"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

S/273/63/000/002/001/010
A052/A126

AUTHOR: Kotoč, Štefan

TITLE: An appliance for exhaust gas decontamination and noise muffling for internal-combustion engines

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 39. Dvigateli vnutrennego sgoraniya, no. 2, 1963, 10 - 11, abstract 2.39.72P (Czech. pat., cl. 46c6, 6/02, no. 101727, November 15, 1961)

TEXT: Exhaust gases are led tangentially through the hole 8 into the housing 1 (see Fig.) and mix with the air coming from the sleeve 9. Further mixing takes place in the snail 10 from which the mixture comes into a chamber with double walls 2 and 4. Additional fuel is supplied through the pipe 5, and by means of the ignition plug 6 the final combustion of combustile components contained in exhaust gases is performed. The appliance operates at the same time as a muffler. There is one figure.

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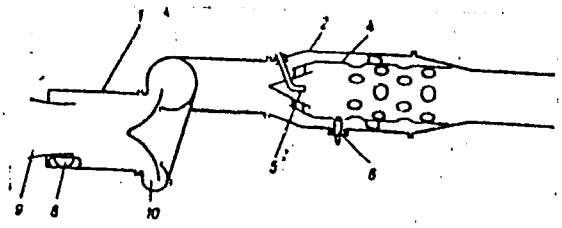
S/273/63/000/002/001/010
A052/A126

Figure



A. Zhukov

[Abstracter's note: Complete translation]

Card 2/2

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOC, S., inz. CSc.

Calculation of continuous cams on an automatic digital computer.
Strojirenstvi 14 no.5:337-342 My '64.

1. Research Institute of Motor Vehicles, Prague.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOC, Stefan, inz.

Suppression of motor vehicle exhaust fumes. Tech praca 15 no.2:117-118 F '63.

1. Ustav pro vyzkum motorovych vozidel.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOC, Stefan, inz. CSc.

What are the vortex apparatus? Tech praca 16 no. 4:261-263 Ap '64.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOCH, Shtefan, inzh. [Kotoc, Stepan]

"Thermal processes in internal-combustion engines" by V.P. Kalabin. Reviewed by Stepan Kotoc. Vest. mash. 41 no. 5: 87-89 My '61. (MIRA 14:5)

1. Prazhskiy nauchno-issledovatel'skiy avtomobil'nyy institut. (Gas and oil engines) (Kalabin, V.P.)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOC, S., inz. CSc.

Harmonic analysis of a function from the digital computer table. Strojirenstvi 14 no.9:667-669 S '64.

1. Research Institute of Motor Vehicles, Prague.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

YESTIFEYEV, A.M.; KOTOCHIGOVA, M.I.

Instrument for determining the percentage of needle ice in a stream-flow during the measurement of its discharge (needle-ice meter). Trudy VNIIM no.1:19-31 '48. (MIRA 11:11)
(Ice on rivers, lakes etc.-- Measurement)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOCHIGOVA, M.I.

Precision of standard resilient dynamometers. Trudy VNIIM No.37:14-28 '59. (MIRA 13:4)
(Dynamometer)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOCHIGOVA, M.I.

Selecting the shape of a resilient body for dynamometers.
Trudy VNIIM no.37:29-41 '59. (MIRA 13:4)
(Dynamometer)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

S/115/62/000/003/005/010
E194/E484

AUTHOR: Kotochigova, M.I.

TITLE: Checking machines with a group of dynamometers

PERIODICAL: Izmeritel'naya tekhnika, no.3, 1962, 17-18

TEXT: The mechanical measurement laboratory of VNIIM has made a series of tests to determine the accuracy when a large machine or dynamometer is checked against a group of dynamometers. A variety of dynamometers were available so that it was possible to check the accumulation of errors by the group method on transition from one set of equipment to another as the load was increased. With all the dynamometers used the maximum scatter was 0.2% provided that the first third of the scale need not be used but in the first third of the scale it was 0.3 to 0.6%. It was found that for accuracy it is important to distribute the load uniformly between the dynamometers within the group. To achieve this uniformity attention had to be paid not only to geometrical symmetry of arrangement and levelling but also to the individual rigidity of the dynamometers. It was found that with dynamometers connected in parallel the deviation of the sum of the readings is 2 to

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOCHIGOVA, M. I.

Relationship between the deformation and the loading of standard flexible dynamometers. Izm. tekh. no.10:22-23 O '62. (MIRA 15:10)

(Dynamometer—Testing)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOCHIGOVA, M.I.

First-grade standard flexible dynamometer designed by the All-Union Institute of Metrology. Trudy inst. Kom. stand., mer i izm. prib. no.50:48-57 '61. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. Mendeleyeva.

(Dynamometer)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

RAFAL'SON, D.I.; VEYKHER, Z.F.; ROZANOVA, L.M.; NIKOLAYEVA, L.K.; KOTOCSHCHIKOVA, M.A.; IVANOVA, N.M.

Effect of taking small and moderate doses of bone marrow on the body of the donor. Report No.1: Effect of taking bone marrow on hemopoiesis. Probl. gemat. i perel. krovi no.10: 29-35 '63 (MIRA 18:1)

1. Iz Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniya krovi (dir. dotsent A.D. Belyakov).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOGYAN, A. M.

Apiculture

Dissertation: "Apiculture in Armenia and Measures for Increasing its Productivity." Dr Agr Sci, Department of Biological Sciences, Acad Sci Armenian SSR, 20 Mar. 54. (Kommunist, Yerevan, 10 Mar 54)

SO: SUM 213, 20 Sept. 1954

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

USSR / Farm Animals. The Honeybee. Q

Abs Jour: Ref Zhur-Biol., No 5, 1959, 21324.

Author : Kotogyan, A. M.; Martirosyan, L. M.
Inst : Armenian Scientific Research Institute of Animal Husbandry and Veterinary Medicine.
Title : Raising Larger Bees and Their National-Economic Significance.

Orig Pub: Byul. nauchno-tekhn. inform. Arm. n.-i. in-ta zhivotnovodstva i veterinarii, 1958, No 2, 32-34.

Abstract: As the entire beehive was transported to artificial combs with 6 mm large cells, bees were raised with a 1.1 mm. longer proboscis, with 30 percent heavier pollen baskets and increased honey production.

Card 1/1 86

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOGYAN, A.M., doktor sel'skokhozyaystvennykh nauk

Comparative characteristics of the Caucasian bee populations. Trudy Arm. nauch.-issl. inst.zhiv. i vet. 4:27-34 '60. (MIRA 15:5)

(Caucasus--Bees)

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, A.A.

BESKIN N.M. (Moskva); KOTOK, A.A. (Grodno); STRELETSKIY, E.V. (Grodno); ELISH, G.M. (Baku); KAGAN, L.S. (Baku); EDELEV, Ya.I. (Ufa).

"Geometry textbook" by N.N. Nikitin, A.I. Fetisov. Reviewed by N.M. Beskin and others. Mat. v shkole no.4:57-69 S-O '57. (MIRA 10:8)
(Geometry)
(Nikitin, N.N.) (Fetisov, A.I.)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, E.V.

Interpretation of the spectrum-luminosity diagram for the Pleiades. Astron.zhur. 37 no.3:492-495 My-Je '60. (MIRA 13:6)

1. Gosudarstvennyy astronomicheskiy institut imeni P.K. Shternberga.

(Pleiades)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, E.V.

Age of the open cluster Orion I. Vop.kosm. 9:196-199 '63.
(MIRA 17:5)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

AUTHOR: КОТОК, Е. В.

TITLE: Calculations of stellar models. [Report of a conference on the inner structure of stars, held at Riga, 16-18 July 1963]

SOURCE: AN SSSR. Vestnik, No. 10, 1963, 103-105 —33—

ABSTRACT: A conference on the inner structure of stars was held in Riga, 16-18 July 1963, at the Astrophysical Observatory, Latvian Academy of Sciences. Scientists from Moscow, Riga, Leningrad, Baku, and Kiev participated. Potsdam Observatory (GDR) was also represented. Among the scientists presenting papers were: A. B. Kasevich, V. V. Porfir'yev, E. K. Dzervitis, P. N. Kholopov, D. A. Frank-Kamenetskiy, Z. F. Seidov, V. V. Sobolev, and R. S. Saakyan.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

ACCESSION NR: AP3004321 S/0033/63/040/004/0659/0667

AUTHOR: Masevich, A. G.; Kotok, E. V.

TITLE: On the evolutionary interpretation of the Herzsprung-Russell diagram of the cluster in Orion

SOURCE: Astronomicheskiy zhurnal, v. 40, no. 4, 1963, 659-667

TOPIC TAGS: Orion I cluster, star age determination, cold star, hot star, star evolution, star formation

ABSTRACT: The age of the hottest stars in the Orion I cluster is determined under different assumptions concerning their evolution. The age of the cold stars, which are apparently still in the stage of gravitational contraction, is also estimated, assuming radiative equilibrium and taking into account the convective zone in the subphotospheric layer. The results show a dispersion in the ages of the hot and cold stars which is of the order of the age of the cluster. Possible reasons for this dispersion are analyzed. It is concluded that the duration of the star formation process in the cluster is considerable. Orig. art. has: 6 figures, 3 tables, and 4 formulas.

ASSOCIATION: Astronomical Council, Academy of Sciences SSSR)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

MASEVICH, A.G.; KOTOK, E.V.; DLUZHNEVSKAYA, O.B.; MAZAN', A.

The neutrino luminosity of stars. Astron.zhur. 42 no.2:334-346 Mr-Ap '65. (MIRA 18:4)

1. Astronomicheskiy sovet AN SSSR i Observatoriya di Brera, Italiya.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, E.V.

Calculation of the early stages of evolution of stars with masses of 15.6 $M_\odot$, 20 $M_\odot$, and 30 $M_\odot$. Astron. zhur. 42 no.6:1221-1227 N-D '65. (MIRA 19:1)

1. Astronomicheskiy sovet AN SSSR.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, K. F.

Dissertation defended for the degree of Doctor of Juridicial Sciences at the Institute of Government and Law

"Essence of Local National Autonomy in the Chinese People's Republic (Main Problems of the Theory and Practice of National Construction in in the Chinese People's Republic, Using the Example of the Hsinchiang-Ugurskaya Autonomous Oblast, 1949-1957)."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

LEVIN, S.M., LIBERMAN, L.M., KOTOK, M.B., GIL'DINER, S.B. (Deceased)

Technical Normalization, Organization and Planning of Labor in Ferrous Metallurgy, Moscow, 1950

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, M.B.; ZAVEL'SKIY, Z.I., redaktor; VAYNSHTEYN, Ye.B., tekhnicheskiy redaktor

[Measuring labor productivity in ferrous metallurgy] Izmerenie proizvoditel'nosti truda v chernoi metallurgii. Khar'kov. Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1952. 94 p. [Microfilm] (MLRA 8:12)
(Labor productivity)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, M. M.

KOTOK, M. M. "The city economy of Leningrad in 1948", Materialy po kommunal. khoz-vu, 1949, Collection 1, p. 7-12.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, N. N.

KOTOK, N. N. and SPEKANSKIY, N. F. "For more aggressive infiltration of progressive techniques into city management", Materialy po kommunal. khoz-vu, 1949, Collection 2, p. 3-10.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK. V. F.

Europe - Economic Conditions

Economic basis of the people's democratic state.
Izv.AN SSSR Otd.ekon.i prava, no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress,
Augsut, 1952. UNCLASSIFIED.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

55M/6
105.2
KOTOK, V F .K8

Razvitiye osnovnykh institutov gosudarstvennogo prava Pol'skoy Narodnoy Respubliki (Development of the fundamental institutions of state law of the Polish Peoples Republic, by) V. F. Kotok i A. G. Mozokh na. Moskva, Akademkniga, 1955.

272 p.

At head of title: Akademiya Nauk SSSR. Institut Prava.

Bibliographical footnotes.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOK, V.O.; CHAYKA, G.V., red.; TSAY, A.A., tekhn.red.

[Aid in cases of poisoning] Pomoshch' pri otravleniiakh. Tashkent, Gos.med.izd-vo M-va zdravookhraneniia UzSSR, 1961. 209 p. (MIRA 15:5)
(TOXICOLOGY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

RUTKOV, V., polkovnik; KOTOLEVSKIY, A., polkovnik

Inculcating the principles of the scientific Weltanschauung in the students of military schools. Komm.Vooruzh.Sil 3 no.19:56-59 O '62. (MIRA 15:9)
(Military education)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

BURKOVSKIY, Yu.A.; ANDROSOV, A.A.; KOTOLUP, G.A.; BAGRYANOVA, G.D.

Some problems of the overall mechanization of extraction operations at cement plant quarries. Sbor.trud. Novorossgiprotsementa no.1:34-43 '61. (MIRA 16:2)

(Quarries and quarrying)
(Cement plants)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMCHANINA, M.S.

128-58-4-12/18

AUTHORS: Boldyrev, V.A.; Kotomchanina, M.S.; Itskovich, Ye.A., Engineers

TITLE: Use of Oil-Less "BTK" "Core Binder for Magnesium Castings" (Primeneniye bezmaslyanogo krepitelya "BTK" dlya magniyevogo lit'ya)

PERIODICAL: Liteynoye Proizvodstvo, 1958, No. 4, p 26 (USSR)

ABSTRACT: The oil-less core binder "BTK" - which can replace the scarce oil binders " 4 GU", " 4 GR" and the "S" oil - consists of 40-45% low-melting petroleum asphalt of "BN-2" or "BN-3" grade, and 60-55% kerosene solvent "TS-1" (Tuymazinskiy). This oil-less binder has a low gas-generating capacity, and the quality of castings has improved since it is used; it is 10 times less expensive than "4 GU". The short article gives information on the composition of the core mix with which the new binder is used, and on the "BTK" binder production process.

AVAILABLE: Library of Congress

Card 1/1 1. Castings 2. Core composition-Economic aspects

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

[redacted], V.I.; KOTOMIN, M.N.; [redacted], A.I.

Measuring cutting forces, the wear of [redacted] and metal removal. Izm.tekh. no.6:42-[redacted] Je '65.

(MIRA 18:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMIN, V. A.

KOLOTYY, S.G.; KOTOMIN, V.A.; EPEL'BAUM, M.L.; NAUMOV, P.A.

Increasing the productivity of cement mills and reducing power consumption during grinding. Prom. energ. 12 no.3:25 Mr '57.
(Cement plants) (MLRA 10:4)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

GOL'DENBERG, M.Z.; [illegible], P.; [illegible], N.; KOTOMKINA, [illegible]; [illegible], N., metodist; SOCHETOVA, T.

Exhibitions and displays of special items. Inform. biul. VDNKH no.8: 11-15 Ag '64. (MIRA 17:11)

1. Starshiy inzh.-metodist razdela "Organizatsiya proizvodstva i upravleniya promyshlennymi predpriyatiyami" pavil'ona "Mashinostroyeniye" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Gol'denberg). 2. Direktor ob"yedinennykh pavil'onov "Toplivnaya promyshlennost' i geologiya" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Pubkov). 3. Glavnyy metodist pavil'ona "Toplivnaya promyshlennost'" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Beginin). 4. Glavnyy inzh.-metodist pavil'ona "Neftyanaya promyshlennost'" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Kotomkina). 5. Starshiy inzh.-metodist pavil'ona "Molochnaya promyshlennost'" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Sochetova).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, A.A., inzh.; IVANOV, G.N., inzh.; SHINKARENKO, P.A., inzh.

Aluminum anodizing. Mashinostroenie no.4:81-84 Jl-Ag '65.
(MIRA 18:8)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

IVANOV, G.N., inzh.; KOTOMINA, A.A., inzh.; SHINKARENKO, P.A., inzh.

Using a pyrophosphate electrolyte in yellow and white bronzing. Mashinostroenie no.6:89-90 N-D '65. (MIRA 18:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMKINA, A.I.; KIRILLOV, V.P.; DZUTSEVA, A.V.

Exhibitions and displays of special items. Inform. biul. VDNKH no.8:11-12 Ag '63. (MIRA 17:8)

1. Glavnyy inzh.-metodist pavil'ona "Toplivnaya promyshlennosti i geologiya" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Kotomkina). 2. Glavnyy inzh. i glavnyy metodist pavil'ona "Lesnoye khozyaystvo, lesnaya i derevoobrabatyvayushchaya promyshlennost'" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Kirillov). 3. Glavnyy metodist ob"yedinennogo pavil'ona "Pishchevaya promyshlennost" na Vistavke dostizheniy narodnogo khozyaystva SSSR (for Dzutseva).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

PIKALEVA, V.Ya.; KOTOMINA, G.L.

