FAVORSKAYA, L.V.

137-58-5-9319

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 75 (USSR)

AUTHORS: Ponomarev, V.D., Stolyarova, Ye.I., Koz'min, Yu.A., Favorskaya, L.V., Shalavina, Ye.L.

TITLE: A Leaching Treatment of Dust From Furnaces of Lead Plants (Shchelochnoy sposob pererabotki pyley svintsovykh zavodov)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str-va i stroymaterialov, 1956, Nr 4 (15), pp 3-17

ABSTRACT: The authors present a technology of a dust-processing system intended to increase the extraction of Cd, Tl, and In from roasted dusts issuing from smelting furnaces in lead plants. The system possesses the following advantages: 1) the Tl is extracted in the early stage of dust processing, namely, during aqueous leaching; the extraction of metallic Tl constitutes 52-57%; the electrolytic Tl, obtained by means of a two-stage electrolysis process, is 99.998% pure; 2) large amounts of Pb, Zn, and As are extracted into solution in the process of alkaline leaching. Cd and In remain in the residue. Owing to the considerable reduction in the weight of the leaching residue (down to 1/6-1/11), the amount of Cd and In contained in it is 6-11 times greater than it was in the original dust.

G.S.

Card 1/1

1. Lead ores--Processing 2. Metals--Separation 3. Electrolysis --Applications

Favorskaya L.V.

USSR/Chemical Technology. Chemical Products and Their Application. J-6
Mineral Salts. Oxides, Acids, Bases.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27432

Author : L.V. Favorskaya, Ye.I. Stolyarova
Inst : Academy of Sciences of Kazakh SSR
Title : Speed of Decomposition of Zinc Oxide Minerals by Caustic Soda Solution

Orig Pub: Izv. AN KazSSR, Ser. gorn. dela, stroymaterialov i metallurgii, 1956, vyp. 6, 92-103.

Abstract: The speed and the completeness of the interaction reaction of the minerals smithsonite ($ZnCO_3$) (I) and calamine ($Zn_2SiO_4.H_2O$) (II) with NaOH solution (III) was studied. The decomposition of I and II was studied with regard to the dependence on the concentration of III, temperature, the speed of the pulp agitation, the magnitude of the caustic modulus of the solution and the fineness of the mineral grains. It is shown that silica and soda produced

Card : 1/2

USSR/Chemical Technology. Chemical Products and Their Application. J-6
Mineral Salts. Oxides,Acids, Bases.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27432

at the decomposition of I and II do not pass completely into the solution in consequence of their limited solubility in III and produce a film on the surface of the mineral, which sharply slows the reaction down being a basical diffusion resistance. The temperature and concentration of III influence the solubility and the conditions of formation of the film of reaction products.

Card : 2/2

PONOMAREV, V.D.; STOLYAROVA, Ye.I.; KOZ'MIN, Yu.A.; FAVORSKAYA, L.V.;
SHALAVINA, Ye.L.

Alkali method of treating lead refinery flue dusts. Izv.AN Kazakh. SSR.Ser.gor.dela met., stroi. i stroimat. no.4:1-17 '57. (MIRA 11:4)
(Flue ash) (Leaching)

Favorskaya, L.V.

137-58-5-9323

Translation from: Referativnyy zhurnal, Metallurgiya 1958, Nr 5, p 76 (USSR)

AUTHORS: Favorskaya, L. V., Stolyarova, Ye. I.

TITLE: Conditions Required for the Formation of Arsenates of Trivalent Thallium (Usloviya obrazovaniya arsenatov trekhvalentnogo talliya)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str-va i stroymaterialov, 1957, Nr 4 (15), pp 53-58 (Summary in Kazakh)

ABSTRACT: The conditions required for the formation of arsenates of Tl were studied on synthetic sulfuric-acid solutions containing the sulfate of Tl^{3+} and As acid. An aqueous solution of ammonia was added, under stirring, to 50 cm^3 of the solution being investigated, after the latter had been heated to 40°C. Upon reaching a definite pH value, a precipitate was observed in the solution. The precipitate was removed and the solution was tested for Tl. The process of precipitation of Tl in the presence of As was studied as a function of the acidity of the medium on a solution containing 0.46 g/ℓ of Tl, 2.3 g/ℓ of As, and 52.9 g/ℓ of Fe. Maximum Tl concentration, in a solution containing As and having a pH of 1.2 amounts to 0.03 g/ℓ . In order to determine the

Card 1/2

137-58-5-9323

Conditions Required for (cont.)

approximate composition of precipitates obtained in various media, experiments were conducted on a solution which contained 0.4 g/ℓ Tl, 3.78 g/ℓ As, and 52.9 g/ℓ H_2SO_4. At a pH of 1.6-2.0, the composition of precipitates of Tl arsenates is nearly identical, and the molar Tl-As ratio in the precipitate amounts to 1:2. At a pH > 4 the precipitates undergo a change in color, while the Tl-As ratio increases and, at a pH of 8.67, becomes equal to 1:0.5.

G.S.

1. Thallium arsenates--Production 2. Thallium arsenates--Precipitation
3. Arsenic acids--Chemical reactions 4. Thallium--Chemical reactions

Card 2/2

FAVORSKAYA, L.V.; PONOMAREVA, Ye.I.

Pressure of thallium sulfate vapor. Izv.AN Kazakh.SSR. Ser.met.obog.i ogneup. no.2:30-33 '60. (MIRA 13:8)
(Thallium sulfate) (Vapor pressure)

S/137/62/000/007/009/072
A052/A101

AUTHORS: Favorskaya, L. V., Nikiforova, G. A., Gur'yeva, A. I.

TITLE: On the possibility of extracting scandium from wolframites and beryls

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1962, 26, abstract 7G178 ("Tr. Kazakhsk. n.-i. in-ta mineral'n. syr'ya", no. 5, 1961, 269 - 274)

TEXT: The possibility of extracting Sc from slags of Fe-W production was investigated. Up to 85% Sc can be extracted into solution from a slag ground by 80% to 200 mesh when decomposing the slag with 18% HCl solution, the temperature 80 - 90°C, the relation liquid phase : solid phase = 4 : 1. From the solution obtained Sc can be precipitated sufficiently fully by means of Na_2SiF_6. Silicofluoride precipitate, after being hydrated with 40% NaOH, contains 6 - 8% Sc_2O_3. To extract Sc from beryl the calcium sulfate method of processing was used. After con-melting beryl, sulfating and lixiviating the melt, a solution was obtained containing ~25 g/l BeO, 36 g/l Al_2O_3 and ~90 mg/l Sc_2O_3. The losses of Sc with

Card 1/2

alumoammonia alum precipitated from the solution are ~5%. After evaporating the solution, $BeSO_4$ crystallizes out and Sc and Fe remain in the solution. When precipitating $Fe(OH)_3$ with the excess of 40% NaOH a co-precipitation of Sc takes place. The obtained Fe precipitate contains 1.9% Sc_2O_3 when completely extracted from the solution. Sc can be separated from Fe by precipitating oxalates in the presence of a large amount of Ca.

L. Vorob'yeva

[Abstracter's note: Complete translation]

ACCESSION NR: AR4015659 S/0081/63/000/021/0318/0318

SOURCE: RZh. Khimiya, Abs. 21L43

AUTHOR: Nikiforova, G. A.; Favorskaya, L. V.; Ponomarev, V. D.

TITLE: Precipitation of scandium with sodium fluosilicate

CITED SOURCE: Tr. Kazakhsk. n.-i. in-ta mineral'n. sy*r'ya, vy*p. 7, 1962, 253-257

TOPIC TAGS: scandium, sodium fluosilicate, scandium fluoride, scandium precipitation, sodium fluoscandate

ABSTRACT: A mixture of scandium fluoride and sodium hexafluoscandate forms during the sodium fluosilicate precipitation of scandium from chloride solutions. The scandium fluoride content in the precipitate increases as heating is prolonged and after 4 hours of heating the precipitate contains only scandium fluoride. Bibl. with 11 references. Authors' summary.

DATE ACQ: 09Dec63 SUB CODE: CH ENCL: 00

Card 1/1

ACCESSION NR: AR4015658 S/0081/63/000/021/0318/0318

SOURCE: RZh. Khimiya, Abs. 21L42

AUTHOR: Nikiforova, G. A.; Favorskaya, L. V.; Ponomarev, V. D.

TITLE: Coprecipitation of scandium with calcium from synthetic solutions under the influence of sodium fluosilicate

CITED SOURCE: Tr. Kazakhsk. n.-i. in-ta mineral'n. sy*r'ya, vy*p. 7, 1962, 258-265

TOPIC TAGS: scandium, calcium, sodium fluosilicate, scandium-calcium coprecipitation, miscibility threshold, abnormal mixed crystal, dispersion factor, scandium fluosilicate, calcium fluosilicate

ABSTRACT: This study concerned the codeposition of small amounts of Sc and Ca during their precipitation from chloride solutions in the presence of sodium fluosilicate. It was established that a definite miscibility threshold is observed during the coprecipitation. The solid phase Ca:Sc ratio of $1:1.5\cdot10^{-1}$ remains constant when the concentration of components in the solution is varied prior to precipitation. This definitely indicates the formation of abnormal mixed crystals of Ca and Sc fluorides. Diagrams of the coprecipitation of Sc and Ca

ACCESSION NR: AR4015658

at constant initial concentrations of one component and variable concentrations of the other are characteristic of solid solutions, the latter being represented in some cases by abnormal mixed crystals. The dispersion factor decreases as the concentration of one component (Ca) in the initial solution lessens, tending to zero values. This attests to the existence of a minimum miscibility threshold which is characteristic for the formation of abnormal mixed crystals. Bibl. with 10 references. Authors' summary.

DATE ACQ: 09Dec63 SUB CODE: CH ENCL: 00

Card 2/2

S/137/63/000/001/004/019
A006/A101

AUTHORS: Favorskaya, L. V., Nikiforova, G.A.

TITLE: Side extraction of scandium from beryllium

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1963, 19, abstract 1G123 ("Tr. Kazakhsk. n.-i. in-ta mineral'n. syr'ya", 1961, no. 6, 239 - 243)

TEXT: The initial material was a ferrous product, obtained during the processing of beryllium and containing 0.04% Sc_2O_3. A 1 g batch of the product was dissolved in a least HCl amount with preheating to 90°C. The insoluble precipitate was filtrated-off, and $CaCl_2$ was added as a precipitating agent. Prior to the precipitation of oxalates the solutions were neutralized with ammonia. The oxalates were precipitated by solid oxalic acid at pH 2.5 - 3.0, 70°C, and stirring during 15 minutes. The oxalates were allowed to settle for 24 hours and were then filtrated. The washed precipitate was dried and roasted at 700°C for 1 hour. The oxides obtained were dissolved in HCl for refining from Ca and Mg, hydroxides were precipitated from the chloride solutions by ammonia, dried

Card 1/2

S/137/63/000/001/004/019
A006/A101

Side extraction of scandium from beryllium

and roasted at 700°C. The optimum amount of the precipitating agent is 2 g $CaCl_2$ per 1 g ferrous product. The extraction of Sc is then 86%. To refine the Sc product from Fe salts, it was dissolved in HCl, and oxalates were again precipitated from the solution. The product obtained after roasting the oxalates contained 98% Sc_2O_3. The extraction of Sc from the ferrous cake into the final product was 78.6%.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 2/2

ROMANOVA, A.D.; FAVORSKAYA, L.V.; PONOMAREV, V.D.

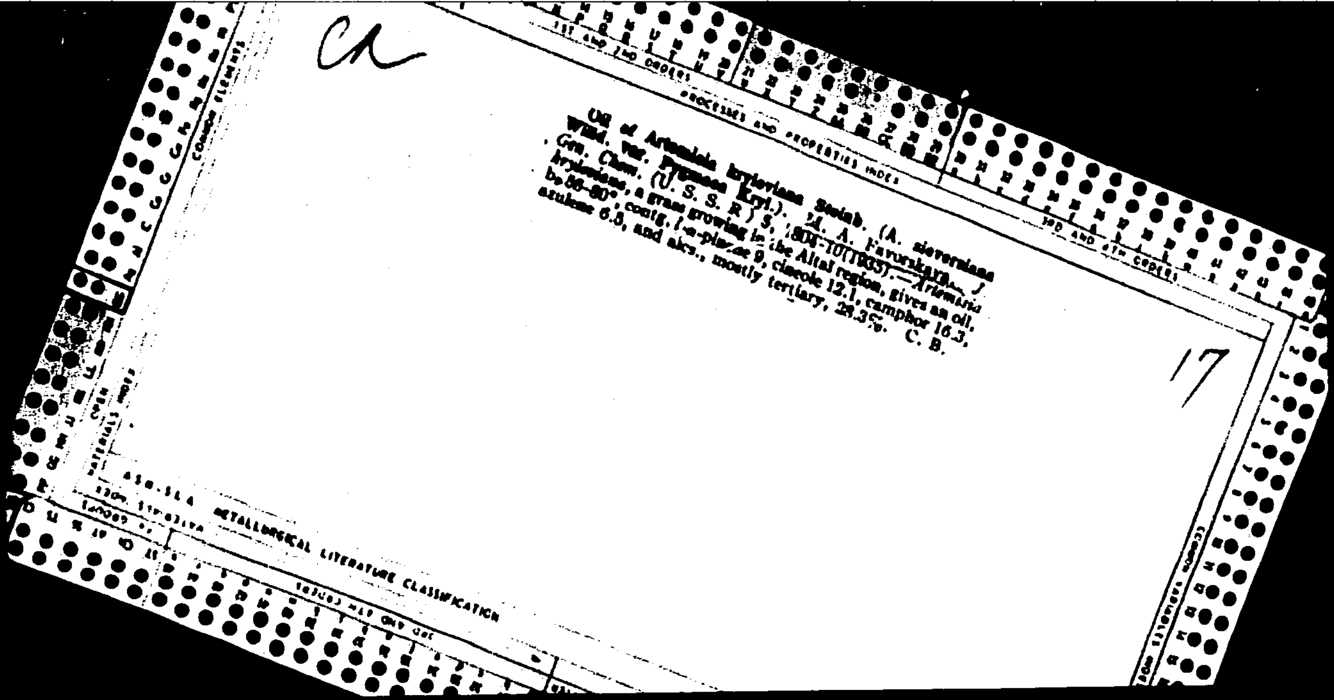
Use of infrared spectroscopy in studying the extraction mechanism of scandium with tributyl phosphates. Izv. AN Kazakh. SSR. Ser. tekh. i khim. nauk no.2:68-74 '63. (MIRA 17:2)

ROMANOVA, A.D.; FAVORSKAYA, L.V.; PONOMAREV, V.D.

Composition of the complexes of hydrochloric acid and scandium extracted with tributyl phosphate. Izv. AN Kazakh. SSR. Ser.tekh. i khim.nauk no.3:49-55 '64. (MIRA 17:2)

NIKIFOROVA, G.A.; FAVORSKAYA, L.V.; FONOMAREV, V.D.

