.I. Mendeleeva (for
Dolinskiy)
(Measurement)

Ostroumov

3/025/60/000/00/02/003

18.5100

AUTHOR: Ostroumov, B.A., Professor (Leningrad)

TITLE: Micrometallurgy

PERIODICAL: Nauka i zhizn', 1960, No 8, pp 10 - 16 and 37

TEXT: Professor A.V. Ulitovskiy, N.M. Averin and V.G. Krasil'nikov were awarded the 1960 Lenin Prize for their research into the preparation of thin and super-thin metal filaments directly from the liquid state. Two methods of effecting this were devised: the fountain method and the drawing method. In the fountain method molten metal was forced through a nozzle under a pressure of 4-5 atmospheres of inert gas to form a jet 0.2-0.5 mm thick. This is cooled by air or water to form wire at the rate of 5-15 m/sec. The method has proved successful with aluminum, zinc, lead, brass and aluminum bronze. V.N. Yakovlev and B.A. Ostroumov prevented the wire from knotting into "wool" (caused by air resistance to the jet of metal) by feeding the jet into a tube containing air or inert gas moving at the same rate as the jet. The resultant wire is fed into a revolving metal drum inside which it coils. The wire can be used for reinforcing auto-tires or plastics. The metal jet can be regulated to give a metal powder of even grain

Card 1/3

X

Micrometallurgy

S/025/60/000/08/02/003

size, excellent for metal ceramics. Ulitovskiy was assisted in his work by V.A. Shpirnov, S.D. Bogoslovskiy and staff of the Institut metallurgii imeni Baykova Akademii nauk SSSR (Institute of Metallurgy imeni Baykov at the Academy of Sciences of the USSR). Method II consisted in preparing the wire in a liquid state within a protective envelope of glass. Assisted by engineer Yu. V. Denisov, Ulitovskiy designed a micro-furnace using a high-frequency heater (30 kw/cm^3) capable of melting tungsten² or molybdenum.¹ A small piece of metal is placed in a glass tube and fitted in the heater. The metal melts and then melts the glass which can then be drawn out into a fine capillary containing molten metal. This is cooled by air or water into fine glass-insulated² wire which is wound onto a spool. The thickness can be varied from 2 to 300 microns and more, with insulation 1 micron thick. With a diameter of 50-60 microns and less the wire and insulation is quite flexible, while above this diameter the brittleness of the glass coating can be offset by heating the wire to 400-600°C before use, when the glass becomes quite plastic. The wire can be made of manganese, copper, bronze or iron. N.M. Averin has been successful in developing the technology of wire-drawing from these metals, and several wire-drawing devices have been designed. Ulitovskiy's apparatus, designed at the Institute of Metallurgy at the Academy of Sciences of the USSR, can be seen facing page 16, while a

Card 2/3

Micrometallurgy

S/025/60/000/08/02/00

second device was exhibited at the 1959 Soviet Exhibition in New York. The super-fine wire has made possible the production of miniature transformers, relays and resistances, which can be sealed in glass under a high vacuum to improve their efficiency, reliability and independence from the external medium. Since the glass conducts heat away from the wire quite efficiently the wire can stand temperatures up to 600-800°C, making it useful in devices used in hot furnaces or in the chemical industry. Thanks to this, it can also withstand a 2-3-fold current overloading and is therefore useful in transformers for high-frequency equipment, giving a 4-5-fold saving in size and a 100-fold saving in weight. Using the wire, engineer D.V. Timashev has increased the sensitivity of mirror galvanometers to weak currents 1,000-fold, while Candidate of Technical Sciences B.K. Zavarikhin has designed a galvanometer with a damping period of 0.01 sec, leading to the development of simple and cheap electrocardiographs. The wire gives even, good-quality windings with little danger of a breakdown in insulation. If the winding or coil is heated steadily at 400-600°C, the glass insulation fuses into a homogeneous, well-insulated structure with no need for a form or carcass. There are 4 sets of diagrams.

X

Card 3/3

OSTROUMOV, B.A.

Radio engineering in Russia in the period after A.S. Popov (1904-
1912). Trudy Inst. ist. est. i tekhn. 44:233-256 '62. (MIRA 18:3)

OSTROUM V, B.A., prof.

The first application of radio in geodesic work beyond the polar circle (1922-1924). Izv. vys. ucheb. zav.; radiotekh. 6 no.3: 320-322 My-Je '63. (MIRA 16:9)
(Polar regions--Radio in surveying)

Estimate of ...

Nizhny Novgorod Radiolaboratory

... covering ...
... I. ...

... radiotechnika, ...

In a 1928 short history survey covering the period 1918-1928. The foundation of this laboratory was laid by Lenin personally (1918). It was directed by I. V. ...
... later ...
... Leon'yev, ...
... later joined: engineer ...
... V. V. Velogdin, M. S. Verbitskiy, ...
... Zhilinskaya, N. S. ... and the hydraulic ...
... The following of the local specialists took part in the work: V. V. Patarinov, the first Russian radio-technician, ... and some young students, among them ... Kondrat'yev. Furthermore there were working: ...

Nizhny Novgorod Radiolaboratory (near V. I. Lenin - the 18-15-1925)
Institute of Soviet Radio Engineering

...lyanov, V. N. Yakovlev, I. M. Ruschchuk. 1925 came to them
...thers B. A. and G. A. Ostroumov, V. A. Pavlov, A. ...
...stnikov, N. N. Galinov, S. V. Leushin, I. I. ...
... . Nikolayenko.- For the consolidation of the scientific-
technical basis of industry the laboratory was ...ced to the
competence of the Supreme **Council of the National Economy** in
1928. At the time later it was ...ed into the Central Radio
Laboratory of the Electrotechnical Trust of **Electronics**
... ..

LIBRARY: Library of Congress

1. Radio engineering--Development--USSR

Card 27

PERFIL'YEV, Boris Vasil'yevich; GABE, Dina Rafinovna; OSTROUMOV, B.A., prof.,
otv. red.; VIKHREV, S.D., red. izd-va; ZAMARAYEVA, R.A., tekhn. red.

[Capillary methods of studying micro-organisms] Kapillarnye metody
izucheniia mikroorganizmov. Moskva, Izd-vo Akad. nauk SSSR, 1961.
534 p. (MIRA 14:5)

(Soil micro-organisms)

OSTROUNOV, B.A., prof. (Leningrad)

Micrometallurgy. Nauka i zhizn' 27 no.8:10-16,37 Ag '60.
(MIRA 13:9)

(Ulitovskii, Aleksei Vasil'evich, 1893-1957)
(Metallurgy)
(Wire drawing)

ACC NR: AP7002973 (A) SOURCE CODE: UR/0413/66/000/024/0069/0000

INVENTOR: Kotrelev, V. N. ; Ostroumov, B. D. ; Opolovenkov, A. F. ; Krasnov, V. A.

ORG: none

TITLE: Method of preparing a chemical composition from fluoroplast 40.
Class 39, No. 189571

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24,
1966, 69

TOPIC TAGS: plastic, teflon, polytetrafluoroethylene, fluorocarbon ~~plastic~~ resin
~~fluoroplast-40~~

ABSTRACT: An Author Certificate has been issued for a method of preparing a composition based on fluoroplast-40 (an unidentified fluorocarbon plastic). The technological properties of the composition are improved by adding up to 10% of polytetrafluoroethylene to the fluoroplast-40 during processing. [Translation]

[NT]

SUB CODE: 11/SUBM DATE: 18Dec64/

Card 1/1

UDC: 678.743.41-139

MAKSIMOV, Vasilii Mikhaylovich, dotsent, kand.geologo-miner.nauk; ASATUR, K.G., dotsent, kand.tekhn.nauk; DAVIDOVICH, V.I., dotsent, kand.tekhn.nauk; ALBUL, S.P., kand.geologo-miner.nauk; PAUKER, N.G., inzh.-gidrogeolog; OSTROMOV, B.P., gidrotekhnik; ZAYTSEV, I.K., doktor geologo-miner.nauk; TOLSTIKHIN, N.I., prof., doktor geologo-mineral.nauk; REZNIKOV, A.A., kand.khim.nauk, starshiy nauchnyy sotrudnik; MERSHALOV, A.F., assistant; VOROTYNTSEV, V.T., dotsent, kand.tekhn.nauk; MARKOV, I.A., dotsent, kand.geologo-miner.nauk; KERKIS, Ye.Ye., dotsent, kand.geologo-miner.nauk; KHITROV, I.N., inzh.-geolog; BOROVITSKIY, V.P., kand.geologo-miner.nauk; RAVDONIKAS, O.V., kand.geologo-miner.nauk; ONIN, N.M., kand.geologo-miner.nauk; BASKOV, Ye.A., inzh.-gidrogeolog; NOVOZHILOV, V.N., dotsent, kand.geologo-miner.nauk; PEKEL'NIYY, I.S., inzh.-gidrogeolog; NEVKL'SHITSYN, Yu.G., inzh.-gidrogeolog; BOSKIS, S.G., inzh.-gidrotekhnik; NIKIFOROV, Ye.M., inzh.-gidrogeolog; GATAL'SKIY, M.A., prof., doktor geologo-miner.nauk, nauchnyy red.; DOLMATOV, P.S., vedushchiy red.; GEN'NAD'YEVA, I.M., tekhn.red.

[Hydrologist's handbook] Spravochnoe rukovodstvo gidrogeologa. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1959. 836 p. (MIRA 12:4)

1. Vsesoyuznyy geologicheskii nauchno-issledovatel'skiy institut (for Reznikov).

(Hydrology)

OSTROUMOV, B.P.

Electric level recorder for measuring the dynamic water level in
wells. Zap.Len.gor.inst.32 no.2:148-152 '56. (MLRA 10:2)
(Water, Underground) (Electric measurements)

ZHELTOV, P.I., dotsent; OSTROUMOV, B.P.

Instrument for determining the filtration factor in rocks under
pressure. Zap.Len.gor.inst.32 no.2:153-155 '56. (MLRA 10:2)
(Hydraulics)

OSTROUMOV, B.P.

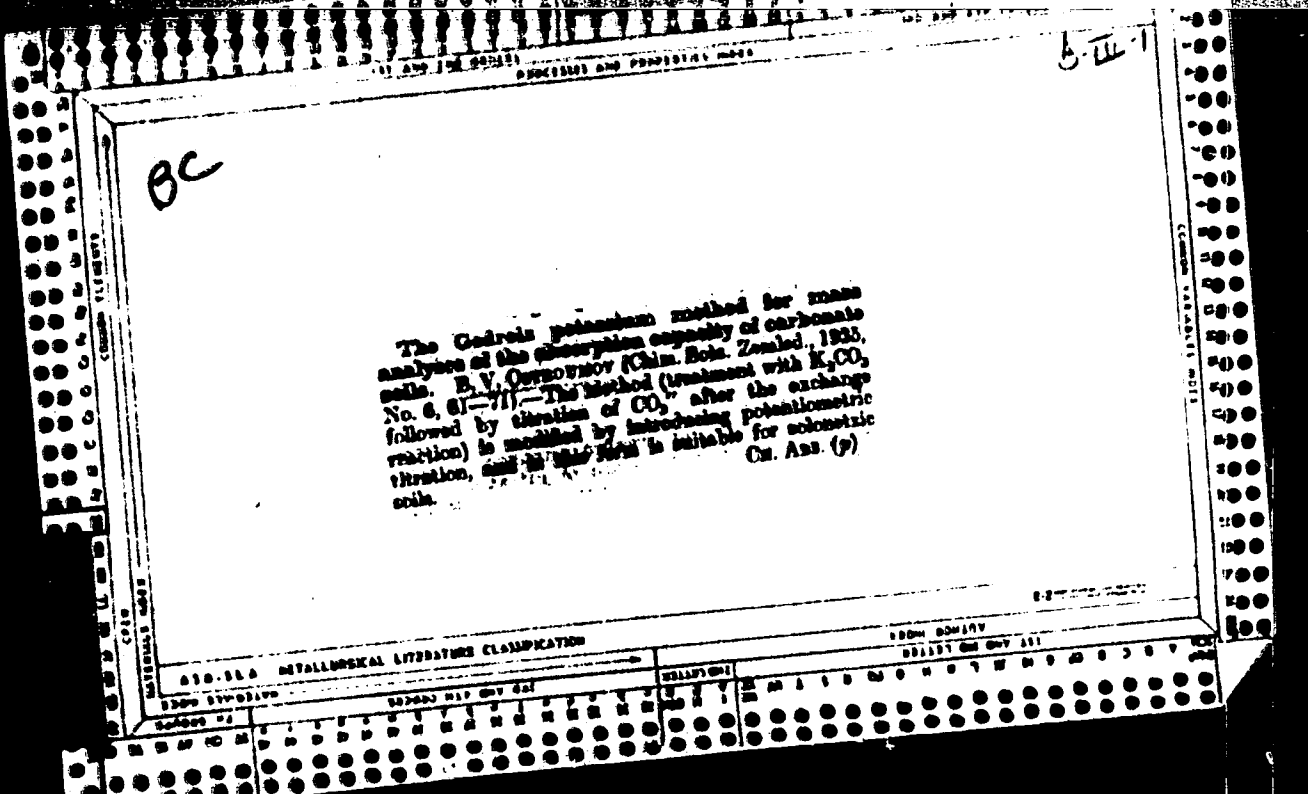
Automatic recording instrument for observations on underground
water levels in bore holes. Zap. LGI 34 no.2:148-153 '58.
(MIRA 12:6)

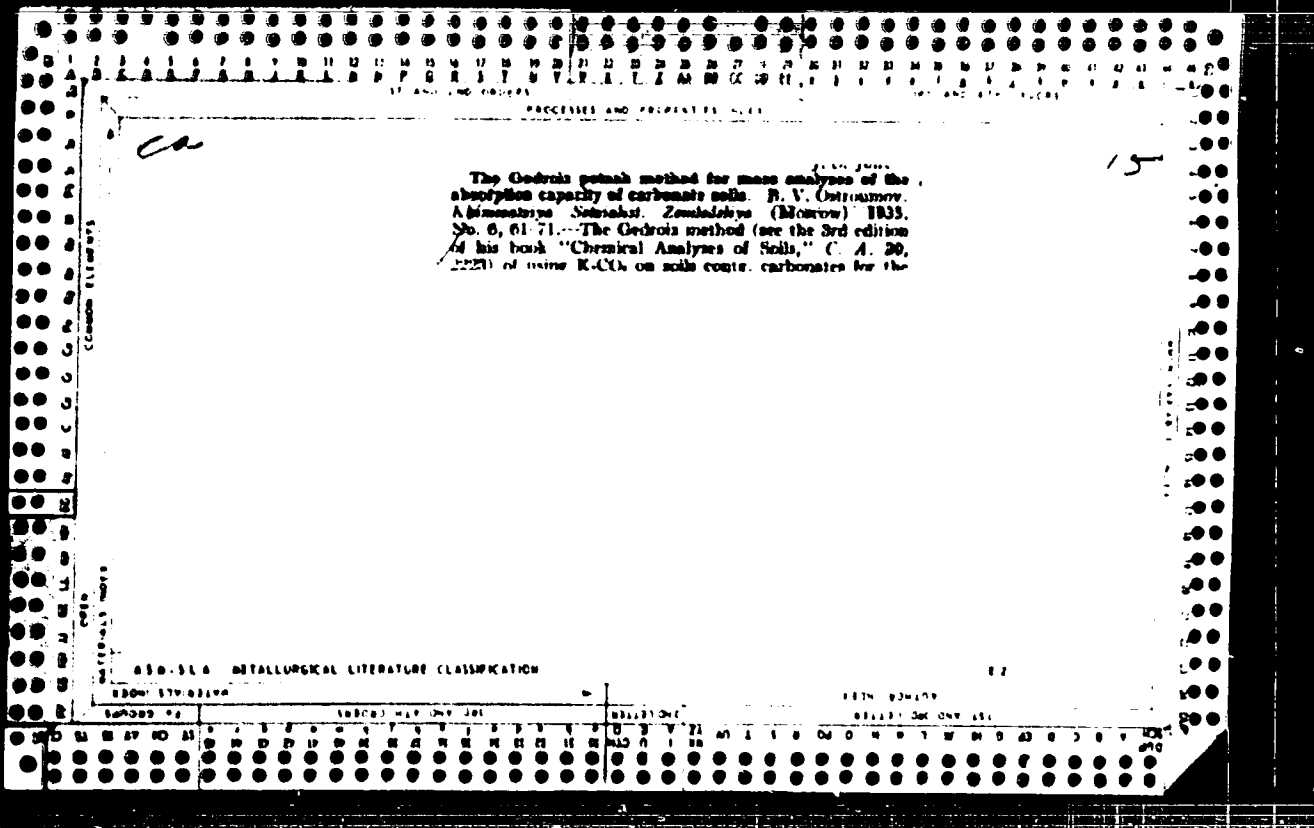
(Water, Underground) (Liquid level indicators)

