"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTAVKIN, P. S.

Reclamation of fields and forests. Peat Moskva, Sel'khozgoz, 1940 (120)p.

1. Peat. 2. Reclamation of land--Russia.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTAVKIN, P.S.

Oak

Close plantingof any in spots in the "Dedovo-Veseloe woods." Les i step', 4, No. 2, 1952.

Monthly List ofRussian Accessions, Library of Congress, June 1952.
Unclassified.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

1. VYSTAVKIN, P. S.

2. USSR (600)

4. Afforestation - Odessa Province

7. Forest belts of the Odessa region, Les i step', 14, No. 11, 1952.

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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

1. VYST'VKIN, P.S.

2. USSR (600)

4. Odessa Province - Afforestation

7. Forest belts of the Odessa region. Les i step' 14 no. 11. 1952.

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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

ROZANTSEV, E.G.; VYSTAVKINA, L.B.

Sulfoaliphatic cation exchangers based on polyvinyl alcohol. Zhur.prikl.khim. 35 no.4:919-921 Ap '62. (MIRA 15:4)

1. Nauchno-issledovatel'skiy institut sinteticheskikh spirtov i organicheskikh produktov.
(Ion exchange) (Vinyl alcohol polymers)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VERKHOVSKAYA, Z.N.; VYSTAVKINA, L.B.; KLIMENKO, M.Ya.

Methods of production of diphenylolpropane. Khim. prom. 41 no.3: 170-175 Mr '65. (MIRA 18:7)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

KLIMENKO, M.Ya.; VERKHOVSKAYA, Z.N.; VYSTAVKINA, L.B.

Dehydration of trimethylcarbinol on ion exchange resins. Neftekhimiia 1 no.5:630-638 S-O '61. (MIRA 15:2)

1. Nauchno-issledovatel'skiy institut sinteticheskikh spirtov i organicheskikh produktov.
(Mehtanol)(Dehydration)(Ion exchange resins)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

26012
Z/036/60/000/004/001/001
A205/A126

26.2120

AUTHORS: Vystyd, Miloš, Vodsedálek, Josef, and Suchomel, Drahomír

TITLE: Cast high-temperature alloys for gas tubine blades

PERIODICAL: Slévárenství, no. 4, 1960, 111 - 114

TEXT: The author lists advantages and disadvantages of cast and wrought alloy gas tubine blades, describes high-temperature alloys used in foreign states and compares them with the "Poldi AKNC" alloy produced in the ČSR. He describes the investment casting method employed by the První brněnská strojírna (Mechanical Engineering Plant) in Brno. In cooperation with the "První brněnská strojírna, závody K. Gottwalda" in Brno, the "SVÚMT - Státní výzkumný ústav materiálu a technologie" (State Research Institute for Materials and Technology) in Prague, conducted creep strength, fatigue strength, physical property and heat-impact resistance tests on "Poldi AKNC-L" alloy. The test rods were centrifugally cast into molds, produced by the lost-wax process. The alloy was tested after 2 different heat treatments: normal treatment (solution annealing at 1,080°C/4 hrs/air hardening at 700°C/16 hrs/air) and gradual treatment (solution annealing at 1,200°C/4 hrs, intermittent annealing at 1,000°C/16 hrs/air, and hardening at 700°C/16 hrs/

Card 1/3

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26102
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A205/A126

Cast high-temperature alloys for gas turbine blades

/air). Gradual heat treatment caused separation of Cr_7C_3 on boundary grains which proved very advantageous. "Poldi AKNC-L" alloy castings showed better creep strength than "Nimonic" alloy castings, and "AKNC-L" castings with normal heat treatment have properties similar to "Nimonic 80A" wrought alloy, while properties of "AKNC-L" castings with gradual heat treatment resemble those of "Nimonic 90" wrought alloy. Fatigue tests were made at 20, 650 and 700°C comparatively on an hf and a "Schenk" pulsator and produced same results. The fatigue limit at 20°C is approximately 10 kg/mm^2 lower than that of a wrought part, but increases with increasing temperature. However, the fatigue limit decreases considerably under tensile stress and is already 16.5% lower at a prestress of 5 kg/mm^2. The amount and size of cracks, originating after repeated heating and water-shower quenching of wedge-shaped samples, was measured on an apparatus, developed for this purpose by the SVÚMT. Test results indicate that the "AKNC-L" cast alloy produces somewhat worse results, especially at lower temperatures. The "První brněnská strojírna" introduced centrifugal investment casting of radial turbine impellers and axially bladed rims both used in superchargers. The impeller wheels are 80 - 130 mm in diameter, weigh 0.20 - 1.45 kg, have 10 - 17 blades and operate at 650°C with 45,000 rpm. The bladed rims are 152 - 420 mm in diameter, weigh 0.6 - 8.5 kg, have

Card 2/3

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

26012
Z/036/60/000/004/001/001
A205/A126

Cast high-temperature alloys for gas turbine blades

41 - 51 blades and operate at 650 C with 2,800 - 12,200 rpm. The "Poldi AKNC" alloy used is melted in "ACEC" in induction furnaces with basic lining. The casting temperature is kept between 1,580 and 1,610°C, the revolution rate of molds is varied according to the size of the casting from 450 to 1,100 rpm. Cast impellers are produced much more economically than wrought and machined impellers and up to 90% of material can be saved. There are 10 figures and 6 references: 5 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: P. R. Toolin: Symposium on Strength and Ductility at Elevated Temperatures. ASTM Spec. Tech. Publ. no. 128, 142.

ASSOCIATION: Státní výzkumný ústav materiálu a technologie, Praha (State Research Institute for Materials and Technology in Prague)(Vystyd and Vodsedálek); První brněnská strojírna, závody K. Gottwalda in Brno (Suchomel)

Card 3/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.; JAKUBOVIC, A.

Sympatholytics and sympathomimetics of imidazole series. Cesk. farm. 2 no.4:120-126 Apr 1953. (CIML 25:1)

1. Of the Institute of Organic Chemistry of Charles University, Prague.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

ZAHRADNIK, R.; VYSTRCIL, A.

Study of au[redacted] Pt. 3. Coll Cz Chem 28 no. 5: 1334-1338 My '63.

1. Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague, and Department of Organic Chemistry, Charles University, Prague.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

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

The pyrazolone series VI Condensation of [illegible] hemidino-5-pyrazolone with [illegible]oxo esters Addendum [illegible] Alois Vystrill and Rudolf Prokes Chemie [illegible] Chem. [illegible] Infrared spectra are given

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CZECHOSLOVAKIA/Organic Chemistry. Natural Compounds and Their Synthetic Analogues. G

Abs Jour: Ref Zhur - Khim., No. 4, 1959, 11958

Author : Vystrcil A., Cerny J.

Inst : Not given.

Title : Model Substances of Physostigmine Compounds.

Orig Pub: Chem. listy, 1958, No. 3, 494-497

Abstract: There were synthesized certain derivatives, containing the 3-phenylpyrrolidine group, which enter into the composition of a physostigmine (eserine) molecule. Phenylsuccinic acid was heated with an excess of an aqueous solution of methylamine before the temperature reached 210°: 1-methyl-3-phenyl-2,5-dioxypyrrolidine was obtained (yield, 33%; melting point, 58° - from

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CZECHOSLOVAKIA/Organic Chemistry. Natural Compounds and Their Synthetic Analogues. G

Abs Jour: Ref Zhur - Khim., No. 4, 1959, 11958

The product was dissolved in methanol CH_3ONa and methylated by CH_3I in 1-methyl-3-phenyl-5-oxo-pyrrolidine (yield, 53%; melting point, 145-146°), which reduced $LiAlH_4$ to dioxane in I; in testing, the picrate does not depress the mixed melting with the above-described preparation. The nitrile of α-phenylacetaminoisobutyric acid after standing (for 10 hours) with alcohol saturated with HCl (gas), provided ethyl ether (yield 49%; melting point, 97°), which was cyclized by the action of Na into xylol in the cold state to 3-phenyl-5,5-dimethyl-2,4-dioxo-pyrrolidine (melting point, 219° - from water). The product was alkylated with CH_3ONa and CH_3 by heating with CH_3OH (for 20 hours) to 100° in a sealed tube in the presence of HgO with the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, Alois

"The chemistry of nucleic acids" by D. O. Jordan. Reviewed by A Vystrcil. Chem prum 11 no.11:600 N '61.

1. Karlova universita.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, Alois

VYSTRCIL, URBANEK, Gabriel; DOLEZAL, Bedrich; RAKUSAN, Bohumir; VYSTRCIL, Alois; ZICHA, Karel; ZICHA, Osval; klinicky spolupracovnik: Miroslav Kolda.

Treatment of endarteritis with tissue preparations RTN. Cas.lek. cesk. 91 no.45-46:1375-1377 14 Nov 52.

1. Z II. interni kliniky prof. dr. Ant. Vancury a Vyzkumneho ustavu lecivych rostlin v Praze.

(TISSUE THERAPY, in various diseases, endarteritis obliterans)
(ENDARTERITIS OBLITERANS, therapy, tissue ther.)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.

Z/009/60/010/05/036/040
E142/E135

AUTHOR: None given

TITLE: Book Reviews

PERIODICAL: Chemický Průmysl, 1960, Vol 10, Nr 5, pp 263-264

ABSTRACT: The following books are reviewed:

1) "The Manufacture, Processing and Uses of Thermo-Setting Compounds", by F. Nuhlíček and Z. Osadan. Published by SNTL, Bratislava, (1959). Reviewed by L. Fogarassy.

2) "Introduction to the Theory of Organic Chemistry" (Einführung in die theoretische organische Chemie). by H.A. Staab, published by Verlag Chemie, Weinheim, 1959. Reviewed by A. Vystrčil, (Charles University), L. Novotný and J. Křepinský (Czech Academy of Sciences).

3) "A Text Book of Practical Organic Chemistry" by A.I. Vogel, published by Longmans, Green & Co., London, 1956. Reviewed by A. Vystrčil (Charles University).

Card 1/2

4) "Free Radicals in Solution" by C. Walling, published by John Wiley & Sons Inc., New York, 1957. Reviewed by Z. Machacek.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

Z/009/60/010/05/036/040
E142/E135

Book Reviews

5) "Gas Chromatography", by A.I.M. Keulemans, published by Verlag Chemie GmbH, Weinheim, 1959.
Reviewed by A. Tockstein (VŠChT, Pardubice).

6) "Lectures Held During the Sixth Conference on Gas Chromatography 1959". Výzkumný ústav syntetického kaučuku (The Research Institute for Synthetic Rubber) n.p. KAUČUK in Gottwaldov has published in book form the lectures held during the above Conference.

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

HOLY, A.; VYSTRCIL, A.

