KOMAR, Igor' Valer'yanovich, kand.geograf.nauk; USPENSKAYA, N.V., red.; [illegible]ROSHCHENKO, L.Ie., tekhn.red.

[The Urals; a sketch of their economic geography] Ural; ekonomiko-geograficheskii ocherk. Moskva, Izd-vo "Znanie," 1958. 38 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser. 8, vyp.2, no.28) (MIRA 12:2)

(Ural Mountain region--Economic conditions)

SOV/10-58-6-5/21

AUTHOR: Komar, I.V.

TITLE: The Development of the Productive Capacity of the Urals and New Changes in Its Economic Geography (Razvitiye proizvoditel'nykh sil Urala i novyye sdvigi v geografii yego khozyaystva)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1958, Nr 6, p 47-58 (USSR)

ABSTRACT: The article stresses the importance of the Ural region in the present and future industrial development of the USSR. In 1955, the total industrial production of the region was 75 times higher than in 1913. At present the region is becoming the main base of industrialization and of economic development of the whole eastern part of the USSR. Its railway system has more than doubled since 1913; the utilization of new agricultural areas in the region doubled.

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The Development of the Productive Capacity of the Urals and New Changes in Its Economic Geography

At present the Ural region is one of the biggest ferrous metallurgical centers of the world. The production of pig iron is higher than that of France and almost equal to English production. The Ural electric power system in 1955 produced 2082 kw-hr per capita of the population, 2½ times more than the per capita average for the whole Union (861 kw-hr). The construction of a powerful atomic power plant is foreseen for the near future; the introduction of nuclear energy will revolutionize the Ural electric power system. The regions east of the Ural underwent even more radical changes and are now the source of inexpensive electric power and of various raw materials. The total reserves of iton ore in the Ural region and Kustanay Oblast', are

The Development of the Productive Capacity of the Urals and New Changes in Its Economic Geography

estimated at 20,000,000,000 tons; one of the largest ore concentrations in the world. The Ural machine building industry is continuously growing. During the last few years it moved further south, to the South Ural region, rich in metals and manpower. In 1956, over 43% of this industry was already concentrated in this region. Production of synthetic materials is insufficiently developed, but several plants and factories for the production of plastics, artificial fibers, synthetic spirits and resins are now being enlarged or built. The production of consumer' goods in the Ural region is very low. Whereas the total number of workers occupied in the light and food industries of the Union represents ¼ of the total number, only 1/10 of the workers were occupied in these industries in the Ural region. The

The Development of the Productive Capacity of the Urals and New Changes in Its Economic Geography

textile and wool industries are also insufficiently developed in the Ural region. It is advisable to develop all these branches of the industry.

ASSOCIATION: Institut geografii AN SSSR (The Institute of Geography of the AS USSR)

Th2

KOMAR, I.V., Doc Geog Sci — (diss) "Ural's economic geography of a large region." Mos, 1959, 45 pp (Acad Sci USSR. Inst of Geography) 110 copies. List of author's works p45. (KL, 28-59, 124)

KOMAR, I.V.; POMUS, M.I.; RYAZANTSEV, S.N.; KONSTANTINOV, O.A., red.

[Planning in a province; materials for the 3d Congress of the Geographical Society of the U.S.S.R.] O vnutrioblastnom raionirovanii; materialy k III s"ezdu Geograficheskogo obshchestva Soiuza SSR. Leningrad, Geogr. ob-vo SSSR, 1959. 13 p. (MIRA 15:3)

(Economic zoning)

KOMAR, I.V.

[The Urals; economic and geographical characteristics] Ural; ekonomiko-geograficheskaia kharakteristika. Moskva, Izd-vo Akad.nauk SSSR, 1959. 365 p. (MIRA 13:8)
(Ural Mountain region--Economic conditions)

3(5) SOV/10-59-3-5/32

AUTHOR: Komar, I.V.

TITLE: About the Large Economic-Geographic Areas of the USSR

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 3, pp 44-54 (USSR)

ABSTRACT: This is an attempt to crystallize the concept of "large economic-geographic areas", into which the entire USSR must be divided. The author takes into consideration old, similar divisions, especially the old GOELRO plan of Lenin, but concentrates upon the present division proposed by the Gosplan, accepting 13 areas (North-West, North, Center, Volga Valley, North Caucasus, Ural, West Siberia, East Siberia, Far East, West, South, Trans-Caucasus, Kazakhstan, and Central Asia). The definition of such an area is a productional and territorial complex showing a character of specialization. Specialization is meant as resulting from the All-Union standpoint and is now reduced to 2 dimensions: industrial or industrial-agrarian areas. The feature of absolute economic autonomy is not essential. The large areas are the size of

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About the Large Economic-Geographic Areas of the USSR

England and upwards (one is about 7.5 times greater than England). Every area is supposed to possess its own resources to develop its complex economy. Overlaps are admitted. Analyzing the idea of such a large economic area, the author states that every such area has the following 3 specific properties: 1) Huge territorial dimensions tightly-combined with the richness and variety of natural resources, as well as with its high economic capacity. 2) The area must (or will) show a sharp yet multisided, specialized profile from the All-union standpoint. The area must have some branches of heavy industry, some branches of light industry (as a rule) and a developed, specialized agriculture. 3) A high standard of development of the entire economy must be brought about by the utilization of local resources. Such areas are the pillars of both the national economy and the national defence. Their organization must be actively planned, and should not be considered a purely-natural, passive result of the development of an area. The shape of such

 areas can vary from a circle as it were, to the form of a

About the Large Economic-Geographic Areas of the USSR

valley (Volga) or to that of an articulated sea shore (the Baltic). The author mentions the following Soviet scientists: D.L. Armand, N.N. Baranskiy, V.F. Vasyutin, and M.M. Zhirmunskiy. There are 12 Soviet references.

ASSOCIATION: Institut geografii AN SSSR (the Institute of Geography of the AS USSR).

SOV/10-59-5-19/25

AUTHOR: Vinogradov, N.V., Klimenko, K.I. and Komar, I.V.

TITLE: Books on the Distribution of Industrial Branches

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 5, pp 121-126 (USSR)

ABSTRACT: The following new books are reviewed in this article: R.S. Lifshits,"The Distribution of the Ferrous Industry of the USSR"; A.G. Omarovskiy- "Specialization of the Production and the Distribution of the Machine Building Industry of the USSR" ; L.V. Opatskiy - "Distribution of the Food Industry of the USSR"; and A.M. Korneyev - "The Textile Industry of the USSR and Ways of Its Development".

Card 1/1

KOLOTIYEVSKIY, A.; KOMAR, I.; MESHKAUSKAS, K.; PURIN, V.[Purins, V.]
TARMISTO, V.

The new in the economic geography of the Soviet Baltic States.
Vestis Latv ak no.9:171-175 '60. (EEAI 10:9)

(Baltic States—Economic conditions)

KOMAR, I. V.

"Soviet Geography at the International Exhibitions of Economy, Science and Culture's Achievements (sic)."

report to be submitted for the Intl. Geographical Union, 10th General Assembly and 19th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.

KOMAR, I. V., MESHKAUSKAS, K., PURIN, V. K., TAMMISTO, V. Yu. and KOLOTIYEVSKIY, A. M.

"New Features in Economic Geography of Soviet Baltic Republics (the role of the so-called 'cultural factor' in geographical phenomena)."

report to be submitted for the Intl. Geographical Union, 10th General Assembly and 19th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.

KOMAR, I.V.; POPOV, K.M.

Problems in the economic regionalization of India. Izv. AN SSSR. Ser. geog no.1:37-47 Ja-F '62. (MIRA 15:2)

1. Institut geografii AN SSSR.
(India--Economic zoning)

KOMAR, I. V.

"Problems of zonification for development of national economy"

report to be submitted for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

GERASIMOV, I.P.; KOMAR, I.V.

Geographical problems in the work of the United Nations conference on the use of scientific and technical knowledge for satisfying the needs of underdeveloped areas. Izv. AN SSSR. Ser. geog. no.5: 127-132 S-O '63. (MIRA 16:10)

GERASIMOV, I. P.; KOMAR, I. V., Moscow

"The role of geography in the study, conservation and rational use of the world's natural resources."

report scheduled to be presented at the 20th Intl Geographical Cong, 6 Jul-11 Aug 64, London.

KOMAR, Igor' Valer'yanovich. Prinimali uchastiye: KOLOTIYEVSKIY, A.M., dots.; KHISMATOV, M.F., dots.; GRIGOR'YEV, A.A., akademik, otv. red.; NEMCHINOV, V.S., akademik, otv. red. FRADKIN, N.G., red.izd-va; RYLINA, Yu.V., tekhn. red.

[Geography of the economy of the Urals by regions] Geografiia khoziaistva Urala; poraionnaia ekonomiko-geograficheskaia kharakteristika. Moskva, Izd-vo "Nauka," 1964. 393 p. (MIRA 17:4)

KOMAR, I.V.; POKSHISHEVSKIY, V.V.; ROZIN, M.S.

Problems of economic development and the exploitation of natural resources of developing countries in the interpretation of the journal "Scientific American". Izv. AN SSSR. Ser. geog. no.3:27-35 '64. (MIRA 17:6)

1. Institut geografii AN SSSR.

GOKHMAN, V.M.; KOMAR, I.V.; MINTS, A.A.; MURZAYEV, E.M.; POMUS, M.I.; POPOV, K.M.; NAZAREVSKIY, O.R.

Vadim Viacheslavovich Pokshishevskii, 1905- ; his 60th birthday. Izv. AN SSSR. Ser. geog. no.5:135-136 S-O '65.

(MIRA 18:10)

KOMAR, I.V., doktor geograf. nauk

Scientific session on problems in the development of economic regions as exemplified by Cracow Province. Vest. AN SSSR 35 no.9:95 '65. (MIRA 18:9)

KORZHUYEV, S.S.; VITVITSKIY, G.N.; YEGOROV, O.V.; NAUMOV, S.N.; ZOL'NIKOV, V.G.; KARAVAYEV, M.N.; KACHURIN, S.P.; KOSMACHEV, K.P.; Prinimali uchastiye: KORONKEVICH, N.I.; D'YAKONOV, F.V.; GERASIMOV, I.P., akademik, red.; PREOBRAZHENSKIY, V.S., red.; RIKHTER, G.D., red.; ABRAMOV, L.S. red.; ARMAND, D.L., red.; GELLER, S.Yu., red.; ZONN, S.V., red.; DZERDZEYEVSKIY, B.L., red.; KOMAR, I.V., red.; LAVRENKO, Ye.M., red.; LEONT'YEV, N.F., red.; LETUNOV, P.A., red.; L'VOVICH, M.I., red.; MESHCHERYAKOV, Yu.A., red.; MINTS, A.A., red.; MURZAYEV, E.M., red.; NASIMOVICH, A.A., red.; POKSHISHEVSKIY, V.V., red.p POMUS, M.I., red.; ROZOV, N.N., red.; SOCHAVA, V.B., red.; FORMOZOV, A.N., red.; YANSHIN, A.L., red.

[Yakutia] IAkutiia. Moskva, Nauka, 1965. 464 p. (MIRA 18:8)

1. Akademiya nauk SSSR. Institut geografii. 2. Institut geografii AN SSSR (for Korzhuyev, Vitvitskiy). 3. Yakutskiy filial Sibirskogo otdeleniya AN SSSR (for Yegorov). 4. Moskovskiy oblastnoy pedagogicheskiy institut im. N.K.Krupskoy (for Naumov). 5. Pochvennyy muzey AN SSSR (for Zol'nikov). 6. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Karavayev). 7. Proizvodstvennyy nauchno-issledovatel'skiy institut stroitel'stva Gosstroya SSSR (for Kachurin). 8. Institut geografii Sibiri i Dal'nego Vostoka Sibirskogo otdeleniya AN SSSR (for Kosmachev).

KOMAR, I.V.

Visiting the economists and geographers of Cracow. Izv. AN SSSR. Ser. geog. no.6:127-128 N-D '65. (MIRA 18:11)

KOMAR, I.V.

First session of the Commission on Applied Geography of the International Geographical Union. Izv. AN SSSR. Ser. geog. no. 1:119-122 Ja-F '66 (MIRA 19:2)

KOMAR, Jelena

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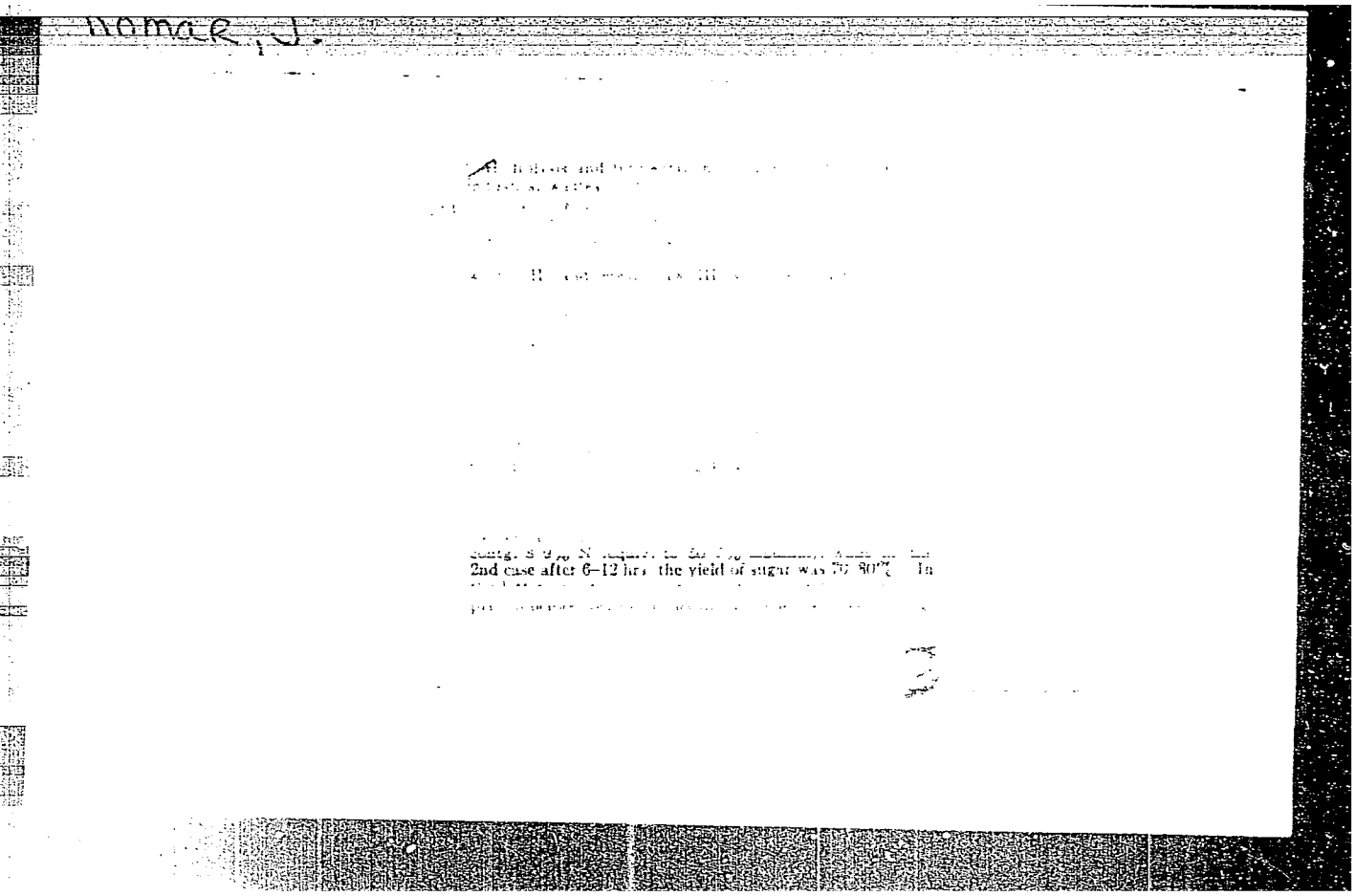
chem (N)

Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
General and Physical Chemistry

A new method of electrophoresis on filter paper. Jelena Komar. *Bull. sci., Conseil acad. RPF Yugoslav.* 1, 14 (1953).—An app. for paper electrophoresis is described that prevents evapn. of the buffer soln. and heating of the filter band.
N. Plavšić

MF
7-13-54



2nd case after 6–12 hrs the yield of sugar was 70–80%. In

KOLAR, J.

