the mass and charge of an electron, respectively. The formula is in good agreement with experiments for current densities up to 10^7 A/cm^2. The cathode can produce high powers (120 W continuously or up to 300 MW in pulses) and is very efficient. Its main disadvantage lies in the fact that it should be used in very well evacuated devices. The second type of field-emission device is the Malter cathode, in which a strong electric field is produced by positively charging the surface of a thin dielectric film deposited on the cathode base material. The most successful dielectric layer can be produced from MgO. The emission in such a cathode can be initiated by irradiating it with a strong beam of light or an electron beam. The period of irradiation is comparatively short and after that the emission current assumes a steady value. The cathode is luminescent during its operation and the intensity of the luminescence indicates distribution of the emission intensity over the cathode surface. During the self-maintaining operation of a MgO cathode, the phenomena occurring on the cathode are similar to those of the Townsend avalanches observed in gas discharges. Attempts have been made to use the cathode in

industrial devices, its main advantage being the very long life and absence of a heater. However, the cathode suffers from the disadvantage of needing a starting "pulse" in the form of heat, electron bombardment or irradiation. In the so-called 'capacitor-type' cathodes, the strong electric field necessary for emission is produced by directly applying a potential across a thin dielectric layer. Originally, mica and aluminium oxide were used as the dielectrics but recently dielectric materials have been restricted to Al_2O_3 or SiO_2. The layers of SiO_2 are 10^{-4} - 10^{-5} cm thick and are deposited on a tungsten base, while the second electrode is provided by a fine bronze grid or a metal layer. The results obtained with dielectric layers of Al_2O_3 were more encouraging than those achieved with SiO_2. It was possible to obtain emission-to-conductance current ratios of the order of 1:100 with Al_2O_3 layers 0.6 - 2.5 μ thick. It appears that this last type of cathode may be able to produce stable emission currents of high density at negligible input power. However, the technological requirements for obtaining successful cathodes are of a very high order: the materials have to be very pure, the thickness of the

Physics and applications of Z/037/62/000/005-6/019/049
E192/E382

dielectric must be strictly controlled and the electrodes should be suitably processed. There are 5 figures.

ASSOCIATION: Katedra elektroniky a vakuové fysiky Karlovy university, Praha (Department of Electronics and Vacuum Physics of Charles University, Prague)

Card 4/4

ECKERTOVA, L.

Notes on the Czech electron emission terminology. Cs cas fys 12 no.5/6:596-597 '62.

1. Katedra elektroniky a vakuove fysiky, Karlova universita, Praha.

VINOPAL, M., inz.; ECKERTOVA, L., doc. dr.; DEMUTH, M., inz.

Method of gas pressure measurement in closed vacuum systems.
Automatizace 6 no.12:314 D '63.

ECKERTOVA, L.

New cathodes with Al_2O_3 and BeO coatings. Slaboproudy obzor 24 no.1:49 Ja '63.

ECKERTOVA, L.

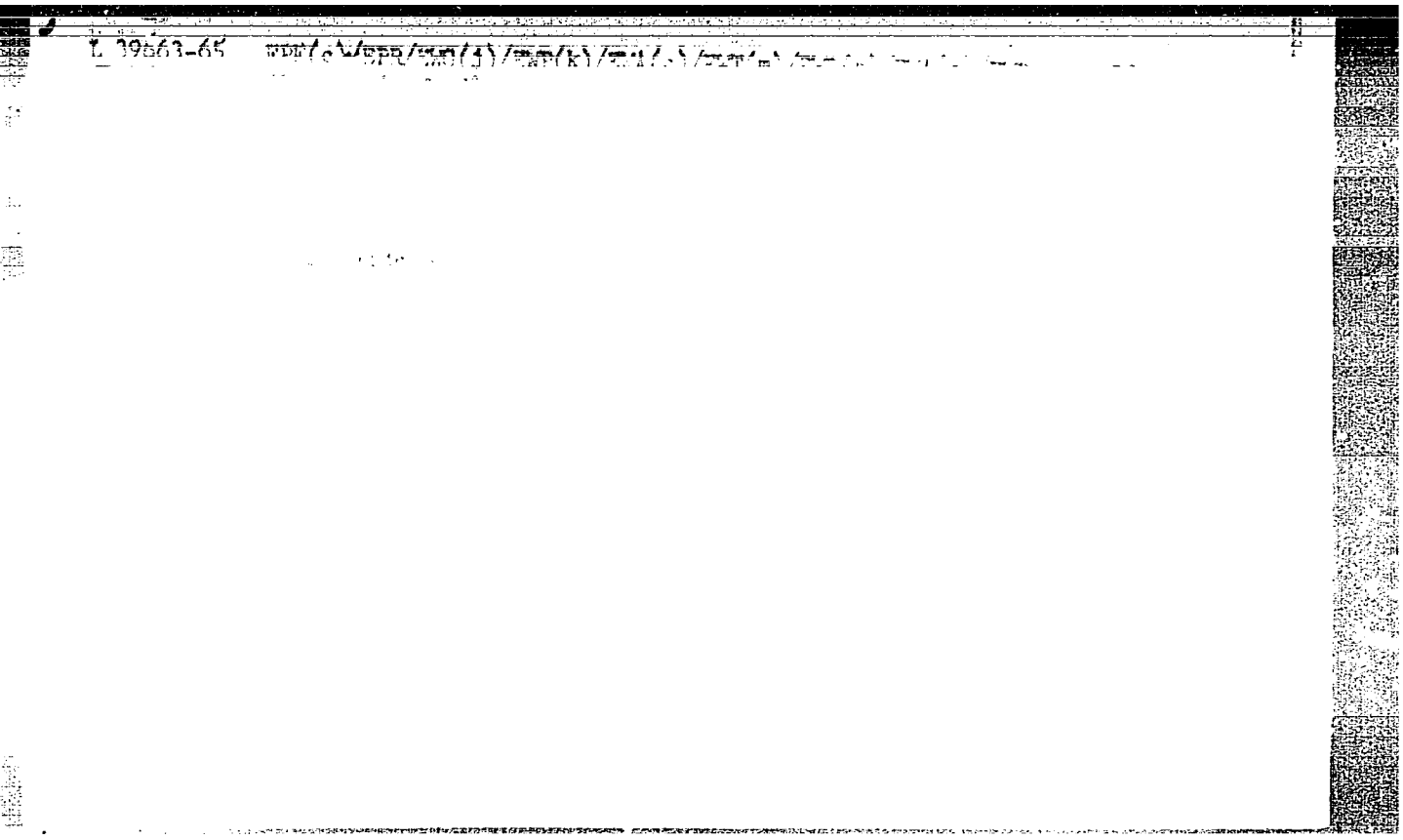
Report on vacuum technique works presented to the Second Polish Conference on Electronics. Slaboproudy obzor 24 no.1:56-57 Ja '63.

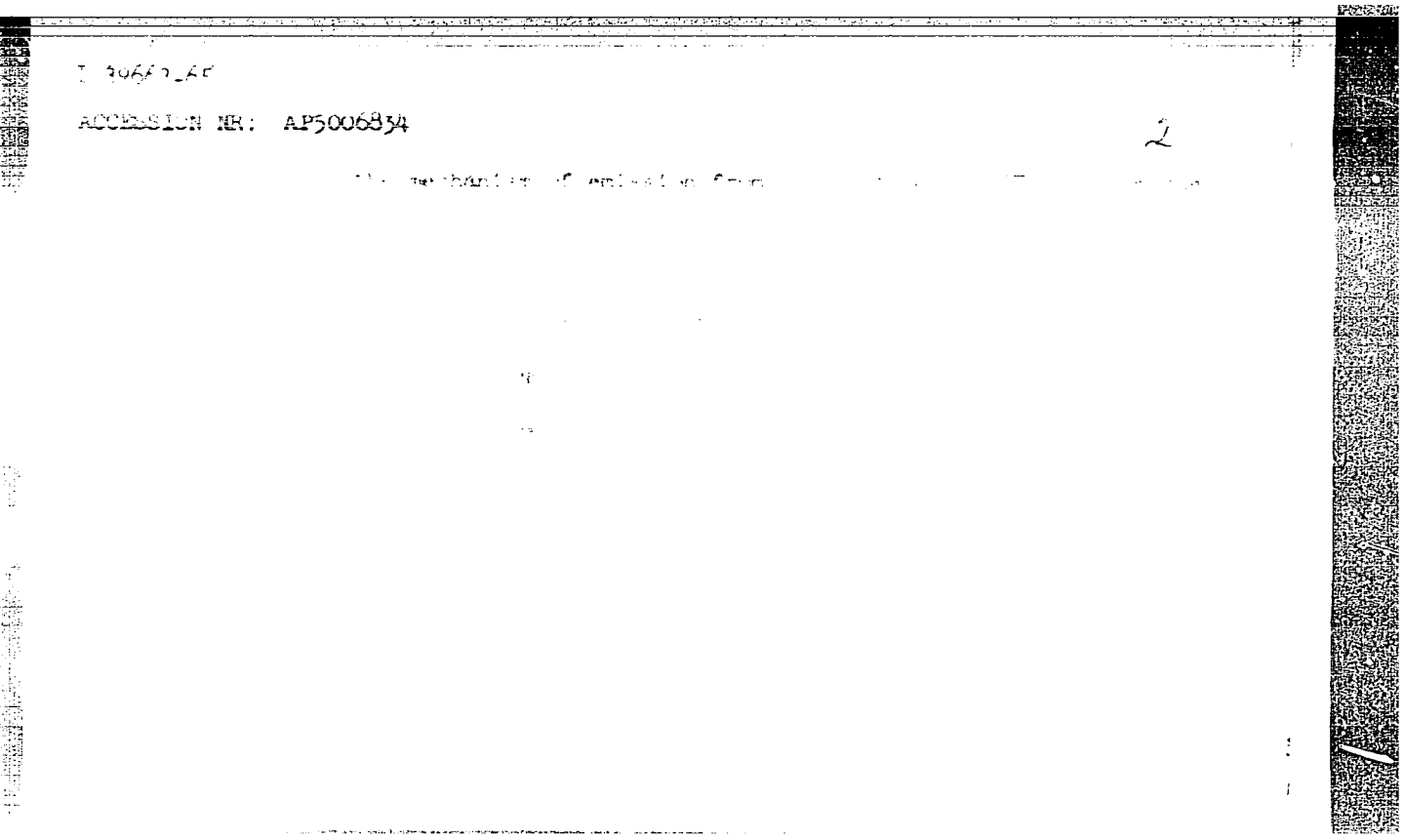
ECKERTOVA, L.; VEJVODOVA, J.; MALAT, Vl.

