"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

ACCESSION NR: AP3000895 S/0179/63/000/002/0155/0159

AUTHOR: Landa, P. S. (Moscow); Ponomarev, Yu. V. (Moscow)

TITLE: Determining eigenfunctions and eigenvalues

SOURCE: AN SSSR. Izv. Otd. tekh. nauk. Mekhanika i mashinostroyeniye, no. 2, 1963, 155-159

TOPIC TAGS: boundary value problems, electronic simulation

ABSTRACT: A method is presented for the solution of natural-oscillation problems in linear inhomogeneous systems with distributed parameters by using electronic models with d-c amplifiers. As an example, a problem of determining the lowest natural frequencies and nature of flexion-torsion oscillations of a wing in vacuum is studied and solved on an MN-7-type computer. Equations of symmetrical flexion-torsion oscillations of a straight cantilever-type wing with certain boundary conditions are written and analyzed. The method consists in substituting a space coordinate x by time coordinate $\tau$ ($x = [1/T]\tau$) and in the selection of unknown initial conditions at one end of the wing in such a manner that the necessary boundary conditions are satisfied at the other end. Both theoretical



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ACCESSION NR: AP300895

and experimental characteristic functions of flexion-torsion oscillations are given in graphs. Oscillograms of natural modes of combined oscillations are presented and discussed. The method described can be applied to the problems of eigenvalues with boundary conditions of a general type and also to the solution of the problem of self-oscillations in distributed systems of the type considered above (e.g., wing flutter problems). Orig. art. has: 13 formulas, 4 figures, and 2 tables.

ASSOCIATION: none

SUBMITTED: 03Jan63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: AI,MM NO REF SOV: 004 OTHER: 000

Card 2/2

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L 26654-65 EWT(d) Pg-4 IJP(c) GS

ACCESSION NR: AT5002510 S/0000/64/000/000/0312/0320

38
12
B+1

AUTHOR: Landa, P. S., Ponomarev, Yu. V.

TITLE: A method of simulating boundary value problems (the determination of eigenfunctions and eigenvalues)

SOURCE: Analogovyye metody i sredstva resheniya krayevykh zadach (Analog methods and means of solving boundary value problems): trudy Vsesoyuznogo soveshchaniya, Moskva, 1962 g. Kiev, Naukova dumka, 1964, 312-320

TOPIC TAGS: electrosimulation, boundary value problem, differential equation, ordinary differential equation, linear differential equation, eigenvalue, eigenfunction, analog computer, wing bending

ABSTRACT: The paper develops a method for solving a dynamic system for the forms of its oscillations and their associated frequencies for a linear one-dimensional system with distributed parameters, without replacement by a system with concentrated parameters. The problem boils down to solving

$$\frac{d\vec{y}}{dx} = A\vec{y}, \quad \vec{y} = (y_1(x), \ldots, y_m(x)) \tag{1}$$

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with the boundary conditions

$$\Gamma_k(\vec{y})|_{x=0} = 0, \quad k = 1, \ldots, n, \tag{2}$$

$$\Gamma_l(\vec{y})|_{x=L} = 0, \quad l = n+1, \ldots, W.$$

The method is applicable and effective for use with electro-simulation devices. The paper presents applications of the method to a) bending-torsion oscillations of the first order in a wing fastened by a cantilever:

$$\frac{d^4y}{dx^4} - \lambda y + \sigma\lambda\vartheta = 0,$$

$$\xi^2 \frac{d^2\vartheta}{dx^2} - \lambda \frac{\sigma}{r_0^2} y + \lambda\vartheta = 0 \tag{3}$$

$$y(0) = 0, \quad \left.\frac{d^2y}{dx^2}\right|_{x=l} = 0, \tag{4}$$

$$\left.\frac{dy}{dx}\right|_{x=0} = 0, \quad \left.\frac{d^3y}{dx^3}\right|_{x=l} = 0,$$

$$\vartheta(0) = 0, \quad \left.\frac{d\vartheta}{dx}\right|_{x=l} = 0,$$



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ACCESSION NR: AT5002510

and b) non-first-order bending oscillations of a wing fastened by a cantilever:

$$\frac{d^2}{dx^2}\left[\frac{EI(x)}{(EI)_b}\cdot\frac{d^2y}{dx^2}\right]-\lambda\frac{m(x)}{m_b}y=0 \qquad (5)$$

$$\left[\frac{EI}{(EI)_b}\cdot\frac{d^2y}{dx^2}\right]_{x=0}=0,\ \frac{d}{dx}\left[\frac{EI}{(EI)_b}\cdot\frac{d^2y}{dx^2}\right]_{x=0}=0,\ y(l)=0,\ \left.\frac{dy}{dx}\right|_{x=l}=0. \qquad (6)$$

The results were derived using the MN-7 and the SB-3, respectively. Orig. art. has: 2 figures, 3 tables and 19 formulas.

ASSOCIATION: None

SUBMITTED: 05Sep64 ENCL: 00 SUB CODE: MA, DP

NO REF SOV: 004 OTHER: 000

Card 3/3

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EEC(k)-2/EWP(k)/EWT(1)/FBD/T IJP(c) WD

ACC NR: AP6024856 SOURCE CODE: UR/0056/66/0051/001/0003/0012

AUTHOR: Klimontovich, Yu. L.; Kuryatov, V. N.; Landa, P. S.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Wave synchronization in a gas laser with a ring resonator

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 1, 1966, 3-12

TOPIC TAGS: laser, ~~mode locking~~, laser theory, coherent light, wave mechanics

ABSTRACT: Mode locking of two opposite waves in a ring laser is studied in the case when frequency mismatch between them is possible. The zero and first harmonics of the density matrix elements are taken into account in the calculation of polarization. A formula for the mode locking region width is derived for single-mode operation by taking into account second-order terms with respect to the mirror reflection coefficient. Results of an experimental investigation of the dependence of the mode locking region width on the magnitude and phase of the reflection coefficient are presented. The reflection coefficient was changed by introducing an additional mirror. The dependence of mode locking band on the reflection coefficient agrees qualitatively with the results of the calculations. Orig. art. has: 39 formulas and 6 figures. [CS]

SUB CODE: 20/ SUBM DATE: 06Dec65/ ORIG REF: 005/ OTH REF: 002/ ATD PRESS: 5043

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

HORACEK, Evzen, inz., CSc; LANDA, Rudolf, inz.

Arc skylight from glass laminate. Stav. vyzkum. no.5/6:5-8'62

1. Vyzkumny ustav stavebni vyroby, Praha.

*

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LANDA, R

VOLKOVA, V.; LANDA, R.

Visiting a coal preparation plant. IUn.tekh.no.1:70-72 Ja '57. (MIRA 10:3)

(Coal preparation)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, R.A.

Determining residual austenite in steels by X-ray structural analysis. Zav.lab. 22 no.1:83-87 '56. (MLRA 9:5)
(Steel--Analysis) (Metallography)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, R.A.

USSR/Solid State Physics - Structure of Deformable Materials. E-9

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11854

Author : Landa, R.A.
Inst : -
Title : X-ray Structural Determination of the Stresses of the First Kind in Solid Solutions.

Orig Pub : Zavod. laboratoriya, 1956, 22, No 7, 821-823

Abstract : First the author shows experimentally the possibility of determining stresses of the first kind in solid solutions by x-ray-structural methods. The optimum conditions are chosen for increasing the sensitivity and accuracy of the method (determination of the stresses was carried out along the lines (211) of monocarbide of tungsten; the X-ray photographs were taken in a backward-photography camera using a dismountable tube with cobalt radiation; the distance between the $K_\alpha$ lines of the doublet was determined by photometry. Plates of the alloys VK8 and

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CIA-RDP86-00513R000928510015-0"

LANDA, R.A.

Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3817

Author : Golovchiner, Ya.M., Landa, R.A.
Inst : Institute of Metal Working and of Metal Physics. Central Scientific Research Institute for Ferrous Metallurgy.
Title : Investigation of the Fine Crystalline Structure of the $\gamma$ Phase, Stabilized by the Reverse Martensitic Transformation.

Orig Pub : Dokl. AN SSSR, 1956, 107, No 1, 67-70

Abstract : X-ray methods were used to study the variation in the fine crystalline structure of austenite of an alloy of iron with 27.2% nickel and 1.15% titanium, subjected to the following stabilizing treatment: 90% reduction, cooling in liquid nitrogen, and subsequent heating to various temperatures from 640 to 775°. The result of such a treatment was a direct and reverse martensitic transformation. It is shown that the state of stabilization corresponds to a state of internal phase hardening, characterized by an increased hardness, considerable stresses of the second kind, and certain crushing of the mosiac blocks. Increasing the heating temperature causes a linear reduction in the stresses of the second

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Category : USSR/Solid State Physics - Phase Transformation in Solid Bodies E-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3817

kind in full agreement with the reduction of the stabilization, and the dimensions of the block vary only insignificantly. The basic reason for the stabilization of the austenite in the investigated alloy after the reverse martensitic transformation is the occurrence of considerable stresses of the second kind.

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SOV/137-58-7-15653

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 248 (USSR)

AUTHORS: Golovchiner, Ya. M., Landa, R. A., Khalin, L. M.

TITLE: Study of the Mosaic Structure of the Gamma Phase of Iron-nickel Alloys during Direct and Reverse Martensite Transformation (Izucheniye mozaichnoy struktury gamma-fazy zhelezonikelevykh splavov pri pryamom i obratnom martensitnom prevrashchenii)

PERIODICAL: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii, 1958, Vol 5, pp 136-146

ABSTRACT: Alloys of the composition (in %) C 0.05, Ni 27.3, Ti 1.2, and the balance in Fe (I) and C 0.06, Ni 23.5, Mn 3.3, the balance in Fe (II), were investigated. By means of the variation of the Debye interference spot the maximum disorientation (D) of the mosaic structure, and the behavior of the γ phase in the course of the direct (DMT) and reverse (RMT) martensite transformation were studied. The D increases considerably during DMT and to a still greater extent during RMT. Upon raising of the heating temperature after the completion of RMT the D also increases. In alloy II the D

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SOV/137-58-7-15653

Study of the Mosaic Structure of the Gamma Phase (cont.)

decreases somewhat in the initial state of RMT which can be attributed to "elastic" relaxation of stresses of type II. In the course of RMT and during subsequent heating, a modification of the orientation of the crystal as a whole is also observed, aside from the increase in D.

L. V.

1. Iron-nickel alloys--Phase studies 2. Iron-nickel alloys
--Structural analysis

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DAVIDSON, A.G.; DATLIN, S.V.; KIRICHENKO, G.A.; KOROTKOVA, Ye.N.; KRAVCHENKO, D.V.; ORLOVA, A.S.; ADADUROVA, A.A.; ARKAD'YEV, V.G.; BARDINA, Yu.Ya.; BODYANSKIY, V.L.; BONDAREV, S.N.; GLAZACHEV, M.V.; DAVYDOVA, E.A.; IVANOV, V.N.; KARPUSHINA, V.Ya.; KREKOTEN', L.P.; LANDA, R.G.; LEVITSKAYA, G.O.; LIFETS, Yu.G.; LOGINOVA, V.P.; ONAN, E.S.; PEGUSHEV, A.M.; PYKHTUNOV, N.V.; TOKAREVA, Z.I.; KHUDOLEY, V.F.; MILOVANOV, I.V., red.; MIKAELYAN, E., red.; MUKHIN, R., red.; SVANIDZE, K., red.; KLIMOVA, T., tekhn. red.

[Africa today; concise reference book on politics and economic conditions] Afrika segodnia; kratkii politiko-ekonomicheskii spravochnik. Moskva, Gos. izd-vo polit. lit-ry, 1962. 326 p.
(Africa--Politics)
(Africa--Economic conditions)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

KOYBASH, Valentin Alekseyevich; KOROL', Valentina Yakovlevna; LANDA, R.S., otv. red.; ROMANOVA, L.A., red.izd-va; LOMILINA, L.N., tekhn. red.

[Planning coal preparation plants] Proektirovanie ugleobogatitel'nykh fabrik. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962. 327 p. (MIRA 15:4)

(Coal preparation)

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LANDA, R.S.; SAFRONOVA, K.I.

Branch conference of coal preparation workers in the Kuznetsk Basin. (MIRA 18:10)
Ugol' 40 no.9:75-76 S '65.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, R.S.

Conference of workers in coal preparation. Ugol' 38 no.6:54-55 Je '63. (MIRA 16:8)

1. Gosudarstvennyy komitet po toplivnoy promyshlennosti pri Gosplane SSSR.

(Coal preparation)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

WEISSER, O.; LANDA, S.; MOSTECKY, J.

Contribution to gas odorization. Ropa a uhlie 5 no.7:201-204 Jl'63.

1. Vysoka skola chemicko-technologicka, katedra syntetickych paliv, a ropy. Praha.

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BC

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

A-3

**Gradual combustion of hydrocarbons.** S. LANDA (Paliva a topení, 1929, 11, 1—4).—On oxidation, paraffin yielded propaldehyde, formaldehyde, acetaldehyde, hexaldehyde, and octaldehyde, methyl and ethyl alcohols, acetone, and methyl ethyl ketone. Triacontane (prepared by electrolysis of potassium palmitate and from a Japanese wax) gave formaldehyde, heptaldehyde, octaldehyde, formic, butyric, and valeric acids, but acetaldehyde, methyl or ethyl alcohol, acetic or propionic acid were not detected. The formation of aldehyde on gradual oxidation is used as a test for paraffin in petroleum oils.

