Bankovskiy, Yu. A.

PHASE I BOOK EXPLOITATION SOV/4226

Riga. Universitate

Uchenyye zapiski, t. 14, Khimicheskiy fakul'tet, 4 (Scientific Notes, Vol 14, Chemistry Faculty, 4) Riga, 1957. 251 p. 550 copies printed.

Eds. (Title page): A.F. Iyevin'sh, Professor, Doctor of Chemistry; L.K. Lepin', Member of the Academy of Sciences Latviyskaya SSR, Professor, Doctor of Chemistry; G.Ya. Vanag, Professor, Doctor of Chemistry; Tech. Ed.: A. Peterson.

PURPOSE: This book is intended for inorganic chemists and scientists in the ceramics industries.

COVERAGE: The book contains 22 articles on organic chemical synthesis and analysis and the physicochemical properties and compositions of ceramic and refractory materials. No personalities are mentioned. Figures, tables, and references accompany the articles.

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AVAILABLE: Library of Congress

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9/29/60

BANKOVSKII, IU

GENERAL

PERIODICALS: VESTIS, No. 3, 1958

BANKOVSKII, IU. Analytic application of 8-mercaptoaquioline (thoixine) and its derivatives. VI, Vanadium complex of thoixine and its properties. Colorimetric determination of vadadium. In Russian. p. 121

Monthly list of East European Accessions (EEAI) LC Vol. 8, No. 2, February 1959, Unclass.

AUTHORS: Kuznetsov, V. I., Bankovskiy, Yu. A., Iyevin'sh, A. F. 75-13-3-1/27

TITLE: The Analytical Use of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives (Analiticheskoye primeneniye 8-merkaptokhinolina (tiooksina) i yego proizvodnykh)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 3, pp 267-273 (USSR)

ABSTRACT: 8-mercaptoquinoline has been known for a long time (Ref 1), but hitherto has not been met with any interest in analytical chemistry (Ref 2). The reason for this was the difficulty of synthesis and the low stability of this compound and its derivatives which rapidly oxidize at the air. One of the authors of the present paper worked out a synthesis of 8-mercaptoquinoline (Ref 3) whereby it became easily accessible. Moreover it was found that the salt of hydrochloric acid is resistant to atmospheric oxygen and that it can therefore serve for storing 8-mercaptoquinoline. The properties of anhydrous 8-mercaptoquinoline and of the following derivatives are described in the present paper: the dihydrate, the hydrochloride, the sodium salt and the disulfide which is produced from 8-mercaptoquinoline by oxidation. The

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authors also investigated the analytical properties and reactions of 8-mercaptoquinoline. This new reagent precipitates the elements of the H_2S-group and of the ammonium sulfide group. Some elements which beside the Me-S bond also yield a stable bond with the nitrogen of the quinoline ring are even precipitated from highly acid solutions. The qualitative reactions of proof based on this fact are distinguished by a high sensitivity. A number of elements are liberated as compounds of certain compositions which can be weighed out as such. The 8-mercaptoquinolinates of Cu, Zn, Hg_2^{2+}, Tl, Sr(II), Pb, As(III), As(V), Sb(III), Bi, V, Mo, Mn, Fe, Co, Ni, Pd are well soluble in organic solvents (especially in bromobenzene, bromoform, benzene and toluene) and can be extracted, whereby the separation of small amounts of one element from very large amounts of other elements which do not react with the reagent is made possible. The solutions of some 8-mercaptoquinolinates in organic solvents are intensively colored and can be photometrically determined. The sensitivity of these reactions is higher than in the corresponding 8-hydroxyquinolinates and approaches the sensitivity of dithi-

zonates. As compared to dithizone, 8-mercaptoquinoline has the advantage of a higher specificity. The use of the new reagent also permits the titrimetric determination of a number of elements, as 8-mercaptoquinoline is by oxidizing agents easily converted to the disulfide. A disadvantage of the reagent is its easy oxidizability. In acid solutions, however, the oxidation by atmospheric oxygen takes place so slowly that it does not disturb the analysis. As 8-mercaptoquinoline is also resistant to very strong reducing agents, elements being present in their lowest stages of valence (Mo, W, etc.) can be complexly bound by it, which is impossible with dithizone. As compared to thionalide, 8-mercaptoquinoline possesses the advantage that it precipitates a number of elements even from very highly acid solutions. In subsequent communications the determination of different elements by means of the new reagent shall be individually described. There are 3 figures, 1 table, and 14 references, 6 of which are Soviet.