Coprecipitation of scandium and aluminum under the effect on their solutions of sodium silicofluoride. Trudy Inst. met. i ob[illegible]. AN Kazakh. SSR 9:85-89 '64. (MIRA 17:9)



Ch

Oil of Artemisia kryloviana Steinb. (A. sieversiana Willd. var. Pygmaea Kryl.). M. A. Favorskaya. J. Gen. Chem. (U. S. S. R.) 5, 1808-10(1935).—Artemisia kryloviana, a grass growing in the Altai region, gives an oil, b6 56-80°, contg. l-α-pinene 9, cineole 12.1, camphor 16.3, azulene 6.8, and alcs., mostly tertiary, 28.3%. C. B.

17

FAVORSKAYA, M.A.

PROCESSES AND PROPERTIES INDEX

CA

10

Production of 2-ethoxy-1,3-butadiene and 1-methyl-1-methoxyallene, and their polymerization. I. A. Rotenberg and M. A. Favorskaya. *J. Gen. Chem.* (U. S. S. R.) 6, 185-9(1936).—Butadiene alkoxy derivs. are of interest as possible materials for the production of synthetic rubber. Favorskii (*J. Russ. Phys.-Chem. Soc.* 19, 414 (1887)) showed that monosubstituted acetylenes on heating with an alc. in the presence of excess KOH are isomerized into disubstituted acetylenes or into unsymmetrically disubstituted allenes, depending on whether the acetylene H is substituted by a primary or a secondary radical. He interpreted the mechanism of the reaction as a result of successive addns. of the alc. elements to the C and subsequent decompn. of the resulting tertiary ethers with the cleavage of the alc. particles in a different direction. Thus he obtained under these conditions isopropenone ether from allylene and allene with EtOH. Accordingly, in the conversion of vinylacetylene (I) there could be expected the formation either of a stable ether by the addn. of alc. at the triple bond as in the case of allylene: I → CH_2:CHC(OR):CH_2, or of MeC(OR):C:CH_2 by a preliminary isomerization of I and subsequent addn. of alc. elements: I → CH_2:CHC(OR)·CH_3 → ROH → CH_2:C:C:CH_2 → MeC(OR)·C:CH_2. The expts. showed that the reaction proceeds differently, depending on the nature of the alc. used. Thus the reaction with EtOH is confined to the addn. of alc. at the triple bond with the formation of CH_2:C(OEt)CH:CH_2 (II), while with MeOH it proceeds through an intermediate isomerization to the formation of the stable ether with allene grouping CH_2:C:C(OEt)Me (III). Carothers (*C. A.* 28, 4373^9) obtained MeC⋮CCH$_2$OMe by condensation of I with alc. in the presence of MeONa. Analysis of the product obtained by this method showed no traces of MeOCH$_2$CO$_2$H, and, therefore, it must be III. One part of I with 3 parts of EtOH and 3 parts of solid KOH was autoclaved at 140-50° for 10 hrs. The reaction product was redistd. into 3 fractions, b. 113-17° (70%), 145-50° and b_{17} 140-5°. The main fraction, d_{20}^{20} 0.839, n_D^{20} 1.43, mol. wt. 97.25, (calcd. for ethoxybutadiene 98), M. R. 30.22 (calcd. M. R. 30.4). The product analyzed for II. I, mixed with 3 parts of MeOH and KOH on autoclaving at 150° for 18 hrs. gave 70% III, b. 92-100°, mol. wt. 83.9 (calcd. for methylmethoxyallene 84), d_{20}^{20} 0.8497, n_D^{20} 1.437, M. R. 25.98 (calcd. M. R. 25.90). I on heating with MeOH alone at 100-50° gave styrene. In the expts. with thermal and catalytic polymerization of the ethers, only II in the presence of the catalytically active α-chloroprene gave a rubber-like latex. The work is being continued.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FAVORSKAYA, M. A.

PA 29/49T36

Jan/Feb 49

USSR/Geology
Volcanology
Tectonics

"The Geologic Situation of the Upper Mesozoic and Cenozoic Magmatic Formations in the Southern Maritime Area," M. A. Favorskaya, 6 pp

"Iz Ak Nauk SSSR, Ser Geol" No 1

Studies recent development of volcanism in the southern maritime area, with particular attention to the extensive spread of multistage intrusive formations in this region.

29/49T36

ID

FAVORSKAYA, M. A.

PA 3/50T37

USSR/Geology - Petrography Sep/Oct 49
Clinkers

"Tertiary Tuffaceous Clinkers of Southern Primorskiy Kray," M. A. Favorskaya, 4 pp

"Iz Ak Nauk SSSR, Ser Geol" No 5 - p. 137-41

Subject tuffaceous clinkers (tufolavy) date to Paleogene in age and lie on eroded surface of Upper Cretaceous and Lower Tertiary effusives and granitoids breaching these effusives. Primorskiy tuffaceous clinker is closest in chemical composition to the red variety (others are black and yellow) of Armenian tuffaceous clinkers.

[redacted] 3/50T37

CA

Stages in the development of the youthful vulcanism of the South Primoria. M. A. Favorskaya. *Izvest. Akad. Nauk U.S.S.R., Ser. Geol.* No. 3, 133-47(1950).—Data are provided for the chem. compn. of effusion complexes and intrusion masses characteristic of each stage of development of the vulcanism of this region. Gladys S. Macy

8

A

Metamorphism at the contacts of Tertiary "gray granites." M. A. Favorskaya. *Trudy Inst. Geol. Nauk, Akad. Nauk S.S.S.R.* No. 107, *Petrog. Ser.* No. 31, 64-78(1949).—The phenomena are discussed and illustrated by chem. and mineralogical analyses. M. Hosch

FAVORSKAYA, M.A.

[redacted]

Role of processes of contamination and metasomatism in the formation of Tertiary monzonitic intrusions of various regions of the Far East. Trudy Inst.geol.nauk 148:92-111 '53. (MLRA 6:12)
(Far East--Rocks, Igneous) (Rocks, Igneous--Far East)

FAVORSKAYA,M.A.

Relation of tin mineralization to magmatism. Izv.AN SSSR. Ser. geol. 20 no.4:20-30 Jl-Ag '55. (MIRA 8:10)
(Tin ores)

FAVARSKAYA, M.A.

[illegible]

FAVORSKAYA, M.A.

[redacted]

Some secondary changes in acidic effusions in the southern Maritime Territory. Izv.AN SSSR. Ser.geol. 21 no.7:72-78 Jl '56.
(MIRA 9:10)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii Akademii nauk SSSR, Moskva.
(Maritime Territory--Rocks, Igneous)

[illegible]

effusive rocks are given. Gladys S.

Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii AN SSSR, maritime

maritime territory--ore deposits) (Sikho [illegible]

AUTHOR: None given

5-3-12/37

TITLE: Chronicle of the Petrographic Section (Khronika petrograficheskoy sektsii)

PERIODICAL: Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Otdel Geologicheskiy, 1957, No 3, pp 157-158 (USSR)

ABSTRACT: The following reports were delivered at a meeting of the Petrographic Section of the Moscow Society of Naturalists during the period from 7 February to 28 March 1957: T.V. Molchanova reviewed the book by Van-Bemmelen "Geology of Indonesia; S.P. Gavrilova reviewed a number of publications by Soviet and foreign scientists on contact metamorphism; M.A. Favorskaya on "Petrography of Eruptive Rocks in Polymetal Deposits of Mexico"; Ye.A. Kuznetsov on some foreign publications of 1956 about African carbonatites; Ye.M. Epshteyn on "Province of Ultrabasic Rocks in the Northern Part of the Siberian Plateau"; A.D. Rakcheyev on "Some Weak Points of Metamorphism Hypothesis", and L.A. Milovanov reviewed 14 articles published in Nos. 9 and 10 of the Collection of L'vov Mineralogical Society for 1956.

AVAILABLE: Library of Congress

Card 1/1

FAVORSKAYA, M.A.

Problem of the origin of dikes and their relation to the process of ore formation. Izv.AN SSSR.Ser.geol. 22 no.1:4-10 Ja '57.

(MIRA 10:3)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.

(Dikes (Geology)) (Ore deposits)

FAVORSKAYA, M.A.; TSINZERLING, Ye.V.

Metamorphism of quartz from an ore vein on contact with a porphyrite dike. Zap. Vses. min. ob-va 86 no.4:488-495 '57. (MIRA 11:1)

1.Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii i Institut kristallografii AN SSSR, Moskva.
(Rocks, Crystalline and metamorphic)

FAVORSKAYA, M.A.

Development of young volcanoes in the Sikhote-Alin' Range. Trudy Lab. vulk. no.13:233-242 '58. (MIRA 12:3)
(Sikhote-Alin' Range--Volcanoes)

FAVORSKAYA, M.A.

Association of the rare metal and complex mineralization with intrusives and effusives in certain areas of the Pacific ore belt. Sov.geol. 2 no.12:71-87 D '59. (MIRA 13:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii.
(Soviet Far East--Ore deposits)

FAVORSKAYA, M. A.

"New Data on the Relationship Between Magnatism and Mineralization in the Pacific Ocean Ore Belt"

report presented at the First All-Union Conference on the Geology and Metallurgy of the Pacific Ocean Ore Belt, Vladivostok, 2 October 1960

So: Geologiya Rudnykh Mestorozhdeniy, No. 1, 1961, pages 119-127

AFANAS'YEV, G.D.; AFANAS'YEV, L.M.; BELIKOV, B.P.; KOPTEV-DVORNIKOV, V.S.; MIKHAYLOV, N.A.; MONICH, V.K.; FAVORSKAYA, M.A.; prinimali uchastiye: DISTANOVA, A.N.; YELISEYEVA, O.P.; MARFUNIN, A.S.; YUNAKOVSKAYA, Yu.V.; USTIYEV, Ye.K., doktor geol.-min. nauk, otv. red.; NEMANOVA, G.F., red. izd-va; BYKOVA, V.V., tekhn. red.

[Principles of the geological mapping of intrusive and extrusive formations as exemplified by petrographic studies in Kazakhstan, Transbaikalia, the Northern Caucasus, and Maritime Province] Printsipy geologicheskogo kartirovaniia intruzivnykh i effuzivnykh formatsii na primere petrograficheskikh issledovanii Severnogo Kavkaza, Kazakhstana, Zabaikal'ia i Primor'ia. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol.i okhrane nedr, 1960. 341 p. (MIRA 14:5)

1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii. 2. Sotrudnik Instituta geologicheskikh nauk AN Kaz. SSR (for Monich). 3. Sotrudnik Vsesoyuznogo geologicheskogo instituta (for Mikhaylov) 4. Sotrudniki Moskovskogo gosudarstvennogo universiteta (for Yunkovskaya, Distanova)

(Rocks, Igneous)

AFANAS'YEV, G.D., otv.red.; USTIYEV, Ye.K., doktor geol.-min.nauk, red.; GAPEYEVA, G.M., doktor geol.-min.nauk, red.; KOPTEV-DVORNIKOV, V.S., doktor geol.-min.nauk, red.; LEBEDEV, A.P., doktor geol.-min.nauk, red.; FAVORSKAYA, M.A., doktor geol.-min.nauk, red.; CHEPIKOVA, I.M., red.izd-va; DOROKHINA, I.N., tekhn.red.

[Petrographic provinces, igneous and metamorphic rocks] Petrograficheskie provintsii, izverzhennye i metamorficheskie gornye porody. Moskva, Izd-vo Akad.nauk SSSR, 1960. 343 p. (Doklady sovetskikh geologov. Problema 13). (MIRA 13:9)

1. International Geological Congress. 21st, Copenhagen, 1960.
2. Chlen-korrespondent AN SSSR (for Afanas'yev).

(Petrography)

FAVORSKAYA, M.A.

Papers submitted for the 10th Pacific Science Congress, Honolulu, Hawaii 21 Aug-6 Sep 1961.

BUTINOV, N. A., Institute of Ethnology - "The ethnolinguistic groups in New Guinea" (Section II.A.7.C)
CHEKOTILLO, K. A., Institute of Oceanology - "The investigation of the horizontal and vertical circulation of waters during the winter period in the northern part of the Pacific Ocean" (Section VII.B)
DEMENT'YEV, G. P., and VINOKUROV, A. A., Chairman, Commission for Preservation of Nature, Academy of Sciences USSR - "The role of the birds of Siberia and the Far East of the USSR as possible spreaders of virus and rickettsial disease" (Section III.D.5)
DZERDZEYEVSKIY, B. L., Institute of Geography, Academy of Sciences USSR - "The analysis of some characteristic processes of atmospheric circulation over the Antarctic" (Section VII.D.1)
FAVORSKAYA, M. A., Institute of Geology - "Advances in recent magnetism investigations of the Pacific shores of the USSR" (Section VII.C)
GALERKIN, I. I., Institute of Oceanology - "On the seasonal variations of level near the coasts of the Pacific" (Section VII.B)
GERASIMOV, I. P., Institute of Geography - "Soil formation in the monsoon climate of the Far East and the influence of recent volcanism" "Present laterites and lateritic soils" (Section I.C)
GORYACHEV, A. V., Institute of Earth Physics imeni O. Yu. Schmidt - "Geotectonic conditions of the Kurile Kamchatkin zone as an example of structural reformation of the earth's crust in the northwestern part of the Pacific basin" (Section VII.C.2)
GEYNRIKH, A. K., Institute of Oceanology - "Specific features in the distribution of zooplankton in the tropical part of the Pacific Ocean" (Section III.C)
GLIKMAN, L. S., The Geological Museum imeni A. P. Karpinskiy, Academy of Sciences USSR - "Sharks' teeth found at the bottom of the Pacific Ocean" (Section III.C)
GORSHKOV, G. S., The Laboratory of Volcanology - "Petrochemical features of volcanism in relation to the types of the earth's crust" (Section VII.C.3)
GZUSE, A. P., Institute of Oceanology - "The stratigraphy of bottom ZHUZE sediments and the paleogeographical conditions of sedimentation in the Pacific" (Section VII.C.1)
IGNAT'YEV, Ye. I., Institute of Geography of Siberia and the Far East - "The original trends and results of medical geographical research in the Soviet Far East" (Section VIII.B.4)
KAGANOVSKIY, A. G., Pacific Ocean Scientific Research Institute of Marine Fishing and Oceanography - "The ichthyological materials collected during the Bering Sea expedition sponsored by the All-Union and Pacific Ocean Scientific Research Institute of Fishing and Oceanography in 1958-59" (Section VII.C)
KAMENKOVICH, V. M., Institute of Oceanology - "Method of computing stationary currents taking into account the effect of islands" (Section VII.B)
KANAYEV, V. F., Institute of Oceanology - "The submarine relief of the Kuril arc" (Section VII.C.1)
KASS, T. S., Institute of Oceanology - "Deep-sea fishes of the northern part of the Pacific and adjacent seas" (Section III.C)
KHLEBOVICH, V. V., and USHAKOV, P. V., Institute of Zoology - "Polychaeta of the seas in the northwest Pacific and problems of amphi-Pacific distribution" (Section III.C)
KHUNDZHUA, G. G., Moscow State University, Physical Faculty - "The calculation of turbulent diffusion coefficients based upon the recordings of electroconductivity fluctuations and current rate at sea" (Section VII.B.5)
KITAYGORODSKIY, S. A., Institute of Oceanology - "Some regularities of the thermocline formation in the ocean" (Section VII.B)
KLENOVA, M. V., and LAVROV, V. M., Institute of Oceanology - "....(Illegible) and relief of the continental shelf of the western seaboard in southern Sakhalin" (Section VII.C.1)
KLUMOV, S. K., Institute of Oceanology - "The zoogeographical zonation of the Kuril Islands and in the waters of adjacent areas" (Section VI.D)
KOBLENTS-MISHK'E, Olga I., Institute of Oceanology - "A survey of data concerned with primary production in the northern part of the Pacific" (Section III.A)

FAVORSKAYA, M.; KIGAY, V.