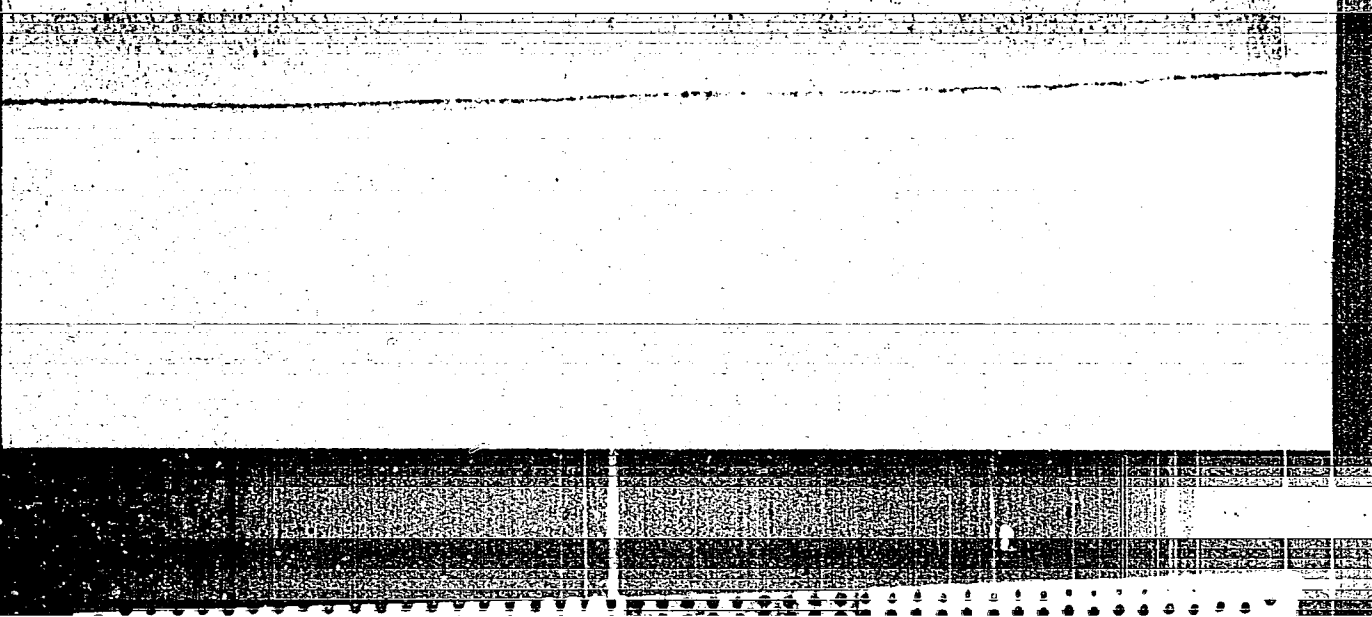
OSTROUMOV, B.V. (deceased)

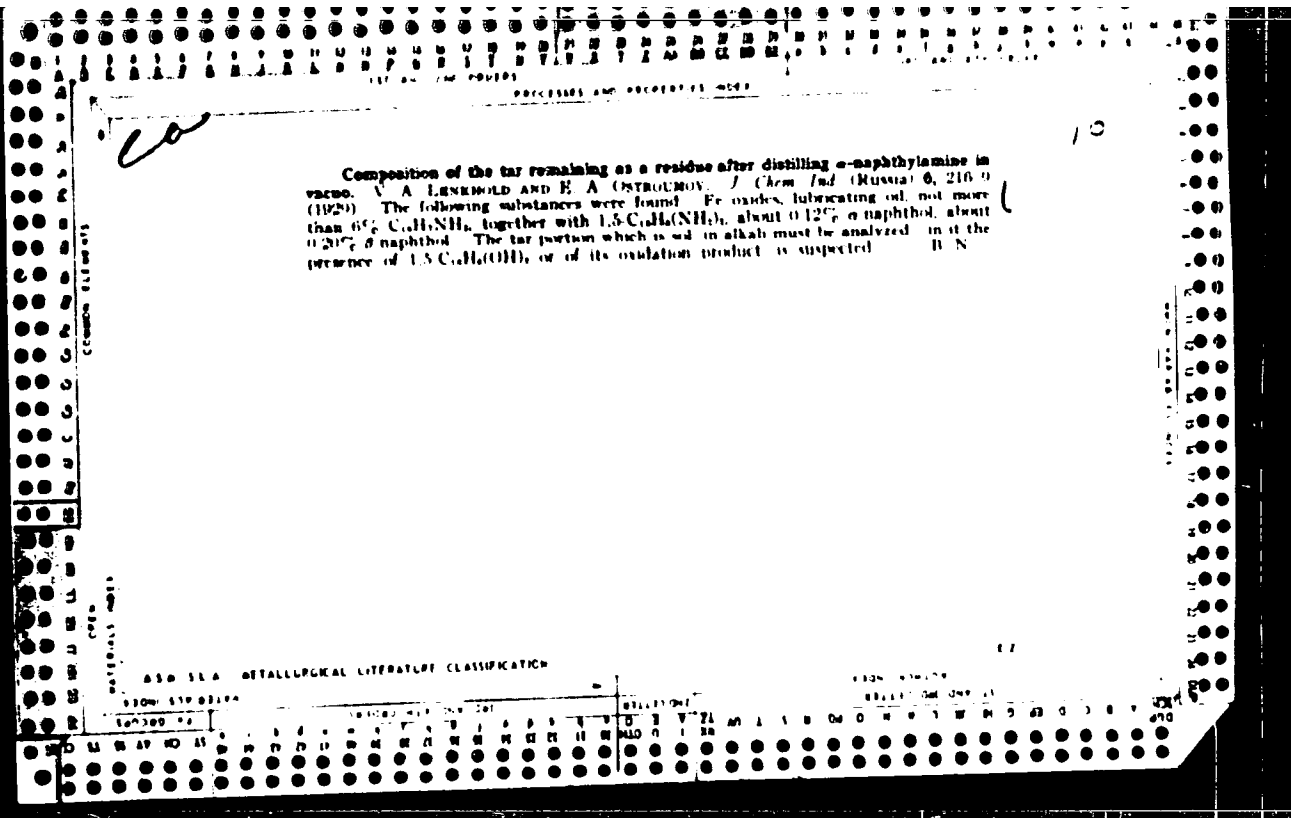
Characteristics of Chernozem meadow soils in the Mayma Valley (Gorno-
Altay Province) [with French summary in insert]. Pochvovedenie no.6:110-
124 Jo '56. (MIRA 9:10)

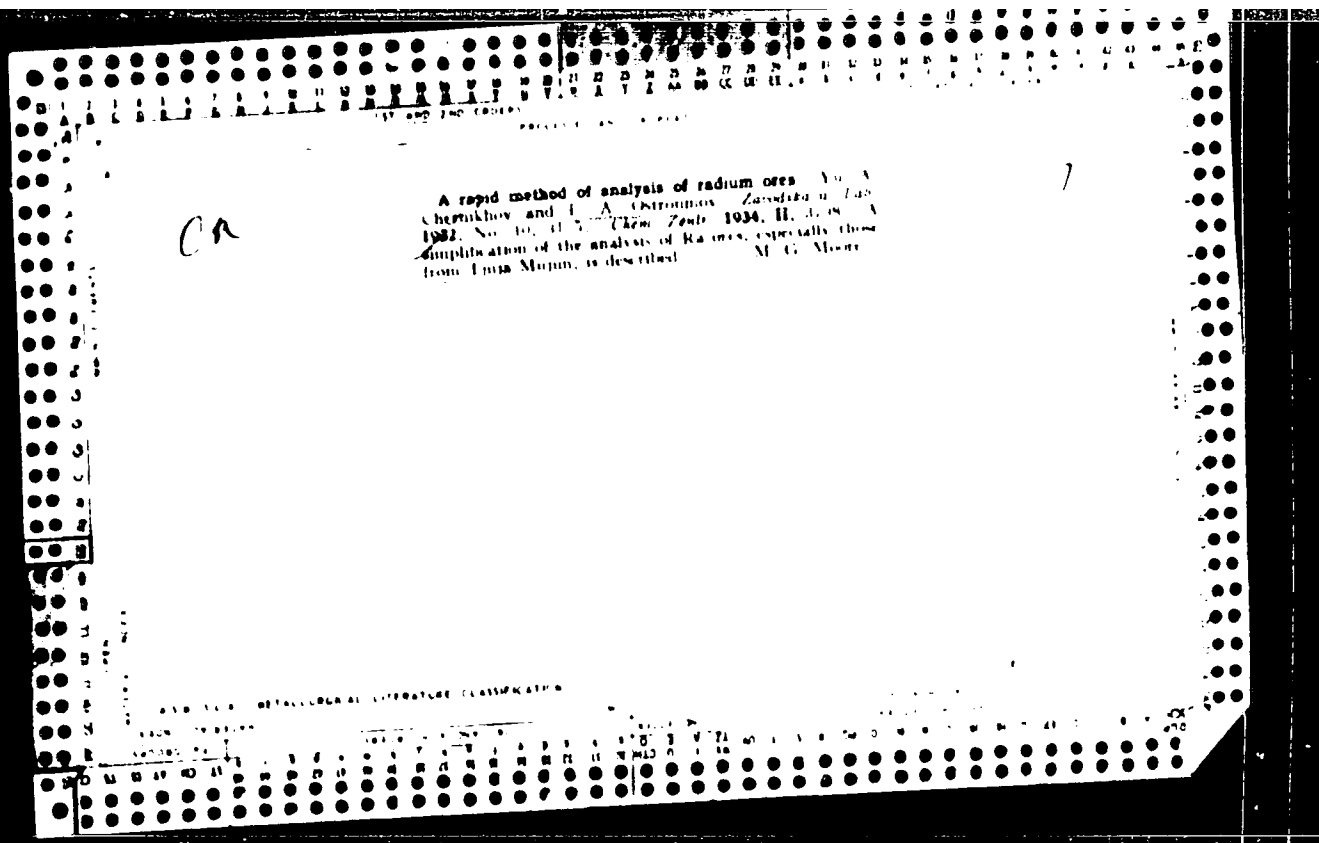
(Mayma Valley--Chernozem soils)