The Analytical Use of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives 75-13-3-7/27

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo AN SSSR i Institut khimii AN Latviyskoy SSR (Institute of Geochemistry and Analytical Chemistry imeni V.I. Vernadskiy AS USSR and Institute of Chemistry, AS Latvian SSR)

SUBMITTED: March 28, 1957

1. Quinolines---Applications

Card 4/4

AUTHORS: Bankovskiy, Yu. A., Iyevin'sh, A. F. SOV/75-13-5-1/24

TITLE: Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives (Analiticheskoye primeneniye 8-merkaptc-khinolina (tiooksina) i yego proizvodnykh) Communication II. Photometric Determination of Small Amounts of Palladium (Soobshcheniye II. Fotometricheskoye opredeleniye malykh kolichestv palladiya)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 5, pp 507-512 (USSR)

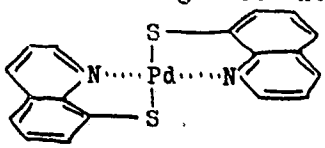
ABSTRACT: Many methods for detecting and determining palladium that make use of its high reducibility and the resulting formation of deeply colored colloidal solutions (Refs 1-7) or of measuring the optical density of colored complex compounds of palladium, are appropriate only for the determination of larger amounts of palladium because of their comparatively low sensitivity. In this respect, organic reagents, especially those that contain the p-nitrosophenylamine group, are more important (Refs 14-17). These methods have the disadvantage that neutral salts affect the determination and that series of foreign ions have to be separated at first. A number of photometric (Refs 18-24) and

Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication II. Photometric Determination of Small Amounts of Palladium

gravimetric (Refs 25-34) methods for the determination of palladium are quoted in the literature on the subject. A highly sensitive reagent for palladium is thiooxine, which may determine this element under certain conditions, also with other elements present. Thiooxine forms, with Pd(II) salts, the bright red palladium-8-mercaptochinolate $Pd(C_9H_6NS)_2 \cdot H_2O$ which is insoluble in water, but soluble in various organic reagents by forming deeply colored solutions (pink or orange) (Ref 37). For the extraction of this compound especially chloroform, chlorobenzene, and bromobenzene can be used. The compound is somewhat less soluble in carbon tetrachloride, diethylether, amylacetate, and carbon disulphide; it is insoluble in aliphatic hydrocarbon. The high solubility in organic solvents, the intense color of these solutions and the high acid resistance of this compound suggest that it is an intermolecular salt. Presumably a stable pentacyclic ring is formed in the reaction of thiooxine with palladium ions, in which palladium substitutes the hydrogen of the mercapto-group and at the same time is bound

Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication II. Photometric Determination of Small Amounts of Palladium

by coordination to the nitrogen of the quinoline ring:



This compound is very stable. It can be completely extracted from highly acid solutions (4n HCl) and also from strongly alcalic solutions. The absorption spectrum of the solutions in chloroform shows three maxima, of which the maximum at 272 mμ is the most sensitive one. This was, however, measured in the visible scope of the spectrum (maximum at 485 mμ) in a Pulfrich photometer. The solutions conform to Beer's law up to 27γ/ml when extracted from 6n HCl. In order to eliminate the interference of foreign ions thiourea is added in highly acid solution as a screening complex-forming substance. With this method, palladium can be determined in the presence of Pt, Os, Ru, Rh, Ir, Cu, Ag, Au, Hg, Fe, Ni, Co, Zn, Cd, Ge, Mn, Tl, As, Sb, Bi, Sn, Se, W, Mo, Pb, U, V, and of other elements. The results

Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication II. Photometric Determination of Small Amounts of Palladium

of several determinations are quoted. Oxidizing agents interfere with the determination as they oxidize the reagent. A very large surplus of the reagent is desirable in the determination, as this reduces the dissociation of the precipitate. A photometric method for the determination of 5-270 γ of palladium in the presence of all the foreign ions listed was worked out. The working directions are described in detail. There are 3 figures, 1 table, and 40 references, 12 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR, Riga (Institute of Chemistry of the Academy of Sciences, Latviyskaya SSR, Riga)

SUBMITTED: May 16, 1957

5(2), 5(3)

AUTHORS: Bankovskiy, Yu. A., Iyevin'sh, A. F. SOV/75-13-6-3/21

TITLE: Analytical Application of 8-Mercapto Quinoline (Thiooxine) and Its Derivatives (Analiticheskoye primeneniye 8-merkaptokhinolina (tiooksina) i yego proizvodnykh) Communication III. Photometric Determination of Small Amounts of Copper (Soobshcheniye III. Fotometricheskoye opredeleniye malykh kolichestv medi)

PERIODICAL: Zhurnal analiticheskoy khimii, 1958, Vol 13, Nr 6, pp 643-646 (USSR)

ABSTRACT: Peyve and Ivanova (Ref 12) used the reagent thiooxine suggested by the authors of the present paper for a rapid direct photometric determination of copper in soils without preceding separation of iron and manganese. In the present paper the influence exercised by other elements upon the accuracy of this determination and the limits of its applicability are investigated. Thiooxine forms in neutral, acid and alkaline solutions with Cu^{2+} ions the dark-brown salt $Cu(C_9H_6NS)_2 \cdot 1/2\ H_2O$ which is insoluble in water. The crystal water in this compound was determined according to Chugayev's and Tserevitinov's