CHEMICAL ABSTRACTS.

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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2ND LETTER

AUTHOR INDEX

1ST AND 2ND LETTER

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PROCESSES AND PROPERTIES INDEX

Ca

10

**The electrolysis of palmitic acid and the preparation of pentadecene.** S. LANDA AND MME. M. LANDOVA. *Collection Czechoslov. Chem. Comm.* 2, 31-5(1930) — A thorough study of the products formed when K palmitate was electrolyzed enabled not only triacontane to be isolated but also pentadecanol and pentadecene, a new hydrocarbon not previously described. Equations for the formation of these substances are given. The electrolysis was performed using Petersen's method (*Z. physik. Chem.* 33, 115(1900)) modified by the use of a reflux condenser which allowed the condensed alc. to fall on the anode and minimize froth formation. The products were solid at ordinary temp. and were sepd. by distn. under 16 mm. pressure. *Pentadecene.* The fraction $b_{15}$ 141-6° was treated with alc. KOH, redistd. brominated (giving 1,2-dibromopentadecene, colorless liquid of agreeable odor, $b_{17}$ 204-5°) and then debrominated, giving $C_{15}H_{30}$, m. 0.50°, $b_{15}$ 144-5°. Among the properties given are the following: I no. 130.4, $d_4^0$ 0.7941 $n_D^{12.35}$ 1.44434, $M_D$ 71.26, heat of combustion at const. vol. 2356.8 kg.-cal., abs. viscosity 20°, 0.019712 cm.$^{-1}$ g.-sec.$^{-1}$. The oxidation of pentadecene was effected by $KMnO_4$ on heating, giving the acid $C_{15}H_{30}O_2$, m. 50°. The diacetate of 1,2-pentadecamethylene glycol was prepd. by heating dibromopentadecene, AgOAc and anhyd. AcOH on an oil bath (yield mediocre). The purified product m. 52-3°. *Pentadecanol* was obtained by taking the 170-80° (15 mm.) fraction from the electrolysis and treating with PhNC at room temp. The temp. rapidly rose to 70° and the mass finally became solid. The excess PhNC was distd. off (*in vacuo*) and the residue purified from $C_6H_6$ giving plates, m. 72°. E. B. SANIGAR

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

10

**Syntheis of some higher isoparaffins.** S. LANDA AND R. RIEDL. *Collection Czechoslov. Chem. Comm.* 2, 520-30(1930).—$Me(CH_2)_{14}CHMe_2$ (I) and $Me(CH_2)_{12}CHMe_2$ (II) have been prepd. by the following series of reactions. The ester with 2 less C atoms with MeMgBr gives the alc. which on distn. yields 2 olefins which by hydrogenation give the paraffin. $Me(CH_2)_{14}CMe_2OH$ was made from Et palmitate, a 20% excess of MeMgBr being used. Yield 90%. The alc. is dehydrated by distn. at 100 mm. 2-Methyl-2-heptadecene, m. —2.5°, b. 314°, $d_{18}$ 0.7953, is the only product as proved by oxidation. The di-Br deriv. $b_{25}$ 207-8°. Hydrogenation was carried out at 220-40° for 82 hrs. The unchanged olefin was brominated and the 2 products sepd. by distn. Yield 25%. Rape oil was hydrogenated, using 2% Ni at 120 atm. The solid product is sapond. with twice the theoretical amt. of alc. KOH and the acid freed by dil. $H_2SO_4$. After heating to 125° the acid is dissolved in alc., HCl gas passed in, water is added and the product heated to 135°. Distn. at 15 mm. and 252-8°, recrystn. from alc. and a 2nd distn. at 255° yields 20% Et behenate, m. 48.5°. Treatment with twice the theoretical amt. of MeMgBr, distn. at 0.002 mm., and crystn. from $Et_2O$ yields 90% $Me(CH_2)_{18}CMe_2OH$, m. 63°. Distn. of the alc. at 290° and 100 mm. yields $Me(CH_2)_{16}CH:CMe_2$, m. 41.5, $b_{10}$ 234-7°. Hydrogenation, carried out at 180° and 1 atm., is incomplete and the product is obtained by twice pptg. an $Et_2O$ soln. with 0.5 its vol. of alc. The product has I no. 1.2, m. 42°, d. 0.7882 at the m. p.

V. F. HARRINGTON

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CA

9

**Synthesis of 2,11-dimethyldodecane and of 2,19-dimethyleicosane.** S. LANDA AND A. KEJVAN. *Collection Czechoslov. Chem. Communications* 3, 307-70(1931).—The method of Witt for prepg. sebacic acid (I) was modified to increase the yield from 10 to 20%: 1 kg. ricin was heated with 2 kg. NaOH in 40% soln., 1/3 of the dried soap was heated slowly with 200 g. KOH and cooled before it blackened, the mass dissolved in $H_2O$ and HCl, and the sebacic acid recrystd. from boiling $H_2O$. The Et ester (130 g.) of I reacted with MeMgBr (prepd. from 100 g. Mg) to give 70 g. 2,11-dihydroxy-2,11-dimethyldodecane (II), liquid at —10°. Distn. of II at 760 mm. gave a colorless diolefin $C_{14}H_{28}$ (III), b. 239-41°, d. 0.8107, one of 3 possible isomers: $Me_2C:CH(CH_2)_8CH:CMe_2$, $CH_2:CMe(CH_2)_8CMe:CH_2$ (IV) and $Me_2C:CH(CH_2)_7CMe:CH_2$. Successive oxidation of III with $CrO_3$ and dil. $HNO_3$, direct oxidation with $HNO_3$, and oxidation with alk. $KMnO_4$ all gave sebacic acid which indicated that IV was the principal isomer present. III readily gave a tetrabromide which lost HBr when distd. *in vacuo*. Hydrogenation of III at room temp. with Pt black gave 2,11-dimethyldodecane, $b_{11}$ 117°, m. —8.5°, $n_\alpha^{18.5°}$ 1.42816, $n_\beta^{18.5°}$ 1.43023, $n_\beta^{18.5°}$ 1.43665, $n_\gamma^{18.5°}$ 1.44033, $M_\alpha$ 66.53, $M_D$ 66.88, $M_\beta$ − $M_\alpha$ 1.13, $M_\gamma$ − $M_\alpha$ 1.63, $d_4$ 0.7820, viscosity at 0° 0.02568. By electrolysis $EtO_2C(CH_2)_8CO_2K$ was converted into $EtO_2C(CH_2)_{18}CO_2Et$ which with MeMgBr gave $Me_2C(OH)(CH_2)_{18}C(OH)Me_2$ (V). Dehydration of V gave a colorless liquid (VI), m. 0°, $b_{11}$ 239.5-40.5, $d_{18}$ 0.8201. VI was a mixt. of at least 2 isomeric 2,19-dimethyleicosadienes. Hydrogenation of VI gave 2,19-dimethyleicosane, m. 41°, $d_{41}$ 0.7816, viscosity at 41° 0.03535. RACHEL BROWN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Cu

14

**The purity of the atmosphere in Prague.** STANISLAV LANDA. *Chem. Listy* 25, 448-50(1931). $SO_2$ was detd. in every month of the yr. 1929-30 by passing air through 3% $H_2O_2$ where the $SO_2$ is oxidized and detg. gravimetrically and by titrating. The contents (in mg.) of $SO_2$ per cu. m. of air were: Feb. 0.092, Mar. 0.35, May 0.05, June 0.008, Sept. 0.000, Oct. 0.08, Nov., Dec. and Jan. 0.36. The scource is mainly domestic heaters.

FRANK MARESH

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

Ca

10

**The slow combustion of 2-methyltricosane.** S. LANDA AND J. POKORNÝ. *Collection Czechoslov. Chem. Communications* 4, 450–62; *Chem. Listy* 26, No. 20, 512–15 (1932).—The object of this investigation of the slow combustion of 2-methyltricosane, $Me(CH_2)_6CHMe_2$, was to det. whether $Me_2CO$ is formed by the rupture of the side-chain. $Me_2CO$ was found, but in very small quantity (2 g. of the theoretical 82 g.). It therefore does not seem to be a normal product of combustion. As a variety of aldehydes are formed, the chain is broken at a no. of points. The acetone formed in the slow combustion of natural paraffins must be due to more highly branched hydrocarbons.

ALFRED HOFFMAN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

BC

CL-3

**Preparation of γ-ethyloctadecane.** S. LANDA and V. SILVA (Coll. Czech. Chem. Comm., 1932, 4, 538—542).—γ-Ethyloctadecan-γ-ol (modified prep. from Et palmitate) (urethane, m.p. 55°) gives, heat with $ZnCl_2$ at 115—125°, γ-ethyl-Δ⁴-octadecene (I), b.p. 199—202°/10 mm., hydrogenated (Ni) at 145°/120 atm. to γ-ethyloctadecane, m.p. —3°, b.p. 202°/12 mm., 341°/760 mm. (I) is oxidised by cold, aq. $KMnO_4$ to Et pentadecyl ketone, AcOH, $EtCO_2H$, palmitic and pentadecoic acids; $COEt_2$ was not formed. R. S. C.

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22

**Adamantane, a new hydrocarbon extracted from petroleum.** S. LANDA AND V. MACHÁČEK. *Collection Czechoslov. Chem. Communications* 5, 1–5(1933).—Adamantane was isolated by chilling to —80° the aromatic fraction of Hodonin petroleum b. 190–5°. It has the empirical formula $C_{10}H_{16}$, $n_D$ 1.568, d. 1.07, mol. heat of combustion 1,451.7 Cal.; it m. 268° in a sealed tube and has a camphor odor. Hot $HNO_3$, chromic acid and alk. $KMnO_4$ do not attack it; concd. $H_2SO_4$ causes carbonization. The crystals are isometric and x-ray studies indicate two different types of C linkage. The structure *tricyclo*[3.3.1.1$^{3,7}$]*decane* is therefore assigned. A. F. SHEPARD

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CA

**Synthesis of 4-propylnonadecane and of 5-butyleicosane.** S. Landa, J. Cech and V. Sliva. *Collection Czechoslov. Chem. Communications* 5, 204-10(1933). *Dipropylpentadecylcarbinol*, m. 44.5°, was prepd. from Et palmitate, Mg and PrBr and purified by freezing out. Heated with $ZnCl_2$ at 110-5° it gave *4-propyl-3-nonadecene*, $b_{16}$ 204-6°. In the same way *butyleicosanol*, m. 50°, and *5-butyl-5-eicosene*, $b_{16}$ 219-21° were prepd. Tables of sp. gravities, viscosities and refractions at various temps. are given. A. H.

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BC

B-1-2

**Preparation of benzine from Hodonin petroleum by hydrogenation under pressure.** S. LANDA and M. LANDOVA (Chem. Listy, 1933, 27, 31—35).—Yields of 80—85% of benzine are obtained by autoclaving petroleum at 465—470° in an atm. of $H_2$, using $(NH_4)_2MoS_4$ as catalyst. The product contains 52—63% of naphthenes, 11—13% of paraffins, 15—27% of aromatic and 4·6—9% of unsaturated hydrocarbons. Better yields are obtained from the residue from steam-distillation of petroleum than from the natural product. R. T.