Use of gas anesthesia in the analgesic stage for the treatment of massive postoperative pulmonary atelectasis. Khirurgiia 39 no.7:82-85 Jl '63 (MIRA 16:12)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. V.I. Kolesov) I Leningradskogo meditsinskogo instituta imeni akademika I.P.Pavlova.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, I.N.; ROGOVIN, Z.A.; LARIN, P.S.

Properties of viscose cellulose related to the location of the original spruce wood in the tree. Khim.volok. no.3:27-31 '58. (MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Cellulose)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOVA, A.T.; KONKIN, A.A.; KOTOMINA, I.N.

Preparation of extra-strong viscose cord. Khim.volok. no.1: 15-21 '59. (MIRA 12:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon)

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KOTOMINA, I.N.; KORETSKAYA, A.I.

Branch conference of the workers of the synthetic fibers industry. Khim.volok. no.1:65-67 '59. (MIRA 12:8)
(Textile fibers, Synthetic--Congresses)

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15.5500,15.5530

SOV/63-4-6-7/37

AUTHORS: Serkov, A. T. (Candidate of Technical Sciences), Kotomina, I. N., Bogomolova, N. A.

TITLE: New Production Methods for High Strength Viscose Fibers

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, pp 730-737 (USSR)

ABSTRACT: About 30% of all tires used in the USSR are worn out prematurely because of carcass breakdown due to the low tensile and fatigue strength of the cord. The application of "super"-type cord with a break length of 35 to 36 km (i.e., 20 to 25% higher than that of the cord used at present) would increase the tire mileage by 15 to 17%. The article describes various types of foreign high-strength viscose fibers (BX, DuPont's Supercordura, Courtaulds' Tenasco-Super 70 and 105, etc.) and gives their chemical and physical characteristics as well as production methods. The role of cations of polyvalent metals, particularly that of zinc cations, in the formation of superstrong xanthate fibers is discussed. The viscose fiber consists of an inner core

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and a shell; the latter forms about 40 to 50% of the total cross section of the fiber and is its most resistant part. Zinc cations with xanthate form an intermediary insoluble compound, zinc xanthate, which is much more stable than sodium xanthate; zinc xanthate causes a rapprochement of the macromolecules, and facilitates the formation of intermolecular chemical bonds and of a fine crystalline structure of the fiber shell. It was established (Z. A. Rogovin, Fundamentals of the Chemistry and Technology of Chemical Fibers--Osnovy khimii i tekhnologii proizvodstva khimicheskikh volokon--, Gizlerprom, 1957, p 364; Vestn. tekhn. i ekonom., inform., 1958, Nr 7, p 26; Khim. volokna, 1959, Nr 1, p 15) that zinc xanthate can form only at certain definite pH values. The thickness of the shell is determined, therefore, and can be regulated by the relationship between the rates of diffusion of the reagents into the fiber, and the hydrolysis of cellulose xanthate. It was shown that the fiber shell thickness increased with the concentration of zinc and sodium sulfate and with the decrease of sulfuric acid concentration in the spinning bath; it increased also with the

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degree of esterification of cellulose xanthate in the viscose, and with the maintaining of the alkali and cellulose concentration in the viscose within certain determined limits. The addition of some modifiers (amines, quaternary ammonium bases, dithiocarbamates, etc.) to the viscose and the spinning bath facilitates the formation of a fiber structured uniformly throughout by slowing down considerably the rate of xanthate decomposition during the first 2-3 seconds of the reaction. The mechanism of this modifier action is discussed, and is explained by the formation of insoluble zinc dithiocarbamate or other compounds which form a mechanical barrier hindering the diffusion of the acid into the fiber. The addition of modifiers usually lowers the surface tension of the viscose and of the water in the spinning bath; the lowered adhesion of these liquids can influence adversely the discharge of uniform viscose streams from the spinnerets. The increase in the rate of the fiber formation causes a considerable lowering of the cord's physical and mechanical constants.

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For example, when the rate of spinning of twisted cord 5.45/2/480/400 was raised from 37 to 55 m/min, the tensile strength of the cord decreased from 13.57 to 12.55 kg; i.e., about 15%. Accordingly, the manufacture of super-type cord can considerably lower the output of the spinning machines. This loss can be compensated in the spinning-finishing units PN-300-I2 and PN-300-I3 by increasing the number of spinning places. Viscose and nylon cords are compared and their respective characteristics discussed. The advantages of the viscose cord are its lower cost and lower loss of tensile strength at higher temperatures. The nylon cord has a higher elongation due to which the size of the tire increases in prolonged use and causes a cracking of the tread. After 40,000 km, viscose cord tires showed a thickness of the tread twice as high as nylon cord tires. There are 9 tables; 3 figures; and 24 references, 8 U.S., 7 U.K., 1 Canadian, 3 German, 5 Soviet. The 5 most recent U.S. and U.K. references are: D. K. Smith, Text. Res. J.,

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29, 32 (1959); J. Hearle, Silk and Rayon, 30, 847 (1958); Text. Week, 57, 969 (1957); Papers Presented at Technical Symposium on Rayon Tire Yarn Progress, Akron, Ohio, 1958; D. N. Tyler, N. S. Wooding, J. Soc. Dyers and Colour., 74, 283 (1958).

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SERKOV, A.T.; KONKIN, A.A.; KOTOMINA, I.N.; SHUBINA, Ye.V.

Surface phenomena occurring in the system viscose - spinneret - precipitation bath. Khim.volok. no.5:31-33 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Viscose) (Rayon) (Surface chemistry)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

15(4) S/183/59/000/06/002/027
AUTHORS: Serkov, A. T., Shevchenko, A. S., B004/B007
Kotomina, I. N., Konkin, A. A.

TITLE: The Application of Surface-active Substances in the Production of Viscose Fiber

PERIODICAL: Khimicheskiy volokna, 1959, Nr 6, pp 3-11 (USSR)

ABSTRACT: The present paper is based mainly on Western publications, the data of which have, in some cases, been checked by the authors' own experiments. The quality-improving effect produced by surface-active substances is pointed out (increase in the strength of viscose-cord by 50-70%). The conception of a surface-active substance (modifier) is defined and its mode of operation is explained. There follows a survey of the application of such modifiers in the mercerization, xanthogenation, and spinning of viscose-solutions. Mention is made of the investigation carried out by Ye. M. Lev of the emulsification of carbon disulphide by sebacic acids (Fig 1), where the most stable emulsion is obtained by means of sebacic acids with 5 to 7 C-atoms. Figures 2 and 3 show the effect of Berol visco 30 upon the rate of filtration and the clearness of the viscose. Table 1 in this connection gives the results obtained by E. Wood, H. Rauch

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and K. Goetze (Ref 1). The influence exerted by the modifiers upon the elimination of air from the viscose is discussed. Oxyethylated aliphatic amines give less stable foam than sulphurized sebacic acids and oxyethylized alcohols. Tables 2 and 3 mention Western results (Refs 1, 2) concerning the necessary additions of modifiers and their effect upon keeping the spinnerets clean. Figures 4 to 7 show the effect of the concentration of H_2SO_4, $ZnSO_4$, Na_2SO_4, and of modifiers upon the adhesion of the viscose to the spinnerets according to reference 11, which was confirmed by experiments carried out by the authors. Table 4 shows various modifiers of Western origin (amines, quaternary ammonium compounds; polyoxyethyl derivatives), which are used for the purpose of obtaining strong viscose fibers. Table 5, figure 8 show the experimental results obtained by the authors, according to which amines with 7 to 9 C-atoms give particularly homogeneous fibers which swell only little in water. Table 6 shows the effect produced by the oxyethyl-group content of the modifier upon the properties of the fiber (Ref 16).

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The Application of Surface-active Substances in the Production of Viscose Fibers S/183/59/000/06/002/027 B004/B007

Table 7 and figure 9 show the dependence of the effect produced by cyclopropane on the concentration of the coagulating bath (Ref 16). There are 9 figures, 7 tables, and 18 references, 6 of which are Soviet.

ASSOCIATION: VNIIV - Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna
(All-Union Scientific Research Institute for Synthetic Fibers)

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15(4) S/183/59/000/06/011/027
AUTHORS: Serkov, A. T., Fedoreva, N. N., B004/B007
Kotomina, I. N.

TITLE: The Dependence of the Structure of the Fiber on the Characteristic Values of the Viscose

PERIODICAL: Khimicheskiy volokna, 1959, Nr 6, pp 37 - 39 (USSR)

ABSTRACT: The authors investigated the influence of viscose ripening, of its α-cellulose content, and of the lye concentration upon the structure of the fiber. Spinning of the fiber was carried out in an acid-lye bath and in an ammonium-sulfate bath. For the purpose of eliminating the influence of mechanical factors on fiber formation, spinning and the further treatment of the fibers was carried out without drawing. Determination of the specific weight of the fiber was carried out according to F.H. Hermans (Ref 1), of swelling in water according to E. Hubert (Ref 8), and of the structure of its cross section (percentage of the shell in the total cross section) by coloring by means of a direct dye (anil pure blue). Table 1 shows the influence

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exerted by the ripening of the viscose, table 2 the influence of the NaOH-content, and table 3 the influence exerted by the α-cellulose content of the viscose upon these characteristic values. The authors obtained the following results: With increasing ripening and increasing α-cellulose content of the viscose, the swelling of the fiber in water decreases. The least swelling was found, in accordance with N.V. Mikhaylov and N.N. Zavyalova (Ref 11) with a 6 - 8% NaOH content in the viscose solution. The lowest specific weight was obtained during spinning in an acid-salt bath at 30°, an NaOH-content of 6% and a 16 hours old viscose. In fibers with a low specific weight the percentage of the fiber sheath in the total cross section is higher. There are 3 tables and 11 references, 3 of which are Soviet.

ASSOCIATION: VNIIV-Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute for Synthetic Fibers)

Card 2/2

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; KOTOMINA, I.N.; SHUBINA, Ye.V.

Surface phenomena during the formation of viscose fibers. Report No.2. Khim.volok. no.5:34-36 '60. (MIRA 13:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Viscose)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; KOTOMINA, I.N.; BOGOMOLOVA, N.A.

New methods of obtaining the high-resistance viscose rayons. Analele chimie 15 no.3:168-180 Jl-Ag '60. (EEAI 10:2)
(Rayon)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; KONKIN, A.A.; KOTOMINA, I.N.; SOLOV'YEVA, N.I.

Effect of the structure of freshly formed viscose fiber on stresses during spinning. Khim.volok. no.5:34-37 '61.
(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Rayon spinning)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; BOGOMOLOVA, N.A.; KOTOMINA, I.N.; IVANOVA, Ye.P.; GUTMAN, G.M.

Machines manufacturing extrastrong viscose cord. Khim.volok. no.6:2-8 '61. (MIRA 14:12)

1. Goskomitet Soveta Ministrov SSSR po khimii (for Serkov). 2. Gosplan SSSR (for Bogomolova). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Kotomina, Ivanova). 4. Spetsial'noye konstruktorsko-tekhnologicheskoye byuro Lensovnarkhoza (for Gutman).

(Rayon spinning)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; KOTOMINA, I.N.; KOLCHIN, V.A.

Zinc sulfate regeneration in the production of extrastrong viscose cord. Khim.volok. no.5:30-32 '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Viscose)
(Zinc sulfate)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; KONKIN, A.A.; KOTOMINA, I.N.; BUDNITSKIY, G.A.

Formation of the supermolecular structure of viscose fibers during spinning. Khim. volok. no.5:40-45 '63. (MIRA 16:10)

1. Gosudarstvennyy komitet khimicheskoy i neftyanoy promyshlennosti pri Gosplane SSSR (for Serkov). 2. Moskovskiy tekstil'nyy institut (for Konkin). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Kotomina, Budnitskiy).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

SERKOV, A.T.; CHERKASOVA, Ye.V.; KOTOMINA, I.N.

Some causes of filament breakage during the formation of viscose fibers. Khim. volok. no.4:33-37 '65. (MIRA 18:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

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USSR/Radio Jan/Feb 1948
Oscillators
Vacuum Tubes, Triode

"The Limiting Wave Length of a Triode Oscillator," L. A. Kotomina, Candidate Tech Sci, 15 pp

"Radiotekh" Vol III, No 1

Study of the frequency range within which it is possible to effectively operate the triode oscillator. Discusses various fundamental factors that determine its range, namely the influence of electron inertia, the virtual cathode, output impedance (plate resistance) of the tube, electron-optical and geometrical dissimilarities, and the parameters of the cathode. Submitted 26 Apr 1947.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA L. A.

1414 Teoriya Primeneniya. Generatornykh Lamp V Rezhi-makh Usileniya Moshchnosti I Umnozheniya chastoty M. 1953. 7 L. 20 sm. (Akad. Nauk SSSR In-t Radiotekhniki I Elektroniki). B. Ts.- Otpech. Mnozhit. Apparatom- (54-52819)

SO: Knizhaya Letopis', Vol. 1, 1955

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, L. A.

"The Theory of the Application of Oscillator Tubes as Power Amplifiers and Frequency Multipliers." Cand Tech Sci, Inst of Radio Engineering and Electronics, Acad Sci USSR, 9 Dec 54. (VM, 30 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

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KOTOMINA, L.

USSR/ Miscellaneous - Personnel

Card 1/1 Pub. 89 - 1/30

Authors : Kotomina, L., Cand. Tech. Sc.

Title : Women should be drawn in larger numbers into the field of radio

Periodical : Radio 3, 1 - 2, Mar 1955

Abstract : The progress of communism is extolled along with the alleged freeing of women to enter all pursuits on an equal footing with men and the prediction is made that more women will be entering the field of radio.

Institution : .....

Submitted : .....

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KOTOMINA, M.G. (Chelyabinsk); USOVA, A.V. (Chelyabinsk)

Practical work in physics in industrial laboratories. Fiz. v shkole 23 no.3:43-44 My-Je '63. (MIRA 16:12)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, N.P.

Some observations concerning the work of the preparation and assembly departments of rubber plants. Kauch. i rez. 23 no.6:52-53 Je '64. (MIRA 17:9)

1. Moskovskiy shinnyy zavod.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, S.I., dotsent

Some current problems in the diagnosis and surgical treatment of multiple ulcers of the stomach and duodenum. Kaz. med. zhur. no.3:15-17 My-Je'63. (MIRA 16:9)

1. Klinika obshchey khirurgii (zav. - prof. A.I.Kozhevnikov) Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova.
(PEPTIC ULCER) (STOMACH--SURGERY)
(DUODENUM--SURGERY)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, R.A.

Electric fluctuation field of a uniformly heated semispace. Izv.vys. ucheb.zav.; radiofiz. 1 no.3:166-167 '58. (MIRA 12:1)

1. Ivanovskiy pedagogicheskiy institut.
(Field theory)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

ALI-ZADE, M.A.; KOTOMINA, R.I.

Effect of gibberellin on the growth of young tea shoots.
Fiziol.rast. 7 no.3:343-344 '60. (MIRA 13:6)

1. Azerbaijan Scientific Research Institute, Baku.
(Gibberellins) (Tea)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, S.I., kand.med.nauk (Gor'kiy)

Symptoms of perforating gastric and duodenal ulcers. Fel'd. i akush. 23 no.3:33-35 Mr '58. (MIRA 11:4)
(PEPTIC ULCER)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOMAROV, A.S., kand.med.nauk; KOTOMINA, S.I., kand.med.nauk

Chemical burns of the stomach and their treatment. Sov.med. 26 no.12:13-16 D '62. (MIRA 16:2)

1. Iz kliniki obshchey khirurgii (zav. - prof. A.I. Kozhevnikov) Gor'kovskogo meditsinskogo instituta.
(BURNS AND SCALDS) (STOMACH--SURGERY)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, S.I., kand.med.nauk

Rupture of the gall bladder following a blunt injury of the abdomen. Khirurgiia 34 no.9:109-110 S '58. (MIRA 12:4)

1. Iz kliniki obshchey khirurgii (zav. - prof. A.I. Kozhevnikov) Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova (dir. - dots. N.N. Mizinov).
(GALL BLADDER--RUPTURE)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

KOTOMINA, S.I. kand. med. nauk.

Course of peptic ulcer of the stomach and duodenum following surgical repair of perforating ulcers; abstract S.I. Kotomina. Khirurgiia 34 no.12: 93 D '58. (MIRA 12:1)

1. Iz kliniki obshchey khirurgii (zav. - prof. A.A. Ozherel'yev) Gor'kovskogo meditsinskogo instituta.
(PEPTIC ULCER)

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KOTOMINA, S.I., dotsent

Diseases appearing after gastric resection. Terap.arkh. 33 no.10: 50-55 '61. (MIRA 15:1)

1. Iz kafedry obshchey khirurgii (zav. - prof. A.I. Kozhevnikov) Gor'kovskogo meditsinskogo instituta imeni S.M. Kirova.
(STOMACH--SURGERY) (STOMACH--DISEASES)

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000825410009-2

50-58-4-8/26

AUTHOR: Kotomkin, N. Ye.