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method (Ref 13) for the determination of active hydrogen. For the analysis of the complex this was dried in vacuum at 140 whereby possibly part of the crystal water is lost so that the copper thiooxinate actually might contain a whole and not only a half crystal water. The complex is well extractable with chloro benzene, bromo benzene, chloroform, amyl acetate and isopropyl alcohol, to a smaller degree with benzene, toluene, xylene and dichloro ethane and very difficultly with carbon tetrachloride and carbon disulfide. In aliphatic hydrocarbons the complex is insoluble. The extraction of the complex takes place quantitatively both from alkaline and acid solution. The absorption spectrum was taken by means of a SF-4 spectrophotometer. The spectrum shows 3 maxima: at 252.5 mμ, at 275 mμ, and in the visible range at 431 mμ. The corresponding molar extinction coefficients have the values 31,000, 29,000 and 7,530. The solutions of the complex which are colored intensely dark-brown, obey Beer's law up to amounts of 8γ Cu in 1 ml chloroform. Very high concentrations of alkali metals and metals of the alka-

line earths, Al, Ti, Zr, Th, Hf and other elements do not interfere with the copper determination. Pd, Ru and Os must be absent. Pt does not interfere with up to quantities of 50γ approximately. The thiooxinates of Ag, Hg and Au are not extractable with organic solvents. Silver, however, interferes with the determination of small amounts of copper, since this is co-precipitated with the very stable Ag thiooxinate. Ordinary quantities of Hg^{2+} and Au^{3+} (4 and 10 mg, respectively) do not interfere with the copper determination. The thiooxine complex of molybdenum is stable in acid solutions. Amounts of 5-10γ Mo can be masked by ammonium thiocyanate. Tungsten does not interfere with as its thiooxinate is insoluble in chloroform. Considerable quantities W can be kept in solution by oxalic acid. Antimony in amounts > 50γ slightly increases the results of the determination of 40γ Cu. It is an important advantage of this method that even very large amounts of bismuth do not interfere with the determination of copper. High concentrations of the generally used anions

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(Cl^-, Br^-, F^-, SO_4^{2-}, tartrate, oxalate, etc.) do not influence the accuracy of the determination. In alkaline solution cyanide ions prevent, if they are present in considerable excess, the complete extractability of copper. Furthermore, a photometric method of the determination of copper traces (3-30γ) in the presence of very large amounts of Bi, Mn, Fe, Ni and other elements was devised. The procedure is described there in detail. There are 3 figures, 1 table, and 13 references, 8 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR, Riga (Riga Institute of Chemistry of the Academy of Sciences Latviyskaya SSR)

BANKOVSKIY, Yu.A., BAUMAN, V.K., IYEVIN'SH, A.F. [Ievins, A.F.]

Colorimetric micromethod for determining calcium in biological material [with summary in English]. Biokhimiia 23 no.6:845-848 N-D '58 (MIRA 11:12)

1. Institut khimii i Institut biologii AN Latviyskoy SSR, Riga.
(CALCIUM)
(COLORIMETRY)
(MICROCHEMISTRY)

AUTHORS: Bankovskiy, Yu. A., Iyevin'sh, A. F., Luksha, E. A. SOV/79-28-8-58/66

TITLE: A Simplified Method for Synthesizing 8-Mercaptoquinoline (Thioxine) and Its Potassium and Sodium Salts (Uproshchennyy metod sinteza 8-merkaptokhinolina (tiooksina) i polucheniye yego kaliyevoy i natriyevoy soley)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp. 2273 - 2276 (USSR)

ABSTRACT: Thioxine was first synthesized by Edinger (Edinger)(Ref 1). As the authors showed, this reagent appears to be a very valuable reagent for the qualitative and quantitative determination of trace amounts of palladium, copper, molybdenum, rhenium manganese, and other elements. Earlier, one of the authors (Ref 2) had refined the carrying out of a single intermediate stage in the Edinger thioxine synthesis. In this synthesis the production of an intermediate product, the benzoyl derivative of thioxine, is not easy. It was shown by the authors that this intermediate step can be by-passed. To do this, only the sodium salt of thioxine is needed; this salt forms by reacting the alkali base with the chloro-tin salt(I).

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A Simplified Method for Synthesizing 8-Mercaptoquinoline (Thioxine) and Its Potassium and Sodium Salts SOV/79-28-8-58/66

The sodium salt is oxidized with hydrogen peroxide to the disulfide (II), which precipitates out of the alkaline solution. The disulfide can be easily purified and reduced to the thioxine (III). The most convenient and energetic reducing reagent appeared to be hypophosphoric acid (potassium hypophosphite in hydrochloric acid solution). This reaction occurs without the formation of by-products (see the reaction scheme). The synthesized potassium salt of thioxine can be stored without decomposition. The composition of the potassium and the earlier synthesized sodium salt was established. The reduction of the disulfide to thioxine and the synthesis of its potassium and sodium salts are described in the experimental section. There are 8 references, 0 of which is Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR (Institute of Chemistry, AS Latvian SSR)

SUBMITTED: June 19, 1957

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A Simplified Method for Synthesizing 8-Mercaptoquinoline (Thioxine) and Its Potassium and Sodium Salts SOV/79-28-8-58/66