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**Syntheses of some aromatic hydrocarbons and hydro-aromatics.** S. Landa and J. Čech. *Collection Czechoslov. Chem. Communications* 6, 433-32(1934).—By heating diphenylpentadecylcarbinol (I) with anhyd. $ZnCl_2$ at 125°, distg. under 12 mm. pressure and allowing to crystallize, *1,1-diphenyl-1-hexadecene* (II) was obtained, m. 21.5-2.5°, n 1.52008, 1.52004, 1.54140, 1.55160, for α, D, β and γ at 21.5°, MR 126.45, 124.54, 4.26, 6.26 for D, α, β-α and γ-α (values of n and MR are given in the same order below), $d_4^{20}$ 0.9180, viscosity abs. 20° and 100° 0.46753, 0.03753. Hydrogenation of II, using Pt black catalyst, yields *1,1-diphenylhexadecane* (III), $b_{10}$ 270-81°, $b_{10}$ 273-75°, $d_4^{20}$ 0.9135, viscosity at 20° and 99° 0.47127, 0.03750, n 1.51209, 1.51509, 1.52508, 1.53346, at 16°, MR 124.48, 123.74, 2.64, 4.32, mol. heat of combustion ΔH, 3.997 Cal. Hydrogenation of III at 100° and 85 atms. yields *1,1-dicyclohexylhexadecane*, m. 18.5-19.5°, $b_{10}$ 269-71°, $b_{10}$ 264-66°, $d_4^{20}$ 0.8791, viscosity abs. at 20° and 99° 0.70704, 0.04403, n 1.48377, 1.48624, 1.49300, 1.49815 at 17.5°, MR 127.13, 126.50, 2.00, 3.20, ΔH, 4.300 Cal. *Dibenzylpentadecylcarbinol* (IV) was prepd. according to the method given in *C. A.* 27, 4211, m. 28°. IV, treated as I, yields *1-phenyl-2-benzyl-1-heptadecene* (V), m. 58.5°, $b_{10}$ 290-2°, $d_4^{20}$ 0.9237, viscosity at 20° and 99° 0.78754, 0.04300, n 1.51882, 1.52303, 1.53302, 1.54220, at 23.5°, MR 134.02, 133.11, 3.05, 5.00. *1-Phenyl-2-benzylheptadecane* (VI), obtained by hydrogenation of V, m. 31.5-5°, $b_{10}$ 204-6°, $b_{10}$ 287-80°, $d_4^{20}$ 0.9105, n 1.51218, 1.51500, 1.52330, 1.53373, at 16.9°, MR 133.58, 132.77, 2.85, 4.00, viscosity abs. at 20° and 99° 0.81474, 0.04455, ΔH, 4389 Cal. Hydrogenation of VI at 180° and 90 atms. yields *1-cyclohexyl-2-hexahydrobenzylheptadecane*, $b_{10}$ 288-90°, $b_{10}$ 279-81°, $d_4^{20}$ 0.8900, n 1.48856, 1.49111, 1.49744, 1.50250, at 18° MR 136.36, 135.75, 2.10, 3.29, viscosity abs. at 20° and 99° 0.62949, 0.04013, ΔH, 4555 Cal. The viscosities of these compds. were detd. at 10° intervals from 20° to 99°. W. A. Moore

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Ca

**Preparation of diethyltetradecane.** S. Landa and M. Hababa. *Collection Czechoslov. Chem. Commun.* 8, 473-6(1936)(in French); cf. *C. A.* 29, 708⁸.—Et sebacate and EtMgBr give $HOCEt_2(CH_2)_8CEt_2OH$, m. 59°, which, heated with 10% $ZnCl_2$ for 3 hrs. at 115°, gives $MeCH:CEt(CH_2)_8CEt:CHMe$ (I), $b_{10}$ 168°, $d_4^{20}$ 0.8121 + 0.00004 (20 − t), $n_D^{20}$ 1.44431; dispersion $M_\alpha$ 84.252, $M_D$ 84.098, $M_\beta - M_\alpha$ 1.848, $M_\gamma - M_\alpha$ 2.470; viscosity from 0.07218 g. per cm. and sec. at 0° to 0.01100 at 99°. I is oxidized in air; with $KMnO_4$ it yields $EtCO(CH_2)_8COEt$, m. 79°, and a trace of an acid which is probably $EtCO(CH_2)_7CO_2H$. Hydrogenation of I with Ni at 112 atm. and <180° yields $Et_2CH(CH_2)_8CHEt_2$, m. about − 30°, $b_1$ about 151°, $b_5$ about 159°, $b_{10}$ 170-1°, $d_4^{20}$ 0.7924 + 0.000075 (20 − t), $n_D^{20}$ 1.44473; dispersion $M_\alpha$ 84.050, $M_D$ 85.014, $M_\beta - M_\alpha$ 1.274, $M_\gamma - M_\alpha$ 2.036; viscosity from 0.08007 g. per cm. and sec. at 0° to 0.011343 at 99°; heat of combustion 11,372 cal.

H. A. Beatty

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3RD AND 4TH ORDERS

BC

A-3

**Influence of structure of olefines on the iodine value.** S. LANDA and M. HABADA (Chem. Listy, 1937, 31, 4—10).—The I vals. obtained for $\Delta^{\alpha}$-hexadecene (I), β-methyl-$\Delta^{\beta}$-heptadecene (II), and γ-ethyl-$\Delta^{\beta}$-octadecene (III) are unaffected by varying the duration of reaction from 0·5 to 24 hr. In presence of excess of reagent normal I vals. are obtained for (I) and (II) (methods of Hübl and of Hanus), and abnormally high vals. for (III), δ-propyl-$\Delta^{\gamma}$-nonadecene, ε-butyl-$\Delta^{\delta}$-eicosene, αα-diphenyl-$\Delta^{\alpha}$-hexadecene, and δμ-diethyltetradecane-$\Delta^{\beta\gamma}$-diene. The I vals. are at a max. for the freshly prepared olefines, and fall more rapidly with time for dienes than for mono-olefines. It is concluded that the I val. is not of great val. in the analysis of mineral oils.

R. T.

COMMON ELEMENTS

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

C.A.

**Polymerization of substituted ε-caprolactams.** St. Landa and J. Procházka. *Chem. Listy* 37, 158–61(1943).—γ-Methyl-ε-caprolactam (I), $b_{15}$ 159°, was prepd. by the sequence: *p*-cresol → 4-methylcyclohexanol → 4-methylcyclohexanone → oxime → Beckmann rearrangement. Similarly, α- and β-methyl-ε-caprolactams (II) were obtained from *o*- and *m*-cresol, and α-, β-, γ-, δ-, and ε-methyl ε-caprolactams (III) from tricresol. *γ-Propyl-ε-caprolactam* (IV): 1. $EtCO_2Ph$ (V), m. 75–7°, was prepd. in 1770-g. yield from 1260 g. PhOH and 1000 g. $EtCO_2H$ by adding 1040 g. $SOCl_2$ at an elevated temp. 2. *p*-$HOC_6H_4COEt$ (VI): PhOCOEt (1770 g.) was slowly added to 2150 g. $AlCl_3$ in 2,200 ml. $CS_2$, the $CS_2$ stripped off, the residue heated in an oil bath until no more HCl escaped, and the solid resinlike residue powdered, decompd. with ice and HCl, giving 570 g. VI. 3. *4-Propylcyclohexanol* (VII): 20 g. VI in 60 ml. EtOH hydrogenated on 10 g. Raney Ni at 150 atm. and 110–200° 45 min., gave 20 g. VII, $b_{15}$ 113–14°. 4. *4-Propylcyclohexanone* (VIII): to 7.5 g. $Na_2Cr_2O_7$ in 36 ml. $H_2O$ and 20 g. VII was added 7.5 g. $Na_2Cr_2O_7$ in 36 ml. $H_2O$ and 22 g. $H_2SO_4$ at 55°; ether extn. and distn. yielded 12–13.5 g. VIII, $b_{15}$ 99.5–100.5°. 5. *Oxime* (IX) of VIII: 81.7 g. VIII in 300 ml. MeOH contg. 96 g. $NH_2OH.H_2SO_4$ and 98 g. $NaHCO_3$ was refluxed 1 hr., and the MeOH stripped off; distn. gave 45 g. IX, $b_{15}$ 132–4°; hydrate of oxime or ketone, m. approx. 40°. Semicarbazone of VIII, m. 181.5°. 6. *Propyl-ε-caprolactam* (X): 14.4 g. IX in 28 ml. $H_2SO_4$ was slowly heated to 120°, 70 g. ice added after the reaction was over, and the soln. neutralized with $Na_2CO_3$; $CHCl_3$ extn. yielded 12 g. X, $b_{15}$ 180°, m. 82°. Polymerization tests in evacuated test tubes at 220–50° 50–70 hrs. with 2% $Na_2AlCl_6$ 0.3% $H_2O$, or 0.5% of 10% $H_2SO_4$ yielded gelatinous, sticky materials. Propyl-ε-caprolactam did not polymerize after 72 hrs. heating with 0.5–1% of 0.5% $H_2SO_4$ or 1% Na.

Miloš Hudlický

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2394. PRODUCTION OF MOTOR FUEL OILS BY HYDROGENATION. Landa, S. (Chem. Obzor, 1947, 22, 154-62; Chem. Abstr., 1947, 41, 7701). Manufg methods of synthetic motor fuels by hydrogenation of tars and "mazuts" under pressure of 320 atm. are described. Some data on hydrogenation and water-gas production in Winkler generators are given.

C.A.

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Bul. abs. BI-2. Solid v Gaseous

**Production of synthetic fuels.** S. Landa (*Palivo*, 1950, **30**, 8—10).—The economic aspects of synthetic fuel production are discussed.

R. Truscoe.

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CA

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**Fundamental information about corrosion and measures for protection against it.** Stanislav Landa. *Palivo* 30, 242-5(1950).—Corrosion of Fe and steel is one of the most serious industrial problems. The driving force of corrosion is largely the electrochem. potential, which varies with the metal and existing conditions. Fe in $H_2O$ undergoes the reactions: $Fe + 2H^+ \rightarrow Fe^{++} + 2H^+$ (I); $2H^+ \rightarrow H_2$ (II), $2H^+ + {}^1/_2 O_2 \rightarrow H_2O$ (III); and $2Fe^{++} + {}^1/_2 O_2 + H_2O \rightarrow 2Fe^{+++} + 2OH^-$ (IV). II from I forms a film on the Fe surface which would stop the reaction, but II and (or) III act simultaneously and are controlling in the corrosion rate. In neutral or alk medium III predominates over II; in acid II predominates. In acid medium (pH < 4.3) the factors influencing rate of corrosion in general order of importance are $H^+$ concn., H film, structure of the metal, dissolved O concn., metal ion concn., and protective coating; in neutral medium (pH 4.3-10), dissolved O concn., protective coating, $H^+$ concn., structure of the metal, H film, metal ion concn.; and in alk. medium (pH > 10), protective coating, dissolved O concn., structure of the metal, $H^+$ concn., H film, metal ion concn. In an electromotive series the more pos. the potential the smaller the tendency toward corrosion. Concn. of metal ions in soln. changes the potential. Some metals such as Zn, Al, Cr and certain alloys are generally more resistance to corrosion than Fe, although they may be more electroneg. because they tend to deposit firm oxide films. Corrosion of Fe may be prevented by dipping into Fe or Mn phosphate solns. to impart a protective coating. Evidence for the cathodic nature of corrosion is given. Protective coatings such as pitch or asphalt sometimes are effective against gas and water pipes located underground, but at other times are ineffective. Cathodic protection, although representing a higher initial investment, is cheaper than the const. repair work and metal losses incurred in the use of standard coatings. The principles of cathodic protection are explained and conventional installations are described. James L. Jezl

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CA

The purification of waste waters from mineral-oil refineries. I, II. Stanislav Landa and Jiří Komers (Ústav technol. paliv, topení a vody, Prague, Czech.). *Chem. Průmysl* 1(26), 67-72, 102-7(1951).—The waste waters contg. nontoxic org. compds. can kill fish by suffocation if in the decompn. process O is absorbed. The purification of waste waters, contg. phenols, naphthenic acids, and naphthenates and their toxic effect on fish are described. J. M.

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LANDA, S.

C.A. V-48
JAN 10, 1954
Organic Chemistry

Aliphatic branched-chain hydrocarbons. I. Stanislav Landa, Jiri Mostecký, Rudolf Sebik, and Jaromír Vacek (Tech. Univ., Prague, Czech.). *Chem. Listy* 46, 604-6 (1952).—Ditertiary glycols prepd. from Grignard reagents and di-Et adipate (I) were dehydrated to dienes, which gave the corresponding paraffins on hydrogenation. 2 M RMgBr in 7-14 parts $Et_2O$ was added with cooling I in an equal amt. of $Et_2O$, and the mixt. was boiled 15 min. and decompd. with $H_2O$ and 20% $H_2SO_4$; evapn. of the ether left the cryst. glycols contaminated with unreacted I, from which they were freed by sapon. The following glycols were prepd. (yield, m.p., b.p.): *3,8-diethyl-3,8-decanediol* (II), 88%, 71.8°, $b_{12}$ 181-2°; *4,9-dipropyl-4,9-dodecanediol* (III), 70%, 87°, $b_1$ 158.5°; *5,10-dibutyl-5,10-tetradecanediol* (IV), 63%, 90.8° (from $Me_2CO$), —; *6,11-diamyl-6,11-hexadecanediol* (V), 43.4%, 79.4° (from $Me_2CO$), —; *9,14-dioctyl-9,14-docosanediol* (VI), 27%, 53.2°, —. Dehydration of the glycols gave diolefins with uncertain positions of the double bonds (glycol, diolefin, reagent and conditions, b.p., and, unless otherwise stated, $n^{20}$ for α, β, γ, and D; d. at 20° and 50°; and η in centistokes at 20°, 37.8°, 50°, and 98.9°): II, *3,8-diethyldecadiene*, iodine above 140°, $b_{20}$ 123.5°; *n* 1.45508, 1.46591, 1.47514, 1.4588, d. 0.8024, 0.7815; η 2.136, 1.558, 1.324, 0.746; III, 4,9-dipropyldodecadiene, —, —, d. 0.8098, 0.7897; η 4.607, 2.957, 2.349, 1.144; IV, *5,10-dibutyltetradecadiene* $CuSO_4$ above 200°, $b_1$ 162.5-3°, $b_{16}$ 201-1.7°, *n* 1.46028, 1.47001, 1.47579, 1.46305, d. 0.8166, 0.7979, η 9.134, 5.208, 3.927, 1.674; V, 6,11-diamylhexadecadiene $(CO_2H)_2$ at 130-40°, $b_1$ 185°, d. 0.8197, 0.8052, η 19.059, 9.900, 6.866, 2.526; VI, 9,14-dioctyldocosadiene, HCl in $C_6H_6$ in the cold or boiling $C_5H_5N$, decompd. on distn. under 0.01 mm., *n* 1.4641, 1.48810, 1.46667, —, d. 0.8262, 0.8206, η 37.777, 18.406, 12.424, 4.277. Hydrogenation of the diolefins in AcOH over $PtO_2$ yielded paraffins in 95-8% yields: 3,8-diethyldecane, m. −48°, $b_{20}$ 118-20°, *n* 1.43351, 1.44101, —, 1.43506, $d_{20}$ 0.7778, $d_{50}$ 0.7575, η 2.466, 1.768, 1.486, 0.819. *4,9-Dipropyldodecane*, m. −36.4°, $b_{10}$ 149.0-50.0°, $b_{20}$ 165.0-5.5; *n* 1.43979, 1.44735, 1.45196, 1.44191, d. 0.7913, 0.7723; η 5.494, 3.369, 2.551, 1.224. *5,10-Dibutyltetradecane*, m. −11.8°, $b_{0.5}$ 159.5-63.3°, $b_{20}$ 205-6.5°, *n*, 1.45474, 1.45250, 1.45296, 1.44689, d. 0.8003, 0.7831; η 13.17, 6.948, 4.898, 1.921. *9,14-Dioctyldocosane*, m. 33.8, $n^{55}_D$ 1.4521, $n^{85}_D$ 1.4464, $d^{20}$ 0.8004; η, —; 28.590, 18.569, 5.527.