TITLE: A Squall in the Region of Sumy (Shkval v rayone g. Sumy)

PERIODICAL: Meteorologiya i Gidrologiya, 1958, Nr 4, pp 25 - 26 (USSR)

ABSTRACT: In the evening of August 23, 1957, a heavy thunderstorm of pelting rain accompanied by gale struck the area in question. A very hot and dry atmosphere (29 - 34°C) prevailed before the storm. At noon a hardly movable front ranged through the cyclone valley (the centre in the neighborhood of the town Kherson) which was marked by some wave-agitations. It ranged along the surface of the earth, northwards of the Krym as far as Nezhin-Smolensk. In Sumy, a high south-east wind (70 - 80 km/h) blew at the entrance of the cyclone valley in a layer between 300 to 1500 km. Along the rear-side of the cyclone cold air was extending cooling down the atmosphere to 17 - 20°C. At 18 hours or so the sky covered with high-layered clouds; dust haze turned up in the air. Towards 19 hours thunderstorms formed near Sumy. In the close neighborhood of the town a wave generated along the idly-moving front which formed a

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sort of a turbulent micro-motion with a radius of 30 m. At 19.15 hours a huge ash-grey thundercloud turned up shaped with a high top and having a low basis. On its edge the chaotic movements of the torn parts of the edge were clearly visible. The wind stopped blowing and the first thunders were to be heard. At once at 19.40 hours the dust storm rushed over reaching 25/28 m/sec. A down paur set in uninterrmittedly accompanied by thunder and lightning . The visibleness deteriorated down to 100 m. The storm raged for 40 minutes. The temperature dropped rapidly at first to 20°C and then to 10°C. Discharges of ball lightning were observed. The front of the storm-zone was estimated from 30 to 40 km. Lots of trees were broken or uprooted in the woods and parks, roofs were carried away, telegraph poles were tossed over, and so on. Several houses were set alight by discharges and burnt down. The development of the storm was caused by the interaction of tropical air and by the cooler air of the temperate zones and by a difference in temperature of 10-12°C.

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Card 2/2 1. Meteorology - USSR 2. Storms - Analysis

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KOTOMKINA, A.I.

Chemistry is the wings of progress. Inform.biul.VDNKH no.3:1 Mr '64. (MIRA 17:3)

1. Glavnyy inzh. pavil'ona "Neftyanaya promyshlennost'" na Vystavke dostizheniy narodnogo khozyaystva SSSR.

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GALEYEVA, N.A.; Prinimali uchastiye: PULIPENKO, G.M., mladshiy nauchnyy sotrudnik; STEPANOVA, T.K., mladshiy nauchnyy sotrudnik; KOTOMKINA, L.V., ladshiy nauchnyy sotrudnik

Production, bleaching, and use of high-yield sulfite woodpulp and hemicellulose obtained from aspen. Trudy LTITSBP no.13 83-90 '64. (MIRA 18:2)

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KOTOMSKA, Z.

Ascorbic acid in apples. S. Krauze and Z. Kotomska (P.Z.H., Warsaw, Poland). *Med. Doświadczal. i. microbiol.* 1, 513–37(1949).—The ascorbic (I) and dehydroascorbic (II) acids in apples grown at the experimental station of the School of Agriculture was detd. by titration with standard soln. of 2,6-dichlorophenolindophenol (cf. Fellenberg, *C.A.* 37, 4481⁶). The values varied for different kinds of apples from 0.4 mg. % to 21.6 mg. % I and from 1.8 to 29.4 of I + II. In most of the 30 varieties the concn. of II was appreciably higher than that of I. Comparison of the methods of detn. shows that the official A.O.A.C. method gives lower values than the one used. The stability of I under a variety of treatments is discussed and its content in horseradish (45.5 mg. % I and 89 mg. % I + II).

I. Z. R.

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ACC NR: AP6015428 SOURCE CODE: UR/0051/66/020/005/0848/0852

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B

AUTHOR: Samson, A. M.; Kotomtseva, L. A.

ORG: none

TITLE: Calculation of amplified luminescence in a polished generating rod

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 848-852

TOPIC TAGS: light reflection coefficient, luminescence, quantum generator, neodymium glass, ruby

ABSTRACT: Using formulas derived earlier for the brightness of noises on the axis of a polished cylinder, the authors analyze the angular distribution of noise brightness due to luminescence, and the density of the noises is calculated for various sizes of the rod and values of the negative absorption coefficient. The cylinder has a finite length, an amplification factor k that is constant throughout its volume, and an emissivity ϵ. The dependence of the luminescence brightness along the axis of the rod on the direction of propagation was determined, and the probability of luminescence-stimulated emission was calculated. Concrete calculations, in which the coefficients of reflection from the ends of the rod were neglected, were carried out for ruby and neodymium glass samples. Comparison of the results of rigorous calculations with the results of approximate calculations based on simplified transport equations (A. M.

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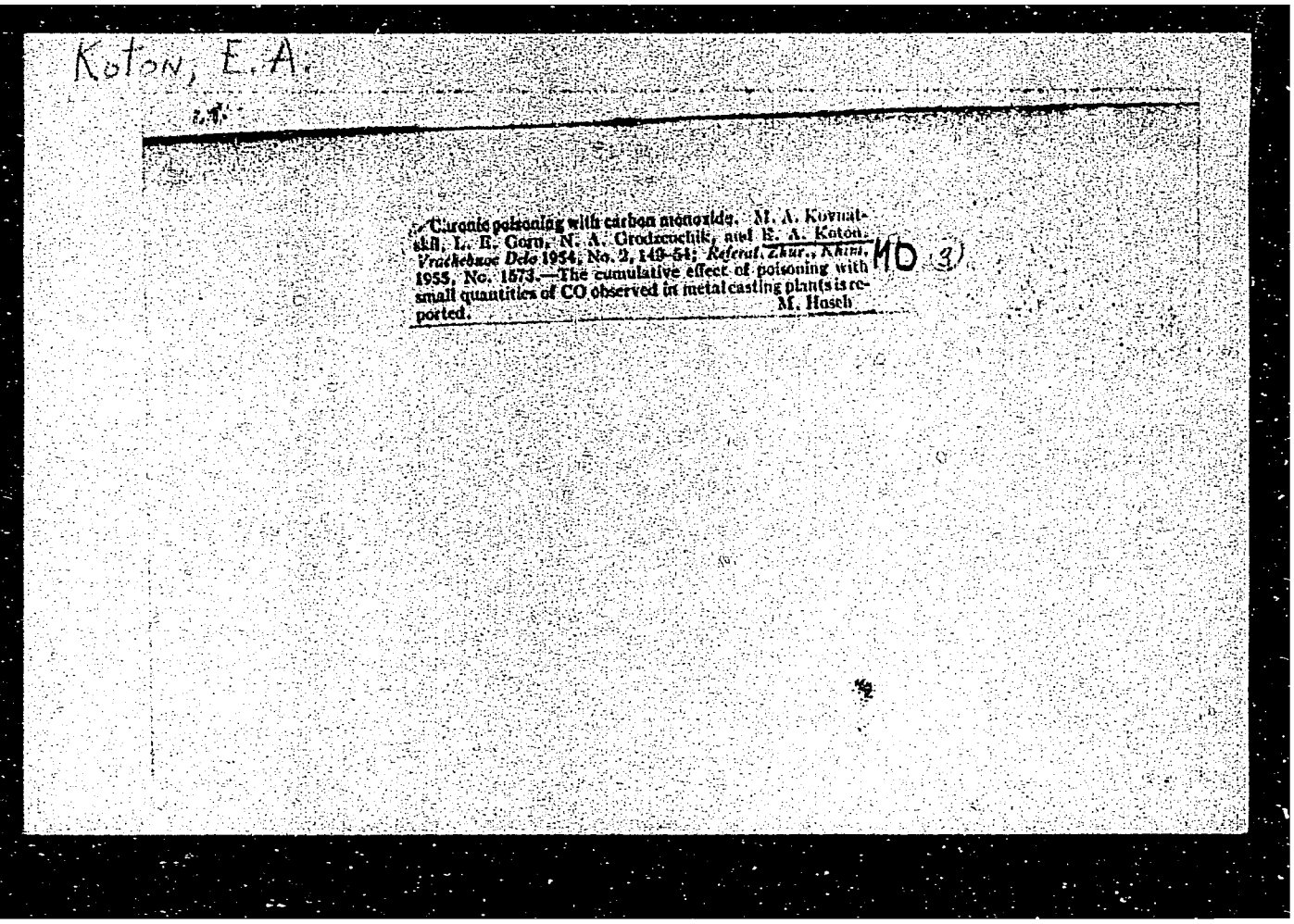

Koton, E.A.

Chronic poisoning with carbon monoxide. M. A. Kovnatskii, L. E. Gorn, N. A. Grodzovchik, and E. A. Koton. *Vrachebnoe Delo* 1954, No. 2, 149-54; *Referat. Zhur., Khim.* 1955, No. 1873.—The cumulative effect of poisoning with small quantities of CO observed in metal casting plants is reported. M. Hosch

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KOTON, I., starshiy nauchnyy sotrudnik

Improving workshop administration. Sots. trud 8 no.5:123-126 My '63. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii proizvodstva i truda chernoy metallurgii.
(Steel industry--Management)
(Rolling(Metalwork))

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KOTON, I., nauchnyy sotrudnik; FAYVISHENKO, L., nauchnyy sotrudnik.

Reducing the number of engineers and technicians in railroad units. (MLRA 10:7)
Sots.trud no.6:125-127 Je '57.

1. Organizatsiya proizvodstva chernoy metallurgii.
(Railroads, Industrial--Employees)

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PEYCHEV, G.; KOTON, I.; ZAMKOVSKIY, V.

Technical control at the steel plants. Sots.trud 4 no.8: 72-75 Ag '59. (MIRA 13:1)
(Steel industry--Quality control)

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KOTON, I.

Wages in the railroad workshops of metallurgical plants. Sots. trud 6 no.3:124-126 Mr '61. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii proizvodstva i truda chernoy metallurgii, g. Khar'kov.
(Railroads, Industrial—Salaries, pensions, etc.)

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KOTON, I., starshiy nauchnyy sotrudnik

Efficiency of the new forms of quality control. Sots.trud 7 no.3:123-126 Mr '62. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii proizvodstva i truda chernoy metallurgii.
(Steel industry--Quality control)

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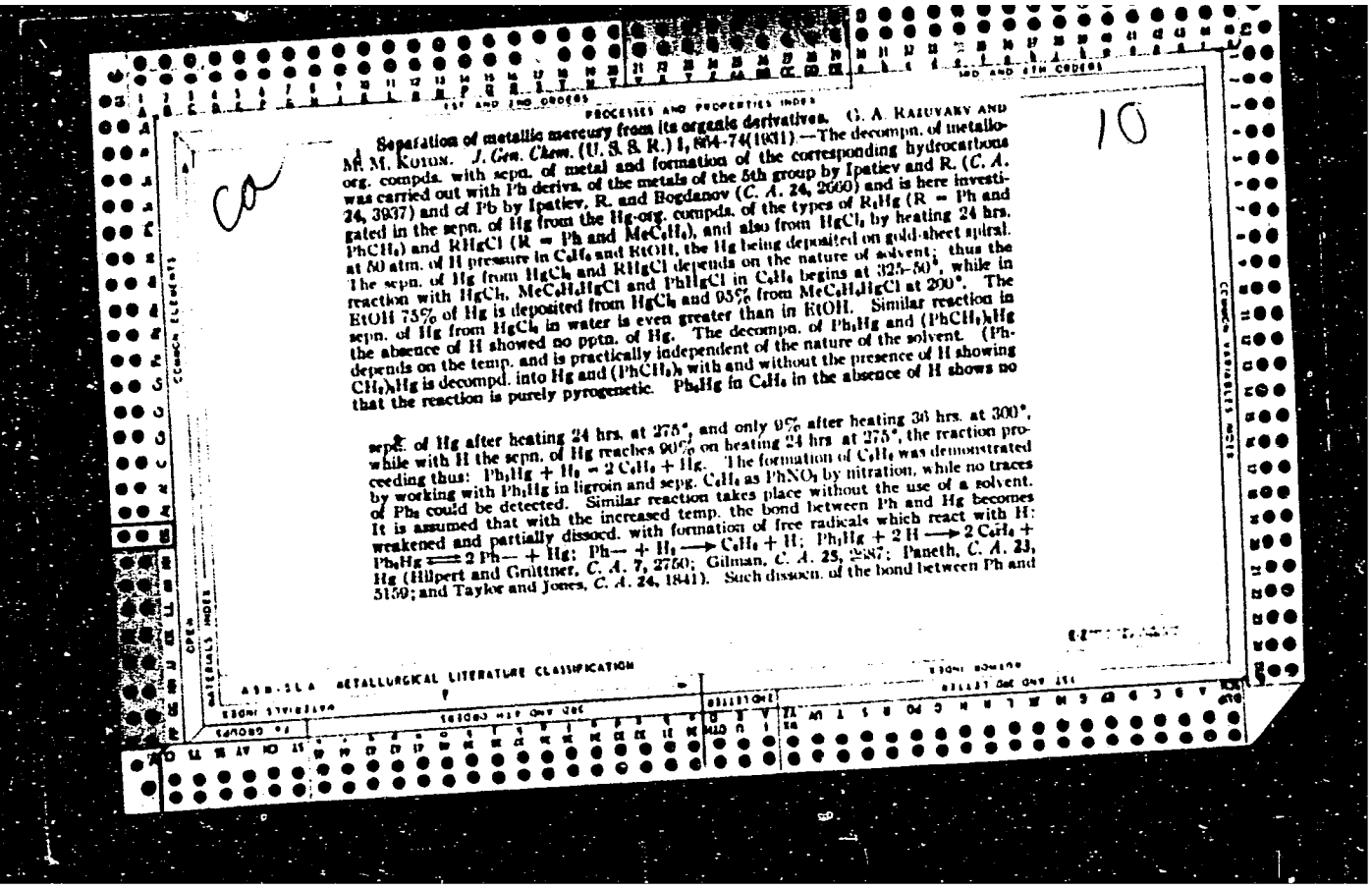

PROCESSES AND PROPERTIES INDEX

Separation of metallic mercury from its orgeals derivatives. G. A. RAZUVAEV AND M. M. KOTON. *J. Gen. Chem.* (U. S. S. R.) 1, 894-74(1931).—The decompn. of metallo-org. compds. with sepn. of metal and formation of the corresponding hydrocarbons was carried out with Pb deriva. of the metals of the 5th group by Ipatiev and R. (*C. A.* 24, 3937) and of Pb by Ipatiev, R. and Bogdanov (*C. A.* 24, 2660) and is here investigated in the sepn. of Hg from the Hg-org. compds. of the types of R_2Hg (R = Ph and $PhCH_2$) and RHgCl (R = Ph and MeC_6H_4), and also from $HgCl_2$ by heating 24 hrs. at 50 atm. of H pressure in C_6H_6 and EtOH, the Hg being deposited on gold-sheet spiral. The sepn. of Hg from $HgCl_2$ and RHgCl depends on the nature of solvent; thus the reaction with $HgCl_2$, MeC_6H_4HgCl and $PhHgCl$ in C_6H_6 begins at 325–50°, while in EtOH 75% of Hg is deposited from $HgCl_2$ and 95% from MeC_6H_4HgCl at 200°. The sepn. of Hg from $HgCl_2$ in water is even greater than in EtOH. Similar reaction in the absence of H showed no pptn. of Hg. The decompn. of Ph_2Hg and $(PhCH_2)_2Hg$ depends on the temp. and is practically independent of the nature of the solvent. $(PhCH_2)_2Hg$ is decompd. into Hg and $(PhCH_2)_2$ with and without the presence of H showing that the reaction is purely pyrogenetic. Ph_2Hg in C_6H_6 in the absence of H shows no sepn. of Hg after heating 24 hrs. at 275°, and only 9% after heating 36 hrs. at 300°, while with H the sepn. of Hg reaches 90% on heating 24 hrs. at 275°, the reaction proceeding thus: $Ph_2Hg + H_2 = 2C_6H_6 + Hg$. The formation of C_6H_6 was demonstrated by working with Ph_2Hg in ligroin and sepg. C_6H_6 as $PhNO_2$ by nitration, while no traces of Ph_2 could be detected. Similar reaction takes place without the use of a solvent. It is assumed that with the increased temp. the bond between Ph and Hg becomes weakened and partially dissocd. with formation of free radicals which react with H: $Ph_2Hg \rightleftharpoons 2Ph- + Hg$; $Ph- + H_2 \longrightarrow C_6H_6 + H$; $Ph_2Hg + 2H \longrightarrow 2C_6H_6 + Hg$ (Hilpert and Grüttner, *C. A.* 7, 2750; Gilman, *C. A.* 25, 2887; Paneth, *C. A.* 23, 5159; and Taylor and Jones, *C. A.* 24, 1841). Such dissocn. of the bond between Ph and