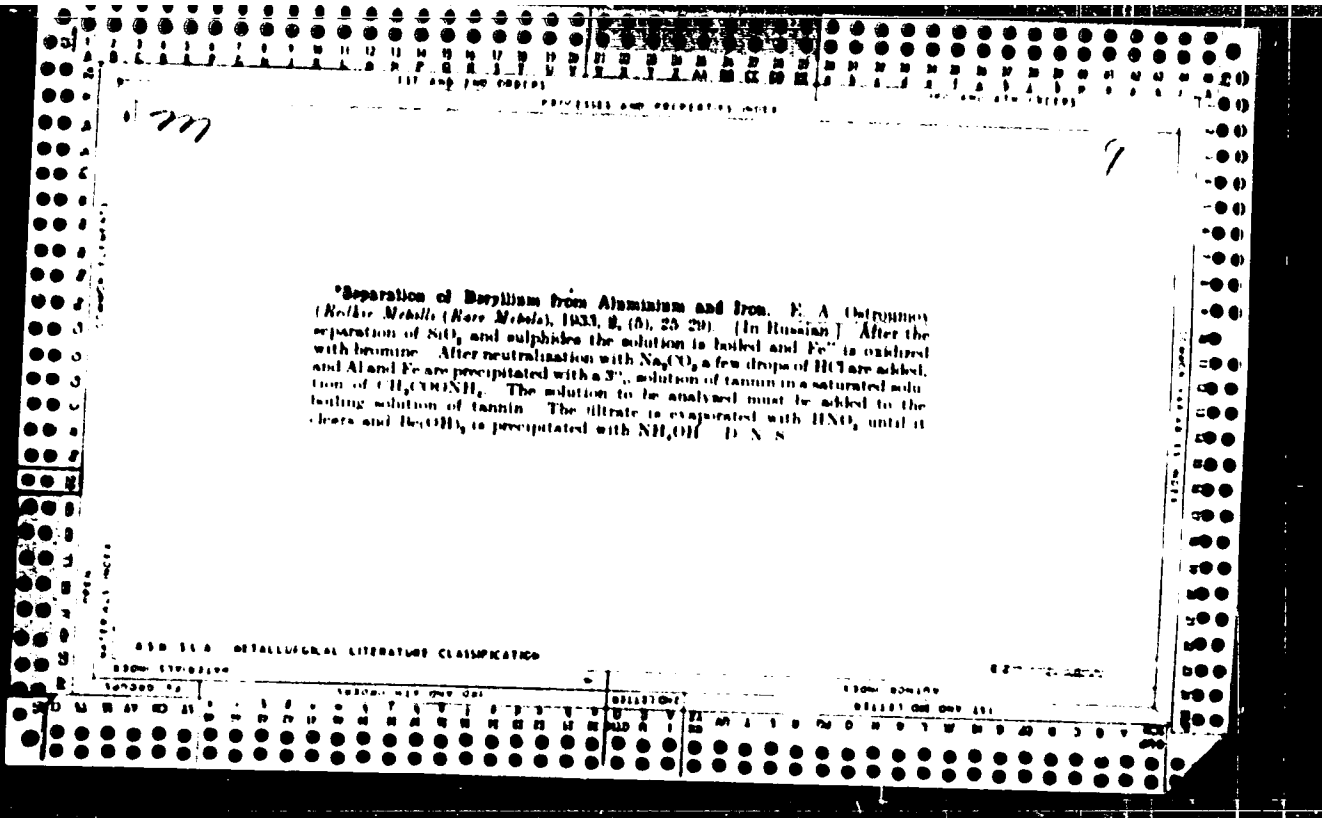






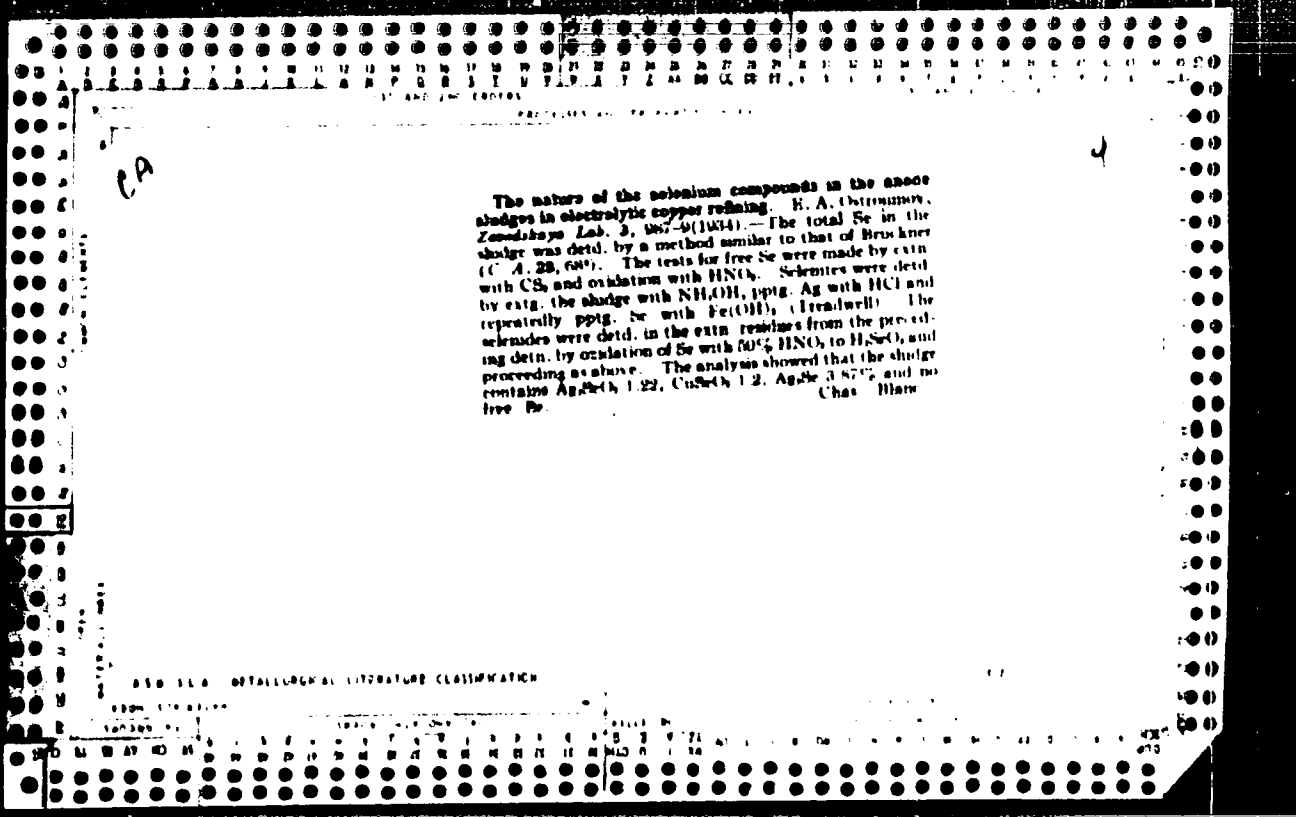


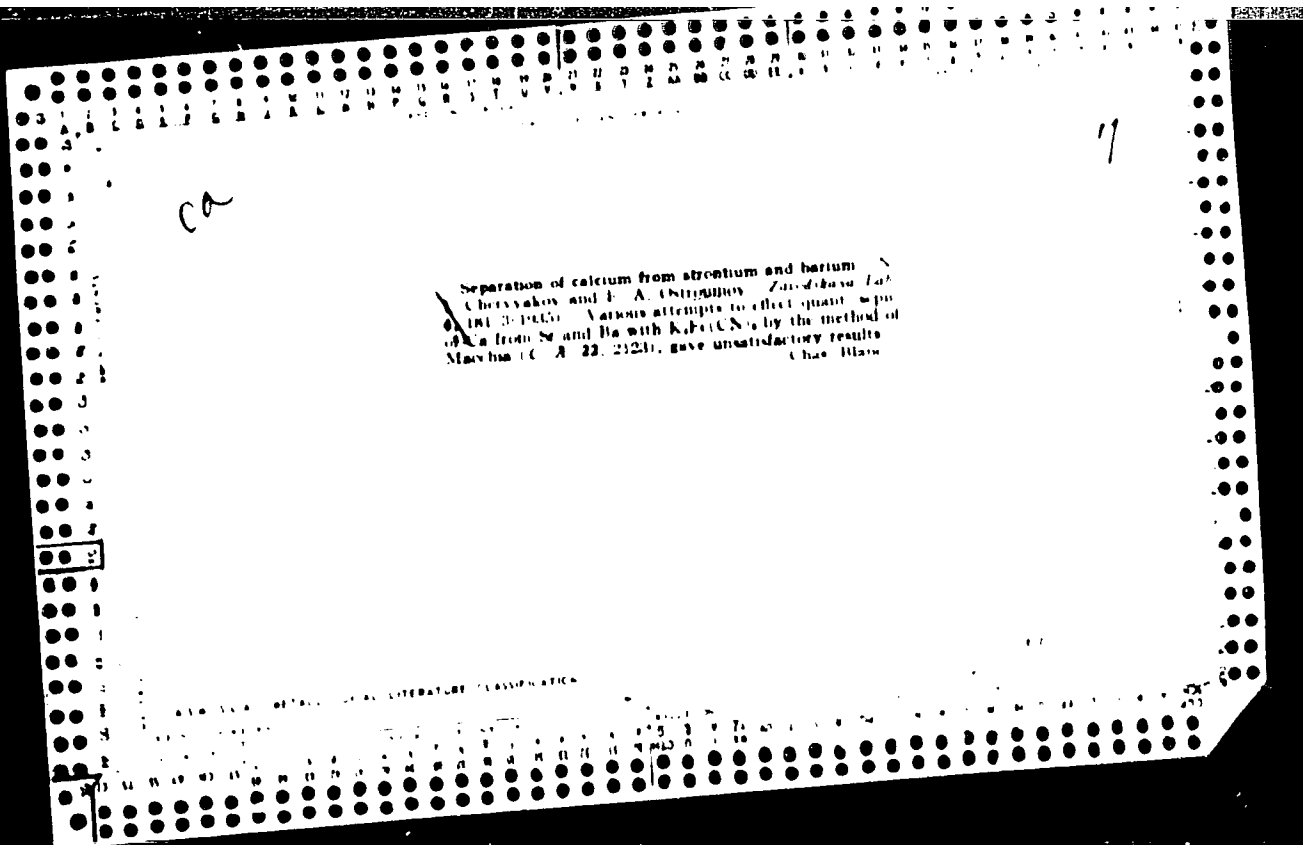


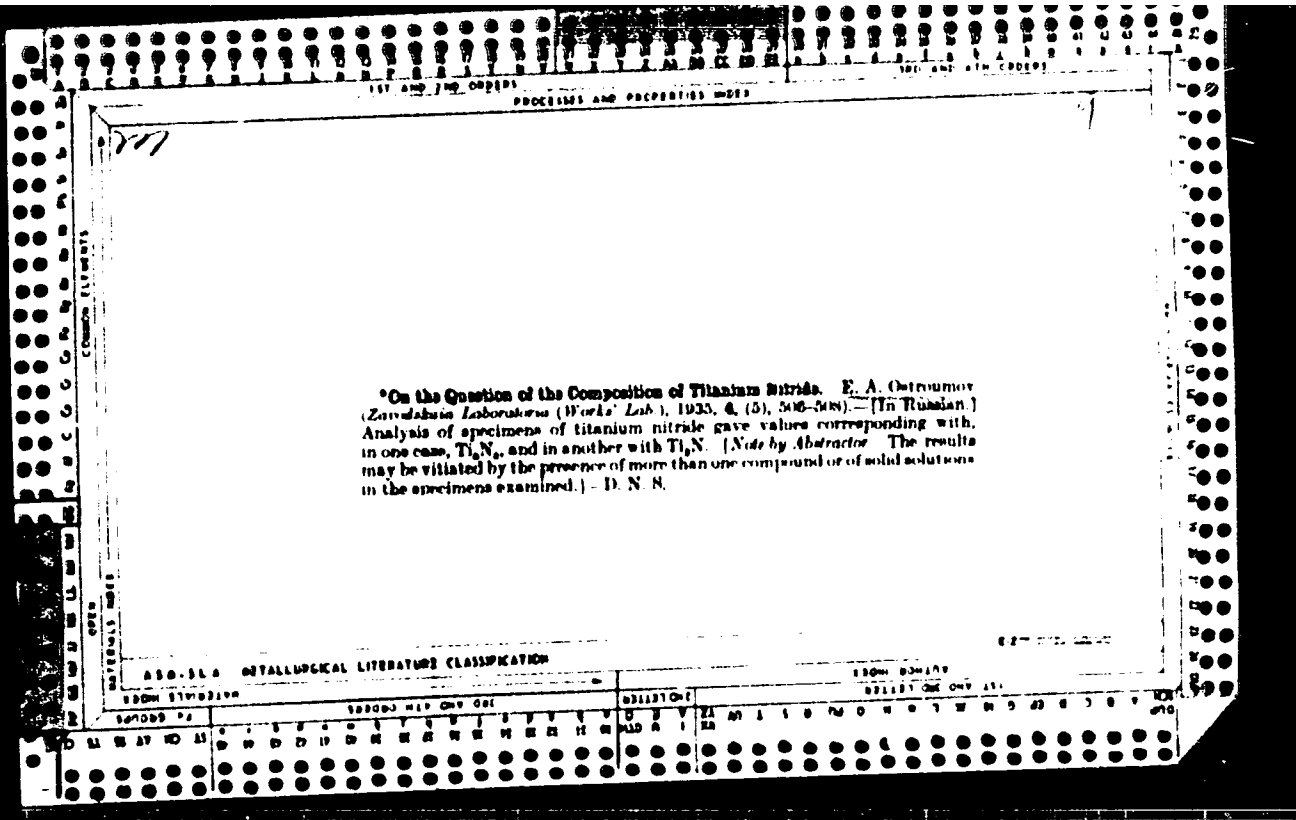


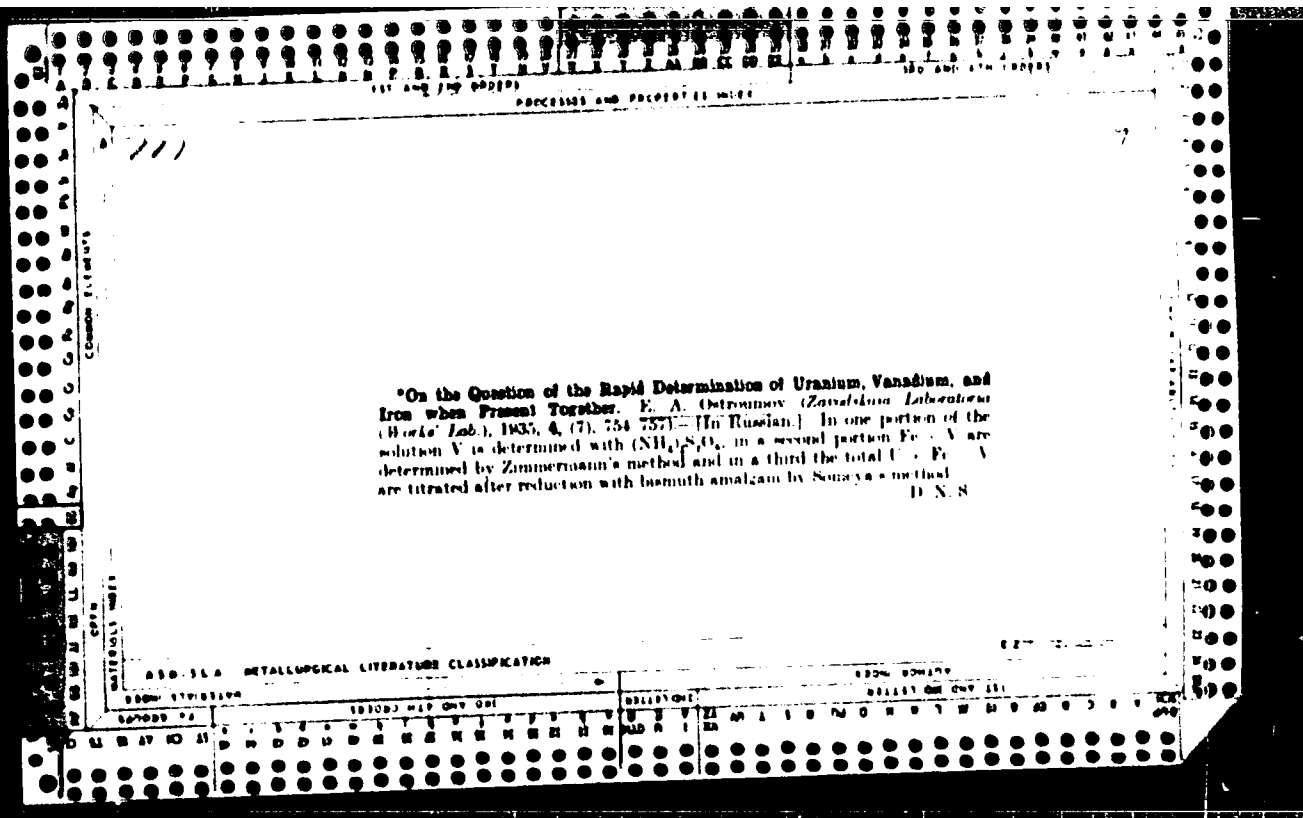
Determination of minute quantities of vanadium in
 uranium preparations. N. I. Chervukov and E. A.
 Ostrovnaya. *Zhurnal Khim. Fiz.* 3, 841 (1934). The

colorimetric data is based on the reaction of V with HCl in
 H₂SO₄ soln of p-H₂N-C₆H₄-NMe₂ (1) with the formation of
 Wurster red. (A similar color reaction is obtained with
 p-C₆H₄(NH₂)₂, Katakovnikov, C. A. 26, 327, 27, 1101.)
 The color, fugitive in H₂O, is stabilized with a large excess
 of alc. Fe salts give a similar color reaction and are con-
 verted into ineffective complex compds. with glycerol and
 H₂PO₄. V was detd. in an artificial mixt. of 0.2 V₂O₅,
 0.0001 V₂O₅ and 0.0012 g. FeCl₃ with an accuracy of
 0.0001 g. V₂O₅ or better. Dissolve 0.2-0.5 g. V₂O₅
 (or V₂O₄SO₄) (U nitrate or acetate must be converted into
 the chloride or sulfate) in 10 cc. H₂O, add 5-6 drops of 50%
 HCl, 0.5 cc. H₂PO₄, 40 cc. alc. (or more), 3-4 cc. glycerol,
 mix, dissolve any turbidity with a min. of HCl, add 1 cc.
 of 0.5% I and compare with the standard soln. prepd. in
 the same way with c.p. V₂O₅ by adding a titrated soln
 of V₂O₅ until the 2 colors match. Chas. Blaw









9

1777

*On the Separation of Bismuth from Lead and Copper. E. A. Ostrovskiy
(Zavodskaya Laboratoriya (Works' Lab.), 1935, 4, (9), 1016 (1930). [In Russian.]
The following methods for separating Bi from Pb were studied with synthetic
mixtures: (1) hydrolysis of the Bi salt with (a) KNO_3 and KNO_2 , (b) HCl , Na_2CO_3 ,
(2) precipitation with pyrazolol, (3) precipitation with cupferron. Method
(1a) was the most reliable and method (1b) the least satisfactory. Method
(1a) can also be used for separating Bi from Cu; good results are also obtained
by converting the Cu into a cyanide complex and precipitating the Bi with
alkali. The basic carbonate method is unsatisfactory. D. N. B.

ASG 334 DETALLURGICAL LITERATURE CLASSIFICATION

PROCESSING AND PROPERTY NOTES

1

BC

Separation of small amounts of tin from arsenic and antimony. N. I. TCHERNYAKOV and E. A. OTRAKOV (Zavod. Lab., 1936, 8, 1173-1176).

The acid solution, containing tartaric acid and group IV and V cations, is made neutral with NaOH, and poured into hot 4% aq. Na₂S, and the solution is filtered from group IV sulphides. As, Sb, and Sn sulphides are pptd. from the acidified filtrate. The washed ppt., suspended in 80-100 ml. of H₂O, is dissolved by adding 2 g. of KOH per 0.1 g. of As + Sb + Sn. H₂O₂ (1 ml. > required to oxidize the sulphides) is added, and the solution is boiled for 15 min. Me-red is added, followed by HCl to a red colour, after which 8 ml. of conc. HCl are added per 100 ml. of solution. Excess of 5% aq. cupferron is added to the solution at 3-5°, the ppt. is collected, washed with 0.05% cupferron at 5°, ignited with HNO₃, and weighed. Good results are obtained for 0.3-30 mg. of tin, in presence of considerably greater amounts of Sb and As.

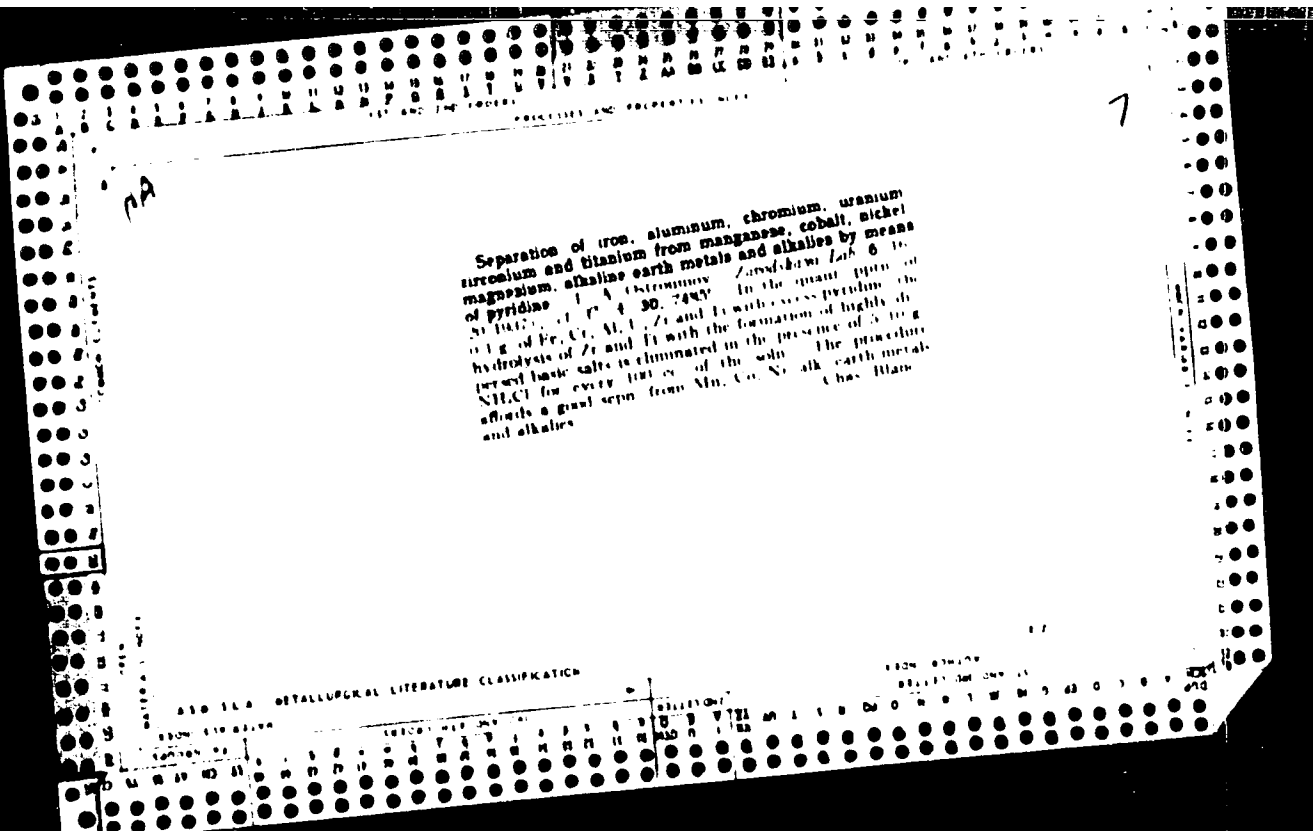
R T

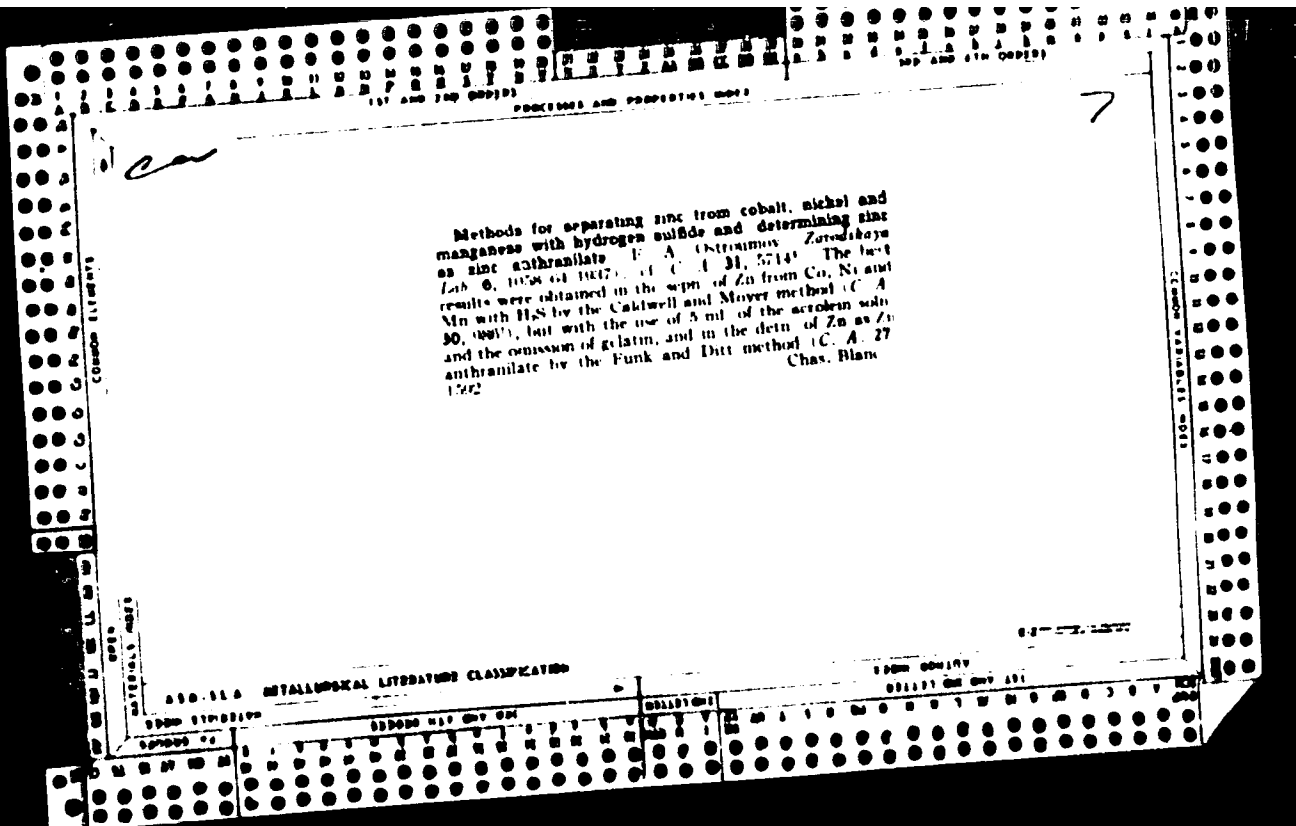
ADD TO METALLURGICAL LITERATURE CLASSIFICATION