International symposium on volcanology. Izv. AN SSSR. Ser. geol. 25 no.4:130-132 Ap '60. (MIRA 13:11)
(Volcanoes)

FAVORSKAYA, M.A.; RUB, M.G.; KIGAY, V.A.; IZOKH, E.P.; GAPEYEVA, G.M.; PREOBRAZHENSKAYA, G.K.; USTIYEV, Ye.K., doktor geol.-mineral.nauk, otv.red.; ROZANOV, Yu.A., red.izd-va; UL'YANOVA, O.G., tekhn.red.

[Magmatic activity and metallogenic features of the Sikhote-Alin' Range and the Lake Khanka region] Magmatizm Sikhote-Alinia i Prikhankaiskogo raiona i ego metallogenicheskie osobennosti. Moskva, Izd-vo Akad. nauk SSSR, 1961. 327 p. (Akademiia nauk SSSR. Institut geologii rudnykh mestorozhdenii, petrografii, mineralogii i geokhimii. Trudy, no.45). (MIRA 15:3)

(Sikhote-Alin' Range--Rocks, Igneous)
(Khanka Lake region--Rocks, Igenous)

BUR'YANOVA, I.Z.; FAVORSKAYA, M.A.

Origin of pillow lavas in the southern Sikhote-Alin' Range.
Izv.AN SSSR Ser.geol.26 no.12:3-12 D '61. (MIRA 14:12)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.
(Sikhote-Alin' Range—Lava)

VOLCHANSKAYA, I.K.; FAVORSKAYA, M.A.; FRIKH-KHAR, D.I.

Petrographic and geomorphologic studies of Cenozoic effusives carried out in a region of Kamchatka. Sov.geol. 6 no.2:91-109 F '63.

(MIRA 16:4)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii.

(Kamchatka—Petrology) (Kamchatka—Geomorphology)

PROKHOROV, Kirill Valentinovich; FAVORSKAYA, M.A., doktor geol.-min. nauk, otv. red.

[Tertiary granitoids of Kamchatka] Tretichnye granitoidy Kamchatki. Moskva, Izd-vo "Nauka," 1964. 132 p.
(MIRA 17:5)

BASKINA, Valentina Aleksandrovna; FAVORSKAYA, M.A., doktor
geol.-miner. nauk, otv. red.

[Igneous activity of the Tetyukhe region (southern Maritime Territory) and the characteristics of the development of some volcano-plutonic formation] Magmatizm Tetiukhinskogo raiona (IUzhnoe Primor'e) zakonomernosti razvitiia nekotorykh vulkano-plutonicheskikh formatsii. Moskva, Nauka, 1965. 210 p.
(MIRA 18:6)

SHATALOV, Ye.T.; KOPTEV-DVORNIKOV, V.S.; RUB, M.G.; RODIONOV, D.A.;
SHIPULIN, F.K.; FAVORSKAYA, M.A

[Criteria of the relationship between mineralization and igneous activity as applied to the study of ore regions; basic principles of metallogenetic studies and the plotting of metallogenetic and forecasting maps of ore deposits] Kriterii sviazi orudeneniia s magmatizmom primenitel'no k izucheniiu rudnykh raionov; osnovnye printsipy metallogenicheskikh issledovanii i sostavleniia metallogenicheskikh i prognoznykh kart rudnykh raionov. Moskva, Nedra, 1965. 292 p. (MIRA 18:4)

VOL'FSON, F.I.; FAVORSKAYA, M.A.

In memory of Academician Sergei Sergeevich Smirnov. Izv.
AN SSSR. Ser. geol. 30 no. 10:3-14 O '65. (MIRA 18:12)

L 29134-66 EWT(1) JXT [illegible]

ACC NR: AP6018685 SOURCE CODE: UR/0011/66/000/004/0156/0160

48
47
B

AUTHOR: Baskina, V. A.; Favorskaya, M. A.

ORG: none

12

TITLE: Conference on use of mathematical methods and electronic computers in geology

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 4, 1966, 156-160

TOPIC TAGS: electronic computer, geologic conference, mathematic model, mineralogy, geochemistry, geomorphology, paleontology, stratigraphy

ABSTRACT: A conference on the use of mathematical methods and electronic computers in geology was held at Novosibirsk during the period 10-14 December 1965. The conference operated in nine sections: lithology, petrography and mineralogy, geochemistry, structural geology, industrial geophysics, geology and prospecting, hydrogeology and engineering geology, geomorphology, prospecting methods, formal geological theories, paleontology and stratigraphy. A total of 115 reports were presented; chairman of the conference was E. E. Fotiadi, Corresponding Member of the Academy of Sciences. The principal problems discussed were: Use of mathematics in the problem of geological time. Mathematical approach to certain genetic problems, including the distribution of minerals. Geological mapping and methods for compiling geological maps. Computa-

Card 1/2 UDC: 006.3 519.246.81.142:551.1/4

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tions of reserves of minerals. Methods for identification of samples by electronic computers. Collection and storage of data. Organization and planning of use of mathematical methods and use of computers. A few of the reports presented at each of the section meetings are summarized. It was noted that inadequate attention is being given to such problems at the institutes of the Academy of Sciences and at the Ministry of Geology and Conservation of Mineral Resources. The resolutions adopted at a similar conference in 1960 have been largely ignored. The next All-Union Conference on this problem will be held in 1968. [JPRS]

SUB CODE: 08, 12 / SUBM DATE: none

Card 2/2

ZAKORINA, N.A.; LAZEYEVA, G.S.; PETROV, A.A.; SKVORTSOVA, G.V.; FAVORSKAYA, M.P.

Various setups for the spectral-isotopic determination of gases in metals. Vest. LGU 20 no.10:152 '65. (MIRA 18:7)

21(4) SOV/112-59-2-3388

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 2, p 166 (USSR)

AUTHOR: Rozen, O., Sukhova, L., Kheyker, D., and Favorskaya, N.

TITLE: Using Radioactive Isotopes for Quality Control of Roll-Strip Materials (Primeneniye radioaktivnykh izotopov dlya kontrolya kachestva rulonnykh materialov)

PERIODICAL: Stroit. materialy, 1958, 4 Nr 3, pp 34-35

ABSTRACT: VNIIAsbesttsement has used methods which permit continuously controlling average weight and thickness of a moving cardboard or pergamin strip and, consequently, its density or porosity. The weight has been determined by a contactless instrument designed by A. N. Slatinskiy (its scheme is presented) which depends on absorption of beta-rays by the material; Te^{204} is used as a source, an ionization chamber as a detector. The strip thickness is determined by an inductance primary element. The strip passes between two rolls, one of which is movable; the latter is displaced by thickness

Card 1/2

SOV/112-59-2-3388

Using Radioactive Isotopes for Quality Control of Roll-Strip Materials

variations and moves a primary-element core; this results in an output voltage across the primary element which linearly depends on the displacement value. The contactless weight-determining instrument is calibrated by cigarette-paper standards in the range of 220-970 g/m^2. A table giving the instrument checking data and a plot of porosity against water absorption in per cent are presented. This outfit for continuous material-porosity control is being adopted at the Leningrad "Kartontol'" and Odessa Roofing-Felt Factories. Two illustrations.

M.L.G.

Card 2/2

Reactions of mobile amino group. III. Reductive cleavage of gramine. A new synthesis of skatole. A. P. Terent'ev, N. A. Dzbanovskii, and N. A. [illegible] (Moscow State Univ.). *Zhur. Obshchei Khim.* [illegible] (1953); cf. *C.A.* 48, 6956h.—Heating 3.5 g. gramine with 6 g. Zn dust and 4 g. NH_4Cl with a free flame for 20-30 min. gave a distillate of 53% crude *skatole*, m. 91-3°. To 8 g. gramine in 160 ml. MeOH was added 20 g. NaOH in 160 ml. H_2O, the soln. heated to b.p. and treated slowly with 10 g. Zn dust over 2 hrs. After heating 12 hrs. on a steam bath with stirring, the MeOH was distd. and the residue was steam distd., yielding 60% crude *skatole*; pure product, m. 94-5° (*picrate*, m. 173°). G. M. Kosolapoff

ISAGULYANTS, V.I.; TISHKOVA, V.N.; FAVORSKAYA, N.A.; OGANESYAN, R.O.

Substituted hindered phenols and their use as antioxidants for petroleum products. Trudy MNI no.23:42-61 '58. (MIRA 12:1)
(Phenols) (Alkylation) (Petroleum products--Additives)

ISAGULIANTS, V.I. (Leningrad); TISHKOVA, V.N. (Leningrad); FAVORSKAYA, N.A. (Leningrad); OGANESIAN, R.O. (Leningrad)

Substituted shaded phenols and their use as antioxidant additives of mineral oil products. Tr. from the Russian. Kem.tud.kozl.MTA 12 no.4:363-381 '59. (EEAI 9:4)

1. Leningradi Tudomanyegyetem.
(Phenols) (Mineral oils)

30650

S/081/61/000/020/085/089
B110/B147

11.0170 (also 3019)

AUTHORS: Isagulyants, V. I., Tishkova, V. N., Favorskaya, N. A.

TITLE: Synthesis of mineral-oil and motor-fuel additives on the basis of substituted phenols

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1961, 410-411, abstract 20M160 ([Tr.] Groznensk. neft. in-t, sb. 23, 1960, 132-136)

TEXT: Schemes for the synthesis of multifunctional additives of the following types are given: metallic salts of sulfides and disulfides of alkyl phenols; metallic salts of diether dithiophosphoric acids, whose ether groups were obtained from disulfides of alkyl phenols; dialkyl amino salts of diether dithiophosphoric acids, whose ether groups were obtained from disulfides of alkyl phenols; Ca and Ba phenolates obtained by chloromethylation of the condensation products of alkyl phenols with CH_2O, by reaction of the chloromethylated products with metallic salts of diether dithiophosphoric acids, and by subsequent treatment with $Ca(OH)_2$

Card 1/2

30650

Synthesis of mineral-oil and...

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or $Ba(OH)_2$. A new method was worked out for synthesizing the oxidation-inhibiting additive 2,6-di-tert-butyl-4-methyl phenol (I) by alkylation of dicresol (mixture of p-cresols and m-cresols) with the butane-butylene fraction in the presence of H_2SO_4. By treatment with aqueous alkali in the presence of a solvent, the alkylate is separated into a solution of I in the solvent and into an aqueous alkaline solution which contains other alkylation products of dicresol. The periods for which ethylated gasoline with an addition of I and some of its synthesized homologs remain stable are indicated. [Abstracter's note: Complete translation.]

Card 2/2

ISAGULYANTS, V.I.; FAVORSKAYA, N.A.

Synthesis of new antioxidant additives. Trudy MINKHiGP no.28: 56-67 '60. (MIRA 14:4)

(Antioxidants)

36541
S/081/62/000/006/074/117
B149/B108

11.0172

AUTHORS: Isagulyants, V. I., Favorskaya, N. A.

TITLE: Synthesis of new antioxidant additives of the screened phenol type

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 535, abstract 6M213 (Sb. "Prisadki k maslam i toplivam", M., Gostoptekhizdat, 1961, 94 - 102)

TEXT: The additives 2,2'-methylene-bis-(6-tert-butyl-4-methylphenol) (I), disulfide-4,6-ditert-butyl-3-methylphenol (II), and 2,2'-methylene-bis-(4,6-ditert-butyl-3-methylphenol) (III) were synthesized and studied. The methods worked out for the preparation of (II) and (III) permit the use of the by-product in the preparation of ionol (4,6-di-tert-butyl-3-methylphenol). As antioxidant additive, (I) added in the amount of 0.05% to ethylated benzine is more effective than ionol; (II) added in the amount of 0.005% to synthol (a motor fuel fraction 150 - 220°C, containing 8% of unsaturated hydrocarbons) has the same effectiveness as ionol. The effectiveness of (II) in the test with transformer oil is next to that of

X

Card 1/2

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B149/B108

Synthesis of new ...

ionol. As an additive (0.005%) to synthol, (III) is also next to ionol. However, a test of (III) (3% added) with transformer oil gave negative results. [Abstracter's note: Complete translation.]

Card 2/2

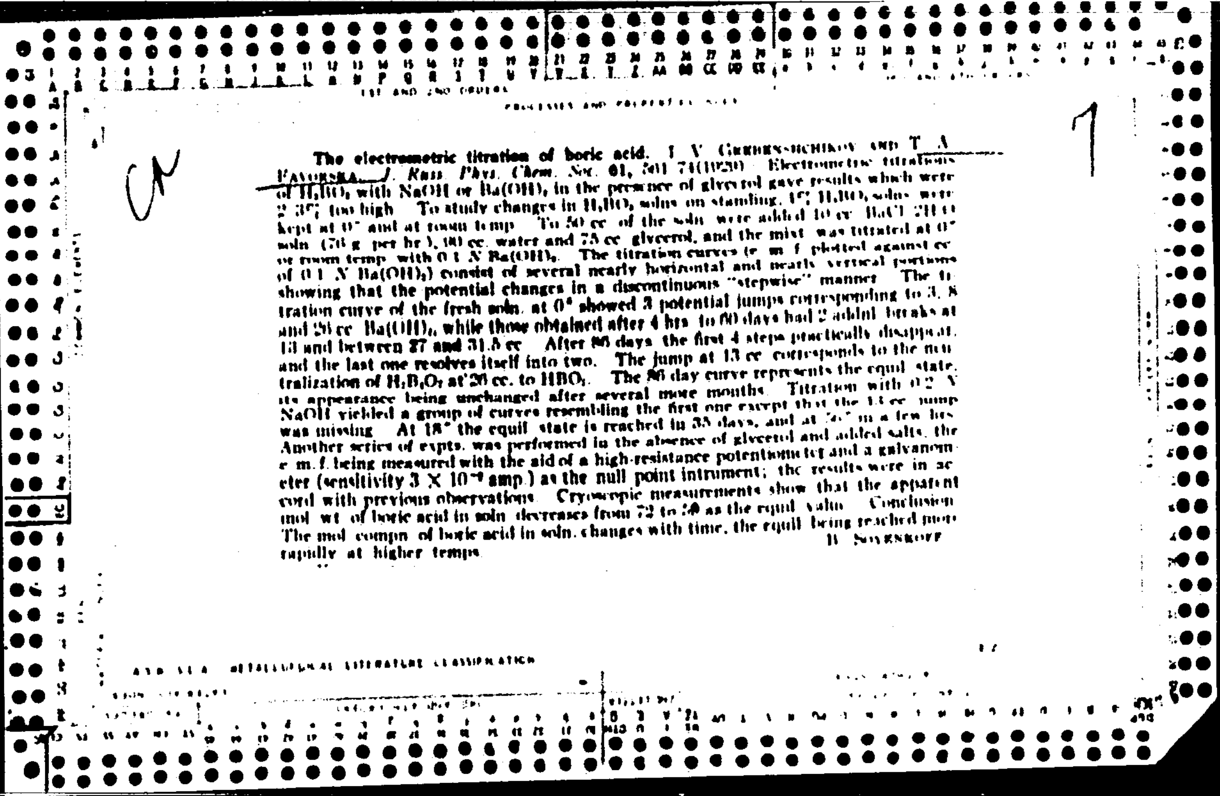
ISAGULYANTS, V.I.; FAVORSKAYA, N.A.; TISHKOVA, V.N.