A study on aurones. Part 2 : On the reaction of the carbonyl group in aurones. Coll Cz Chem 27 no.8:1861-1869 Ag '62.

1. Institut fur organische Chemie, Karls-Universitat, Prag (for Vystrcil). 2. Abteilung fur organische Synthesen, Institut fur organische Chemie und Biochemie, Tschechoslowakische Akademie der Wissenschaften, Prag (for Holy).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A;STEJSKAL, Z.

Study of pyrazol series. Cas. cesk. lek. Ved. priloha. (CIML 20:1)
63 no.5-6 :75-85 1950.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.; KALFUS, K.

Preparation of 3-(β-indolyl)-butyric acid from 1-hydroxy-2-carbazole phenols [in German with summary in Russian]. Sbor.Chekh.khim.rab. 19 no.1: 179-181 F '54. (MLRA 7:6)

1. Institut organicheskoy khimii Karlova universiteta, Praga.
(Indole butyric acid) (Carbazole)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.

DELEZEL, B.; RAKUSAN, B.; URBANEK, G.; VYSTRCIL, A.; ZICHA, K.; ZICHA, O.

Floristen as a drug in the treatment of inflammation. Cesk. farm. 3 no.7:247-248 Sept 54.

1. Z Vyzkumneho ustavu lecivych rostlin v Praze.

(PLANTS,
Hypericum perforatum extract, ther. of inflamm.)
(INFLAMMATION, therapy,
Hypericum perforatum extract)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRENIN, A.V.

Actinomycosis of the mastoid process and of the pharynx complicated by leptomeningitis. Vest. otorinolar., Moskva 14 no.6:64-65 Nov-Dec 1952. (CIML 23:4)

1. Candidate Medical Sciences. 2. Of the Clinic for Diseases of the Ear, Throat, and Nose (Head -- Doctor Medical Sciences A. Kh. Min'kovskiy), Chelyabinsk Medical Institute.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTROIL A.

DOLEZEL, B.; RAKUSAN, B.; URBANEK, G.; VYSTROIL, A.; ZICHA, K.; ZICHA, O.

Retisin, a new tissue preparation. Cask. farm. 3 no.7:246-247 Sept 54.

1. Z Vyzkumneho ustavu lecivych rostlin v Praze.
(TISSUE EXTRACTS,
retisin)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CA

Complex organic compounds. A. Vystrčil. Chemie (Prague) 3, 85-9(1948).—The complex org. compds. characterized by multiple and different linkages begin to show special properties as chemiluminescence, to act as oxidases, peroxidases, catalases, and to have high oxidation-reduction potentials. V. tries to relate the org. linkages to the special properties of 23 complex compds.

Frank Marsh

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CA

10

Halogenated acetals or glycerol. A. Vystrčil and J. Vacek (Charles Univ., Prague). *Chem. Listy* 44, 204-10 (1950).—Isopropylideneglycerol was brominated with Br in CCl_4 in the presence of Na_2CO_3 (31.5% yield of a viscous oil, b_{12} 132-4°), with *N*-bromosuccinimide in CCl_4 (52% yield, b_{12} 130-7.5°), and with Br in C_5H_5N [illegible] *Bromoisopropylideneglycerol* (I) (39%), b_{12} [illegible] prepd. from glycerol and $BrCH_2COMe$ with dry HCl. I and thiourea gave the corresponding isothiuronium bromide on boiling in EtOH. This was characterized as a *picrate*, m. 134°, which, on heating in EtOH gave [illegible] *picrate*, m. 222°, of *4-methyl-2-aminothiazole*. I (21.1 g.) heated 3 hrs. at 130-40° with 50 g. KOH in 200 ml. quinoline, dild. with 50 ml. water, and the quinoline layer distd. at 15-16° yielded fractions at 70-1° (4.28 g.) and at 88-9° (2.98 g.) of identical compn. The lower-boiling fraction gave *glycolaldehyde dinitrooxazone* on boiling with $2,4-(O_2N)_2C_6H_3NHNH_2$. I (82.3 g.) with 9 g. Na in 150 ml. EtOH was refluxed 3 hrs., the EtOH stripped off, 200 ml. water added, and the red soln. extd. with Et_2O; distn. yielded *ethoxyisopropylideneglycerol* as a main fraction, b_{10} 97-102° or b_{10} 94-6°. (*1,1'-Dichloroisopropylidene*)*glycerol* (31%), b_{10-8} 225°, was prep. by heating 12.7 g. $(ClCH_2)_2CO$, 9.2 g. glycerol, and 100 ml. PhMe 8 hrs. with 0.5 g. *p*-$MeC_6H_4SO_3H$, washing the mixt. with Na_2CO_3, drying, and distg. M. Hudlický

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CA

Addition of amines to methyl methacrylate and the effect of water (on the reaction product). A. Vystrčil and S. Hudeček (Charles Univ., Prague). *Chem. Listy* 44, 202-9 (1950).—Aliphatic amines add to $CH_2:CMeCO_2Me$ (I) and form *N*-substituted $H_2NCH_2CHMeCO_2Me$ in nonaq. mediums. I (1 mole) and 1.1 moles Bu_2NH, $C_5H_{10}N$, morpholine, and piperazine, resp., in abs. EtOH were allowed to stand at room temp. 22 days; vacuum distn. yielded 93% $Bu_2NCH_2CHMeCO_2Me$, b_{10} 88.5°, 77% $C_5H_{10}NCH_2CHMeCO_2Me$, b_{10} 99.5-101°, 61.2% $O(C_4H_8)$-$NCH_2CHMeCO_2Me$, b_{10} 112°, and 3.8% α-methyl-1-piperazinepropionic acid piperazide, m. 221° (decompn.), resp. In aq. medium, a shift of the esterically-bound Me to the amino group resulted in the formation of *N*-methyl-substituted betaines: Approx. 30% aq. solns. of amines (2.5 moles) were treated with 1 mole I, the mixt. homogenized with EtOH, the solvents stripped off *in vacuo* after 4 weeks at room temp., the residues treated with EtOH-Et_2O (1:1), allowed to crystallize, and the hygroscopic products recrystd. from EtOH. From $EtNH_2$, Me_2NH, Bu_2NH, and $C_5H_{10}N$, the following compds. were obtained: 95% $EtMeNCH_2CHMeCO_2H$, m. 130-6.5°, 98% $Me_3\overset{+}{N}CH_2CHMeCO_2^-$, m. 123-4°, 92% $MeBu_2\overset{+}{N}CH_2CHMeCO_2^-$ (II), m. 85.5-6.5°, and 95% $MeC_5H_{10}\overset{+}{N}CH_2CHMeCO_2^-$ (III), m. 106-8°. NH_3 and $MeNH_2$ formed $CH_2:CMeCONH_2$ (m. 104-5°, 62%) and $MeNHCH_2CHMeCONHMe$, resp. The amino acids and betaines were titrated with $HClO_4$ in AcOH. II and III were decompd. at 140° and 175°, resp., and the liberated amines titrated.

M. Hudlický

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

C. 4.

Dihydroxyacetone. I. Oxidation of glycerol and separation of products. A. Vystrčil. *Chem. Listy* 42, 73-[illegible] (1948).—A method for the sepn. of the 2,4-dinitrophenylhydrazones of $CO(CH_2OH)_2$ (I) and glyceraldehyde (II) on the basis of different solv. in $CHCl_3$-petr. ether has been worked out. A mixt. of the dinitrophenylhydrazones in EtOH was added to $CHCl_3$-petr. ether (1:5) and EtOH and extd. with water; the dinitrophenylhydrazone of I stayed in soln., that of II sepd. in crystals. By means of this method and chromatographic sepn. of the dinitrophenylhydrazones, the relative amts. of I and II resulting from the oxidation of glycerol with various oxidants were detd. The yields (%) of I and the ratios I:II are given following the names of the oxidants: HNO_3, 6, 1:10; Br + Na_2CO_3, 31.8, 7:1; NaOCl, 16, 4:1; electrolytically (Pt electrodes, 30 v.), 23, 1:1; H_2O_2 + $FeCl_3$, 18, 1:10; H_2O_2 + $FeCl_3$ + quinhydrone, 7, 1:3; Pt glycerate + Br, 28, 1:1.2. CH_2O was found among the products (1.8 and 12%, resp.) of the oxidation with Br, NaOCl, and electrolytically.

M. Hudlický

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CA

Polymerization of methyl methacrylate in the presence of benzaldehyde. A. Vystrčil and M. Bohdaneckỳ *Chem. Listy* 43, 97-102(1949).—BzH accelerates the polymerization of methyl methacrylate, the effect increasing with concn. of BzH; the dependence on concn is not linear. The degree of polymerization is unchanged by BzH during the block polymerization; in soln., the degree of polymerization decreases with time and with increasing concn. of BzH. Concns. of BzH up to 3.3% were used. M. Hudlicky

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

CA

A new method for the preparation of sulfanilylguanidine. J. Stanek and A. Vystrčil (Charles Univ., Prague). *Chem. Listy* 40, 280-90(1946).—*Sulfanilylguanidine* (I) was obtained by the hydrolysis of (*N*-*acetylsulfanilyl*)*guanidine* (II) which was prepd. from *p*-AcNH$C_6H_4SO_2H$ (III) and $MeSC(NH_2)$:NH (IV) or $H_2NC(:NH)SH$ (V). III (18.2 g.), 27.8 g. IV.H_2SO_4, and 6.9 g. K_2CO_3 heated at 200° gave 16.3 g. (72%) II. From 13.4 g. V.2HNO_3 and 6.9 g. K_2CO_3 added to 18.2 g. molten III at 220° during 30 min. was obtained 13.7 g. (61%) II; boiling 22.4 g. II 2.5 hrs with 200 ml. 2 *N* HCl, neutralized with NH_3, and crystn. from 300 ml. H_2O yielded 15 g. (82%) I, m. 180-90°. M. H.