Card 3/3

AUTHORS: Bankovskiy, Yu. A., Lobanova, Ye. F. SOV/79-28-10-50/60

TITLE: Synthesis of 6-Bromo-8-Mercapto Quinoline (6-Bromo Thioxene), and Some of Its Properties (Sintez 6-brom-8-merkaptokhinolina (6-bromticoksina) i yego nekotoryye svoystva)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2857-2860 (USSR)

ABSTRACT: As demonstrated by the present studies, 8-mercapto quinoline (thioxene) is a good analytical reagent for the calorimetric determination of copper, palladium, molybdenum, manganese, vanadium, and other metals (Ref 1). For analytical purposes, the derivatives of 8-mercapto quinoline can also be of interest, as the presence of substituents in the quinoline nucleus affects the properties of the functional atom groupings, thus being able to change the analytical properties of the reagent. The synthesis of 8-mercapto quinoline and of 5-bromo-8-mercapto quinoline was achieved by Edinger (Ref 2), and has been improved by Yu.A.Bankovskiy (Ref 3). Later on Riegel (Ref 4) described the synthesis of 4-chloro-8-mercapto quinoline. In the paper under discussion,

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Synthesis of 6-Bromo-8-Mercapto Quinoline (6-Bromo Thioxene), and Some of Its Properties SOV/79-28-10-50/60

the synthesis of 6-bromo-8-mercapto quinoline is presented. By the method of Edinger, the synthesis of 6-bromo-8-mercapto quinoline (VI) can be carried out in accordance with the pattern specified. Its synthesis and its hydrolysis have not yet been described. In aqueous solutions with cations of the hydrogen sulfide- and ammonium sulfide groups it forms inner complex salts which are water-insoluble and solve in organic solvents. There are 6 references, 2 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR (Institute of Chemistry at the AS **Latvian** SSR)

SUBMITTED: July 25, 1957

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BANKOVSKIY, Yu. (Riga); Ievin'sh, A. [Ievins,A.] (Riga); LOKENBAKH, A. (Riga); ZARUMA, D. (Riga)

Zinc thiooxinate. Vestis Latv ak no.10:115-121 '59. (EEAI 9:10)
(Zinc)

5(2), 5(3) SOV/75-14-2-14/27

AUTHORS: Bankovskiy, Yu. A., Iyevin'sh, A. F., Luksha, E. A.

TITLE: Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives (Analiticheskoye primeneniye 8-merkaptokhinolina (tiooksina) i yego proizvodnykh). Communication 4. Photometric Determination of Small Amounts of Manganese (Soobshcheniye 4. Fotometricheskoye opredeleniye malykh kolichestv margantsa)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 2, pp 222-226 (USSR)

ABSTRACT: In alkaline and ammoniacal solutions bivalent manganese reacts in the presence of tartrates and citrates with thiooxine under the formation of an inner complex salt of dark brown color. The preparation of this salt in pure form is described in this paper. Manganese thiooxinate $Mn(C_9H_6NS)_2$ is insoluble in water, with dark brown color, however, well soluble in most of the organic solvents. In carbon disulphide and carbon tetrachloride the compound is very difficultly soluble, and in aliphatic hydrocarbons it is insoluble. Ex-

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Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication 4. Photometric Determination of Small Amounts of Manganese

tracts of manganese thiooxinate are stable for two days in toluene, benzene, chlorobenzene, and xylene. At a longer storing the extinction of the extracts decreases. Solutions of the complex in chloroform or bromoform are less stable. The complex is stable only in alkaline solutions and can be extracted only at pH > 7. Two maxima are observed in the absorption spectrum of manganese thiooxinate: λ_1 = 250 mμ (molar extinction coefficient ε_1 = 34000) and λ_2 = 413 mμ ($\varepsilon_2 \sim$ 7000). The solutions of the complex in carbon tetrachloride are subject to Beer's law in the case of amounts of < 4 γ Mn in 1 ml CCl_4. Alkali and alkaline earth metals, Al, Cr, Zr, Th, Ti, La, and other elements forming unstable sulfides in water do not disturb the determination of manganese. Since the reaction of manganese with thiooxine takes place in an alkaline medium, it is not very specific because all elements which form sulfides stable in water are precipitated as sulfides in alkaline solution with thiooxine. Iron, cobalt, nickel, palladium, copper, molybdenum, antimony, arsenic,

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tungsten, and rhenium, may, if they have low valences, be masked by potassium cyanide. The cyanide complex of manganese is so little stable at pH 10 that it is destroyed by thiooxine. The masking of iron as $[Fe(CN)_6]^{4-}$ is attained only under certain conditions: iron must be completely bivalent and the pH value of the solution must be 9.5 - 10.5 in the masking. Silver and gold are reduced to metals in alkaline solution and do not inhibit the determination of γ-amounts of manganese, nor do iridium and osmium in mg-amounts disturb the determination. Amounts of about 20 mg platinum cause an intense blue coloration of the extract. Lead, zinc, cadmium, thallium, vanadium, and tin disturb the determination. The devised photometric method of determining manganese is described in detail in this paper as well as the production of the solution of the reagent. Using the method described still 1.5 γ manganese in a 5 ml extract may be determined by means of an SF-4 spectrophotometer with satisfactory accuracy. Using a Pulfrich photometer amounts of manganese of 3 γ in

Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication 4. Photometric Determination of Small Amounts of Manganese

50 - 100 ml solution may be determined. The results of the determination of manganese in the presence of various elements are summarized in a table. There are 3 figures, 1 table, and 15 references, 7 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR, Riga (Institute of Chemistry of the Academy of Sciences, Latvian SSR, Riga)

SUBMITTED: June 19, 1957

5(2)

AUTHORS: Bankovskiy, Yu. A., Shvarts, Ye. M., Ievin's, A. F. SOV/75-14-3-10/29

TITLE: Analytical Application of 8-Mercapto Quinoline (Thiooxine) and Its Derivatives (Analiticheskoye primeneniye 8-merkaptokhinolina - tiooksina - i yego proizvodnykh). Communication 5. Photometric Determination of Molybdenum (Soobshcheniye 5. Fotometricheskoye opredeleniye molibdena)

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 3, pp 313-317 (USSR)

ABSTRACT: Thiooxine reacts both in weakly and strongly acid solution with molybdates under formation of compounds insoluble in water. Under certain conditions the green $MoO_2(C_9H_6NS)_2 \cdot H_2O$ is formed which dissolves in organic solvents with emerald coloration. In the presence of ascorbic acid a pronounced adsorption maximum is formed at 420 mμ. The molar extinction coefficient is 8,600. Figure 3 shows that the toluene extract of the molybdenum thiooxinate obeys Beer's law. An excess of Fe, Co, Ni, Zn, Cd, Pb, Mn, U, Tl, Ir and Rh does not influence the determination. Bi, Ag, Au, Hg and W form

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voluminous amorphous precipitates which are insoluble in toluene and xylene and must therefore be masked like Os, Ru, Cu, Pt and Pd what is done with thiourea. The determination of molybdenum according to this method is possible up to a molybdenum content of 1.5 - 200γ. There are 3 figures, 2 tables, and 11 references, 2 of which are Soviet.

ASSOCIATION: Institut khimii AN Latviyskoy SSR, Riga (Institute of Chemistry of the Academy of Sciences of the Latvian SSR, Riga)

SUBMITTED: May 19, 1957

BANKOVSKIY, YU. A.

PHASE I BOOK EXPLOITATION SOV/4350

Soveshchaniye po khimii, tekhnologii i primeneniyu proizvodnykh piridina i khinolina. Riga, 1957

Khimiya, tekhnologiya i primeneniye proizvodnykh piridina i khinolina; materialy soveshchaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk Latviyskoy SSR. Institut khimii; Vsesoyuznoye khimicheskoye obshchestvo.

Ed.: S. Bachanova; Tech. Ed.: A. Klyavinya; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Vanags, Candidate of Chemistry (Resp. Ed.); L. P. Zalukayev, Doctor of Chemistry, and M. M. Kalnyn'.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

BANKOVSKIY, Yu. [Bankovskis,J.] (Riga); LOBANOVA, E. (Riga)

Analytic application of 8-mercaptoquinoline (thiooxine) and its derivatives. Report XVI. Colorimetric method of determination of rhenium with 6-chlor-8 mercaptoquinoline. Vestis Latv ak no.1: 97-106 '60. (EEAI 9:11)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.
(Quinolinethiol)
(Colorimetry)
(Rhenium)
(Chloroquinolinethiol)

GUDRINIETSE, E.[Gudriniece, E.](Riga); IYEVIN'SH, A.[Ievins, A.](Riga); VANAG, G.[Vanags, G.](Riga); BRUNERE, V.(Riga); BANKOVSKIY, Yu. [Bankovskis, J.](Riga)

Sulfonation of β-diketones. IX. Indandione-1,3-disulfo-2,2-acid and its salts. In Russian. Vestis Latv ak no.3:103-106 '60. (EEAI 10:7)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.
(Ketones) (Sulfonation) (Indandisulfonic acid)

BANKOVSKIY, Yu.[Bankovskis,J.](Riga); LOBANOVA,Ye.(Riga)

6-chlor-8-mercaptoquinolinat of vanadyl. In Russian. Vestis Latv ak no.3:113-118 '60. (KEAI 10:7)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.
(Chloroquinolinethiol) (Vanadium)

BANKOVSKIY, Yu.[Bankovskis, J.] (Riga); MISULOVINA, Z. (Riga); IYEVIN'SH, A.[Ievins, A.] (Riga); BUKA, M.

8-mercaptomethylquinoline and its interaction with metal ions. Vestis Latv ak no.11:103-106 '60. (KEAI 10:9)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.

(Methylmercaptoquinoline) (Ions) (Metals)

BANKOVSKIY, Yu.[Bankovskis, J.] (Riga); FEDOTOVA, L. (Riga); IYEVIN'SH, A. [Ievins, A.] (Riga)

ω,ω-diquinaldildisulfate and its reaction with metal ions. Vestis Latv ak no.12:69-74 '60. (EEAI 10:9)

1. Akademiya nauk Latviyskoy SSR, Institut khimii.

(Quinaldil) (Disulfide group) (Ions)

5.5300

77739
SOV/75-15-1-1/29

AUTHORS: Bankovskiy, Yu. A., Iyevin'sh, A. F., Liyepinya, Z. E.