Utilization of maize waste for fermentation. p. 1.

PRIRODA. (Hrvatsko prirodoslovno drustvo) Zagreb, Yugoslavia.
Vol. 8, no. 2, 1958.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959.

Uncl.

KOMAR, J.

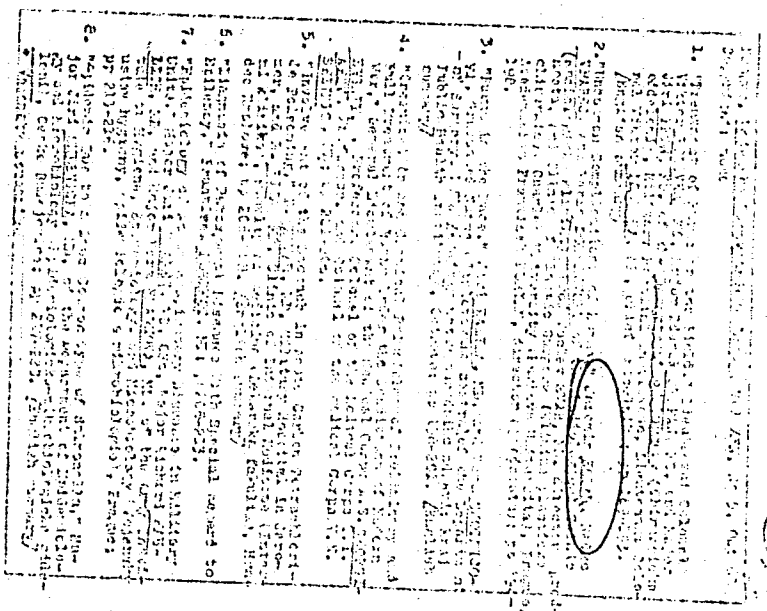
Contribution to the knowledge of the physical properties of some soils in southwestern Slovakia from the point of view of water economy. p. 340.

VODOHOSPODARSKY CASOPIS. (Slovenska akademiavied) Bratislava, Czechoslovakia, Vol. 7, no. 4, 1959

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

Uncl.

KOMAR, J.



VLADIMIRSKIJ, V.V.; KOMAR, Je.G.; MINC, A.L.; GOL'DIN, L.L.; KOSKAREV, D.C.; MONOSZON, N.A.; NIKITIN, S.Ja.; RUBCINSKIJ, S.M.; SKACKOV, S.V.; STREL'COV, N.S.; TRASOV, Je.K.; MEDONOS, S., inz. [translator]

Main characteristics of the planned proton accelerator for 50-60 BeV energy with sharp focusing. Jaderna energie 3 no.2:56-57 F '57.

JEFREMOV, D.V.; MESCERJAKOV, M.G.; MINC, A.L.; DZELEPOV, V.P.; IVANOV, P.P.; KAMYSEV, V.S.; KOMAR, J.G.; MALYSEV, I.F.; MONOSZON, N.A.; NEVJAZSKIJ, I.Ch.; POLJAKOV, B.I.; CESTNOJ, A.V.; BENDA, Frantisek [translator]

The six meter synchrocyclotron of the Institute for Research on Nuclear Problems affiliated to the Academy of Sciences of Soviet Union. Jaderna energie 3 no.1:1-4 Ja '57.

1. Ustav jaderne fysiky (for Benda).

SZOKE, Tamas, dr.; HAFFNER, Zsolt, dr.; KOMAR, Jozsef, dr.

Cancer of the gallbladder causing Guillain-Barre syndrome. Ideggyogy. szemle 16 no.11:321-327 N '63.

1. Fovarosi Istvan Korhaz Idegosztalyanak (foorvos: Dr. Lehotzky Tibor egyetemi tanar) kozlemenye.

(POLYRADICULITIS) (GALLBLADDER NEOPLASMS)
(NEOPLASM METASTASIS) (SPINAL CORD NEOPLASMS)
(PATHOLOGY) (PULMONARY EMBOLISM)

KOMAR, Jozsef, Dr., KOMAR, Gyula, Jr., Dr; Capital City Istvan Hospital, Neurological Ward (LEHOCZKY, Tibor, Dr, professor) (Fovarosi Istvan Korhaz, Idegosztaly), and Capital City Council Central Veterinary Hospital (director: ZOBORY, Emil, Dr) (Fovarosi Tanacs Kozponti Allatkorhaz).

"Comparative Clinical and Pathological Observations Related to Periodic Ataxia."

Budapest, Ideggyogyaszati Szemle, Vol XIX, No 9, Sep 66, pages 274-279.

Abstract: [Authors' Hungarian summary] Periodic ataxia was observed in a male patient and in a female cat. The man has been under clinical observation for 2 1/2 years, the cat was observed for a half year. Neither macroscopic nor microscopic changes were observed in the course of autopsy of the cat; the symptom complex was most probably an independent syndrome. Based on the comparative observations, certain deductions are made concerning the origin of the symptoms of the male patient as well. With respect to the pathomechanism it is presumed that, in addition to a "biochemical injury" to the cerebellum, the transient insufficiency of the vertebrobasilar arterial system is the cause of the clinical symptoms. The group of symptoms accompanying periodic ataxia is considered to be an independent syndrome by the authors on the basis of their observations. 2 Hungarian, 7 Western references.

1/1

KOMAR, Jozsef, dr.; BANKY, Ferenc, dr.

Bilateral tarsal tunnel syndrome. Orv. hetil. 106 no.9:421-422 28 F '65

1. Fovarosi Istvan Korhaz, Idegosztaly (foorvos: Lehoczky, Tibor, dr.) es Budapesti Orvostudomanyi Egyetem, III. Sebeszeti Klinika (tanszekvezeto: Stefanics, Janos, dr.).

HUNGARY

KOMAR, Jozsef, M.D., of the Department for Neurology at the Istvan Hospital of the Capital (Fovarosi Istvan Korhaz, Ideggyogyaszat) in Budapest.

"Thyroid Gland Cancer Metastasis Causing a Meningo-Encephalitic Syndrome"

Budapest, Orvosi Hetilap, Vol 104, No 20, 19 May 1963, pp. 933-936.

Abstract: Meningeal and cerebral metastases originating from thyroid gland carcinoma were described. No neurological symptoms providing an indication of localization were evident for five month following the first complaint. Subsequently developed symptoms gave a strong indication of meningo-encephalitis. The possibility of tumor or metastasis was suspected only when growth cells were discovered in the liquor. Sixteen references, including 2 German and 14 Western.

1/1

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020010-4

KOMAR, Jozsef, dr.

Metastatic thyroid cancer causing meningoencephalitis syndrome. Orv. hetil. 104 no.20:933-936 19 My'63

1. Fovarosi Istvan Korhaz, Ideggyogyaszat.

*

HUNGARY

KOMAR, Dr Jozsef, and KOMAROMY, Dr Laszlo; Neurological Clinic of the Budapest Istvan Hospital (Fovarosi Istvan Korhaz Ideggyogyaszat)(Chief Physician: Dr Tibor LEHOCZKY) and National Institute of Traumatology (Orszagos Traumatologiai Intezet)(Director: Dr Gyorgy SZANTO).

"Cervical Vertebral Metastasis Caused by Struma Maligna"

Budapest, Magyar Sebeszet, Vol 19, No 3, Jun 66; pp 161-166.

Abstract: Authors observed three cases of cervical vertebral metastasis orinating from struma maligna in which the malignancy of the disease was more or less certain even before the operation. The histology of struma maligna and the mechanism of metastasis is discussed. It is assumed that the metastasis takes place via the vertebral venous system. Attention is called to the mechanism of vertebral metastasis of vascular origin, causing bone-marrow necrosis. The surgical intervention chosen was Cloward's anterior vertebrotomy, which is suitable also for the purposes of biopsy. (18 References, mainly Western).

1/2

NEKRASOV, I.Ya.; DIMAN, Ye.N.; BROVKIN, A.A.; KOMAR, L.V.

New type of tin mineralization in magnesian skarns in the northeastern part of the U.S.S.R. Geol. rud. mestorozh. 7 no.2:50-62 Mr-Ap '65. (MIRA 18:7)

1. Institut geologii Yakutskogo filiala Sibirskogo otdeleniya AN SSSR.

KOVALEVA, L.T.; NEKRASOV, I.Ya.; ARKHIPENKO, D.K.; BROVKIN, A.A.; GRIGOR'YEV, A.P.; KOMAR, L.V.

Study of the minerals in the series of ascharite-sussexite by infrared spectroscopy and electron diffraction methods. Zhur. strukt. khim. 6 no.1:79-82 Ja-F '65.

(MIRA 18:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk i Institut geologii Yakutskogo filiala Sibirskogo otdeleniya AN SSSR, Yakutsk. Submitted October 28, 1963.

NEUBAUER,R.; KARLIN,M.; KORSIKA,L.; FILIPEC,L.; KOMAR,M.; NANUT,E.

Certain considerations on the recurrence of pulmonary tuberculosis. Tuberkuloza,Beogr. 11 no.3:318-327 '59.

1. Ftizioloska klinika,Ljubljana; Bolnica za tuberkulozu,Sezana.
(TUBERCULOSIS PULMONARY therapy)

KOMAR, MARINA ANATOL'YEVNA,

KOMAR, Marina Anatol'yevna; SINAYSKIY, M.M., red.; LARIONOV, G.Ye., tekhn.red.

[Principles of electric drive and control equipment] Osnovy elektroprivoda i apparatura upravleniia. Moskva, Gos.energ.izd-vo, 1957. 350 p. (MIRA 11:1)
(Electric driving) (Electric controllers)

FORTIC, Bojan, doc. dr.; KOMAR, Marjan, dr.

Evaluation of therapeutic results in chronic cavitary tuberculosis treated with ethionamide, cycloserine and pyrazinamide. (A joint study on results and prospects). Tuberkuloza 16 no.5: 359-371 S-D '64

1. Institut za tuberkulozo, Golnik (Direktor: doc. dr. B. Fortic); Bolnica za plucne bolesti, Sezana (Direktor: dr. M. Komar).

GERASIMOV, Yuriy Ivanovich; FRIDMAN, Grigoriy Beniaminovich; KOMAR, M.A., red.; LARIONOV, G.Ye., tekhn. red.

[Explosionproof transformer substations for mines] Shakhtnye vzryvobezopasnye transformatornye podstantsii. Moskva, Gosenergoizdat, 1963. 158 p. (Transformatory, no.11) (MIRA 17:4)

PETROV, Georgiy Nikolayevich; KOMAR, M.A., red.; LARIONOV, G.Ye., tekhn. red.

[Electrical machinery in three parts] Elektricheskie mashiny v trekh chastiakh. Izd.2., perer. Moskva, Gosenergoizdat. Pt.2.[Asynchronous and synchronous machines] Asinkhronnye i sinkhronnye mashiny. 1963. 415 p.
(MIRA 17:3)

YEPANESHNIKOV, Mikhail Mikhaylovich; KNORRING, G.M., kand. tekhn. nauk, retsenzent; LEVITIN, I.B., kand. tekhn. nauk, retsenzent; KOMAR, M.A., red.; BUL'DYAYEV, N.A., tekhn. red.

[Electric lighting]Elektricheskoe osveshchenie. Izd.3., perer. i dop. Moskva, Gosenergoizdat, 1962. 335 p. (MIRA 16:1)
(Electric lighting) (Electric light fixtures)

KHALIZEV, Georgiy Petrovich; KOMAR, M.A., red.; BUL'DYAYEV, N.A., tekhn. red.

[Electric drive and its control principles] Elektroprivod i osnovy upravleniia. Moskva, Gosenergoizdat, 1962. 383 p. (MIRA 16:3)

(Electric driving)

DYMKOV, Aleksandr Mikhaylovich. Prinimal uchastiye KAGANOVICH, Ye.A.; KOMAR, M.A., red.; BORUNOV, N.I., tekhn. red.

[Voltage transformers] Transformatory napriazheniia. Moskva, Gosenergoizdat, 1963. 191 p. (Transformatory, no.10) (MIRA 16:10)

(Electric transformers)

GOLUNOV, Aleksey Mikhaylovich; KOMAR, M.A., red.

[Cooling systems of oil-filled transformers] Okhlazhdaiushchie ustroistva maslianykh transformatorov. Moskva, Energiia, 1964. 151 p. (Transformatory, no.13) (MIRA 18:2)

ANTONOV, Gleb Vasil'yevich; OVCHAROV, Fedor Filaktovich; KOMAR, M.A., red.

[Repair of the magnetic circuits of transformers] Remont magnitoprovodov transformatorov. Moskva, Energiia, 1965. 215 p. (Transformatory, no.14) (MIRA 18:3)

KOMAR', N.A., inzhener; STEPANCHENKO, A.F., inzhener.

New signaling system for passenger train traffic. Bezop.truda v prom. 1 no.6:24-25 Je '57. (MLRA 10:7)
(Railroads--Signaling)

Kuznetsov, N. A.