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CA

Pyrazole series. A. Vystrčil and Z. Stejskal. *Časopis Českého Lékárnictva* 69, 76-85(1950); cf. following abstr.—In the condensation of $PhNHNH_2$ (I) and $CH_2:CMeCO_2Me$ (II) a no. of acidic and alk. catalysts were used at several ranges of temp. Freshly distd. I (5.4 g.), 5 g. II, and 0.05 g. hydroquinone (III) were stored in sealed tubes in const. temp. baths of the desired temp. for 12 hrs. with the following product yields (%): 135-40°, 1-phenyl-4-methyl-5-pyrazolidone (IV), 11.25; 160-5°, IV 32.41, 1-phenyl-4-methyl-3-pyrazolidone (V) 2.7; 180-2°, IV 72.6, V 4.00, 1-phenyl-4-methyl-5-pyrazolone (VI) 0, 1-phenyl-4-methyl-3-pyrazolone (VII) 1.73; 190-3°, IV 74.9, V 4.57, VII 5.79; and 200-10°, IV 70.02, V 4.78, VI 4.78, and VII 10.23. When 5.4 g. I and 7.5 g. II were heated 12 hrs. in the presence of 0.1 g. of III, the yields (%) were: 135-40°, IV 9.54; 160-5°, IV 33.3, V 1.28; 180-2°, IV 74.3, V 4.85; 190-4°, IV 77.5, V 5.08, VII 1.15; and 210-15°, IV 73.8, V 5.46, and VII 1.73. For 5.1 g. I, 5 g. II, and 0.05 g. III the yields were: 135-40°, IV 6.37; 160-5°, IV 21.82; 180-6°, IV 69.3, V 5.92, VII 2.56; 190-4°, IV 69.2, V 5, VI 4.94, VII 5.51; and 220-5°, IV 20.7, V 12, VI 52.8, and VII 7.92. In the presence of 10 cc. 70% AcOH and 0.05 g. III, condensation of 5.4 g. I with 5 g. II for 12 hrs. at various temps. yielded V in the following quantities (%): 130-2° 41.00, 140-3° 69.00, 150-2° 77.20, 165-70° 76.00, 185-90° 59.50. I (5.4 g.) and 7.5 g. II heated 12 hrs. in the presence of 0.05 g. III and 10 cc. 70% AcOH gave the following yields of V: 140-3° 70.02, 150-2° 70.50, 165-75° 76.25, and 185-90° 73.70. The effect of time on yield of V is shown by the following series in the interaction of 5.4 g. I and 5.5 g. II in the presence of 0.05 g. III and 10 cc. of 70% AcOH: 2 hrs. 32.15, 3 hrs. 47.00, 4 hrs. 70.20, 5 hrs. 76.00, 6 hrs. 77.20, and 10 hrs. 73.10%. I and II were condensed in the presence of MeONa in a flask by dissolving 5 g. Na in 25 cc. of MeOH, adding 1 g. III in 5 cc. MeOH, and then quickly introducing a mixt. of 10.8 g. I and 10 g. II; after the exothermic reaction subsided the mixt. was refluxed 3 hrs. on a H_2O bath, the MeOH distd. off on a H_2O bath, 200 g. warm H_2O added, the red soln decolorized with 5 g. C, filtered, the filtrate exactly neutralized with dil. AcOH, heated to boiling, 2 g. $NaHSO_3$ and 5 g. Carboraffin were added, and the mixt. was rapidly filtered; upon cooling 70.8% V, m. 129-130° (m.pe. uncorr.), ppitd. Extn. of the C with EtOH yielded 12.08% VII, m. 208-8.5°. Heating 1 hr. instead of 3 hrs. yielded 72.7% V and 4.71% VII; 8 hrs.' heating gave 67.8% V and 20.1% VII. Condensation in the presence of NaNH, resulted in low yields of these derivs. Condensation of 2.90 g. of the betaine, $MeEtNCHMeCO_2H$ (VIII), and 2.16 g. I in the presence of 50 cc. 0.5 *N* H_2SO_4 at 140-50° for 0.5 hr., followed by 20 cc. more of 0.5 *N* H_2SO_4 and another 0.5 hr. of heating, resulted in 93.2% decompn. of VIII and 61% yield of IV. Condensation of 3.70 g. the betaine, Me α-methyl-1-piperidinepropionate (IX), and 2.16 g. I at 170-80° for 3 hrs. yielded 90.2% IV. Condensation of 10.8 g. I with 10 g. $MeCH:CHCO_2Me$ (X) in the presence of 0.5 g. III for 12 hrs. at 180-5° yielded 60.2% 1-phenyl-3-methyl-5-pyrazolidone (XI), m. 81-2.5°, 4.42% 1-phenyl-5-methyl-3-pyrazolidone

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(XII), m. 125-6°, and 18.85% 1-phenyl-3-methyl-5-pyrazolone (XIII), m. 124.5-5°. In the presence of 10 cc. 60% AcOH and 0.5 g. III, 5.4 g. I and 5 g. X heated 5 hrs. at 150-5° gave 46.66% XII. In the presence of MeONa (5 g. Na), 10.8 g. I and 10 g. of X gave 4.72% 1-phenyl-5-methyl-3-pyrazolone (XIV), m. 165-5°, and 47.7% XII. Condensation of Me cinnamate with I gave no pyrazolidine derivs., only PhCH:CHCONHNHPh being produced. The properties of the new compds. were: IV, m. 109.5-10°, insol. in alkalies, sol. in dil. acid; IV with Ac_2O yielded the 3-*Ac derivs.*, $b_{1.5}$ 151-8°, m. 61-2° (from CCl_4); dehydrogenation with Br and with $Ca(ClO)_2$ yielded VI, m. 142.5-3°. V, m. 129.5-30°, sol. in alk. and acid soln., gave VII, m. 207.5-8°, with HgO or $FeCl_3$, *1-(bromophenyl)-4-methyl-5-pyrazolone* (XV), m. 233-4°, with Br in AcOH. XV with 2 *N* NaOH yielded the Na salt, $C_{10}H_6ON_2BrNa.2H_2O$, which with $CuSO_4$ yielded $(C_{10}H_6ON_2Br)_2Cu.H_2O$.

James L. Ieal

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Halogenated acetals of glycerol. A. Vystrčil and J. Vacek (Charles Univ., Prague). *Chem. Listy* 44, 204-10 (1950).—Isopropylideneglycerol was brominated with Br in CCl_4 in the presence of Na_2CO_3 (31.5% yield of a viscous oil, b_{10} 132-4°), with *N*-bromosuccinimide in CCl_4 (52% yield, b_{10} 130-7.5°), and with Br in C_5H_5N (72% yield). *Bromoisopropylideneglycerol* (I) (39%), b_{10} 132-4°, was prepd. from glycerol and $BrCH_2COMe$ with dry HCl. I and thiourea gave the corresponding isothuronium bromide on boiling in EtOH. This was characterized as a *picrate*, m. 134°, which, on heating in EtOH gave the *picrate*, m. 222°, of *4-methyl-2-aminothiazole*. I (21.1 g.) heated 3 hrs. at 130-40° with 50 g. KOH in 200 ml. quinoline, dild. with 50 ml. water, and the quinoline layer distd. at 15-16° yielded fractions at 70-1° (4.28 g.) and at 88-9° (2.98 g.) of identical compn. The lower-boiling fraction gave *glycolaldehyde dinitrosoazone* on boiling with $2,4-(O_2N)_2C_6H_3NHNH_2$. I (82.1 g.) with 9 g. Na in 150 ml. EtOH was refluxed 3 hrs., the EtOH stripped off, 200 ml. water added, and the resl. soln. extd. with Et_2O; distn. yielded *ethoxyisopropylideneglycerol* as a main fraction, b_{10} 97-102° or b_{15} 94-6°. *(1,1'-Dichloroisopropylidene)glycerol* (31%), b_{10-15} 225°, was prepd. by heating 12.7 g. $(ClCH_2)_2CO$, 9.2 g. glycerol, and 100 ml. PhMe 8 hrs. with 0.5 g. *p*-$MeC_6H_4SO_3H$, washing the mixt. with Na_2CO_3, drying, and distg. M. Hudlický

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CA

The pyrazole series. III. Alois Vystrčil and Jaromír Vašíčka (Charles Univ., Prague, Czech.). *Chem. Listy* 45, 407-9(1951); cf. preceding abstr.—*3-Ethylmercapto-4-methyl-6-hydroxypyrimidine* (I) was methylated to the MeO compd. (II) which gave *3-hydrazino-4-methyl-6-methoxypyrimidine* (III) on heating with N_2H_4. III with furfural and $AcCH_2CO_2Et$ (IV) gave the corresponding hydrazones (V and VI, resp.). The 6-Cl analog (VII) of I heated with N_2H_4 gave the *6-hydrazino compd.* (VIII) and *3-hydroxy-4-methyl-6-hydrazinopyrimidine* (IX). VIII and IV yielded *3-ethylmercapto-4-methyl-6-pyrimidylhydrazone* (X) of IV. IX and IV gave *1-(3-hydroxy-4-methyl-6-pyrimidyl)-3-methyl-5-pyrazolone* (XI). I (8.51 g.) was refluxed 6 hrs. with 9 g. MeI in 50 ml. EtOH contg. 1.15 g. Na. The EtOH (30 ml.) distd. off, the residue poured into water, and the oily layer extd. with Et_2O and distd., yielding 4.85 g. (52.5%) II, b. 110-15°, m. 58-9°. II (8.6 g.) and 5 ml. 94% N_2H_4 in H_2O were refluxed in 50 ml. EtOH 4 hrs., the crystals of III septd., the mother liquor was evapd., and both crops were recrystd. from EtOH, yielding 5.26 g. (70.5%) III, m. 190-201°. Furfural and III gave V (*3-furfurylidenehydrazino-4-methyl-6-methoxypyrimidine*), m. 128-8.5°. III (3 g.) and 2.65 g. IV were refluxed in 50 ml. EtOH 2 hrs., the EtOH was distd. off, and the oily residue dissolved in 120 ml. boiling water, yielding 3.00 g. VI on cooling, and an addnl. 0.75 g. on evapg.; the 2 crops, after recrystn. from EtOH, m. 114.5-15°. VII (9 g.) and 7.5 g. 90% $N_2H_4.H_2O$ were refluxed in a 50 ml. EtOH soln. 3 hrs. and the residue, after evapn. of the EtOH, was extd. hot with Et_2O, yielding 4.02 g. VIII, m. 91-2°. The extn. residue (1.85 g.), m. 211°. Shorter reaction time favored the formation of VIII. VIII and IX treated with furfural gave hydrazones, m. 125° and 234°, resp. VIII (1.84 g.) and 1.30 g. IV were heated 30 min. on a steam-bath, cooled, dissolved in CCl_4, and pptd. with petr. ether; cooling with Dry Ice gave 1.02 g. X, m. 70-1°. IX (1.40 g.) and 1.30 g. IV refluxed 3 hrs. in 10 ml. EtOH, the mixt. evapd., the residue dild. with water, and the crystals recrystd. from dil. EtOH yielded 1.61 g. (78%) XI, m. 205°.

M. Hudlický

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VYSTRCIL, A.; RIHOVA, E.

Triterpenes. Pt. 6. Coll Cz Chem 29 no.10:2377-2388 O '64.

1. Institut fur organische Chemie, Karlsuniversitat, Prague.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

KLINOT, J.; VYSTRCIL, A.

Beckmann's regroupment of triterpene-3-ketoximes. Coll Cz Chem 27 no.2:377-386 F '62.