TITLE: Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication 10. Relative Stability of Thiooxinates and the Influence of Complexing Agents on the Reaction of Thiooxine With Cations

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol 15, Nr 1, pp 4-9 (USSR)

ABSTRACT: A relative stability of thiooxinates of different elements and the relation between the thiooxinates and different complexing agents was studied. Parallel determinations of the relative stability of thiooxinates of different elements were made by three different methods: substitution, rate of thiooxinate formation, and the limits of thiooxinate extraction. It was found that the investigated thiooxinates form a following series, according to their stability:

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Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication 10. Relative Stability of Thiooxinates and the Influence of Complexing Agents on the Reaction of Thiooxine With Cations

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Re > Au > Ag > Hg > Pd > Pt > Ru > Os > Mo > Cu > W > Cd > In > Zn > Fe > Ir > V > Co > Ni > As > Sb > Sn > Bi > Pb > Mn > Tl.

This series is only approximate, since the methods used do not always give reproducible results. The corrections may be made after the dissociation constants of the thiooxinates are determined. Reaction between the thiooxinates and H_2S at different pH was studied in order to show that the stability of thiooxinates depends not only on the metal-sulfur bond, but also on the strength of the metal-nitrogen bond. The results are shown in Table 1. Experiments were conducted in order to compare the stability of oxinates and thiooxinates. It was found that in acid and alkaline media, the thiooxinates, which

Card 2/5

Table 1. Reaction of H_2S with thiooxinates (a) thiooxinates; (b) product of reaction of thiooxinate with H_2S at different pH; (c) decomposes; (d) forms slowly; (e) partly decomposes; (*) decomposes to perrhenate; (**) decomposes to tungstate; (***) in an alkaline media in the presence of oxidizing agent, forms vanadate.

(a)	(b)		
	pH 1	pH 3	pH 10
Re	—	—	Na_2ReO_4 *
Au	—	—	—
Ag	Ag_2S	Ag_2S	Ag_2S
Hg	HgS	HgS	HgS
Pd	—	—	—
Pt	—	—	—
Ru	—	—	(e)
Os	—	—	—
Mo	—	—	—
Cu	—	—	—
W	—	—	Na_2WO_4 **

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Table 1 (cont'd)

(a)	(b)		
	pH 1	pH 3	pH 10
Cd	—	—	—
In	—	—	—
Zn	—	—	—
Fe	—	—	—
Ir	—	—	—
V	—	—	(c) ***
Co.	—	—	—
Ni	—	—	—
As	As_2S_3	(d) As_2S_3	Na_3AsO_3
Sb	Sb_2S_3	Sb_2S_3	Sb_2S_3
Pb	PbS	PbS	PbS
Sn	—	—	—
Bi	Bi_2S_3	Bi_2S_3	Bi_2S_3
Mn	(c)	(e)	—
Tl	Tl_2S	Tl_2S	Tl_2S
Ta	—	—	(c)
Nb	—	—	(c)

Card 4/5

Analytical Application of 8-Mercaptoquinoline (Thiooxine) and Its Derivatives. Communication 10. Relative Stability of Thiooxinates and the Influence of Complexing Agents on the Reaction of Thiooxine With Cations

77739
SOV/75-15-1-1/29

form hydrolyzable sulfides, are more stable than oxinates of the same elements, with the exception of vanadium (in acid solution) and Nb and Ta (in alkaline solution). Studying the effect of different substances on the reaction between different elements and thiooxine, the authors come to the conclusion that highly concentrated hydrochloric acid acts as a masking agent for the following elemements: Fe, Mo, Hg, Ag, Bi, Sn, and Sb; thiourea for: Cu, Ag, Au, Pt, Hg, Ru, and Os; sodium fluoride for Fe^{3+} and Sn^{4+}; potassium cyanide (in alkaline solution) for: Fe (II), Ag, Au, Pt, Ru, Os, Ir, Pd, Ni, and Co; Potassium thiocyanide is a good masking agent for Fe (III) and for moderate amounts of Zn and Cd. There are 2 tables; and 13 references, 4 German, 9 Soviet.

ASSOCIATION: Institute of Chemistry, Academy of Sciences, Latvian SSR, Riga (Institut khimii Akademii nauk Latviyskoy SSR, Riga)

SUBMITTED: March 18, 1958

BANKOVSKIY, Yu.A.; IYEVIN'SH, A.F. [Ievinš, A.]; LUKSHA, E.A., [Lukša, E.]; BOCHKANS, P. Ya.

Analytical application of 8-quinolinethiol (thioquinolinol) and its derivatives. Report 17: 8,8' Diquinolyldisulfide, a new selective reagent for the photometric determination of small amounts of copper. Zhur.anal.khim. 16 no.2:150-157 Mr-Ap '61. (MIRA 14:5)

1. Institute of Chemistry, Academy of Sciences Latvian S. S. R., Riga.
(Copper—Analysis)
(Quinolinethiol)

S/079/60/030/05/44/074
B005/B016

AUTHORS: Bankovskiy, Yu. A., Fedotova, L. A., Zaruma, D. E.