Technology

(Apparatus STSB and results of using it in mines of the Donets basin). Moskva, Ugletekhizdat 1951.

9. Monthly List of Russian Accessions, Library of Congress, November 1952, Uncl.

STEPANCHENKO, A.F.; KOMAR', N.A.; TSESARENKO, N.P.

Mechanism of the KTT 1 thermostat. Ugol' Ukr. 5 no.1:39-40 Ja '61. (MIRA 14:1)
(Coal mining machinery) (Thermostat)

S/194/61/000/012/047/097
D256/D303

AUTHORS: Stepanchenko, A. F., Komar', N. A. and Tsesarenko, N.P.

TITLE: Temperature control apparatus "Ktt-1"

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 28, abstract 12V239 (Ugol' Ukrainy, 1961, no. 1, 39-40)

TEXT: A full description and a basic diagram are given of an apparatus developed by Dongidrouglemash for mining compressor temperature-rise control at 8 various points including that of the electric motor bearings and windings and of the compressed air. The set includes the basic unit, a signal panel and 8 sensitive elements. The latter are copper-resistance thermometers or the following KMT-type thermistors: 20 kohm, 40 to 90°C; 55 kohm, 90 to 120°C and 220 kohm, 120 to 170°C. The individual temperature sensing circuits are connected to a common network, the 8 bridge circuits with separate diagonals being constantly connected to a common relay РП-5 (RP-5) via pairs of semiconductor diodes in such a way that the temperatures at

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S/194/61/000/012/047/097
D256/D303

Temperature control apparatus ...

all 8 points are controlled simultaneously, the relay reacting upon the signal from the element of the highest temperature. The second winding of the relay is also connected to all the diagonals through pairs of diodes reacting on an open circuit in any one of the temperature sensing elements, and in such case a synchronous motor is switched on successively closing the diagonals of the elements until the diagonal of the element which brought the relay into operation is closed. At the same time a scale connected with the motor indicates the overheated element. The accuracy of the relay operation is + 5°C. There are 2 figures. [Abstractor's note: Complete translation.]

Card 2/2

KOMAR', N. L.

AUTHOR: Tikhonov, A. 75-13-2-26/27

TITLE: Review and Bibliography (Kritika i bibliografiya)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol. 13, Nr 2, pp. 264-264 (USSR)

ABSTRACT: This article is a review of the scientific manual: "Fundamental Principles of Qualitative Chemical Analysis" ("Osnovy kachestvennogo khimicheskogo analiza") by N.L. Komar'. Edition by the Khar'kov State University imeni A.M. Gor'kiy (1955). The work is an introduction to the course for qualitative chemical analysis.

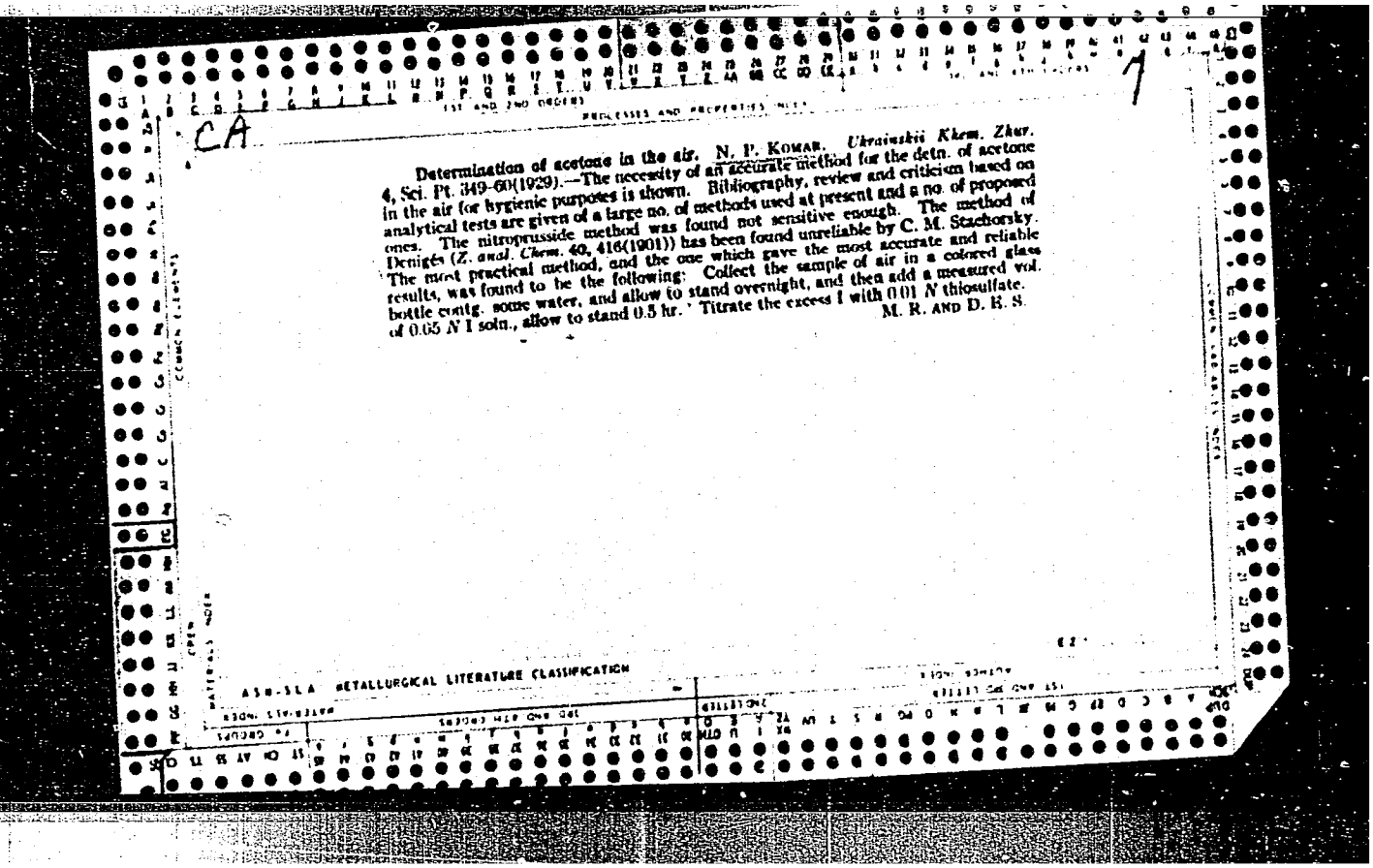
1. Chemistry--Bibliography

Card 1/1

KOMAR', N.F., zasluzhennyy vrach RSFSR, sanitarnyy vrach

Sanitary characteristics of the River Ai. Gig. i san. 26 no.6: 77-79 Je '61. (MIRA 15:5)

1. Iz Zlatoustovskoy sanitarno-epidemiologicheskoy stantsii.
(WATER—POLLUTION) (AI RIVER)

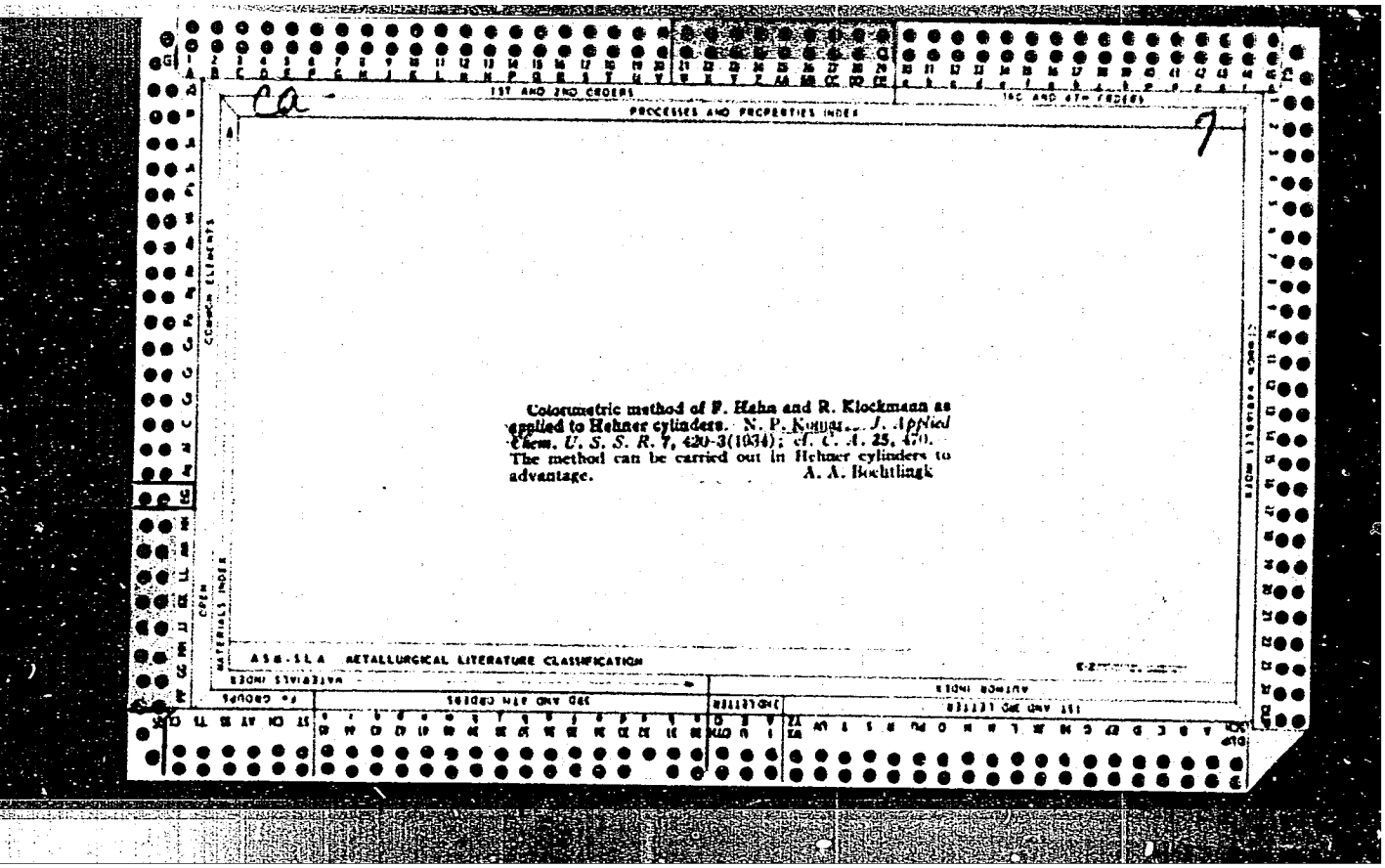


CA

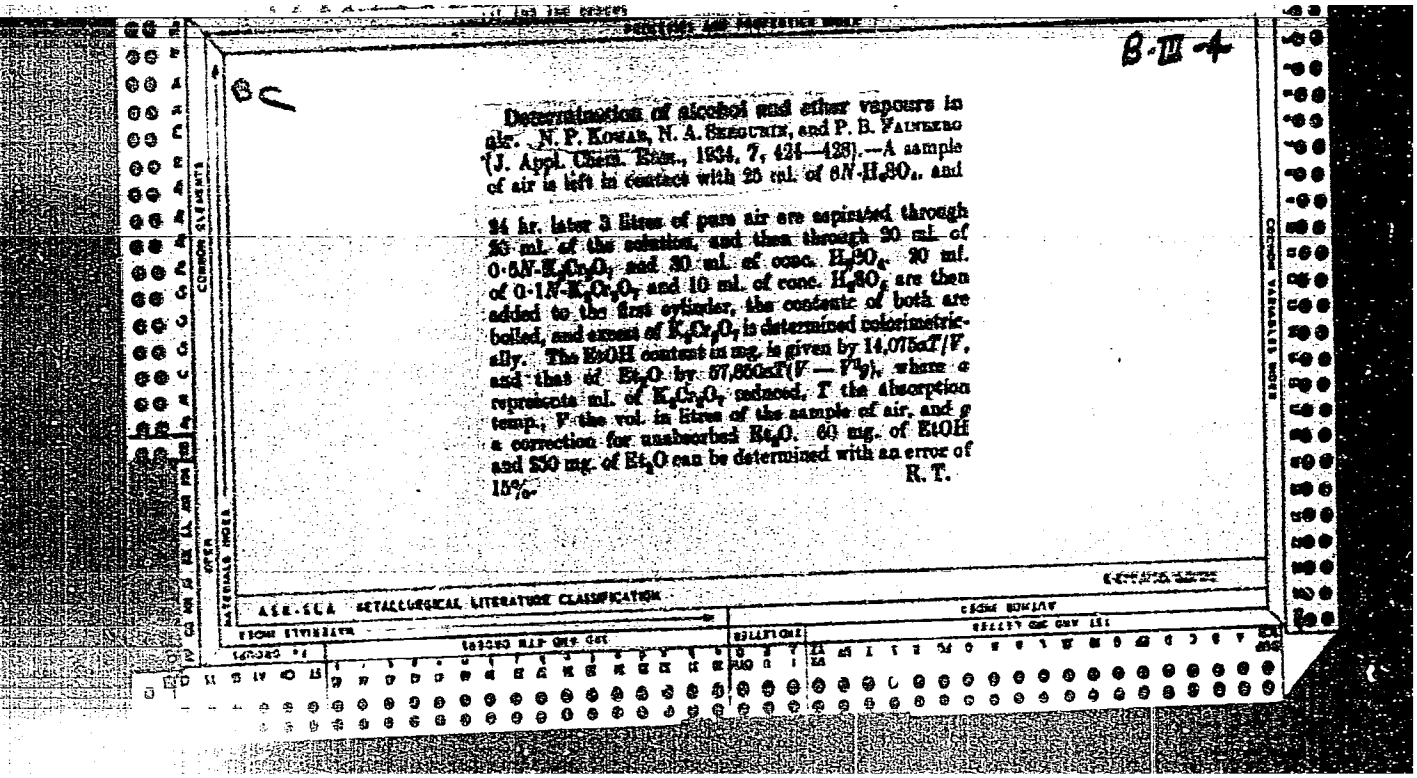
Determination of acetone in the air. N. P. KOMAR. *Ukrainskii Khem. Zhur.* 4, Sci. Pt. 349-60(1929).—The necessity of an accurate method for the detn. of acetone in the air for hygienic purposes is shown. Bibliography, review and criticism based on analytical tests are given of a large no. of methods used at present and a no. of proposed ones. The nitroprusside method was found not sensitive enough. The method of Denigès (*Z. anal. Chem.* 40, 416(1901)) has been found unreliable by C. M. Stachorsky. The most practical method, and the one which gave the most accurate and reliable results, was found to be the following: Collect the sample of air in a colored glass bottle contg. some water, and allow to stand overnight, and then add a measured vol. of 0.05 *N* I soln., allow to stand 0.5 hr. Titrate the excess I with 0.01 *N* thiosulfate.