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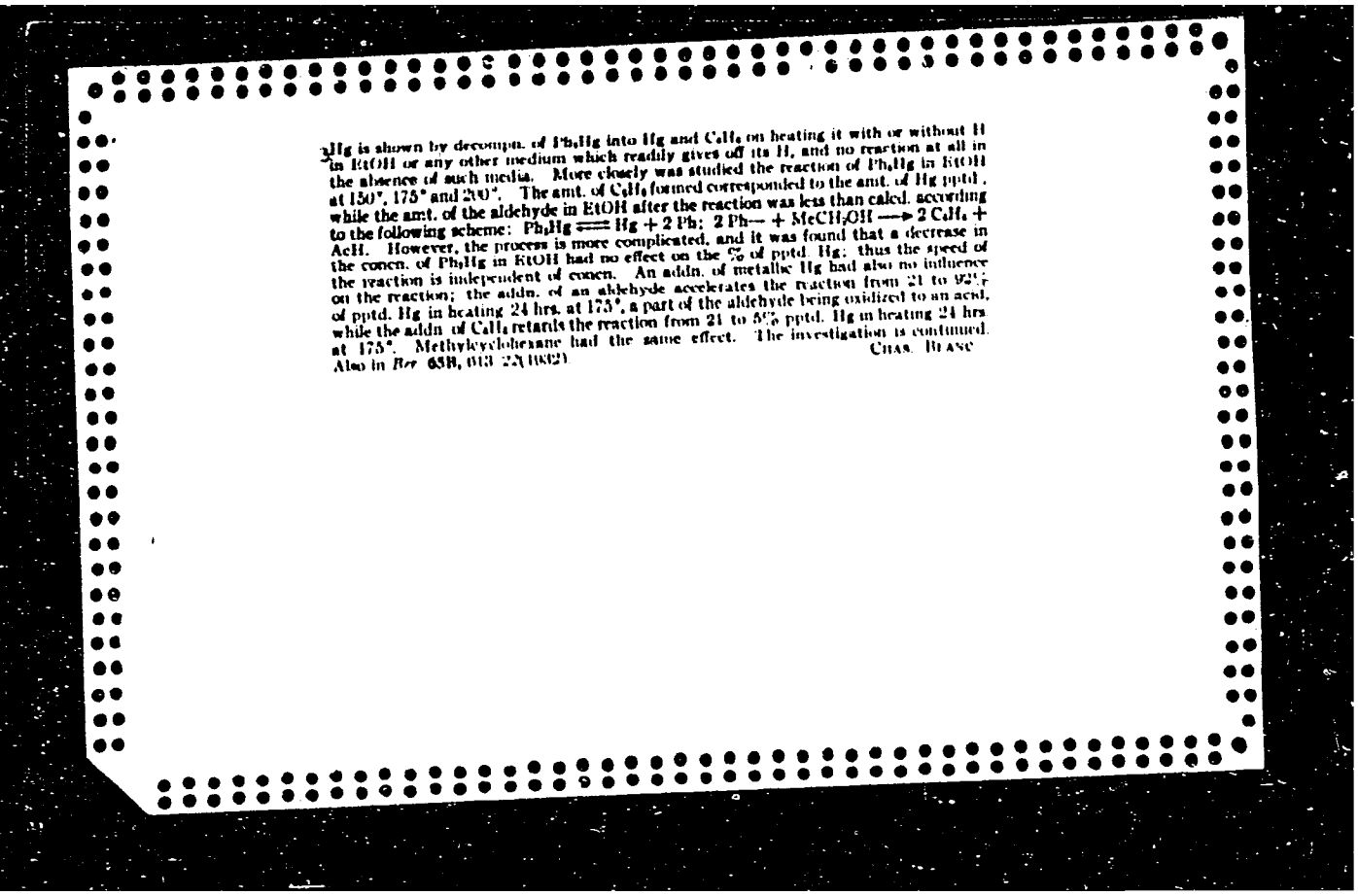

₂Hg is shown by decompn. of Ph_2Hg into Hg and CaH_6 on heating it with or without H in EtOH or any other medium which readily gives off its H, and no reaction at all in the absence of such media. More closely was studied the reaction of Ph_2Hg in EtOH at 150°, 175° and 200°. The amt. of CaH_6 formed corresponded to the amt. of Hg pptd., while the amt. of the aldehyde in EtOH after the reaction was less than calcd. according to the following scheme: $Ph_2Hg \rightleftharpoons Hg + 2\,Ph$; $2\,Ph— + MeCH_2OH \longrightarrow 2\,CaH_6 +$ AcH. However, the process is more complicated, and it was found that a decrease in the concn. of Ph_2Hg in EtOH had no effect on the % of pptd. Hg; thus the speed of the reaction is independent of concn. An addn. of metallic Hg had also no influence on the reaction; the addn. of an aldehyde accelerates the reaction from 21 to 92% of pptd. Hg in heating 24 hrs. at 175°, a part of the aldehyde being oxidized to an acid, while the addn. of CaH_6 retards the reaction from 21 to 5% pptd. Hg in heating 24 hrs at 175°. Methylcyclohexane had the same effect. The investigation is continued.

CHAS. BLANC

Also in *Ber.* 65B, 013 22(1932)

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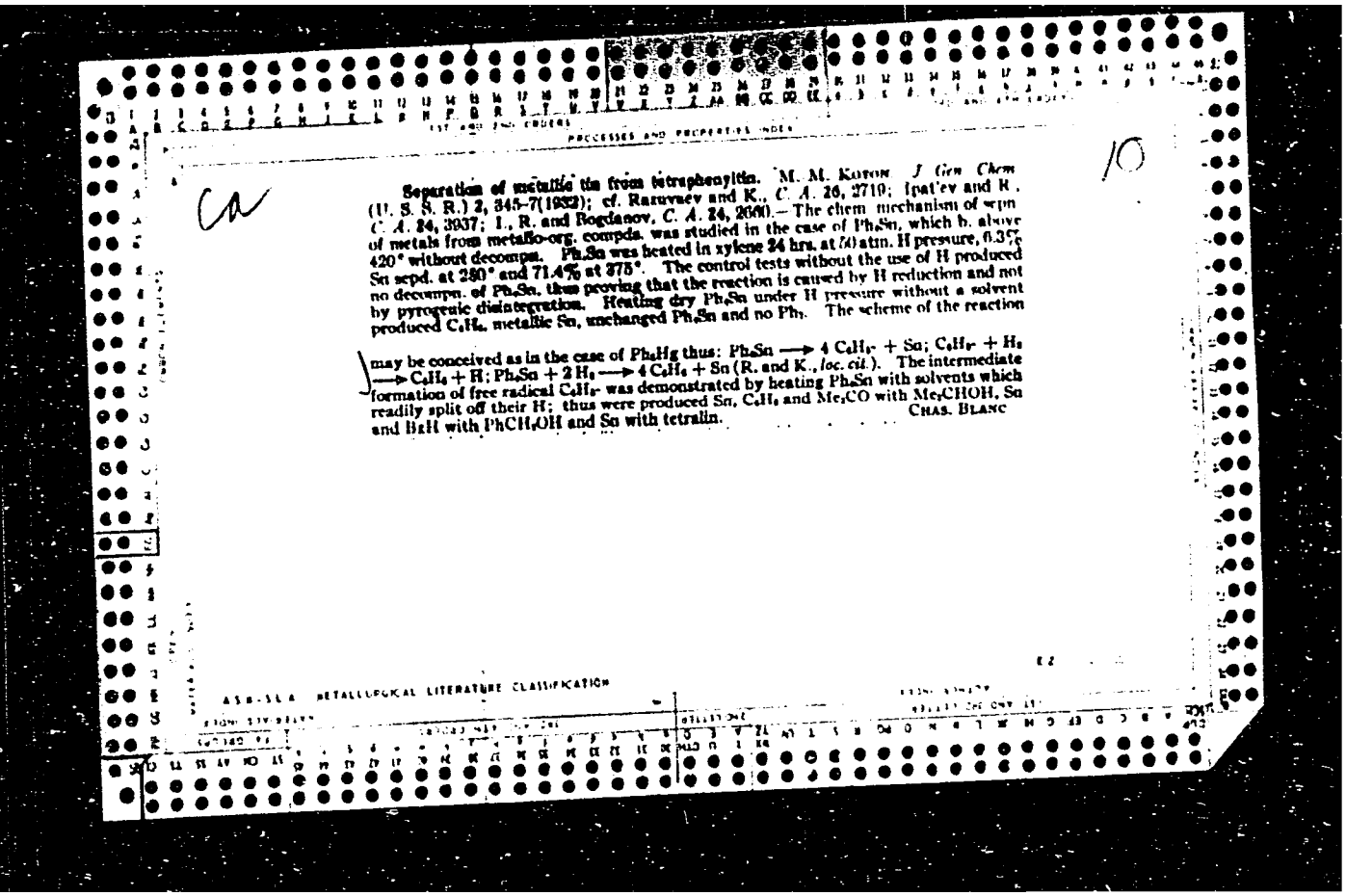

PROCESSES AND PROPERTIES INDEX

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Separation of metallic tin from tetraphenyltin. M. M. Koton. *J Gen Chem* (U. S. S. R.) 2, 345–7(1932); cf. Razuvaev and K., *C. A.* 26, 2710; Ipat'ev and R., *C. A.* 24, 3937; I., R. and Bogdanov, *C. A.* 24, 2690).— The chem mechanism of sepn of metals from metallo-org. compds. was studied in the case of Ph_4Sn, which b. above 420° without decompn. Ph_4Sn was heated in xylene 24 hrs. at 70 atm. H pressure, 0.3% Sn sepd. at 280° and 71.4% at 375°. The control tests without the use of H produced no decompn. of Ph_4Sn, thus proving that the reaction is caused by H reduction and not by pyrogenic disintegration. Heating dry Ph_4Sn under H pressure without a solvent produced C_6H_6, metallic Sn, unchanged Ph_4Sn and no Ph_2. The scheme of the reaction may be conceived as in the case of Ph_2Hg thus: $Ph_4Sn \longrightarrow 4\ C_6H_5\cdot + Sn$; $C_6H_5\cdot + H_2 \longrightarrow C_6H_6 + H$; $Ph_4Sn + 2\ H_2 \longrightarrow 4\ C_6H_6 + Sn$ (R. and K., *loc. cit.*). The intermediate formation of free radical $C_6H_5\cdot$ was demonstrated by heating Ph_4Sn with solvents which readily split off their H; thus were produced Sn, C_6H_6 and Me_2CO with Me_2CHOH, Sn and BzH with $PhCH_2OH$ and Sn with tetralin.

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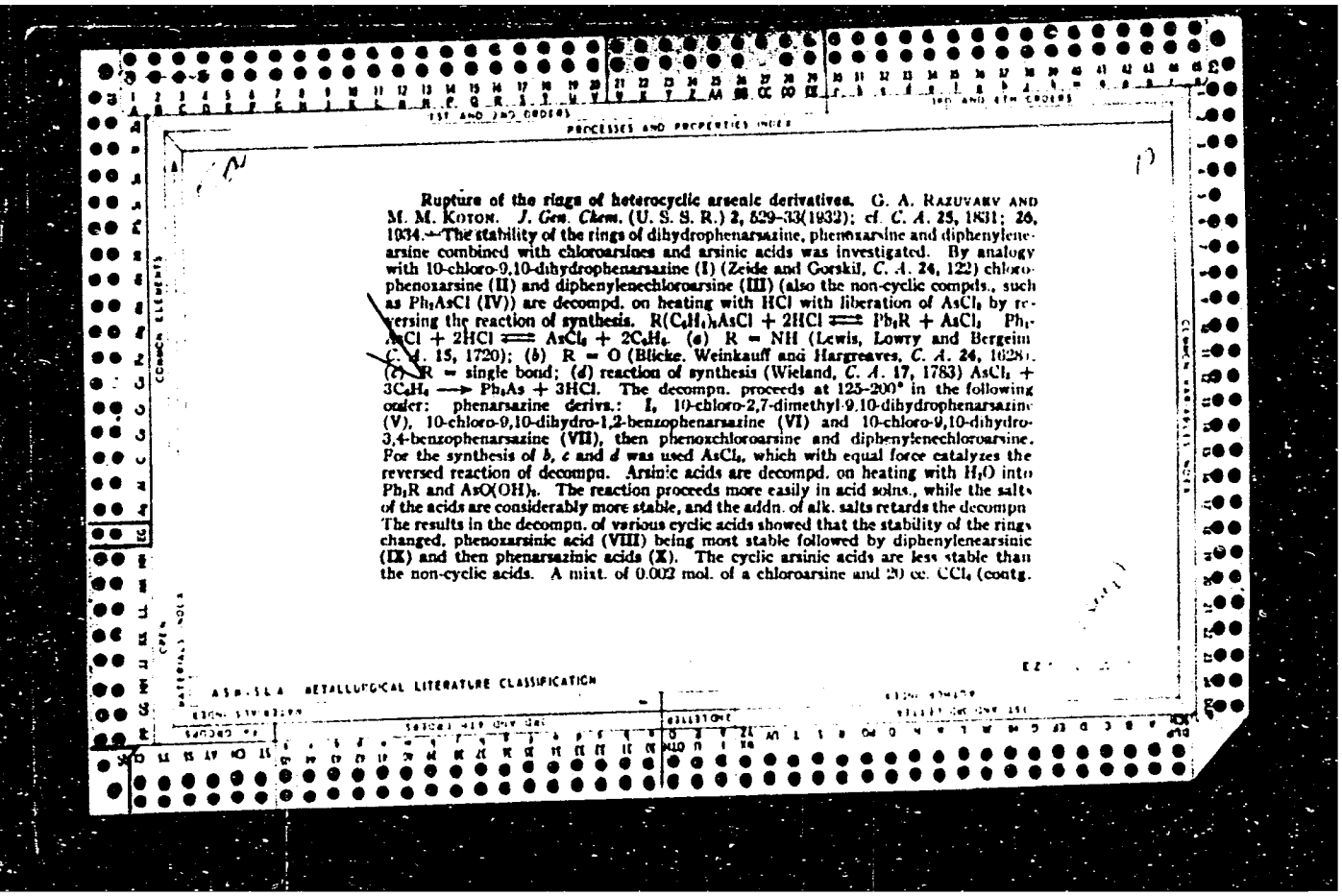

Rupture of the rings of heterocyclic arsenic derivatives. G. A. RAZUVAEV AND M. M. KOTON. *J. Gen. Chem.* (U. S. S. R.) **2**, 829–33(1932); cf. *C. A.* **25**, 1831; **26**, 1034.—The stability of the rings of dihydrophenarsazine, phenoxarsine and diphenylenearsine combined with chloroarsines and arsinic acids was investigated. By analogy with 10-chloro-9,10-dihydrophenarsazine (I) (Zeide and Gorskil, *C. A.* **24**, 122) chlorophenoxarsine (II) and diphenylenechloroarsine (III) (also the non-cyclic compds., such as Ph_2AsCl (IV)) are decompd. on heating with HCl with liberation of $AsCl_3$ by reversing the reaction of synthesis. $R(C_6H_4)_2AsCl + 2HCl \rightleftharpoons Ph_2R + AsCl_3$ $Ph_2AsCl + 2HCl \rightleftharpoons AsCl_3 + 2C_6H_6$. (*a*) R = NH (Lewis, Lowry and Bergeim *C. A.* **15**, 1720); (*b*) R = O (Blicke, Weinkauff and Hargreaves, *C. A.* **24**, 1028). (*c*) R = single bond; (*d*) reaction of synthesis (Wieland, *C. A.* **17**, 1783) $AsCl_3 + 3C_6H_6 \longrightarrow Ph_3As + 3HCl$. The decompn. proceeds at 125–200° in the following order: phenarsazine derivs.: I, 10-chloro-2,7-dimethyl-9,10-dihydrophenarsazine (V), 10-chloro-9,10-dihydro-1,2-benzophenarsazine (VI) and 10-chloro-9,10-dihydro-3,4-benzophenarsazine (VII), then phenoxchloroarsine and diphenylenechloroarsine. For the synthesis of *b*, *c* and *d* was used $AsCl_3$, which with equal force catalyzes the reversed reaction of decompn. Arsinic acids are decompd. on heating with H_2O into Ph_2R and $AsO(OH)_3$. The reaction proceeds more easily in acid solns., while the salts of the acids are considerably more stable, and the addn. of alk. salts retards the decompn. The results in the decompn. of various cyclic acids showed that the stability of the rings changed, phenoxarsinic acid (VIII) being most stable followed by diphenylenearsinic (IX) and then phenarsazinic acids (X). The cyclic arsinic acids are less stable than the non-cyclic acids. A mixt. of 0.002 mol. of a chloroarsine and 20 cc. CCl_4 (contg.