Synthesis of 2, 6-di-tert-butyl-4-methylphenol. Zhur.prikl.khim. 34 no.3:693-694 Mr '61. (MIRA 14:5)
(Cresol)

FAVORSKAYA, T.A.; TOLSTOPYATOV, G.M.; GAL'DING, M.R.

Synthesis and study of the transformations of acetylenic α-glycols. Part 9: Molecular rearrangements observed in the reactions of 3,4-dimethyl-1-hexyne-3,4-diol with hydrochloric acid. Zhur. ob. khim. 35 no.4:593-597 Ap '65. (MIRA 18:5)

1. Leningradskiy gosudarstvennyy universitet.



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

1

The electrometric titration of boric acid. I. V. Gerbers-nchikov and T. A. Favorska. *J. Russ. Phys. Chem. Soc.* **61**, 501-74(1929). Electrometric titrations of H_3BO_3 with NaOH or $Ba(OH)_2$ in the presence of glycerol gave results which were 2-3% too high. To study changes in H_3BO_3 solns. on standing, 1% H_3BO_3 solns. were kept at 0° and at room temp. To 50 cc. of the soln. were added 10 cc. $BaCl_2 \cdot 2H_2O$ soln. (76 g. per l.), 100 cc. water and 75 cc. glycerol, and the mixt. was titrated at 0° or room temp. with 0.1 N $Ba(OH)_2$. The titration curves (e. m. f. plotted against cc. of 0.1 N $Ba(OH)_2$) consist of several nearly horizontal and nearly vertical portions showing that the potential changes in a discontinuous "stepwise" manner. The titration curve of the fresh soln. at 0° showed 3 potential jumps corresponding to 3, 8 and 26 cc. $Ba(OH)_2$, while those obtained after 4 hrs. to 60 days had 2 addnl. breaks at 13 and between 27 and 31.5 cc. After 86 days the first 4 steps practically disappear, and the last one resolves itself into two. The jump at 13 cc. corresponds to the neutralization of $H_2B_4O_7$ at 26 cc. to HBO_2. The 86 day curve represents the equil. state, its appearance being unchanged after several more months. Titration with 0.2 N NaOH yielded a group of curves resembling the first one except that the 13 cc. jump was missing. At 18° the equil. state is reached in 35 days, and at 76° in a few hrs. Another series of expts. was performed in the absence of glycerol and added salts, the e. m. f. being measured with the aid of a high-resistance potentiometer and a galvanometer (sensitivity 3×10^{-9} amp.) as the null point instrument; the results were in accord with previous observations. Cryoscopic measurements show that the apparent mol. wt. of boric acid in soln. decreases from 72 to 50 as the equil. value. Conclusion: The mol. compn. of boric acid in soln. changes with time, the equil. being reached more rapidly at higher temp.

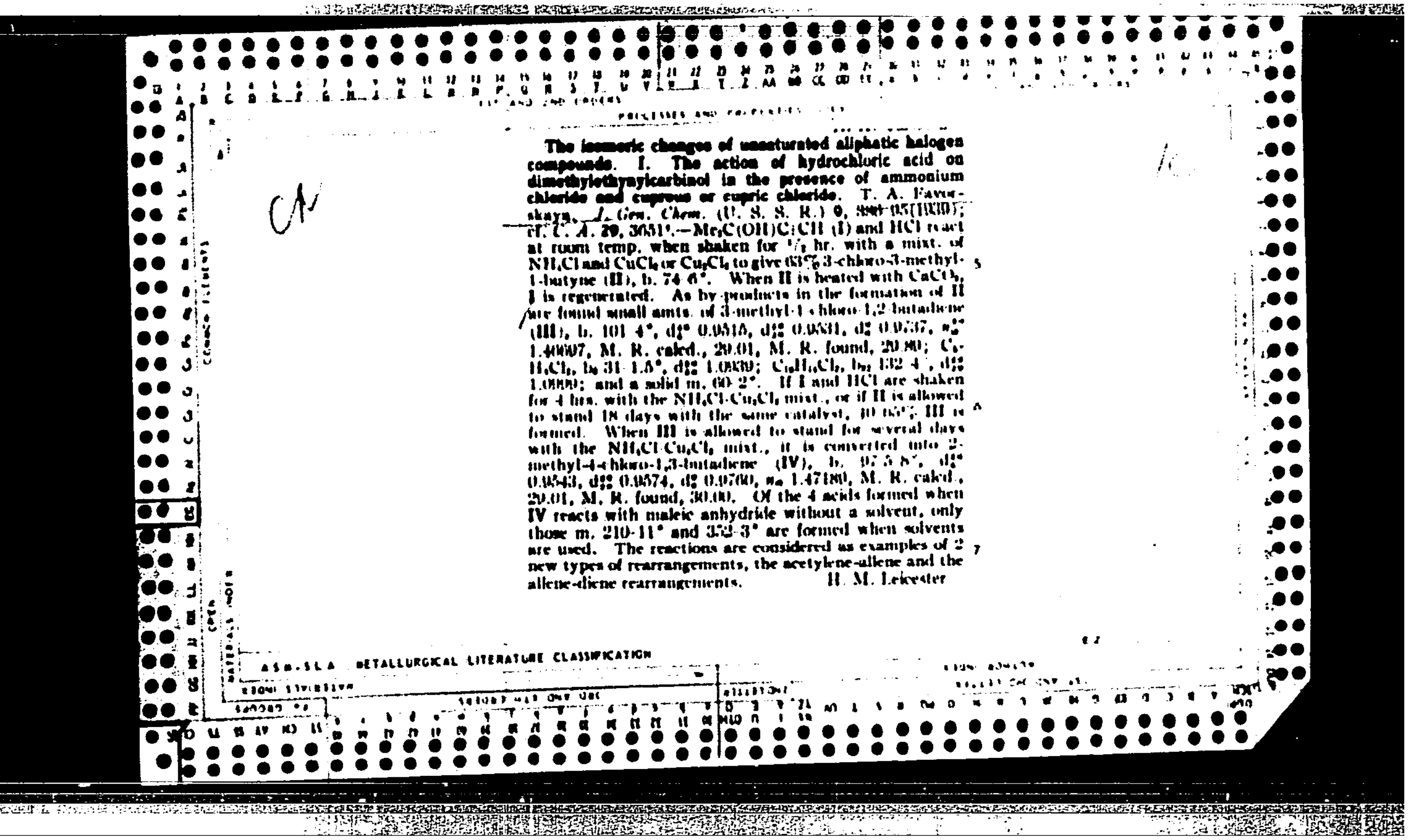
B. Sovsskoff

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Chemical resistance of glasses. I. V. Grebenshchikov and T. A. Favorskaya. *Trans. Optical Inst.* (Leningrad) 7, 72(1931); *Ceram. Abstracts* (in *J. Am. Ceram. Soc.*) 11, 486.—Disintegration of glass as detd. by the test of Mylius proceeds rapidly at the beginning, slows down and reaches, within a min., an almost const. value. There is often formed on the surface of the glass a protective layer between 11 and 60 A. U. in thickness (after 1 min. of action of moist ether). This layer has a colloidal character and greatly influences the resistance of glasses. The Mylius test is the best method for detg. the resistance of the surfaces of glasses, but the thickness of the disintegration layer formed in dependence on time should be detd. and not, as usual, the glass attack in mg. Na iodoeosin used for a certain amt. of the glass surface. O. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Cl

The isomeric changes of unsaturated aliphatic halogen compounds. I. The action of hydrochloric acid on dimethylethynylcarbinol in the presence of ammonium chloride and cuprous or cupric chloride. T. A. Favorskaya. *J. Gen. Chem.* (U. S. S. R.) 9, 890-95(1939); cf. *C. A.* 29, 3651'.—$Me_2C(OH)C:CH$ (I) and HCl react at room temp. when shaken for ½ hr. with a mixt. of NH_4Cl and $CuCl_2$ or Cu_2Cl_2 to give 63% 3-chloro-3-methyl-1-butyne (II), b. 74-6°. When II is heated with $CaCl_2$, I is regenerated. As by-products in the formation of II are found small amts. of 3-methyl-1-chloro-1,2-butadiene (III), b. 101-4°, d_4^{20} 0.9516, d_{20}^{20} 0.9531, d_0^0 0.9737, n_D^{20} 1.46607, M. R. calcd., 29.01, M. R. found, 29.80; $C_5H_8Cl_2$, b_6 31-1.5°, d_{20}^{20} 1.0839; $C_{10}H_{14}Cl_2$, b_{10} 132-4°, d_{20}^{20} 1.0880; and a solid m. 60-2°. If I and HCl are shaken for 4 hrs. with the NH_4Cl-Cu_2Cl_2 mixt., or if II is allowed to stand 18 days with the same catalyst, 40-65% III is formed. When III is allowed to stand for several days with the NH_4Cl-Cu_2Cl_2 mixt., it is converted into 2-methyl-4-chloro-1,3-butadiene (IV), b. 97.5-8°, d_4^{20} 0.9543, d_{20}^{20} 0.9574, d_0^0 0.9760, n_D 1.47180, M. R. calcd., 29.01, M. R. found, 30.00. Of the 4 acids formed when IV reacts with maleic anhydride without a solvent, only those m. 210-11° and 332-3° are formed when solvents are used. The reactions are considered as examples of 2 new types of rearrangements, the acetylene-allene and the allene-diene rearrangements. H. M. Leicester

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

10

Isomeric transformations of unsaturated halogen derivatives in the aliphatic series. II. Saponification of 1-chloro-3-methyl-1,2-butadiene. T. A. Favorskaya. *J. Gen. Chem.* (U. S. S. R.) 9, 1237-42(1939); cf. *C. A.* 33, 9281⁴.—ClCH:C:CMe$_2$ on heating with H$_2$O and CaCO$_3$ to 80° is isomerized to CH:CCMe$_2$Cl and ClCH:CHCMe:CH$_2$, with simultaneous formation of propyne, CH$_2$:CHCl, Me$_2$C:CHCHO and a dimeric compd. C$_{10}$H$_{14}$Cl$_2$, b_9 103-5°, d_4^{20} 1.0957.

Gertrude Berend

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FAVORSKAYA, T. A.

"Research in the Field of Molecular Transpositions in the Unsaturated Aliphatic Halogen Derivatives -- The Action of Hydrochloric Acid on Dimethyl Acetylenyl Carbinol in the Presence of Ammonium Chloride and Cupric Chloride or Cuprous Chloride," Zhur. Obshch. Khim., 9, No. 5, 1939. Laboratory of Organic Chemistry, Scientific-Research Chemical Institute, Leningrad State University. Received 30 May 1938.