M. Hudlický

6-15-54
gap

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LANDA, S.

LANDA, S., SCHULMANN, J.
"Cyanides Found in Waters Formed during Carbonization and Gasification of Coal and during Washing of Blast Furnace Gas," p. 27.
(Pa liva, Vol.33, No.2, Feb. 1953, Praha.)

SO: Monthly List of East European Accessions, Vol.2, No.9, Library of Congress, September 1953, Uncl.

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C ZECH

Miscibility of methanol and gasoline. S. Landa and Jar. Eliášek. *Palivo* 33, 121-3(1953). The miscibility of methanol (produced from CO by hydrogenation) and gasoline (produced by hydrogenation of brown-coal tars) was detd. in a series of expts. The gasoline had sp. gr. 0.750 and contained 9.9% aromatic hydrocarbons and 0.051 cc. $H_2O$/l., while the methanol had sp. gr. 0.7918, b. 64.5°, $n_D$ 1.3280, and contained 0.326 cc. $H_2O$/l. The miscibility was increased by the addn. of EtOH, $Me_2CO$, AmOH, iso-BuOH, $C_6H_6$ and MePh. Addn. of EtOH had a greater effect on the miscibility than addn. of aromatic hydrocarbons. The effect of ales. on the miscibility of MeOH and gasoline is in direct proportion to their mol. wt. Addn. of ales. increases the moisture content of the blend and reduces the stability of the system but has no corrosive effect on the engine. Jos. Lederer

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LANDA, S.

CZECH

Catalytic dehydrogenation of propane. S. Landa and Z. Nerad. *Palivo* 33, 183-8(1953).—A [illegible] metallic oxides were used as catalyst at 600° with $Al_2O_3$ in gamma form as a carrier bed. The best results were obtained with 4% $Cr_2O_3$ or $Ag_2O$ or a combination of both. J. L.

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LANDA, Stanislav

Chemical Abst.
Vol. 48 No. 6
Mar. 25, 1954
Biological Chemistry

Biological degradation of phenols. I. Biological oxidation of monobasic phenols. Stanislav Landa, Václav Solín, Karel Burlánek, and Blanka Pisecká (Vysoká škola chem., Prague, Czech.). *Chem. Listy* 47, 623-9(1953).—*Escherichia coli* cultivated from the Moldavian water degrades 50–100 mg. PhOH/l./hr. The degradation of phenol homologs is much slower than that of PhOH: *o*-$MeC_6H_4OH$ and *p*-$MeC_6H_4OH$ are destroyed 2–5 times, *m*-$MeC_6H_4OH$ 7–17 times, 2,3-$Me_2C_6H_3OH$ 12 times slower than PhOH; 2,4- and 2,5-xylenols resist degradation even after 450 hrs. An *Oospora* culture degraded phenol, cresols, and xylenols, but 3–7 times slower than *E. coli*. *cis-cis-Muconic acid* was isolated as an intermediate during the degradation by the *Oospora*. M. Hudlicky

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LANDA, STANISLAV

Chemical Abst.
Vol. 48
Apr. 10, 1954
Biological Chemistry

Biological degradation of phenols. II. Assimilation of pyrocatechol by molds. Stanislav Landa, Václav Šolín, and Jiří Palatý (Vysoká škola chem., Prague, Czech.). *Chem. Listy* 47, 1066-70(1953); cf. *C.A.* 48, 3445e.— Surface-cultivated *Penicillium* and submerged cultures of *Oöspora* assimilate pyrocatechol (I). More than 14% of *cis,cis*-muconic acid has been isolated, the amt. and rate of formation being dependent on the age of the culture, acidity, and the concn. of I. *Oöspora* assimilates I faster than *Penicillium*, and may stop the growth of *Penicillium* if both are present in the same soln. of I. Ca salts decrease and Mg salts increases the degradation of I. Fe salts do not influence the yields of muconic acid. The degradation of I with molds is slower but more general than with bacteria. The acidity of solns. caused by muconic acid increases the speed of degradation. Degradation of monobasic phenols with molds requires aeration; I is degraded even without aeration.

M. Hudlický

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LANDA, STANISLAV

Adamantane and its derivatives. I. Stanislav Landa, Slechtislav Krichel, and Eduard Knobloch (Vysoka skola chem., Prague, Czech.). *Chem. Listy* 48, 61-4(1954).—Adamantane (I) was obtained from naphtha of Hodonin (Czech.) by superheated steam distn., satd. steam distn., and rectification over a 54-plate column. Yield 0.021% m. 269°. I (6.5 g.) and 48 g. Br heated in a sealed tube 2 hrs. on the steam bath, dissolved in 30 ml. $CCl_4$, washed with 500 ml. $H_2O$, $Na_2SO_3$, $H_2O$, and dried with $Na_2SO_4$ gave, after evapn. and sublimation at 70° and 20 mm., 6 g. (58.4%) *bromoadamantane* (II), m. 119.5-20°. I (1.8 g.) with 3 g. $I_2$ and 80 ml. $CCl_4$ heated 2 hrs. at 150° in a sealed tube yielded, after sublimation at 100° at 20 mm., 1.5 g. of a product, m. 100-3° crystd. from MeOH gave I and *iodoamantane*, m. 151-2.5°. Heating 1 g. II with $CaCO_3$ in 30 ml. aq. MeOH (1:1) 2 hrs. at 115-20° in a sealed tube, filtering off the carbonate, and steam distg. the filtrate dild. with $H_2O$ yielded 0.325 g. (45.9%) *hydroxyadamantane* (III), m. 288.5-90°. The same compd. was obtained from iodoadamantane and AgCN. Infrared spectra of I, II, and III are given. From the spectra of III it follows that the hydroxyl has probably tertiary character.

M. Hudlický

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LANDA, S.

CZECH

Aliphatic branched-chain hydrocarbons. II. Stanislav Landa, Jaromír Vacek, Josef Kefmann, Josef Vinařický, and Karel Valeš (Výzkum. ústav Akademie chem., Prague).

*Chem. Listy* 48, 074-8(1954); cf. *C.A.* 48, 1051.—Nine branched-chain paraffins were prepd. by the hydrogenation of dienes obtained by the dehydration of alcohols or glycols. The hydroxy compds. were prepd. by the Grignard synthesis from the esters of undecylenic, glutaric, and pimelic acids. Dehydration was carried out by heating the hydroxy compds. 5 hrs. at 160-70° with anhyd. $CuSO_4$, or by heating 8 hrs. at 140-70° with anhyd. $(CO_2H)_2$, or with $C_6H_5(CO)_2O$ at 160-70°. Some dienes were prepd. by the dehydrohalogenation of the corresponding halides by heating with $C_5H_5N$. Hydrogenation of the dienes over $PtO_2$ gave the paraffins the unreacted unsatd. hydrocarbons being removed by $KMnO_4$ oxidn. The following *hydroxy compds.* were prepd. (yield in %, m.p., and b.p. given): 3,7-diethylnonan-3,7-diol, 32, 68°, $b_{17}$ 161-2°; 4,8-dipropylundecan-4,8-diol, 29, 87°, —; 11-ethyl-tridecen-11-ol, 58.8, —, $b_{15}$ 158°; 3,9-diethylundecan-3,9-diol, 46, 89.2°, —; 11-propyl-1-tritadecen-11-ol, 79.5, 0.9°, —; 11-butyl-1-pentadecen-11-ol, 53.3, —, $b_{15}$ 16[illegible]°; 4,10-dipropyltridecan-4,10-diol, 30, 56°, —; 5,9-dibutyltridecan-5,9-diol, 10, 66.7°, —; 5,11-dibutylpentadecan-5,11-diol, 34.6, 43.5°, —; 11-n-octyl-1-nondecen-11-ol, 39, 39-40.5°, $b_{0.05}$ 193°; 6,12-dimylheptadecan-6,12-diol, 30, 61.2°, —. The following *dienes* were formed (b.p., $d_{20}$, $n_D^{20}$, $\nu$ in centistokes at 37.8°, 50.0°, and 98.9° given): 3,7-diethylnonadiene (points of unsaturation uncertain), $b_{10}$ 126°, 0.8179, 1.46723, —, —, —; 3,[illegible]-diethylundecadiene, $b_{10}$

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[illegible] 0.7072, 1.[illegible]20, 2.00, —, 0.91; 11 propyl-1(trans)-12 [illegible]ne, $b_{11}$ 10[illegible], 0.7335, 1.41762, 2.[illegible], —, 1.11; 5-butylpentadeca-1[illegible]7-diene, $b_{11}$ 169-71°, 0.[illegible], 1.4520, 3.47, —, 1.31; 4,10-dipropyltridecadiene, $b_{11}$ 167°, 0.6125, 1.[illegible]680, 4.13, —, 1.97; 5,11-dibutylpentadecadiene, $b_{11}$ 20[illegible]°, 0.8187, 1.4027, 0.71, 4.57, 3.11; 11-octylnonadeca-1,7-diene, $b_{11}$ 247.5-8°, 0.8212, 1.46142, 4.06, 3.23, 1.5[illegible]; 6,12-diamylheptadecadiene, $b_{11}$ 250.5-1.9°, 0.8273, 1.46502, 12.01, 8.32, 2.95. These were reduced to the following *paraffins* (m.p., b.p., $d_{20}$, $n^{20}_{D}$, η in centistokes at 20°, 37.8°, 50.0°, and 98.9° given): 3,7-diethylnonane, below −80°, $b_{11}$ 100.5-10[illegible].4°, 0.7073, 1.44972, —, 1.58, 1.56, 0.91; 3,9-diethylundecane, −62°, $b_{11}$ 125.9°, 0.78[illegible]8, 1.4365, 3.12, 2.09, 1.87, 1.230; 3-ethyltridecane, −38.4°, $b_{11}$ 13[illegible]°, 0.77599, 1.4340, 3.40, 2.37, 1.02, 1.04; 4-propyltetradecane, −6.9°, $b_{11}$ 162°, 0.7845, 1.43745, —, 3.38, 2.50, 1.25; 5-butylpentadecane, −16.1°, $b_{11}$ 170.2°, 0.7809, 1.4408, 6.52, 4.37, 3.34, 1.40; 4,10-dipropyltridecane, −51°, $b_{11}$ 168°, 0.7005, 1.4410, 5.92, 3.88, 2.80, 1.78; 5,11-dibutylpentadecane, 0.2°, $b_{11}$ 214-14.5°, 0.8034, 1.44848, —, 8.28, 5.78, 2.19; 9-octylnonadecane −11°, $b_{11}$ 2[illegible]1°, 0.8098, 1.45118, —, 0.69, 4.76, 1.88; 6,12-diamylheptadecane, −44°, $b_{11}$ 243.5-4°, 0.8055, 1.45290, —, 14.3, 9.05, 2.98. M. Hudlický

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LANDA, S.

CZECH

Isolation of azulene and 2-methylazulene form brown coal tar. S. Landa, J. Romováček, and H. Romováčková (Vysoká škola chem., Prague). *Chem. Listy* 48, 917C (1954).—Two azulenes were found during the rectification of brown coal tar: a lower boiling azulene, m. 97.5° [$C_{10}H_8(NO_2)_3$ *compd.*, m. 157.5–8.5°] visible absorption max. at 698, 662, 633, 605, 580, 558, 530 mμ, and ultraviolet max. at 341–2, 328–30, 296–7, 281–2, 273–6, 238–40 mμ; and higher boiling 2-methylazulene, m. 40° (approx.) [$C_{11}H_8(NO_2)_3$ *compd.*, m. 140–1°], visible spectrum max. at 744, 704, 672, 650, 634, 613, 592, 580, 568, and 562 mμ.