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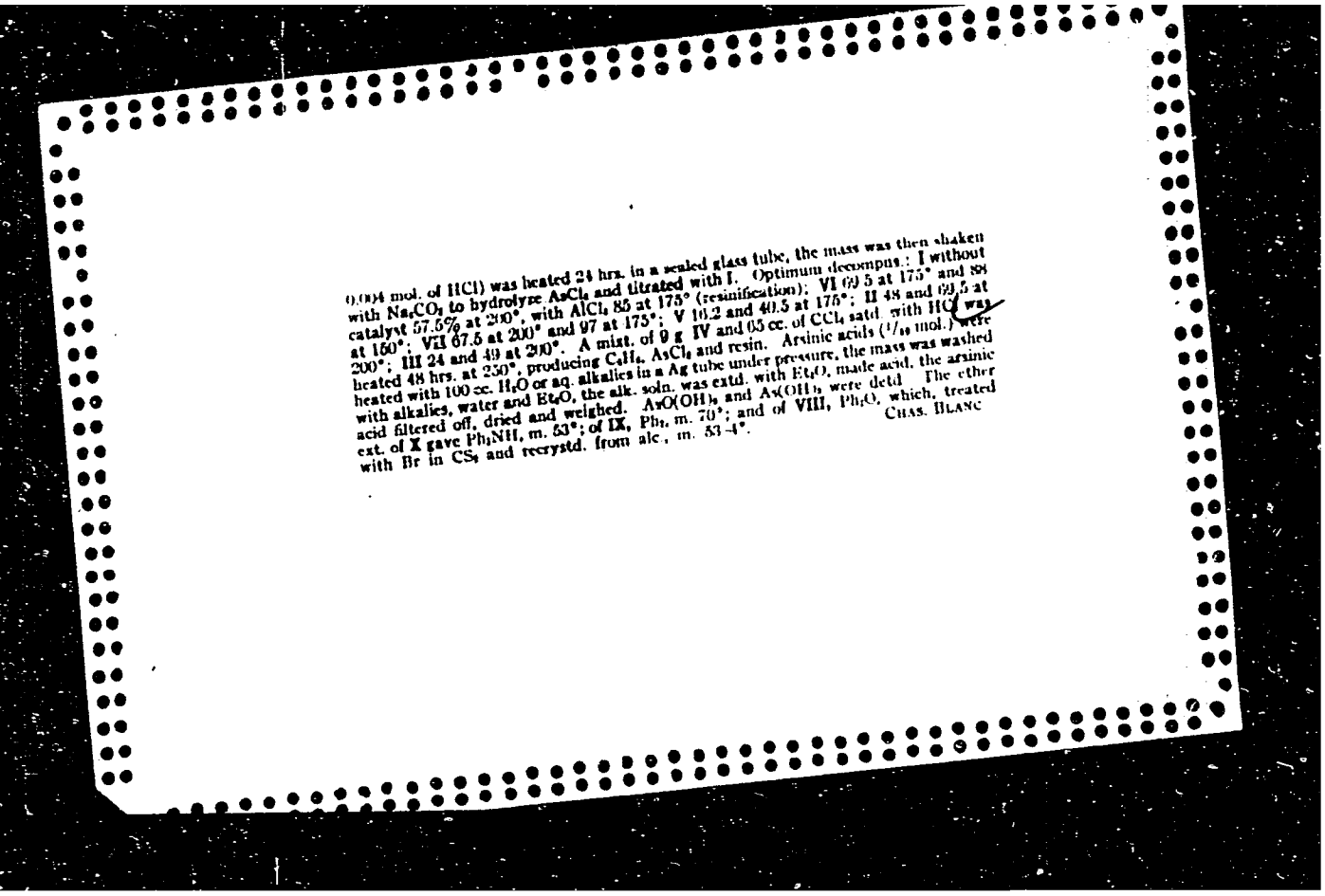

0.004 mol. of HCl) was heated 24 hrs. in a sealed glass tube, the mass was then shaken with Na_2CO_3 to hydrolyze $AsCl_3$ and titrated with I. Optimum decompns.: I without catalyst 57.5% at 200°, with $AlCl_3$ 85 at 175° (resinification); VI 69.5 at 175° and 88 at 150°; VII 67.5 at 200° and 97 at 175°; V 10.2 and 40.5 at 175°; II 48 and 69.5 at 200°; III 24 and 49 at 200°. A mixt. of 9 g. IV and 65 cc. of CCl_4 satd. with HCl was heated 48 hrs. at 250°, producing C_4H_4, $AsCl_3$ and resin. Arsinic acids (1/10 mol.) were heated with 100 cc. H_2O or aq. alkalies in a Ag tube under pressure, the mass was washed with alkalies, water and Et_2O, the alk. soln. was extd. with Et_2O, made acid, the arsinic acid filtered off, dried and weighed. $AsO(OH)_3$ and $As(OH)_5$ were detd. The ether ext. of X gave Ph_2NH, m. 53°; of IX, Ph_2, m. 70°; and of VIII, Ph_2O, which, treated with Br in CS_2 and recrystd. from alc., m. 53–4°.

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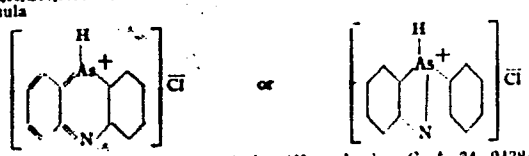
Nitration and bromination of heterocyclic arsenic derivatives. G. A. Razuvaev and M. M. Kaiton. *J. Gen. Chem.* (U. S. S. R.) 2, 880-92(1932); cf. *C. A.* 27, 984. Chlorophenoxarsine (I) and diphenylenechloroarsine (II) subjected to mild nitration produced the nitrates of phenoxarsenic acid, $[O(C_6H_4)_2As(OH)_2]NO_3$ and diphenylenearsenic acid, $[(C_6H_4)_2As(OH)_2]NO_3$, resp. A more energetic nitration of the chloroarsines and the corresponding acids resulted in the formation of *m*-dinitro acids with the probable formulas $O(C_6H_2NO_4)_2As(:O)OH$ and $(C_6H_2NO_4)_2As(:O)OH$. By analogy with non-cyclic chloroarsines I and II add Br_2, the resulting halo derivs. being easily hydrolyzed to the corresponding acids: $O(C_6H_4)_2AsBr_2Cl + H_2O = (O(C_6H_4)_2As(:O)OH$. Unlike other chloroarsines 10-chloro-9,10-dihydrophenarsazine (III) is not oxidized by HNO_3 to an arsinic acid but forms mono- and dinitro derivs. of chloroarsine, while the action of Br causes the rupture of the heterocyclic nucleus with formation of $(C_6H_3Br)_2NH$. These reactions led to the proposal for III of the following structural formula



which served as explanation of its coloring (Kappelmeier, *C. A.* 24, 2438; Gibson, Johnson and Vining, *C. A.* 25, 107). The specific reactions of III may be characteristic of the general properties of the phenarsazine nucleus and other derivs. of dihydrophenarsazine (except the tertiary arsines) might react similarly regardless of their coloring. The colorless 10-acetyl-9,10-dihydrophenarsazine (IV) reacts analogously to III; *i. e.*, the nitration of IV in AcOH produced a ppt. of mono- and dinitro derivs. of IV and a soln. of dinitrophenarsazinic acid, while bromination resulted in the rupture of the phenarsazine ring.

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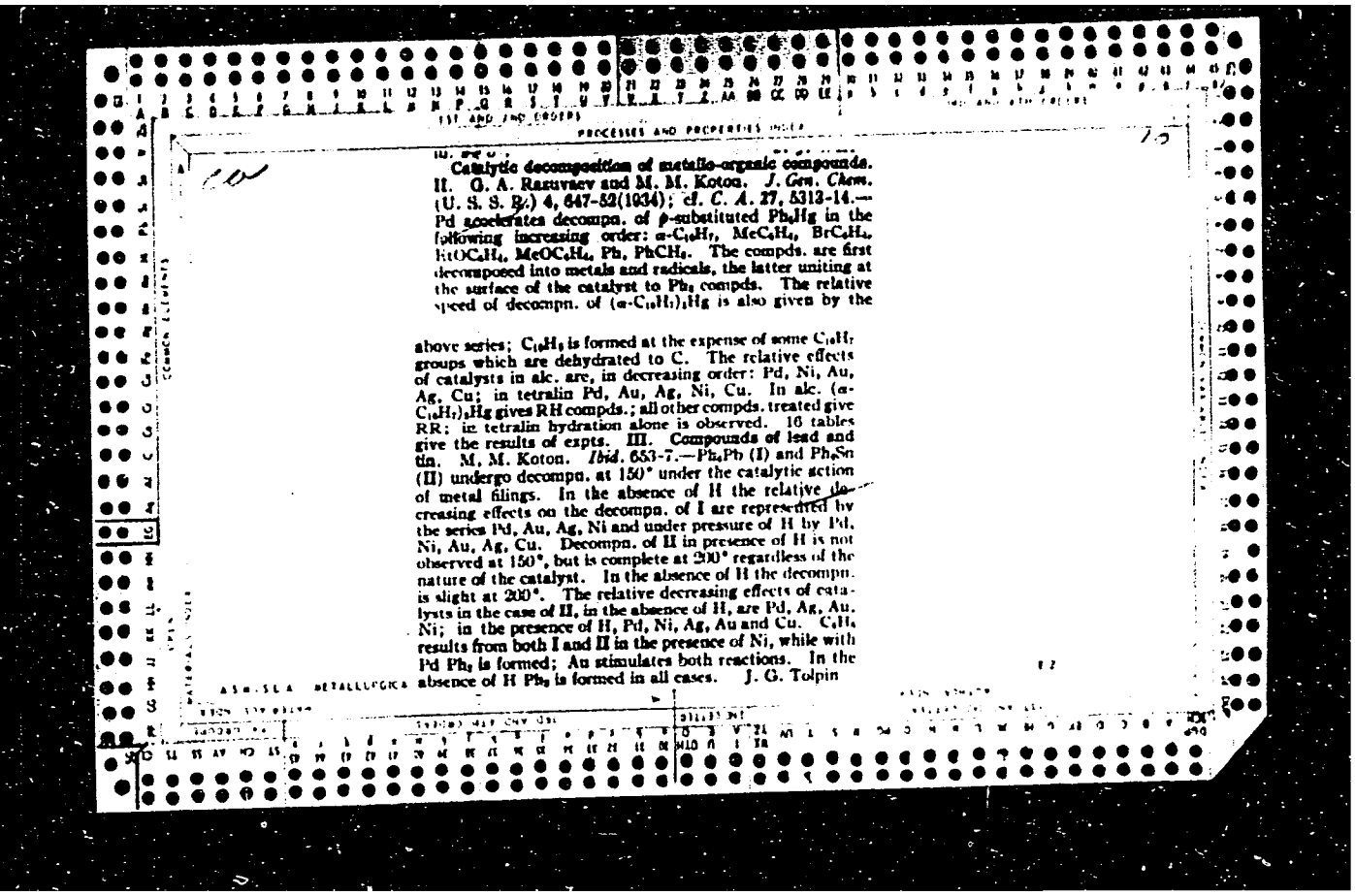

Catalytic decomposition of metallo-organic compounds. II. G. A. Razuvaev and M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) 4, 647-52(1934); cf. *C. A.* 27, 5313-14.—Pd accelerates decompn. of *p*-substituted Ph_2Hg in the following increasing order: α-$C_{10}H_7$, MeC_6H_4, BrC_6H_4, $EtOC_6H_4$, $MeOC_6H_4$, Ph, $PhCH_3$. The compds. are first decomposed into metals and radicals, the latter uniting at the surface of the catalyst to Ph_2 compds. The relative speed of decompn. of $(\alpha\text{-}C_{10}H_7)_2Hg$ is also given by the above series; $C_{10}H_8$ is formed at the expense of some $C_{10}H_7$ groups which are dehydrated to C. The relative effects of catalysts in alc. are, in decreasing order: Pd, Ni, Au, Ag, Cu; in tetralin Pd, Au, Ag, Ni, Cu. In alc. $(\alpha\text{-}C_{10}H_7)_2Hg$ gives RH compds.; all other compds. treated give RR; in tetralin hydration alone is observed. 16 tables give the results of expts. III. Compounds of lead and tin. M. M. Koton. *Ibid.* 653-7.—Ph_4Pb (I) and Ph_6Sn (II) undergo decompn. at 150° under the catalytic action of metal filings. In the absence of H the relative decreasing effects on the decompn. of I are represented by the series Pd, Au, Ag, Ni and under pressure of H by Pd, Ni, Au, Ag, Cu. Decompn. of II in presence of H is not observed at 150°, but is complete at 200° regardless of the nature of the catalyst. In the absence of H the decompn. is slight at 200°. The relative decreasing effects of catalysts in the case of II, in the absence of H, are Pd, Ag, Au, Ni; in the presence of H, Pd, Ni, Ag, Au and Cu. C_6H_6 results from both I and II in the presence of Ni, while with Pd Ph_2 is formed; Au stimulates both reactions. In the absence of H Ph_2 is formed in all cases. J. G. Tolpin

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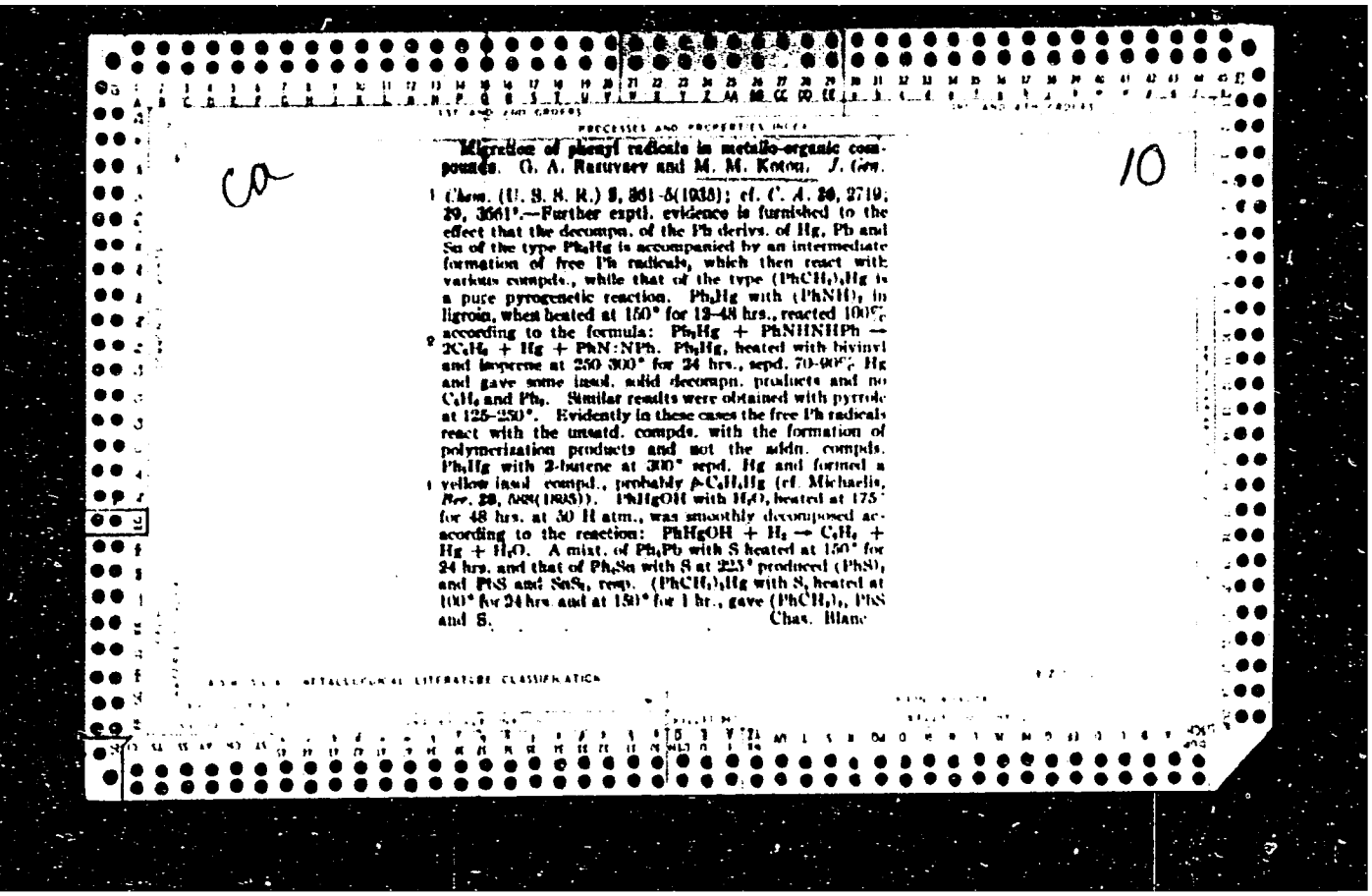