Report U-1517, 22 Oct 1951

CA

10

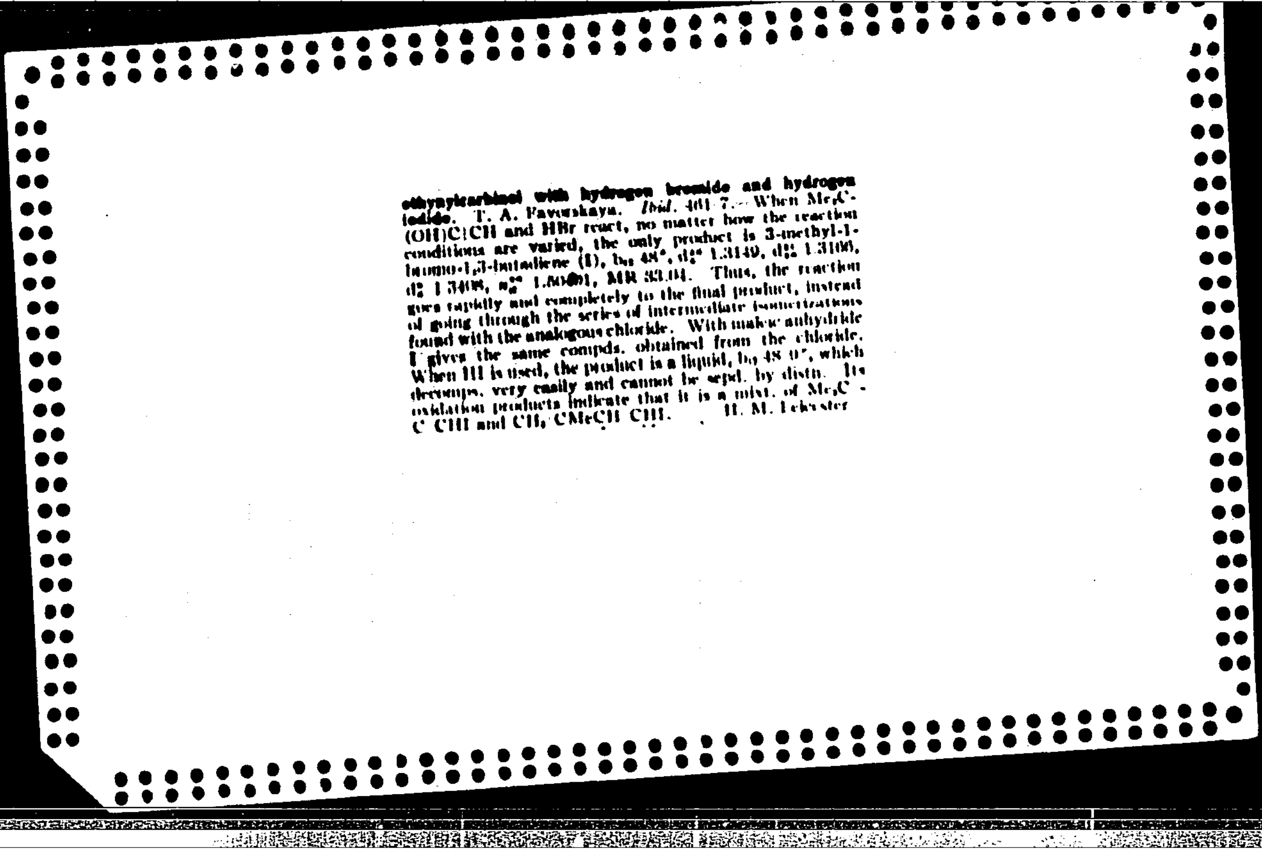
PROCESSES AND PROPERTIES INDEX

Isomeric transformations of unsaturated aliphatic halogen compounds. III. The action of hydrochloric acid on methylethylethynylcarbinol in the presence of ammonium chloride and cuprous chloride. T. A. Favorskaya and A. I. Zakharova. *J. Gen. Chem.* (U. S. S. R.) 10, 446-50(1940); cf. *C. A.* 34, 1300⁸.—When 100 g. MeEtC(OH)C:CH is allowed to stand for 4 hrs. with 170 cc. concd. HCl, 10 g. CuCl and 5 g. NH_4Cl, it gives a mixt. of 40 g. *3-chloro-3-methyl-1-pentyne*, b_{750} 48-50°, d_4^{20} 0.9141, n_D^{20} 1.42983, MR 33.04, and 18 g. 1-chloro-3-methyl-1,2-pentadiene (I), b_{100} 68-70°, d_4^{20} 0.9502, n_D^{20} 1.46907, MR 34.44. When I is allowed to stand 8 months with CuCl, NH_4Cl and a few drops of concd. HCl, it is converted into *1-chloro-3-methyl-1,3-pentadiene*, b_{100} 62-3°, d_4^{20} 0.9574, n_D^{20} 1.47714, MR 34.40. This reacts with maleic anhydride to give a mixt. from which, after hydrolysis, 2 acids, m. 218-20° and 350-1°, are obtained. All these reactions are analogous to those of $Me_2CClC:CH$, but go more slowly. **IV. The action of hydrochloric acid on diethylethynylcarbinol in the presence of cuprous or cupric chloride and ammonium chloride.** T. A. Favorskaya and I. A. Favorskaya. *Ibid.* 451-60.—Et_2CO and C_2H_2 in the presence of powd. KOH give 70-80% $Et_2C(OH)C:CH$ (I), b. 130-7°, d_4^{17} 0.8748, d_4^{14} 0.8779, d_4^0 0.8890, n_α^{14} 1.4385, n_β^{14} 1.44007, MR_α 33.58, MR_β 34.01; *phenylurethan*, m. 52-3°. At the same time, 10% tetraethylbutynediol is always formed. When I reacts with HCl, either alone or in the presence of CuCl and NH_4Cl, it forms 70% *3-ethyl-3-chloro-1-pentyne* (II), b_{100} 73-6°, $d_4^{19.5}$ 0.9230, d_4^0 0.9530, $n_\alpha^{19.5}$ 1.44372, $n_\beta^{19.5}$ 1.45304, MR_α 37.54, MR_β 37.88. If a mixt. of CuCl and NH_4Cl is used as a catalyst, a mixt. of II and 3-ethyl-1-chloro-1,2-pentadiene (III), b_{100} 85-8°, $d_4^{19.5}$ 0.9297, $d_4^{15.5}$ 0.9329, d_4^0 0.9502, $n_\alpha^{19.5}$ 1.47030, $n_\beta^{19.5}$ 1.48431, MR_α 39.10, MR_β 40.11, is obtained. The amt. of III in the mixt. gradually increases with time of stirring, but reaches a max. of 25-30% which is not exceeded even if the mixt. is stirred more than 6 hrs. II is partly converted to III when it is stirred with HCl and CuCl-NH_4Cl, but if the HCl is absent, no isomerization occurs. Isomerization to a conjugated diene never occurs. The CuCl dissolves to form a complex acid which is the true catalyst. The reactions of these compds. are all much slower than those of the corresponding di-Me derivs. II easily loses HCl to form *3-ethyl-3-penten-1-yne* (IV), b_{100} 41-3°, d_4^{18} 0.7733, n_α^{18} 1.43062, n_β^{18} 1.45224, MR_α 31.7, MR_β 32.0. Some IV is always formed during isomerization of II to III. When IV is hydrated, it forms MeCH:CEtCOMe which reacts with $NO_2C_6H_4NHNH_2$ to give a pyrazolone, m. 165-6°. Hydrolysis of II with an aq. suspension of $CaCO_3$ gives a mixt. of I and IV. When III is hydrolyzed under these conditions, it isomerizes to II which then forms I and IV. **V. Reactions of dimethyl-**

SEE OTHER SIDE →

Lab. Org. Chem. Sci-Res Chem. Inst, Leningrad State U.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ethynylcarbinol with hydrogen bromide and hydrogen iodide. T. A. Favorskaya. *Ibid.* 401-7.—When $Me_2C(OH)C:CH$ and HBr react, no matter how the reaction conditions are varied, the only product is 3-methyl-1-bromo-1,2-butadiene (I), b_{15} 48°, d_0^{20} 1.3149, d_4^{20} 1.3100, d_4^0 1.3408, n_D^{20} 1.5001, MR 33.04. Thus, the reaction goes rapidly and completely to the final product, instead of going through the series of intermediate isomerizations found with the analogous chloride. With maleic anhydride I gives the same compds. obtained from the chloride. When HI is used, the product is a liquid, b_{15} 48-9°, which decomps. very easily and cannot be sepd. by distn. Its oxidation products indicate that it is a mixt. of $Me_2C:C:CHI$ and $CH_2:CMeCH:CHI$. H. M. Leicester

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

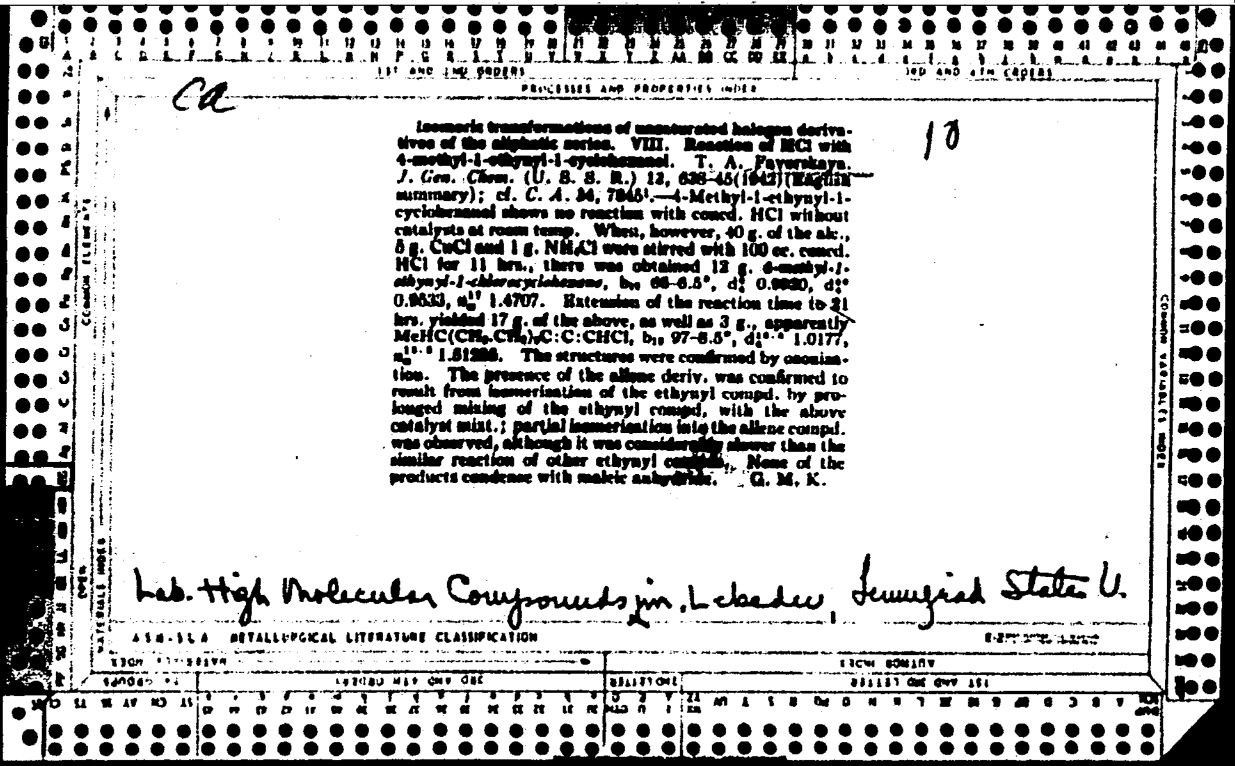
Ca

p

Isomeric transformations of unsaturated halogen derivatives of the aliphatic series. VI. Reaction of methylcyclopropylethynylcarbinol with phosphorus trichloride, hydrogen chloride, and formic acid. T. A. Favorskaya. *J. Gen. Chem.* (U.S.S.R.) 11, 1246-54(1941); cf. *C.A.* 34, 7844; 35, 1478⁴.—Methylcyclopropylethynylcarbinol (I) (80 g.), 6.5 g. Cu_2Cl_2, 3.2 g. NH_4Cl, and 85 cc. concd. HCl were stirred for 3 hrs. to yield *3-methyl-6-chloro-3-hexen-1-yne*, b. 60-61° (75%). Use of the same amt. of $CuCl_2$ as above, or omission of the Cu salts entirely, gave the same chloride, as did the use of 1:1 HCl. Treatment with a molar amt. of PCl_3 converted I into the above chloride and a dichloride, b. [illegible]°, n_D^{20} 1.[illegible], d_4^{20} 1.1759, which is apparently $ClCH_2CH_2CH:CMeCCl:CH_2$. Treatment of I with excess [illegible]% HCO_2H under reflux for 3 hrs. gave [illegible]% $CH{:}CCMe:CHCH_2CH_2OCOH$, b_{16} 70.5-1.5°, d_0^{20} 0.[illegible]7, d_4^{20} 0.9716, n_C^{20} 1.[illegible], n_D^{20} 1.[illegible]31, n_F^{20} 1.[illegible]04, and a small amt. of an ester, $MeCOCMe:CHCH_2CH_2OCOH$, b_{16} 12[illegible]-3°, d_4^{20} 1.0414, n_C^{20} 1.47[illegible], n_D^{20} 1.4[illegible], n_F^{20} 1.4[illegible]16.

O. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Ca

10

Isomeric transformations of unsaturated halogen derivatives of the aliphatic series. VIII. Reaction of HCl with 4-methyl-1-ethynyl-1-cyclohexanol. T. A. Favorskaya. *J. Gen. Chem.* (U. S. S. R.) 12, 638-45(1942)(English summary); cf. *C. A.* 34, 7865¹.—4-Methyl-1-ethynyl-1-cyclohexanol shows no reaction with concd. HCl without catalysts at room temp. When, however, 40 g. of the alc., 5 g. CuCl and 1 g. NH_4Cl were stirred with 100 cc. concd. HCl for 11 hrs., there was obtained 12 g. *4-methyl-1-ethynyl-1-chlorocyclohexane*, b_{16} 66-6.5°, d_4^0 0.9820, d_4^{20} 0.9633, n_D^{17} 1.4707. Extension of the reaction time to 21 hrs. yielded 17 g. of the above, as well as 3 g., apparently $MeHC(CH_2CH_2)_2C:C:CHCl$, b_{15} 97-8.5°, $d_4^{19.5}$ 1.0177, $n_D^{19.5}$ 1.51286. The structures were confirmed by ozonization. The presence of the allene deriv. was confirmed to result from isomerization of the ethynyl compd. by prolonged mixing of the ethynyl compd. with the above catalyst mixt.; partial isomerization into the allene compd. was observed, although it was considerably slower than the similar reaction of other ethynyl compds. None of the products condense with maleic anhydride. G. M. K.

Lab. High Molecular Compounds im. Lebedev, Leningrad State U.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

10

Isomeric transformations of unsaturated halogen derivatives in the aliphatic series. VII. Reaction of dimethylcyclopropylcarbinol with hydrochloric acid. T. A. Favorskaya and Sh. A. Fridman (Leningrad State Univ.). *J. Gen. Chem.* (U.S.S.R.) 15, 421-8(1945)(English summary); cf. *C.A.* 39, 4047^{8}; 38, 1478^{4}.—It was shown that the reaction of dimethylcyclopropylcarbinol (I) with concd. or with HCl gave the same chloride, [illegible] (II), [illegible] according to Kizhner and [illegible] *J. Russ. Phys.-Chem. Soc.* 43, 595(1911)), [illegible] 0.9011, d$_{4}^{10.6}$ 0.8896, d$_{4}^{15}$ 0.8881, d$_{4}^{20}$ 0.8832, [illegible] n$_{D}^{20}$ 1.4406[illegible]. The reaction gave, besides the previously known iodide, $C_6H_{11}I$, a small amt. of what appeared to be a glycol *$C_{12}H_{22}O_2$*, b$_{15}$ 134-7°, d$_{4}^{20}$ 1.0253, n$_{\alpha}^{20}$ 1.46173, n$_{D}^{20}$ 1.46168, which resulted from 2 moles of acetyltrimethylene. I stirred with concd. HCl or with 1:1 HCl gave at room temp. up to 70% II, b. 131-3°, d$_{0}^{19.6}$ 0.8817, d$_{4}^{20}$ 0.9182, n$_{\alpha}^{19.6}$ 1.44485, n$_{D}^{19.6}$ 1.45534; the use of concd. HCl also gave rise to a small amt. of a *dichloride, $C_6H_{12}Cl_2$*, b$_{15}$ 66.5-7°, d$_{4}^{19.6}$ 1.05147, n$_{\alpha}^{19.6}$ 1.4500[illegible]. II on boiling with 10% K_2CO_3 regenerated 60% I. The authors believe that the formation of II proceeds through transformation of I to the chloride, followed by ring opening preceded by allene rearrangement.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CA

10

Transition from derivatives of ethylenic hydrocarbons to derivatives of simplest polymethylene rings. I. Preparation of methylethylcyclopropylcarbinol and properties of the chloride derived from it. T. A. Favorskaya (Leningrad State Univ.). *J. Gen. Chem.* (U.S.S.R.) 17, 541-9(1947)(in Russian).—In an extension of earlier work on simple ring compds. (*C.A.* 40, 4655[3]) a study was made of *methylethylcyclopropylcarbinol* (I). The action of EtMgI on acetyltrimethylene gave crude I; purification was made by distn. over KOH followed by treatment with KMnO$_4$; pure I, b. 141.5-43°, d_4^{20} 0.8860, n_D^{20} 1.43050. The by-products of formation of I included a noncrystallizable acid, isolated as the Ag salt (C$_6$H$_{11}$O$_3$Ag), which was probably a methylethylallylcarbinol oxidation product (from the KMnO$_4$ treatment); the latter carbinol, b. 139°, cannot be sepd. from I by simple distn. Synthesis of I also gave a high-boiling by-product, b$_{4}$ 83°, which gives AgI on treatment with AgNO$_3$; this material, d_4^{0} 1.3784, d_4^{20} 1.3651, d_4^{20} 1.3547, n_D^{15} 1.54887, n_D^{20} 1.52580, n_D^{20} 1.53402, is *MeEtCICH$_2$CH:CH$_2$*, which is contaminated with small amts. of the corresponding *pinacone*, not specifically isolated or characterized. Oxidation of the iodide with KMnO$_4$ gave EtMeCO when the MnO$_2$ ppt. was extd. with Et$_2$O; when the MnO$_2$ was boiled with water the neutral product was I, because of partial sapon. of the iodide, followed by cyclization of the allyl radical; the filtrate from the MnO$_2$ on evapn. and extn. with EtOH gave on acidification *methylethylglycolic acid*, m. 68°, and (CO$_2$H)$_2$. When the synthesis of I was conducted with decompn. of the reaction mixt. with dil. H$_2$SO$_4$, an addnl. by-product was isolated; this was a hydrocarbon, b. 100-3°, d_4^{20} 0.8112, n_D^{20} 1.43847, which was apparently *MeCH:CMeCH.CH$_2$.CH$_2$*. Treatment of I with concd. or 1:1 HCl gave the same chloride, *3-methyl-3-chloro-1-hexene*, b. 154-5°, d_4^{20} 0.9119, n_D^{20} 1.45057, which on oxidation with KMnO$_4$ gave the same acids as were obtained by oxidation of I or the above iodide, confirming that both the iodide and the chloride were the halide derivs. of methylethylallylcarbinol. The chloride (15 g.) boiled 30 hrs. with 180 cc. 10% K$_2$CO$_3$ gave 50% I and 50% methylethylallylcarbinol, estd. by KMnO$_4$ oxidation to methylethylglycolic acid.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FAVORSKAYA, T. A.