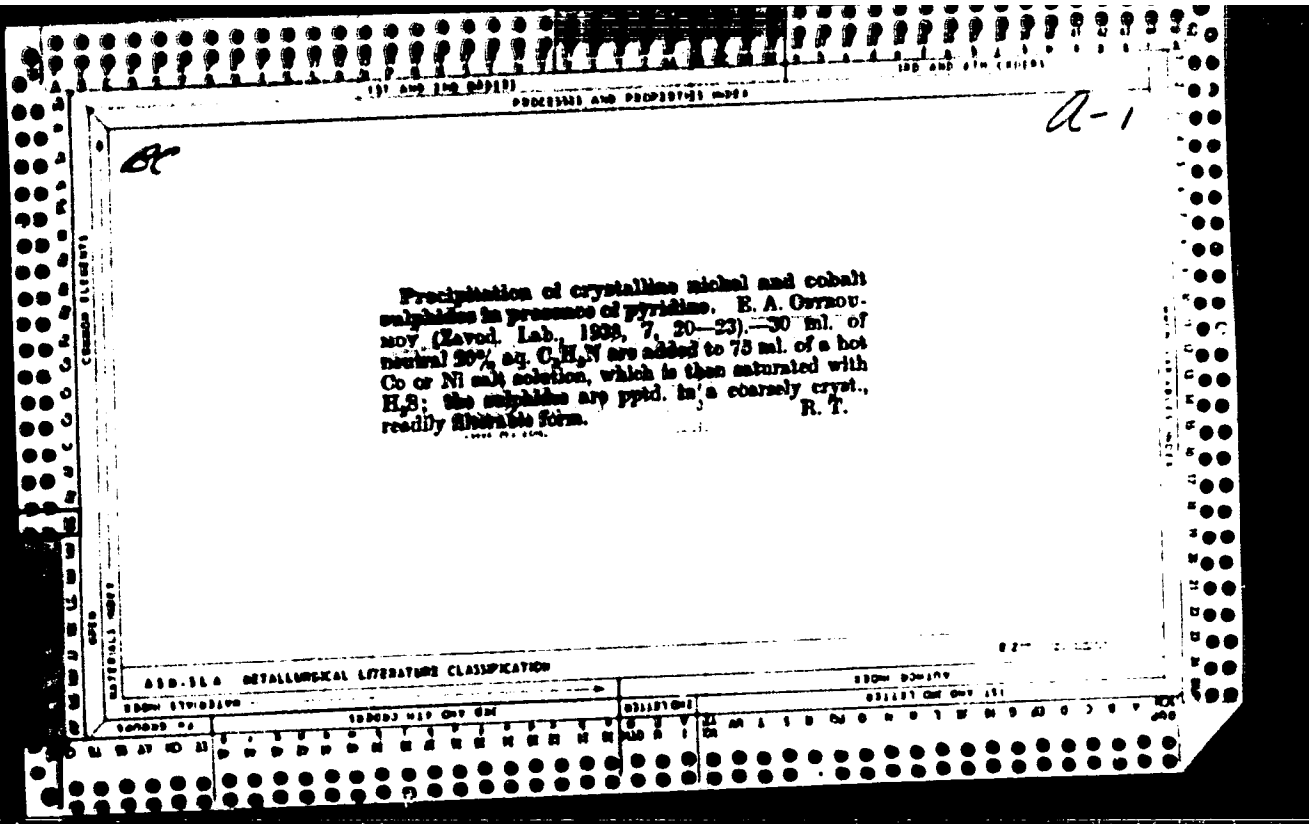
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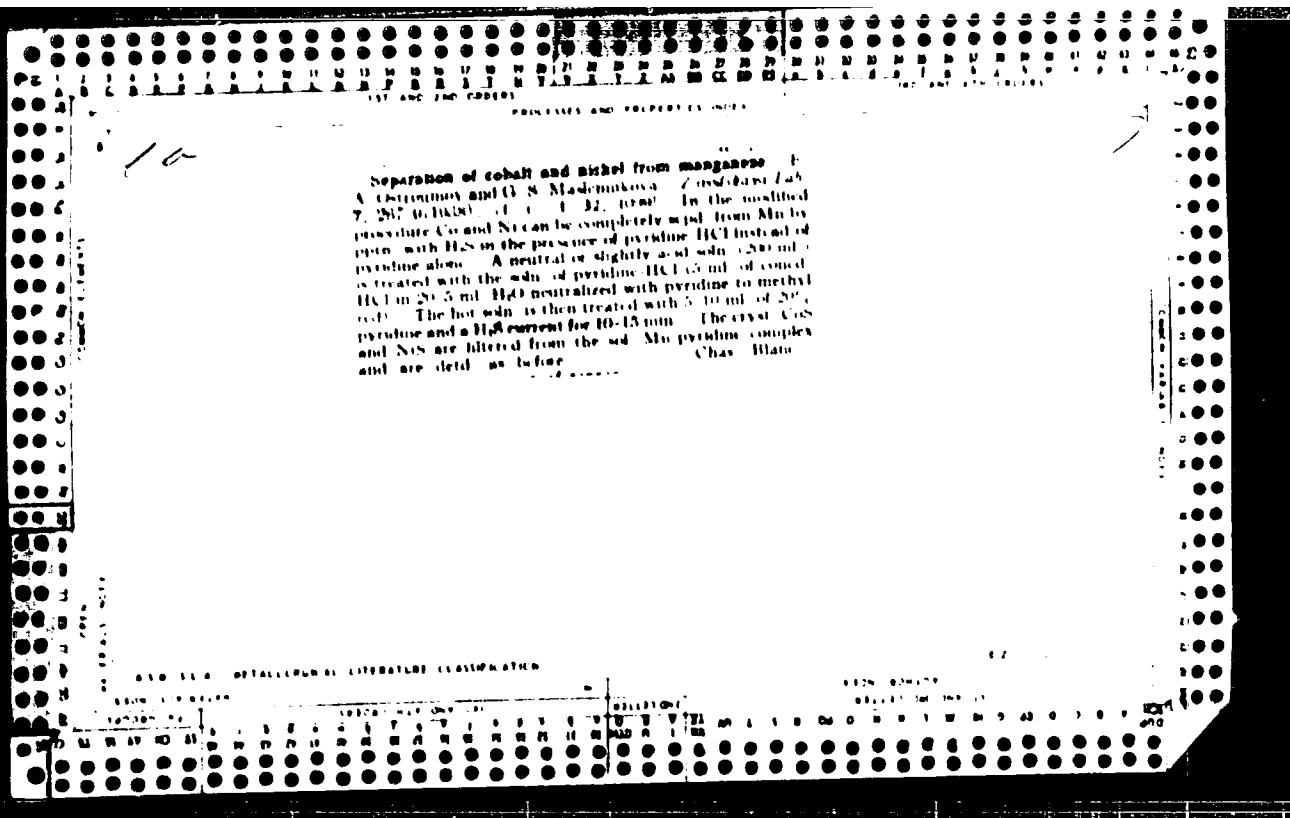
SUBSECTION