Migration of phenyl radicals in metallo-organic compounds. G. A. Razuvaev and M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) **8**, 861-8(1938); cf. *C. A.* **30**, 2719; **29**, 3561⁹.—Further expti. evidence is furnished to the effect that the decompn. of the Pb derivs. of Hg, Pb and Sn of the type Ph_3Hg is accompanied by an intermediate formation of free Ph radicals, which then react with various compds., while that of the type $(PhCH_2)_2Hg$ is a pure pyrogenetic reaction. Ph_2Hg with $(PhNH)_2$ in ligroin, when heated at 150° for 12–48 hrs., reacted 100%, according to the formula: $Ph_2Hg + PhNHNHPh \rightarrow 2C_6H_6 + Hg + PhN:NPh$. Ph_2Hg, heated with divinyl and isoprene at 250–300° for 24 hrs., sepd. 70–90% Hg and gave some insol. solid decompn. products and no C_6H_6 and Ph_2. Similar results were obtained with pyrrole at 125–250°. Evidently in these cases the free Ph radicals react with the unsatd. compds. with the formation of polymerization products and not the addn. compds. Ph_2Hg with 2-butene at 300° sepd. Hg and formed a yellow insol. compd., probably β-C_4H_7Hg (cf. Michaelis, *Ber.* **28**, 1668(1895)). $PhHgOH$ with H_2O, heated at 175° for 48 hrs. at 50 H atm., was smoothly decomposed according to the reaction: $PhHgOH + H_2 \rightarrow C_6H_6 + Hg + H_2O$. A mixt. of Ph_4Pb with S heated at 150° for 24 hrs. and that of Ph_4Sn with S at 225° produced (PhS)$_2$ and PbS and SnS_2, resp. $(PhCH_2)_2Hg$ with S, heated at 100° for 24 hrs. and at 150° for 1 hr., gave $(PhCH_2)_2$, PbS and S.

Chas. Blanc

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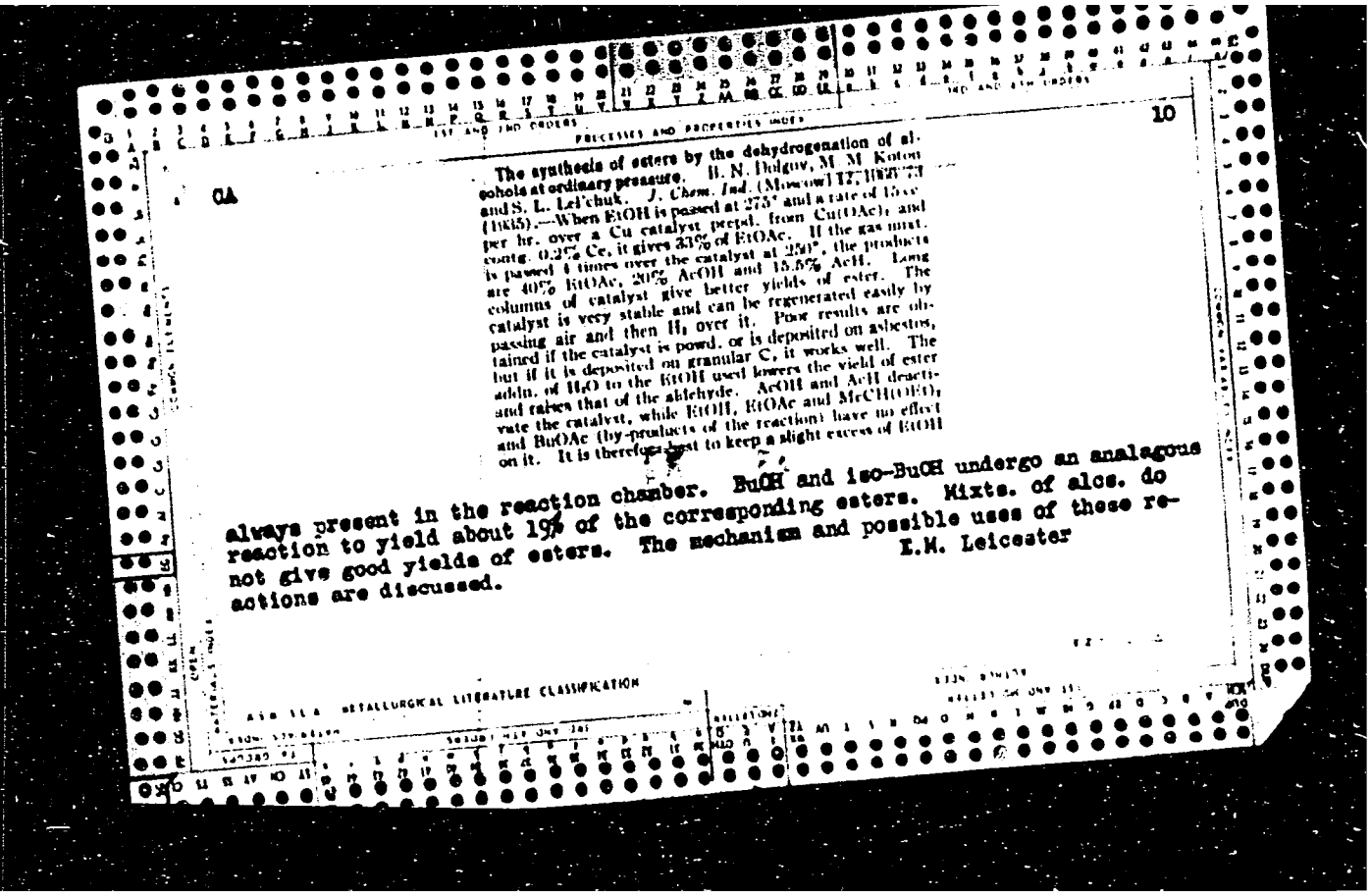

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The synthesis of esters by the dehydrogenation of alcohols at ordinary pressure. B. N. Dolgov, M. M. Koton and S. L. Lel'chuk. *J. Chem. Ind.* (Moscow) 12, 1182-7 (1935).—When EtOH is passed at 275° and a rate of 15 cc. per hr. over a Cu catalyst precpd. from Cu(OAc)$_2$ and contg. 0.2% Ce, it gives 33% of EtOAc. If the gas mixt. is passed 4 times over the catalyst at 250°, the products are 40% EtOAc, 20% AcOH and 15.6% AcH. Long columns of catalyst give better yields of ester. The catalyst is very stable and can be regenerated easily by passing air and then H_2 over it. Poor results are obtained if the catalyst is powd. or is deposited on asbestos, but if it is deposited on granular C, it works well. The addn. of H_2O to the EtOH used lowers the yield of ester and raises that of the aldehyde. AcOH and AcH deactivate the catalyst, while EtOH, EtOAc and MeCH(OH)Et, and BuOAc (by-products of the reaction) have no effect on it. It is therefore best to keep a slight excess of EtOH always present in the reaction chamber. BuOH and iso-BuOH undergo an analogous reaction to yield about 1% of the corresponding esters. Mixts. of alcs. do not give good yields of esters. The mechanism and possible uses of these reactions are discussed.

E.M. Leicester

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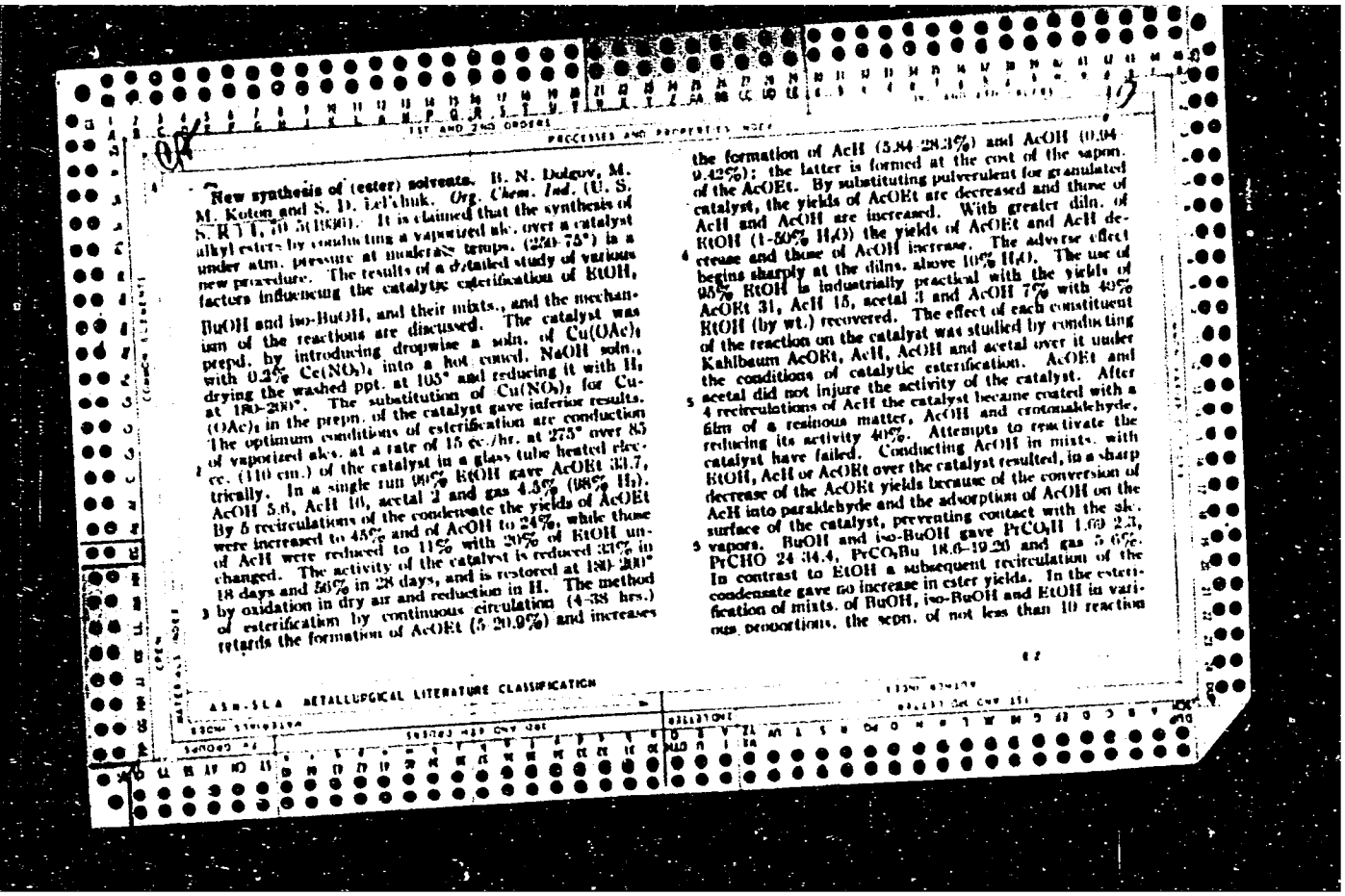

New synthesis of (ester) solvents. B. N. Dolgov, M. M. Koton and S. D. Lel'chuk. *Org. Chem. Ind.* (U. S. S. R.) 7, 50-5(1940). It is claimed that the synthesis of alkyl esters by conducting a vaporized alc. over a catalyst under atm. pressure at moderate temps. (220-75°) is a new procedure. The results of a detailed study of various factors influencing the catalytic esterification of EtOH, BuOH and iso-BuOH, and their mixts., and the mechanism of the reactions are discussed. The catalyst was prepd. by introducing dropwise a soln. of $Cu(OAc)_2$ with 0.2% $Ce(NO_3)_3$ into a hot concd. NaOH soln., drying the washed ppt. at 105° and reducing it with H_2 at 180-200°. The substitution of $Cu(NO_3)_2$ for $Cu(OAc)_2$ in the prepn. of the catalyst gave inferior results. The optimum conditions of esterification are conduction of vaporized alcs. at a rate of 15 cc./hr. at 275° over 85 cc. (110 cm.) of the catalyst in a glass tube heated electrically. In a single run 96% EtOH gave AcOEt 33.7, AcOH 5.6, AcH 16, acetal 2 and gas 4.5% (68% H_2). By 5 recirculations of the condensate the yields of AcOEt were increased to 45% and of AcOH to 24%, while those of AcH were reduced to 11% with 20% of EtOH unchanged. The activity of the catalyst is reduced 31% in 18 days and 56% in 28 days, and is restored at 180-200° by oxidation in dry air and reduction in H. The method of esterification by continuous circulation (4-38 hrs.) retards the formation of AcOEt (5-20.9%) and increases the formation of AcH (5.84-28.3%) and AcOH (0.04-9.42%); the latter is formed at the cost of the sapon. of the AcOEt. By substituting pulverulent for granulated catalyst, the yields of AcOEt are decreased and those of AcH and AcOH are increased. With greater dilns. of EtOH (1-50% H_2O) the yields of AcOEt and AcH decrease and those of AcOH increase. The adverse effect begins sharply at the dilns. above 10% H_2O. The use of 95% EtOH is industrially practical with the yields of AcOEt 31, AcH 15, acetal 3 and AcOH 7% with 49% EtOH (by wt.) recovered. The effect of each constituent of the reaction on the catalyst was studied by conducting Kahlbaum AcOEt, AcH, AcOH and acetal over it under the conditions of catalytic esterification. AcOEt and acetal did not injure the activity of the catalyst. After 4 recirculations of AcH the catalyst became coated with a film of a resinous matter, AcOH and crotonaldehyde, reducing its activity 40%. Attempts to reactivate the catalyst have failed. Conducting AcOH in mixts. with EtOH, AcH or AcOEt over the catalyst resulted, in a sharp decrease of the AcOEt yields because of the conversion of AcH into paraldehyde and the adsorption of AcOH on the surface of the catalyst, preventing contact with the alc. vapors. BuOH and iso-BuOH gave $PrCO_2H$ 1.6-2.2, PrCHO 24-34.4, $PrCO_2Bu$ 18.6-19.2 and gas 5.6%. In contrast to EtOH a subsequent recirculation of the condensate gave no increase in ester yields. In the esterification of mixts. of BuOH, iso-BuOH and EtOH in various proportions, the sepn. of not less than 10 reaction

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products in the condensate is difficult. Of the 4 possible esters AcOEt, Bu butyrate, Et butyrate and AcOBu, the latter predominates. The yields of mixed aldehydes, acids and esters (19–21%) are mean results for the individual alcs. The Bu fraction of the synthetic rubber production gave results similar to those of BuOH. The iso-Pr fraction gave a large yield of acids (up to 13%), caused by the decompn. of iso-PrOH into Me_2CO and H and the subsequent decompn. of Me_2CO into AcOH and $HCCH$. In the distn. of the condensate of the EtOH esterification there are formed azeotropic mixts. At 68–72° there distils a mixt. of 72% AcOEt and 25% EtOH contg. no acid or aldehyde. AcH (93% pure) is completely distd. off at 20–22°. A small fraction, b. 85–90°, consists chiefly of AcOBu. The final fraction, b. 110–18°, is pure 100% AcOH. There is no distn. residue. The mechanism of the reaction is thus interpreted: (1) EtOH → AcH + H_2; (2) 2AcH → AcOEt (Tishchenko, *J. Russ. Phys. Chem. Soc.* 1906); AcOEt may be also formed by other reactions than condensation of AcH; (3) formation of acetal from AcH and EtOH in the presence of AcOH: AcH + EtOH → $MeCH(OEt)_2$ + H_2O (Geuther, *Ann.* 126, 62(1863)); acetal itself may be catalytically decompd. into AcH, AcOEt, EtOH, C_2H_4, and H; (4) sapon. of the AcOEt with H_2O obtained in the formation of acetal or contained in alc. The formation of a little AcOBu in the esterification of EtOH may be explained by the condensation of AcH into aldol; this by splitting off H_2O is converted into crotonaldehyde, which in a H atm. is reduced to BuOH, and this reacts with the AcOH, giving AcOBu. **Technological problems of the synthesis of ethyl acetate by the new method.** N. M. Beltel, I. E. Hel'me and S. L. Lel'chuk. *Ibid.* 102 7.—All important phases of the industrial production of AcOEt and recovery of by-products based on the above method are discussed, and a large-scale procedure with schematic factory outlay is shown. Since the recirculation of the single-run condensate is impractical because of the poisoning of the catalyst with the AcH, it is proposed to distil off the AcH at 25° and either reduce it with the waste H to EtOH or oxidize it with air to AcOH. On the basis of recirculation of unchanged EtOH (40%) 1 ton of 95% EtOH gives in a single run AcOEt solvent (70% AcOEt + 25% EtOH) 850 kg., AcOH (100%) 350, acetal 40–50 and H (97%) 23 kg.