M. R. AND D. E. S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

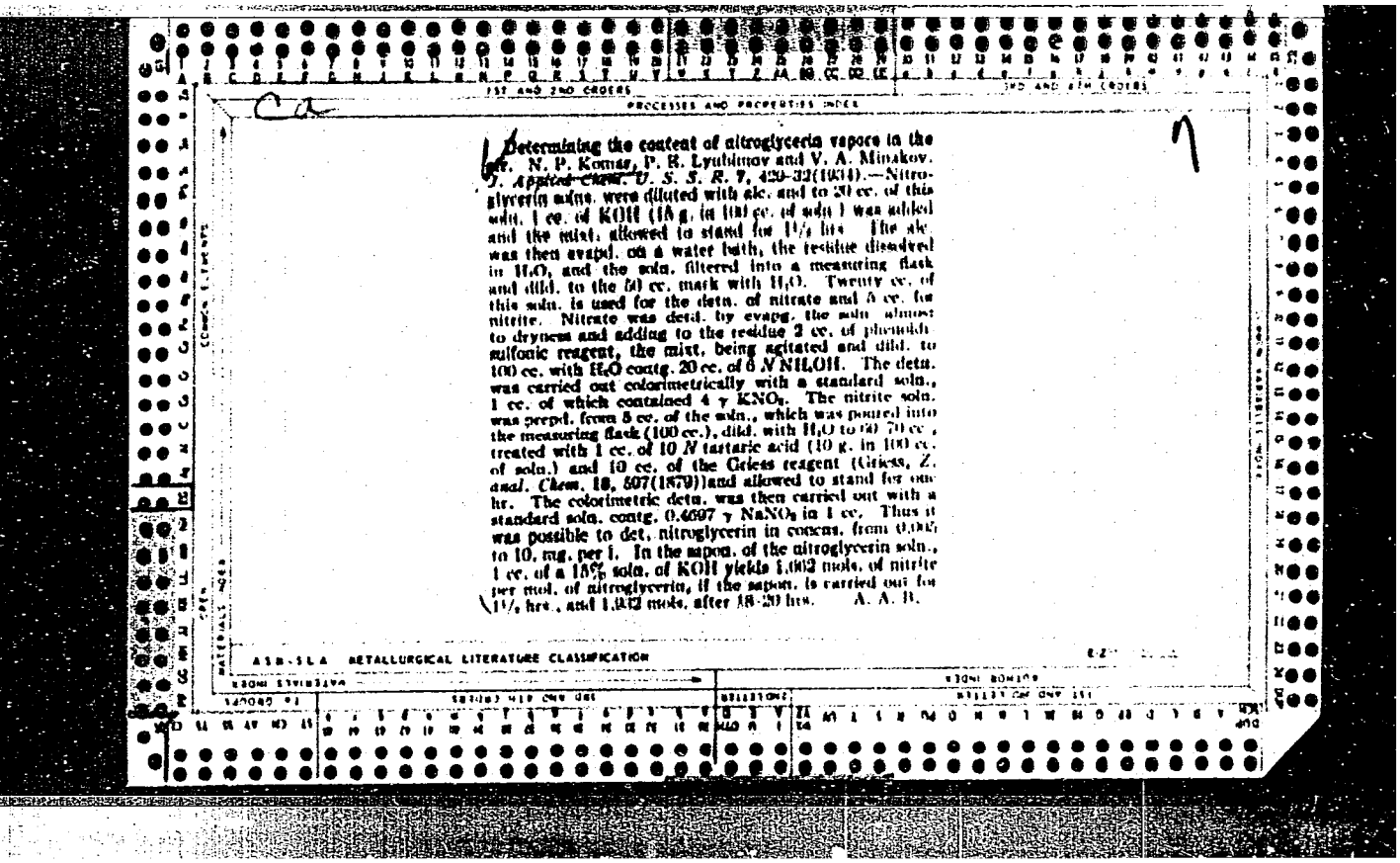


Colorimetric method of F. Hahn and R. Klockmann as applied to Hehner cylinders. N. P. Konuş... *J. Applied Chem. U. S. S. R.* **7**, 420-3(1934); cf. *C. A.* **25**, 470. The method can be carried out in Hehner cylinders to advantage. A. A. Bochtlingk



B-III-4

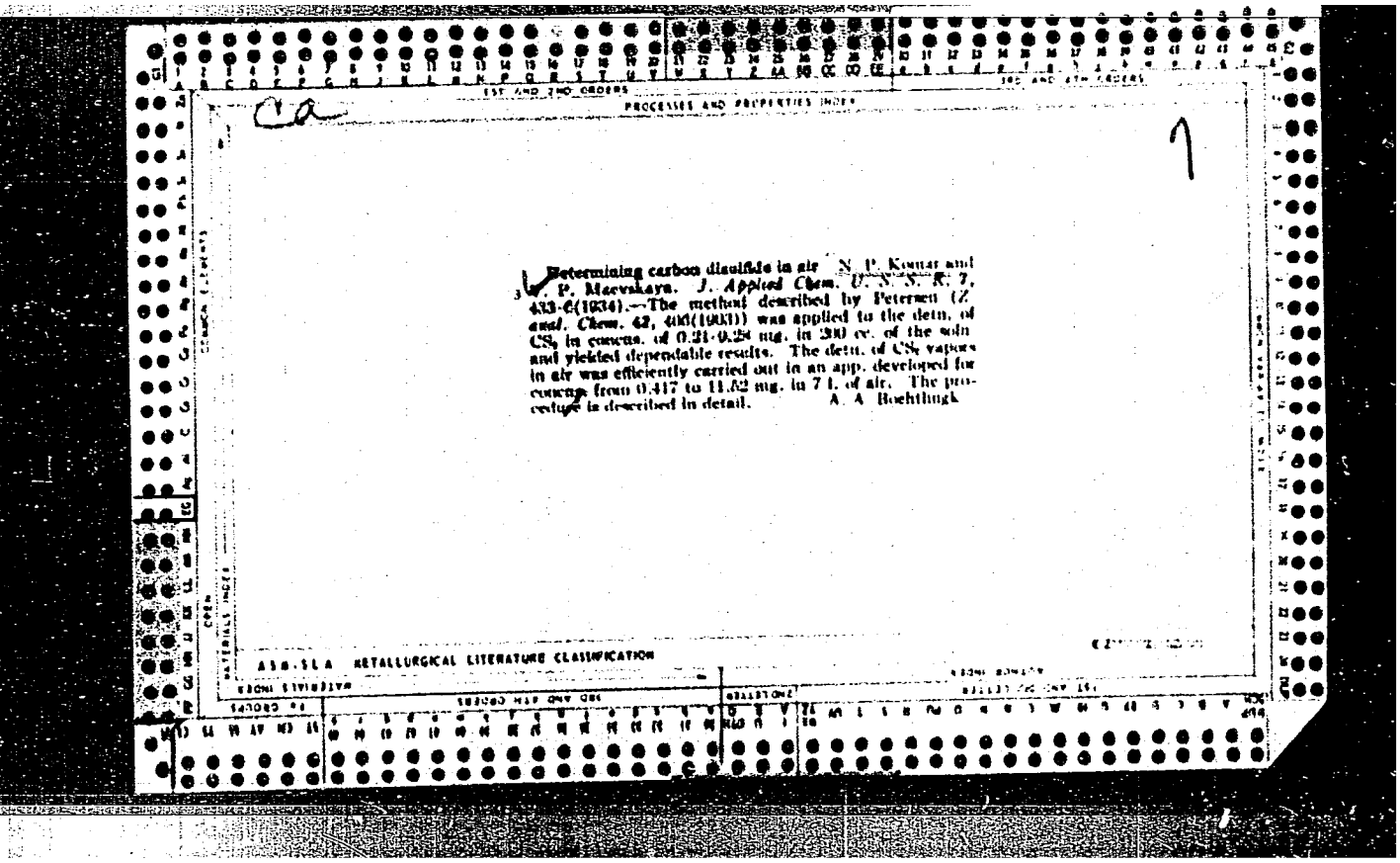
Determination of alcohol and ether vapours in air. N. P. Kowan, N. A. Shegurin, and P. B. Fainberg (J. Appl. Chem. Russ., 1934, 7, 424—428).—A sample of air is left in contact with 25 ml. of $6N$-H_2SO_4, and 24 hr. later 3 litres of pure air are aspirated through 25 ml. of the solution, and then through 20 ml. of $0{\cdot}5N$-$K_2Cr_2O_7$ and 30 ml. of conc. H_2SO_4. 20 ml. of $0{\cdot}1N$-$K_2Cr_2O_7$ and 10 ml. of conc. H_2SO_4 are then added to the first cylinder, the contents of both are boiled, and excess of $K_2Cr_2O_7$ is determined colorimetrically. The EtOH content in mg. is given by $14{,}075aT/V$, and that of Et_2O by $57{,}850aT(V - Vg)$, where a represents ml. of $K_2Cr_2O_7$ reduced, T the absorption temp., V the vol. in litres of the sample of air, and g a correction for unabsorbed Et_2O. 60 mg. of EtOH and 350 mg. of Et_2O can be determined with an error of 15%. R. T.



PROCESSES AND PROPERTIES INDEX

Determining the content of nitroglycerin vapors in the air. N. P. Komar, P. E. Lyubimov and V. A. Minakov. *J. Applied Chem. U. S. S. R.* 7, 429-32(1934).—Nitroglycerin solns. were diluted with alc. and to 20 cc. of this soln. 1 cc. of KOH (15 g. in 100 cc. of soln.) was added and the mixt. allowed to stand for 1½ hrs. The alc. was then evapd. on a water bath, the residue dissolved in H_2O, and the soln. filtered into a measuring flask and dild. to the 50 cc. mark with H_2O. Twenty cc. of this soln. is used for the detn. of nitrate and 5 cc. for nitrite. Nitrate was detd. by evapg. the soln. almost to dryness and adding to the residue 2 cc. of phenoldisulfonic reagent, the mixt. being agitated and dild. to 100 cc. with H_2O contg. 20 cc. of 6 *N* NH$_4$OH. The detn. was carried out colorimetrically with a standard soln., 1 cc. of which contained 4 γ KNO_3. The nitrite soln. was prepd. from 5 cc. of the soln., which was poured into the measuring flask (100 cc.), dild. with H_2O to 70–70 cc., treated with 1 cc. of 10 *N* tartaric acid (10 g. in 100 cc. of soln.) and 10 cc. of the Griess reagent (Griess, *Z. anal. Chem.* 18, 507(1879)) and allowed to stand for one hr. The colorimetric detn. was then carried out with a standard soln. contg. 0.4697 γ $NaNO_3$ in 1 cc. Thus it was possible to det. nitroglycerin in concns. from 0.005 to 10. mg. per l. In the vapors of the nitroglycerin soln., 1 cc. of a 15% soln. of KOH yields 1.002 mols. of nitrite per mol. of nitroglycerin, if the vapors is carried out for 1½ hrs., and 1.032 mols. after 18–20 hrs. A. A. B.