SUBSECTION





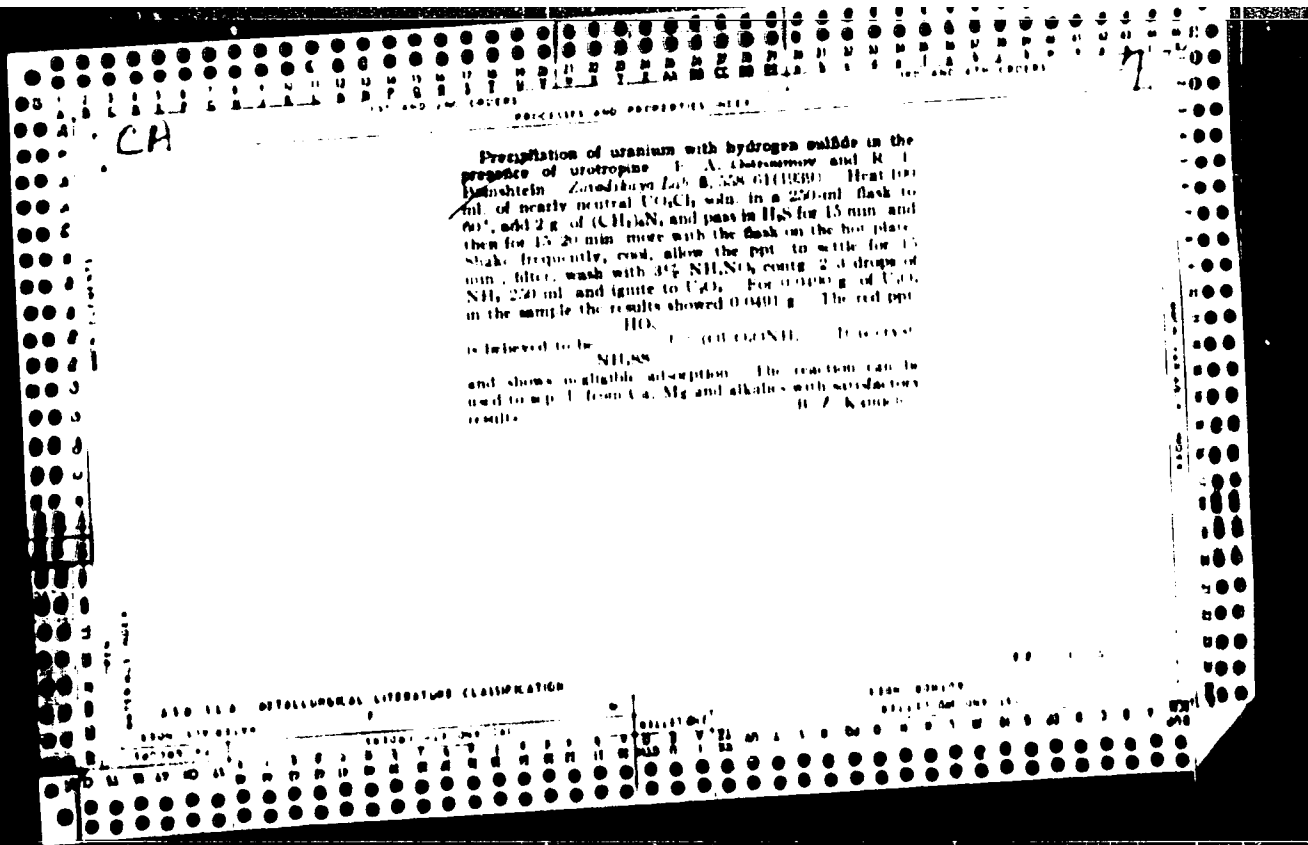


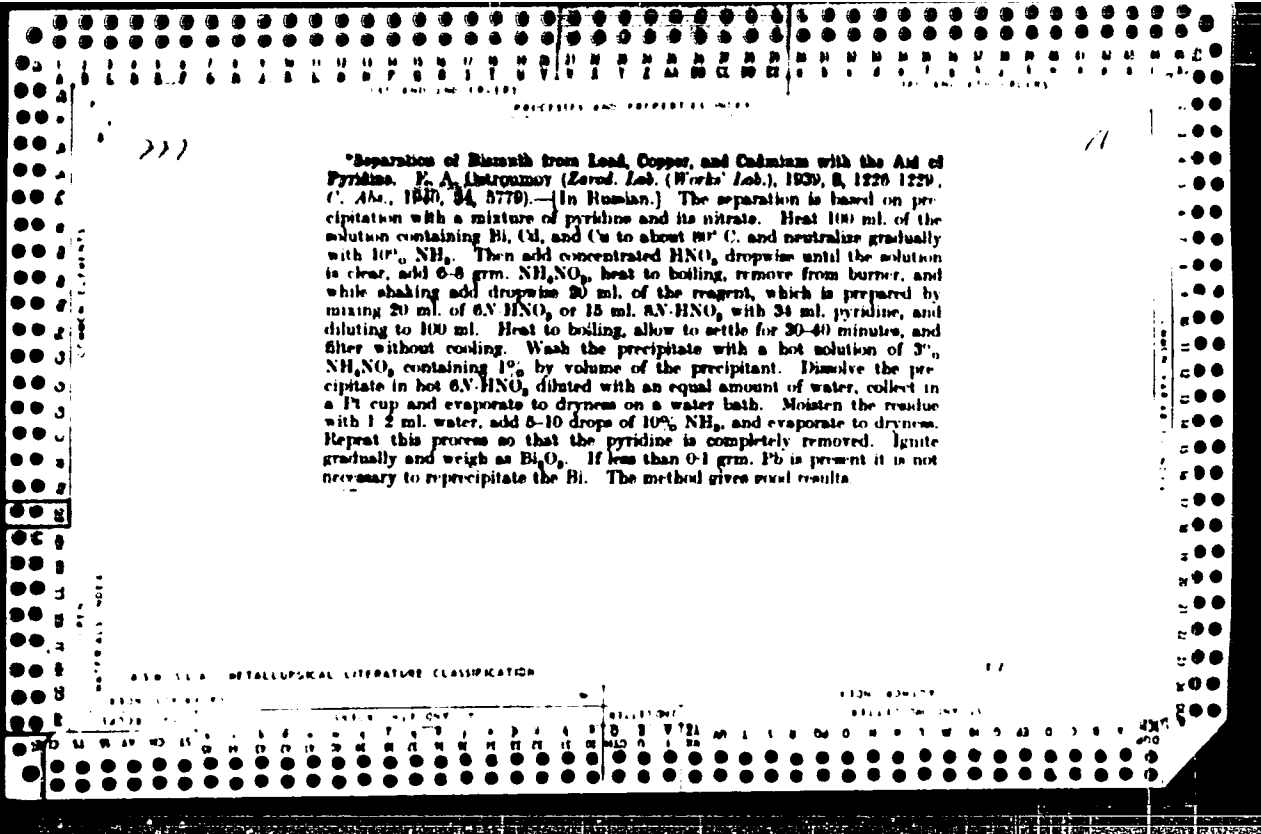


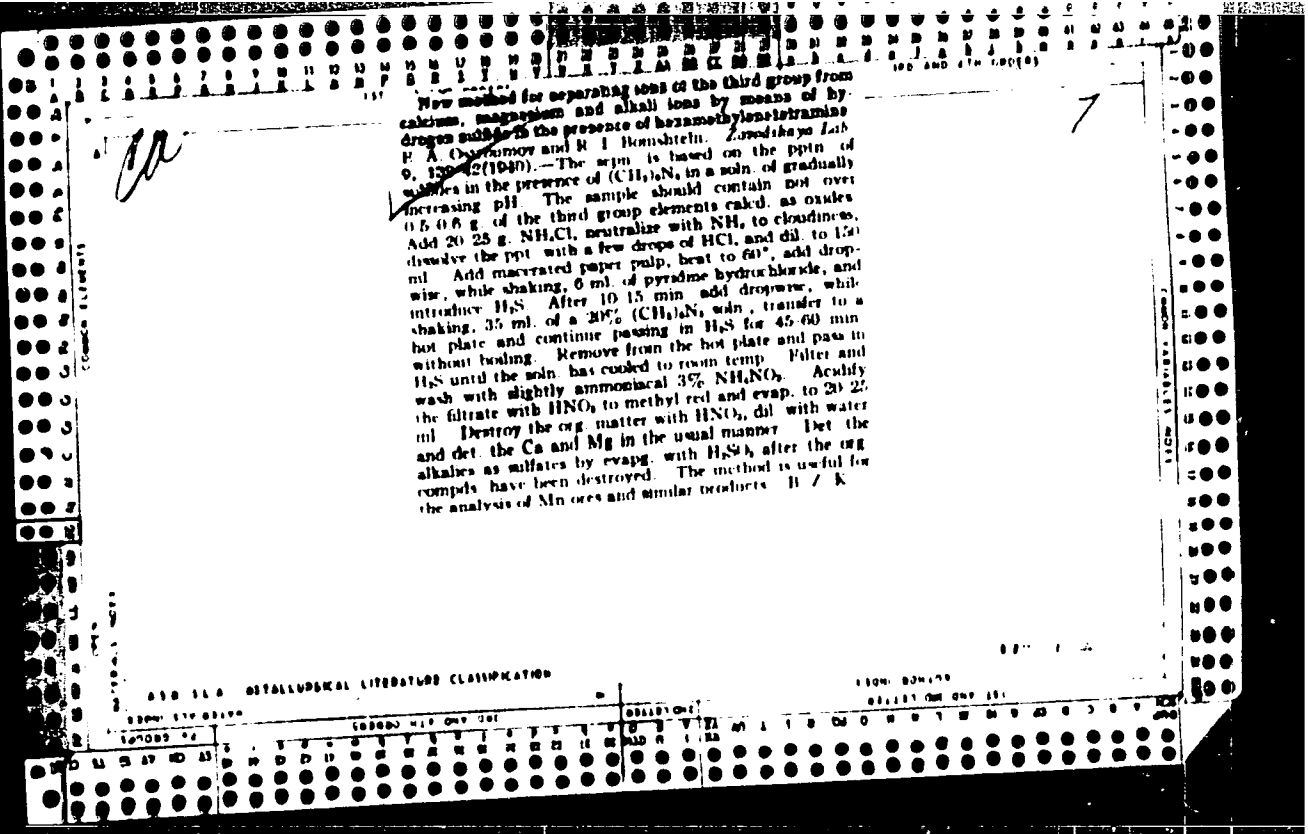
7

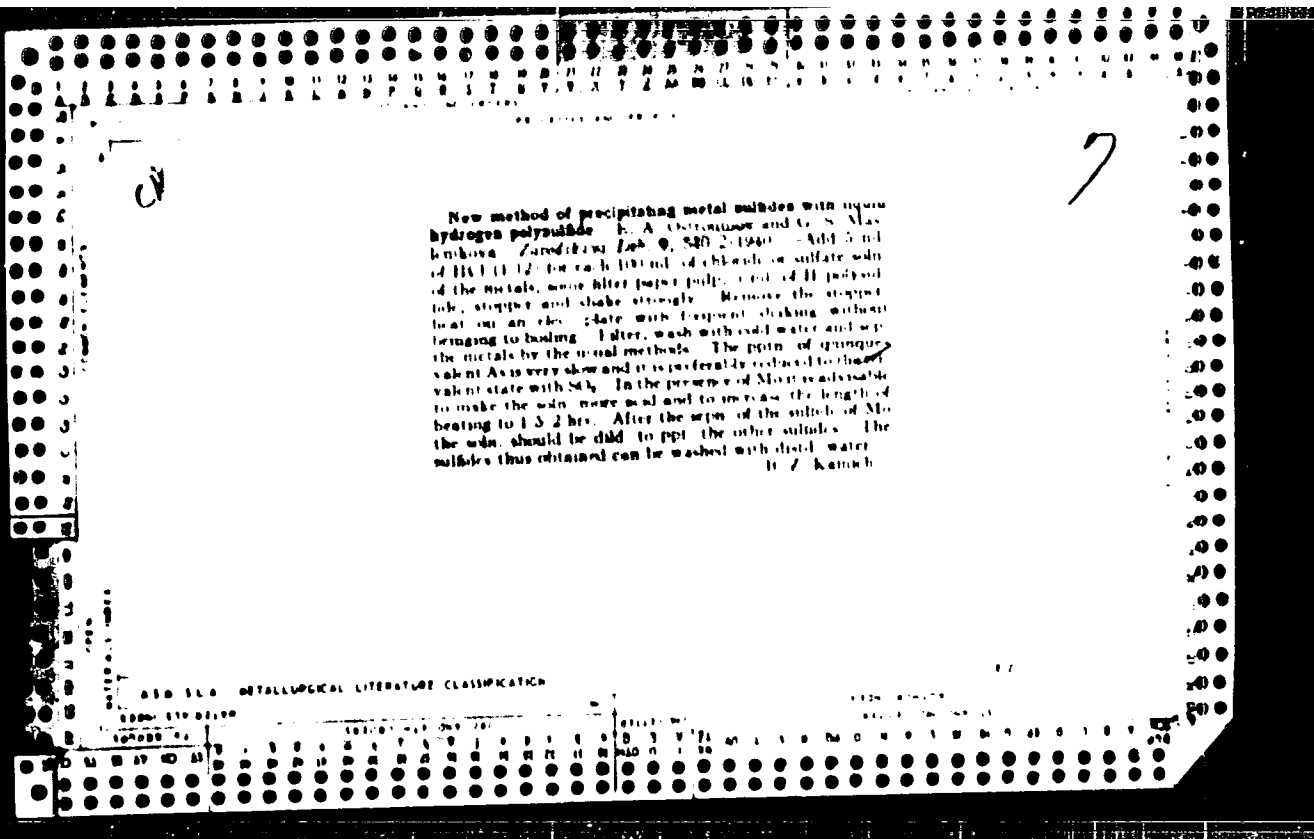
Precipitation of manganese in a crystalline state by hydrogen sulfide in the presence of hexamethylenetetramine. E. A. Ostroumov. *Zashchita Lab* 7, 1233-7 (1938). - If a slightly acid soln. is treated with 2 g. hexamethylenamine (for max. 0.5 g. Mn) and then the soln. at (40°) is acid. with H₂S, an orange-red ppt. of MnS is obtained which is easily filterable. The MnS can be calcined and analyzed by any known method. Alkalies and alk. earths are detd. in the filtrate from MnS. In the analysis of ores Co and Ni are pptd. as sulfides with pyridine and H₂S (C. A. 32, 8250¹) and the filtrate is used for detg. Mn after the pyridine is driven off. Chas. Blanc

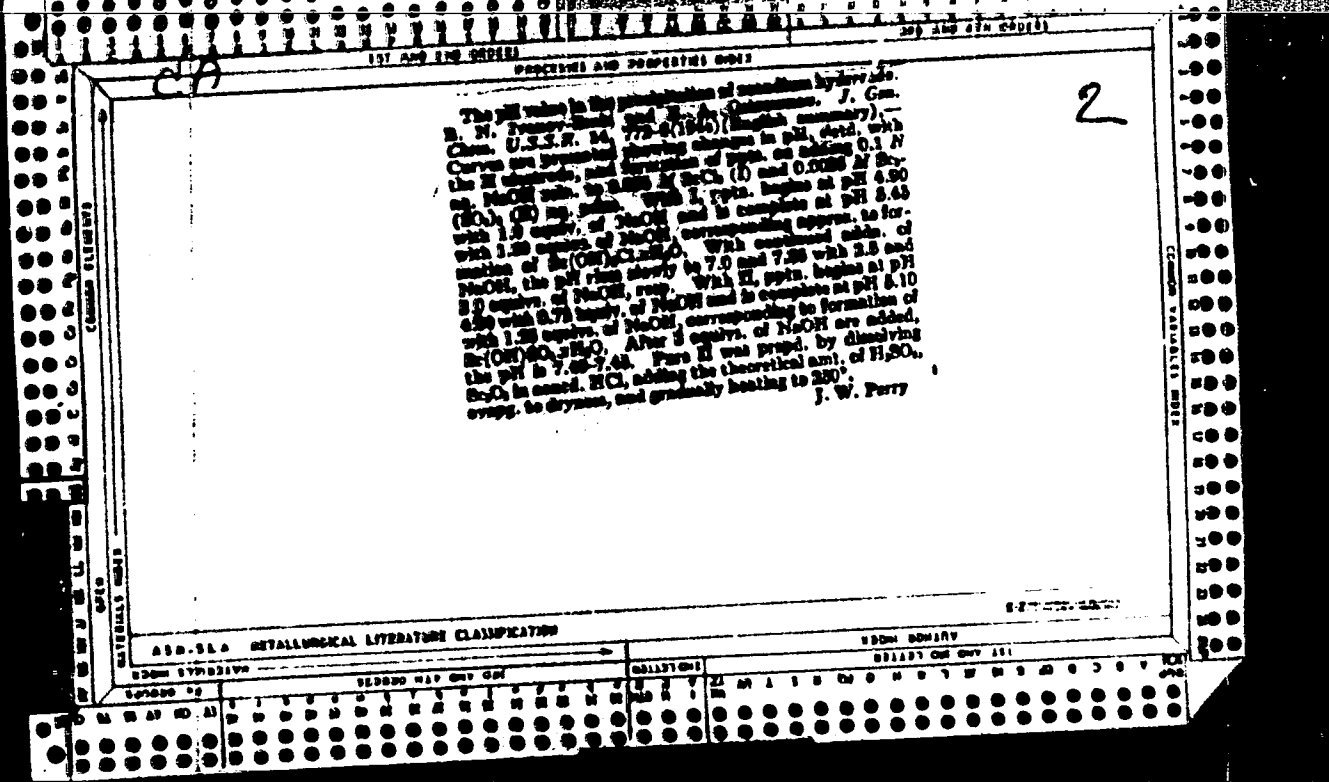
ALSO SEE METALLURGICAL LITERATURE CLASSIFICATION