Symposium on the electron and vacuum physics in Hungary. Slaboproudy obzor 24 no.2:Suppl.:Literatura 24 no.2:122-123 '63.

ECKERTOVA, L.

"Photocathodes" by T. Reichel, M. Jedlicka. Reviewed by L. Eckertova. Slaboproudy obzor 25 no.6:Suppl:Literatura 25 no. 6:L41 '64.





ACCESSION NR: AP5006834

2

ACCESSION NR: AP4039353 G/0010/64/000/011/0339/0343

AUTHOR: Eckhardt, D. (Graduate engineer)

TITLE: Continuous-wave radiolocation methods with reflected electromagnetic waves

SOURCE: Radio und Fernsehen, no. 11, 1964, 339-343

TOPIC TAGS: altitude meter, DOPPLER radar, MARCONI-DOPPLER navigator, difference frequency, frequency mixing, frequency modulation, frequency deviation, modulation level, transmitter, receiver, target, reflected wave, DOPPLER frequency shift, velocity measurement, air traffic, maritime traffic, street traffic

ABSTRACT: Some aspects of the continuous-wave radiolocation method offer certain advantages over the pulse technique employed in the operation of radar equipment. The continuous wave reflected back into the transmitter station makes it possible to measure: 1) the distance of the target, by frequency modulating the difference frequency obtained by mixing the transmitter and receiver waves; 2) the target velocity in the transmitter-receiver direction, with an unmodulated wave of DOPPLER

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ACCESSION NR: AP4039353

frequency; 3) both the distance and velocity of the target, by means of frequency modulated waves (WITTMER method). The first of these techniques is applied to the frequency-modulation altitude meter for continuous tracking of elevation above ground ranging from 2 meters to 1500 or even 6000 meters with an accuracy between 2 meters to 20 centimeters, depending on the instrument design. The general principle is based on effecting a delay between the wave coming to the receiver directly from the transmitter and the wave which arrives at the receiver after reflection from ground. The mixing results here in the generation of a difference frequency which is proportional to the displacement between both received waves. This mean difference output is then amplified and the resulting voltage is sent through a low-pass filter. Subsequent differentiation and rectification yield a mean direct current proportional to the mean difference frequency. If a single target is tracked with such equipment, then a step effect appears in readings. This effect is not significant at high altitudes, but it becomes important at low height. In order to reduce this effect, a large frequency deviation must be chosen; this would mean a wide bandwidth and make it difficult to attain the necessary sensitivity for high altitudes. Consequently, the instrument is made to operate differently for a low altitude range (f.e. 0-150 m) and for a wide range of altitude (f.e. 0-1500 m), by

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ACCESSION NR: AP4039353

switching a dial. The second of the above mentioned techniques is based on the DOPPLER effect, the shift of the wave reflected from the target, which makes it possible to measure the differences between relative velocity components along the transmitter-target-receiver line. The reflected wave and the unmodulated transmitter wave are mixed at the receiver, the difference frequency is then amplified and calibrated into meters/second readings. Since the DOPPLER instrument operates on unmodulated waves, it is practical to employ high frequencies. The resulting advantages are: small sharp-focussing and easily camouflaged antennas and simple transmitter construction. Also, such instrument can operate with narrower receiver bandwidths and are, therefore, much more sensitive than comparable FM devices. The operation of this DOPPLER equipment lends itself furthermore to automated techniques. Its application ranges from street traffic and maritime traffic to the even more significant air traffic problems. Navigation is possible without the use of ground stations; the speed of the airplane is determined by at least three beams emitted in different directions and is measured along three axes of a coordinates system in space. Computers are used for these operations. One difficulty with this type of equipment arises from the fact that an ideally smooth ground surface reflects only a small portion of the incident radiation and gives no DOPPLER shift.

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The earth with its natural surface roughness, however, does provide a wide DOPPLER spectrum and a narrow 3° to 5° beam is used for measurements. The DOPPLER frequency here is compared to another frequency coming from a tone alternator and is then converted into speed readings by means of tachometer. Above sea water no reading is obtained during calm weather or an error is introduced by the speed of the waves during windy condition. The necessary sensitivity of the DOPPLER apparatus can be attained by either of two methods: a) sampling the transmitter (repetition rate 50 kilocycles/second, pulse duration 4 microseconds) and mixing the signals from antennas located at test points, b) frequency modulating (rate of modulation 400 kilocycles/second, deviation 5%), then mixing transmitted and received frequencies directly. The instrument can also be tuned to higher harmonics of the modulation frequency (f.e. the 6-th harmonic, in the MARCONI-DOPPLER navigator), which results in still better sensitivity. The third and last of the previously mentioned continuous-wave radar techniques (proposed by K. J. WITTMER) is similar to the MARCONI-DOPPLER navigator. A sinusoidal frequency-modulated wave is emitted and received back after reflection by the target. The received frequency is mixed with the transmitted frequency increased by the mean intermediate frequency. This last frequency is thus recovered: its deviation is proportional to the distance of the

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ACCESSION NR: AP4039353

distance of the reflecting target. The target velocity, too, generates a DOPPLER shift and therefore an offset from the discriminator frequency. The discriminator is used for FM to AM conversion and direct instrument readings of distance and speed (the latter after rectification). The advantages of the WITTMER technique are absence of the step effect, sensitivity over a wide bandwidth, and low modulation levels with easy avoidance of noise and hum. This method is suitable for lower minimum and higher maximum altitudes, with indication of movement. A disadvantage here is that the simple velocity measurement is not very accurate and that it is difficult to decouple transmitter and receiver when necessary for wide-range measurements. Orig. art. has: 5 figures and 2 formulas.

ASSOCIATION: None

SUBMITTED: 00	DATE ACQ: 18Jun64	ENCL: 05
SUB CODE: EC,	NO REF SOV: 000	OTHER: 009

Card 5/10

SZAM, I.:HANKOVSZKY, M.:ECKHARDT, S.:JANCSO, G.:SELLEI, C.

Effect of potassium cyanide on the inhibitory effect of urethane on the growth of tumors. Kiserletes orvostud. 4 no. 4:256-259 Aug 1952. (CLML 23:5)

1. Second Internal Clinic, Budapest Medical University.

ECKHARDT, S.:KAPAS, L.:HAVAS, I.

Immunity experiments on Guerin's tumor in rat. Kiserletes orvostud. 4 no. 5:321-323 Oct 1952. (CLML 23:5)

1. Second Internal Clinic, Budapest Medical University.

Eckhardt, S.

SELLEI, C.; OLAH, G.; ECKHARDT, S.; KAPAS, L.

The effect of organic fluorine compounds on experimental tumors. Orv. hetil. 93 no. 26:756 29 June 1952. (CIML 23:3)

1. Doctors except for Kapas. 2. Second Internal Clinic (Director — Prof. Dr. Imre Haynal), Budapest Medical University and Budapest Technical Organic Chemistry Institute (Director — Prof. Dr. Geza Zemplen).

ECKHARDT, Sandor,dr.,; HARTAI, Ferenc, dr.,; MOLNAR, Endre, dr.

Experiences with sanamycin. Orv. hetil. 96 no.42:1168-1169 16 Oct 55.

1. Az orsagos Onkologiai Intezet (igazgato: Venkei Tibor dr. az orvostudomanyok Kandidatusa) Belosztalyanak (foorvos: Sellei Camillo dr.) kozlemenye.

(ANTIBIOTICS, therapeutic use
actinomycin C in Hodgkin's dis.)
(HODGKIN'S DISEASE, therapy
actinomycin C)

SELLEI, Camillo, dr.,; LEHOCZKY, Gyozo, dr.,; BARTSCH, Aurel, dr.,; ECKHARDT, Sandor, dr.,; HARTAI, Ferenc, dr.,; MOLNAR, Endre, dr.,; TOTTOSSY, Bela, dr.

Hormone and surgical therapy of the metastases in breast cancer. Orv. hetil. 97 no.2:45-49 8 Jan 56.

1. Az Orszagos Onkologiai Intezet (igazgato: Venkei Tibor dr. az orvostudomanyok Kandidatusa) Belgyogyaszati Osztalyanak (foorvos: Sellei Camillo dr.) es Nogyogyaszati Osztalyanak (foorvos: Lehoczky Gyozo dr.) kozlemenye.