M. Hudlický

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LANDA, STANISLAV

Distr: 4E2c(j)

Polymerization of chloroprene. Stanislav Landa and Mikuláš Furdík. Czech. 83,272, Mar. 8, 1955. A sheet having a strength (140-150 kg.) higher than latex alone (100-120 kg.) is obtained when the polymerization is carried out in the presence of dithiocarbamates or their derivs.

V. Kratochvilová

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JAJ(NB)(May)
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LAK

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LANDA, STANISLAV

Aromatic hydroxy compounds substituted by a four- or six-membered saturated aliphatic residue. Stanislav Landa, Miloslav Landa, Rudolf Smrž, and Jos[illegible] [illegible] 83, 26, May 1, 1955. Addn. of 292 g. dry HCl to 208 g. vinylacetylene at 40° and 20 atm. in the presence of AcOH and Cu acetate yielded 188 g. dichlorobutene, which was then dropped at −5° into 360 g. dry Na phenolate, yielding 2[illegible]8 g. chlorocrotylphenol. On hydrogenation in MeOH (8[illegible] atm., 65°, Raney Ni) 93.9% butylphenol was obtained. L. J. Urbánek

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LANDA, STANISLAV

CZECH

Biological treatment of sewage. Stanislav Landa and Václav Solín. Czech. 83,656, May [illegible], 1955. *Oidium*, *Penicillium*, *Aspergillus*, or *Fusarium* cultivated in sewage waters contg. phenols, especially pyrocatechol (I), can produce org. acids, such as muconic acid (II). A soln. contg. 100 g. I and 2.5 g. $(NH_4)_2SO_4$ in 50 l. water was inoculated with *Botrytis* spores and aerated at 20° until I disappeared (neg. reaction). The pH changed from 6–7 to 3. II was sepd. by absorption on charcoal and elution with dild. $NH_4OH$. Yields of pure II were 50%, based on the wt. of I. L. J. Urbánek

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LANDA, S.; MOSTECKY, J.

Preparation of pure hydrocarbons by hydrogenation on tungsten disulfide. I. Hydrogenation of alcohols, ketones, esters, and acid anhydrides. In English. p. 430.

Vol. 20, no. 2, Apr. 1955
SBORNIK CHEKHOSLOVATSKIKH KHIMICHESKIKH RABOT
Praha, Czechoslovakia

So: Eastern European Accession Vol. 5, No. 4, April 1956

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LANDA, S.

The relation between ten percent and flash equilibrium distillation curves [of coal tar]. S. Landa and V. Šesulka. *Palivo* 35, 263-7(1955).—Various articles dealing with this relation for crude oils have been published, but not for tar. To remedy this situation, tars obtained from various coals and processes were investigated. A flash b.p. equil. distn. app. was constructed, consisting of: const.-temp. bath with mixt. of $NaNO_3$ and $KNO_3$ salts in mol. ratio, elec. mixer, flash evaporator with thermometer on top and also condenser with thermometer insert for liquid fractions. The bottom part contained 2 openings, one for 3-part spray nozzles and the 2nd for removal of the nonliquid portion of tar. The results of Engler-type distn. were compared to flash evapn. A series of curves was constructed showing that the middle point of Engler distn. was also the center for flash equil. distn. curves. From the slope of 10% distn. curves the slope of flash distn. curves was detd. mathematically.

Jos. Lederer

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LANDA, S.

Czechoslovakia /Chemical Technology. Chemical Products I-15
and Their Application

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31831

Author : Landa S.

Title : Effect of Composition of Absorbent Oil and of Its Hydrogenation on Its Sorption Capacity in Relation to Gasoline of Low Temperature Carbonization Gas.

Orig Pub: Paliva, 1955, 35, No 11, 315-318

Abstract: To study the effect of the composition of absorbent oil, and in particular of the presence of phenols therein, on its capacity to remove gasoline

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Czechoslovakia /Chemical Technology. Chemical Products and Their Application I-15

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31831

from low temperature carbonization gases, laboratory experiments were carried out with five varieties of such oils: a) the product obtained from the middle oil of low temperature carbonization tar, b) light fraction obtained on distillation of refined mineral oil, c) absorbent oil used at coking plants for the recovery of benzene, d) oil obtained after hydrogenation of product (a), e) product obtained after distilling off the fraction boiling below 220° from the oil (d). It is shown that at normal temperature the oil (c) exhibits the greatest capacity of absorbing gasoline from the gas, but at an elevated temper-

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Czechoslovakia /Chemical Technology. Chemical Products and Their Application I-15

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31831

ature (+40°) its sorption capacity in relation to gasoline is lower than that of the other oils. Molecular weight of the oil has no decisive influence on its sorption capacity, but of an exceptional importance is the presence, in the oil, of even a slight amount of phenols: for example, the presence of 10% phenols decreases the capacity of the oil to absorb gasoline, by 2-3 times. Experiments on hydrogenation of oils (a) and (b), using $WS_2$ as a catalyst, at 340-380° and 100 atmosphere pressure, have shown that the procedure is very effective for a re-

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Czechoslovakia /Chemical Technology. Chemical Products and Their Application I-15

Treatment of solid mineral fuels

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31831

generation of these oils, since it removes completely, from these oils, the phenols and unsaturated compounds.

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LANDA, STANISLAV

6000

CH

Pure hydrocarbons by hydrogenation over tungsten disulfide. I. Hydrogenation of alcohols, ketones, esters, and acid anhydrides. Stanislav Landa and Jiří Mostecké (Vysoká škola chem. [illegible]). *Chem. Listy* 49, 67-72; *Collection of Czechoslov. Chem. Communs.* 20, 130-5 (1955) (in English).—Primary, secondary, and tertiary aliphatic alcs., ketones, esters, and acid anhydrides give satd. hydrocarbons by reduction over $WS_2$ at 320-50° and 90-120 atm. Aromatic esters give at 320-40° and 100-120 atm. benzene homologs, which is contradictory to the results of Pier (*C.A.* 44, 2730g). $C_6H_6$ and PhMe were recovered unhydrogenated at 320-30° and 100-120 atm. The hydrogenation over $WS_2$ is a suitable lab. method for the synthesis of satd. hydrocarbons from mixts. after the Grignard synthesis. The catalysts used were com. catalyst 5058, freshly prepd. $(NH_4)_2WS_4$ (I), and $WS_2$, prepd. *in situ* as follows: I (30 g.) in 100 g. PhMe was hydrogenated at 320-30° and 120 atm., the PhMe decanted, the crystals of $WS_2$ washed with MeOH, and the appropriate compd. was introduced and hydrogenated. PrCHOH gave Et-CH:CHPr (II) at 310° and $n$-$C_7H_{16}$ at 340°. The results are listed in the order: compd., initial pressure (atm.), temp.°, time (min.), product, % yield, b.p., $n_D^{20}$, $Me_2$-COH, 76, 320-30°, 30, $Me_2CH$, 63, −12.2°, —; fermentation AmOH, 112, 330-40°, 30, $Me_2CHEt$, 84.2, 27.0-9.5°, 1.3548; tetrahydrofuryl alc., 122, 330-40°, 30, $n$-$C_7H_{12}$, 79.0, 36-6.5°, 1.3570; cyclohexanol, 120, 330-40°, 30, cyclohexane, 87, 80-80.5°, 1.4263; methylcyclohexanols (mixts.), 120, 330-40°, 30, methylcyclohexane, 90.5, 100-2°, 1.4250; crude product (III) of the reaction PrMgBr + $HCO_2Me$, 110, 310°, 45, II, 92, 95.5-6°, 1.3950; III, 105, 340°, 30, $n$-$C_7H_{16}$, 93, 98°, 1.3874; $C_7H_{15}CH_2OH$, 92, 350°, 30, $n$-$C_8H_{18}$, 91, 125.5-6°, 1.3977; $C_7H_{15}CH_2OH$, 120, 340-50°, 30, $n$-$C_8H_{18}$, 95.8, 125-6°, 1.3975; $n$-$C_{15}H_{31}CH_2OH$, 120, 340-50°, 30, $n$-$C_{15}H_{34}$, 93.4, $b_{15}$ 155-8°, 1.4353; iso-PrCOMe, 120, 340°, 30, $Me_2CHEt$, 76.3, 27.8-8°, 1.3540; cyclopentanone, 98, 320°, 30, cyclopentane, 85, 48.9-9°, 1.4067; $Me_2C$:CHAc, 120, 320-30°, 20, $Me_2CHPr$, 93, 60-60.2°, 1.3715; AcCHMeEt, 120, 325°, 30, $Et_2CHMe$, 89, 62.9-3.1°, 1.3764; PhAc, 120, 310-20°, 60, PhEt, 90, 136°, 1.4959; BzOMe, 120, 300-20°, 30, PhMe, 85.7, 110.5-1°, 1.4968; $CH_3$:$CH(CH_2)_4CO_2Et$, 97, 340-50°, 15, $n$-$C_{11}H_{24}$, 92, 193.5-4°, 1.4189; $C_{15}H_{31}CO_2Me$, 110, 340-50°, 10, $n$-$C_{16}H_{34}$, 95, $b_{25}$ 165-7°, 1.4355; $Ac_2O$, 120, 320-30°, 30, $C_6H_6$, 100, —, —; $o$-$C_6H_4(CO)_2O$, 120, 320-30°, 30, o-xylene, 90, 143-3.8°, 1.5054.

M. Hudlický

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C

Composition of low-temperature brown-coal tar. I. Paraffins. Stanislav Landa, Jiří Romovátek, and Hana Romovátková (Vysoká škola chem. technol., Prague). *Chem. Listy* 49, 313-16(1955).—Low-temp. brown-coal tar was washed with 3% NaOH, with 5% $H_2SO_4$, and steam-distd. to give 20% of an oil, $d_{20}$ 0.8972, $n_D^{20}$ 1.493, m. −42°. The oil was distd. on a 54 TP column, and fractions having low refractive indexes were cooled with Dry Ice after being dild. with 1.5 vol. $Me_2CO$. In this way, the following paraffins were isolated (m.p., b.p., $d_{20}$, $d_{20}$, $n_D^{20}$, $n_D^{20}$): *decane*, −29.6°, $b_{760}$ 173°, 0.7293, 0.7261, 1.4130, 1.4102; *undecane*, −26.7°, $b_{760}$ 127°, 0.7400, 0.7363, 1.4190, 1.4161; *dodecane*, −12.25, $b_{760}$ 216°, 0.7519, 0.7488, 1.4218, 1.4190; *tridecane*, −7.2°, $b_{760}$ 141°, 0.7599, 0.7560, 1.4280, 1.4255; *tetradecane*, 5.25°, $b_{760}$ 159.8°, 0.7674, 0.7641, 1.4315 1.4306; *pentadecane*, 9.1°, $b_{760}$ 172°, 0.7740, 0.7708, 1.4335 1.4314. Isolation of dodecane (fraction 119.4-21.7° at 47 mm.) required chromatography to remove the admixt. of naphthalene. Infrared spectra of the hydrocarbons are given.

M. Hudlický

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LANDA, Stanislav (Dr. Ing.) Czechoslovakia

Die Gewinnung und Bedeutung der Wertstoffe von Phenolabwaessern

Report given at the Phenol workers meeting in Liepzig on 27 October 1955.

SO: Wasser Technik, March 1956, Unclassified.

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LANDA, STANISLAV

Preparing pure hydrocarbons by hydrogenation on tungsten disulfide. II. Hydrogenation of aldehydes. Stanislav Landa and Iiri Mostecký. *Collection Czech. Chem. Commun.* 21, 1177-81(1956)(in German).—See C.A. 50, 13831a. R. I. C.

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LANDA, S.

Adamantane and its derivatives. II. Synthesis of 1,3-diisopropyladamantane. Preliminary communication. S. Landa and Z. Kamýček (Vysoká škola chem. technol., Prague). *Chem. Listy* 50, 388(1956); cf. *C.A.* 49, 1598b.—Di-Me adamantane-1,3-dicarboxylate treated with MeMgI gave *1,3-bis(α-methyl-α-hydroxyethyl)adamantane* (I), m. 161–3°, which was transformed with $SOCl_2$ to the corresponding *dichloro deriv.*, m. 71–2°. Dehydrohalogenation yielded *1,3-diisopropenyladamantane*, $b_{15}$ 152–5°, $n_D^{17.5}$ 1.519 whose hydrogenation afforded *1,3-diisopropyladamantane* (II), $b_{15}$ 152°, identical with the product of reduction of I with III at 255°. Infrared spectrum of II is given.

M. Hudlický

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Landa, S.