PA 67/49T38

USSR/Chemistry - Conversion Dec 48
Hydrocarbons

"Problems in Conversion From Ethylene Hydrocarbon Derivatives to the Simplest Polymethylene Cycle Derivatives: II, Interaction of Dimethyl, Methyl-Phenyl- and Dimethyl-Allyl-Carbinols With Sulfuric Acid and Hydrochloric Acid," T. A. Favorskaya, Sh. A. Fridman, Lab imeni Acad A. Ye. Favorskiy, Leningrad State Ord of Lenin U, 9½ pp

"Zhur Obshch Khim" Vol XVIII, No 12

Reaction of 2-chloro-2-methyl-4-pentene with a 10% solution of K_2CO_3 gave dimethylallylcarbinol.

[redacted] 67/49T38

USSR/Chemistry - Conversion Dec 48
(Contd)

Action of concentrated HCl on methylphenylallylcarbinol gave the chlorohydrin which liberated HCl upon heating with a K_2CO_3 solution and yielded 2-phenyl-1, 4-pentadiene. Action of H_2SO_4 on methylphenylallylcarbinol yielded acetophenone.

[redacted] 67/49T38

FAVORSKAIA, T. A.

T. A. Favorskaia and Sh. A. Fridman, Concerning the question of the transition from derivatives of ethylene hydrocarbons to derivatives of simplest polymethyl cycles. II. On the interaction of di-methyl, methyl-phenyl- and di-phenyl-allyl-carbinols with hydrochloric and sulfuric acids. p. 2080.

It is shown that the hydrochloride of di-methyl-allyl-carbinol upon saponification with a 10 percent solution of KOH gives an originally unsaturated alcohol. A cyclic alcohol is not formed. The action of concentrated hydrochloric acid on methyl-phenyl-allyl-carbinol and on diphenyl-allyl-carbinol is studied.

The action of dilute sulfuric acid on methyl-phenyl-allyl-carbinol and diphenyl-allyl-carbinol is studied also.

The A. E. Favorskii Laboroatory
Leningrad State University
Holder of Lenin Order
March 15, 1947

SO: J. Gen. Chem. (USSR) 28, (80) No. 12, 1948

FAVORSKAYA, T. A.

58/49T43

USSR/Chemistry - Synthesis
Chemistry - Glycols

Jan 49

"Synthesis of Dimethylacetylenylphenylethyleneglycol and the Study of Its Interation With Sulfuric Acid," T. A. Favorskaya, A. N. Shirshova, Stud, Lab imeni Acad A. Ye. Favorskiy, Leningrad State Ord of Lenin U, 5 3/4 pp

"Zhur Obshch Khim" Vol XIX, No 1

During synthesis, keto alcohol of dimethylbenzoylcarbinol is reduced to dimethylbenzylcarbonol. Structure of the glycol is shown in its decomposition by heating with an alkaline

[redacted]

58/49T43

USSR/Chemistry - Synthesis (Contd)

Jan 49

solution and oxidation by lead tetra-acetate. Its interaction with 10 and 20% H_2SO_4 is studied. Submitted 20 Dec 47.

[redacted]

58/49T43

CH.

11

Synthesis of methylethylallylcarbinol and its transformations under the influence of sulfuric acid. T. A. Favorskaya and Sh. A. Fridman (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 413-18(1950).—Addn. over 6 hrs. of 30 g. MeEtCO and 150 g. $CH_2:CHCH_2Br$ to 30 g. Mg in 500 ml. Et_2O (after activation with MeI) and stirring 1 hr. gave 34% $MeEt(CH_2:CHCH_2)COH$, b. 138-40°, d_4^0 0.8641, d_4^{20} 0.8410, n_D^{20} 1.4380. In one expt. no carbinol was obtained but a 20% yield of a substance, b. 120-2°, free of CO group or halogen, and which gave only $(CO_2H)_2$ on oxidation; repetition of the expt. failed to duplicate this result. Heating 52 g. carbinol with 300 ml. 25% H_2SO_4 1 hr. at reflux gave 8 g. original alc. and 17.5 g. $C_7H_{14}O$, b. 165-7°, d_4^0 0.8681, d_4^{20} 0.8513, n_D^{20} 1.4444, identified as $MeEtC:CHCH_2CH_2OH$, on the basis of its oxidation with $KMnO_4$ to MeEtCO and $CH_2:CHCO_2H$. In addn., there were obtained small amts. of dehydration products, C_7H_{12}, b. 90-105°, $d_4^{20.5}$ 0.7622, $n_D^{20.5}$ 1.4300, and its *dimer*, b_4 95-7°. No reaction took place with 20% H_2SO_4. If the prepn. of the carbinol is done conventionally in 2 steps, the yield is poorer (30%). G. M. Kosolapoff

CA

The synthesis of methylethylallylcarbinol and its transformations when acted on by sulfuric acid. T. A. Favorskaya and Sh. A. Fridman (A. A. Zhdanov State Univ. Leningrad). *J. Gen. Chem. U.S.S.R.* 20, 437-42(1950 (Engl. translation).—See *C.A.* 44, 7753e. R. M. S.

CA

/A

Transition from the derivatives of ethylenic hydrocarbons to the derivatives of the simplest polymethylene cycles. III. Reaction of methylphenylcyclopropylcarbinol with hydrochloric and sulfuric acids. T. A. Favorskaya and Sh. A. Fridman (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 881-94(1950); cf. C.A. 43, 3770i.—The action of H_2SO_4 on *cyclopropylmethylphenylcarbinol* (I) leads to ring-size expansion to 1-methyl-1-phenyl-2-cyclobutanol (II) and dehydration to *2-phenyl-1,4-pentadiene* (III). HCl gives 2 reactions: ring opening to $MeCPh:CHCH_2CH_2Cl$ and ring expansion to a 4-C ring. $ArCH.CH_2.CH_2$ (53.5 g.)

and 98 g. PhBr added to 15 g. activated Mg (by MeI) over 4 hrs. in Et_2O gave 85% I, b_{10} 110-21°, d_4^{20} 1.0002, n_D^{20} 1.5307, d_4^{20} 1.0219. I (60 g.) boiled 5 hrs. with 120 ml. 25% H_2SO_4 gave 47% (15 g.) of a product b_{10} 99-101°; 50% H_2SO_4 (30 min. boiling) gave 40% of the same substance; this does not have a carbonyl group, is stable to Br in C_6H_6 and to $KMnO_4$, but reacts with Na; a purified sample, d_4^0 1.0523, d_4^{20} 0.9997, n_D^{20} 1.5152, on oxidation gave BzOH and $(CO_2H)_2$, while MeMgI gave the unchanged product; attempted oxidation with CrO_3 gave only some AcPh and no cyclic ketone, while HNO_3 gave only a trace of $(CO_2H)_2$; only heating with $KMnO_4$ resulted in formation of a solid *acid*, $C_{10}H_{12}O_3$, m. 78°, which on standing in a desiccator becomes sirupy without change of compn. This acid was not $PhMe_2CCO_2H$ (mixed m.p. depression with an authentic sample from MeMgI and Me mandelate); possibly it was a mixt. of *Me-PhCCO₂H* and *$MePhCHCH_2CO_2H$* (m. 37°). The results indicate that the reaction product of I with H_2SO_4 was II. The crude product from the reaction slowly oxidizes with $KMnO_4$, indicating an admixt. of some III, or possibly *4-phenyl-1,3-pentadiene* (IV), since a considerable amt. of resinous matter is formed. I failed to react with 1:1 HCl in the cold in 15 min. but concd. HCl gave in 3 hrs. 66.8% of a mixt. of cyclic and unsatd. chlorides, b_{11} 131-6°, which could not be sepd. by distn.; in addn. there was isolated a small amt. of $C_{11}H_{12}$, b_{10} 94.7°, d_4^0 0.9710, d_4^{20} 0.9520, n_D^{20} 1.5125, giving BzOH and $(CO_2H)_2$ with $KMnO_4$, and identified as III, probably formed from $MePhCCl.CH_2.CH.CH_2$. The latter could be removed with cold $KMnO_4$ from the mixt. with the *cyclic chloride*, b_{11} 125.7°, d_4^0 1.0831, d_4^{20} 1.0183, n_D^{20} 1.5290, identified as *1-methyl-1-phenyl-2-chlorocyclobutane*, since it was unchanged after 150 hrs. with hot 20% K_2CO_3 or 15% NaOH, while oxidation with hot $KMnO_4$ gave *MePhC(OH)-CH(OH)CO₂H*, m. 85-6°, which was also obtained from the unsatd. Cl deriv. (above), as well as BzOH. The cyclic chloride boiled with 10% alc. NaOH readily yielded IV, which reacted vigorously with maleic anhydride, as well as some of its *dimer*, obtained only in crude state, b_{10} 117-18°. G. M. Kosolapoff

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C/t

The problem of the transition from derivatives of the ethylenic hydrocarbons to derivatives of the simplest polymethylenic rings. III. The reaction of methylphenylcyclopropylcarbinol with hydrochloric and sulfuric acids T. A. Favorskaya and Sh. A. Fridman. *J. Gen. Chem U.S.S.R.* 20, 613-26(1950)(Engl. translation).—See C.A. 44, 7784f. R. M. S.

1951

CA

Transition from derivatives of ethylenic hydrocarbons to the derivatives of the simplest polymethylene rings. IV. Reaction of phenylmethylallylcarbinol and methylphenyl- and methylethylcyclopropylcarbinols with formic acid. T. A. Favorskaya, N. V. Shcherbinskaya, and S. E. Chernobel'skaya (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 855-67(1950); cf. C.A. 44, 7784*f*.—Addn. of 78.5 g. PhBr and 42 g. acetyltrimethylene in 200 ml. Et_2O over 4 hrs. to 12 g. Mg in Et_2O gave, after the usual decompn., 53-7% *methylphenylcyclopropylcarbinol* (I), b_{14} 119-21°. Refluxing 30 g. I with 88 g. 48% HCO_2H 1.5 hrs. gave 40% *1-phenyl-1-cyclopropylethylene*, b_8 88-90°, d_4^{21} 0.9618, n_D^{21} 1.5421, and 41% of an ether, which apparently has the structure *MePhC:CHCH₂CH₂OCHO*, b_6 138-40°, d_4^0 1.058, d_4^{20} 1.040, n_D^{20} 1.5366. The former with $KMnO_4$ gave *benzoyltrimethylene* (isolated as the *semicarbazone*, m. 177-7.5°), HCO_2H, and *1-phenyl-1-cyclopropylethylene glycol*, m. 53°, which with $Pb(OAc)_4$ gave benzoyltrimethylene; ozonolysis of the ether gave HCO_2H and AcPh, hydrolysis was ineffective, but treatment with EtMgBr gave Et_2CHOH and *2-phenyl-2-penten-5-ol*, b_{11} 142-4°, d_4^{20} 1.002, n_D^{20} 1.5573, which on hydrogenation over Pt black gave *4-phenylamyl alc.*, b_{11} 132-3°, d_4^0 0.9962, d_4^{20} 0.9822, n_D^{20} 1.5104, oxidized by dichromate to *γ-phenylvaleric acid*, b_{16} 170°, isolated as *Ag salt*. The use of 45% HCO_2H in the reaction with I gave 53% ether deriv. and a correspondingly lower yield of the hydrocarbon. Addn. of 65 g. AcPh and 61 g. $CH_2:CHCH_2Br$ in Et_2O to 12 g. Mg in Et_2O gave 51% *MePh(CH₂:CH-CH₂)COH*, b_6 99-101°. This (30 g.) refluxed 1.5 hrs. with 90 g. 80% HCO_2H gave an unresolvable mixt.; stirring at room temp. 3 hrs. with 48% HCO_2H gave much unreacted alc. and 31% of a mixt. of *2-phenyl-1,4-pentadiene* and *4-phenyl-1,3-pentadiene*, b_{16} 88-90°, d_4^0 0.9668, d_4^{20} 0.9472, n_D^{20} 1.5420, as shown by the results of $KMnO_4$ oxidation; a small amt. of polymer also formed. The yield of hydrocarbons is raised to 54% if the reaction is run only 1.5 hrs. The same reaction performed with 98% HCO_2H and ice cooling (3 hrs.) gave 35% 2-phenyl-1,4-pentadiene and 25% formate of *methylphenylallylcarbinol*, b_{10} 112-14°, d_4^0 1.0197, n_D^{20} 1.5179, d_4^{20} 1.0105, which is readily sapond. by hot aq. K_2CO_3. EtMgBr with acetyltrimethylene gave 32% *methylethylcyclopropylcarbinol*, b. 141-2°, d_4^{20} 0.8860, n^{20} 1.4398, which (30 g.), refluxed 2 hrs. with 80% HCO_2H, gave 14 g. $C_7H_{14}O$, b. 119-21°, identified as *4-methyl-4-ethyltetrahydrofuran*, on the basis of oxidation by $KMnO_4$ to *γ-methyl-γ-hydroxycaprolactone*, b. 220-1°, d_4^0 1.0191, d_4^{20} 1.0025, n_D^{20} 1.4401, d_4^{20} 1.0000 (converted also to the *Ag salt* of the free acid), which yields the corresponding *amide*, m. 94-5°, in the cold with concd. NH_4OH. G. M. Kosolapoff

FAVORSKAYA, T. A. & L. V. FEDOROVA

RT-1403 (Tertiary acetylenic alcohols. II. Di-p-rolyl-ethynyl-carbinol)
Tretichnye atsetilenovye spirty. II Di-n-folilatsetilenilkarbinol.
SO: Zhurnal Obshchei Khimii, 20(6): 1068 - 1072, 1950

Chem Abs

U-48 25 Jan 54

Organic Chem.

3 ③

α-**Cyclobutyl-α-methylbenzyl alcohol.** T. A. Favorskaya and I. P. Yakovlev. *Akad. Nauk S.S.S.R., Inst. Org. Khim., Sintezy Org. Soedinenii, Sbornik* 2, 113-14(1952).—To MeMgBr, from 9.2 g. Mg and 40 g. MeBr, in 200 ml. Et_2O is added 60 g. phenyl cyclobutyl ketone in 100 ml. Et_2O; after stirring 2-3 hrs. at room temp. the mixt. is treated with ice, the org. layer is sepd. and the aq. layer is acidified with 1:4 HCl and extd. with Et_2O. The combined org. layers, after drying over Na_2SO_4, yield 90% *α-cyclobutyl-α-methylbenzyl alc.*, b_1 100.5-4°, n_D^{20} 1.5358, d_{20} 1.0316. Similarly are obtained: 93.5% *α-cyclobutyl-α-ethylbenzyl alc.*, b_{16} 127-8°, n_D^{20} 1.5302, d_{20} 1.0085, and *α-cyclobutyl-α-isopropylbenzyl alc.*, 89%, b_{11} 131-3°, n_D^{20} 1.5325, d_{20} 1.0129. G. M. Kosolapoff

NF

FAVORSKAYA, T. A.