(BREAST, neoplasms
metastases, ACTH & cortisone ther. & surg. castration (Hun))
(ACTH, ther. use
cancer of breast, metastases, with cortisone & surg. castration (Hun))
(CORTISONE, ther. use
cancer of breast, metastases, with ACTH & surg. castration (Hun))
(CASTRATION
in ther. of breast cancer metastases, surg. with (ACTH & cortisone ther. (Hun))

Eckhardt S

3447. SELLEI C., ECKHARDT S., HARTAI F. and MOLNÁR E. Onkol. Int. Belosztályának, Országos. Klinikai vizsgálatok cytostatikus mannit (BCM) származékkal *Clinical trials with a cytostatic mannitol derivative (BCM)* Orv. Hetil. 1956, 97/36 (999–1001) Graphs 1

100 patients with various malignant diseases were treated with 1:6-bis(2-chlorethylamino)-1:6-desoxy-D-mannitol-diHCl (BCM). The effective total dose was found to be 900–1000 mg., administered in 10–12 injections during a period of 30 days. Strikingly favourable effects were observed in patients with various blood disorders especially lymphoid leukaemias and Hodgkin's disease. Molnár – Budapest

ECKHARDT, SANDOR

SELLEI, Kamillo; NEMETH, Laszlo; ECKHARDT, Sandor; KELLNER, Bela

Clinical and experimental results with BCM (8-bis-1,6-chloroethylamino-D-mannitol dihydrochloride). Magy. Tudom. Akad. Biol. Orv. Oszt. Kozl. 8 no.1-2:119-121 1957.

1. Orszagos Onkologiai Intezet, Budapest.
(NITROGEN MUSTARDS
1,6-bis-(B-chloroethylamino)-1,6-desoxy-D-mannitol, pharmacol. (Hun))
(MANNITOL, related cpds.
same)

2259. **Clinical experiences with nitrogen mustard oxide** Klinikai tapasztalatok oxydmustárnitrogénnel. ECKHARDT S., SELLEI C., HARTAI F. and ZALAI M. *Mag. Onkol.* 1958, 2/3 (133-136) Tables 2

This drug was administered to 71 patients, 58 of whom had a malignant tumour (carcinoma, sarcoma), and 13 a malignant disease of the haematopoietic system (Hodgkin's disease, lymphosarcoma, reticulosarcoma, lymphocytic leukaemia). There was an objective improvement in 10 cases, subjective improvement in 18 and no change in 43.

AMBROZY, Gyorgy, dr.; ECKHARDT, Sandor, dr.; GALLAI, Margit, dr.

Neural complications in malignant tumors of the hemopoietic system. Ideg.szemle 12 no.12:367-379 D '59.

1. A Budapesti Orvostudomanyi Egyetem Neurologiai Klinikaja (Igazgato: Dr. Horanyi Bela egyetemi tanar) Orszagos Onkologiai Intezet (Igazgato: Dr. Vikol Janos, foorvos: Dr. Sellei Camillo) kozlemenye.

(NERVOUS SYSTEM dis)
(HEMATOPOIETIC SYSTEM neopl)

ECKHARDT, Sandor, dr.

Present state of the problem of bone marrow transplantation.
Orv.hetil. 100 no.52:1864-1868 D '59.

1. Az Orszagos Onkologiai Intezet (igazgato: Vikol Janos dr., tudomanyos igazgato Wald Bela dr. az orvostudomanyok kandidatusa) Belosztalyanak (foorvos: Sellei Camillo dr.) koslemenye.
(BONE MARROW transpl.)

ZALAY, Magda, dr.; SCHMIDT, Marta, dr.; ECKHARDT, Sandor, dr.; SELLEI, Camillo, dr.

Evaluation of a new method for the determination of gastric acidity. Orv.hetil. 101 no.52:1848-1850 25 D'60.

1. Orszagos Onkologiai Intezet.
(GASTRIC JUICE)

ECKHARDT, Sandor, dr., SELIEI, Camillo, dr. HORVATH, Piroska, dr.; INSTITORISZ, Laszlo, dr.; MEDGYES, Arpad, dr.; MASSZI, Ferenc, dr.; HARTAI, Ferenc, dr.; HINDY, Ivan dr.

Effect of 1,6-dibromo-1,6-D-didesoxymannitol (DBM) on chronic myeloid leukemia. Orv. hetil. 105 no.12:547-549 '60

1. Orszagos Onkologiai Intezet.

*

ECKHARDT, Sandor, dr.; SELLEI, Camillo, dr.; HARTAI, Ferenc, dr.

Effect of mannitol-myleran (1,6-dimethanesulfonoxy-D-mannitol) in chronic myeloid leukemia. Orv. hetil. 102 no.42:1987-1989 15 O '61.

1. Orszagos Onkologiai Intezet, Belosztaly.

(BUSULFAN ther) (MANNITOL ther)
(LEUKEMIA MYELOCYTIC ther)

ECKHARDT, S., dr.

Some actual problems of the treatment of leukaemia. Ther. hung. 9 no.3/4:8-15 '61.

1. National Cancer Research Institute, Budapest.
(LEUKEMIA) (ANTINEOPLASTIC AGENTS)

GALLAI, Margit, dr.; ECKHARDT, Sandor, dr.; AMBROZY, Gyorgy, dr.

A case of progressive multifocal leukoencephalopathy associated with Hodgkin's disease. Ideggyogy. szemle 15 no.9:257-264 S '62.

1. A Budapesti Orvostudomanyi Egyetem Neurologiai Klinikajanak (Igazgato: Horanyi Bela dr. egyetemi tanar) es az Orszagos Onkologiai Intezet belgyogyaszari osztalyanak (Foorvos: Sellei Camillo dr.) kozlemenye.
(HODGKIN'S DISEASE) (BRAIN DISEASES)

GALLAI, Margit, dr.; ECKHARDT, Sandor, dr.; AMBROZY, Gyorgy, dr.

A case of progressive multifocal leukoencephalopathy associated with Hodgkin's disease. Ideggyogy. szemle 15 no.9:257-264 S '62.

1. A Budapesti Orvostudomanyi Egyetem Neurologiai Klinikajanak (Igazgato: Horanyi Bela dr. egyetemi tanar) es az Orszagos Onkologiai Intezet belgyogyaszari osztalyanak (Foorvos: Sellei Camillo dr.) kozlemenye.
(HODGKIN'S DISEASE) (BRAIN DISEASES)

ECKHARDT, Sandor, dr.

Diagnostic problems in acute leukemia. Magy onkol 5 no.4:247-254 D '61.

1. Orszagos Onkologiai Intezet, Belgyogyaszati osztaly.

(LEUKEMIA diag)

NEMETH, Bela, dr.; FARKAS, Eva, dr.; JASPER, Antal, dr.; ECKHARDT, Sandor, dr.

Diagnostic difficulties in the case of cancer. Magy.onkol. 7 no.4: 248-252 D '63.

1. Pestmegyei Tanacs Semmelweis Korhaza es Orszagos Onkologiai Intezet.

RISKO, Tibor, dr.; NYUL-TOTH, Pal, dr.; TOMORY, Istvan, dr.; ECKHARDT, Sandor, dr.

Current aspects of bone tumor diagnosis. Orv. hetil. 105 no.14: 643-644 5 Ap'64

1. Allami Fodor Jozsef TBC Gyogyintezet, Orszagos Onkologiai Intezet, Budapest.

*

GLAUBER, A.; RISKO, T.; NYUL-TOTH, P.; TOMORY, I., VINCZE, E.; ECKHARDT, S.

On the diagnosis of bone tumors. Orv. hetil. 105 no.28:1338-1340 12 Jl '64

ECKHARDT, Sandor, dr.

Chemotherapy in lung cancer. Tuberkulozis 17 no.7:216-221 Jl '64.

1. Az Orszagos Onkologiai Intezet (igazgato: Vikol Janos dr.) Belosztalyanak (foorvos: Sellei Camillo dr.) kozlemenye.

ECKHART, EDE

GER/4

Preparation of sugar-tetrazolium compounds. Géza Zemplén, László Mester, and Ede Eckhart (Tech. Univ., Budapest). *Chem. Ber.* 86, [illegible]. D-Galactodiphenyltetrazolium chloride pentaacetate (I) was formed by the oxidation of D-galactodiphenylformazan pentaacetate (II) with $Pb(OAc)_4$ (III), and was deacetylated to the pentahydroxy compd. (IV). II (10.4 g.) in 150 cc. $CHCl_3$ was treated with 8 g. III for 30 min. After separation of Pb with HCl-satd. abs. alc., the addn. of Et_2O to the filtrate gave 7.8 g. crystals, m. 103-5°, which were dissolved in H_2O and treated with a few drops 10% HCl to induce crystn. Recrystn. gave I, m. 204°, $[\alpha]_D^{20}$ 39.3° (alc.). I (2.5 g.) in MeOH was boiled 4 min. with 2-3 cc. 0.5 N MeONa and treated with HCl-satd. MeOH. The addn. of Et_2O ppted. 1.1 g. IV, which was redissolved in abs. alc. and reppted. with Et_2O several times. IV (0.73 g.) was obtained, $[\alpha]_D^{20}$ 21.7° (H_2O). When 0.5 g. I was heated, and treated with 0.3 g. vitamin C, the addn. of H_2O ppted. 0.17 g. D-galactodiphenylformazan (V), which, recrystd. from BuOH, m. 167°; I in 2% NaOH treated with vitamin C formed II, m. 142°. The oxidation of 1 g. D-mannodiphenylformazan in HCl-satd. abs. alc., with $AmNO_3$ yielded 3 g. D-mannonic acid-γ-lactone, m. 151-2°, $[\alpha]_D^{20}$ 47.5° (H_2O); pentaacetate, m. 131°. The same treatment of V gave unidentifiable products. The toxicity of I and IV to mice is given.

Prof. Houser

Eckhart E.

HUNG.