2827 COMPOSITION OF LOW TEMPERATURE BROWN COAL TAR. II. [illegible] O-ALKYLPHENOLS. Landa, S. and Mostecký, J. (Chem. Listy (Chem. Pap., Prague), 1956, vol. 50, 391-393; abstr. in Chem. Abstr., 1956, vol. 50, 7428). Treating the 200-220° xylenol fraction from a low temperature brown coal tar (15 Kg.) with 16 l. of 30% sodium hydroxide, extracting the solution with 22 l. diethyl ether, and evaporating the diethyl ether up to 50° in vacuo gave 306 g. (1.5%) of a phenol mixture, boiling at 10 mm pressure at 92-98.6°. Treatment of the mixture with mono-chloro-acetic acid gave, after crystallization from water and petroleum ether, a product, melting at 121.30, probably a eutectic mixture of aryloxyacetic acids. Methylation of the phenolic mixture (obtained by the diethyl ether extraction) with methyl sulphate and distilling the mixture of phenolic methyl ethers gave fraction I ($C_7$) boiling at 37 mm pressure at 85.7-86.4°, fraction II ($C_8$), boiling at 37 mm pressure at 100.2-101.0°, and fraction III ($C_9$), boiling at 37 mm pressure, at 102.7-3.5. Fraction I gave on oxidation with 5% potassium permanganate phenoxyl acetic acid (IV) melting at 100°, fraction II gave IV and 1,3,2-$C_6H_3(CO_2H)_2OCH_3$, and fraction III gave a mixture which was not separated into pure compound. The oxidation thus shows the presence of cresol, ethyl phenol and 2,1,3-xylenol in the extract. J.A.

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~~STANISLAV~~, LANDA, Stanislav

7000

Preparing pure hydrocarbons by hydrogenation on tungsten disulfide. II. Hydrogenation of aldehydes. Stanislav Landa and Jiří Mostecký (Tech. Univ., Prague). Chem. Zhly 50, 565-8(1956); cf. C.A. 50, 771d.—Hydrogenation of aldehydes on $WS_2$ at 320-30° yields besides the corresponding hydrocarbons also branched hydrocarbons with a doubled no. of C atoms which are formed by aldolization. EtCHO (100 g.) treated with 30 g. $WS_2$ and 117 atm. H 45 min. gave 17.8 g. propane and 13.1 g. 2-methylpentane, b. 60.1-60.8°, $n_D^{20}$ 1.3713, besides a 6.2-g. fraction, b. 128-38°, $n_D^{20}$ 1.4305, contg. 85.13% C and 14.81% H. Similarly 150 g. PrCHO gave 42 g. butane and 29.35 g. 3-methylheptane, $b_{77}$ 37.3°, $n_D^{20}$ 1.3983, besides a 5.84-g. fraction, $b_{77}$ 37.3-104.4°, $n_D^{20}$ 1.4210, and a 6.34-g. residue ($n_D^{20}$ 1.4522, 85.42% C and 14.33% H). n-Heptanal (85 g.) yielded 28 g. heptane and 20.4 g. 6-methyltridecane, $b_{10}$ 145.3°, $n_D^{20}$ 1.4296, $d_{20}$ 0.7641, besides 5.06 g. viscous oil, $n_D^{20}$ 1.4462. n-Heptanal di-Et acetal (60 g.) gave 9.7 g. n-heptane besides a residue contg. 84.56% C and 15.18% H which could not be sepd. by distn. BzH (92 g.) yielded besides 20.1 g. toluene 46.2 g. $(PhCH_2)_2$, m. 52°. The possibility is suggested of utilizing this reaction for the prepn. of paraffins possessing a Me side-chain. L. J. Urbánek

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

Landa, Stanislav

Preparing pure hydrocarbons by hydrogenation on molybdenum disulfide. I. Hydrogenation of alcohols, ketones, acids and esters. Stanislav Landa and Otto Weisser (Tech. Univ., Prague). Chem. Listy 50, 569-72(1956).—Thermally stable alcs., ketones, acids, and esters are hydrogenated at 350° and 120 atm. in the presence of $MoS_2$ or $(NH_4)_2MoS_4$, yielding hydrocarbons with the same arrangement of C atoms. A single $C_6H_6$ ring is not hydrogenated, whereas in cmpds. with 2 or more condensed aromatic rings there is hydrogenation of 1 ring. α-Naphthol gives a mixt. of 59% naphthalene (I) and 23% Tetralin; I is partially hydrogenated to tetrahydronaphthalene (81%), and anthracene to 9,10-dihydroanthracene (60%), and phenanthrene to tetrahydrophenanthrene (49%). Examples are given of 23 expts. showing normal hydrogenation. $(NH_4)_2MoS_4$ is prepd. by dissolving 60 g. $(NH_4)_6Mo_7O_{24}\cdot 4H_2O$ in a mixt. of 180 ml. water and 100 ml. concd. $NH_4OH$, followed by addn. of 500 ml. $NH_4OH$ and satn. with $H_2S$ yielding crystals of $(NH_4)_2MoS_4$. Hydrogenation of $(NH_4)_2MoS_4$ in toluene at 300° and 100-20 atm. for 30 min. gives $MoS_2$ which is filtered off and washed with MeOH and $Et_2O$.

L. I. Urbánek

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, STANISLAV.

2

Biological degradation of phenols. III. Intermediates in the biological oxidation of catechol with Oöspora. Stanislav Landa and Jaroslav Eliášek (Vysoká škola chem.-technol., Prague). *Chem. Listy* 50, 1834-9(1956); cf. *C.A.* 48, 4043g.—The course of biol. degradation of catechol (I) with *Oöspora* is controlled by initial concn. of I and by pH whose optimum is 4-6. Concn. of the intermediate cis-cis-muconic acid (II), reaches its max. just before complete consumption of I. Further contact with the medium transforms II to $CO_2HCH_2CHCH:CHCOO$ (III), $OCOCH_2CHCHCH_2COO$ (IV), and $CO_2HCH_2CH_2COCH_2CO_2H$ (V).

Paper chromatography revealed the presence of $(CO_2H)_2$, $CH_2(CO_2H)_2$, $(CO_2HCH_2)_2$, $CO_2HCH_2CH(OH)CO_2H$, $CO_2HCH(OH)CH(OH)CO_2H$, citric acid, III and V. IV was formed during isolation process. Degradation of 877 g. I gave at 40°, pH 5-6, concn. 3 g. I/l. 23 g. II, m. 189-90°, 2.4 g. IV, m. 128-9°, and 1.2 g. III, m. 110-11°.

M. Hudlický

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application - Treatment of Solid Mineral Fuels. H.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 30097

Author : Landa, S., Romovacek, J., Romovackova, H.
Inst : -
Title : The Composition of Promary Brown-Coal Resins. III. Azulenes.

Orig Pub : Chem Listy, 50, No 12, 1964-1968 (1956) (in Czech)

Abstract : Extraction of the fraction boiling between 142 and 147°/47 mm, obtained by steam distillation from the neutral fraction of the middle oil fraction of primary brown-coal bitumens, with 85% phosphoric acid followed by chromatography on $Al_2O_3$, purification by passage through trinitrobenzoate, and distillation yields azulene; the 159-161°/47 mm fraction when treated by the above-outlined procedure yields 2-methylazulene. A similar procedure (but without the steam-distillation

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

Distr: 4E3d

Composition of the Duo-Sol extract of Zisterdorf naphtha. Stanislav Landa and Vasil Konik (Vysoká škola chem. technol., Prague). *Sborník vysoké školy chem.-technol. v Praze, Oddíl paliva a voda* 1957, 7-36.—A Duo-Sol ext. of Zisterdorf naphtha was sepd. by chromatography on $Al_2O_3$ and on silica gel into 30.61% petr. ether fractions, 44.06% benzene fractions, and 9.01% MeOH fractions. From the first petr. ether fractions, a mixt. of solid hydrocarbons was obtained amounting to 12.45% of the ext. From d., *n*, mol. wt., aniline point, I no., elementary analysis, ring and spectrographic analysis it was concluded that the petr. ether fractions contain a small amt. of paraffins and a large amt. of hydroaromatic and aromatic hydrocarbons, in which 50% of the C is present in rings (2-6 rings/mol.). The benzene fractions contained O, S, and N compds. A compd., $C_{14}H_{18}O_3$, m. 78.2-79.8° was isolated. The MeOH fractions had d. >1 and contained 3-6% O. M. Hudlický

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, STANISLAV

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and Their Application, Part 3. - Treatment of Natural Gases and Mineral Oil, Motor and Rocket Fuel, Lubricants. H-23

Abs Jour: Referat. Zhurnal Khimiya, No 10, 1958, 33838.

Author : Stanislav Landa, Jiří Mostecký.
Inst : Not given.
Title : Manufacturing of White Vaselines and Ceresins by Refining with Hydrogenation.

Orig Pub: Chem. průmysl, 1957, 7, No 8, 393-397.

Abstract: Laboratory experiments of refining vaselines and ceresins by the hydrogenation method were carried out. The raw materials were ceresins, petrolatum and low-viscous paraffine distillates; the experiments were carried out in an autoclave and a circulation apparatus at tempera-

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3/

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CZECHOSLOVAKIA/Chemical Technology, Chemical Products and Their Application, Part 3. - Treatment of Natural Gases and Mineral Oil, Motor and Rocket Fuel, Lubricants. H-23

Abs Jour: Referat . Zhurnal Khimiya, No 10, 1958, 33838.

tures from 300 to 360° and under pressures from 30 to 100 atm in the presence of 10 to 20% ( of the raw material weight) of the catalyst $WS_2$. It was shown that high quality products can be obtained by single-stage hydrogenation at a strictly determined process temperature, which is more important than pressure. Technological indices of the process are given. Bibliography with 60 titles.

Card : 2/2

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S. : WEISSER, O.

"Properties of sulfide catalysts. III. Hydrogenation of alcohols, ketones, acids, and esters on molybdenum sulfide. In Russian."

p. 93 (COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS. SBORNIK CHEKHOSLOVATSKIKH KHIMICHESKIKH RABOT. --Praha, Czechoslovaka.)
Vol. 22, No. 1 Feb. 1957

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

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S.

Composition of low-temperature tar from brown coal. II. o-Alkylphenols. S. Landa and J. Mostecký. (*Coll. Trav. chim. Tchécosl.*, 1957, 22, 629—631).—The o-alkylphenols can be selectively extracted with ether from aq. alkaline solution. The 200—220° fraction of xylenols from tar, obtained by the carbonization of Brüxer coal in Lurgi retorts, was extracted in this way, and the extract fractionated to give $C_7$, $C_8$ and $C_9$ cuts. The cuts were methylated with dimethyl sulphate and oxidized with alkaline permanganate to methoxy-acids, which could be identified. The presence of o-cresol, o-ethylphenol and 2 : 6-xylenol was established, but the $C_9$ phenol could not be identified. (In German.)

A. B. Denham.

3

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, STANISLAV

CZECHOSLOVAKIA/Organic Chemistry - Theoretical and General Questions on Organic Chemistry.

G-1

Abs Jour: Referat Zhur-Khimiya, No 5, 1958, 14320.

Author : Landa Stanislav, Weisser Otto, Mostecky Jiri
Inst :
Title : Properties of Sulfide Catalysts. IV. Concerning the Mechanism of Hydrogenation of Oxygen-Containing Substances.

Orig Pub: Sb. chekhosl. khim. rabot, 1957, 22, No 3, 1006-1013.

Abstract: On hydrogenation of oxygen-containing compounds over $MoS_2$ (I) and $WS_2$ (II), under pressure, alcohols are formed at first; the major portion of alcohols is dehydrated to olefins which are hydrogenated further to saturated compounds. The minor portion of alcohols is hydrogenated directly to paraffin. In the course thereof compounds of the type of neopentyl alcohol undergo mostly a retropinacolin rearrangement and yield only little paraffin retaining the carbon skeleton. Hydroge-

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I, 240, 30, 120, $C_2H_5OH$ (77.2) + high-boiling [illegible] tone, I, 240, 30, 120, $C_3H_6$ (10.4) + iso-$C_3H_7OH$ (26.7); acetone, II, 240, 60, 100, $C_3H_6$ (39.3); acetone, II, 180, 60, 100, iso-$C_3H_7OH$ (25.5); methyl ethyl ketone, I, 220, 30, 120, [illegible] I, 240, 30, 120, cyclohexane (4.4) + cyclohexene (44.1) + cyclohexanol (29); cyclohexanone, II, 240, 60, 100, cyclohexene (13) + cyclohexanol (35.3); $C_2H_5COOCH_3$, I, 240, 20,

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Card : 2/3

n-$C_{16}H_{33}OH$, MP 48-49° (13.9) 2,2-dimethyl-butanol-3, I, 320, 30, 120, mixture of 4.5% 2,2-dimethylbutane (III) and 75.3% 2,3-dimethyl-butane (IV) (determined from infra-red spectrum); 2,2-dimethyl-butanone-3, I, 320, 30, 120, mixture of 11.5% III and 72.5% IV (determined from infrared spectrum); pinacone hexahydrate, I, 350, 30, 110, mixture of 6.1% III and 70.8% IV (infrared spectrum) + high-boiling products; $(CH_3)_3CCOOCH_3$, I, 340, 45, 130, neopentane (V) (0.4) (infrared spectrum) + iso-$C_5H_{12}$ (VI) (74.0); $(CH_3)_3CCOOCH_3$, I, 320 30, 120, (CH ) CCH OH (7.5); $(CH_3)_3CCH_2OH$, I, 340, 45, 130, V (24.6) + VI (30). Prior communications see RZhKhim, 1957, 22857, 22876.

Card : 3/3

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S.; ELIASEK, J.

"Biological degradation of phenols. III. Intermediates in the biological oxidation of catechol by oospora molds. In German."

p. 1029 (Collection of Czechoslovak Chemical Communications. Sbornik Chekhoslovatskikh Khimicheskikh Rabot.) Vol. 22, no. 3, June 1957. Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81510.