1. Institut fur organische Chemie, Karlsuniversitat, Prag.

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COUNTRY : CZECHOSLOVAKIA
CATEGORY : Organic Chemistry. Natural Substances and Their Synthetic Analogs
ABS. JOUR. : RZKhim., No.23 1959, No.82428

AUTHOR : Vystrcil, A.; Cerny, J.
INST. :
TITLE : Model Substances of Physostigmine

ORIG. PUB. : Collect. Czechosl. Chem. Communs, 1959, 24, No 3, 804-808
ABSTRACT : No abstract.
See RZhKhim., 1959, No 4, No 11958.

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VYSTRCIL, ALOIS

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Model compounds for physostigmine. Alois Vystrčil and Jiří Černý (Karlova Univ., Prague). *Chem. listy* 52, 401-7 (1958).—Substituted pyrrolidines such as *1-methyl-3-phenylpyrrolidine* (I), *1,3-dimethyl-3-phenylpyrrolidine* (II), and *1,2,3,4-tetramethyl-4-phenylpyrrolidine* (III) were prepd. by reduction with $LiAlH_4$ of pyrrolidones or substituted succinimides. Heating a mixt. of 10 g. $HO_2CCH_2CHPhCO_2H$ and 3.6 g. $MeNH_2$ in 11.5 ml. H_2O until the temp. reached 210°, dissolving the ppt. in 30 ml. hot EtOH, filtering the soln. with activated C, and cooling gave 6 g. crude and 3.2 g. pure *1-methyl-3-phenyl-2,5-dioxopyrrolidine* (IV), m. 58° (EtOH). Refluxing 3.2 g. IV in 100 ml. Et_2O with 1.52 g. $LiAlH_4$ in 150 ml. Et_2O 10 min., decompg. the mixt. with H_2O, adding a 10% soln. of Na K tartrate, sepg. the Et_2O layer, extg. the aq. layer with Et_2O, and distg. the Et_2O yielded 2.1 g. I, b_3 82-5°; *picrate*, in C_6H_6 soln., m. 155° (H_2O). Treatment of 9.4 g. $HO_2CCH_2CMePhCO_2H$ with 2.76 g. $MeNH_2$ in 8.9 ml. H_2O as described above, and recrystn. of the product yielded 2.9 g. *1,3-dimethyl-3-phenyl-2,5-dioxopyrrolidine* (V), m. 51° (EtOH). Reducing 2.9 g. V in 100 ml. Et_2O with 0.9 g. $LiAlH_4$ in 150 ml. Et_2O yielded 1.8 g. II, $b_{1.4}$ 82°. Dissolving 20 g. $O_2NCH_2CHPhCH_2CO_2Et$ in 200 ml. EtOH, adding 2 g. Raney Ni, hydrogenating the mixt. at normal pressure, and evapg. the filtrate gave 7.8 g. Et 4-phenyl-2-oxopyrrolidine-3-carboxylate (VI), m. 125-6° ($CHCl_3$-petr. ether). Refluxing 4 hrs. 6.62 g. VI with 140 ml. EtOH and 30 ml. HCl, distg. the EtOH, filtering off the crystals, and evapg. the mother liquor gave 3.6 g. *4-phenyl-2-pyrrolidone* (VII), m. 76-7°. Dissolving 3.4 g. VII in 30 ml. MeOH, adding a soln. formed by dissolving 0.49 g. Na in 25 ml. MeOH, treating the mixt. with 3.49 g. MeI, allowing the mixt. to stand 20 hrs. at room temp., filtering the mixt., evapg. the filtrate, digesting the residue with $CHCl_3$, filtering, and evapg. the filtrate gave 1.9 g. *1-methyl-3-phenyl-5-pyrrolidone* (VIII), m. 145-6° (Et_2O-petr. ether). Treating 1.6 g. VIII in 30 ml. dioxane with 0.41 g. $LiAlH_4$ in 30 ml. dioxane gave I, b_3 82-5°; *picrate*, m. 155°. Satg. a soln. of $Me_2C(CN)NHCOCH_2Ph$ in 250 ml. EtOH with HCl and distg. the EtOH after 10 hrs. at room temp. gave 41 g. *$Me_2C(CO_2Et)NHCOCH_2Ph$* (IX), m. 97°. Treating 5.5 g. IX with 0.96 g. Na dust in 50 ml. xylene and decompg. the reaction mixt. with an excess of 10% AcO yielded 1.2 g. *3-phenyl-5,5-dimethyl-2,4-dioxopyrrolidine*, m. 219° (X). MeONa prepd. from 0.225 g. Na and 10 ml. MeOH, was mixed with a soln. of 1 g. X in 20 ml. MeOH, the mixt. was treated with 1.4 g. MeI and 0.4 g. HgO and heated 20 hrs. at 100°. Evapn. and washing of the residue with dil. $Na_2S_2O_3$ yielded 0.5 g. *1,2,2,4-tetramethyl-4-phenyl-3,5-dioxopyrrolidine* (XI), m. 185°. Reduction of 0.5 g. XI in 200 ml. Et_2O with 1.52 g. $LiAlH_4$ in 150 ml. Et_2O gave 0.2 g. III, m. 147°. Treating NaOEt from 2.8 g. Na in 25 ml. EtOH with 24.5 g. $AcCHPhCO_2Et$ and then with 17 g. MeI, refluxing the mixt. 2 hrs., evapg., dissolving the residue in 35 ml. H_2O, extg. the ester with Et_2O, washing the ext. with H_2O, and distg. the ext. yielded 13.7 g. *$AcCMePhCO_2Et$* (XII), b_{11} 104-7°, n^{20} 1.5000. Refluxing a mixt. of 7.5 g. XII, 6 g. *N*-bromosuccinimide and 0.01 g. Bz_2O_2 in 25 ml. CCl_4 6 hrs. on the steam-bath, filtering the mixt. and evapg. the filtrate gave 6 g. $BrCH_2COCMePhCO_2Et$, b_{11} 112-25°. M. Hudlický

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Vystrcil, Alois

E-3

CZECHOSLOVAKIA/Analytical Chemistry - Analysis of Organic Substances.

Abs Jour : Ref Zhur - Khimiya, No 8, 1958, 24919

Author : Starka Lubos, Vystrcil Alois

Inst : -

Title : Chromatographic Separation of Some Derivatives of Anthraquinone.

Orig Pub : Chem. listy, 1957, 51, No 2, 378-380; Sb. chekhosl. khim. rabot, 1957, 22, No 5, 1686-1688

Abstract : A study of the behavior of amino-anthraquinones and hydroxy derivatives of anthraquinone and anthrone in paper chromatography, using paper impregnated with 10% alcohol solution of foramide, and determination of the corresponding R_f values. The solvent was a mixture of alcohol and benzene (1:1). Development was effected with petroleum ether containing 6% chloroform. Chromatograms of anthrone derivatives were developed in an atmosphere of SO_2.

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[illegible] of the molecule. The methylation and acetylation of alpha-hydroxy group result in a lowering of R_f value, while the same conversions of the beta-hydoxy group produce the opposite effect. The amino-group is more polar than the hydroxy-group, and differences in properties of alpha- and beta-amino derivatives are relatively slight. Derivatives of anthraquinone have higher R_f values than the corresponding derivatives of anthrone, due to enolization of the latter.

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VYSTRCIL, ALOIS

CZECHOSLOVAKIA / Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khim., No 10, 1958, No 31893

Author : Lubos Starka, Alois Vystrcil, Bela Starkova
Inst : -
Title : Upon the Polarographing Anthraquinone Derivatives in Glacial Acetic Acid.

Orig Pub : Chem. listy, 1957, 51, No 8, 1440-1448; Collect. czechosl. chem. comm., 1958, 23, No 2, 206-215.

Abstract : The polarographic behavior of some substituted anthraquinone (I) and helianthrone (II) derivatives in glacial CH_3COOH with 10%-ual H_2SO_4 as background was studied. In the cases of all the 40 studied I and II derivatives, two-electron diffusion reduction waves, usually accompanied by adsorption phenomena, are observed. Kalousek's commutator was used for the study of reversibility of the electron process. The inclination of the curves is less than that which

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CZECHOSLOVAKIA / Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khim., No 10, 1958, No 31893

1-benzoylamino-2-chloro-I - -0.23_8 v; 1-amino-2,4-dibromo-I - -0.22_6 v; 1-amino-2-methyl-4-chloro-I - -0.22_7 v; 1-amino-2-methyl-4-bromo-I - -0.23_3 v; 1-acetylamino-2-methyl-4-bromo-I - -0.23_9 v; 1-sulfonic acid-I - -0.20_0 v; 1-chloro-I - -0.23_7 v; 2-chloro-I - -0.28_4 v; 1,5-dichloro-I - -0.24_4 v; 2,6-dichloro-I - -0.26_6 v; 1-chloro-2-carboxy-I - -0.24_0 v; phenanthraquinone - 0.05 v; helianthrone (II) - -0.18 v; 4,4'-dioxy-2,2'-dimethyl-II - -0.20 v; 4,4'-dioxy-3,3'dimethoxy-II - -0.25 v. The substitution with the -OH group in the α or β position causes a $E_{\frac{1}{2}}$ shift of 50 mv to the negative side. The substitution with the -Cl, $-OCH_3$, $-OCOCH_3$ and $-CH_3$ groups in the β position causes a $E_{\frac{1}{2}}$ shift of 15 mv to the negative side, but the same groups in the α position cause a shift to the positive side. Induction effects prevail in the case of substitution in the α position, and tautomeric effects prevail in the case of

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CZECHOSLOVAKIA

ELIEOT, J; VYSTROIL, A

Department of Organic Chemistry, Karlova University, Prague - (for both)

Prague, Collection of Czechoslovak Chemical Communications, No 3, March 1966, pp 1079-1092

"Triterpenes. Part 7: Stereochemistry of 2-bromo derivatives of allobetuline and allohoterobetuline."

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VYSTRCIL, ALOIS

CZECHOSLOVAKIA / Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khim., No 10, 1958, No 31894

Author : Lubos Starka, Alois Vystrcil

Inst : -

Title : On Polarographing Anthrone Derivatives in Glacial Acetic Acid.

Orig Pub : Chem. listy, 1957, 51, No 8, 1449-1452; Collect. czechosl. chem. communs, 1958, 23, No 2, 216-220.

Abstract : Anthrone (I) and benzanthrone in glacial CH_3COOH with an addition of 10%-ual H_2SO_4 cause the formation of a irreversible two-electron wave, the height of which is limited by the diffusion rate. The more difficult reduction of I is explained by the possibility of enolization. The substitution with the -OH group in the positions 2, 3, 6 or 7 stabilizes the enol form, which is indicated by the shift of $E_{\frac{1}{2}}$ by about 100 mv to the negative side. The fol-

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CZECHOSLOVAKIA / Physical Chemistry. Electrochemistry.