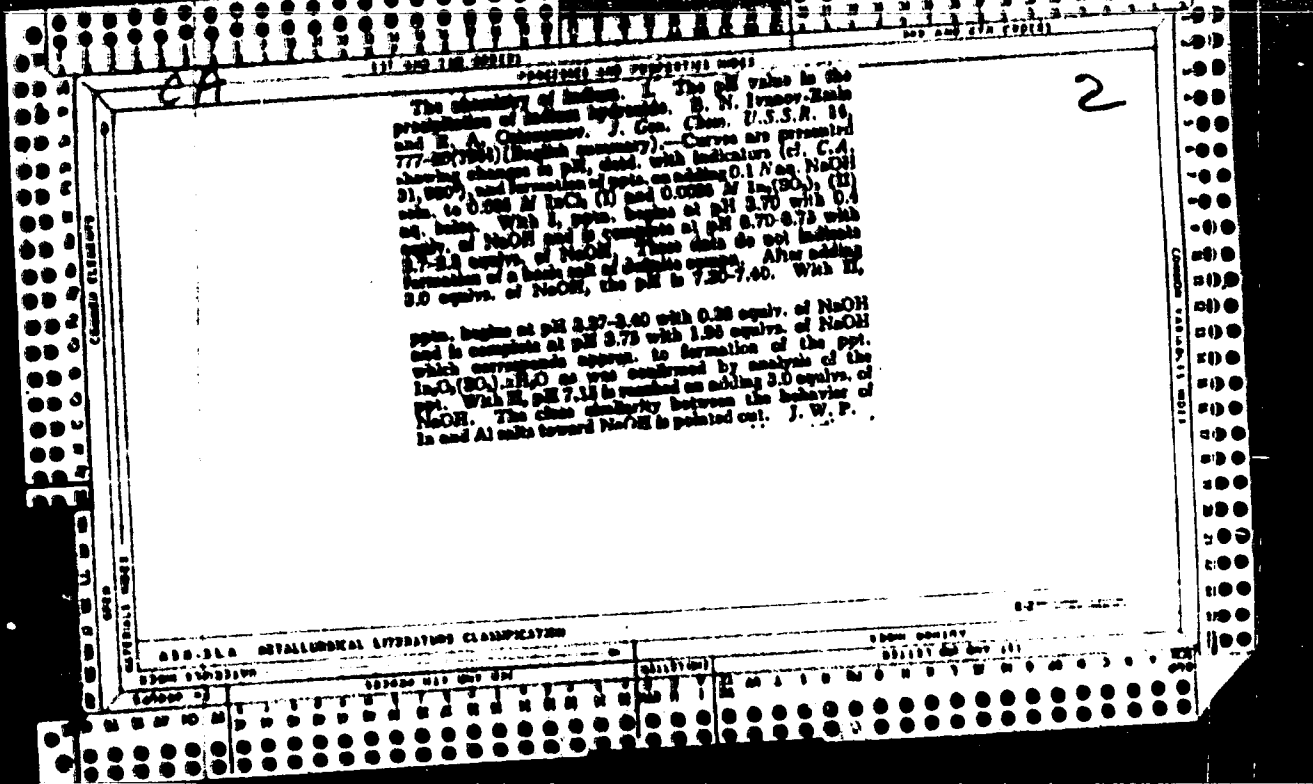


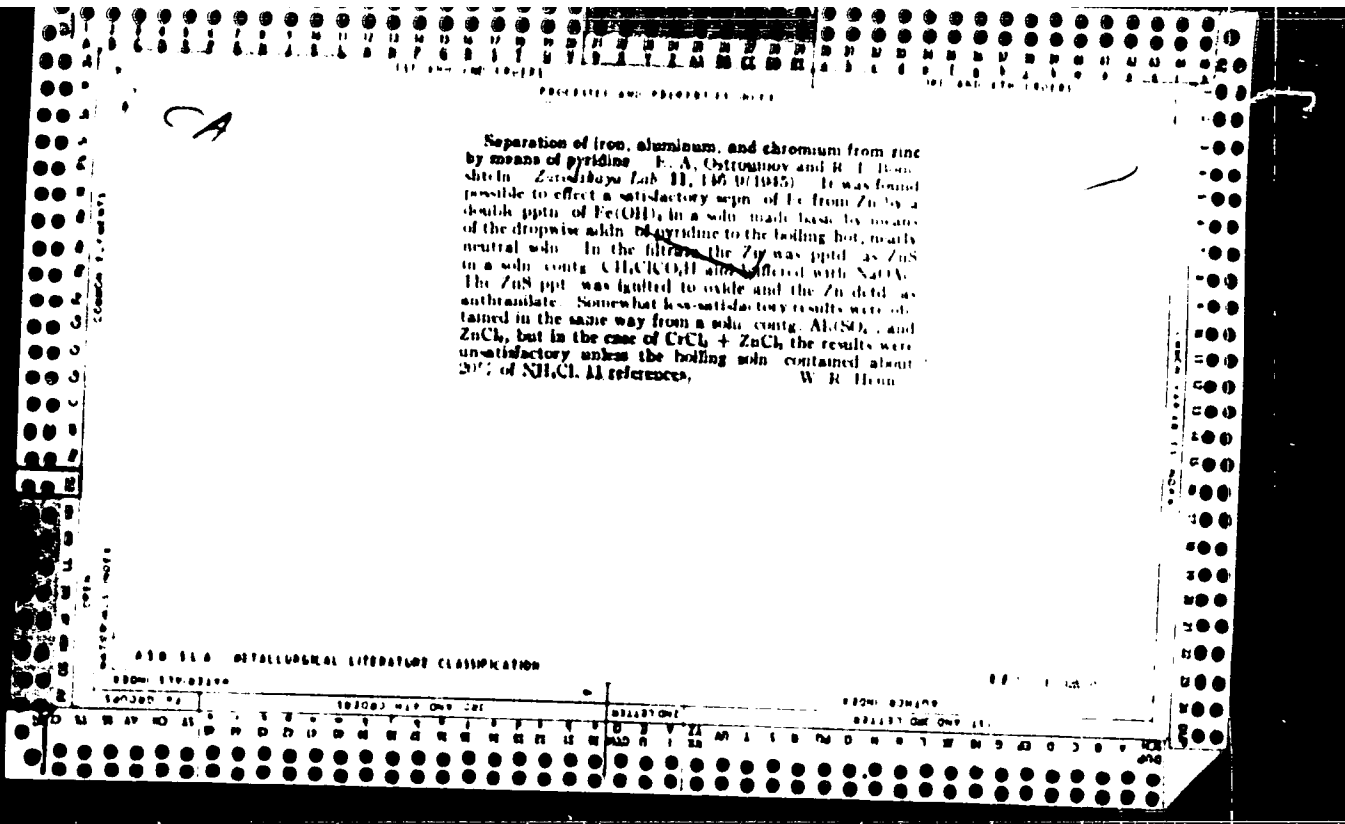


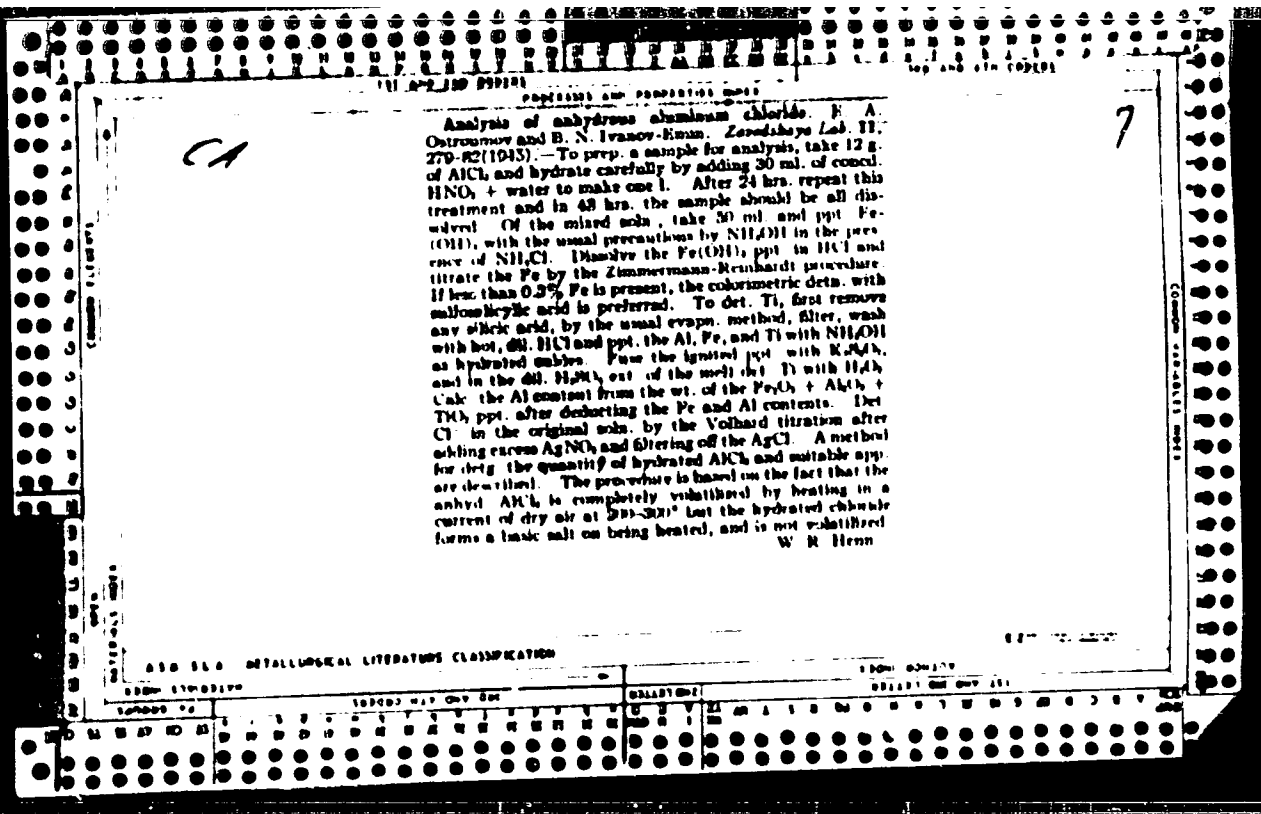


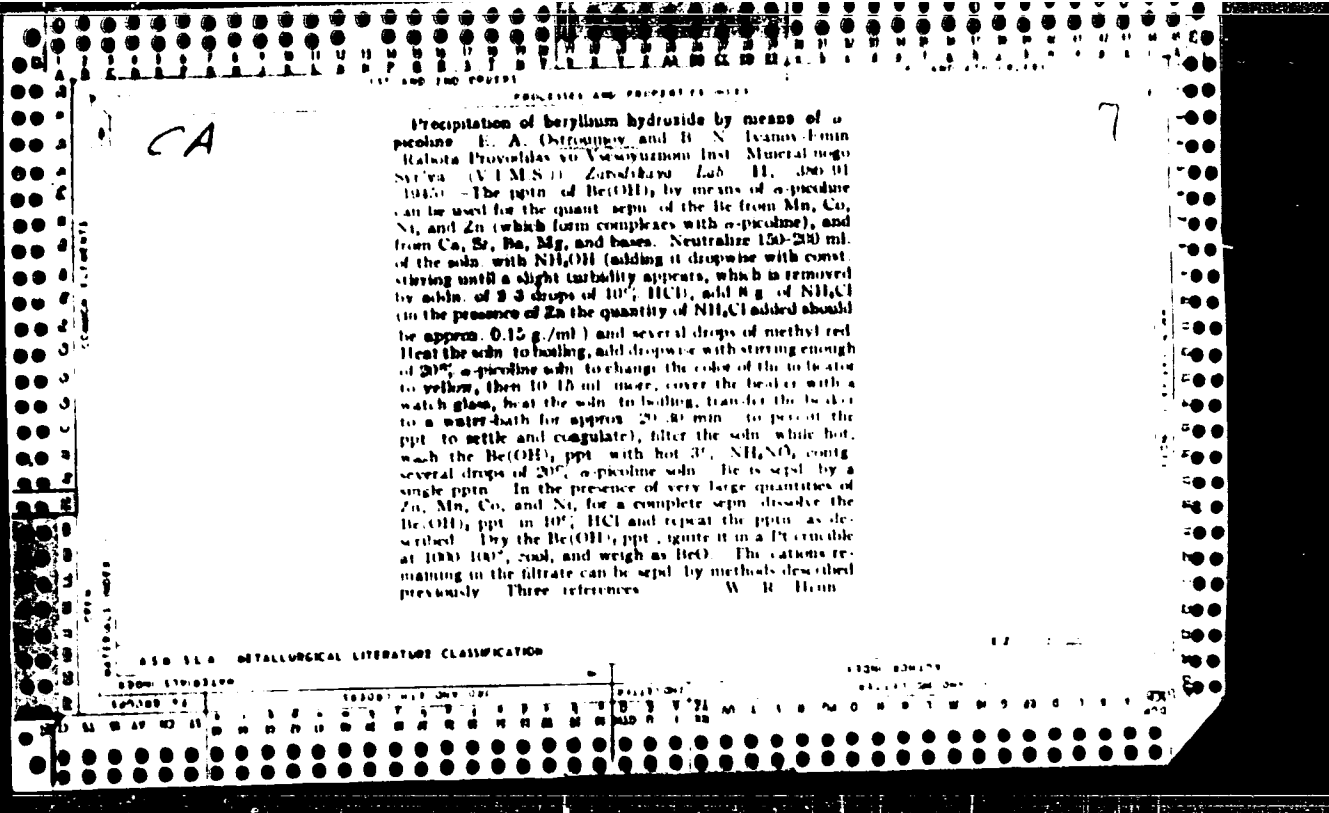


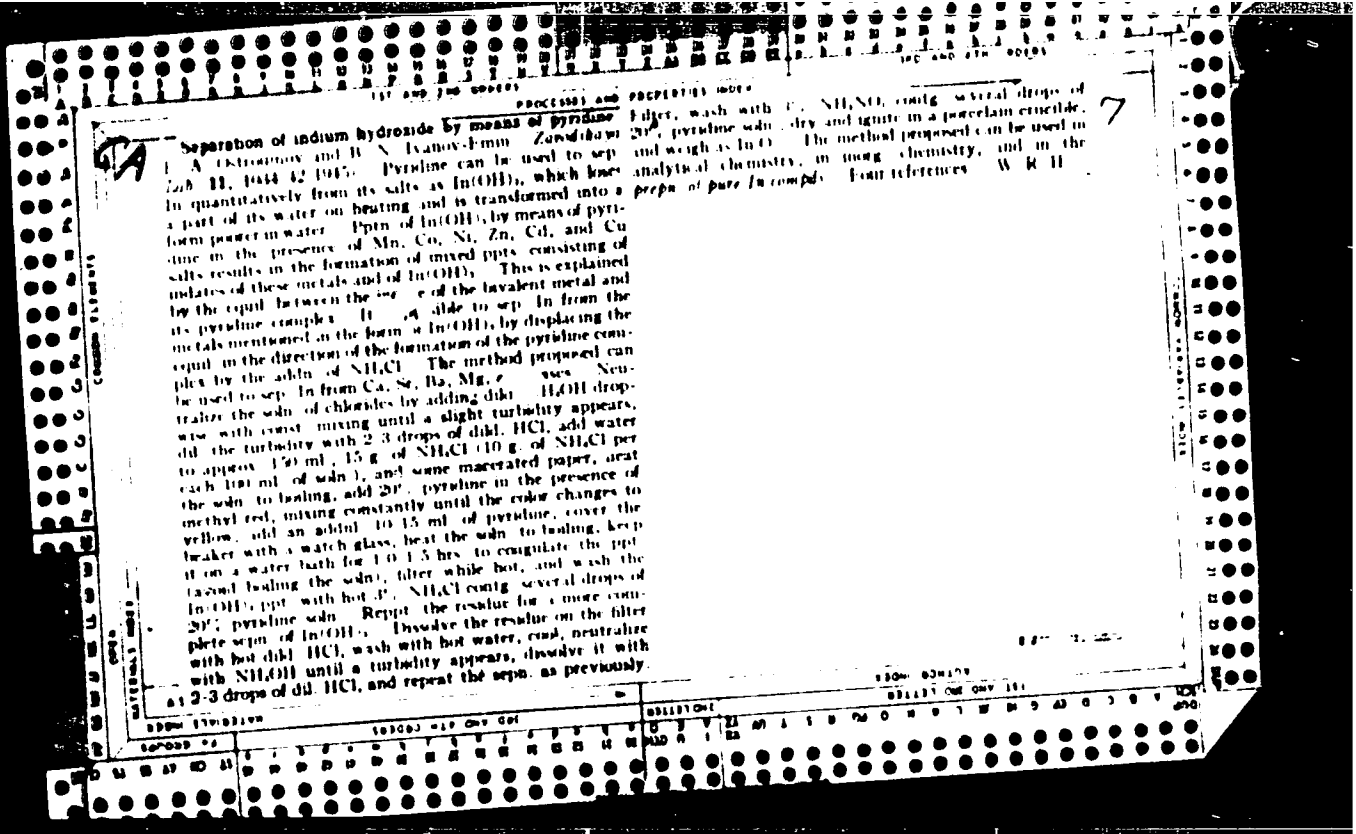












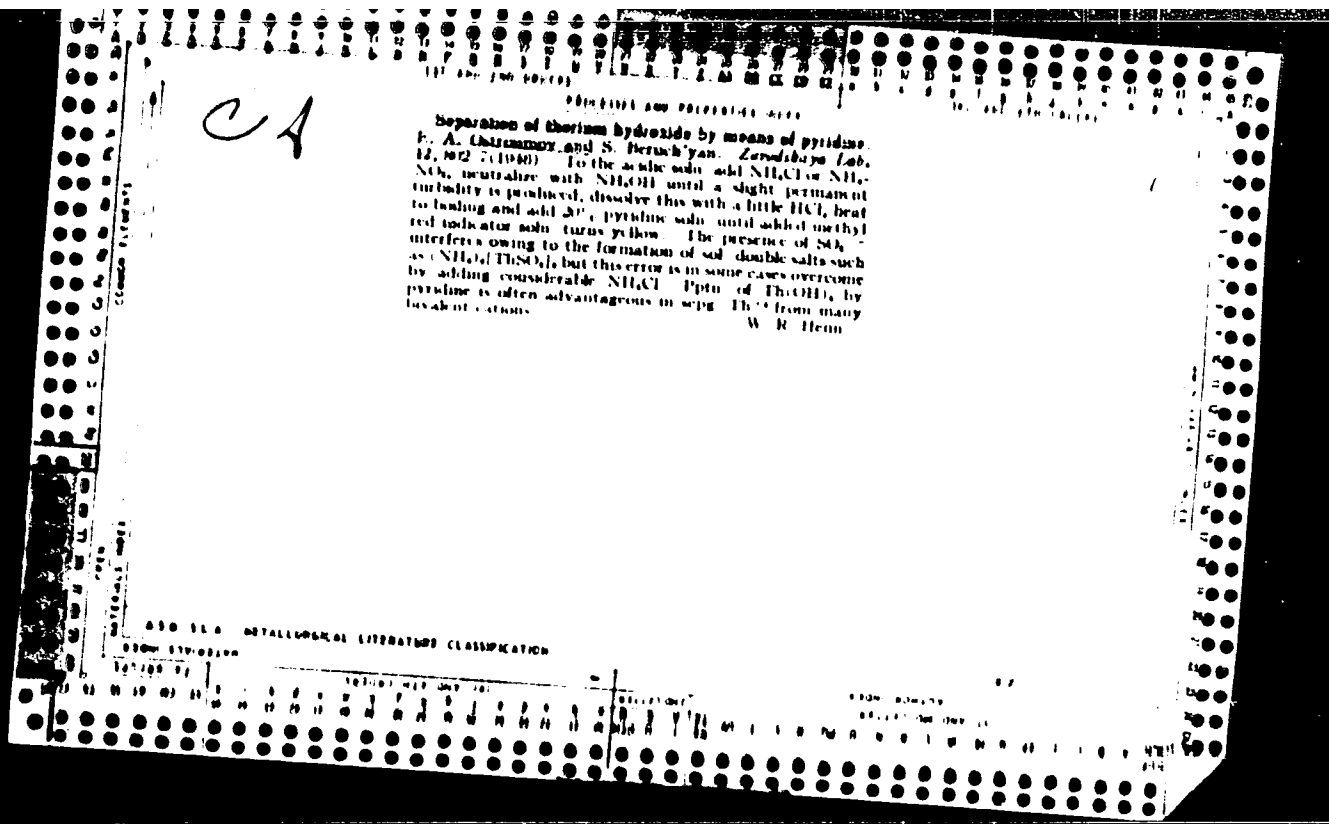
PROCESSING AND PROPERTIES INDEX

CA

7

Separation of gallium hydroxide by pyridine. B. N. Ivanov-Efimov and K. A. Ostrosumov, *Leningradskaya Lab.* 12, 674 S(1960). Pyridine ppt^s quantitatively Ga(OH)₃, which on heating loses part of its water, and is transformed into an almost insol. form. A small excess of pyridine and considerable amts. of NH₄ salts do not increase its soly. to any considerable degree. In the presence of salts of Mn, Co, Ni, Zn, Cd, and Cu, pyridine ppt^s Ga(OH)₃ contaminated by these metals, owing to a partial formation of gallates, especially with Cu, Zn, and Cd. In the presence of large amts. of NH₄Cl it is possible to sep. nearly pure Ga(OH)₃ in one pptn. The method can be used not only for analytical purposes, but also to prep. high-purity Ga compds. and to sep. Ga from alk. earth metals, Mg, and alk. metals. To an acid soln. of a Ga salt contg. Mn, Co, Ni, Zn, Cd, or Cu add with const. mixing dil. NH₄OH until a slight turbidity is formed, dissolve by adding several drops of dil. HCl, add approx. 15 g. of NH₄Cl, bring the vol. to 150 ml., add some macerated paper, heat to boiling, add methyl red indicator and 2% pyridine soln. (dropwise with mixing) until the color changes to yellow, heat liquid with the ppt. to boiling, let stand for 3-4 hrs. at a temp. close to boiling (owing to evapn. of pyridine the color of the soln. changes to red and therefore, during the pptn., pyridine soln. sufficient to change the color of the indicator should be added). Filter, wash the ppt., dissolve in HCl, and measure the color produced with a suitable reagent (Mn with (NH₄)₂S₂O₈, Co and Ni with dimethylglyoxime, Cu with pyridine thioyanate). The pyridine chloride complexes of Zn and, especially, of Cd (general formula [MPy₂Cl]₂) are slightly sol. in the cold, and therefore the liquid should be kept warm during the filtration and the ppt^s washed with hot 2% NH₄NO₃. In the washed ppt^s Zn and Cd are detd. spectroscopically. The sepn. of Ga from Zn and Cd is so nearly complete that no repptn. is required. Addn. of NH₄NO₃ to the soln. also results in the formation of pyridine complexes of greater soly., and the sepn. of Ga from Zn and Cd is less nearly complete; complete sepn. requires repptn. The alk. earth metals and Mg form no gallates under the conditions of Ga(OH)₃ formation by pyridine, and they can be sepd. completely from Ga. Ga can be sepd. also from K, Na, and Li. W. R. Henn

ABO-114 METALLURGICAL LITERATURE CLASSIFICATION



OSTROV, E. A. Dr. Tech. Sci.

Dissertation: "New Methods for Investigating the Composition of Mineral Raw Materials Using Organic Bases." All-Union Sci. Res. Inst. of Mineral Raw Materials, 2 Jul 47.

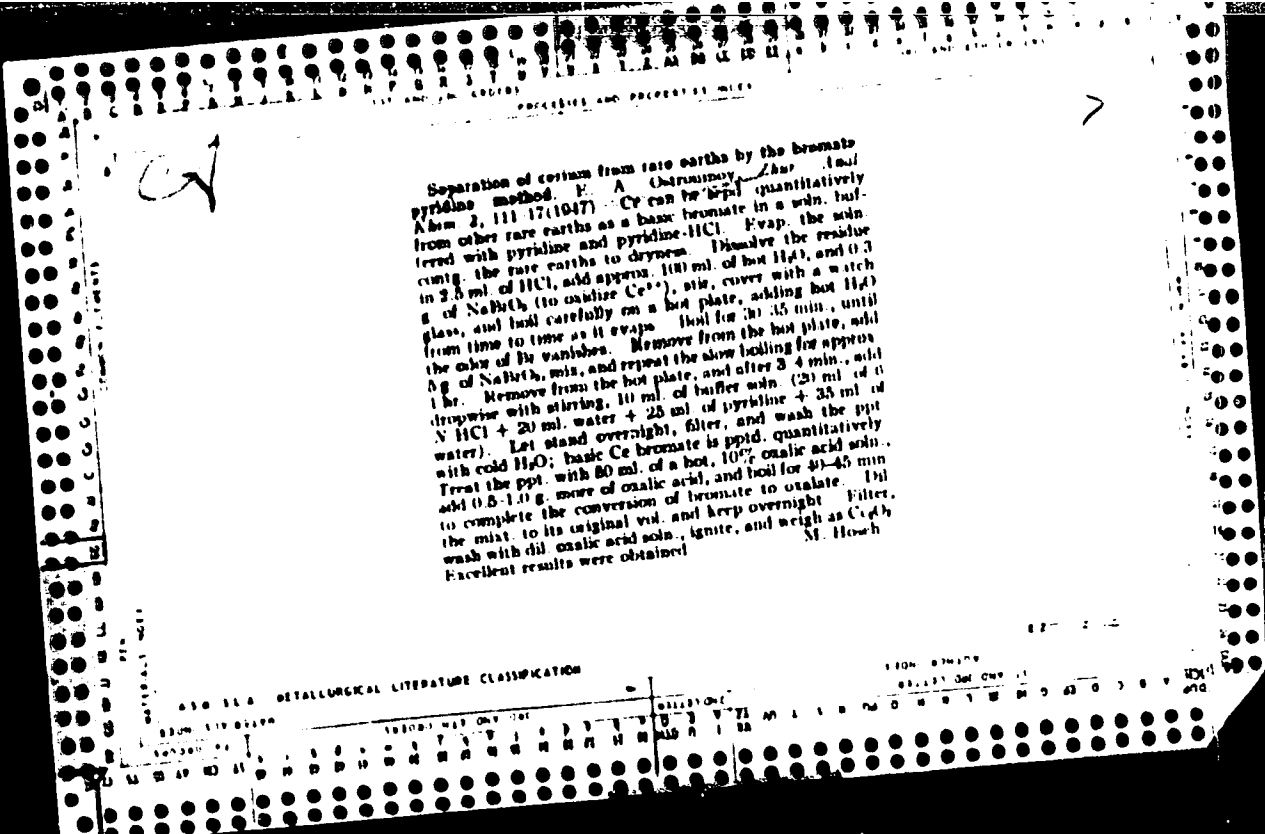
SO: Vechernyaya Moskva, Jul, 1947 (Project #17836)