19. Direct preparation of the so-called β-acetochloroglucose (In German) - G. Zemplén, L. Mester and E. Eckhart. (Acta Chimica Academiae Scientiarum Hungaricae -- Vol. 1, 1951, No. 1, pp. 73-77)

By reacting a solution of β-pentaacetylglucose in chloroform with anhydrous aluminium chloride, the authors succeeded in producing with good yield the compound obtained by Schlubach through the Walden inversion of α-acetobromoglucose with silver chloride and which Schlubach took to be α-acetochloroglucose. A more thorough study of the properties of the product led to the belief that it has an orthoester structure.

BELOHRADSKY, Frantisek; ECKMAYER, Zdenek; HALAMEK, Cyril

Soluble collagens. Kozarstvi 13 no.4:108-110 Ap '63.

1. Vyzkumny ustav kozedelny, Gottwaldov.

CZECHOSLOVAKIA

VEPREK-SIROKA, J; VACHEROVA, D.M; ECKSCHLAGER, E

Institute for Inorganic Chemistry, Czechoslovak Academy of Sciences (Institut fur anorganische Chemie, Tschechoslowakische Akademie der Wissenschaften) Prague - (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 3, March 1966, pp 1248-1255

"Uni-equivalent oxidation. Part 2: Sulfite oxidation using complex ions."

CZECHOSLOVAKIA

ECKSCHLAGER, E.; "Leciva" National Enterprise, Factory 04 [Leciva n.p., zavod 04 7, Prague-Vysocany.

"Chelatometric Determination of Sodium Glutamate in Injections."

Prague, Ceskoslovenska Farmacie, Vol 12, No 8, 1963, pp 419-420

Abstract: Chelatometric titration of soluble cupric chelate, obtained from a suspension of cupric phosphate by the action of glutamate was used for the determination of the glutamate. An excess of the cupric phosphate suspension was used, and after completion of the reaction filtered off, or removed by centrifuging. After decomposition by a nitrite, liberated cupric ions are titrated in a neutral or a slightly acid medium with 0.05M Chelaton III (EDTA), using glycine thymol blue as an indicator. Results agree very well with those obtained by the Kjeldahl method.
1 Table, 2 Western, 4 Czech references.

1/1

[redacted], K.; FIDLEROVA, J.

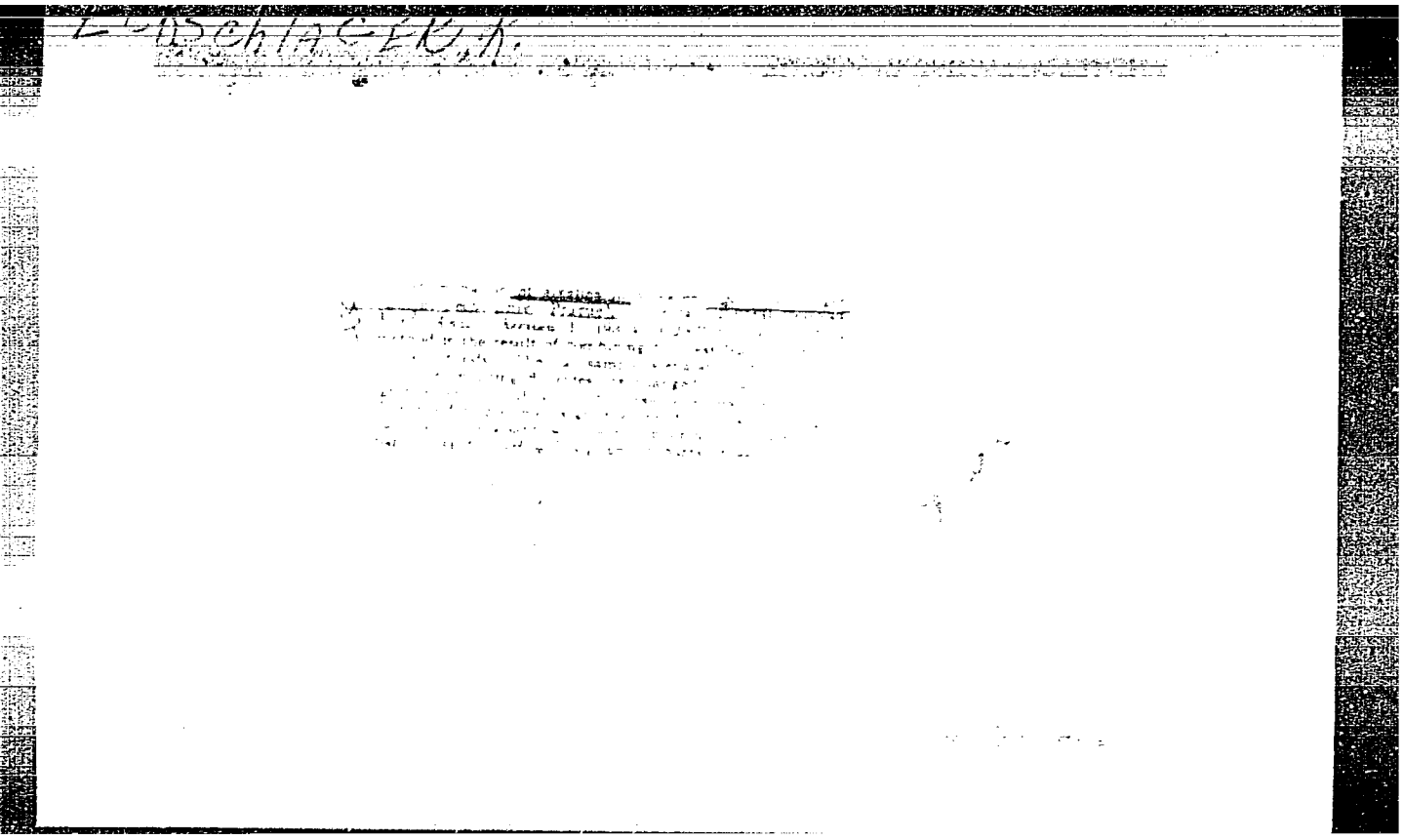
Chelatometric determination of nicotinic acid in Riboflavin.
Cesk. farm. 13 no.7:371-373 S '64.

1. Ustav [illegible], n.p., zaved. O. Kraus.

[redacted], K.; [redacted], J.

Contribution to an analysis of heparin. 1. Existing methods of heparin determination. Cesk. farm. 11 no.7:379-381 S '62.

1. Ceska, n.p., zavod 01, [redacted]-Vyrovany, Vyrovany nad Iz. Farmacii a biochemii, Praha.



ECKSCHLAGER, Karel

"Errors in Gravimetric Analysis," Prague, Chemicke Listy, No. 11, Nov 60, p. 1133.

ECKSCHLAGER, K.

Statistical evaluation of Kjeldahl's method. Coll Cz Chem 25 no.4: 987-992 Ap '60. (EEAI 9:12)

1. Leciva, Werk 04, Prag.
(Nitrogen)

ECKSCHLAGER, Karel

Errors in final results of chemical analyses. Chem prum 12 no.5:244-246 My '62.

1. Lecivo 04, Praha.

ECKSCHLAGER, Karel

Permissible difference of parallel estimations. Chem prum 12 no.10:555-556 O '62.

1. Leciva 04, Praha - Vysocany.

ECKSCHLAGER, K.

Errors of the polarographic determination by the standard addition method. Coll Cz Chem 27 no.7:1521-1527 Jl '62.

1. Leciva Werk 04, Prag.

ECKSCHLAGER, Karl C.

ECKSCHLAGER, K.

Mathematico-statistical testing of the results of the polarographic and biological determination of the potency of insulin. Cesk. farm. 11 no.7:360-362 S '62.
(INSULIN) (POLAROGRAPHY) (BIOLOGICAL ASSAY)

ECKSCHLAGER, K.

Chelatometric determination of sodium glutamate in injection solutions. Cesk. farm. 12 no.8:419-420 0'63.

1. Leciva, n.p., zavod o4, Praha-Vysocany.

ECKSCHLAGER, Karel

Use of calculating machines in analytical chemistry. Chem listy 57 no.8:812-817 Ag '63.

1. Lecivo, n.p. 04., Praha.

ECKSCHLAGER, Karel

Use of gradual statistical analysis in comparing the results of two analytic methods. Chem prum 14 no.4:206-207 Ap '64.

1. Leciva 04, Prague.

ECKSCHLAGER, K.

Contribution to the analysis of heparin. II. Relation of the sulfur content and anticoagulant effect. Cesk. farm. 13 no.9:468-470 N '64

1. Ieciva n.p., zaved. 01, Praha.

L 34435-66 EWP(t)/ETI IJP(c) JD

ACC NR: AP6026227 SOURCE CODE: CZ/0008/65/000/012/1479/1483

AUTHOR: Voprok-Siska, Josef; Eckschlager, Karol; Wagnerova, Dana M.

ORG: Institute of Inorganic Chemistry, CSAV, Prague (Ustav anorganicke chemie CSAV)

TITLE: Analysis of dithionates

27
B

SOURCE: Chemicke listy, no. 12, 1965, 1479-1483

TOPIC TAGS: colorimetric analysis, polarographic analysis

ABSTRACT: Colorimetric determination of dithionates can be based either on the orange color of the $Cr_2O_7^{=}$ group, or the blue color of the VO^{++} group. This method allows the determination of $S_2O_6^{=}$ groups in amounts of milligrams or centigrams, even when sulfites are originally present; the sulfites can be removed by oxidation with permanganate in a slightly alkaline medium. An indirect polarographic determination can be made by estimating the decrease of the height of the three electron reduction waves of $CrO_4^{=}$ in an ammoniacal medium; this method is suitable for the determination of quantities of the order of 5 mg of $Na_2S_2O_6 \cdot 2H_2O$. The authors thank Engineer, Doctor Jan Moravek, Department of Analytical Chemistry, VSCHT, Prague, for carrying out the thermogravimetric oxidation of $Na_2S_2O_6 \cdot 2H_2O$. They also thank E. Hrdlick and O. Vahalik for their technical assistance and for carrying out the analysis. Orig. art. has: 3 figures. [JPRS: 34,669]

SUB CODE: 07, 20 / SUBM DATE: 17Feb65 / ORIG REF: 002 / OTH REF: 009

Card 1/1 JRS

0916 1775

ECKSCHLAGER, K.