A S B - S L A METALLURGICAL LITERATURE CLASSIFICATION



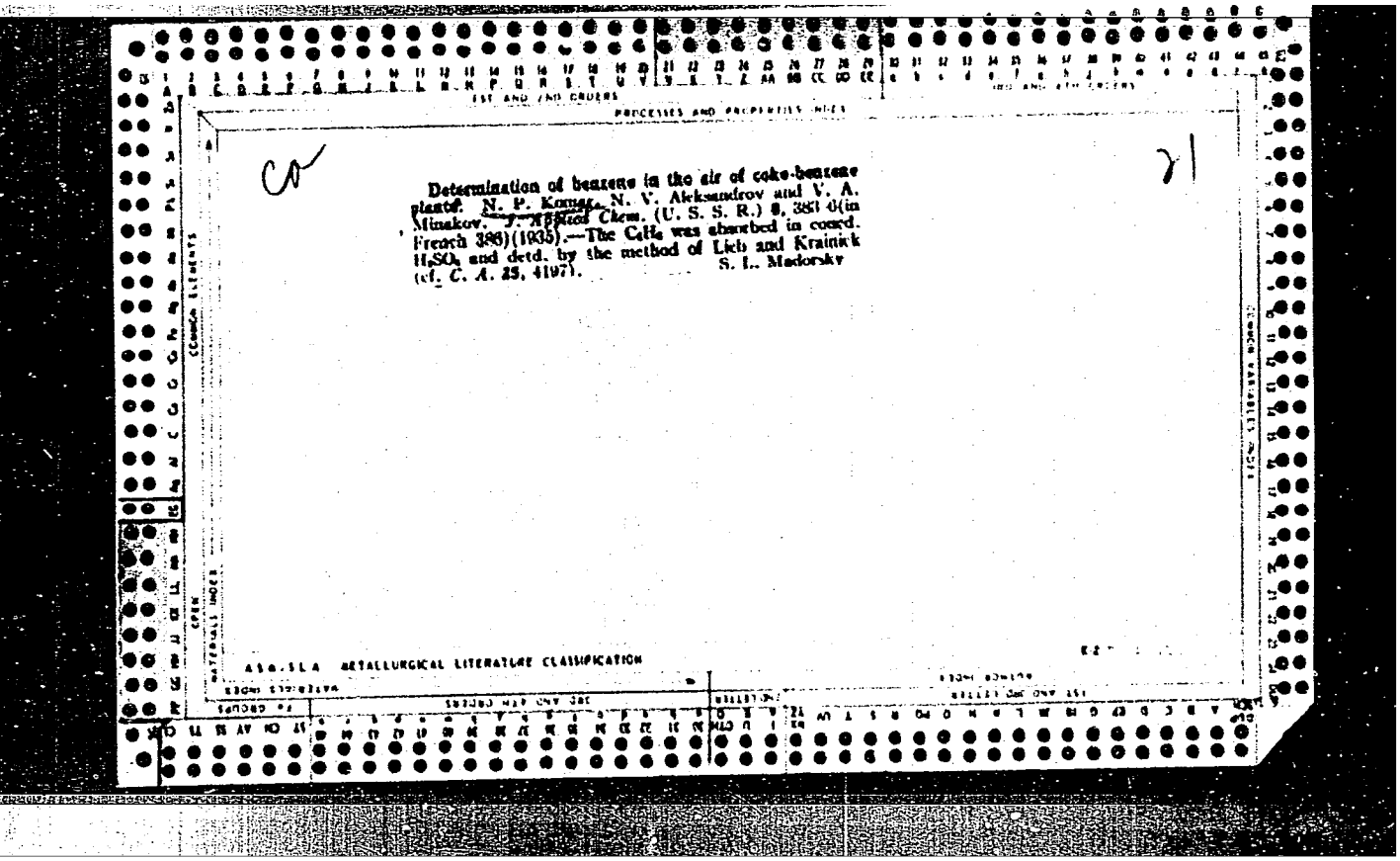
Ca

7

PROCESSES AND PROPERTIES INDEX

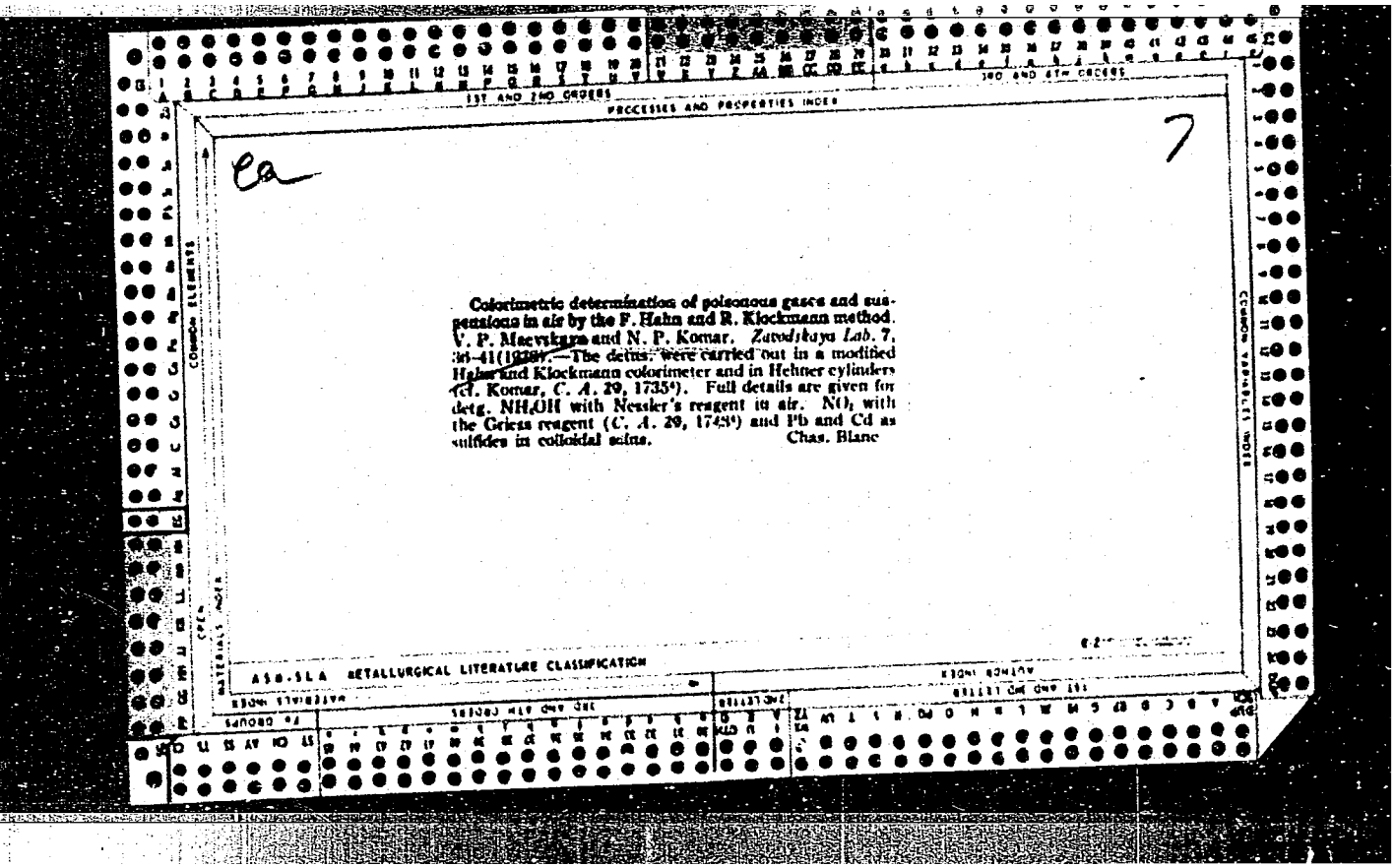
Determining carbon disulfide in air. N. P. Kumar and V. P. Maevskaya. *J. Applied Chem. U.S.S.R.* 7, 433-6(1934).—The method described by Petermen (*Z. anal. Chem.* 42, 400(1903)) was applied to the detn. of CS_2 in concns. of 0.21-0.25 mg. in 200 cc. of the soln and yielded dependable results. The detn. of CS_2 vapors in air was efficiently carried out in an app. developed for concns. from 0.417 to 11.52 mg. in 7 l. of air. The procedure is described in detail. A. A. Boehtlingk

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION

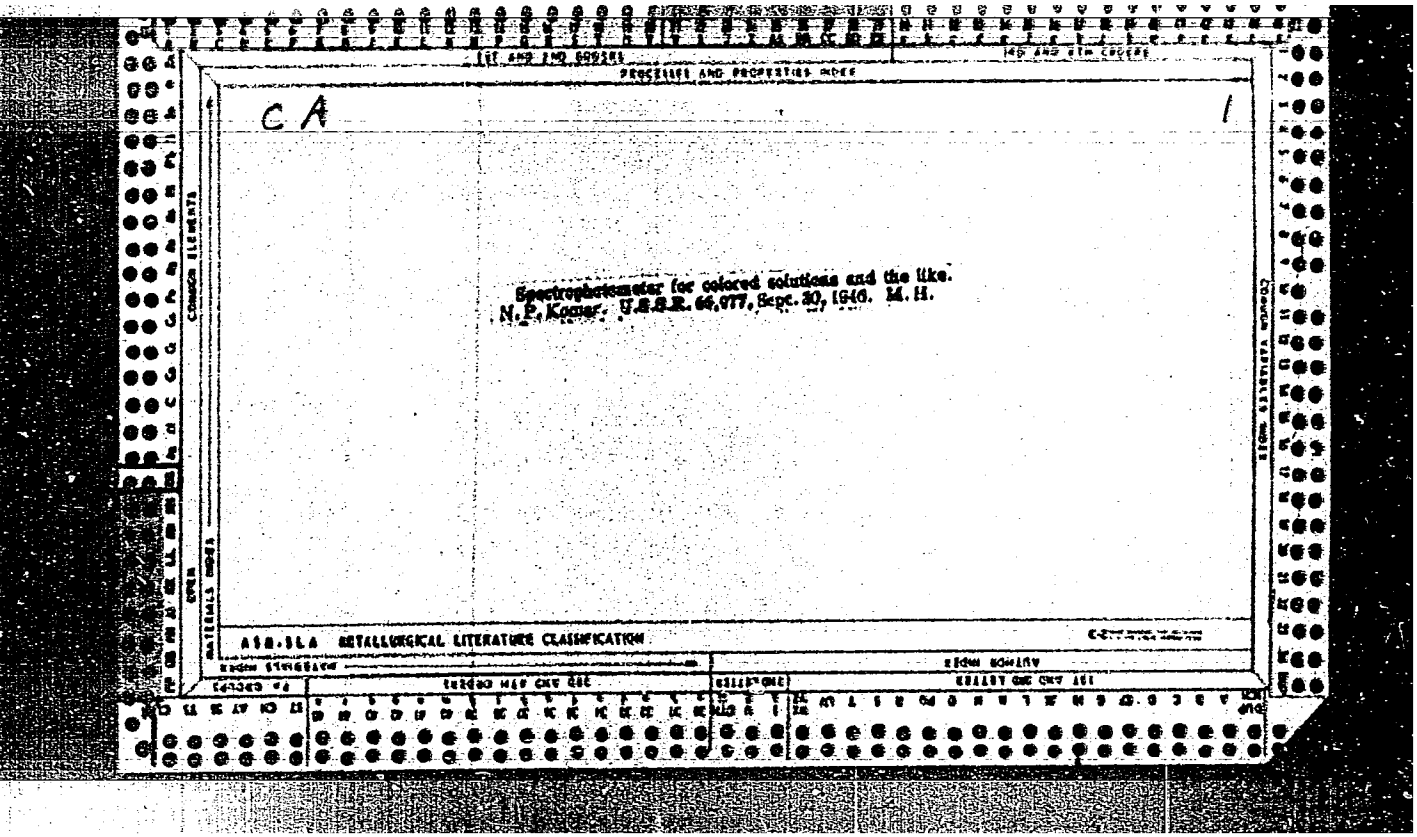


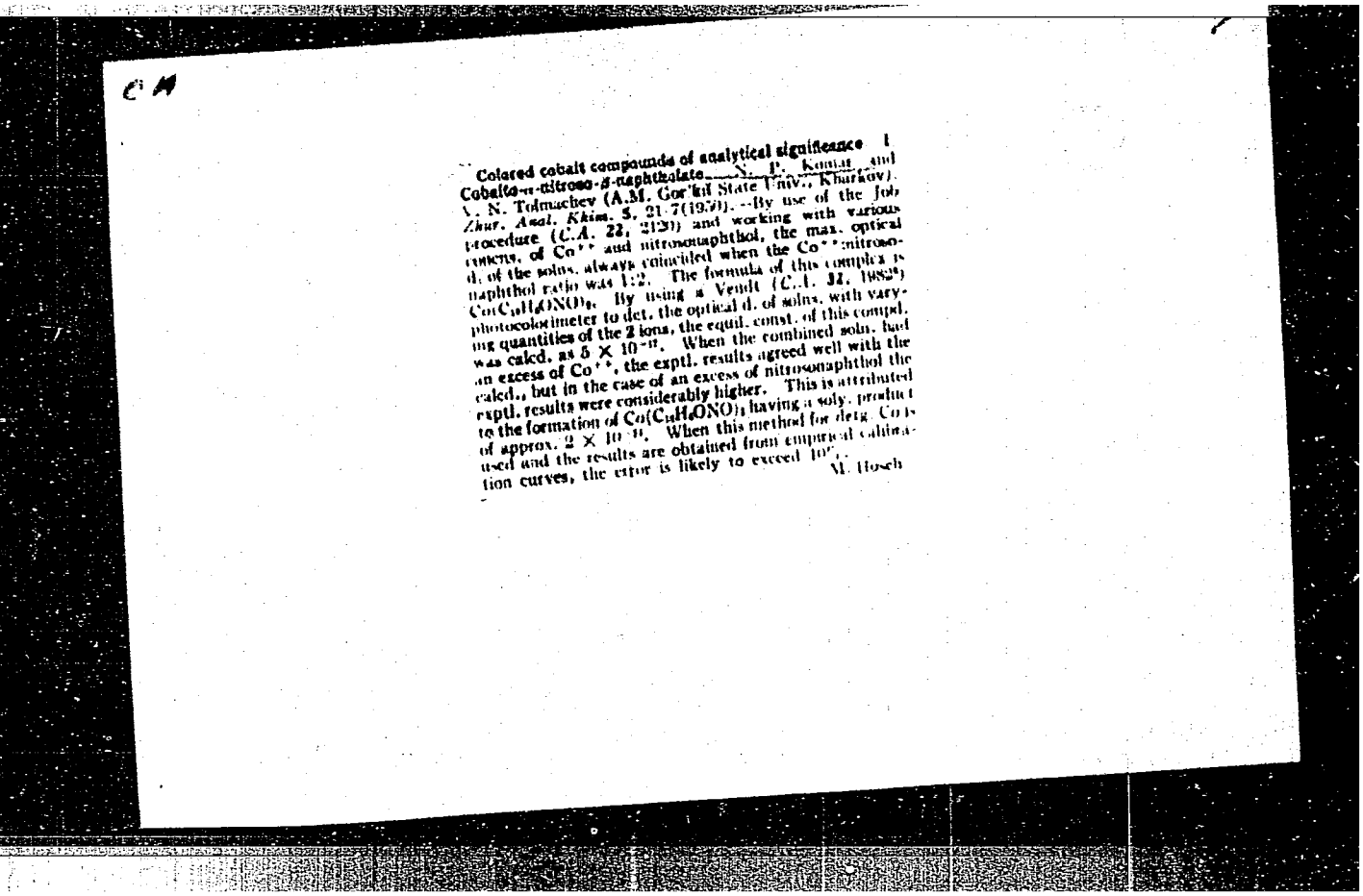
Determination of benzene in the air of coke-benzene plants. N. P. Komar, N. V. Aleksandrov and V. A. Minakov. J. Applied Chem. (U. S. S. R.) 8, 385-6(in French 386)(1935).—The CeHe was absorbed in concd. H_2SO_4 and detd. by the method of Lieb and Krainick (cf. C. A. 25, 4197). S. L. Madorsky