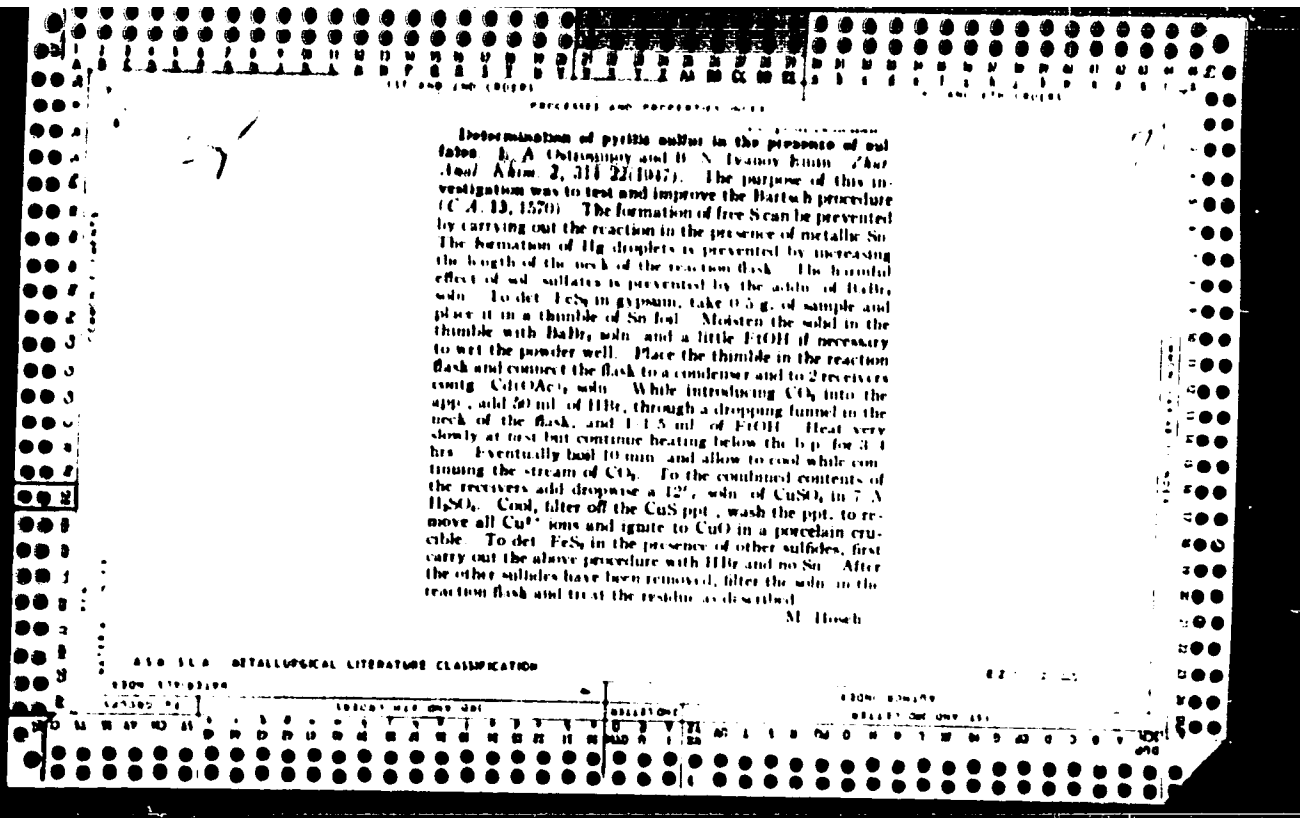
OSTROUMOV, B. A.
OSTROMOV, B. A.

"New Methods for Investigating the Composition of Mineral Raw Materials
Using Organic Bases." Sub 2 Jul 47, All-Union Sci Res Inst of Mineral Raw
Materials. *In Tekhnich. Ser.*

Dissertations presented for degrees in science and engineering in Moscow
in 1947

SO: Sum No. 457, 18 Apr 55

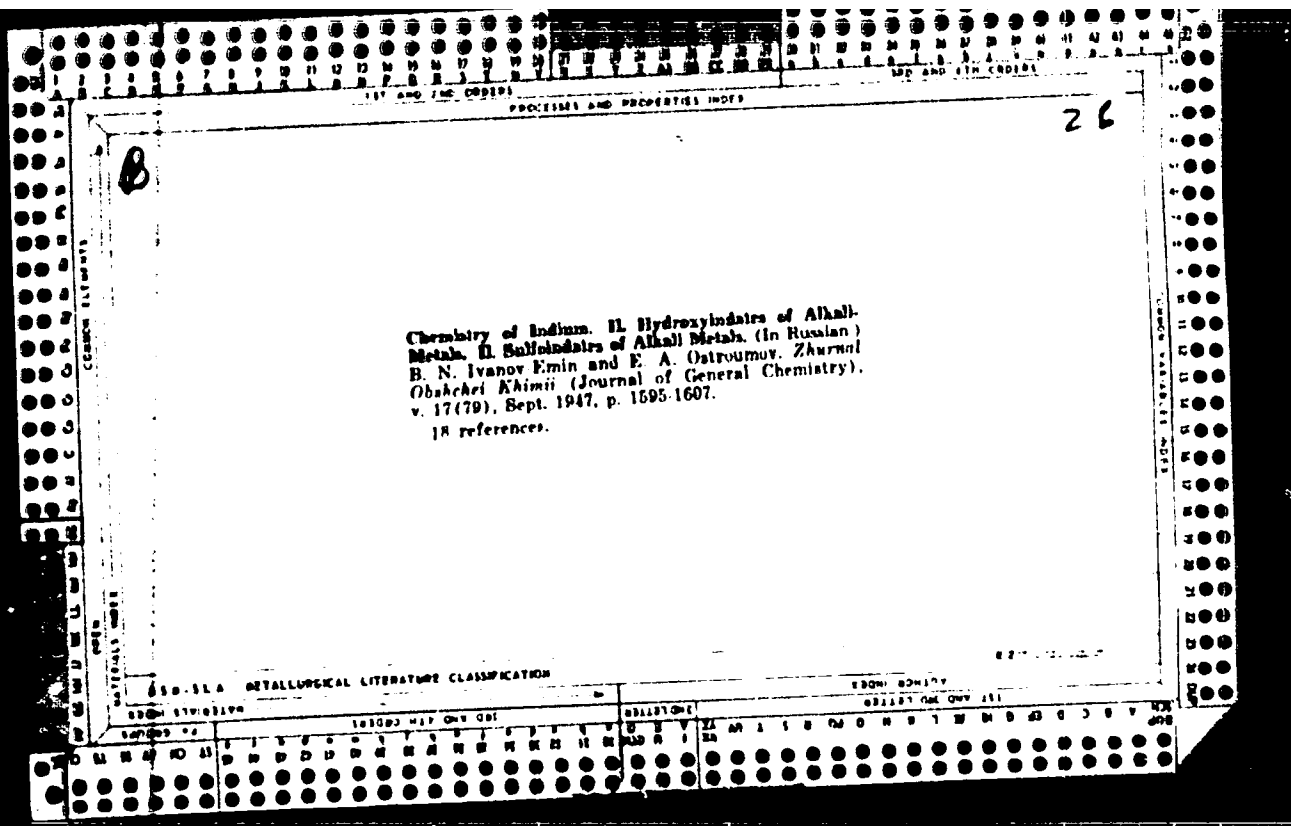




Handbook of new analytical methods with pyridine, α -picoline, and hexamethylenetetramine. R. A. (Instrum. Zvezdnyy Lab. 19, 614-10(1947).—The methods are based on the use of pyridine as a regulator of the pH of solutions during hydrolysis and formation of complexes. In adding pyridine to a weakly acidic solution, a pH of about 6.8 results when some metals are pptd. as hydroxides while Mn, Ni, Co, Zn, Cu, and Cd form easily sol. complexes. Pyridine nitrate will give a stable ppt of 4:1-4:2; under these conditions it is possible to sep. Bi from Pb (and also from Cu and Cd which form sol. tri-complexes with pyridine) and some rare metals from trivalent Cr and rare earths. In reaction between α -picoline and Be solutions, Be is sep'd as the hydroxide; the resulting Mg, and alkali. Thus, Be(OH)₂ can be sep'd from Ca, Sr, Ba, Mg, and alkali. Two procedures are proposed: (1) Remove the cations of the 3rd group with H₂S in the presence of hexamethylenetetramine. Destroy org. material in the filtrate with HNO₃ and det. alk. earths, Mg, and alkali as usual. Ash the soluble ppt. of the 3rd group, heating. If an insol. residue remains, fuse with soda, grind carefully, and treat the ash with concd. HCl while acidic, and add to the filtrate. Then, with the aid of pyridine, sep. Fe, Al, Cr, Ti, Zr, In, Ga, and some rare metals from Mn, Zn, Ni, and Co. From the filtrate, after the addn. of pyridine hydrochloride, ppt. Co, Ni, and Zn with H₂S, thus sep'g these from Mn. (2) Sep. Fe, Al, Cr, In, Ga, Ti, Zr, and some rare metals with pyridine.

From the filtrate, after the addn. of pyridine hydrochloride, ppt. Ni, Co, and Zn with H₂S. From the filtrate, after the elimination of the pyridine, ppt. Mn with H₂S in the presence of hexamethylenetetramine. In the filtrate from Mn, after the destruction of the org. material with HNO₃, det. the alk. earths, Mg, and alkali as usual. (1) This procedure is preferred when Ca, Mg, and alkali are det'd in products contg. large amts. of Mn, Co, and Ni. This procedure is to be used in all cases except when the product contains considerable phosphate and small quantities of Al, Ti, and Zr, because then some of the Ca may be ppt'd as phosphate. But if the Al, Ti, and Zr are sufficient to combine with all P and V are present, then the method is applicable. (2), with sufficient Fe⁺⁺⁺ in the soln., is also suitable when P and V are present. In sep'g Zn from Ni and Co it is preferred to ppt. Zn with H₂S from a soln. contg. CH₃COOH and NaOAc. Rare earths should be sep'd as oxalates and then Th should be sep'd from Ce and rare earths with the aid of pyridine and its nitric acid salt. If the product contains Be, it is necessary to use α -picoline for complete pptn. In the 4th group it is possible to sep. Bi from Pb, Cu, and Cd with pyridine in presence of its nitric acid salt.

H. Z. Kamich



Separation of scandium with the aid of pyridine. H. A. ...
 (Munroe). *Zur. Anal. Chem.* 3, 163-61 (1938).—A
 method for sepg. Sc from other rare earths is based on the
 difference in pH at which their hydroxides ppt. Thus,
 Sc(OH)₃ ppts. at pH 4.9 (C.A. 39, 3153) whereas the
 hydroxides of other rare earths start ppt. at pH 6.3
 (Yb and Lu) and higher. The desired pH is attained
 with buffer solns. of pyridine or its salts (C.A. 34, 5779).
 To prep. the pptg. soln., measure into a 200-ml. flask
 enough concd. HNO₃, free of N oxides, and standardized,
 to correspond to 27.2 g. of 100% HNO₃. Add approx.
 20 ml. of H₂O, mix, and add slowly 136 ml. of pure pyri-
 dine with const. shaking and cooling. When the soln. is at
 room temp., fill to the mark and mix thoroughly. To
 det. Sc, dissolve the sample, add approx. 5 g. of NH₄NO₃,
 carefully neutralize with dil. NH₄OH until a slight per-
 manent turbidity appears, and then add 3 drops of concd.
 HNO₃ to dissolve it. Dil. to definite vol. (e.g. 100 ml.) and
 bring to a boil. Add a little macerated paper pulp and
 then from a dropping funnel add approx. 15 ml. of the
 pptg. soln. with const. stirring. Cover the beaker, bring
 to slight boiling, and keep on a water bath for 40-50
 min. to complete coagulation and pptn. of Sc(OH)₃. Fil-
 ter, wash with hot 3% soln. of NH₄NO₃ contg. a small
 quantity of the pptg. soln. (5 ml. per 100 ml. of 3%
 NH₄NO₃), place the ppt. in a weighed porcelain crucible,
 dry, ash, ignite at 1000°C., cool, and weigh. For 12
 analyses in which Sc₂O₃ was 0.0015-0.0090 g., there was no
 difference between "taken" and "found" in 6 cases, and
 in the other 6 analyses the difference did not exceed
 ±0.0001 g. The filtrates were evapd. to a small vol. and
 tested for Sc; none was found. It is thought that Sc-
 (OH)₃NO₃ is first formed, which upon addn. of more pyri-
 dine soln. changes completely to Sc(OH)₃. Tests were
 run on sepg. Sc by this method in the presence of other
 rare earths severally and combined. The contamination
 of the Sc ppt. was tested by x-rays. When taken sever-
 ally, complete sepg. of Sc was obtained by double pptn.

except for Gd, Ho, and Yb, where for the greatest accu-
 acy, triple pptn. was needed. Similar results were ob-
 tained when the rare earths were taken together with Sc
 rare earths (La, Ce, Pr, Nd, Sm, Cd, Ho, Er, Yb, and Y)
 ratios of 1:1-1:14 M. Hoesch

POZOMAROV, A.I.; OSTROUMOV, B.A., doktor khimicheskikh nauk, redaktor;
KISELEVA, A.A., tekhnicheskii redaktor.

[Method of chemical analysis for minerals and rocks] Metody khimicheskogo analiza mineralov i gornykh porod. Moskva, Izd-vo Akad. nauk SSSR, Vol 1 [Silicates and carbonates] Silikaty i karbonaty. 1951 334 p. (MLRA 8:8)

(Silicates) (Carbonates (Mineralogy)),
(Mineralogy, Determinative)

CA

7

Determination of zirconium with mandelic acid. A. A. Astanina and R. A. Ostroymov (Inst. of Mineral Raw Materials, Moscow, U.S.S.R.). *Zhur. Anal. Khim.* 6, 27-33 (1951). — The purpose of this investigation was to check the Kumins method (C.A. 41, 473f). The method was accurate and effective in sepa. of Zr from other metals including the rare earths and Mo. Equally good results were obtained by weighing Zr mandelate without igniting the ppt. to ZrO_2 . The excess mandelic acid was removed by washing the ppt. 2-3 times with H_2O . Zr in quantities below 0.0010 g. does not ppt. at once, particularly in the presence of other elements. In such cases the time allowed for pptn. should be extended to 1 or more days. M. Hosen

~~Chromatography. A. A. Novy: metody khimicheskoy analiza
s primeneniem organicheskikh osnovaniy (New Method of
Chemical Analysis with the Use of Organic Bases). Mos-
cow: Gosudarst. Izdatel'stvo Geol. Lit. 1952. 110 pp. 1~~

OSTROUMOV, B. A.; SHINA, O. M.

Vanadium

Some laws of the distribution of vanadium in contemporary marine deposits.
Dokl. AN SSSR 86 No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 Incl.

OSTROUNOV, E.A.

Method of determining forms of sulfur compounds in deposits of
the Black Sea. Trudy Inst.okean. 7:57-69 '53. (MLRA 7:3)
(Deep-sea deposits--Black Sea) (Black Sea--Deep-sea deposits)

OSTROUMOV, E.A.

Forms of sulfur compounds in deposits of the Black Sea. Trudy
Inst. okean. 7:70-90 '53. (MLRA 7:3)
(Black Sea--Deep-sea deposits) (Deep-sea deposits--Black Sea)

Ostroumov, E. A.

USSR A

CR
 Rare earths in the deep water deposits of the Black Sea.
 E. A. Ostroumov. Doklady Akad. Nauk S.S.S.R. 91, 1176-8 (1953). Sediments from deep water regions of the eastern part of the Black Sea and the heavy mineral fraction from the sand on the Caucasian coast at Cagra were analysed for La₂O₃, CeO₂, Pr₂O₃, Nd₂O₃, Gd₂O₃, and Dy₂O₃ by the method of Borneman-Starykovich, et al. (C.A. 48, 8016⁴). They were also detd. by an x-ray method. The predominant element was Cr. Most abundant in rare earths are the clayey sands. These sediments contain siliceous and carbonate veins contain less of these earths. The quantities of these earths in the various sediments are tabulated.
 I. A. Joffe

Inst. Oceanology, AS USSR

PONOMAREV, A.I.; OSTROUMOV, B.A., doktor khimicheskikh nauk, redaktor;
LOSKUTOV, I.P., redaktor; NEVRAYEVA, N.A., tekhnicheskiiy redaktor.

[Methods of chemical analysis of minerals and rocks] Metody khimicheskogo analiza mineralov i gornykh porod. Moskva, Izd-vo Akademii nauk SSSR. Vol.2 [Iron ores, titanomagnetites and chromites] Zheleznyerudy, titanomagnetity i khromity, 1955. 343 p.
(Iron ores) (Chromites) (MLRA 8:11)
(Titanomagnetites)

OSTROUMOV, E. A.

Occurrence of manganese in bottom deposits of the Sea of Okhotsk.
Izv. AN SSSR. Ser. geol. 20 no. 5: 83-88 S-O '55. (MLRA 8:12)
(Okhotsk, Sea of--Manganese ores)

OSTROUMOV, E.A.

2

Iron in the bottom sediments of the Okhotsk Sea. E. A. Ostroumov. Doklady Akad. Nauk S.S.S.R. 102, 129-33 (1958).—Fe (ferrous and ferric oxides) was detd. in samples from more than 200 regions of the Okhotsk Sea sediments. The deposits are divided into 7 zones with Fe content from 1.0 to 7%. The zone with more than 7% of Fe occurs near the Kuril islands and in the south extremity of the Kamchatka shore. Most of the Fe comes to the sea from terrestrial materials and volcanic breakdown products. Some colloidal Fe in very fine suspension concentrates in the clay slime together with Fe bound with the phytoplankton residue. In the south the concn. of Fe is assocd. with the clay-diatom slime. Another part of the Fe, bound with the volcanic activity products, concentrates in the sand and silt particles, located along the Kuril islands and the east

shore of Kamchatka. In comparison with other Russian seas, sediments of the Okhotsk Sea have a high content of Fe, which in some places amounts to 11.11%. A map of distribution of Fe by zones is included. M. G.

EE

USSR/Cosmochemistry - Geochemistry. Hydrochemistry.

D.

Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 30352

Author : Ostroumov, E.A.