Chas. Blanc

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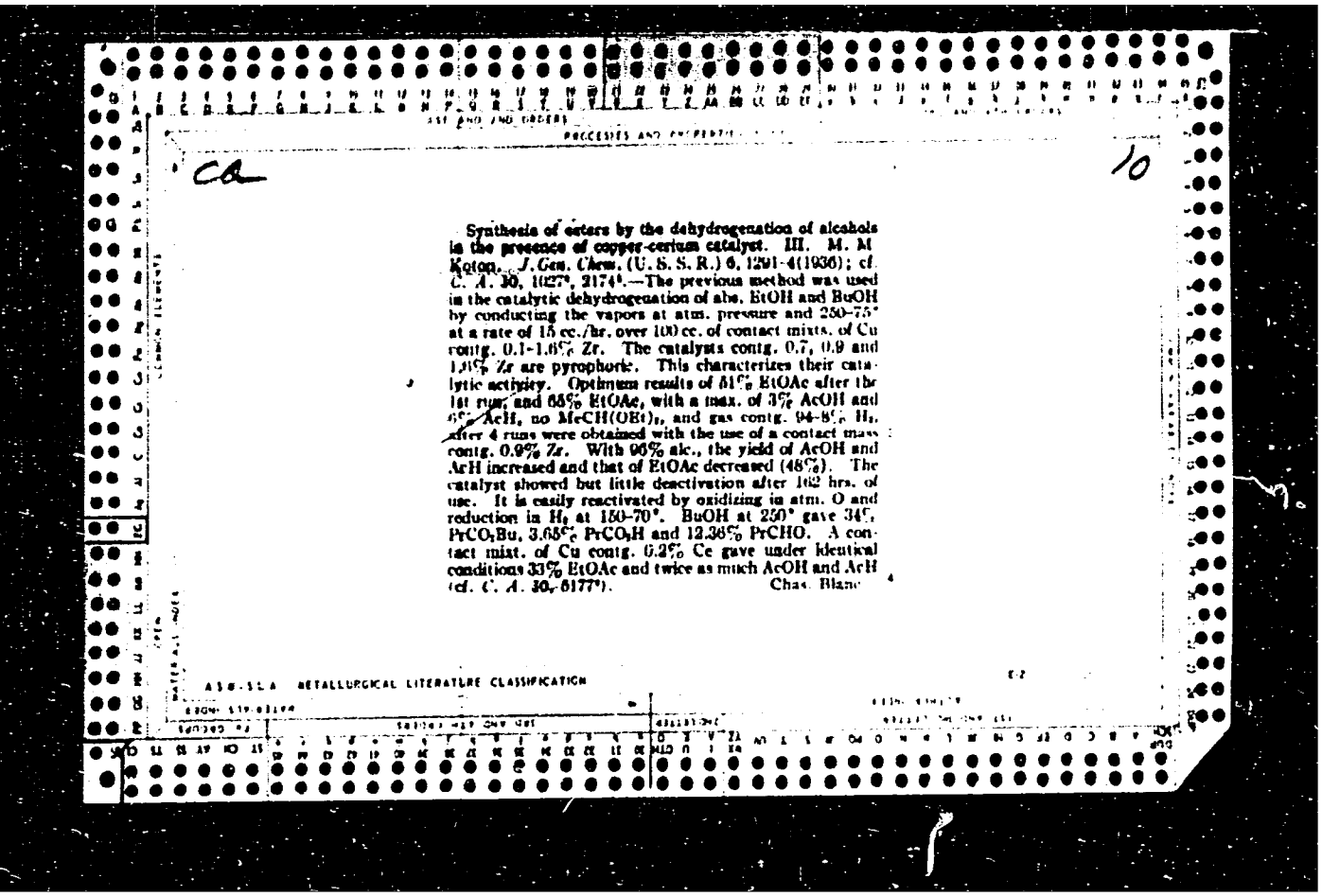

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Synthesis of esters by the dehydrogenation of alcohols in the presence of copper-cerium catalyst. III. M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) 6, 1291-4(1936); cf. C. A. 30, 1027⁸, 2174⁵.—The previous method was used in the catalytic dehydrogenation of abs. EtOH and BuOH by conducting the vapors at atm. pressure and 250–75° at a rate of 15 cc./hr. over 100 cc. of contact mixts. of Cu contg. 0.1–1.6% Zr. The catalysts contg. 0.7, 0.9 and 1.6% Zr are pyrophoric. This characterizes their catalytic activity. Optimum results of 81% EtOAc after the 1st run, and 65% EtOAc, with a max. of 3% AcOH and 6% AcH, no $MeCH(OEt)_2$, and gas contg. 94–8% H_2, after 4 runs were obtained with the use of a contact mass contg. 0.9% Zr. With 96% alc., the yield of AcOH and AcH increased and that of EtOAc decreased (48%). The catalyst showed but little deactivation after 102 hrs. of use. It is easily reactivated by oxidizing in atm. O and reduction in H_2 at 150–70°. BuOH at 250° gave 34% $PrCO_2Bu$, 3.65% $PrCO_2H$ and 12.36% PrCHO. A contact mixt. of Cu contg. 0.2% Ce gave under identical conditions 33% EtOAc and twice as much AcOH and AcH (cf. C. A. 30, 6177⁹). Chas. Blanc

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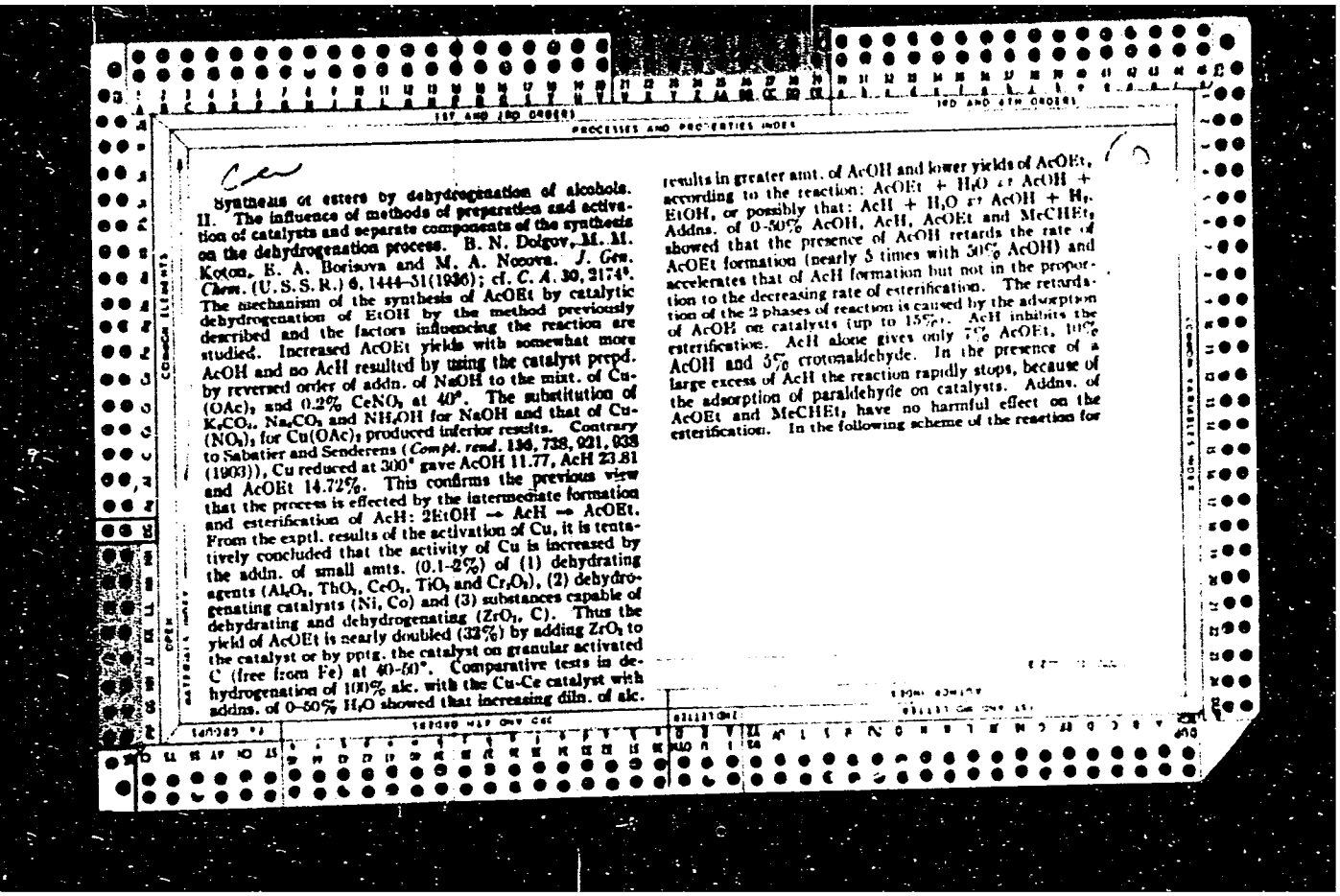

Syntheses of esters by dehydrogenation of alcohols. II. The influence of methods of preparation and activation of catalysts and separate components of the synthesis on the dehydrogenation process. B. N. Dolgov, M. M. Kotov, E. A. Borisova and M. A. Nozova. *J. Gen. Chem.* (U.S.S.R.) 6, 1444–51(1936); cf. *C. A.* 30, 2174⁹. The mechanism of the synthesis of AcOEt by catalytic dehydrogenation of EtOH by the method previously described and the factors influencing the reaction are studied. Increased AcOEt yields with somewhat more AcOH and no AcH resulted by using the catalyst prepd. by reversed order of addn. of NaOH to the mixt. of $Cu(OAc)_2$ and 0.2% $CeNO_3$ at 40°. The substitution of K_2CO_3, Na_2CO_3 and NH_4OH for NaOH and that of $Cu(NO_3)_2$ for $Cu(OAc)_2$ produced inferior results. Contrary to Sabatier and Senderens (*Compt. rend.* 136, 738, 921, 933 (1903)), Cu reduced at 300° gave AcOH 11.77, AcH 23.81 and AcOEt 14.72%. This confirms the previous view that the process is effected by the intermediate formation and esterification of AcH: $2EtOH \rightarrow AcH \rightarrow AcOEt$. From the exptl. results of the activation of Cu, it is tentatively concluded that the activity of Cu is increased by the addn. of small amts. (0.1–2%) of (1) dehydrating agents (Al_2O_3, ThO_2, CeO_2, TiO_2 and Cr_2O_3), (2) dehydrogenating catalysts (Ni, Co) and (3) substances capable of dehydrating and dehydrogenating (ZrO_2, C). Thus the yield of AcOEt is nearly doubled (33%) by adding ZrO_2 to the catalyst or by pptg. the catalyst on granular activated C (free from Fe) at 40–50°. Comparative tests in dehydrogenation of 100% alc. with the Cu-Ce catalyst with addns. of 0–50% H_2O showed that increasing dilu. of alc. results in greater amt. of AcOH and lower yields of AcOEt, according to the reaction: $AcOEt + H_2O \rightleftarrows AcOH + H_2$. EtOH, or possibly that: $AcH + H_2O \rightleftarrows AcOH + H_2$. Addns. of 0–50% AcOH, AcH, AcOEt and $MeCHEt_2$ showed that the presence of AcOH retards the rate of AcOEt formation (nearly 5 times with 50% AcOH) and accelerates that of AcH formation but not in the proportion to the decreasing rate of esterification. The retardation of the 2 phases of reaction is caused by the adsorption of AcOH on catalysts (up to 15%). AcH inhibits the esterification. AcH alone gives only 5% AcOEt, 10% AcOH and 5% crotonaldehyde. In the presence of a large excess of AcH the reaction rapidly stops, because of the adsorption of paraldehyde on catalysts. Addns. of AcOEt and $MeCHEt_2$ have no harmful effect on the esterification. In the following scheme of the reaction for

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KOTONE, M. M.

"Synthese des ethers-sels par la methode de la deshydrogenation des alcools. IV" Nouvelle methode d'obtention et de la regeneration des catalyseurs d'etherification". Dolgow, R. N., Kotone, M. M. et Ssidorow, N. W. (p. 1456)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1936, Vol. 6, No. 10

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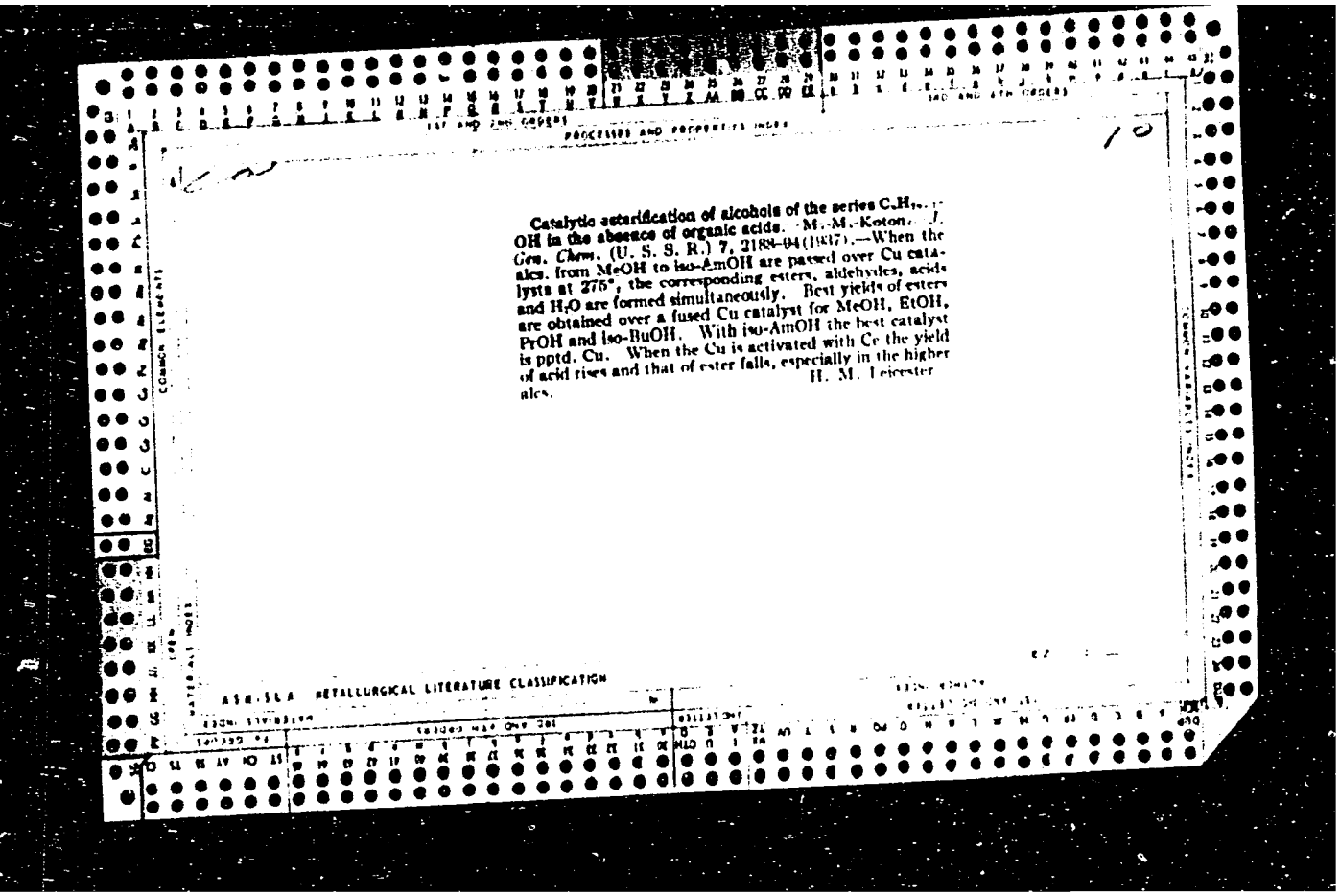