A rapid orientation method for the assessment of protamine.
Cesk. farm. 14 no.2:82-83 F '65.

1. Leciva, n.p., zavod 04, Praha-Vysocany.

CZECHOSLOVAKIA

VACHEK, J.; ECKSCHLAGER, K.; NEKVASILOVA, M.; Pharmaceutical and Biochemical Research Institute (Vyzkumny Ustav pro Farmacii a Biochemii), Prague, United Pharmaceutical Works (SPOFA), Drugs (Leciva), 04, Prague.

"An Indirect Polarographic Determination of Heparin."

Prague, Ceskoslovenska Farmacie, Vol 15, No 5, Jun 66, pp 260-261

Abstract [Authors' English summary modified]: An indirect method of preliminary polarographic determination of heparin is described. It is based on the decrease of the cathodic wave of a methylene blue solution in a phosphate buffer at pH of 6.24, after standing one day at normal temperature. 2 Figures, 3 Western, 2 Czech references. (Manuscript received 10 Sep 65).

1/1

ECKSCHLAGEROVA, Marcela, inz.

Czechoslovak Standard 65 2025 on Testing Technical Alkali Carbonates. Normalizace 11 no.5:152 My '63.

1. Urad pro normalizaci a mereni.

ECKSTEIN, Juraj; UCHYTILOVA, Anna; WACHTL, Zdenek; HOLAS, Miroslav

Growing lithium fluoride monocrystals for optical purposes. Sbor chem tech no.3,part 2:229-234 '59.

1. Vyzkumny ustav pro mineraly v Turnove a Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

ECKSTEIN, Juraj; JINDRA, Josef; WOLFOVA, Marta

Effect of gradient on the distribution of thallium in potassium iodide monocrystals. Sbor chem tech no.3, part 2:245-251 '59.

1. Vyskumny ustav pro mineraly v Turnove a Katedra mineralogie, Vysoka skola chemicko-technologicka, Praha.

COUNTRY : Czechoslovakia
CATEGORY :

ABS. JOUR. : RZKhim., No. 5 1960, No. 17644

AUTHOR : Eckstein, J., Holas, M., and Plestil, J.
INST. : Not Given
TITLE : A Wire Saw for the Cutting of Soluble Crystals

ORIG. PUB. : Chem Prumysl, 9, #1 5, 249-250 (1959)

ABSTRACT : A saw with an endless nylon or silk thread of 0.2-0.5 mm thickness, designed for the cutting of synthetic single crystals without the production of internal stresses, is described. The saw described is an improvement over an earlier design in which the block is immersed in a water bath. Provision is made for cutting crystals in different directions, e.g., as in the production of prisms for UV and IR rays, as well as for the production of round specimens which are frequently

CARD: 1/2 146

COUNTRY	:	Czechoslovakia F
CATEGORY	:	
ABS. JOUR.	:	RZKhim., No.5 1960, No. 17644
AUTHOR	:	
INST.	:	
TITLE	:	
ORIG. PUB.	:	
ABSTRACT	:	used in the treatment of scintillating crystals of the NaI(Tl) type. The minimum specimen thickness of 0.2-0.3 mm was achieved in the cutting of a single crystal of Rochelle salt. Ya. Satunovskiy

CARD: 2/2

Z/508/60/000/000/007/018
E024/E335

AUTHOR: Eckstein, Juraj

TITLE: Universal unit of Czechoslovak design for growing single crystals from the melt

SOURCE: III. Konference o monokrystalech. Prague, Výzkumný ústav pro minerály, 1960. 89 - 99

TEXT: A new method for growing crystals from the melt has been developed. Its main features are: a) a cooled stationary holder for the seed; b) a crucible which performs a reciprocating rotary motion and is simultaneously lowered. Some advantages of this apparatus are as follows. The growing crystal is stationary and therefore free from vibration. The reciprocating rotation of the crucible helps to remove impurities. The crystal can be grown relatively easily in vacuum or in any chosen atmosphere. The growth can be continuously observed. The bottom of the furnace in which the growth occurs is heated and by regulating the input to this heater the temperature distribution in the furnace can be altered. Another heater is wound in the wall of the furnace in such a way as to ensure a long zone of even temperature. The

temperature in the furnace must not only be controlled but also programmed in order to ensure that, as the phase boundary moves, it should remain at the temperature of the melting point of the substance. All the measuring and control devices are located in the heavy base of the instrument. The furnace forms a separate unit which rests on the base and is thus readily exchangeable. In order to increase the flexibility of the equipment, a mechanism for the motion of the seed-holder can be added. This allows the use of the equipment for annealing the crystals or for growing crystals by the Kyropoulos method or by a combined motion of seed and crucible. This method is being studied further; a patent has been applied for. Alkali-halide crystals with diameters up to 13 cm have been grown in the equipment during test runs. There are 14 figures.

ASSOCIATION: Výzkumný ústav pro minerály, Turnov
(Research Institute for Minerals, Turnov)

Z/508/60/000/000/008/018
E112/E120

AUTHORS: Eckstein J., and Gröbner P.

TITLE: Contribution to the technology of single crystal growing

SOURCE: III. Konference o monokrystalech. Prague, Výzkumný ústav pro minerály, 1960. 109-123

TEXT: Practical problems in the growing of single crystals of alkali-metal halides by the Kyropoulos withdrawal technique are discussed. At the very high temperatures of fusion there is some volatilization of the alkali metal halide which diffuses through the refractory wall of the furnace and may lead to corrosion of the embedded heating elements. An improved unit is described which provides a better refractory material, a more accurate temperature control and a special corrosion-resistant lining for the furnace wall (subject matter of Czechoslovak Patent Application B 538/MPSt 8-56). The refractory material consists of a mixture of white, synthetic corundum and clay, fired at 600-700 °C for 8 hours. Its porosity is reduced by soaking in a solution of AlF_3, followed by treatment with NH_4OH. A precipitate of aluminium hydroxide gel

Card 1/2

is deposited within the pores of the refractory material. The improved temperature control is provided by a platinum resistance thermometer, wound upon a corundum former and housed in a silica sheath. To reduce heat losses, the walls of the furnace must be as thin as possible. Their stability and durability is ensured by a special corrosion-resistant liner, made from aluminized iron plate. Best anti-corrosion effects were obtained with an Fe-Al alloy in which the Al content was not less than 12%. The aluminized layer was provided with a multiple protective coating of sodium silicate or ethylsilicate. These protective layers were then fused at 650 and 900 °C. The chemical reactions, upon which the protective action of aluminium against the vapors of the alkali-metal halides is based, are discussed. There are 14 figures.

ASSOCIATION: Výzkumný ústav pro minerály, Turnov (Research Institute for Minerals, Turnov) (J.Eckstein); Výzkumný ústav ochrany materiálu, Praha (Research Institute for Protective Coatings, Prague) (P.Gröbner)

Z/508/60/000/000/010/018
E112/E120

AUTHORS: Hrbková, Eva, and Eckstein, Juraj

TITLE: Contribution to the question of suitability of raw materials for the growing of CaF_2 single crystals

SOURCE: III. Konference o monokrystalech. Prague, Výzkumný ústav pro minerály, 1960. 137-143

TEXT: This paper describes criteria by which natural fluorspar or synthetic calcium fluoride can be assessed in quick experiments as to their suitability for the growing of single crystals. A small sample of the material is placed in a crucible and allowed to cool slowly after being fused. The physical appearance of the melt provides information about the ease of crystallization. The raw materials were, accordingly, divided into three groups: 1) melt is milky white, transparent at the edges and composed of single crystals. The center is crystalline and not tinted. This structure suggests great ease of crystallization. 2) Not tinged, granular, edges opaque. The growth of single crystals is possible only under strictly specified conditions. 3) Tinted melt, without granular structure and porous surface.

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Contribution to the question of ... Z/508/60/000/000/010/018
E112/E120

Not suitable for crystal growth. Other topics discussed are as follows. Construction of the furnace: a novel feature is a centrally placed molybdenum spiral heating element. The use of molybdenum necessitates an oxygen-free atmosphere during fusion. In the presence of oxygen, volatile oxides of molybdenum could form at the very high temperatures of fusion, and cause contamination of the crystals. Preliminary treatment of raw materials. Crude fluorspar was heated to a very high temperature and cooled rapidly. Fissures formed which allowed an easy separation of impurities. The size of the granules was found to have little effect on the results. Synthetic CaF_2, on the other hand, is unsuitable for single crystal growth. Effect of mineralizer: lead fluoride was used with spectacular effect. Platinum crucibles, however, were unsuitable because of their reaction with lead. Graphite crucibles are therefore used, although they produce discoloration of the crystals. The chemistry of the action of mineralizers is discussed.
There are 4 figures.

Card 2/3

Contribution to the question of ... Z/508/60/000/000/010/018
E112/E120

ASSOCIATION: Katedra mineralogie VŠCHT, Praha
(Chair of Mineralogy, University of Chemical Technology, Prague) (E. Hrbkova);
Výzkumný ústav pro minerály, Turnov
(Research Institute for Minerals, Turnov) (J.Eckstein)

Card 3/3

ECKSTEIN, J.