TITLE: Synthesis of 5-Bromo Quinoline

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1614-1616

TEXT: The production of 5-bromo quinoline from m-bromo aniline by means of the Skraup synthesis requires a long distillation with water vapor. Afterwards, the 5-bromo quinoline must be extracted with ether from large quantities of the distillate. Besides, an about equal quantity of isomeric 7-bromo quinoline is formed the complete separation of which is very difficult. The yield in pure 5-bromo quinoline in this synthesis is never more than 10-20% (calculated for m-bromo aniline). Also the synthesis of 5-bromo quinoline by diazotation of 5-aminoquinoline and substitution of bromine for the diazo group (Ref. 2) show several shortcomings which are discussed in the present paper. The authors devised a method of synthesizing 5-bromo quinoline on the basis of 8-aminoquinoline. According to N. N. Vorozhtsov and I. M. Kogan (Ref. 6), 8-aminoquinoline can also be obtained easily by amination of 8-hydroxyquinoline with ammonia in the

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presence of ammonium bisulfite. G. I. Mikhaylov (Ref. 7) improved this method, and was able to raise the yield of 8-aminoquinoline to 81-83%. The authors used this method for the preparation of 8-aminoquinoline. The synthesis of 5-bromo quinoline devised is accomplished as follows: 8-aminoquinoline is acetylated in benzenic solution with acetic anhydride. 8-Acetylaminoquinoline which results in good yield is not isolated but brominated in the resultant reaction mixture at 0-2°C. In this way, 5-bromo-8-acetylaminoquinoline is obtained in yields up to 98.5%. By hydrolysis with hydrochloric acid, the acetyl group is split off. The resultant 5-bromo-8-aminoquinoline is diazotized in sulfuric acid solution at -2°. By reduction with copper powder and alcohol, the diazo group is replaced by hydrogen, and 5-bromoquinoline results as end product in a yield of 40-51%. In an experimental part, the total course of synthesis is described in detail. The scheme of the synthesis is given as well. There are 11 references, 4 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR (Institute of Chemistry of the Academy of Sciences, Latviyskaya SSR)

Synthesis of 5-Bromo Quinoline

S/079/60/030/05/44/074
B005/B016

SUBMITTED: May 22, 1959

Card 3/3

BANKOVSKIY, Yu.A. [Cirule, J.]; TSIRULE, Ya.A. [Ievins. A.]; IYEVIN'SH, A.F.

Use of 8-quinolinethiol (thioöxine) and its derivatives in analysis. Report No.18: Gallium, indium, and thallium thioöxinates. Photometric determination of indium with thioöxine. Zhur.anal.khim. 16 no.5:562-572 S-O '61. (MIRA 14:9)

1. Institute of Chemistry, Academy of Sciences, Latvian S.S.R., Riga.
(Quinolinethiol) (Gallium--Analysis) (Indium--Analysis)

BANKOVSKIY, Yu.A.; MISULOVINA, Z.V.; IYEVIN'SH, A.F. [Ievins, A.]; BUKA, M.R.

5-Fluoro-8-mercaptoquinoline and its salts. Metod.poluch.khim. reak.i prepar. no.4/5:71-78 '62. (MIRA 17:4)

1. Institut khimii AN Latviyskoy SSR.

BANKOVSKIY, Yu.A.; MEZHARAUPS, G.P. [Mezaraups, G.]; IYEVIN'SH, A.F. [Ievins, A.]

Analytical application of 8-mercaptoquinoline (thiooxine) and its derivatives. Report No.20: Thiooxinates of platinum metals. Zhur.anal.khim. 17 no.6:721-733 S '62. (MIRA 16:1)

1. Institut khimii AN Latviyskoy SSR, Riga.
(Quinolinethiol) (Platinum metals)

L 15496-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD
ACCESSION NR: AR3003755 S/0137/63/000/005/K011/K011

56

SOURCE: RZh. Metallurgiya, Abs. 5K63

AUTHOR: Mezharaups, G. P., Iyevin'sh, A. F., Bankovskiy, Yu. A.

TITLE: The use of thioxine for the qualitative determination of platinum and palladium in the presence of other platinum metals

CITED SOURCE: Izv. AN LatvSSR. Ser. khim., no. 1, 1962, 29-33

TOPIC TAGS: thioxine, platinum, palladium, iridium, osmium, ruthenium, qualitative analysis

TRANSLATION: A method of qualitative determination of Pt and Pd in the presence of other platinum metals was developed. The method is based on the co-precipitation of the thiooxinates of Pt and Pd with 8,8'-diquinolyldisulfide. Pt can be determined in the presence of 120 times the amount of Rh and 35-50 times the amount of Ir, Os, and Ru. Pd is determined in the presence of relatively large amounts of Rh and Ir and moderate amounts of Os, Ru, and Pt. Author's summary.