Author : Landa S., Sesulka V.
Inst :
Title : The Products of Condensation from the Action of Sulfuric Acid Upon Acetone.

Orig Pub: Sb. czechos. khim. rabot, 1957, 22, No 6, 1859-1865.

Abstract: See R. Zh. Khim., 1958, 39540.

Card : 1/1

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S.; LANDOVA, M.

250 years of engineering education in Prague from the point of view of fuels technology. p. 149. (Paliva, Vol. 37, No. 5, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S

7

Sulfide catalysts. IV. Mechanism of hydrogenation of oxygen-containing compounds. Stanislav Landa, Otto Weisser, and Jiří Mostecký (Tech. Univ., Prague). Chem. Listy 31, 452-8(1957); cf. C.A. 50, 1[illegible].—Hydrogenation of simple esters, ketones, and alcs. at 220-40° and 100-20 atm. H, with $MoS_2$ and $WS_2$ as catalysts, proceeds via the corresponding alcs.; hydrogenation of the alcs. to satd. hydrocarbons involves for the most part dehydration, yielding unsatd. hydrocarbons as intermediary products. The presence of $Me_2CCH_2Me$ among products of hydrogenation of pinacolyl alc., pinacolone, and pinacol and the presence of $Me_3C$ in hydrogenation products of $Me_2CCH_2OH$ and of Me pivalate suggest partial hydrogenolysis. L. J. U.

Now: two petrochemical routes to glycerol. Anon. Oil in Can. 9, 34, 85-8(1957).—A discussion with 7 references.

C. B. Béland

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LANDA, SHESHULKA

CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39540.

Author : Landa, Sheshulka.
Inst : Not given.
Title : The Condensation Product of Acetone Prepared by Treatment with Sulfuric Acid.

Orig Pub: Chem. listy, 1957, 51, No 6, 1159-1164.

Abstract: From 22999 ml of acetone and 16650 ml of technical sulfuric acid according to a known method of organic synthesis (m., Izd-vo in. lit., 1949, sb. 1,242) one obtains 3050 ml of crude mesitylene, which is fractionated at 230 mm thru a column having 56

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39540.

Abstract: theoretical plates, and employing a reflux ratio from 1:30 to 1:40. In this way there are obtained 23.7 g. of a low boiling fraction and 1370 g. of pure mesitylene. The residue is separated into 44 fractions on the same column at 75 mm. Thru a combination of freezing out, crystallization, chromatography and distillation by a complicated scheme, the following crystalline compounds are separated: durol(I), 35 g., M.P. 79.0-79.4 degrees Centigrade (oxidized by $KMnO_4$ into pyromellitic acid, M.P. 264.5-266°C.), isodurol, 40.5 g., b.p. 75.1-75.4°C/ /11 mm, M.P. -23.5°C; 1,2,3-trimethyl-5-tert-butyl benzene(II), 3.1 g, M.P. 37.8-38.2°C (product of its oxidation — pregnitic acid); pentamethyl benzene (III), 58 g, m.p. 51.6-51.9°C (its oxidation

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

CZECHOSLOVAKIA / Organic Chemistry. Synthetic Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39540

Abstract: higher aromatic hydrocarbons. Since the ratio C:H in these compounds does not correspond to the formula $(C_3H_4)X$, it was assumed that by the acetone condensation, reactions of various types are taking place, which are catalized by acid, for instance, the Jacobsen's reaction.

The IR spectra from (II)-(VII) and the UV spectra of (I), (III)-(VI) are given.

Card 4/4 11

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CZECHOSLOVAKIA / Organic Chemistry. General and Theoretical Problems of Organic Chemistry. G

Abs Jour: Ref Zhur-Khimiya, No 20, 1958, 67472.

Author : Landa S., Macak J.
Inst : Not given.
Title : Properties of Sulfide Catalysts. V. Synthesis of Alkylphenols.

Orig Pub: Chem. listy, 1957, 51, No 10, 1851-1857.

Abstract: Selectivity of $MoS_2$ in the hydrogenation of aromatic oxyaldehydes and oxyketones has been investigated. It has been established that with $MoS_2$ the CO-groups of aldehydes and ketones are reduced to either $CH_3$ or $CH_2$, while the nuclear oxy-groups

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81566.

Author : Landa S., Hala S.
Inst :
Title : Adamantan and Its Derivatives. III. A New Method of Separation, and New Homologs.

Orig Pub: Chem. listy, 1957, 51, No 12, 2325-2329.

Abstract: Adamantan (II) was separated from Godonine naphtha with the help of thiourea (I), (66 kg of the fraction, steam distilled, 7.7 kg of I and 6.2 kg of $CH_3CH$ were mixed for two hours and the adduct formed is washed with hexane, is decomposed with 10 liters of water, steam distilled, cooled to -50°C.and a 224 kg yield of II is obtained, m.p. 270°C.) Bromadanthan (III) is obtained from II (R. Zh. Khimiya, 1954, 39437), m.p.

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CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81566.

240°C./745 mm., m.p. -58°C., $n^{20}D$ 1.4955. The heating of 5 grams of III and 20 grams of $C_3H_7Cl$ with sodium in petroleum ether at -10°C. leads in addition to II and IV to the formation of propylademantan, yield 0.51 grams, b.p. 251°C./748 mm., m.p. -1°C., $n^{20}D$ 1.4962. The IR spectra of II, IV - VI are given. Communication II: see Ref. Zh. Khimiya, 1956, 71664.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, Stanislav; ELIASEK, Jaroslav

Polarography of some halogen derivatives of phenols. Sbor.pal.vod. VSChT 1958:7-19. (EEAI 9:4)

1. Katedra synthetickych pohonnych latek, Vysoka skola chemicko-technologicka, Praha.
(Polarograph and polarography) (Halogens) (Phenols)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, Stanislav; HALA, Slavoj; WEISSER, Otto; STRILEK, Vladislav; SONSKY, Jan

Composition of lighter portions of Hodonin crude oil. Sbor.pal.vod. VSChT 1958:21-43. (EEAI 9:4)

1. Katedra synthetickych pohonnych latek, Vysoka skola chemicko-technologicka, Praha.
(Czechoslovakia—Petroleum)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

S/081/62/000/004/013/087
B149/B101

AUTHORS: Landa, Stanislav, Petrů, František, Vít, Yaroslav, Procházka, Vladimír, Mostecký, Jiří

TITLE: The Chemistry of alkali metal hydrides. I. The production of alkali metal hydrides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 97, abstract 4V30 (Sb. Vysoké školy chem.-technol. Praze. Odd. Fak. anorgan. a organ. technol. v. 2, 1958, 495-503)

TEXT: A method is described for the production of LiH, NaH and KH by the action of $H_2$ on the metals in question under a pressure of about 120 atm, at temperatures between the melting points of the metals and of the hydrides, using $MoS_2$ and $WS_2$ as catalysts. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

COUNTRY : CZECHOSLOVAKIA H
CATEGORY : Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Natural Gases*
ABS. JOUR. : RZhKhim., No 17, 1959, No. 62199

AUTHOR : Landa, S.; Hala. S.
INSTITUTE : -
TITLE : Detection of Adamantane in Crude Oils by Means of Complex Formation with Thiouria
ORIG. PUB. : Chem. prumysl, 1958, 8, No 8, 395-397

ABSTRACT : It is found that adamantane (I) [symmetrical tricyclo-(1, 1, 3, 3)-decane] detected in the Godominskaya crude in Czechoslovakia forms with thiourea a stable crystalline adduct type compound. A rapid and sensitive detection method, based on the above reaction is proposed for I. It is demonstrated that I is present in concentrations $\geq$0.02-0.03% in several other naphthenic crudes of Czechoslovakia. -- Ya.Satunovskiy.

*and Petroleum. Motor and Rocket Fuels. Lubricants.

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Czechoslovakia G-2
Category= : Organic Chemistry. Synthetic Organic Chemistry
19386
Abs. Jour. : Ref. Zhur.-Khimiya No. 6, 1959

Author : Landa, S.; Macak, J.
Institut. :
Title : Properties of Sulfide-Catalysts. V. Preparation of Alkylphenols.

Orig. Pub. : Collect. czechosl. chem. commun., 1958, 23, No 7, 1322-1329

Abstract : See RZhKhim, 1958, 67472.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S

G

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis.

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38567.

Author : Landa, S. and Kanyeck, Z.
Inst :
Title : Adamantane and its Derivatives. IV. Synthesis of Ditopic /sic/ Derivatives.

Orig Pub: Chem Listry, 52, No 6, 1150-1155 (1958) (in Czech)

Abstract: The authors have synthesized 1,3-diisopropenyladamantane [nomenclature uncertain] (I), 1,3-diisopropyladamantane (II), and 1,3-dimethyladamantane (III). The dimethyl ester of bicyclo [3,3,1]nonane-2,6-dione-3,7-dicarboxylic acid, obtained in 40-55% yields by the method of Prelog (V. Prelog and R. Seiwerth, Ber, 74, 1644, 1769 (1941)), on heating with $CH_2Br_2$ in the

Card : 1/5

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis.

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Abs Jour: Ref Zhur-Khim., No 11, 1959, 38567.

presence of $CH_3ONa$ is converted to the dimethyl ester of adamantane-2,6-dione-1,5-dicarboxylic acid (IV ester, V acid) (yield 31%) which on hydrolysis with $HCl-CH_3COOH$ is converted to V. The reduction of V or of IV according to Kishner (210-220° in a sealed vessel) gives adamantane-1,3-dicarboxylic acid (VI), yield 90 and 96%, respectively, mp 279.5-280.5° (from glacial $CH_3COOH$). When VI is reacted with $CH_2N_2$ or heated with $SOCl_2$, followed by treatment with $CH_3OH$, the dimethyl ester (VII) is obtained, yield 95-100%, mp 60.5-61.5° (after chromatography on silica gel). VII has also been prepared by converting IV to the corresponding bis-dithioketal (VIII) (a solution of IV in $CHCl_3$ is treated with $(CH_2SH)_2$ and

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CZECHOSLOVAKIA/Organic Chemistry. Organic Synthesis.

Abs Jour: Ref Zhur-Khim., No 11, 1959, 38567.

also obtained by the reduction of IX with HI acid with P at 255°. The reduction of VII by $NaAlH_4$ in tetrahydrofuran gives 1,3-dihydroxymethyladamantane (XI), yield 100% (when $LiAlH_4$ is used the yield is 90%) which on heating with $SOCl_2$ is converted to 1,3-bis-(chloromethyl)-adamantane (XII), yield 62%, mp 63.8-65.3° (from abs ether and $CH_3OH$; when XI is heated with $SOBr_2$, 1,3-bis-(bromomethyl)-adamantane (XIII) is obtained, yield 91.5%, mp 85.5-87° (from $CH_3OH$). When XI is heated with HI acid (5 hrs at 210-220° in a sealed tube), 1,3-bis-(iodomethyl)-adamantane is obtained, mp 85.5-86.5° (from acetone). The reduction of XII with Na in liquid $NH_3$ or of XIII by Na in $CH_3OH$ or by Raney Ni yields III, bp 100-110°/

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Metal hydrides. II. Reaction of alkali metals with hydrogen at higher pressures and temperatures. Stanislav Landa, František Petrů, Jiří Mostecký, Jaroslav Vit, and Vladimír Procházka (Vys. škola chem.-technol., Prague). *Chem. Listy* 52, 1357-9(1958); cf. Czech. 86,722 (*C.A.* 52, 6737*e*).—KH, NaH, and LiH were prepd. in quant. yields by hydrogenating in a 2500 ml. stainless-steel rotating autoclave 10 g. atoms of K, Na, and Li, resp., in the presence of 0.1% $WS_2$ (prepn., cf. *C.A.* 50, 771*d*) or $MoS_2$ (prepn., cf. *C.A.* 50, 13854*d*) at 120 atm. and 140-150°. Local overheating destroys the activity of catalyst. In the case of KH and NaH (not LiH) it is necessary to heat at the end of 250° and 350°, resp., to obtain a stable product. The hydrides prepd. are pure enough to be used in the synthesis of complex hydrides. Jiří Plíml

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, Stanislav, prof., inz., dr., doktor chemickych ved; ELIASEK, Jaroslav

Biological degradation of bivalent phenols. Sbor pal vod VSChT no.3, part 1:35-53 '59.

1. Katedra syntetickych pohonnych latek Vysoke skoly chemicko-technologicke, Praha.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

5(3)

SOV/62-59-8-14/42

AUTHORS: Landa, S., Weiser, O., Kaplan, Ye. P., Kao Ch'ing-lang, Petrov, A. D.