27

7

The yellow coloring of lithium fluoride crystals. J. Eckstein, M. Holas, J. Jindra, A. Uchytilová, and Z. Wuchil (Mineral Research Inst., Turnov). *Czechoslov. J. Phys.* 10, 247-54(1960)(in English).—The causes of the yellow coloring of LiF crystals are discussed. In agreement with some others, coloring is attributed to impurities. Selective absorption in the infrared region at 2.8 μ is independent of this coloring. Anal. data are supplemented by crystal-growing expts. in which defined admixts. of heavy metals (such as Co, Mn, Fe, Cr, Ni, Pt, Cu) are added to the melt. The most intense coloring of the admixts. is produced by Mn. Expts. on the effect of Cu and Pt are not entirely conclusive. In vacuum, color-producing impurities evap. easily from the melt until their concn. drops below the crit. limit required for coloring; in air this happens only if the charge is left in the melted state for a longer period (a 1-kg. charge was kept at 100° above the m.p. for 36 hrs.). Results are improved if a dried gas, for instance N, is bubbled through the melt. A colorless crystal can be obtained in this manner even without using a vacuum; the starting material, however, must be sufficiently pure. A new method was worked out for prepg. the salt by direct pptn. of LiCl and HF. Heavy metals are removed from the Li component by means of cupral and dithizone. The construction of a novel app. for the crystal-growing expts. in vacuum is described (cf. Deubner, *et al.*, *CA* 53, 12835f). 12 references. A. Kremheller

ECKSTEIN, Juraj; JINDRA, Josef

Cultivation of CsI(Tl) crystals for scintillation purposes. Sbor chem tech 4 no.1:193-216 '60. (EEAI 10:9)

(Cesium iodide) (Scintillation counters)
(Thallium)

S/081/63/000/001/047/061
B144/B186

AUTHORS: Eckstein, Juraj, Uchytilová, Anna

TITLE: Purification of lithium chloride, lithium nitrate and ammonium fluoride

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 1, 1963, 346, abstract 1L32 (Czechosl. patent 99820, June 15, 1961)

TEXT: The initial materials for preparing LiF, which is suitable for growing single crystals (LiCl, $LiNO_3$, NH_4F) are purified by two-stage precipitation of the heavy-metal impurities. In the first stage, a group reagent is used for precipitation (thioacetamide, cupral, thionalide, or potassium ethyl xanthate). In the second stage, after separating the precipitation, the residual impurities are bound by complexes, e.g., dithizonates, and extracted with chloroform at pH 5-9. Example. LiCl or $LiNO_3$ of usual purity are dissolved in water until a concentrated solution is obtained with pH 3.5-4. To this solution, 3% aqueous solution of cupral is added in small portions at intervals of 30 min, followed by activated

Card 1/2

Purification of lithium ...

carbon, and then the mixture is filtered. To the transparent filtrate, 0.2% solution of dithizon in chloroform is added in the ratio of 2 parts by volume dithizon solution to 1000 parts by volume filtrate; the mixture is shaken vigorously. The complexes forming are extracted with small additions of $CHCl_3$. These procedures are repeated until the heavy-metal reaction disappears completely. The solution obtained is introduced into a slight excess of HF (acid) which has been previously purified by isothermic distillation in a polyethylene vessel, or into NH_4F solution previously purified by the same method as the Li salt. The LiF precipitation is decanted in boiling water until the reaction with Cl^- (or NH_3^-) disappears. The filtered pure salt is vacuum dried at 180°C in a platinum or teflon vessel. [Abstracter's note: Complete translation.]

Card 2/2

S/081/63/000/003/014/036
B144/B186

AUTHORS: Eckstein, Juraj, Wachtl, Zdeněk

TITLE: Method and apparatus for growing single crystals from a melt

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 378, abstract 3L70 (Czechosl. patent 100778, September 15, 1961)

TEXT: A single crystal is grown from a melt in a hermetically sealed, vertically mounted crucible in the form of a truncated cone widening toward the top and ending at the top with a cylindrical part with a gutter round the upper section. Into the gutter is inserted the edge of a flat cover which seals the crucible hermetically when the gutter has been filled with a salt or metal melt with a melting point 50 - 200°C higher than the melting point of the single crystal being grown. In the central inner part below the upper surface the cover is equipped with walls having the form of a funnel widening toward the bottom, which when in working position almost rests on the shoulder formed by the end of the conical part of the crucible. When the process of growth of the single crystal is completed, the closed crucible, having been turned 180°, is put into

Card 1/3

Method and apparatus for growing ...

an oven for annealing. Example: - NaI (melting point 615°C) dried in a vacuum drier is mixed with the appropriate quantity of activator and introduced in hot state into the crucible, the entire conical part of which is filled. The crucible is closed with the cover, into the gutter of which NaCl powder (m. p. 801°C) is filled as sealing material. Then the crucible is put into the oven, which has two chambers so that the widening part of the crucible is located above the isothermic ring and projects into the upper chamber of the oven. The temperature in the bottom chamber is kept below the melting point of the crystal; the temperature in the top chamber is raised at first above the melting point of NaCl and then adjusted to a level corresponding to the process of single crystal growing (680-700°C), whereupon the NaCl melt solidifies. When the growing process is completed, the crucible is put into the oven for annealing. When the walls are heated above the melting point of the crystal, this descends to the funnel-shaped surface below the cover. The residual melt runs down the walls and collects in the narrowing part of the funnel. When the crucible has cooled, the seal of solid NaCl melt is dissolved in water, the crucible is taken out and the single crystal is extracted. The method suggested makes it possible to prevent evaporation

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S/081/63/000/003/014/036
B144/B186

Method and apparatus for growing ....

and losses of activator, and also the contact of the single crystal with the atmosphere and the walls of the crucible (in annealing). A diagram is given. [Abstracter's note: Complete translation.]

Card 3/3

3/137/62/000/006/127/163
A052/A101

AUTHORS: Ekshteyn, Yu., Yindra, Y.

TITLE: Some new developments in the technique of growing single crystals from a smelt

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 70, abstract 6I439 (V sb. "Rost kristallov. T.3". Moscow, AN SSSR. 1961, 300 - 307. Discuss. 501 - 502)

TEXT: A hermetically sealed Pt crucible for growing scintillation single crystals is proposed. when these crystals are grown by usual methods the activator escapes. The crucible has a cover which is hermetically sealed by means of a "salt seal" (by filling up the gap between the cover and the body of the crucible with a salt with a melting point 100 - 150°C higher than that of the crystal). NaCl or KCl is used for the salt seal when melting NaI(TI) or KI(TI), respectively. Before the beginning of the process the upper part of the crucible is placed in the furnace zone with an elevated temperature at which the salt melts preventing the access of air to the fusion and eliminating activator

Card 1/2

Some new developments in the technique of...

losses. The solidified crystal is annealed without impairing the hermetic state. Growing Al single crystals by zone melting is also described. From a sheet of 99.5%-pure Al 1.5 mm thick 30 x 300 mm strips are cut out along the direction of rolling and are laid on a fixed horizontal plate (backing) arranged inside a slowly moving (at 0.7 - 3 cm/h) furnace with a steep temperature gradient. As a result of the primary and secondary recrystallization, bi-crystals are formed with a boundary along the strip. Such a strip is subjected then to zone melting in the same appliance but using a furnace with a narrower maximum temperature zone. New methods of purification of alkaline halogenides are developed. The dithizone method consists in the extraction of the rest of heavy metals in the form of dithizones with chloroform. Another method consists in the formation of soluble combinations of heavy and alkali earth metals by means of "complexon", a substance from the α-amine acid group with an additional carboxy-methyl group connected with N. Complexon is also used for purifying alkaline halogenides in combination with ionites.

M. Guterman

[Abstracter's note: Complete translation]

Card 2/2

ECKSTEIN, J.; KUHN, A.; JINDRA, J.; HOLAS, M.

Some physical properties of large CdS monocrystals. Chekhosl fiz zhurnal 13 no.3:182-187 '63.

1. Vyzkumny ustav monokrystalu, Turnov.

ACC NR: AP5027698 SOURCE CODE: CZ/0037/65/000/006/0531/0534

AUTHOR: Eckstein, J.; Polivka, P.; Petrasek, J.