Chem Abs V47
1-25-54
Organic Chemistry

3
(3) Chem

Methyl cyclobutyl ketone. T. A. Favorskaya and I. P. Yakovlev. (Akad. Nauk S.S.S.R., Inst. Org. Khim., *Sintezy Org. Soedinenii, Sbornik* 2, 115-16(1952).—To 60 g. CrO_3 is added 26.5 ml. 25% NH_4OH and made up with H_2O to 300 ml. This soln. is added to 110 g. $Mn(NO_3)_2$ in 300 ml. H_2O, followed by 34.5 ml. 25% NH_4OH. The brown soln. is filtered and the ppt., after washing with H_2O is dried at 110°, then decompd. in a porcelain dish by heating with stirring (exothermic). The catalyst in the form of a powder (40 g.) is deposited on glass wool and is placed into a tube, through which a mixt. of 1 part Et cyclobutanecarboxylate with 3 parts EtOAc is passed at 10-12 ml. per hr. at 110°. Distn. of the product yields 63% *methyl cyclobutyl ketone*, b_{760} 137-9°, b_{50} 36°, n_D^{20} 1.4339, d_{20} 0.9093. The catalyzate contains some dicyclobutyl ketone, while EtOAc yields some 40% Me_2CO.
G. M. Kosolapoff

2-23-54

1. FAVORSKAYA, T. A.

2. USSR (600)

4. Compounds, Unsaturated

7. Structure of unsaturated compounds according to Butlerov and further development of views on the double bond, Vest. Len. un., 7, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

FAVORSKAYA, T. A.

USSR/Chemistry - Hydrocarbons Jan 52

"Research in the Field of Tertiary Alcohols With the Cyclobutyl Radical. I. Interaction of Diisopropylcyclobutylcarbinol With Hydrochloric and Sulfuric Acids," T. A. Favorskaya, I. P. Yakovlev, Lab imeni A. Ye. Favorskiy, Leningrad State U

"Zhur Obshch Khim" Vol XXII, No 1, pp 113-122

Prepd and characterized for the 1st time: diisopropylcyclobutylcarbinol (I), 1,1-diisopropylcyclopentanol-2 (II), diisopropylmethylenecyclobutane (III), 1,1-diisopropylcyclopentene-2 (IV), 1,2-diisopropyl-2-chlorocyclopentane (V), 1,2-diisopropyl-methylenecyclopentane (VI). Interaction of

207T23

USSR/Chemistry - Hydrocarbons (Contd) Jan 52

I with H_2SO_4 goes in 2 directions: dehydration but no isomerization; and formation of isomeric alc II. Interaction of I with HCl goes in 3 directions, yielding II, III, and V. II is dehydrated under action of H_2SO_4, is also dehydrated under action of HCl to yield IV and 2 5-membered cyclic chlorides, one of which seems to be secondary reaction product. Established isomerization of one cycle into another in organo-Mg synthesis, by which method I is formed at same time as II. Formation of isomeric alc results from isomerization of organo-Mg complex.

207T23

FAVORSKAYA, T. A.; YAKOVLEV, I. P.

Alcohols

Research in the field of tertiary alcohols with cyclobutyl radical. II. Reaction of methylphenylcyclobutylcarbinol with hydrochloric and sulfuric acids. Zhur. ob. khim 22 No. 1, 1952. Laboratoriya im. Akad. A.YE. Favorskogo Leningradsk go

Monthly List of Russian Accessions, Library of Congress, May 1952, UNCLASSIFIED.
Gosudarstvennogo Ordena Lenina Universiteta im. A.A. Zhdanova

FAVORSKAYA, T. A.

USSR/Chemistry - Hydrocarbons Feb 52

"Research in the Field of Tertiary Alcohols With the Cyclobutyl Radical. III. Interaction of Ethylphenylcyclobutylcarbinol With Hydrochloric and Sulfuric Acids," T. A. Favorskaya, I. P. Yakovlev, Lab imeni Acad A. Ye. Favorskiy, Leningrad Order of Lenin State U imeni A. A. Zhdanov

"Zhur Obshch Khim" Vol XXII, No 2, pp 215-220

Prepd for the 1st time ethylphenylcyclobutylcarbinol and products of its dehydration and isomerization under action of H_2SO_4 and HCl (ethylphenylmethylenecyclobutane, 1-methyl-2-phenyl-2-cyclobutylethylene, and 1-chloro-1-ethyl-2-phenylcyclopentane).

209T16

USSR/Chemistry - Hydrocarbons (Contd) Feb 52

Cites mean arithmetic values for relative dispersion as FCD of some alcs with cyclobutyl radical and their dehydration, substitution, and isomerization products.

209T16

FAVORSKAYA, T.A.; YAKOVLEV, I.P.

Tertiary alcohols with a cyclobutyl radical. IV. Reaction of isopropylphenylcyclobutylcarbinol with hydrochloric and sulfuric acids.
Zhur. Obshchey Khim.22, 1816-21 '52. (MLRA 5:11)
(CA 47 no.14:6876 '53)

1. A. Zhdanov State Univ., Leningrad.

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Synthesis and transformations of dimethylethynylisobutylethyleneglycol. T. A. Favorskaya and O. A. Zakhar'evskaya (A. A. Zhdanov State Univ., Leningrad). *Sbornik Statei Obshchei Khim.* 2, 887-91(1953).—Condensation of iso-BuAc with C_2H_2 in the presence of powd. KOH in Et_2O gave 45-80% *iso-BuCMe(OH)C:CH*, b. 146-9°, b_{14} 76-8°, n^{18}_D 1.435, along with 5-15% [*iso-BuCMe(OH)C:*]$_2$, b_{10} 153-7°, m. 56-60°. The alc. (50 g.) treated with 4.2 g HgO in 25 ml. H_2SO_4 and 150 ml. H_2O gave 75% *iso-BuCMeAcOH*, d_0 0.9308, $d_{18.1}$ 0.9158, d_{20} 0.9135, $n^{18.1}_D$ 1.4303; *semicarbazone*, m. 161-2°. This (0.5 mole) added to (:CMgBr)$_2$ (from 25 g. Mg) and the mixt., after standing overnight, decompd. with dil. HCl yielded 49% unreacted alc. and 10 g. product, described below. To increase the yield 1 mole of the Grignard reagent was employed, yielding 61% product, b_2 80-3°, identified as *iso-BuCMe(OH)CMe(OH)C:CH*, m. 50-1° (after long standing), d_{20} 0.9521, n^{20}_D 1.4595 (I), oxidized with $Pb(OAc)_4$ to iso-BuAc. The residue after the distn. of I was [*iso-BuCMe(OH)CMe(OH)C:*]$_2$, b_2 150-60°, a sirup. Heating I with 70 parts 40% H_2SO_4 0.5 hr. at 95-100° gave 10% product, b_{11} 93-6°, which had a free C:CH group but no conjugated double bonds. A similar reaction run 2.5 hrs. gave 2 products, b_{20} 71-4° and b_2 130-50°. The former, $C_{10}H_{16}O$, d_0 0.8833, d_{20} 0.8692, n^{20}_D 1.4387, had a C:CH group, and appeared to be *iso-BuCMe(OH)C(:CH$_2$)C:CH*; it did not evolve C_2H_2 in the presence of alkali; oxidation with $KMnO_4$ gave only AcOH and $(CO_2H)_2$. The 2nd product, b_2 130-50°, d_{20} 0.9403, n^{20}_D 1.4892, was $C_{20}H_{32}O_2$, apparently a dimer of a dehydration product of I. No pinacol rearrangement products of I were isolated. G. M. Kosolapoff

FAVORSKAYA, T.A.

USSR.

✓Synthesis of substituted cysteines. I. Possibility of the use of diphenylglycolic and diphenylacetic aldehydes for the synthesis of β,β-diphenylcysteine. T. A. Favorskaya and L. A. Remizova. *J. Gen. Chem. U.S.S.R.* 23, 695-700(1953)(Engl. translation).—See *C.A.* 48, 7588*d*. H. L. H.

FAVORSKAYA T. A.

Chemical Abst.
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Synthesis of substituted cysteine. II. Possibility of application of substituted hydantoins for preparation of β,β-diphenylcysteine. T. A. Favorskaya and L. A. Remizova (A. A. Zhdanov ~~State Univ., Leningrad~~). *Zhur. Obshchei Khim.* **23**, 817-23(1953); cf. [illegible] 667. KCN (22 g.), 64 g. $(NH_4)_2CO_3$, and 200 ml. 50% EtOH gradually treated with 40 g. $Ph_2CHCHO.NaHSO_3$, heated 6 hrs. at 50-5° and finally to 70-5° gave on cooling 71% *5-(diphenylmethyl)hydantoin*, m. 218-19° (from 50% EtOH). This (2.5 g.) heated 1 hr. to 120-30° in 4 ml. 60% H_2SO_4, neutralized with $BaCO_3$, and filtered, yielded only traces of $A\cdot NH_3$, indicating decompn.; under milder conditions no reaction took place. Hydrolysis of the hydantoin with $Ba(OH)_2$ in sealed tube 0.25 hr. at 130°, or better 1 hr. at 100°, gave *β-(diphenylmethyl)hydantoic acid*, m. 197-8° (from dil. EtOH). This boiled with aq. HCl or H_2SO_4 gave the original hydantoin. Refluxing 40 g. $Ph_2CBrCHO$, 80 ml. 96% EtOH, and 41 g. $Na_2S_2O_3$ 22 hrs. in 40 ml. H_2O, treatment with CO_2, addn. of 90 ml. 45% H_2SO_4, and extn. with Et_2O gave a mixt. of products, from which was isolated a green liquid (I), b. 122° (in a high vacuum), which appeared to be impure *Ph_2CHCHS*; with 2,4-*$(O_2N)_2C_6H_3NHNH_2$* (II) in EtOH it yields at first a deep red *hydrazone*, then a *yellow one*, m. 145-6°, which was that of the above aldehyde. The red hydrazone, m. 235-6° (from EtOAc), appeared to be that of Ph_2CO; further examn. of I indicated that it was composed of Ph_2CO, Ph_2CHCHO, and Ph_2CHCHS. $Ph_2CBrCHO$ (20 g.) in dry C_6H_6 treated with fresh NaSH suspended in C_6H_6 gave on distn. a blue product, resolved into 2 fractions, b. 123-33° (high vacuum), and 134-8°, both free of S and both giving with II the hydrazones of Ph_2CO and Ph_2CHCHO. The distn. residue contained S and the CHO group, but

FAVORSKAYA, T A.

Synthesis of substituted cysteines. II. Possibility of application of substituted hydantoins for preparation of β,β-diphenylcysteine. T. A. Favorskaya and L. A. Remizova. *J. Gen. Chem. U.S.S.R.* 23, 866-80(1953)(Engl. translation).—See *C.A.* 48, 3934*f*. H. L. H.

FAVORSKAYA, T. A.

Mechanism of transformation of tertiary alcohols of the cyclopropane series under the influence of mineral and organic acids. I. The reaction of dimethylcyclopropylcarbinol with formic acid. T. A. Favorskaya and N. V. Shcherbinskaya (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* 23, 1485-93(1953).—In the reaction of HCO_2H with dimethylcyclopropylcarbinol (I), is formed. The product is in part converted to the formate and in part isomerized to *2,2-dimethyltetrahydrofuran* (III). Slow distn. of $Ac(CH_2)_3OH$ with HBr gave 75-80%, corresponding bromide which was shaken with excess KOH or NaOH (solid), yielding 75% *acetylcyclopropane* (IV), b. 109-12°, which with MeMgBr gave 68-70% crude, 54-5% pure I, b. 120-3°, d_{20} 0.8888, d_0 0.9053, n_D^{20} 1.4323. I (150 g.) refluxed 1.5 hrs. with 300 ml. 1:1 HCO_2H, and the mixt. neutralized with Na_2CO_3 and extd. with Et_2O yielded 5% unreacted I, 19.2% III, b. 90-2°, d_{20} 0.8477, n_D^{20} 1.4301 (with $KMnO_4$ III yielded *4-hydroxyisocaprolactone*, b. 203-4°, which gave the *Ag salt* of the corresponding *acid*), 5% IV, b. 108-12°, some 85 g. mixed II and its *formate*, b. 152-5°, d_{20} 0.9028-0.9038, n_D^{20} 1.4340-1.4364 (stirring with 10% K_2CO_3 8-10 hrs. with heating gave the pure II, b. 156-7°, d_{20} 0.8550, n_D^{20} 1.4464), and 8.6% *1,1-dimethyltetramethyleneglycol monoformate*, b_7 97.5-8.5°, d_{20} 1.0123, d_0 1.0250, n_D^{20} 1.4335 (hydrolysis with 10% K_2CO_3 gave *$HO(CH_2)_3CMe_2OH$* (V), b_{14} 112-13°, d_{20} 0.9789, n_D^{20} 1.4500). Refluxing 10 g. V with 13 ml. 1:1 HCO_2H 1 hr. gave 28% III and up to 30% monoformate of V. Refluxing mixed II and its formate with 1:1 HCO_2H 2.5 hrs. gave 47.5% III. Heating 37 g. I with 80 ml. HCO_2H 1.5 hrs. at 60-70° gave 54% II and its formate; a small amt. of IV was also isolated, but no III. Refluxing 12 g. $CH_2:CHCH_2C(OH)Me_2$ (VI) with HCO_2H (1:1) 1.5 hrs. gave 61% unchanged VI and 1.9 g. mixed hydrocarbons corresponding to those formed from dehydration of VI (cf. *C.A.* 44, 7753a). Stirring VI with pure HCO_2H 6 hrs. at 0° gave no reaction, but refluxing 1.5 hrs. gave a low yield of a *trimeric hydrocarbon*, *$C_{15}H_{30}$*, b_{12} 142-3°, d_{20} 0.8089, n_D^{20} 1.4903, which did not react with $KMnO_4$ and evolved HBr with Br in $CHCl_3$. Possibly this was a cyclic product without double bonds or side chains.