Catalytic esterification of alcohols of the series $C_nH_{...}OH$ in the absence of organic acids. M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) 7, 2188-94 (1937).—When the alcs. from MeOH to iso-AmOH are passed over Cu catalysts at 275°, the corresponding esters, aldehydes, acids and H_2O are formed simultaneously. Best yields of esters are obtained over a fused Cu catalyst for MeOH, EtOH, PrOH and iso-BuOH. With iso-AmOH the best catalyst is pptd. Cu. When the Cu is activated with Ce the yield of acid rises and that of ester falls, especially in the higher alcs.
H. M. Leicester

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

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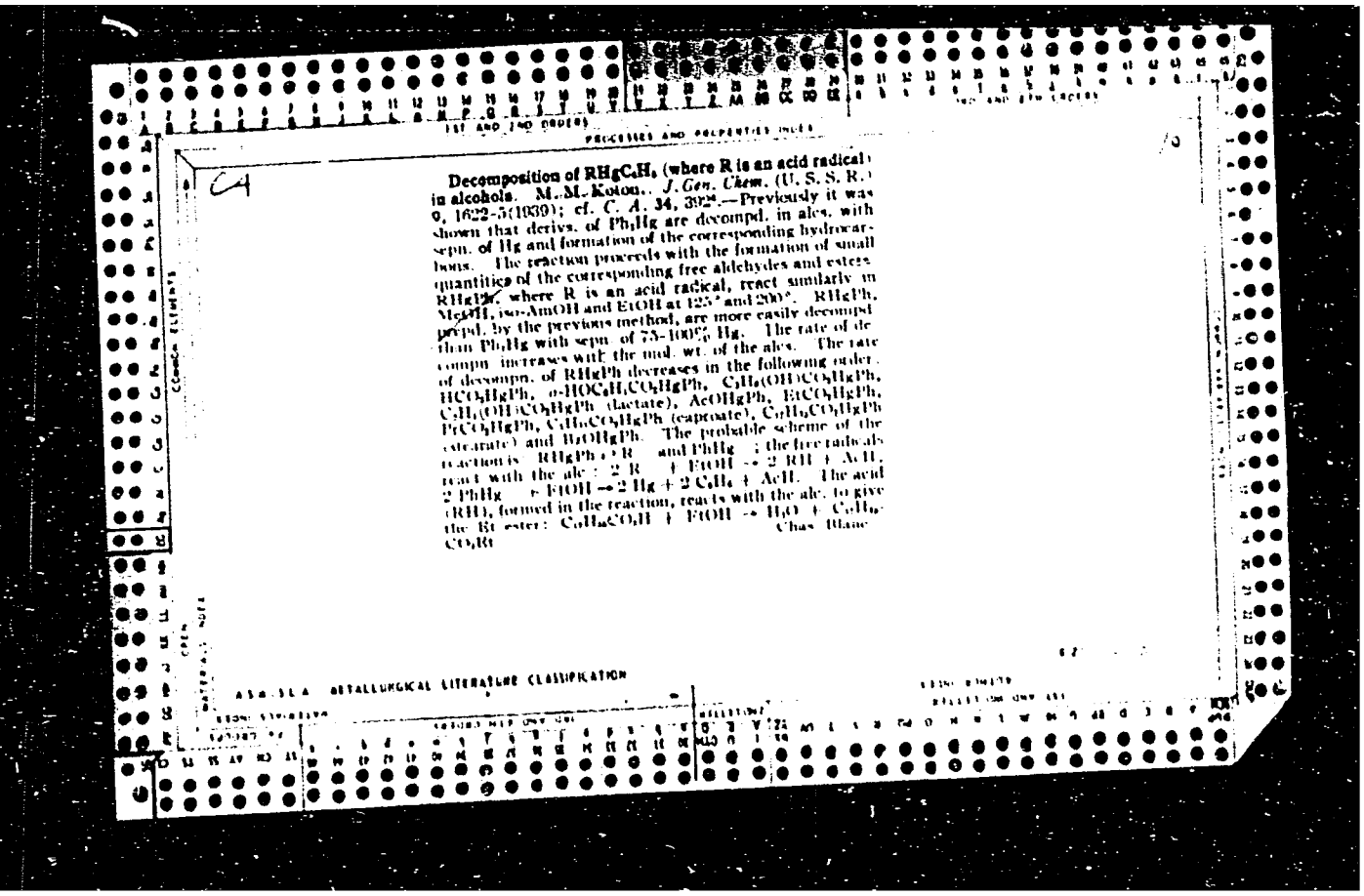

CA

Decomposition of $RHgC_6H_5$ (where R is an acid radical) in alcohols. M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) 9, 1622-5(1939); cf. *C. A.* 34, 392⁴.—Previously it was shown that derivs. of Ph_2Hg are decompd. in alcs. with sepn. of Hg and formation of the corresponding hydrocarbons. The reaction proceeds with the formation of small quantities of the corresponding free aldehydes and esters. $RHgPh$, where R is an acid radical, react similarly in MeOH, iso-AmOH and EtOH at 125° and 200°. $RHgPh$, prepd. by the previous method, are more easily decompd than Ph_2Hg with sepn. of 75–100% Hg. The rate of decompn increases with the mol. wt. of the alc. The rate of decompn. of $RHgPh$ decreases in the following order: HCO_2HgPh, o-$HOC_6H_4CO_2HgPh$, $C_2H_5OHCO_2HgPh$, $C_2H_5(OH)CO_2HgPh$ (lactate), $AcOHgPh$, $EtCO_2HgPh$, $PrCO_2HgPh$, $C_{17}H_{35}CO_2HgPh$ (caprate), $C_{17}H_{35}CO_2HgPh$ (stearate) and $BzOHgPh$. The probable scheme of the reaction is $RHgPh + R$ and $PhHg$; the free radicals react with the alc.: $2R + EtOH \rightarrow 2RH + AcH$, $2PhHg + EtOH \rightarrow 2Hg + 2C_6H_6 + AcH$. The acid (RH), formed in the reaction, reacts with the alc. to give the Et ester: $C_6H_5CO_2H + EtOH \rightarrow H_2O + C_6H_5CO_2Et$

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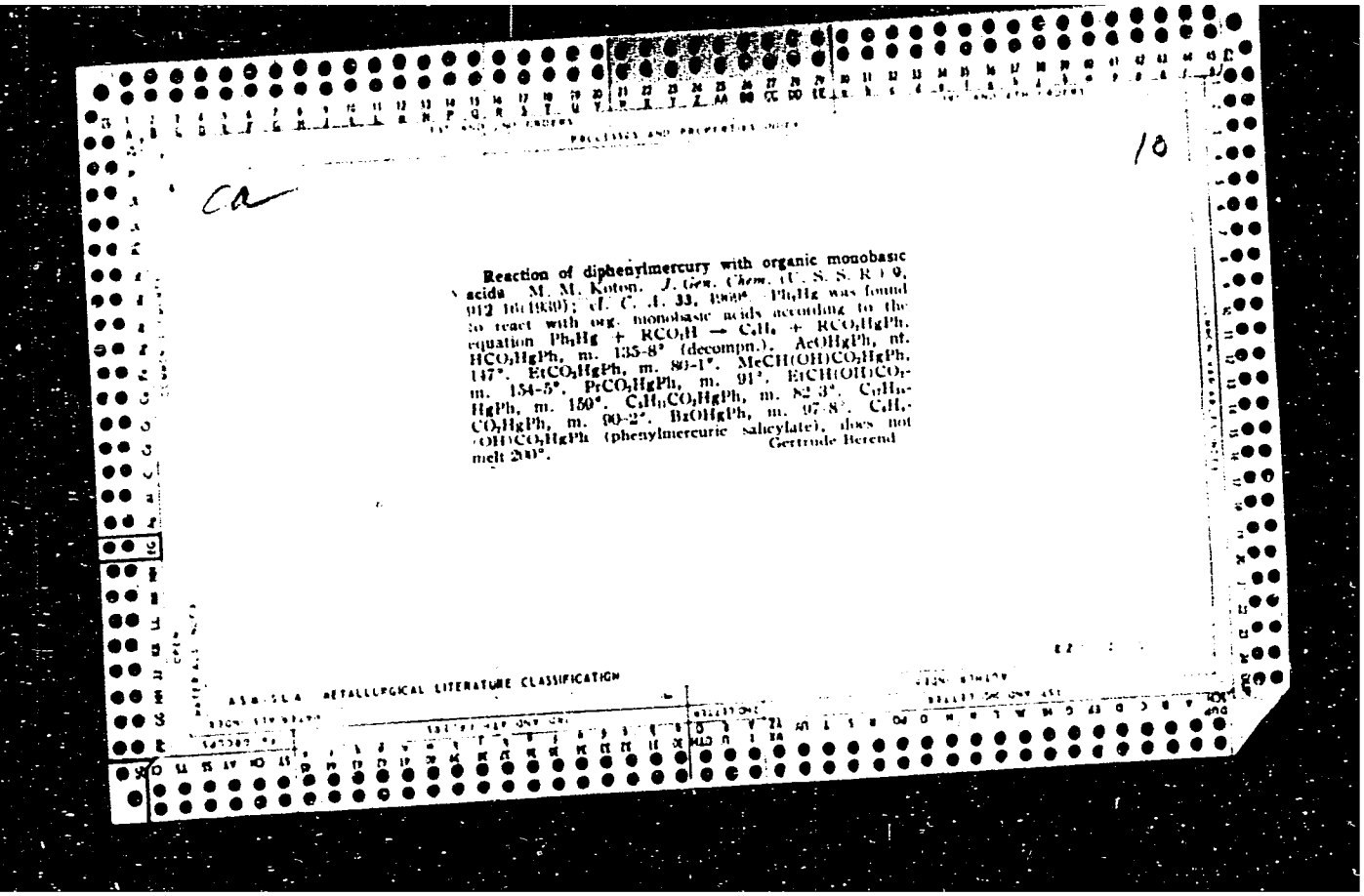

Reaction of diphenylmercury with organic monobasic acids. M. M. Koton. *J. Gen. Chem.* (U. S. S. R.) 9, 912 16(1939); cf. *C. A.* 33, 8998. Ph_2Hg was found to react with org. monobasic acids according to the equation $Ph_2Hg + RCO_2H \rightarrow C_6H_6 + RCO_2HgPh$. HCO_2HgPh, m. 135-8° (decompn.). $AcOHgPh$, m. 147°. $EtCO_2HgPh$, m. 80-1°. $MeCH(OH)CO_2HgPh$, m. 154-5°. $PrCO_2HgPh$, m. 91°. $EtCH(OH)CO_2HgPh$, m. 150°. $C_4H_9CO_2HgPh$, m. 82-3°. $C_5H_{11}CO_2HgPh$, m. 90-2°. $BzOHgPh$, m. 97-8°. $C_6H_4(OH)CO_2HgPh$ (phenylmercuric salicylate), does not melt 280°.

Gertrude Berend

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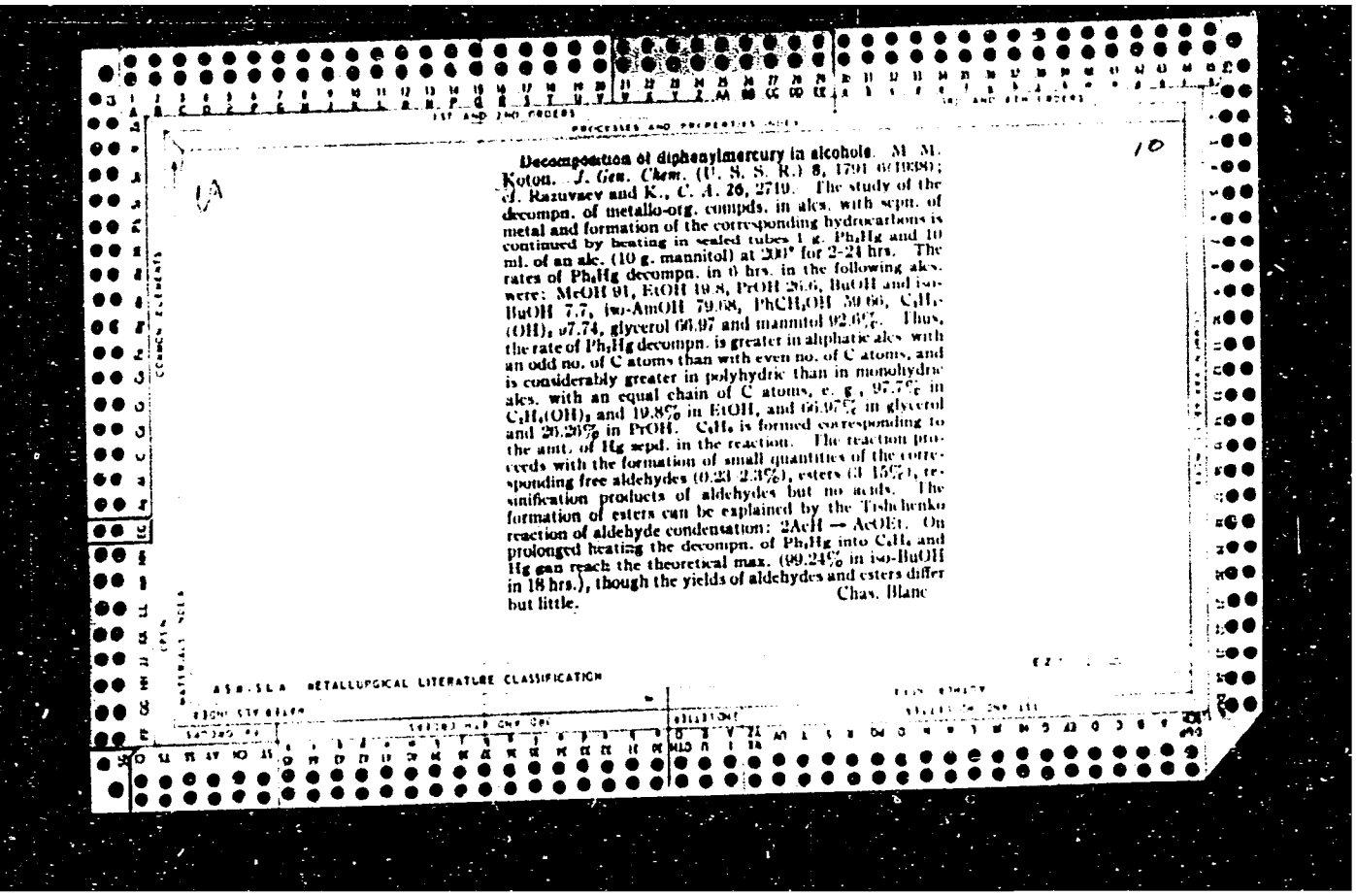

Decomposition of diphenylmercury in alcohols. M. M. Kotov. *J. Gen. Chem.* (U. S. S. R.) **8**, 1791-6(1938); cf. Razuvaev and K., C. A. **26**, 2719. The study of the decompn. of metallo-org. compds. in alcs. with septn. of metal and formation of the corresponding hydrocarbons is continued by heating in sealed tubes 1 g. Ph_2Hg and 10 ml. of an alc. (10 g. mannitol) at 200° for 2-24 hrs. The rates of Ph_2Hg decompn. in 6 hrs. in the following alcs. were: MeOH 91, EtOH 19.8, PrOH 26.6, BuOH and iso-BuOH 7.7, iso-AmOH 79.08, $PhCH_2OH$ 59.66, $C_6H_6(OH)_6$ 7.74, glycerol 66.97 and mannitol 92.6%. Thus, the rate of Ph_2Hg decompn. is greater in aliphatic alcs. with an odd no. of C atoms than with even no. of C atoms, and is considerably greater in polyhydric than in monohydric alcs. with an equal chain of C atoms, e. g., 97.7% in $C_6H_8(OH)_2$ and 19.8% in EtOH, and 66.97% in glycerol and 20.26% in PrOH. C_6H_6 is formed corresponding to the amt. of Hg sepd. in the reaction. The reaction proceeds with the formation of small quantities of the corresponding free aldehydes (0.23-2.3%), esters (1.15%), resinification products of aldehydes but no acids. The formation of esters can be explained by the Tishchenko reaction of aldehyde condensation: $2AcH \rightarrow AcOEt$. On prolonged heating the decompn. of Ph_2Hg into C_6H_6 and Hg can reach the theoretical max. (99.24% in iso-BuOH in 18 hrs.), though the yields of aldehydes and esters differ but little.

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