ORG: [Polivka, Petrasek] Semiconductor Plant, CKD, Prague (CKD Praha n.p. — zavod Polovodice); [Eckstein] SAV Physics Institute, Bratislava (Fyzikalny Ustav SAV)

TITLE: Deposition chamber for epitaxial growth

SOURCE: Ceskoslovensky casopis pro fysiku, no. 6, 1965, 531-534

TOPIC TAGS: epitaxial growing, semiconductor, single crystal growing

ABSTRACT: A chamber for the epitaxial deposition of thin monocrystalline semiconductors has been tested and is described. The chamber for small substrate plates is within and separated from the heating chamber (a hollow graphite cylinder which may also be made of molybdenum, tantalum, or of molybdenum disilicide). The gas medium in the outer cylinder need not be the same as that in the inner chanber, depending on the material of the heater. Intake and outlet nozzles at the ends of the inner chamber are sealed with cap nuts and packing. The substrate disks do not lie on the bottom of the inner chamber, but are placed in grooved holders which leave most of their surfaces exposed to the gas medium. These holders are made of graphite, fused quartz, or of high-ohmic silicon and may be either U-shaped or shaped to fit the cylinder. Such holders make possible the deposition on both faces of the disks in one operation and in any selected system (p-n-p; n-p-n; n^+-n-n^+; p^+-p-p^+, etc.). If a deposit is desired on

Card 1/2

L 9749-66

ACC NR: AP5027698

only one face, two disks may be placed back to back in the groove. If the disks are held at an oblique angle to the gas stream, or rotated during exposure, the epitaxial deposit will be more homogeneous and more evenly spread on all disks. Tests were also made with a reversible gas stream, which can be easily arranged with two three-way teflon cocks. Orig. art. has: 5 figures [08]

SUB CODE: SS / SUBM DATE: 05Mar65 / OTH REF: 004/ ATD PRESS: 4157

Card 2/2

L 31200-66 EWP(t)/ETI IJP(c) JD
ACC NR: AP6022555 SOURCE CODE: CZ/0008/66/000/001/0083/0086

54
B

AUTHOR: Polivka, Pavel; Eckstein, Juraj

ORG: CKD, n.p., Factory for the Production of Semiconductors (CKD, n.p., závod Polovodice)

TITLE: Preparation of hydrogen chloride of high purity

SOURCE: Chemicke listy, no. 1, 1966, 83-86

TOPIC TAGS: hydrogen chloride, chemical purity, silicon compound, halide, chemical decomposition, hydrogen

ABSTRACT: The authors describe a method for preparation of HCl of very high purity; it is based on the decomposition of $SiCl_4$ of a purity suitable for semiconductor work. The reaction is conducted at 1000 to 1300°C in a quartz tube filled with quartz particles through which a stream of pure hydrogen is passed. The gas prepared in this manner may be measured exactly and used for the etching of surfaces to a predetermined depth. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 07 / SUBM DATE: 14Jan65 / ORIG REF: 002 / OTH REF: 011

Card 1/1 BLG

ECKSTEIN, M.

Chemical Abstracts
May 25, 1954
Organic Chemistry

7

(4)

Sulfanilamidosalicylic acids. A. Kowa, M. Eckstein, and Z. Wałczak (Med. Acad., Kraków). *Polska Akad. Umiejęt., Prace Kom. Nauk Farm., Dissertationes Pharm.* 3 149-58(1951)(French summary).—The condensation of aminosalicylic acids with *p*-AcC$_6$H$_4$SO$_2$Cl (I) in alk. or pyridine soln., and alk. hydrolysis of these Ac derivs. to sulfanilamidosalicylic acids is given. 3-, 4-, and 5-Aminosalicylic acids (or their chlorides) heated at 40° with I (pH 8–10) (the end of the reaction recognized by a negative diazotization), acidified with HCl (pH up to 2), and the product purified by soln. in 5% NaOH, decolorization with NaHSO$_3$, acidification with HCl, and cryst. from dil. alc. (with C) yielded 3-, 4-, and 5-(*N*-acetylsulfanilamido)salicylic acid, m. 257–8°, 224.5°, and 264.5°, resp. 3- and 5-(Acetylsulfanilamido)salicylic acids boiled in 20% NaOH 2 hrs., cooled, acidified with HCl (pH 2–3), and the product cryst. from dil. alc. (with C) gave 3- and 5-sulfanilamidosalicylic acids, m. 216.5–17.5°, and 218.5–19.5°, resp. 4-Sulfanilamidosalicylic acid, obtained similarly from 2,4-HO(*p*-AcNHC$_6$H$_4$SO$_2$NH)C$_6$H$_3$CO$_2$H but with the product hydrolyzed 5–6 hrs. at 70°, m. 225.6° (decomp.). 2,4-HO(H$_2$N)C$_6$H$_3$CO$_2$H (0.76 g.), in 10–12 cc. alc. and 0.71 g. *p*-Me$_2$NC$_6$H$_4$CHO in 5 cc. alc. heated 0.5 hr. at 40° gave on cooling an orange-red residue which, washed with hot alc. and Et$_2$O, yielded *4-(p-dimethylaminobenzalamino)-salicylic acid*, m. 189–90°. The chromatographic *S*-benzylisothioureas of the nitro- and aminosalicylic acids were also obtained.

Gene A. Wozny

Eckstein M.

Poland/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 884

Author: Eckstein, M., and Kocwa, A.

Institution: None

Title: Derivatives of Dicoumarol with Some Organic Bases

Original Periodical: Acta Polon. pharmac., 1955, Vol 11, Dodatek: Pam. Ogolnopolskiego Zjazdu nauk. Polsk. Towarz. Farmac. Lodzi, 63-64 (published in Polish with summaries in Russian and English)

Abstract: Dicoumarol forms salts with morpholine (mp 216.5-218°), dimethylcolamine (mp 137-138°), and diethylcolamine (mp 175-176.5°) which can be used in the identification of dicoumarol.

Card 1/1

ECKSTEIN, M.; MAJ, J.; KOCWA, A.; HANO, J.

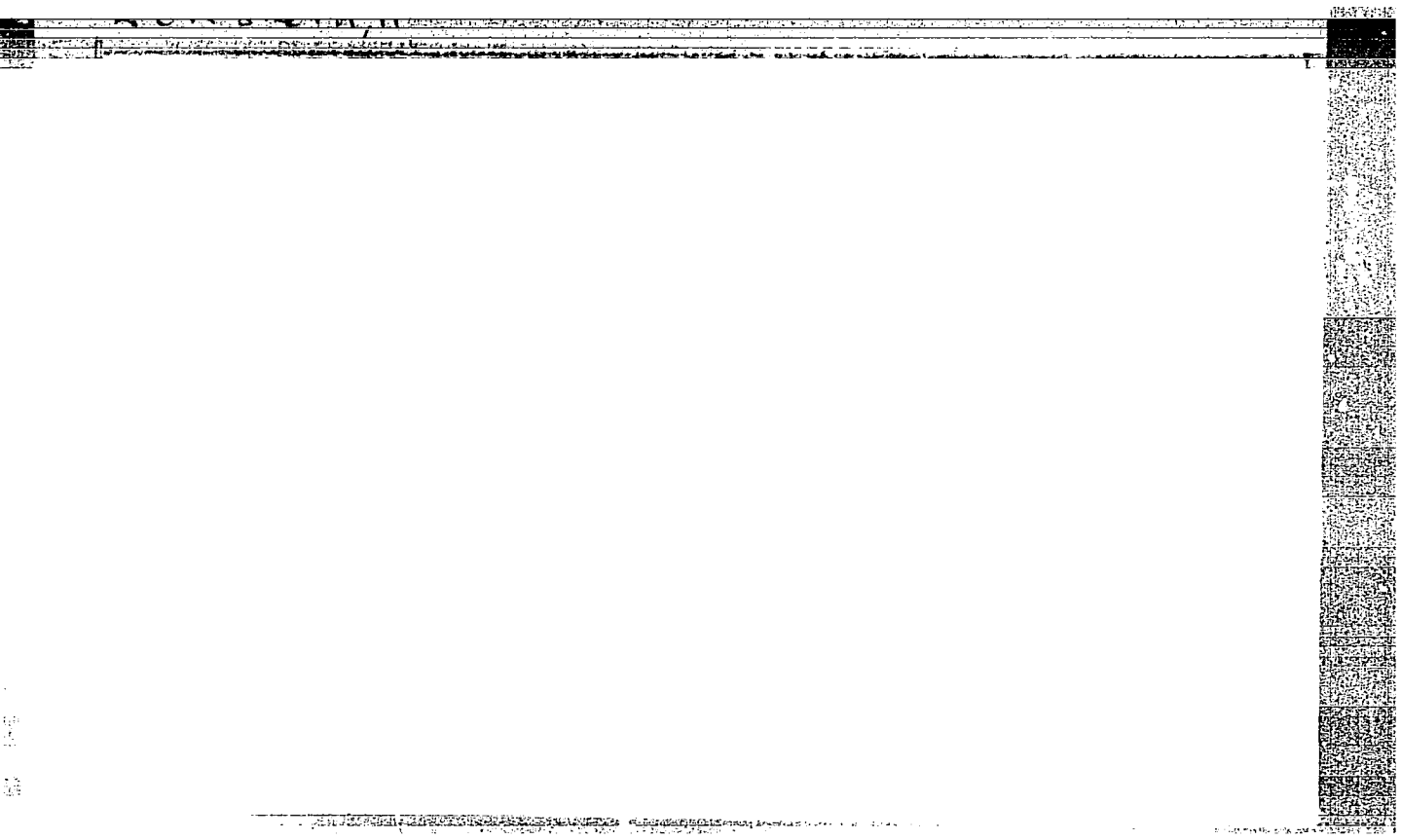
Investigations on action of certain new pyrazolone compounds.
Acta Poloniae pharm. 11 Suppl.:130-132 1955.

1. Zaklad Chemii Farmaceutycznej A. M., Krakow. Pracownia Farmakodynamiki Wyda. Farm. A. M., Krakow.
(ANALGESICS,
antipyrine aldehydes)

GUMINSKA, M.; ECKSTEIN, M.

Anticoagulant action of 1,3-indandione naphthyl derivatives.
Acta biochem. polon. 3 no.3:323-331 1956.