Abs Jour : Ref Zhur - Khim., No 10, 1958, No 31894

lowing $E_{\frac{1}{2}}$-s were found (sat. cal. el.): I - -1.01 v; 1-oxy-I - -1.02 v; 3-oxy-I - -1.06 v; 4-oxy-I - -0.98 v; 1,2-dioxy-I - -1.12 v; 1-oxy-2-methoxy-I - -1.01 v; 1,8-dioxy-I - -1.20 v; 3,4-dioxy-I - -1.07 v; 4,5-dioxy-I - -1.01 v; 1,2,3,-trioxy-I - -1.18 v; 3,4,6-tioxy-I - -1.27 v; 4-chloro-I - --.00 v; 1,5 dichloro-I - -0.99 v; 1,8-dichloro-I - -1.08 v; benzanthrone - -0.89 v. Only little shifts of the $E_{\frac{1}{2}}$-s are observed at the substitution by the group -OH in the positions 1,4,5 or 8, which is explained by the formation of hydrogen bonds or the steric influence. Bianthronyls are reduced with the formation of two waves; the $E_{\frac{1}{2}}$-s of the first wave are: bianthronyl (II) - -0.62 v; 4,4'-dioxy-II - -0.61 v; 1,1'-dioxy-2,2'-dimethoxy-II -

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CZECHOSLOVAKIA / Physical Chemistry. Electrochemistry. B-12

Abs Jour : Ref Zhur - Khim., No 10, 1958, No 31894

-0.69 v; 1,1'-dioxy-8,8'-dimethoxy-II - -0.81 v; 3,3',4,4'-tetraoxy-II - -0.58 v; 1,1'-dichloro-II - -0.77 v; 1,1',5,5'-tetrachloro-II - -0.70 v.

The $E_{\frac{1}{2}}$-s of the second wave are by about 400 mv more negative.

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VYSTRCIL, A.

CZECHOSLOVAKIA

ZAHRADNIK, R; VYSTRCIL, A.

1. Institute of Physical Chemistry, Czechoslovak Academy of Science, Prague; 2. Department of Organic Chemistry, Charles University, Prague (for all)

Prague, Collection of Czechoslovak Chemical Communications, Vol 5, 1963, pp 1334-1337

"Study of Aurones. III. Attempt for Theoretical Explanation of the Formation of Benzofuran Derivative from Aurone."

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VISTRCIL, A.; STARKA, L.

Chromatographic separation of some anthraquinone derivatives. p. 378. (Chemicke Listy, Vol. 51, No. 2, Feb. 1957.)

SO: Monthly List of East European Accession (EEAL) Vol. 6, no. 7, July 1957. Uncl.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.

VYSTRCIL, A. Polarography of urea and thiourea derivatives. V III. Anodic depolarization in solutions of some 2-mercaptoquinazoline-4-ones. p. 62. Vol. 50, no. 1, Jan. 1956. CHEMICKE LISTY. Praha, Czechoslovakia.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4, April 1957

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, A.

VYSTRCIL, A. Studies on the thioquinazolone series. III. Synthesis and desulfuration of 1-methyl-2-thio-3-phenyl-1, 2-dihydroquinazolone-(4). p. 666. Vol. 50, no. 4, Apr. 1956. Praha, Czechoslovakia. CHEMICKE LISTY.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL 6 NO 4 APRIL 1957

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VYSTRCIL, A.

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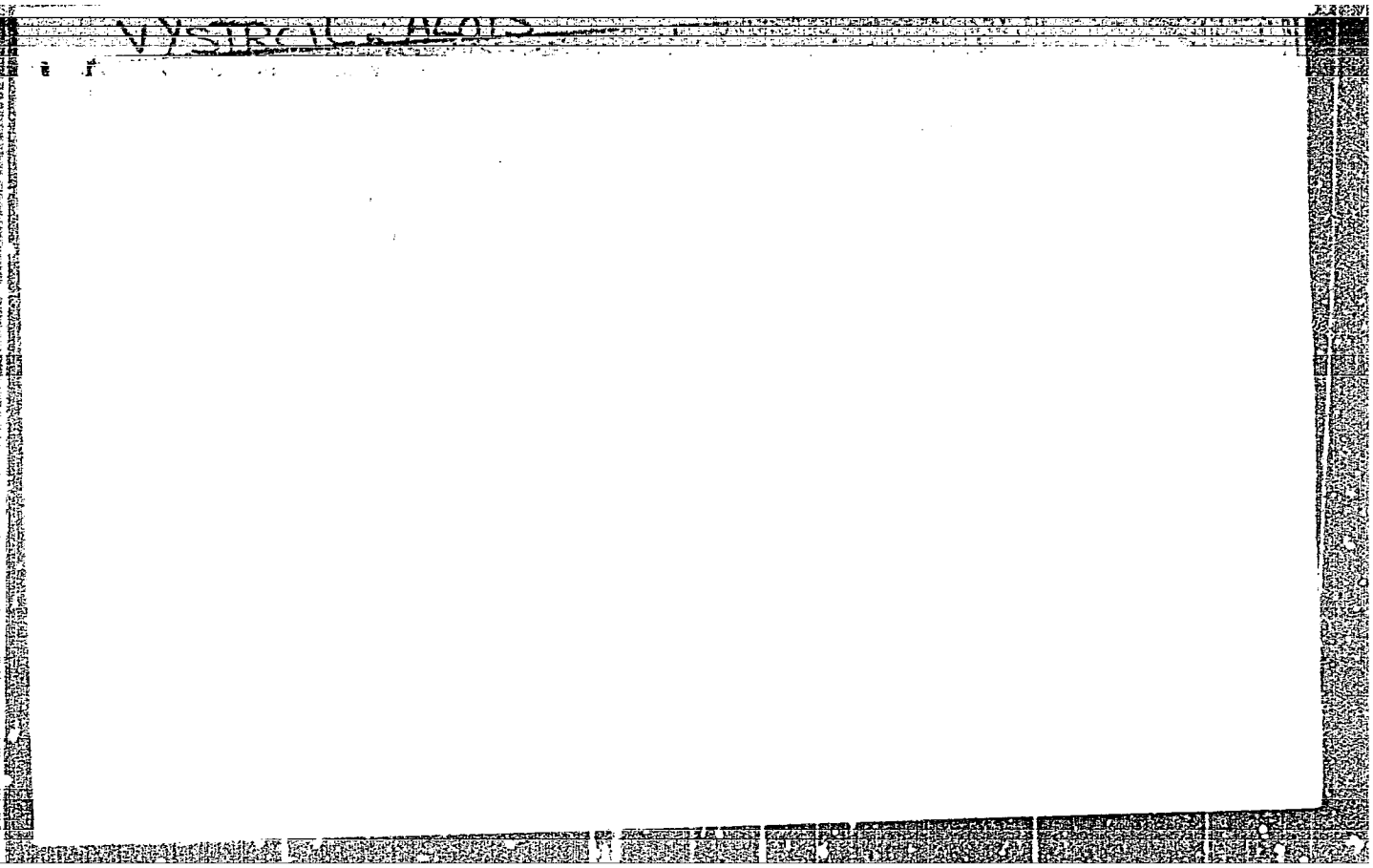

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VISTRČIL, A.

(I) gave 3-substituted-4(2H)-quinazolones (II). [(R = H)
(III) (0.01 mole), prepd. in 21% yield by heat on K.S.N

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VYSTRČIL, ALOIS

The mercaptoquinazolone series. I. Desulfuration of 2-thio-4-quinazolones with Raney nickel. Cyril Párkányi and Alois Vystrčil (Charles Univ., Prague). *Chem. Listy* 50, 100-16(1956).—Raney Ni desulfuration of 3-substituted-2-mercapto-4(3*H*)-quinazolones (substituent = R) (I) gave 3-substituted-4(3*H*)-quinazolones (II). I (R = H) (III) (0.01 mole), prepd. in 24% yield by heating KSCN and *o*-$MeO_2CC_6H_4NH_2.HCl$ 6 hrs., m. 298°, refluxed and stirred 3 hrs. with 15 g. Raney Ni W1 in 400-500 ml. EtOH gave 92% II (R = H), m. 210-12° (from H_2O), also obtained in 28.5% yield by desulfuration of *2-methylmercapto-4(3H)-quinazolone* (prepd. in 71% yield from III and MeI), m. 213° (from MeOH). I (R = Ph) (IV), m. 290°, was prepd. according to Freundler [*Bull. soc. chim. France* [3], 31, 882(1904)] in 95% yield. IV with MeI in alc. KOH gave 82.5% *2-Me thioether* (V), m. 128° (from EtOH-H_2O). Heating 4.3 g. KOH in 80 ml. 50% EtOH and 17.8 g. IV on the steam bath, dilg. with 80 ml. EtOH and 10 ml. H_2O, adding 9 g. $PhCH_2Cl$, heating 30 min., filtering, and allowing the filtrate to stand 3 days gave 21.5 g. *2-benzyl thioether* (VI), m. 169.5° (from AcOEt). Desulfuration of IV, V, and VI gave II (R = Ph), m. 138-9° (from C_6H_6), in 80, 51, and 69% yields, resp. Refluxing 8.5 g. *o*-HO_2C-$C_6H_4NH_2$, 150 ml. EtOH, and 9.23 g. $PhCH_2NCS$ (bp 140-2°) 3 hrs., allowing the mixt. to stand 1 day, and evapg. the mother liquors gave 4.75 g. I (R = $PhCH_2$) (VII), m. 216-7° (from EtOH); desulfuration yielded 57% II (R = $PhCH_2$), m. 115.5-16.5° (from AcOEt-petr. ether). Ultraviolet spectra are given for II (R = H), III, IV, and VII.

M. Hudlický

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Vystrcil, Alois

5

CH

Polarography of derivatives of urea and thiourea. VIII. Anodic depolarization in solutions of some 2-mercapto-4-quinazolones. Cyril Packányi and Alois Vystrčil (Karlova univ., Prague). *Chem. Listy* 50, 62-8(1956); cf. Fedoroňko, *C.A.* 50, 79a.—The polarographic behavior of 2-mercapto-4-quinazolone, 2-mercapto-3-phenyl-4-quinazolone, and 2-mercapto-3-benzyl-4-quinazolone in aq. buffer solns., alk. hydroxides, and in alc. KOH solns. was described. In all these cases anodic depolarization complicated by adsorption phenomena took place. No anodic depolarization was found with satd. solns. of 2-mercapto-3-phenyl-4-quinazolone in 0.1 M KOH. [illegible]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, B.

Thoroughbreds from Napajedla. p. 42 (Rolnicke Hlasy Vol. 11, no. 1, Jan. 1957 Praha)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTREIL, A.