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FAVORSKAYA, T.A

Mechanism of transformation of tertiary alcohols of the cyclopropane series under the influence of mineral acids and organic acids. II. Reaction of methylethylcyclopropylcarbinol with dilute formic acid. **T. A. Favorskaya and N. V. Shcherbinskaya** (A. A. Zhdanov [illegible] Leningrad). *Zhur. Obshchei Khim.* 33, 1667–73(1963); cf. [illegible] 48, 11368*f*. –Methylethylcyclopropylcarbinol (I) [illegible] with dil. HCO_2H analogously to the reaction with [illegible] I formed in 54% yield from acetylcyclopropane and EtMgBr [illegible] in addn. there was [illegible] [illegible] contg. [illegible] cyclopropane and [illegible] [illegible] propylethylene as well as MeEt[illegible] CHCH [illegible] and MeCH CMeCH$_2$CH CH$_2$ with KMnO$_4$ it gave HCO_2H AcOH and $(CO_2H)_2$. The other products included 2-methyl-2-ethyltetrahydrofuran (II) and a mixt. of *Et-Me* $CHCH_2CH_2OH$ (III) and its *formate*, b. 162–7°, d_{20} [illegible] n_D^{20} 1.4308; hydrolysis with aq. K_2CO_3 gave the alc., b. 169–70°, d_{20} 0.8610, n_D^{20} 1.4510; oxidation of the mixt. with KMnO$_4$ gave MeCOEt, HCO_2H, and MeEt-C(OH)CO$_2$H, m. 67°). Treatment of the alc.-formate mixt. with MeMgI and hydrolysis of the product with 1:5 H_2SO_4 gave II and III; hydrolysis with H_2O alone gave only III, showing that cyclization requires acidic catalysis. Extensive fractionation of the residual products of the original reaction of I with aq. HCO_2H gave a mixt. of inseparable products, b_{14} 112–14°, d_{20} 0.9667, n_D^{20} 1.4565, hydrolyzed with 20% K_2CO_3 to HCO_2H and *MeEtC(OH)* $CH_2CH_2CH_2OH$ (IV) [illegible] [illegible] product was [illegible] formate [illegible] MgBr [illegible] [illegible] and [illegible] [illegible] ozonolysis [illegible] KMnO$_4$ oxidation [illegible] bond between secondary and tertiary [illegible] bond in misleading results since hydration [illegible] with instead of addn. of 2 HO groups [illegible] therefore KMnO$_4$ gave some MeEt[illegible] [illegible] the iodide formed in the reaction [illegible] Mg [illegible] propane [illegible] 42 [illegible] M. K. *MeCH: CH$_2$* and not PrCMe:CH [illegible]

FAVORSKAYA, T.A.

Mechanism of transformations of tertiary alcohols of the cyclopropane series under the influence of mineral and organic acids. III. Reaction of dimethylcyclopropylcarbinol, methylethylcyclopropylcarbinol, and methylisopropylcyclopropylcarbinol with sulfuric acid. T. A. Favorskaya, N. V. Shcherbinskaya, and E. S. Golovacheva (Leningrad State Univ.). *Zhur. Obshchei Khim.* 23, 1878-84(1953); cf. *C.A.* 48, 13638b; Slabey, *C.A.* 47, 5890f; 48, 13638g.—*Dimethylcyclopropylcarbinol* (I), from acetylcyclopropane and MeMgI in 54% yield, b. 120-3°. Heating I at reflux 2 hrs. with 1:4 H_2SO_4 gave 31.1% *2,2-dimethyltetrahydrofuran* (II), 13.6% *bis-(2-methyl-2-penten-5-yl) ether* (III), and 8% polymeric residue. With 1:5 H_2SO_4, there was formed 44.1% II, 10% III, 1% *2-methyl-2-penten-5-ol* (IV), and 7.5% residue. Refluxing I with 1:10 H_2SO_4 1 hr. gave 51.6% II and 5% IV with only a trace of residue. IV b_{11} 61-3°, d_{20} 0.8573, n_D^{20} 1.4400. III b_{15} 101-3°, b_{28} 115-16°, d_{20} 0.8416, d_4 0.8570, n_D^{20} 1.4530. Thus the reaction of I proceeds through IV to both II and III. EtMgBr and acetylcyclopropane gave 54% *methylethylcyclopropylcarbinol* (V), b. 141-3°. This (50 g.) refluxed 2 hrs. with 120 ml. 1:5 H_2SO_4 gave 29% crude hydrocarbons, from which was isolated a product, b. 100-6°, that was very close in properties to the mixt. of hydrocarbons formed from V and HCO_2H (cf. *C.A.* 48, 13638b): *4-methyl-1,4-hexadiene* and *2-cyclopropyl-2-butene*. Acetylcyclopropane (5%) was also obtained, along with 24% *2-methyl-2-ethyltetrahydrofuran*, b. 119-21°, n_D^{20} 1.4228, and 0.5 g. *3-methyl-3-hexen-6-ol*, b_{11} 69-71°, n_D^{20} 1.4500, and polymeric residue. Acetylcyclopropane and iso-PrMgBr gave 26.6% *methylisopropylcyclopropylcarbinol* (Va), b_2 45-6°, b_{11} 61.5-3.0°, b_{28} 75-6°, n_D^{20} 1.4405, d_{20} 0.8888, and 6.17% *2,3-dicyclopropyl-2,3-butanediol* (VI), b_2 128-30°, m. 71-2°. Va (10 g.) refluxed 1 hr. with 1:10 H_2SO_4 gave *2-methyl-2-isopropyltetrahydrofuran*, b. 141-3°, n_D^{20} 1.4310, d_{20} 0.9824. Prolonged oxidation of this with $KMnO_4$ gave *γ,δ-dimethyl-γ-hydroxycaprolactone*, b_4 97°, n_D^{20} 1.4500, d_{20} 0.9970; the Ag *salt* of the free *acid* was isolated. VI refluxed 1 hr. with 1:10 H_2SO_4 gave only undistillable tarry products under usual conditions; when the reaction was repeated under a CO_2 atm., there was obtained a small amt. of distillable material which was resolved into a *ketone*, $C_{10}H_{16}O$, b_4 25°, d_{20} 0.8678, n_D^{20} 1.4300 (*2,4-dinitrophenylhydrazone*, m. 181.5-2.0°), and a very small amt. of, probably, $(HOCH_2CH_2CH{:}CMe)_2$, b_4 about 75°, n_D^{20} 1.4790. G. M. K.

Favorskaya, T.A.

Mechanism of transformations of tertiary alcohols of the cyclopropane series under the influence of mineral and organic acids. IV. Reactions of dimethylcyclopropyl-carbinol with benzoic acid and methylphenylcyclopropyl-carbinol with dilute formic acid. T. A. Favorskaya and N. V. Shcherbinskaya (A. A. Zhdanov State Univ., Leningrad). *Zhur. Obshchei Khim.* 23, 2009–14(1953); cf. *C.A.* 49, 193f.—The reactions of tertiary alcs. of the cyclopropane series follow the same mechanism regardless of whether org. acids or H_2SO_4 are employed. Refluxing 70 g. dimethylcyclo-propylcarbinol with 170 g. BzOH in 170 ml. H_2O 4 hrs. gave 2-*methyl-2-penten-5-ol* and its *benzoate* (b_{10} 142–4°, b_{760} 272–4°, d_{20} 1.0103, d_4 1.0252, n_D^{20} 1.5125). The latter treated with excess PhMgBr gave 2-methyl-2-penten-5-ol and Ph_3COH. Refluxing 60 g. methylphenylcyclopropylcarbinol with 60 ml. 1:1 HCO_2H 1.5 hrs. gave 18.7% *CH_2:CPhR* (R = cyclopropyl), b_9 88–90°, d_{20} 0.9618, n_D^{20} 1.5421, and 63% mixed 2-phenyl-2-penten-5-ol and its formate, b_7 138–40°, which could not be sepd. by distn. After hydrolysis with 20% K_2CO_3 the alc. was isolated, along with AcPh (cf. *C.A.* 44, 9358*h*). Reaction of 17 g. acetopropyl alc. with PhMgBr from 52 g. PhBr gave 70% *α-methyl-α-phenyl-tetramethylene glycol*, b_{22} 200–5°, which refluxed with 80% HCO_2H 2 hrs. gave 57% *2-methyl-2-phenyltetrahydrofuran*, b_{14} 102–3°, d_{20} 1.0073, n_D^{20} 1.5161. The latter oxidized with $KMnO_4$ at room temp. to *γ-phenyl-γ-hydroxyvaleric acid*, isolated as the *Ag salt* and *lactone*, m. 94–5°. When the above glycol was heated 2 days with 20% K_2CO_3 no reaction took place and no AcPh was formed. Thus the tertiary cyclopropyl alcs. react with acids by isomerization to a primary ethylenic acid, which then undergoes the observed changes to the final products, the yields of which are affected by the pH of the medium. V. **Reaction of methylbutylcyclopropylcarbinol with hydrochloric acid, and reaction of dimethylcyclopropylcarbinol, methylisopropylcyclopropylcarbinol, and methylbutylcyclopropylcarbinol with phosphorus trichloride in the presence of pyridine.** T. A. Favorskaya, T. N. Gulyaeva, and E. S. Golovacheva (A. A. Zhdanov State Univ., Leningrad). *Ibid.* 2014–20.—Acetylcyclopropane and BuMgBr gave 84% *methylbutyl-cyclopropylcarbinol*, b_8 62–3°, d_{20} 0.8762, n_D^{20} 1.4463. This (33 g.) stirred 2 hrs. with 65 ml. 1:1 HCl gave 31% 2-*cyclopropyl-2-hexene*, b_{15} 52–3°, d_{20} 0.7929, n_D^{20} 1.4500 (identified by $KMnO_4$ oxidation to acetylcyclopropane and $PrCO_2H$), and 43% *4-methyl-1-chloro-3-octene*, b_{15} 82–3°, d_{20} 0.8993, n_D^{20} 1.4550, confirmed by ozonolysis to MeBuCO and $ClCH_2CH_2CO_2H$. Hydrolysis of the chloride by 50% aq. alc. KOH gave a small amt. of *4-methyl-1,3-octadiene*, b_{25} 60–2°, n_D^{20} 1.4605, d_{20} 0.7699 (yields a rubbery maleic anhydride adduct), and crude *4-methyl-3-octen-1-ol*, b_{15} 91–5°, d_{20} 0.8199, n_D^{20} 1.4400, which on ozonolysis gave MeBuCO and CH_2:$CHCO_2H$ isolated as the Ag salt. To 12.2 g. PCl_3 was added a mixt. of 37.5 g. methylbutylcyclopropylcarbinol and 7.5 g. pyridine, with ice cooling; after 2 hrs. the org. layer was sepd. and distd. yielding 4-methyl-1-chloro-3-octene and 2-cyclopropyl-2-hexene. Similar reaction with dimethylcyclopropylcarbinol gave 2-methyl-5-chloro-2-pentene, b. 130–2°, and [illegible] RCMe$_2$Cl (R = cyclopropyl), b. 104–5°, d_{20} 0.9380, n_D^{20} 1.4395. Raman spectrum given. Reaction of 3.8 g. PCl_3, 10 g. methylisopropylcyclopropylcarbinol, and 1.5 g. pyridine similarly gave 6.7 g. crude RCMe[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

FAVORSKAYA, T.A.; GULYAYEVA, T.N.; GOLOVACHEVA, Ye.S.

Mechanism of the conversion of tertiary alcohols of the cyclopropane series under the action of mineral and organic acids. Part 5. Interaction of methyl-*n*-butyl-cyclopropylcarbinol with hydrochloric acid. Interaction of dimethyl-cyclopropylcarbinol, methyl-isopropyl-cyclopropylcarbinol, and methyl-*n*-butyl-cyclopropylcarbinol with phosphorus trichloride in the presence of pyridine. Zhur.ob.khim.23 no.12:2014-2020 D '53. (MLRA 7:2)

1. Leningradskiy Gosudarstvennyy universitet im. A.A.Zhdanova Laboratoriya im. akademika A.Ye.Favorskogo.
(Carbinols) (Phosphorus trichloride)

FAVORSKAYA, T.A.; ANISIMOVA, I.L.; SHEYNBERG, Z.A.

Study of conditions for the formylation of acyl amino acids.
Zhur.ob.khim. 25, no.3:551-558 Mr '55 (MLRA 8:6)

1. Leningradskiy Gosudarstvennyy universitet
(Amino acids)(Formylation)

FAVORSKAYA I.A.

C-11

Synthesis of α-mercaptoisobutyraldehyde. T. A. Favorskaya and D. A. Shkurgina (Leningrad State Univ.). ~~Zhur. Obshchei Khim. 25, 747-53~~; *J. Gen. Chem. U.S.S.R.* 25, 713-17(1955)(Engl. translation).—To 36 g. iso-PrCHO at 0° was added 1 drop H_2SO_4 and the resulting *polymer* in 50 ml. CCl_4 was treated with cooling with 80 g. Br, yielding 82.6% *Br deriv.*, m. 125-6° (cf. Danilov and Venus-Danilova, *C.A.* 28, 1664[1]). This (10.57 g.) heated on a steam bath with 18.2 g. $Na_2S_2O_3.H_2O$, 20 ml. H_2O, and 45 ml. EtOH 8 hrs., then treated rapidly with 30.8 ml. 50% H_2SO_4, cooled under CO_2, and distd. gave but a few drops of distillable org. matter, the residue being an undistillable polymer of $HSCMe_2CHO$. To 20 g. iso-PrCHO and 51 g. dry EtOH was added 25 g. $CaCO_3$ followed by 14.2 ml. Br; after standing overnight the mixt. was washed with Na_2CO_3 and extd. with Et_2O yielding 16.8% *$Me_2CBrCH(OEt)_2$*, b_9 60-2°, d_{20} 1.1815, n_D^{20} 1.4399. This (22 g.) in 30 ml. Et_2O was treated with 12 g. dry NaSH and the mixt. stirred 5 hrs. gave 16 g. starting material and a dark resin contg. S and Br. To 60 g. iso-PrCHO, 500 ml. dry Et_2O, and 120 g. powd. dry $CaCO_3$ was added with stirring, ice-cooling and illumination with a strong lamp 42 ml. Br over 2 hrs.; after 2 hrs. continued stirring, filtering, drying, and distg. there was obtained 78% *$Me_2CBrCHO$*, $b_{?}$ 48°, d_{20} 1.4132, n_D^{20} 1.4531. This (60 g.) added to 35 g. KSH suspended in 300 ml. dry Et_2O and stirred 5 hrs. gave a soln. (I) (after removal of the ppt.) which by iodine titration contained 43.2% $Me_2C(SH)CHO$; attempted distn. led to decompn. and loss of H_2O; a small amt. of *C_4H_6O* (unidentified), d_{20} 0.7810, n_D^{20} 1.3880, which gave Ag mirror test. However, when the soln. I was treated with metallic Na it formed a ppt. of the mercaptide, which with H_2O gave brownish liquid, which could be titrated with iodine. Treatment of I with $AgNO_3$-AcONa gave a black ppt. initially, followed by a grayish ppt. of the Ag mercaptide, which gave a poor agreement on analysis with the expected $Me_2C(SAg)CHO$. Heating I with alc. KSH 4 hrs. gave a tar, but a reaction without heating gave after evapn. of the solvents a cryst. solid, which was impure and contained S, halogen, and gave aldehyde and SH tests. This solid, m. 75-7°, gave a 2,4-dinitrophenylhydrazone, m. 249-51°. The oily residue also gave a 2,4-dinitrophenylhydrazone, m. 226-8°. The derivs. contained S. Cryst. of the product from EtOH gave an oil which gave a 2,4-*dinitrophenylhydrazone*, m. 250-1°. The mol. wt. of the oil, detd. cryoscopically, agreed fairly well with a trimer of *$Me_2C(SH)CHO$*.

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