Inst : Institute of Oceanology, Academy of Sciences USSR

Title : Distribution of Titanium in the Deposits of the Sea of Okhotsk

Orig Pub : Geokhimiya, 1956, No ., 90-95.

Abst : The content of Ti was determined in dried samples of the upper level of sediments collected at 209 stations during a number of years of field work by the expedition of the expedition of the Institute of Oceanology of the Academy of Sciences USSR. Ti was determined colorimetrically with H_2O_2 after decomposition of the samples with hydrofluoric and sulfuric acid and fusion with potassium pyrosulfate. A chart of Ti distribution in the bottom deposits has been prepared. The following zones were delineated (TiO₂ in %): less than 0.2; 0.2 - 0.3; 0.3 - 0.4 - 0.5 0.5 -

Card 1/2

USSR/Cosmochemistry - Geochemistry. Hydrochemistry.

D.

Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 30351

Author : Ostroymov, E.A.

Inst : Academy of Sciences USSR

Title : Titanium in the Deposits of the Sea of Okhotsk

Orig Pub : Dokl. AN SSSR, 1956, 107, No 3, 444-447

Abst : See next abstract.

Card 1/1

OSTROUMOV, E.I.; SHILOV, V.M.

Occurrence of iron sulfide and hydrogen sulfide in deposits of deep
trenches in the northwestern Pacific Ocean. Geokhimiia no.7:25-
38 '56. (MLRA 10:1)

1. Institut okeanologii Akademii nauk SSSR.
(Pacific Ocean--Iron sulfides) (Pacific Ocean--Hydrogen sulfide)

OSTROUMOV, E.A.; ASTANINA, A.A.; SHOKHOR, T.G.

Method for determining rare earths in ocean deposits. Trudy
Inst.okean. 19:297-303 '56. (MLRA 10:2)

(Ocean bottom) (Earths, Rare)

OSTROUMOV, E. A.

USSR/Cosmochemistry - Geochemistry. Hydrochemistry, F

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61349

Author: Ostroumov, E. A., Shilov, V. M.

Institution: None

Title: Iron Sulfide and Hydrogen Sulfide in Recent Deposits of North-western Part of Pacific Ocean

Original
Periodical: Dokl. AN SSSR, 1956, 106, No 3, 501-504

Abstract: Process of reduction (R) of SO_4^{2-} in sediments takes place at definite strata and begins after R of Fe^{3+} to Fe^{2+} at definite stage of decomposition of organic matter necessary for life processes of sulfate-reducing microorganisms. R of SO_4^{2-} is well developed in sediments of Kuriles-Kamchatka and Aleutian troughs where it begins in 10-15 cm strata; amounts of FeS reach 0.39% and free H_2S is present. East and southeast of trough R zone is located below layer of red clay and contains little FeS. In the sediment bed this zone is situated in the 120-200 cm layer

Card 1/2

OSTROUMOV, E.A.

Titanium in deposits of the Okhotsk sea. Dokl.AN SSSR 107 no.3:444-447
Mr '56. (MIRA 9:7)

1.Institut okeanologii Akademii nauk SSSR. Predstavleno akademikom
N.M.Strakhovym.
(Okhotsk, Sea of--Titanium)

VOLKOV, I.I.; OSTROUMOV, B.A.

Forms of sulfur compounds in silt waters of sediments of the Black Sea.
Geokhimiia no.4:337-345 '57. (MIRA 12:3)

1. Laboratory of Marine Sediments of the Institute of Oceanology,
Academy of Sciences, U.S.S.R., Moscow.
(Thiosulfates) (Black Sea--Silt)

OSTROUMOV, B.A.; VOLKOV, I.I.

Interconnection of phosphorus, vanadium and organic matter in the
Black Sea sediments [with summary in English]. Geokhimiia AN
SSSR no.6:518-528 '57. (MIRA 11:2)

1. Institut okeanologii AN SSSR, Moskva.
(Phosphorus) (Vanadium)
(Black Sea--Sedimentation and deposition)

OSTROUHOV, B.A.

Sulfur compounds in bottom deposits of the Sea of Okhotsk. Trudy
(MIRA 11:3)
Inst. okean. 22:139-152, 1972.
(Okhotsk, Sea of--Sulfur)

OSTROUMOV, P.L.

BEZHUKOV, P.L.; ~~OSTROUMOV, P.L.~~

Phosphorus distribution in the sediments of the Okhotsk Sea. Dokl.
AN SSSR 113 no.1:142-145 Mr-Apr '57. (MLRA 10:6)

1. Institut okeanologii Akademii nauk SSSR. Predstavleno akademikom
N.M. Strakhovym.
(Okhotsk, Sea of--Sedimentation and deposition)

20-114-4-47/63

AUTHORS: Volkov, I. I., Ostroumov, E. A.

TITLE: Determination of Thiosulphates in Silt Waters of the Black Sea Deposits (Opredeleniye tiosul'fatov v ilovykh vodakh osadkov Chernogo morya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 853-855 (USSR)

ABSTRACT: In order to get a better idea of the diagenesis processes it is necessary when studying the types of sulphur compounds in sea deposits, not only to investigate the solid phase, but to determine also the types of sulfur compounds of the water by which these deposits are drenched. In the Black Sea, in which an intensive reduction process of the sulphates takes place, there may also occur sulphites and thiosulphates, beside free hydrogen sulfide and sulphates. The authors investigated, from the expedition ship "Akademik S.Vavilov", at the below mentioned station, whether these soluble compounds occur in the silt waters of the deposits. A method for the determination of sulfites and thiosulfates in the presence of free hydrogen sulfide had been previously worked out by Kurtenacker. Its applicability to the Black Sea was to be checked. The shallow-water deposits here often do not contain any hydrogen sulfide. In

Card 1/3

Determination of Thiosulphates in Silt Waters of the Black
Sea Deposits

20-114-4-47/63

the silt water of the deep-sea deposits it is often removed during filtration in vacuum. Tests indicated that the content values of the thiosulfates obtained on this occasion are unstable and vary considerably. This is due to the leaking through into the filtration of small amounts of colloidal sulphurous iron (hydrotoilite). For that reason treatment with zincarbonate suspension is indispensable. It removes the free hydrogen sulfide and the colloidal iron which is disturbing in the determination of the thiosulfates. The experiments showed that the silt waters in the Black Sea deposits contain virtually no sulfites, at the most very minute traces of them, whose amount lies within the limits of experimental errors. But steady figures for the thiosulfates are obtained in spite of their small amounts. They vary between from 0,0 to 10 mg/lit. The deep-sea deposits are richer in them than those of the shallow water. As is well-known one sulfur atom of the thiosulfates is very mobile and capable of reaction. Therefore the thiosulfates can function as a peculiar type of sulfur transmitters. In this respect the occurrence of thiosulfates may be of great interest in the study of diagenetical transformation of the Black Sea deposits. There are 1 table and

Card 2/3

OSTROUMOV, E. A.

20-4-32/51

AUTHORS: Volkov, I. I., and Ostroumov, E. A.,

TITLE: Concretions of Iron Sulphide in Black Sea Deposits (Konkretaii sul'fida zheleza v otlozheniyakh Chernogo morya)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 4, pp. 645-648 (USSR)

ABSTRACT: Already in 1890 colloidal iron sulphide was found in the Black Sea deposits and the possibility of a formation of pyrites which was contained in it in form of tiny pellets was assumed. Also at that time concretions of pyrites of a length of 12 mm and a breadth of 0,5 mm were found there for the first time. Beside 90,84% pyrites they consist of a small quantity of silicates which apparently are of the deposit itself. A further reference review shows the presence of mel'nicovit, hydrotroilite, and marcasite also in the old Black Sea deposits. Transitions between the two latter minerals occur, too. The research of these transitions and of the process could throw a light on one of the questions of the autogenous mineral formation of the bottom of the sea. In summer 1956 a pillar of the ground of a length of 6m was taken in a depth of 540 m by the expedition ship "Akademik S. Vavilov" from one of the stations beside the cape Kodor (42°54',0 north latitude, 40°54',8 east longitude). It was clayey mud, grey coloring with bluish tinge and with single intermedia-

Card 1/2

OSTROYNOV, E. A.

Ostroyrov, E. A., Astanina, A. A.

"Determination of Thorium by the Weight and Colorimetric Methods" p. 50

in book Methods of Determining Radioactive Elements in Mineral Raw Materials,
1958, 68 pp

AUTHOR: Petelin, V. P., Ostroumov, S. A.

TITLE: Some Peculiarities in the Distribution of Iron in the Sediments of the Sea of Okhotsk (o nekotorykh osobennostyakh raspredeleniya zheleza v osadkakh Okhotskogo morya)

PERIODICAL: Byulleten' Vostochnogo nauchnogo tsentra SSSR, Seriya Geologiya i Otdel geologicheskii, 1959, Nr. 2, pp. 11-12.

ABSTRACT: The research work done during 1942-1951 by an expedition on the ship "Vityaz" has proved that a special peculiarity can be noted in the distribution of the Okhotsk Sea deposits in contrast to other seas. The author of this article based his research on the studies of I. K. Kozlov and A. M. Udintsev. He established that the greatest concentration of iron (on the average 5%) can be observed in the sandy sediments in regions adjoining the Kurile Islands and the straits (Figures 1 and 2), the maximum percentage, also, has been found in the Fourth Kurile Strait. Figure 1 quotes various views of scientists who have made studies in this field, such as A. N. Gavrilitskiy, V. M. Gerasimov, G. I. Liverovskiy and N. M. Strakhov, and arrives at the conclusion that the basic mass of iron gets into the Okhotsk Sea sediments together with detrital material consisting of the fine

Some Peculiarities in the Distribution of Iron in the Sediments of the Sea of Okhotsk

hand of erosion products of the dry land, and on the other hand of products of recent volcanic activity. The concentration of the main iron-containing minerals in the sedimentary clastic material, and the distribution of these minerals according to the granulometric spectrum determines the character of the iron distribution in the sediments of the Okhotsk Sea. Therefore, as far as the distribution is concerned, the Okhotsk Sea can be regarded as a special type of sea basin - a basin with maximum Mark-type concentrations of iron in the coastal zones. There are 4 maps, 1 table and 11 references, 1 of which are Soviet and 1 German.

1. Sea of Okhotsk -- Properties
2. Sedimentation
3. Iron Distribution
4. Iron Sources

Card 2/2

AUTHOR:

Ostrovskiy, A. A.

TITLE:

Separation of Thorium from the earths of cerium, pyridine and its nitrate salt of the cerium of redox potential elementov (Prikladnaya Khimiya, 1958, No. 10, p. 1401-1402)

PERIODICAL:

Zhurnal Analiticheskoy Khimii, 1958, Vol. 11, No. 10, p. 1401-1402 (35-3)

ABSTRACT:

The author showed in a previous paper (Ref. 1) that the quantitative separation of thorium from manganese, nickel, cobalt, copper, zinc, and cadmium is possible by means of pyridine. Thus the problem was raised, whether a possibility of a separation of thorium from the rare earth metals with pyridine exists. The reaction of the rare earths to pyridine was investigated still to a very small extent. Watters and Keltzoff (Ref. 2) pointed out that tetravalent cerium is precipitated together with cerium quantitatively by iron hydroxide. Trivalent cerium is precipitated quantitatively by iron hydroxide on the condition that iron oxide is present in four-fold excess. In the case of a method described earlier by the author for the precipitation of metal hydroxides with pyridine

Card 1/3

Separation of Thorium from Rare Earths by means
of Pyridine and Its Nitrate

... (Ref. 1) a p_{H^+} value of 11.5...
 On the strength of the investigations of the p_{H^+} values of
 the case of which the hydroxides of the rare earths...
 are precipitated (Ref. 2) it can be concluded that in the
 precipitation of hydroxides with pyridine...
 the rare earth metals are not precipitated quantitatively
 if the p_{H^+} of the solution amounts to 11.5. The other rare
 conditions under which the difference...
 precipitation of the hydroxides of thorium and of the rare
 earth metals can be used for their quantitative separation.
 In order to prevent the separation of the hydroxides of the
 rare earth metals in the precipitation of thorium...
 the p_{H^+} value of the solution must be 11.5. It was shown
 ever, to be high enough for the quantitative precipitation
 of thorium hydroxide. For this purpose the application of
 pyridine in presence of pyridine nitrate was most expedient.
 As it was shown earlier (Ref. 1) the p_{H^+} value must be 11.5

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Separation of Thorium From Rare Earths by Means
of Pyridine and Its Nitrate

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precisely regulated in the precipitation and kept on a value of 4,1-4,2 by means of this solution. In the precipitation of thorium hydroxide it is desirable to add ammonium nitrate in order to accelerate the formation of a denser precipitation and to accelerate the deposition. By experiments it was proved that even in the case of a singular precipitation of thorium hydroxide by means of a mixture of pyridine and pyridine nitrate a practically complete separation of thorium from the rare earth metals can be obtained. Yttrium, lanthanum, trivalent cerium, neodymium, praseodymium, erbium, samarium and ytterbium remain in the solution. Thorium is precipitated in such pure form that a re-precipitation is not necessary. The experimental carrying out of the separation is described very precisely. There are 1 figure, 2 tables and 6 references, 4 of which are Soviet.

SUBMITTED:

March 14, 1957

Card 3/3

1. Rare earths--Precipitation
2. Thorium--Determination
3. Pyridines--Chemical reactions
4. Pyridine nitrate--Chemical reactions

5(2)

AUTHORS:

Volkov, I. I., Ostroumov, E. I.

SOV/75-13-6-14, 21

TITLE:

Determination of Sulfates by Their Reduction to Hydrogen Sulfide (Opredeleniye sul'fatov vosstanovleniyem ikh do serovodoroda)

PERIODICAL:

Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 6, pp 686-690 (USSR)

ABSTRACT:

Among the titrimetric methods for determining sulfates, those basing on a reduction of sulfate to hydrogen sulfide and a subsequent iodometric titration, are of particular interest (Refs 1-11). In using stannous chloride and phosphoric acid for the sulfate reduction (Refs 7, 8), a disturbance is caused by copper and other elements of the same analytical group, which form sulfides difficult to solve. The authors of the present paper worked out a method for determining sulfates. The reduction to hydrogen sulfide takes place with a reagent obtained from SnCl₂ and phosphoric acid. Owing to the fact that the apparatus for the reduction described by Kibe and collaborators (Ref 8) has a number of defects, it was modified by the authors. The new apparatus is illustrated and described. It is characterized by the fact that it can be quickly

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Determination of Sulfates by Their Reduction to
Hydrogen Sulfide

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reactivated and that it is well protected from oxidation by the concentrate phosphoric acid. The reagent for the analysis was prepared in accordance with Sibata's directions by heating SnCl_2 with concentrated phosphoric acid until a turbid solution was completely removed. In this connection it was found, however, that a reagent having a constant activity was not obtainable. Investigations carried out gave evidence of the fact that small amounts of chloride remaining in the reagent after boiling not only do not disturb the reduction process but even intensify the latter. A prolonged heating of the reagent for the purpose of removing hydrogen chloride effects a considerable decrease of the reducibility, this being apparently caused by the formation of considerable amounts of 85% phosphoric acid. A very accurate description is given of the preparation of the $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ used for the reagent, as of the concentrated phosphoric acid, and also of the optimum conditions for the preparation of the reagent. Temperature is not increased beyond 300° . The dense liquid obtained is placed on KOH or CaCl_2 and stored. This method was tested on the analysis of pure salts. As became apparent, the presence of

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Determination of Sulfates by Their Reduction to
Hydrogen Sulfide

SOV 75-11-6-11 21

Ca, Ba, Fe, Al, Cr, Mn, Co, Ni and Zn does not cause any disturbance. The reduction process is accelerated up to 10% by the presence of alkali metals. Neither do Bi, Pb and Sn disturb the reduction. Copper and mercury salts cause a disturbance. The same method was also adopted to analyze natural materials, as gypsum, Black Sea ooze and sea water. The results are on the same level with those obtained by the gravimetric determination of sulfate as BaSO_4 . A number of practical indications for this method is also given. There are 2 figures, 3 tables, and 11 references.

ASSOCIATION: Institut okeanologii AN SSSR, Moskva (Institute of Oceanography of the Academy of Sciences, USSR, Moscow)

SUBMITTED: October 1, 1957

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OSTROUMOV, E.A.; SHILOV, V.M.

Distribution of ferrous sulfide and hydrogen sulfide in bottom
deposits of the northwestern part of the Pacific Ocean. Trudy
Inst. okean. 27:77-85 '58. (MIRA 11:4)
(Pacific Ocean--Iron sulfide) (Pacific Ocean--Hydrogen sulfide)

SECRET, U. S.

THE Distribution of Subjects in the Submarine Force is
type report and titled for the Intl. cover graphic design
12 Aug - 11 Sep 1951.

(Inst. of Oceanography, 1951)

5(2)

SOV/78-0-1-1-1-1-1

AUTHORS:

Ivanov-Emin, B. N., Ostroumov, E. A.

TITLE:

On the Question of the Formation of Hydroxy-scandiates of the Alkali Metals (K voprosu ob obrazovanii gidroksoskandiatov shchelochnykh metallov)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 71-73 (USSR)

ABSTRACT:

The separation of hexahydroxo-sodium scandiate, having the composition $\text{Na}_3(\text{Sc}(\text{OH})_6) \cdot 2\text{H}_2\text{O}$, is described. For the synthesis of this compound scandium hydroxide produced by the method of N. A. Tananayev was dissolved by heating in 18 n sodium hydrate. The compound separated out was analyzed and the formula mentioned above was confirmed. The coordination number of scandium in this compound is 6. The crystalline compound has a rhombic lattice. The crystals frequently form druses. At a temperature of 25 the crystal density is 2.01-2.05 as measured by the micropyknometer by V. V. Syromyatnikov (Ref 10). The compound sodium hexahydroxo-scandiate decomposes on the effect of

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