A56.5LA METALLURGICAL LITERATURE CLASSIFICATION



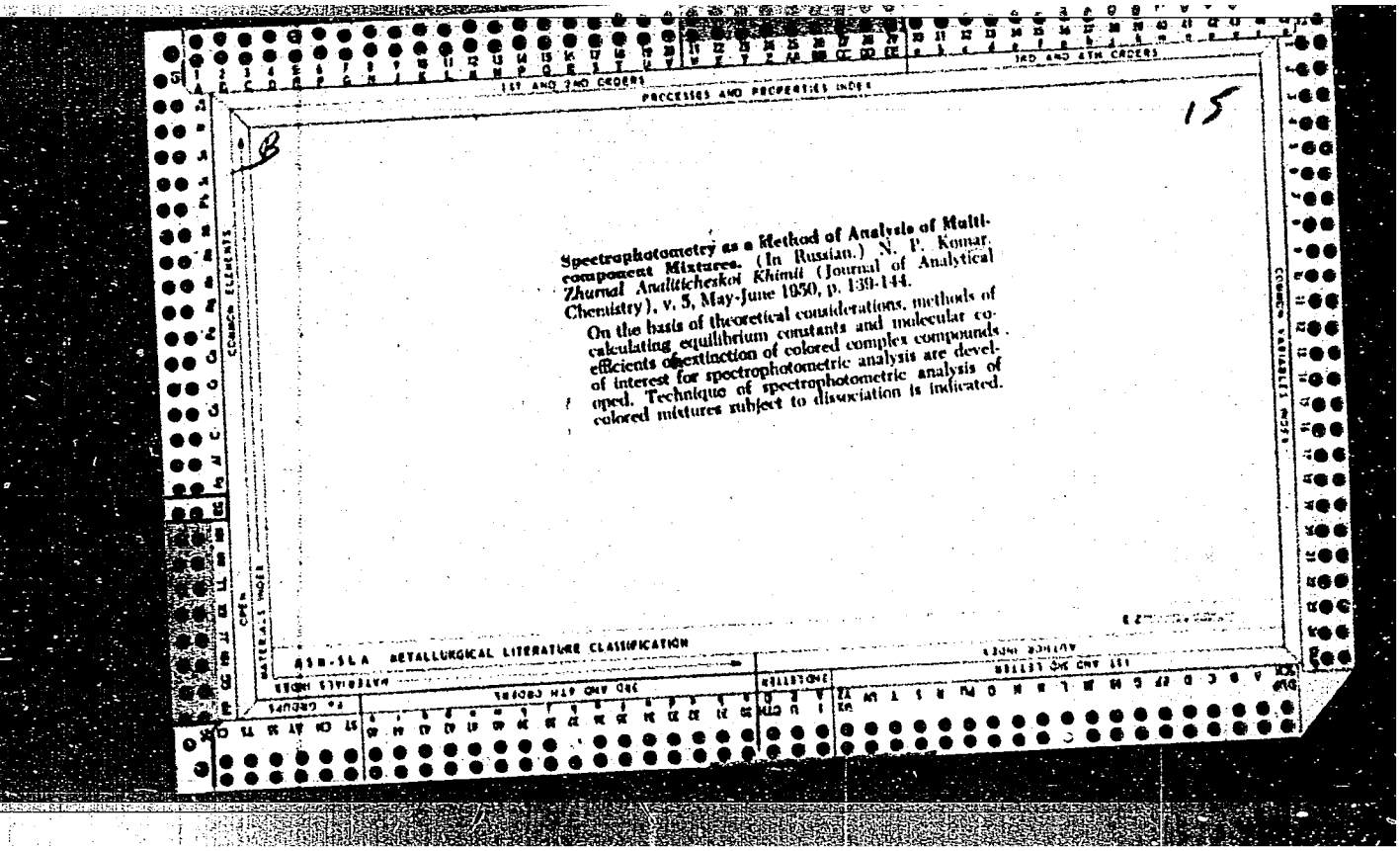
Colorimetric determination of poisonous gases and suspensions in air by the F. Hahn and R. Klockmann method. V. P. Maevskaya and N. P. Komar. *Zavodskaya Lab.* 7, 36-41(1938).—The detns. were carried out in a modified Hahn and Klockmann colorimeter and in Hehner cylinders (cf. Komar, *C. A.* 29, 1735⁵). Full details are given for detg. NH_4OH with Nessler's reagent in air. NO_2 with the Griess reagent (*C. A.* 29, 1745⁹) and Pb and Cd as sulfides in colloidal solns. Chas. Blanc





Colored cobalt compounds of analytical significance. I. Cobalto-α-nitroso-β-naphthalate. V. P. Komar and V. N. Tolmachev (A.M. Gor'kii State Univ., Kharkov). *Zhur. Anal. Khim.* 5, 21-7(1950).—By use of the Job procedure (*C.A.* 22, 2130) and working with various concns. of Co^{++} and nitrosonaphthol, the max. optical d. of the solns. always coincided when the Co^{++}:nitroso-naphthol ratio was 1:2. The formula of this complex is $Co(C_{10}H_6ONO)_2$. By using a Vendt (*C.A.* 32, 1982[8]) photocolorimeter to det. the optical d. of solns. with varying quantities of the 2 ions, the equil. const. of this compd. was calcd. as 5×10^{-11}. When the combined soln. had an excess of Co^{++}, the exptl. results agreed well with the calcd., but in the case of an excess of nitrosonaphthol the exptl. results were considerably higher. This is attributed to the formation of $Co(C_{10}H_6ONO)_3$ having a soly. product of approx. 2×10^{-11}. When this method for detg. Co is used and the results are obtained from empirical calibration curves, the error is likely to exceed 10%.

M. Hosch



Spectrophotometry as a Method of Analysis of Multicomponent Mixtures. (In Russian.) N. P. Komar. *Zhurnal Analiticheskoi Khimii* (Journal of Analytical Chemistry), v. 5, May-June 1950, p. 139-144.

On the basis of theoretical considerations, methods of calculating equilibrium constants and molecular coefficients of extinction of colored complex compounds of interest for spectrophotometric analysis are developed. Technique of spectrophotometric analysis of colored mixtures subject to dissociation is indicated.

USSR/Chemistry - Reaction Kinetics, Unstable May 50
Substances

"Determination of the Composition of Unstable Compounds According to the Ostromyslenskiy-Job System in Systems Which Contain Colored Initial Substances," N. P. Komar', Khar'kov State U imeni A. M. Gor'kiy

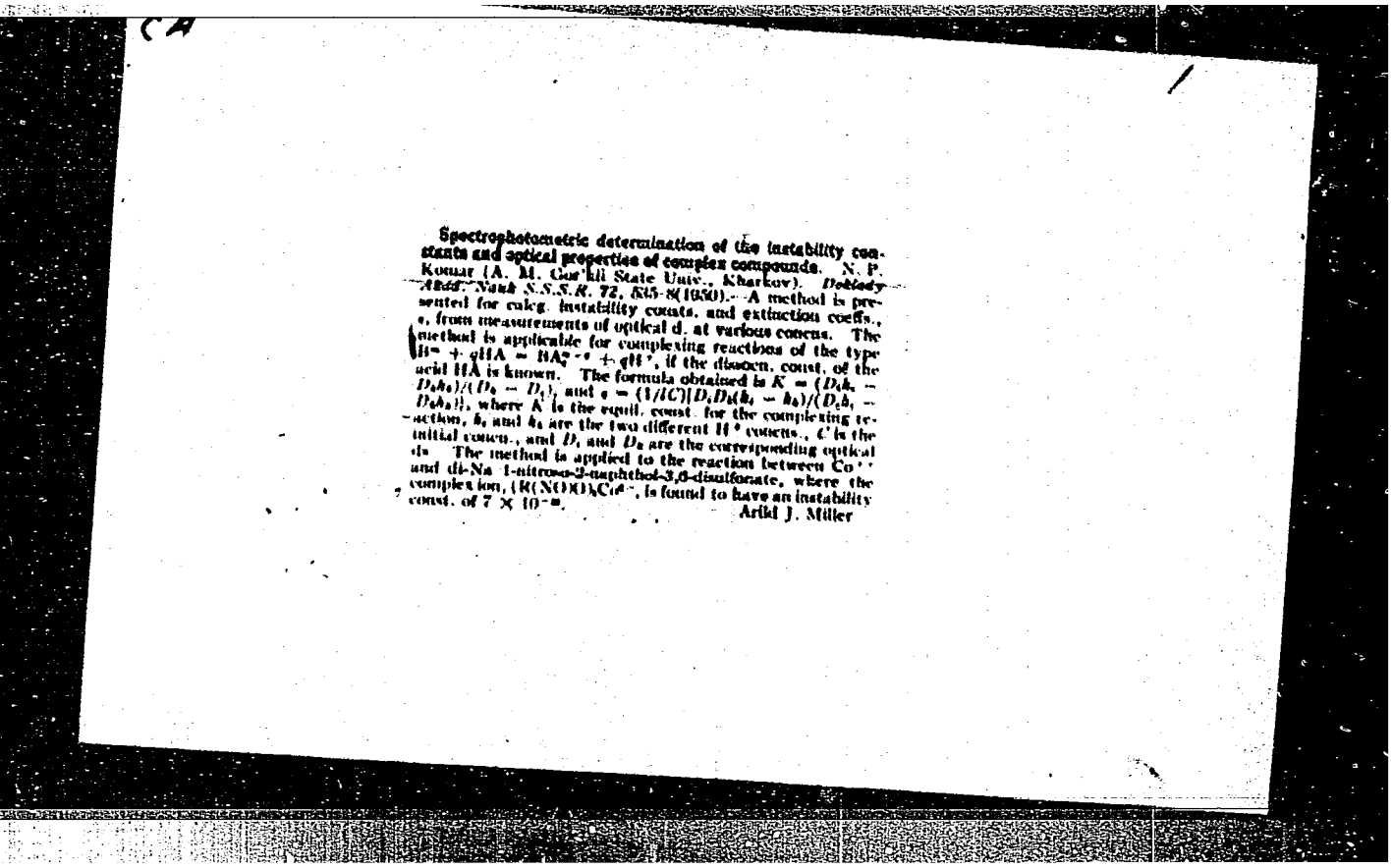
"Zhur Fiz Khim" Vol XXVI, No 5, pp 686-691

Found that it is possible to det the compn of unstable compds according to I. I. Ostromyslenskiy and P. Job's method, if the compds are formed by the reaction $mB + nEA = B_mA_n + nE$ and measurements of optical density are carried out with a wave length which can be absorbed by all components of the equil. 219T7

Established conditions under which it is possible to det the compn in the following cases: (a) when the initial concns of reaction products are zero; (b) when the initial concn of the substance E is very high in comparison with the increase of this concn at the point of equil; (c) when the initial concn of the substance E is not very great. Obtained formulas which det the displacement of the extremal point along the curve optical density - compn of the mixt in the case of (a).

219T7

KOMAR', N.P.



CA

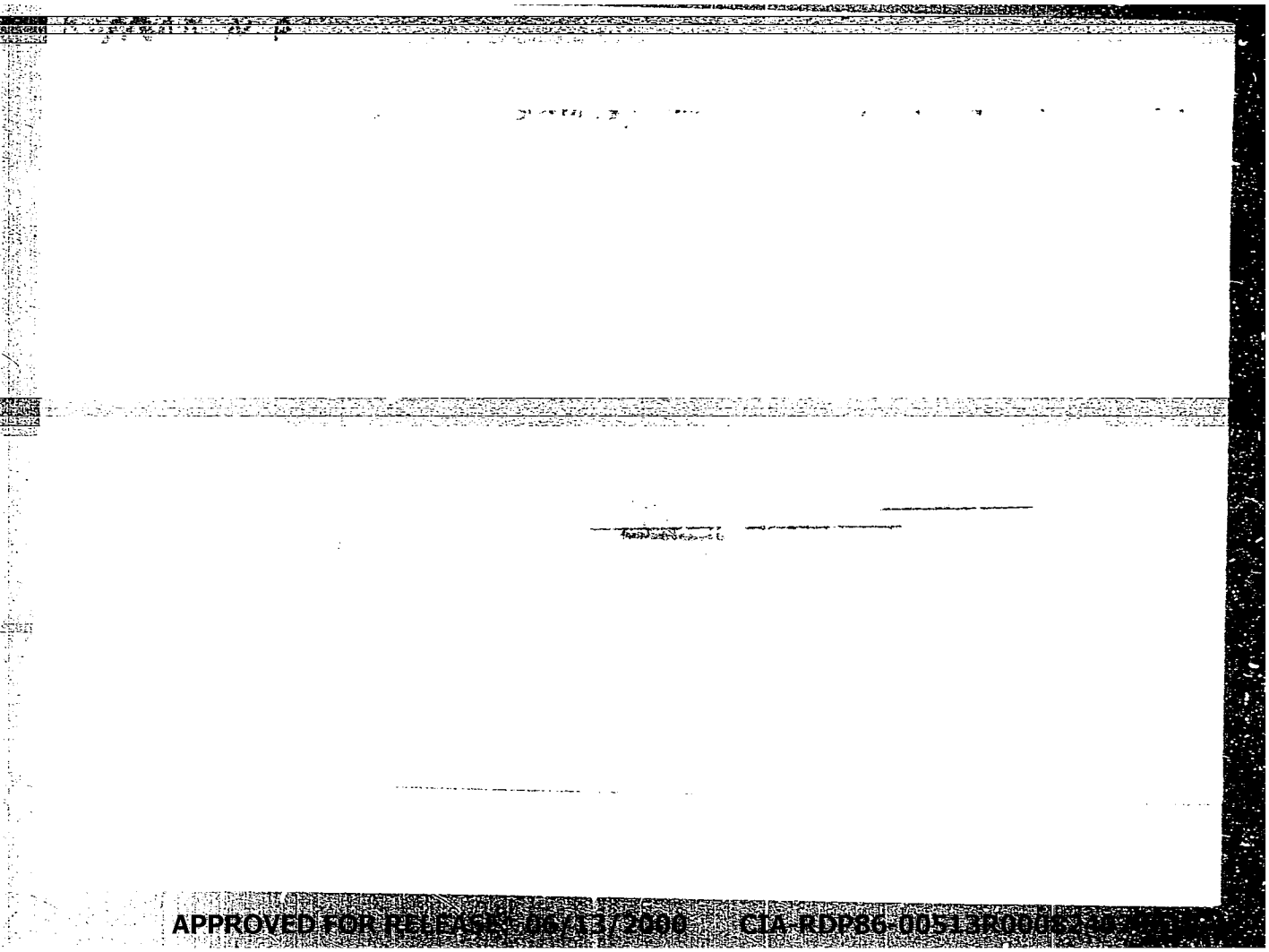
Spectrophotometric determination of the instability constants and optical properties of complex compounds. N. P. Komar (A. M. Gor'kii State Univ., Kharkov). *Doklady Akad. Nauk S.S.S.R.* 72, 855-8(1950).—A method is presented for calcg. instability consts. and extinction coeffs., ε, from measurements of optical d. at various concns. The method is applicable for complexing reactions of the type $H^+ + qHA = HA_q^{-(q-1)} + qH^+$, if the dissocn. const. of the acid HA is known. The formula obtained is $K = (D_2h_1 - D_1h_2)/(D_1 - D_2)$, and $\varepsilon = (1/lC)[D_1D_2(h_1 - h_2)/(D_2h_1 - D_1h_2)]$, where K is the equil. const. for the complexing reaction, h_1 and h_2 are the two different H^+ concns., C is the initial concn., and D_1 and D_2 are the corresponding optical ds. The method is applied to the reaction between Co^{++} and di-Na 1-nitroso-2-naphthol-3,6-disulfonate, where the complex ion, $H(NOD)_3Co^{--}$, is found to have an instability const. of 7×10^{-8}.

Arild J. Miller

KOMAR', N.P.

Sbornik zadach, uprazhnenii i voprosov
po kursu kachestvennogo analiza (Collected assignments,
exer cises, and problems in a course in qualitative analysis).
Khar'kov, Izd. Khar'k, univ., 1952. 231 p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 1, April 1953



KOMAR, N.P.