Chem

CA V-48
Jan, 10, 1954
Organic Chemistry

Pyrazolone series. VI. Condensation of 1-guanyl-5-pyrazolone with β-oxo esters. Alois Vystrčil and Rudolf Prokeš (Charles Univ., Prague, Czech.). *Chem. Listy* 46, 670-1(1952); cf. *C.A.* 46, 7507b.—$H_2NC(:NH)NHNH_2 \cdot HNO_3$ (I) (13.7 g.) in the min. amt. of H_2O and 13 g. $AcCH_2CO_2Et$ in EtOH gave, by salting out with K_2CO_3 after 48 hrs. 15 g. (70.5%) of *1-guanyl-3-methyl-5-pyrazolone nitrate* (II), m. 234° (decompn.) (from EtOH). II (2.1 g.) in 35 ml. EtOH refluxed 3 hrs. with 3 g. $AcCH_2CO_2Et$ in 100 ml. EtOH in the presence of 10 drops of AcOH and the mixt. dild. with water deposited 2.5 g. (57%) $CO.CH_2 \cdot CMe:N.NC(:NH)NHCR:CHCO_2Et$ (III, R = Me), m. 180° (decompn.) (from dil. EtOH), also was obtained in a 44.5% yield (4.9 g.), m. 179° (decompn.), by refluxing 7 g. I carbonate with 16 g. $AcCH_2CO_2Et$ in 50 ml. EtOH. Hydrolysis of III with HCl or dil. H_2SO_4 yielded the corresponding salt; the sulfate m. 161° (from H_2O); *picrate*, m. 184° (from H_2O). Condensation of 1.6 g. II in 60 ml. EtOH with 2 g. $BzCH_2CO_2Et$ in the presence of 10 drops AcOH yielded, after heating at 80° 6 hrs., 0.8 g. (32%) of the *compd.* (IV) (III, R = Ph), m. 185° (from H_2O). *1-Guanyl-3-phenyl-5-pyrazolone*, prepd. in 70% yield, m. 102°.
M. Hudlický

1-24-54

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, V.;KALFUS, K.

"Preparation of 3 (B-Indolyl)-Butyric Acid from 1-Hydroxy-2Carbazole Phenols." p. 179, (COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, SBORNIK CHEKHOSLOVATSKIKH KHIMICHESKIKH RABOT, Vol. 19, No. 1, Feb. 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4 No. 5, May 1955, Uncl.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

Vystrčil, Aloiš

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, Alois

URBANEK, Gabriel; DOLEZEL, Bedrich; RAKUSAN, Bohumir; VYSTRCIL, Alois; ZICHA, Karel; ZICHA, Osvald, Kolektiv RTN; LUNDOVA, Anna, MUDr, asistent I. gynekologicke kliniky prof. Dr. Klause

Tehrapy of chronic gynecological diseases with the tissue preparation Floristen mite (RTN 118) Cas. lek. cesk. 93 no.49:1352-1354 3 Dec 54.

1. Z vyzkumneho ustavu lecivych rostlin, z II. interni kliniky prof. Dr.Vancury a z I. gynekolgicke kliniky prof. Dr. Klause v Praze

(PLANTS, therapeutic use
Hypericum perforatum extract in inflammatory gynecol. dis.)
(GYNECOLOGICAL DISEASES, therapy
Hypericum perforatum extract)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

C. A.

Mannich condensation of acylmalonic esters. Alois Vystrčil and Jaroslav Dalek (Charles Univ., Prague, Czech.). *Chem. Listy* 45, 139-43(1951).—PhCH(OMe)-COCH(CO$_2$Et)$_2$ (I), PhCH(OAc)COCH(CO$_2$Et)$_2$ (II), and PhCH$_2$COCH(CO$_2$Et)$_2$ (III) were prepd. from the corresponding acyl chlorides and EtOMgCH(CO$_2$Et)$_2$ in quant. I and 90% II yields. During the Mannich condensation of I with MeNH$_2$ and CH$_2$O, a fission of I and a formation of MeNHCH$_2$CH(CO$_2$Et)$_2$ (IV) was observed. In the condensation of I with CH$_2$O and piperidine or morpholine, hydrolysis of I occurred and piperidine and morpholine salts of PhCH(OMe)CO$_2$H, m. 142° and 124°, resp. (from C$_6$H$_6$ with EtOH), were isolated. Mannich condensation of PhCH$_2$COCHPhCO$_2$Et (V) with MeNH$_2$ and CH$_2$O gave 1-methyl-3,5-diphenyl-2,4-dioxopiperidine (VI). I (41 g.) in 45 ml. 80% EtOH, 11.4 g. 41% MeNH$_2$, and 21.1 g. 20% aq. CH$_2$O were mixed with cooling, allowed to stand at room temp. 36 hrs., the EtOH evapd., the mixt. acidified with HCl, the unreacted ester extd. with ether, and IV was liberated from the aq. layer with K$_2$CO$_3$; ether extn. yielded 12 g. IV, b. 110-14°; *methiodide*, m. 177° (EtOH). A similar result was obtained when MeNH$_2$.HCl was substituted for MeNH$_2$. Salts of I with piperidine and morpholine, m. 142° and 150° (from C$_6$H$_6$ with small amt. of EtOH), resp., were obtained from I with the amines and CH$_2$O in H$_2$O-EtOH. V (20 g.) in EtOH, 12 g. 33% aq. MeNH$_2$, and 16 g. 20% aq. CH$_2$O were kept at room temp. 3 days; evapn. of the EtOH, acidification, removal of unreacted V, alkalization, and extn. with ether gave 15.5 g. (78%) VI; oxalate, m. 148° (from EtOH).

M. Hudlický

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRCIL, Z.; CERNY, J.

"Model compounds of physostigmine."

p. 494 (Chemicke Listy, Vol. 52, no. 3, 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 9, September 1958

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

USSR/Farm Animals. Horses.

Abs Jour: Ref Zhur-Biol., No 4, 1958, 16760.

Author : Genenko N.V., Vystoropov B.K., Okhamat V.S.
Inst :
Title : Seasonal Changes of the Physical Properties of the Air in the Stable and Their Influence on the Physiological Indexes of Horses (Sezonnyye izmeneniya fizicheskikh svoystv vozdukha konyushni i ikh vliyaniye na fiziologicheskiye pokazateli loshadey)

Orig Pub: Sb. nauchno-issled. rabot stud. Stavropolsk. s.-kh. in-t, 1956, vyp. 4, 90-93.

Abstract: No abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTRELKOV, I.N.; VARAKSIN, N.F.

Packaged freight transportation. Khol.tekh. 40 no.1:51 Ja-F '63. (MIRA 16:3)

(Refrigerated motortrucks)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, M.

PHASE I BOOK EXPLOITATION JUN 26 1963 S/6284 42

Jeric, Jan, ed., Engineer, Doctor, Corresponding Member of the Czechoslovak Academy of Sciences

Základní problémy ve stavbě spalovacích turbin (Basic Problems in the Construction of Gas Turbines [collection of articles]). Prague, Nakl. ČAV, 1962. 627 p. 1600 copies printed.

Sponsoring Agency: Československá akademie věd.

Ed. of Publishing House: Marie Moravcová; Tech. Ed.: František Konečický.

PURPOSE: The book is intended to familiarize turbine designers with recent developments in the design of gas turbines and to present some research results which may be helpful in designing more efficient turbines.

COVERAGE: The book comprises articles by leading Czechoslovak turbine experts on thermodynamic cycles, flow research in turbine components,

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Basic Problems in the Construction (Cont.) Z/6284

J. Vosečálek (State Research Institute for Materials and Technology, Prague). Requirements for Construction Materials of the Principal Turbine Components 183

L. Čížek and M. Vystyd (State Research Institute for Materials and Technology, Prague). Current State and Development of Heat-Resistant Materials for Gas Turbines 199

L. Čížek. Prospective Materials for Use in Gas Turbine Construction 211

Z. Emingor (V. I. Lenin Plant, Plzeň) and J. Krumpos (State Research Institute for Materials and Technology, Prague). The Austenitic Alloy "LZ" 221

M. Vystyd, J. Ježek, and H. Tůma (State Research Institute for Materials and Technology, Prague). The Relationship between the Microstructure and the Properties of Some Heat-Resistant Steels and Alloys 233

Card 4/8

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, Milos; SUCHOMEL, Drahomir, NOVOTNA, Jindra

Precision casting of alloys on the NiCr basis in vacum. Slevarenstvi 11 no.11:457-463 N'63.

1. Statni vyzkumny ustav materialy a technologie, Praha (for Vystyd). 2. Prvni brnenska strojirna (for Suchomel and Novotna).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

ZDENEK, Z., inz.; KECLIK, V.; DEDEK, Vlad., inz.; KRUMNIKL, Fr., inz.; VYSTYD, M.; JENICEK, L.; LIKES, Jiri; HRANOS, Zd., inz.

Informations on metallurgy. Hut listy 16 no.3:217-227 Mr '61.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

23437

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Z/034/61/000/005/006/010
E073/E535

AUTHORS: Löbl, K., Engineer and Vystyd, M., Engineer

TITLE: High creep strength stabilized weldable steel for castings.
Patent Application Class 18d, 2/80, PV 4972-60 dated August 10, 1960

PERIODICAL: Hutnické listy, 1961, No.5, p.365

TEXT: The steel contains max 1.2% Si, max 3.2% Mn, 14 to 20% Cr, 12 to 20% Ni, whereby the P and S contents are below 0.1%. The subject matter of the patent is that the contents of W, Mo, Nb and V are in the ratios (5 ± 3):(3 ± 1.5):(1 ± 0.5):(0.51 ± 0.5), whereby the total quantity of these elements is within the limits of 4 to 10 wt.%. The steel is suitable for castings used in the manufacture of high pressure equipment in the power supply industry etc.

[Abstractor's Note: This is a complete translation.]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

Z/056/62/019/008/002/007
I037/I237

AUTHORS: Vystyd, M., Ježek, J., and Keřkovský, O.

TITLE: Regarding brittleness of glow-proof Chrome-Vanadium steel

PERIODICAL: Přehled technické a hospodářské literatury. Hutnictví a strojírenství v. 19, no 8, 466, refabstract HS62-5922 (1960 Praha SVÚMT, STK 12909)

TEXT: Study of basic properties of glow-proof steel for screws CSN 15233. Limit of rigidity at flow. Relaxation properties. Enhancing brittleness by annealing for a period of 10000 hours. The influence of strain on brittleness. There are 2 photos, 18 microphotos, 1 drawing, 21 diagrams, 5 tables ,and 2 references. From the collection (p. 25-39). Material collection (Materialovy sbornik) 1960, Part II. Glow-proof, glow-resistant and corrosion-resistant steels and alloys.

[Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, M.