TITLE: Synthesis of Some Highly Branched Paraffin Hydrocarbons

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1425-1432 (USSR)

ABSTRACT: In the present paper the hydrogenation of tertiary alcohols and ditertiary glycols with two isopropyl or tertiary butyl groups at the carbon atom in the presence of molybdenum sulfide is carried out. By means of this hydrogenation hydrocarbons with an equal, or usually even lower, number of carbon atoms could be obtained. In the case of compounds with tertiary butyl radicals (one or two), these radicals split off in the dehydrogenation process while hydrocarbons were formed which contain 4 - 8 carbon atoms less than the initial products. Analogous alcohols and glycols with isopropyl groups remained stable during hydrogenation and hydrocarbons with the same carbon structure as the oxygen-containing initial products were formed. By means of hydrogenation a high yield of 2-methyl-3-isopropyloctane and 2,9-dimethyl-3,8-diisopropyldecane could be gained from the compounds of 2-methyl-3-isopropyloctanol and 2,9-dimethyl-3,8-diisopropyldecanediol-

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Synthesis of Some Highly Branched Paraffin Hydrocarbons SOV/62-59-8-14/42

3,8. The synthesis of the individual compounds and the hydrogenation reactions are described in the experimental part. A survey on the tests containing also the properties of the compounds is given in table 2. The individual substances were identified by means of infrared spectra and elementary analyses (Figs 1-3). The elementary analyses were carried out by T. Leki in the analytical laboratory of the Chair of Synthetic Motor Fuels of the Higher Education School of Chemical Technology in Prague. The infrared spectra were taken at the Chair of Special Analytical Methods (Professor F. Cuta ) under the supervision of Engineer L. Novotný and A. Kchutova whom the authors thank for their work. There are 3 figures, 2 tables, and 12 references, 5 of which are Soviet.

ASSOCIATION: Higher Education School of Chemical Technology, Prague

SUBMITTED: January 28, 1959

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

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Country : CZECHOSLOVAKIA
Category: Organic Chemistry. Organic Synthesis

Abs Jour: RZhKhim., No 17, 1959, No 60789

Author : Landa, S ; Hala, S.
Inst : -
Title : Adamantane and its Derivatives. III. New Synthesis Method and New Homologues

Orig Pub: Collect. Czechosl. Chem. Communs, 1959, 24, No 1, 93-98

Abstract: See Ref Zhur-Khimiya, 1958, No 24, 81566

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S.; HALA, S.

"Composition of brown coal and sulfur tar" IV. Paraffins. In German. p. 203

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech.,
Vol. 24, No. 1, Jan. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59

Unclassified

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

COUNTRY : Czechoslovakia B-9
CATEGORY :

ABS. JOUR. : RZKhim., No. 23 1959, No. 81432

AUTHOR : Landa, S.; Weisser, O.; Mostecky, J.
INST. : Not given
TITLE : Properties of Sulfide Catalysts. VI. Dehydrating and Dehydrogenating Properties of Molybdenum and Tungsten Disulfides.
ORIG. PUB. : Collect. Czechosl. Chem. Communs, 1959, 24, #4, 1036-1044.
ABSTRACT : See RZKhim, 1959, #1, 513.

CARD: 1/1

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

COUNTRY : [illegible]
CATEGORY :

ABS. JOUR. : AZKhim., No. 1959, No. [illegible]

AUTHOR : [illegible]
INST. : [illegible]
TITLE : [illegible]

ORIG. PUB. : [illegible]

ABSTRACT : [illegible]

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

LANDA, S.; KAMYCEK, Z.

Adamantane and its derivatives. V. Synthesis of 1,3,5,7,-tetramethyladamantane. Coll Cz chem 25 no.12:4004-4009 '59. (EEAI 9:6)

1. Institut fur synthetische Treibstoffe, Technische Hochschule fur Chemie, Prag.
(Adamantane) (Methyl group)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R000928510015-0

SEBIK, Rudolf; LANDA, Stanislav

Chromatographic separation of binary mixtures of hydrocarbons, especially nonanes. Sbor pal vod VSChT 4 no.1:7-54 '60. (EEAI 10:9)

1. Katedra synthetickych pohonnych latek, Vysoka skola chemicko-technologicka, Praha.

(Chromatography) (Hydrocarbons) (Nonane) (Mixtures)

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LANDA, S.

Distr: 4E2c(j)/4E3d

Sulfide catalysts. X. Preparation of isoparaffins by hydrogenation of aldols. S. Landa, J. Mostecký, and O. Weisser (Vysoká škola chem. technol., Prague). *Collection Czech. Chem. Communs.* 25, 1165-73(1960)(in German); cf. *CA* 54, 13046a.—High temp. and high pressure hydrogenation of aldols over $MoS_2$ (I) or $WS_2$ (II) afforded paraffins with Me side chains in 20-42% yields. During hydrogenation, aldols were split and normal paraffins with the same no. of C atoms as the starting aldehyde formed. Aldol condensation was carried out by stirring 1 mole aldehyde in 300 ml. $Et_2O$ 2 hrs. with 116 ml. 15% KOH under ice-cooling, sepg. the ether layer, extg. the aq. layer, and evapg. the ether and the unreacted aldehyde. Conditions of the hydrogenation were [starting aldol, catalyst (approx. 15 wt.-%), temp., pressure in atm., time in min., resulting paraffin, % yield, b.p./mm., $d_4$, and $n_D^{20}$ given]: MeCH(OH)$CH_2$CHO, I, 320°, 120, 40, $C_4H_{10}$, 24.8, —, —, —; $Me_2C(OH)CH_2COMe$, I, 320°, 120, 40, $Me_2CHPr$ (III), 38, 59.5-60°, —, 1.3720; EtCH(OH)CHMeCHO, I, 320°, 130, 40, III, 40.9, —, —, —; $C_4H_9CH(OH)CHPrCHO$, II, 340°, 120, —, $C_8H_{18}CHMePr$, 19.7, 78.5-80.2°/37, 0.7322, 1.4119; $C_8H_{18}CH(OH)CH(CHO)C_8H_{18}$, I, 320°, 120, 40, $C_7H_{15}CHMeC_8H_{17}$ (IV), 39.8, 124-5°/18, —, 1.4302; $C_7H_{15}CH(OH)CH(CHO)C_8H_{17}$, II, 340°, 94, 50, $C_8H_{17}CHMeC_8H_{17}$ (V), 37.4, 166.7-7.2°/37, 0.7754, 1.4341; $C_8H_{17}CH(OH)CH(CHO)C_7H_{15}$, II, 340°, 120, 40, $C_8H_{17}CHMeC_7H_{15}$ (VI), 27.1, 164-5°/12, 0.7904, 1.4415; $C_7H_{15}CH(OH)CH(CHO)C_8H_{17}$, II, 340°, 120, 30, $C_{16}H_{33}CHMeC_8H_{17}$ (VII), 19.5, 179-80°/12, 0.7920, 1.4430; $C_{16}H_{33}CH(OH)CH(CHO)C_8H_{17}$, II, 340°, 120, 30, $C_{11}H_{23}CHMeC_8H_{17}$ (VIII), 19.5, 210-11°/10, 0.7941, 1.4418. The infrared spectra of III-VIII were given. M. Hudlický

Institut fur synthetische Treibstoffe, Technische Hochschule fur Chemie, Prag.

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LANDA, S.

Distr: 4E2o(j)/4E3d

Sulfide catalysts. VIII. Preparation of alkylphenols on tungsten sulfide. S. Landa and J. Macák (Vysoká škola chem. technol., Prague). *Collection Czech. Chem. Communs.* 25, 761-5(1960)(in German); cf. *CA* 54, 250i.—Hydrogenation of aromatic hydroxy aldehydes, hydroxy ketones, and esters of aromatic hydroxy carboxylic acids on $WS_2$ at 300–40° was found to be less suitable than that on $MoS_2$, previously reported (*CA* 52, 4538e). Thus, *m*-$HOC_6H_4CHO$ in cyclohexane (I), *p*-$HOC_6H_4CO_2Me$ in I, *m*-$HOC_6H_4COMe$ in ligroine (b.p. 90–125°), 5,2-Me(HO)-$C_6H_3COMe$, and 4,2-Et(HO)$C_6H_3COMe$ gave 32% *m*-cresol, 71.5% of a PhOH-*p*-cresol mixt., 78.5% *m*-Et-$C_6H_4OH$, 76% 4,2-MeEt$C_6H_3OH$, and 78% 2,5-$Et_2C_6H_3OH$, resp. Hydrogenation of 5,2-Me(HO)$C_6H_3COPh$ in I at 320° and without solvent at 340° gave 65–6% 5,2-Me(HO)-$C_6H_3CH_2Ph$ as the chief product and, as by-products, *p*-cresol and $PhCO_2H$, resp. IX. Preparation of dibasic phenols. *Ibid.* 766–77.—Hydrogenations of aromatic dihydroxy ketones with the CO group in α-position to the ring on $MoS_2$ or $WS_2$ in cyclohexane or without any solvent at 210–330° for 8–30 min. (H initial pressure 100 atm.) gave dibasic alkylphenols. Thus, 2,4-$(HO)_2C_6H_3COMe$, 2,5-$(HO)_2C_6H_3$-COMe, and 3,4-$(MeO)_2C_6H_3COMe$ yielded 2,4-$(HO)_2$-$C_6H_3Et$ (I), 2,5-$(HO)_2C_6H_3Et$, and 3,4-$(MeO)_2C_6H_3Et$, resp. At temps. over 290° I was accompanied by *o*-$EtC_6H_4OH$. Hydrogenation of 3,4-$(HO)_2C_6H_3COMe$ with free ortho situated OH groups led to a mixt. of *m*-$HOC_6H_4Et$, *o*-$(HO)_2C_6H_4$ (II), 3,4-$(HO)_2C_6H_3Et$, $C_2H_4$, $C_2H_6$, and $H_2O$. Hydrogenation of II gave a mixt. of $H_2O$, $CH_4$, PhOH (III), cyclohexanol, cyclohexanone, *p*-cyclohexylphenol (IV), cyclohexene (V), dicyclohexyl, and, as shown by gas chromatography, $C_2$–$C_4$ hydrocarbons (VI), *n*-$C_6H_{12}$ (VII), *n*-$C_6H_{14}$, methylcyclopentane (VIII), cyclohexane (IX), and $C_6H_6$ (X). Hydrogenations of veratrole gave $H_2C$, $CH_4$, and III–X. On the whole, hydrogenations on $WS_2$ required higher temps. than on $MoS_2$. Mechanism of formation of the by-products was suggested. JiH ~~Plíml~~

Institut für synthetische Treibstoffe und Institut für Koks-und-Gaserzeugung, Technische Hochschule für Chemie, Prag

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9.4300 (1043,1138,1143)

Z/009/61/000/001/001/006
E112/E153

AUTHORS: Mostecký, Jiří; Weisser, Otto; Landa, Stanislav

TITLE: Hydrogenation Refining of Selenium

PERIODICAL: Chemický Průmysl, 1961, No.1, pp.2-7

TEXT: The present paper is the thirteenth in a series of investigations dealing with sulfide catalysts in hydrogenation processes and describes specifically the hydrogenation of selenium, using the sulfides of molybdenum and tungsten as catalysts. The work was undertaken in order to establish the possibility of refining selenium by hydrogenation and of utilising domestic sources of selenium for the rectifier and photoelectric cell industry. Although germanium and silicon have superior properties as semiconductors, the rectifier industry of Czechoslovakia is still based on selenium, and it is not anticipated that changes will take place within the next few years. The production of highly purified selenium presents an important economic problem. A process consisting of the following steps is suggested by the authors. 1) Hydrogenation of selenium under pressure of 100-110 atm at 350 °C in presence of molybdenum as

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E112/E153

Hydrogenation Refining of Selenium

catalyst; reaction time 60-120 minutes. Thermodynamic data and comparisons between sulfur and selenium are tabulated. It is shown that the hydrogenation of selenium proceeds less readily than that of sulfur, but that nevertheless, in presence of catalysts and an excess of hydrogen, conversions were favourable. 2) Hydrogen selenide, thus produced, is reoxidised to elementary selenium, and three possible approaches are suggested: a) using 30% hydrogen peroxide; b) selenic acid as oxidant; and c) burning in a current of air. A sketch of the laboratory method for the burning of hydrogen selenide in a current of air is shown, but details of the other two methods of oxidation are not provided. The paper is mainly concerned with the purity of the refined selenium and analytical methods for an assay of mercury, tellurium and ash content are presented. Results of spectrographic analyses are submitted. Analytical methods have confirmed the efficiency of the hydrogenation refining method. Iron and tellurium were completely removed, and silicium and magnesium were reduced to trace concentrations. Mercury contents were reduced beyond the

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Hydrogenation Refining of Selenium

permitted limits and spectrographic analysis indicated the absence of arsenic. Ash contents, however, were higher than permissible, and this is explained by a secondary contamination of the hydrogen selenide during its oxidation to elementary selenium. The durability of the catalysts in the present process was not studied but it is proposed to publish more data in the near future. The authors are of the opinion that the suggested process is economical and that it can be applied particularly usefully to lower-grade raw materials. Acknowledgements are made to L. Ješinová, test laboratories ČKD Modřany n.p., Rectifier Research, Běchovice. There are 7 figures, 3 tables and 17 references: 6 Czech, 6 German, 1 Soviet, 1 French and 3 English.

ASSOCIATION: Katedra syntetických paliv, VŠCHT Praha a Miroslav Ruprych, ČKD Modřany n.p., Výzkum usměrňovačů, Běchovice u Prahy (Chair of Synthetic Fuels, University of Chemical Technology, Prague, and Miroslav Ruprych, CKD Modřany, Rectifier Research, Běchovice, near Prague)

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