(2) 2

Rational process for verifying the composition of compounds from analytical data as proposed by P. Eynbrodt. N. P. Komar

(*J. anal. Chem., U.S.S.R.*, 1953, 8, 373—376).—The method of Eynbrodt (1848) slightly modified is recommended for checking the formula of an organic compound derived from analytical data. Calculate a coeff. q for each element equal to (mol. wt. × % of the element found)/(no. of atoms of this element in the formula × at. wt. of the element × 100). With correct analysis and correct formula all q must be unity. Examination of the departures from unity will show if the formula is probably correct or, if probably incorrect, where correction may have to be made. G. S. SMITH.

10-14-54
mlf

KOMAR, N.P.

Absorption spectra and equilibrium. N. P. Komar. (1)
Izvest. Akad. Nauk S.S.S.R., Ser. Fiz. 17, 676-80(1953).—
Theoretical. The influence of complex formation on the optical d. is discussed, and methods are derived to calc. (1) the equil. concn. of the components, (2) the integral absorption curve, (3) the individual absorption curve of each component in equil. S. Pakswer

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KOMAR', N P

Sbornik zadach uprazhenyiy i voprosov po kurus kachestvennogo analiza (Collection of prlblems, exerciese and questions for a course in qualitative analysis) Khar'kov, Izd-vo Khar'kovskogo Universiteta, 1954.

223 P. Tables.

USSR/Chemistry - Spectrophotometric investigations

Card 1/2 : Pub. 147 - 8/27

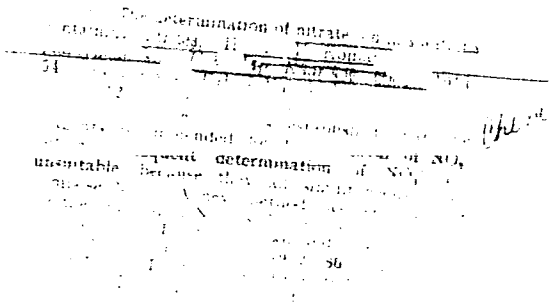
Authors : Komar', N. P.

Title : Spectrophotometric investigation of complex compounds in systems complicated by hydrolysis and preliminary complex formation

Periodical : Zhur. fiz. khim. 28/12, 2142-2151, Dec 1954

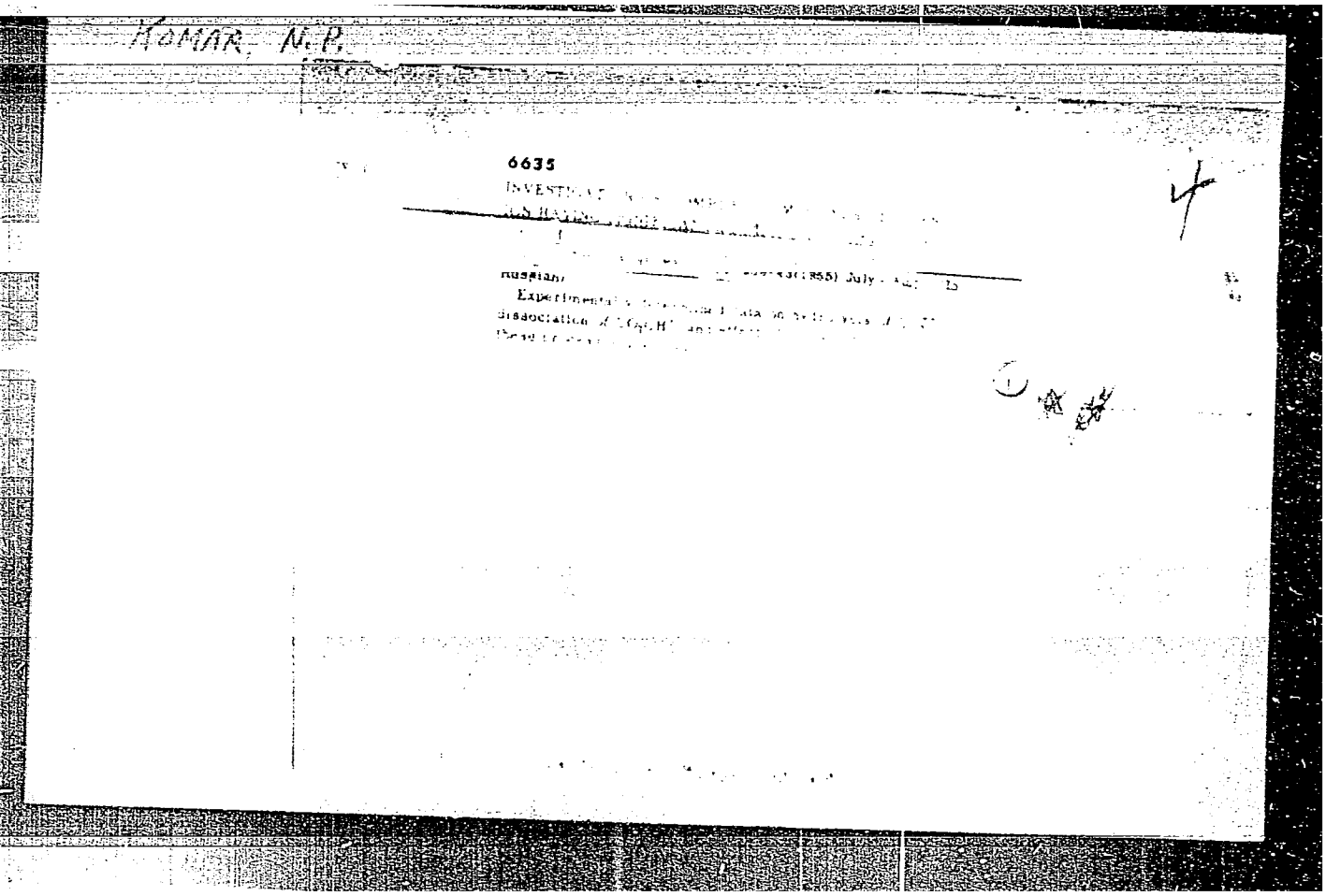
Abstract : It was established experimentally that the composition-optical density diagram cannot solve the problem regarding the ratio of stoichiometric complex formation coefficients if the system contains ion hydrolysis products which participate in the formation of the complex. It is shown that the great difficulties in determining the ratio of stoichiometric coefficients originate during the study of systems in which the basic ions (as result of hydrolysis or coordination of buffer components), form polynuclear complexes. The composition-deviation of optical density from its additive value diagram makes it possible to find the searched for value but offers no aid in determining the composition of the particles which form the complex. Twenty-three references ; 13 USSR: 7 USA; 2 Danish and / FRENCH.

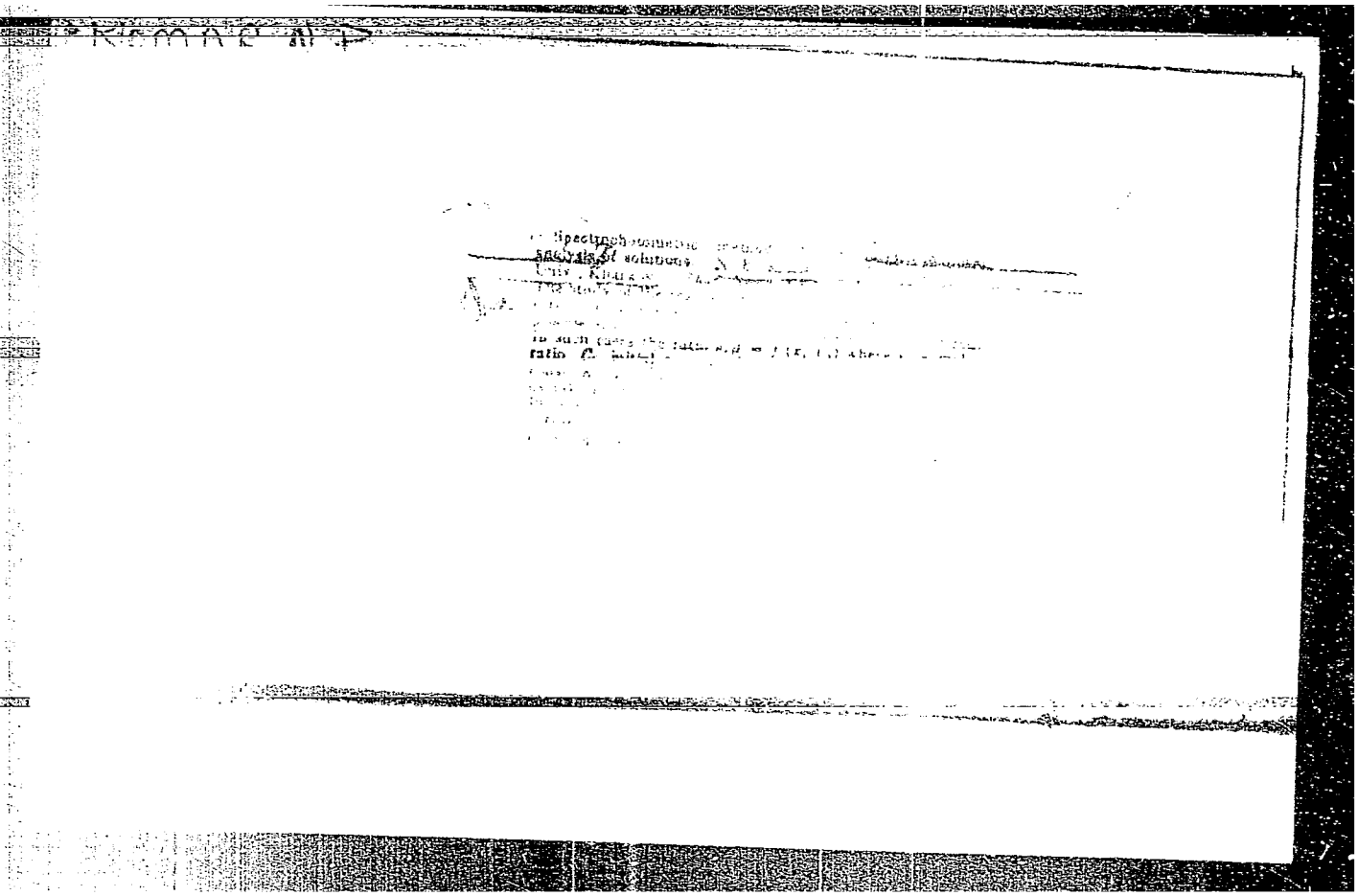
INSTITUTION: The A. M. Gorkiy State Univ., Kharkov

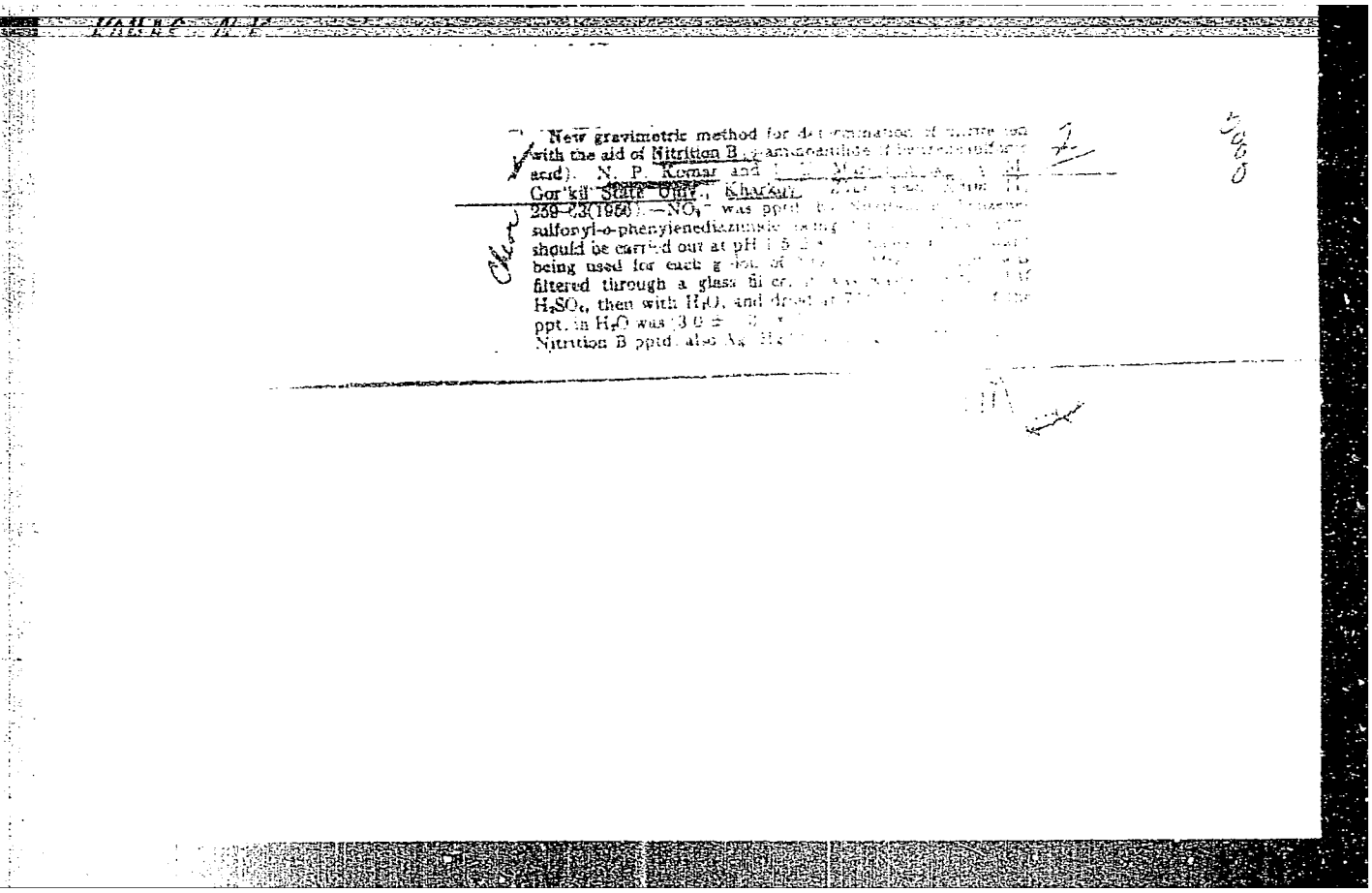


KOMAR', Nikolay Petrovich; IZMAYLOV, N.A., professor, otvetstvenny redaktor; CHERNYSHENKO, Ya.T., tekhnicheskiy redaktor.