Z/6284

PHASE I BOOK EXPLOITATION

Jerie, Jan, ed., Engineer, Doctor, Corresponding Member of the Czechoslovak Academy of Sciences

Základní problémy ve stavbě spalovacích turbin (Basic Problems in the Construction of Gas Turbines [collection of articles]). Prague, Nakl. ČAV, 1962. 627 p. 1600 copies printed.

Sponsoring Agency: Československá akademie věd.

Ed. of Publishing House: Marie Moravcová; Tech. Ed.: František Končický.

PURPOSE: The book is intended to familiarize turbine designers with recent developments in the design of gas turbines and to present some research results which may be helpful in designing more efficient turbines.

COVERAGE: The book comprises articles by leading Czechoslovak turbine experts on thermodynamic cycles, flow research in turbine components, burning of fuel in combustion chambers, axial compressors, and characteristics of turbines manufactured in Czechoslovakia.

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Basic Problems in the Construction (Cont.) Z/6284

J. Vosedálek (State Research Institute for Materials and Technology, Prague). Requirements for Construction Materials of the Principal Turbine Components 183

L. Čížek and M. Vystyd (State Research Institute for Materials and Technology, Prague). Current State and Development of Heat-Resistant Materials for Gas Turbines 199

L. Čížek. Prospective Materials for Use in Gas Turbine Construction 211

Z. Eminger (V. I. Lenin Plant, Plzeň) and J. Krumpos (State Research Institute for Materials and Technology, Prague). The Austenitic Alloy "LZ" 221

M. Vystyd, J. Ježek, and H. Tůma (State Research Institute for Materials and Technology, Prague). The Relationship between the Microstructure and the Properties of Some Heat-Resistant Steels and Alloys 233

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, Milos, inz., CSc.

Materials for gas turbine blades and their treatment. Zpravodaj VZLU no.1:13-18 '63.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VODSEDALEK Josef, inz., ScC.; VYSTYD, Milos, inz., ScC.

Refractory alloys on the Ni-Cr base for castings.
Zpravodaj VZLU no.2:67-71 '63.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, Milos, inz., ScC.; SUCHOMEL, Drahomir

Vacuum casting of turbine blades. Zpravodaj VZLU no.2: 85-90 '63.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, M.; SUCHOMEL, D.

Fusion and casting of refractory alloys in vacuum. Energetika Cz 13 no.9:500 S '63.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

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E073/E335

18.1150 1496,1416

AUTHORS: Vystyd, M., Engineer, Candidate of Sciences and Čížek, L., Engineer, Candidate of Sciences

TITLE: Development of Refractory Alloys for Gas Turbines

PERIODICAL: Strojírenství, 1961, Vol. 11, No. 6, pp. 423 - 432

TEXT: This is a review article dealing with the development of heat-resistant steels. Foreign developments are reviewed in detail in the first part, whilst in the latter part of the article the development of steels in Czechoslovakia is discussed, particularly the discrepancies between the demands of the engineering plants and the immediate potentialities of Czech steel works. During the war years, Germany and the Soviet Union were severely limited as regards raw materials and Soviet research aimed primarily at developing steels with the lowest practicable contents of Ni, Mo, Co and Nb. A number of successful economy steels were developed, for instance, the austenitic steel EI 481 (13% Cr, 8% Mn, 8% Ni, 1.1% Mo, 1.3% V and 0.3% N). The nickel was partly substituted by

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E073/E335

Development of ....

manganese; this steel is superior to the much higher alloyed British steel G 18B and the American steel Timken 16-25-6. Another example is the Soviet steel EI-696 (10% Cr, 20% Ni, 3% Ti, 0.4% Al, 0.015% B) which has properties approaching those of Nimonic 80-type alloys. Nimonic 75-type alloys were also substituted by steels. Most Soviet higher-temperature steels do not contain Co. The Co alloy LK-4 (30% Cr, 3% Ni, 5% Mo, rest Co) was successfully substituted by a Cr-Ni-Fe alloy and the material similar to the American S-816 alloy was substituted by a Co-free nickel alloy. The Soviet alloy steels contain relatively little Mo and Nb and alloying with low quantities of boron is applied. Furthermore, austenitic steels are being substituted by pearlitic or inoculated 12% chromium steels. The Soviet alloy ZhS-6 is a peak achievement for cast alloys, whilst the alloys EI-617 and EI-765 are outstanding alloys for formed parts; the latter is used particularly for stationary gas turbines. Extensive tabulated data are included on materials used outside Czechoslovakia: austenitic steel castings for the most stressed parts of combustion chambers;

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E073/E335

Development of ....

materials used in Great Britain for turbine rotors and discs and for gas-turbine blades. Table 5 gives data of materials used for turbine blades in Great Britain, U.S.A. and the USSR (SSSR) in the forged (tvářený) and as-cast (litý) states. The composition of the individual elements is given in % and the last column lists "other" elements (Fe and B). Development of materials for gas turbines started in Czechoslovakia relatively late. As regards low-alloy and 12% chromium steels the state of development in Czechoslovakia is fully comparable with that of other countries. The position is not as good in the field of austenitic steels but the gap is being bridged by the newly-developed steel Poldi AKRN; the position is most difficult as regards alloys for the highest temperatures, with the exception of the alloys VZÚ-60 and the Poldi AKNC; no Czech-produced alloys are available for operating temperatures of about 750 °C and higher. However, it is anticipated that alloys, the production of which is being developed at SONP Kladno and LZ Pilsen, will make good this deficiency. Table 9 gives the chemical composition (%) of some Czech-produced high-temperature

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steels and alloys ("zbytek" means "remainder"). Table 10 gives the creep strength of some Czech-produced austenitic steels and alloys for the temperatures 550, 600, 650, 700, 750 and 800 °C and for durations of 10^3 - 10^5 hours. Table 11 gives the mechanical properties of some of the Czech-produced austenitic steels and alloys.
There are 4 figures, 11 tables.

ASSOCIATION: SVÚMT, Prague

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Development of ....

Table 5:

			C	Cr	Ni	Mo	W	Co	V	Ti	Al	Nb	Jiné
F. C. B. (T)	Velká Británie	tvářený	0,10	18	12	—	—	—	—	—	—	1,2	—
Rex 326	Velká Británie	tvářený	0,25	17	16	3	—	7	—	—	—	2	—
G 40	Velká Británie	tvářený	0,2	25	20	—	—	—	—	—	—	—	—
G 42 B	Velká Británie	tvářený	0,3	19	15	—	—	25	—	—	—	—	—
Nimonic 80 A	Velká Británie	tvářený	0,08	20	76	—	—	—	—	2,3	1	—	—
Nimonic 90	Velká Británie	tvářený	0,08	20	58	—	—	18	—	2,3	1,4	—	—
Nimonic 95	Velká Británie	tvářený	0,10	20	54	—	—	18	—	3	2	—	—
Nimonic 100	Velká Británie	tvářený	0,25	11	56	4	—	20	—	1,5	5	—	—
19-9 DL	USA	tvářený	0,3	19	10	1,4	1,3	—	—	0,2	—	0,4	—
S 590	USA	tvářený	0,4	20	20	4	4	20	—	—	—	4	—
S 816	USA	tvářený	0,38	20	20	4	4	43	—	—	—	4	—
Inconel X	USA	tvářený	0,03	15	73	—	—	—	—	2,3	0,9	0,8	7 Fe
Waspalloy	USA	tvářený	0,10	20	55	4	—	13	—	2,5	1,2	—	—
M 252	USA	tvářený	0,15	19	52	10	—	10	—	2,5	1	—	—
DCM	USA	litý	0,08	15	(65)	5	—	5 Fe		3,5	4,5		0,08 B
Nimrotung	USA	litý	0,10	12	(60)		8	10		4	4	Zr 0,05	0,05 B
HS 21	USA	litý	0,25	27	3	5,5		62	—	—	—	—	—
X 40	USA	litý	0,5	25	10		8	55	—	—	—	—	—
EI 437	SSSR	tvářený	0,08	20	76	—	—	—	—	—	—	—	—
EI 437 B	SSSR	tvářený	0,08	20	76	—	—	—	—	2,6	0,7	—	—
EI 612	SSSR	tvářený	0,12	15	35	—	3	—	—	1,3	—	—	—
EI 617	SSSR	tvářený	0,08	15	68	3	7	—	0,3	2	2	—	0,008 B
EI 765	SSSR	tvářený	0,15	15	(70)	4	5	—	—	1,2	1,8	—	0,010 B
EI 826	SSSR	tvářený	0,08	15	(70)	3	7	—	—	2	3	—	B
ZS 3	SSSR	litý	0,16	15	(70)	4	5	—	—	2	2	—	—
LK 4	SSSR	litý	0,25	26	3,5	5,2	—	60	—	—	—	—	—

Great Britain

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Development of ....

Table 9:

	Obsah prvků (%)										
	C	Mn	Si	Cr	Ni	Mo	W	V	Ti	Al	Fe
AKVSB 17 341	0,12	0,50	0,50	13,0	12,0	—	1,25	—	0,70	—	zbytek
AKRE	0,12	0,50	0,50	13,0	12,0	1,0	1,25	0,70	0,70	—	zbytek
AKRN	max. 0,12	1,0 2,0	0,25 0,50	14,0 16,0	34,0 38,0	—	2,80 3,20	—	1,20 1,80	—	zbytek
AKC 17 255	0,17	0,5	1,25	24,0	19,0	—	—	—	—	—	zbytek
VZÚ-60	max. 0,10			max. 19,0	zbytek	(Mo + W)	max 5 %		max. 1,50	max. 0,80	max. 15,0
AKNC	max. 0,10			20	zbytek	—	—	—	2,8	0,8	max. 5,0
AKND	0,08			20	52	—	—	—	2,3	1,3	10 Co
AKNW	0,12			15	zbytek	4	5	—	1,2	2,0	—

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E073/E335

Development of ....

Table 10:

	Teplota [°C]																	
	550			600			650			700			750			800		
	Čas [h]																	
	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5
AKVSB 17 341	25	19	13	19	13	8,5	13	8,5	5	—	6							
AKRE				min. 25	min. 17		min. 20	min. 13	—	17	13	—						
AKRN				40	30	—	28	20										
VZÚ 60	26	22	18	23	18	13,5	19	14	9,5	14	9,5	5,5						
AKNC										25	15	—	17	12	—	10	4	—
AKND												—	26	14	—	18	9	—
AKNW										38	20	—	30	25	—	18	11,5	—

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Development of ....