1. Z Zakladu Chemii Fizjolog. A.M. w Krakowie, Kier. prof. dr. B. Skarzynski i Zakladu Chemii Farmaceutycznej A.M. w Krakowie, Kier. prof. dr. A. Kocwa.
(ANTICOAGULANTS,
1,3-indandione naphthyl deriv. (Pol))



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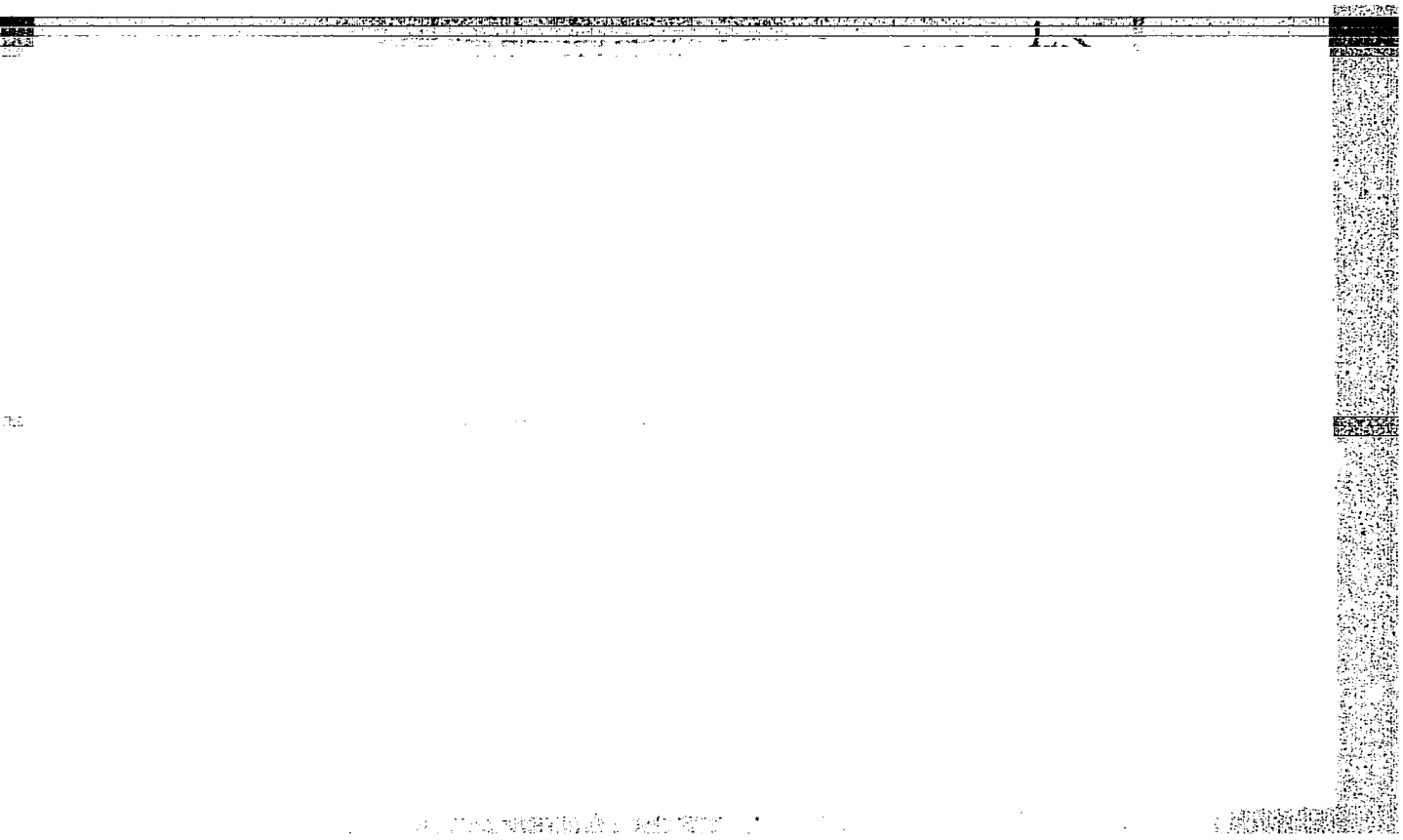

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Eckstein, M.

3
Zalacy

Colorimetric, method for determination of 2-phenyl-1,3-indandione. M. Eckstein and R. Ryś. *Zeszyty Problemowe Nauki Polskiej* 5, 77–9(1956).—A colorimetric, qual. method was developed for detn. of 2-phenyl-1,3-indandione (I), based on the formation of orange to dark-red salts with K, Na, and NH_4; the color intensity is dependent on salt concn. A photocolorimeter was used with a blue filter of max. transparency λ = 425 mμ. In concn. 25–40 mg./l. the error does not exceed 0.2%. Extinction coeff. of I dissolved in 0.1 *M* NaOH in concn. 2–50 mg./l. = 76.9.
K. Bojanowska

RB
1/11

Eckstein, M.

4-may

Polarographic method for qualitative determination of 2-phenyl-1,3-indandione. M. Eckstein, W. Ostrowski, and A. Krawczyk. *Zeszyty Naukowe Nauki Polskiej* 9, 81 (1966).—A linear relation exists between the concn. of 2-phenyl-1,3-indandione (I) and the height of the reduction wave; a dropping Hg electrode was used. A standard curve is obtained for 0.001–0.003*M* concns. of I in 0.1*N* NaOH or in 1% LiCl soln. in EtOH. K. Bojanowska

RG

ECKSTEIN, MARIAN

New drugs—salicylic acid derivatives. Marian Eckstein. *Farm. Polska* 12, 29-35, 57-61(1956).—A review with 55 references. B. H.

ECKSTEIN, M.

POLAND/Organic Chemistry. Naturally Occurring Substances and their Synthetic Analogs. G-3

Abs Jour: Referat Zhur-Khimiya, No 4, 1957, 11448.

Author : Eckstein, M., Gorczyca, M., Kocwa, A., and Zejc, A. and Eckstein, M., Kocwa, A., and Danek, A.

Inst : Polish Academy of Sciences

Title : Synthesis of New Medicinals Belonging to the Group of Xanthine Derivatives. Part I. 7-(-hydroxy- -alkoxy)-propyl Derivatives of Theophylline. Part II. N-(- -acetoxymercuripropyl)-amides of Theophylline-7-acetic Acid

Orig Pub: Dissert Pharmac PAN, 9, No 2, 73-82, 83-87 (1957) (in Polish with summaries in English and Russian)

Abstract: I. Derivatives of Theophylline (I-derivatives) have been

Card : 1/5

POLAND/Organic Chemistry. Naturally Occurring Substances and their Synthetic Analogs. G-3

Abs Jour: Referat Zhur-Khimiya, No 4, 1957, 11448.

synthesized having in the 7-position the group $CH_2CHOHCH_2OR$, where R = CH_3 (Ia), C_2H_5 (Ib), n-C_3H_7 (Ic), n-C_4H_9 (Id), iso-C_4H_9 (Ie), n-C_5H_{11} (If), and iso-C_5H_{11} (Ig), all of which exhibit enhanced solubility in water and lipids. Preparation: 2 gms NaOH are added to a boiling solution of 0.05 mol theophylline in 30-35 ml water followed by the dropwise addition of 0.06 mol $ClCH_2CHOHCH_2OR$ (prepared from $ClCH_2\overline{CHCH_2}O$ and ROH in the predence of H_2SO_4); the solution is maintained at a slow boil and heated for another 2-3 hrs, evaporated to dryness under vacuum, and extracted with abs alcohol or CH_3OH; I is obtained (the product, yield in %, and mp (from abs alcohol) in °C are given): Ia, 65, 142-143 (from alcohol-chloroform-water); Ib, 67, 111 (from alcohol-water); Ic, 70, 105-107 (from

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alcohol); Id, 67, 102-103; Ie, 60, 99-100; If, 69, 78-80; Ig, 60, 81-83. On oxidation ($K_2Cr_2O_7$ + H_2SO_4 in water at 90°) all I yield 1,3-dimethyl parabanic acid. Equimolar amounts of I and 3-nitrophthalic anhydride are heated for 1 hr ($\sim$ 100°) with a small amount of pyridine and the reaction mixture is acidified with dilute H_2SO_4; the acid 3-nitrophthalates of the I are obtained (the free COOH group is in the 1-position). Analogously I and p-$NO_2C_6H_4COCl$ give p-nitrobenzoates. The I, mp of the acid ester (from abs alcohol), and the mp of the p-nitrobenzoate (from alcohol) in °C are given belong: Ia, 193.5-194, 166-167; Ib, 122-124, 125-126; Ic, 120-121, 119-121; Id, 117-118, 113-114.5; Ie, 110-113, -; If, 94-95, -; Ig, 91-93, -.

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II. Compounds having the general formula $RCH_2CONHCH_2CH(OR')CH_2HgCCO\text{-}CH_3$ where R = 7-theophylline and R' = CH_3 (I), C_2H_5 (II), and n-C_3H_7 (III) have been synthesized. I, II, and III as well as $RCH_2CONHCH_2CH=CH_2$ (IV, R as above) are weakly toxic: LD_{min} = 500, 400, 450, and 750 mg/kg and LD_{50} = 625, 633, 750, and 1193 mg/kg, respectively; IV appears to be a weak diuretic; I, II, and III exhibit diuretic acidtivity in doses of 0.5-2 mg/kg. IV is synthesized from 1 gm RCH_2COCl in 10 ml abs C_6H_6 and 1 gm allylamine, yield 52%, mp 233-235° (from water) (or from $RCH_2COOC_2H_5$ and allylamine in yields of of 24%. A mixture of a solution of 1.38 gms IV in 70 ml abs CH_3OH and a solution of 1.6 gms $(CH_3COO)_2Hg$ in 15 ml CH_3OH acidified with CH_3COOH is refluxed 6 hrs; on dis-

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tillation of 50 ml CH_3CH I is obtained, mp 164-166° (from CH_3OH, softens at 148-150°). Analogously using alcohol or C_3H_7OH III and IV are prepared, the yields and mp's being respectively 55.2% and 168-172° (from alcohol, softens at 160°) and 60.6% and 193-195° (decomp; from C_3H_7OH).

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