[Principles of qualitative chemical analysis] Osnovy kachestvennogo khimicheskogo analiza. Khar'kov, Izd-vo Khar'kovskogo univ. Vol.1 [Ionic equilibriums] Ionnye ravnovesiia. 1955. 446 p. (MLRA 9:6)
(Ions) (Phase rule and equilibrium)







New gravimetric method for [illegible] with the aid of Nitrition B [illegible] acid). N. P. Komar and [illegible] Gor'kii State Univ., Kharkov. Zh. Analit. Khim. 15, 239–43(1960). —NO_3^- was ppd. [illegible] sulfonyl-o-phenylenediazonium [illegible] should be carried out at pH [illegible] being used for each g. [illegible] filtered through a glass fi[lter] [illegible] H_2SO_4, then with H_2O, and dried at [illegible] ppt. in H_2O was [illegible]. Nitrition B ppd. also [illegible]

KOMAR', N.P.

On the article of A.K. Babko "Spectrophotometry of solutions of complex compounds. Ukr.khim.zhur. 22 no.2:259-261 '56. (MLRA 9:8)

1. Khar'kovskiy gosudarstvennyy universityet imeni A.M. Gor'kogo.
(Spectrophotometry)
(Compounds, Complex)
(Babko, Anatolii Kirillovich, 1905-)

KOMAR', N.P.

Spectrophotometry of multicomponent systems. Part 14: Determining the composition of a complex compound formed in an aqueous solution and partially extracted by the nonaqueous solvent. Uch.zap. KHGU 71: 119-128 '56. (MLRA 10:8)

(Complex compounds) (Spectrophotometry)

KOMAR', N.P.

Spectrophotometry of multicomponent systems. Part 15: Investigating reagents distributed between two solvents. Uch.zap. KHGU 71:129-134 '56. (MLRA 10:8)

(Co[illegible]mds)
(Spectrophotometry)

KONAR', N.P.

Spectrophotometry of multicomponent systems. Part 16: Determining the constants of a complex compound distributed between two solvents. Uch.zap. KHGU 71:135-144 '56. (MLRA 10:8)
(Complex compounds) (Spectrophotometry)

KOMAR' N.P.

Short survey of scientific activities of P. Einbrodt, professor of the Kharkov University. Uch.zap. KHGU 71:223-236 '56. (MLRA 10:8)
(Einbrodt, P., 1809-1857)

KOMAR, N.P.

AUTHOR: None Given. 30-12-34/45

TITLE: Defense of Dissertations (Zashchita dissertatsiy). January-July 1957 (Yanvar' - iyul' 1957 g.). Section of Chemical Sciences (Otdeleniye khimicheskikh nauk).

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, pp. 111-112 (USSR).

ABSTRACT: At the Institute for Hydrochemistry (Gidrokhimicheskiy institut). Application for the degree of Candidate of Chemical Sciences: M.N. Tarasov - Forming of Ion composition and the hydrochemical regime of water in the ponds of the northeastern Azov district (Formirovaniye ionnogo sostava i gidrokhimicheskiy rezhim vody prudov severo-vostochnogo Priazov'ya).
At the Institute for high-molecular Compounds (Institut vysokomolekulyarnykh soyedineniy). Application for the degree of Candidate of Physical-Mathematical Sciences: L.L. Burshteyn - Investigation of dielectric polarization of polymers (Issledovaniye dielektricheskoy polyarizatsii polimerov).
At the Institute for Geochemistry and Analytical Chemistry imeni V.I. Vernadskiy (Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo). Applications for the degree of Doctor of Chemical Sciences: M.G. Valyachko - Geochemical rules

Card 1/5

governing the formation of deposits of potash salts (Geokhimicheskiye zakonomernosti formirovaniya mestorozhdeniy kaliynykh soley). A.I. Kokorin - Tri- and Tetraheteropoly-Acids (Tri- i tetrageteropolikisloty). N.P. Komar' - The bases of chemical qualitative analysis (Osnovy kachestvennogo khimicheskogo analiza). Applications for the degree of Candidate of Chemical Sciences: N.P. Kondratyuk - Investigation of the process of precipitation and the structure of the pseudomorphous precipitation on the basis of magnesium hydroxide (Issledovaniye protsessa osazhdeniya i struktury psevdomorfnogo osadka na primere gidrookisi magniya). R.R. Shvangiradze - The spectral analysis of rare earth and some other rare elements (Spektral'nyy analiz redkozemel'nykh i nekotorykh redkikh elementov).

At the Institute for Organic Chemistry imeni N.D. Zelinskiy (Institut organicheskoy khimii imeni N.D. Zelinskogo). Application for the degree of Doctor of Chemical Sciences: K.G. Ioffe - On the Structure of silk fibroin (O stroyenii fibroina shelka). Applications for the degree of Candidate of Chemical Sciences: I.F. Bel'skiy - Catalytic hydrogenolysis of furan homologues (Kataliticheskiy gidrogenoliz gomologov furana). M.L. Kirmalova - Synthesis and transformation of di-(2-tienyl)

KOMAR', N.P., dotsent

Spectrophotometry of multicomponent systems. Part 17: Use of equilibrium between colored and colorless compounds for the determination of the composition of the latter. Uch. zap. KHGU 82:87-94 '57. (MIRA 12:9)

(Chemistry, Analytical) (Spectrophotometry)

KOMAR', N.P., dotsent

Spectrophotometry of multicomponent systems. Part 18: Investigation of equilibrium between colored and colorless compounds for the determination of the instability constant of the latter. Uch. zap. KHGU 82:95-106 '57. (MIRA 12:9)
(Phase rule and equilibrium)
(Complex compounds)
(Spectrophotometry)

KOMAR', N.P., dotsent

Ionic equilibria, their spectrophotometric investigation and application in analytical chemistry. Uch. zap. KHGU 95:117-142 '57.
(MIRA 12:10)
(Phase rule and equilibrium) (Complex compounds)

KOMAR, N. P.
p. 2

PHASE I BOOK EXPLOITATION SOV/3850

SOV/9-M-8(11)

Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii imeni V. I. Vernadskogo. Komissiya po analiticheskoy khimii

Spektrofotometricheskiye i kolorimetricheskiye metody analiza (Spectrophotometric and Colorimetric Methods of Analysis) Moscow, 1958. 286 p. (Series: Its: Trudy, tom. 8 (11) Errata slip inserted. 3,000 copies printed.

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PURPOSE: The publication is intended for chemists, particularly analytical chemists and geochemists.

COVERAGE: This collection of 29 articles is published as Volume VIII (XI) of the Transactions of the Committee on Analytical Chemistry at the Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, Academy of

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Sciences USSR. The general subject of the volume is the investigation of spectrophotometric and colorimetric analysis. Individual articles on the following topics may deserve special attention: the present state of light absorption analysis, the sensitivity of the colorimetric methods of inorganic analysis, the basic variations of the kinetic method of analysis, spectrophotometric investigation of heteropolyacids of germanium, a new colorimetric method of determining small quantities of thallium, a fluorimetric method of determining uranium, spectro-photometric investigation of the behavior of oxidation-reduction indicators, a phasometric optical-acoustical method of gas analysis, and a description of an automatic spectrophotometric gas analyser. No personalities are mentioned. References are given at the end of each article.

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IZMAYLOV, Nikolay Arkad'yevich; KOMAR', N.P., prof., doktor khim. nauk, otv.red.; KOSTYUK, P.D., red.; PROFIMENKO, A.S., tekhred.

[Electrochemistry of solutions] Elektrokhimiia rastvorov. Khar'kov, Izd-vo Khar'kovskogo gos.univ., 1959. 957 p. (MIRA 12:8)

1. Chlen-korrespondent Akademii nauk USSR (for Izmaylov). (Electrochemistry) (Solution (Chemistry))

5(2)

AUTHOR: Komar', N. P.

TITLE: On the Theory of Complexometric Titration With Metal Indicators (K teorii kompleksonometricheskogo titrovaniya s metalloindikatorami)

SOV/75-14-2-2/27

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 2, pp 152-160 (USSR)

ABSTRACT: In the present paper the theory of the ionic equilibria is used for the evaluation of the accuracy of complexometric titration with metal indicators. In this connection the possibility of a subsequent titration of two metal ions and of the determination of one of the two ions after the precipitation of the other one by a suited reagent was investigated. The coloring characteristics of systems were computed, the equivalent initial concentrations of metal ions and Complexon were obtained. Further, the initial concentration of the Complexon which causes a certain coloring was computed. Moreover, the problem of the subsequent titration of two metal ions reacting with the same reagent was investigated: 1) for pH values at which hydrolysis of the Complexon anion can be neglected, while hydrolysis of the two metal ions must be taken into account, and 2) for pH values at which hydrolysis of the

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Complexon anion and one of the two metal ions must be taken into account. In this paper also general methods of computing the results of complexometric titrations in systems containing masking or precipitation reagents are given. All problems mentioned are mathematically dealt with in detail in this paper. There are 16 references, 6 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

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AUTHOR: Komar', N. P.

TITLE: Determination of the Stability Constants in the Stepwise Complex Formation

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol. 15, No. 3, pp. 260 - 263

TEXT: To determine the stability constants β_n in stepwise complexing, two polynomial equations (1) were suggested in publications (Refs.1,2) ($\bar{n} = B/b$ ... "complexity" according to Leden (Ref.1); $\bar{n} = (A-a)B^{-1}$ ... "formation function" according to Bjerrum (Ref.2); $B = c_B$, $b = [B]$; $A = c_A$, $a = [A]$; N ... coordination number; $\beta_n = [BA_n]b^{-1}a^{-n}$ at constant ionic strength). The values of B and A are always known, N being given by the position of B in the periodic system and depending on the maximum value of $\bar{n}$. b and a are not always measurable; still, a, and thus also $\bar{n}$, may be calculated according to Refs.3 and 4 for an arbitrary solution, of

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which the pH, B and A are known, if the addend is the anion of a weak acid and if no polynuclear complexes or complexes which contain protons appear in the system. These conclusions, however, were made without considering the hydrolysis of the B-ion. The author of the present paper checked the mentioned statements. To investigate the stepwise complexing, either a strong acid HR ($c_{HR}=c_{H^+}=R$) or a strong base MOH ($c_{MOH}=c_{OH^-}=M$) were added to a system which contained the $c_{BR_\mu}=c_{B^{\mu+}}=B$ and $c_{M_\nu A}=c_{A^{\nu-}}=A$.

In the first case $[A^{\nu-}]$ = a decreases, in the second case it increases which causes a corresponding change in the yields of the complex and of the hydrolysis products of the $B^{\mu+}$ and $A^{\nu-}$ ions and a change of the values of Φ and $\bar{n}$. In the most general case μ equilibria of the stepwise hydrolysis of the $B^{\mu+}$ ion (Equation (2)), Q hydrolysis equilibria of the same $B^{\mu+}$ ion which result in the formation of hydroxyl complexes (Equation (3)), ν equilibria of the association of the $A^{\nu-}$ ion with H^+ ions (Equation (4)), and N equilibria of the stepwise complex formation

(Equation (5)) have to be considered. In equation (3) $k_0 k^q$ is the constant of the q-th step of the multistage hydrolysis, in equation (4) $\sigma_j = (K_{\nu-j+1} \cdots K_{\nu-1} K_\nu)^{-1}$ and $K_1, K_2, \ldots, K_\nu$ - are the dissociation constants of the weak acid $H_\nu A$ for the individual dissociation stages. If the law of mass action is applied to equations (2) and (5), equations (6) and (7) result for the mass balance. The condition of the electroneutrality adopts the form (8), when the strong acid HR is added, and the form (9) in the case of addition of the strong base MOH. In equation (8) $[R^-] = c_{R^-} = \mu B + R$ and $[M^+] = c_{M^+} = \nu A$; in equation (9) $[R^-] = c_{R^-} = \mu B$ and $[M^+] = c_M = \nu A + M$. It follows from equation (6), that in the most general case the first equation (1) according to Leden adopts the shape (10) for the calculation of β_n, whereas the second equation (1) according to Bjerrum adopts the shape (11) for the same general case, if the value $A - \varphi_2 a$ in equation (7) is divided by B from equation (6). In the equations (10) and (11)

$f(b) = k_o \sum_{q=1}^{Q} (q+1)k^q b^q h^{-qp}$, in equation (11) $\bar{n}_o = (A-\varphi_2 a)B^{-1}$. When hydroxyl complexes occur, a as well as b have to be known for the calculation of β_n; in this case, the calculation of β_n by (10) is far more convenient than by (11). In the special case, if the concentrations of the hydroxyl complexes may be neglected, the knowledge of a will suffice for the calculation of β_n from equation (11). In this case, therefore, this equation is more important than equation (10). To calculate the values of a and b, equation (7) is multiplied by ν, and then equation (6) which is extended with μ is derived. Thus equation (12) is obtained. By substituting (12) under consideration of the values of φ_1 and φ_2 into equations (8) and (9), equations (13) and (14) result after transformations, φ_1 and φ_2 being given by the equations (15). The equations (13) and (14) are of (q+1) degree with respect to b and linear with respect to a. It is therefore necessary for the calculation of a to know b, i.e. a has to be measured prior to the calculation of b. The measurement of the equilibrium concentrations is

therefore indispensable contrary to the statements in Refs.3 and 4. When hydroxyl complexes occur, b has to be measured; then a is obtained from the equations (16). If there are no hydroxyl complexes in the system, the equations (17) readily result from (13) and (14). It may be seen from them that in the simultaneous gradual hydrolysis of both ions b must be known for the calculation of a and vice versa. Only in these cases, if one of the two ions, e.g. $A^{\nu-}$, hydrolyzes, a may be calculated from one of the two simple equations (18). In this case only the equation according to Bjerrum is recommendable for the calculation of β_n, as in this case the graphical integration (Ref. 4) may be used to calculate the values of b from the values of a. If only the $B^{\mu+}$ ions are hydrolyzed, b may be calculated from the two equations (19). The values of a have to be measured at any rate in this case, as they enter both the equation according to Leden and that according to Bjerrum. To determine β_n from the equations according to Leden and Bjerrum mainly graphical methods are used (Refs.1, 2,4,7-9). The stability constants obtained in this way are, however, not very precise, since extrapolation and limiting processes take place in a

range of observations where the experimental errors are particularly high. Also the method of the subsequent correction of values suggested by some authors was criticized, since such corrected constants are not the wanted constants of the law of mass action but only coefficients of one of the many possible interpolation formulas. The only rational method of solving the equation systems (10) and (11) is a variant of the method of least squares which is applied to determine the most probable values of physical constants (Ref. 11). The accuracy of the values of the constants may be estimated with arbitrary reliability by means of the methods suggested by A. N. Krylov (Ref. 12) and V. I. Romanovskiy (Ref. 13). The occurrence of values of the constants which do not differ statistically from zero may be regarded as proof for a negligibly low concentration of the particles concerned. There are 13 references: 3 Soviet, 2 French, 2 Danish, 1 German, 1 British, and 4 US.

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