Table 11:

	$\sigma_{0,2}$ [kg/mm²]	σ_{Pl} [kg/mm²]	δ_5 [%]	ψ [%]	R [mkg/cm²]
AKVSB 17 341	30	60	45	68	18
AKRE	min. 23	55—70	min. 35	min. 45	min. 15
AKRN	54	92	26	45	9,5
AKO 17255	35	70	30	50	15
VZÚ-60	25	52	30	27	6,5
AKNO	63	100	35	47	4,6
AKND	52	130	25	26	—
AKNW	82	120	26	35	—

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E073/E535

From the Reports of Research Institutes

problem of reliable isolation of carbide and intermetallic phases has been solved. The report also deals with the problem of correct choice of steel for thermal power stations and finally, a new chromium steel is proposed which is alloyed with molybdenum and copper and is intended as a substitute for the type 18/8 CrNi steel.
1959, Prague: SVÚMT Z-59-783.

O. Schola: "Investigation of material for turbine blades and its heat treatment".
On the basis of experimental heats and heat treatment experiments, the optimum composition of steels of the type containing 13% Cr and Ni and the heat treatment of such steels are proposed. Variants are also given of the composition of a chromium steel of high mechanical strength alloyed with a higher content of nickel or molybdenum and having a low carbon content. On the basis of laboratory experiments contained in a separate report and on the basis of practical experience, directives have been issued on moulding and casting and the casting properties of the steels have been determined.
1959, Prague: SVÚMT Z-59-783.

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M. Vyklický: "Investigation of the properties of inoculated (modified) Fe-Cr-Al type alloys".
The report is a continuation of an earlier report "Malleable refractory chromium steel with addition of aluminium for applications up to 1200°C" (Report Z-57-576), whereby the present report is concerned with improving the mechanical properties of the developed steels at room temperature. Seventeen different inoculated heats were tested and the most suitable was found to be the one containing about 10% Mn, which, contrary to the original ternary Fe-Cr-Al type, does not become brittle at elevated temperatures.
1959, Prague: SVÚMT.

M. Vystrčil: "Shaping and checking of forgings from Nimonic type alloys".
Available literary data are summarised on shaping of Nimonic type alloys in view of the fact that some technological problems, particularly forging and pressing of large turbine blades from such materials, have not been solved in Czechoslovakia and these

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problems cause difficulties in using such alloys in gas turbines produced in Czechoslovakia. At the end of the report destruction-free testing is briefly dealt with.
1959, Prague: SVÚMT Z-59-786.

M. Vyklický: "Chromium steel ČSN 17 041 with the addition of titanium".
Investigation of two heats of steels of the type ČSN 17 041 - Ti has shown that this steel has certain advantages compared to steel without titanium. The mechanical properties of this steel are approximately equal to those of steel without titanium. However, annealing of the steel with titanium is appreciably simpler and its weldability is considerably better. A disadvantage is that it is more difficult to polish.
1960, Prague: SVÚMT Z-59-808.

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VYSTYD, M.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

VYSTYD, Milos

Precision casting of refractory alloys in Great Britain.
Slevarenstvi 12 no.1:9-11 Ja'64.

1. Statni vyzkumny ustav materialu a technologie, Praha.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

S/137/62/000/006/121/163
A052/A101

26.2120

AUTHORS: Vodšed'álek, Josef, Vystyd, Miloš, Tykva, Jaroslav, Váša, Čestmír, Sicho, Miroslav

TITLE: Materials for gas turbine blades

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 56, abstract 6I330 ("Materiál. sb. SVUMT. 1959". Praha, 1960, 57 - 114, Czechoslovakian; Russian, English and German summaries)

TEXT: The high-temperature alloy of Poldi AKNTo grade was investigated in a cast and forged state. Besides long-life strength of the material, relaxation, fatigue and damping, thermal expansion, heat conductivity, E and thermal impact resistance of the material were determined. An investigation of the alloy in a forged state has shown that the values of mechanical and heat-resistance properties are in accordance with the literature data for nimonic-80A alloy. However, by means of a special heat treatment it was possible to achieve higher characteristics. The alloy is sensitive to stress concentrations on account of its low ductility at rupture. In a cast state the heat-resistance properties are good,

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S/137/62/000/006/121/163
A052/A101

Materials for gas turbine blades

however there is a larger spread of results. σ_w of the material in a cast state is lower than that of the material in a forged state.

T. Rumyantseva

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

Z/032/62/013/008/002/004
E073/E135

AUTHORS: Vystyd, M., Vintr, J., and Mandaus, J.

TITLE: Refractory steels and alloys in the manufacture of turbo-blowers

PERIODICAL: Strojírenství, v.13, no.8, 1962, 635

TEXT: The report deals with investigation of the properties and the technology of working and treatment of refractory steels and alloys intended for the manufacture of turbo-blowers. The properties and applicability of the formed steels Poldi AKRE and Poldi AKRN in the case of composite, welded, axial turbine wheels (shafts made of low-alloy steels, blades made of austenitic refractory steels) and the properties of refractory steels and alloys LVN-1 to LVN-5 for precision castings and working of these alloys (friction welding, arc welding in a protective argon atmosphere) are described. The results are given of tests of experimental turbine wheels which were achieved on the test stand and in practice. Report no. Z-61-1017, joint report of SVÚMT, Prague, IBZKG, Brno, and VÚSSTS, Prague, 1961.

Card 1/1 [Abstractor's note: Complete translation.]

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18.7100
18.1250

67105
CZECH/34-59-12-31/44

AUTHOR: Vystyd, Miloš, Engineer

TITLE: Influence of the Heat Treatment on the Properties of Creep Resistant Nickel Alloys

PERIODICAL: Hutnické listy, 1959, Nr 12, pp 1143-1145

ABSTRACT: Paper presented at the "Symposium on Problems of Development of Creep-Resisting Materials", Mariánské Lázné, September 11-13, 1959. Section IV. The work of numerous authors indicates that Nimonic 80A type alloys are notch sensitive and that their low elongation during fracture is due to the high notch sensitivity. To improve the service life of components of stationary gas turbines made of such alloys various authors carried out experiments with a view to improving the elongation even at the expense of reducing the resistance of this material to creep. In Great Britain a number of special heat treatments were developed, whilst in the Soviet Union the possibilities of influencing the elongation by changing the titanium and aluminium contents were studied. The author of this paper investigated both methods but so far has not reached satisfactory results. In this paper a part of

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67105
CZECH/34-59-12-31/44

Influence of the Heat Treatment on the Properties of Creep Resistant Nickel Alloys

the carried out research work is described, namely, study of the influence of stepwise heat treatment on the creep rupture strength and on the fatigue strength in the hot state of shaped and cast 80Ni-20Cr-Ti-Al alloys; the chemical composition of three of the tested alloys are entered in Table 1, p 1144. The mechanical properties at 20°C and the heat treatment data are entered in Table 2. The results of tests at 700, 750, 800°C for stresses of 35, 25 and 15 kgm/mm^2 respectively are entered in Table 3. The author discusses the influence of heat treatment on the creep strength and on the fatigue strength and also the microstructure changes as a result of stepwise heat treatment. The tests have confirmed known literary data, namely, that application of stepwise heat treatment with double hardening (at 850 and 700°C) brings about an increase in the elongation of 80Ni-20Cr-Ti-Al alloys and a reduction in the creep strength. Furthermore, it was found that chromium carbide in the form of envelopes of grain boundaries, produced by heat treatment with double

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67105
CZECH/34-59-12-31/44

Influence of the Heat Treatment on the Properties of Creep Resistant Nickel Alloys

annealing at very high temperatures (1200 and 1000°C), has a favourable influence. This result, which is substantiated by long run tests, may contribute to the theory of creep resisting alloys.
There are 6 figures, 3 tables and 14 references, 12 of which are English, 1 Czech and 1 German.

ASSOCIATION: Státni výzkumný ústav materiálu a technologie, Praha (State Research Institute for Materials and Technology, Prague)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

S/137/62/000/009/021/033
A006/A101

AUTHORS: Löbl, Karel, ~~Vystyd, Miloš~~

TITLE: Heat resistant stabilized welding steel for castings

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 9, 1962, 78, abstract 9I482 P (Czech. Patent no. 101050, of September 15, 1961)

TEXT: A composition of heat resistant steel for casting is proposed which does not contain Co and is distinguished by high structural stability and good weldability. The steel contains in %: C 0.06 - 0.25, $S_1 \leq 1.2$, Mn ≤ 3.2, Cr 14 - 20, Ni 12 - 20, P ≤ 0.1, S ≤ 0.1, (W+Mo+Nb+V) 4 - 10 in a proportion of $(5\pm3):(3\pm1.5):(1\pm0.5):(0.51\pm0.5)$. Some Nb portion may be replaced by Ta; the Ti content may be 0.1 - 0.4%. The steel may contain N up to 0.25%, B up to 0.1% or Zr up to 0.4%.

M. Shapiro

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001961420012-5

Z/506/60/000/000/002/004
I037/I237

AUTHORS: Vodsed'álek, Josef, Engineer, Vystyd, Miloš, Engineer, Tykva, Jaroslav, Engineer, Vaša Šicho, Miroslav
Čestmír and

TITLE: Materials for gas turbine blades

SOURCE: Prague. Statni vyzkumny ustav materialu a technologie. Materialovy sbornik, 1959. Prague, 1960, 57-114

TEXT: Modern gas turbine blades reach temperatures of up to 1000°C. Great interest is given to cast blades. The properties of blades cast from the alloy Poldi AKNC (80 Ni - 20 Cr admixtures of Ti, Al) were compared with the forged alloy. Alloys having different admixtures of Ti and Al (1-3%) and smaller quantities of Mn, Si with traces of C, P, S, were investigated by measuring: creeping strength, relaxation, fatigue, damping, thermal expansion, electric conductivity, Young's modulus and thermal shock resistance.
For creeping strength tests, sticks were preheated for annealing in air for up to 16 hrs at temperatures between 700°C - 1080°C in case I and 700°C - 1200°C in case II. At 750°C in case I a strength

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I037/I237

Materials for gas...

limit of 15 kg/mm^2 for 1000 h. and in case II a limit of 19 kg/mm^2 for 1000 h were achieved. At stresses greater than 15 kg/mm^2, the alloy Poldi AKNC is inferior to the English alloy Nimonic 80A. At lower stresses (longer time or higher temperatures) the two alloys are equivalent. Heat treatment (case II) applied gradually considerably improved Poldi AKNC. The creep properties of castings are also very good but results vary more than for the forged alloy. Fatigue can be tested by several methods: (bending at rotation, alternate bending, stress - compression test) with different results. The normally treated alloy has a somewhat higher limit of fatigue at alternate stress and at smaller prestress, whereas the specially heat treated alloy is superior at higher prestress. The fatigue properties of normally treated Poldi AKNC are similar to those of Nimonic 80 A. There is a relation between grain size and limit of fatigue. From here follows the low fatigue limit for castings. The internal damping in Poldi AKNC is relatively small. It is dependent on temperature and prestressing.

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