DATE ACQ: 21 Jun 63 SUB CODE: CH, EL ENCL: 00

Card 1/1

BANKOVSKIY, Yu.A.; MICULOVINA, Z.V.; TSIRULE, Ya.A.; IYEVIN'SH, A.F. [Ievins, A.]

8-Chloro-8-mercaptoquinoline and its salts. Metod.poluch.khim.reak.i prepar. no.4/5:79-85 '62. (MIRA 17:4)

1. Institut khimii AN Latviyskoy SSR.

BANKOVSKIY, Yu.A.; IYEVIN'SH, A.F. [Ievins, A.]; BUKA, M.R.; LUKSHA, E.A. [Luksa, E.A.]

Inner-complex compounds of manganese with the coordination number of 8. Zhur.neorg.khim. 8 no.1:110-118 Ja '63. (MIRA 16:5)

1. Institut khimii AN Latviyskoy SSR.
(Manganese compounds) (Coordination compounds)

BANKOVSKIY, Yu.A.; CHERA, L.M.; IYEVIN'SH, A.F. [Ievins, A.]

Analytical application of 8-mercaptoquinoline (thioxine) and its derivatives. Report No.25: Solubility in water and the extraction range of 8-mercaptoquinoline in the system water - organic solvents. Zhur. anal. khim. 18 no.5:555-561 My'63. (MIRA 17:2)

1. Institute of Chemistry, Academy of Sciences, Latvian S.S.R., Riga.

BANKOVSKIY, Yu.A.; CHERA, L.M.; IYEVIN'SH, A.F. [Ievins, A.]

8-Mercaptoquinoline (thioxine) and its derivatives. Report No.28: Absorption spectra and the state of 8-mercaptoquinoline in solutions. Zhur.anal.khim. 18 no.6:668-686 Je '63. (MIRA 16:9)

1. Institut khimii Akademii nauk Latviyskoy SSR, Riga.
(Quinolinethiol—Absorption spectra)

ACCESSION NR: AP4009722 S/0075/64/019/001/0048/0053

AUTHOR: Bankovskiy, Yu. A.; Chera, L. M.; Iyevin'sh, A. F.

TITLE: Study of 8-mercaptoquinoline(thioxine) and its derivatives. Report No. 29. Application of thioxine for extractive purification of reagents by removing heavy metal admixtures

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 1, 1964, 48-53

TOPIC TAGS: 8-mercaptoquinoline, thiooxine, purification, heavy metal trace removal, thioxine oxidation, purification pH, coprecipitation, 8,8'-diquinolyldisulfide

ABSTRACT: Thioxine, when used as the sodium salt, forms stable, water-insoluble, complex salts with heavy metal ions which can then be removed by organic extractants. By varying the acidity selective extraction can be achieved, and the thioxine excess is removed together with the thiooxinates. Thioxine is practically and quantitatively extracted between pH 2-8.4; and at a pH 5.2 of a 10:1 chloro-

Card 1/2

ACCESSION NR: AP4009722

form-water mixture, 1/1000 of the initial thioxine will remain in the water layer after 2 extractions, 1/30,000 after 3. By increasing thioxine excess, the pH interval may be significantly broadened. Conditions for removing each of the various metals are listed. Thioxine may be used for all heavy metals which do not form stable sulfides in aqueous solutions, also for uranyl salts in a weakly acidic medium, and for purifying many organic substances soluble in water and insoluble in the usual organic solvents. The sodium introduced with thioxine is removed by subsequent crystallization. Purification to 10^{-8} - 10^{-9}% is possible. The procedure is described. Instead of extraction, coprecipitation and subsequent filtration may be used by oxidizing thioxine in alkaline solution to 8,8'-diquinolyldisulfide. Orig. art. has: 2 figures.

ASSOCIATION: Institut khimii Akademii nauk Latviyskoy SSR, Riga (Institute of Chemistry of the Academy of Sciences of the Latvian SSR)

Card 2/2

ACC NR: AP6033456 SOURCE CODE: UR/0413/66/000/018/0039/0039

INVENTOR: Bankovskiy, Yu. A.; Gertner, M. D.; Yanson, E. Yu.

ORG: none

TITLE: Preparation of α-dithionaphthoates of tetramethylammonium, tetraethylammonium, or tetraphenylarsonium. Class 12, No. 185907 [announced by Latvian State University im. Stuchka (Latviyskiy gosudarstvennyy universitet)]

SOURCE: Izobret prom obraz tov zn, no. 18, 1966, 39

TOPIC TAGS: tetramethylammonium dithionaphthoate, tetraethylammonium dithionaphthoate, tetraphenylammonium dithionaphthoate, sodium dithionaphthoate, halide ammonium compound

ABSTRACT: In the proposed method, α-dithionaphthoates of tetramethylammonium, tetraethylammonium, or tetraphenylarsonium are obtained by treating sodium α-dithionaphthoate with the appropriate onium halides, e.g., with tetramethylammonium iodide. [W.A. 50]

SUB CODE: 07/ SUBM DATE: 08Oct65

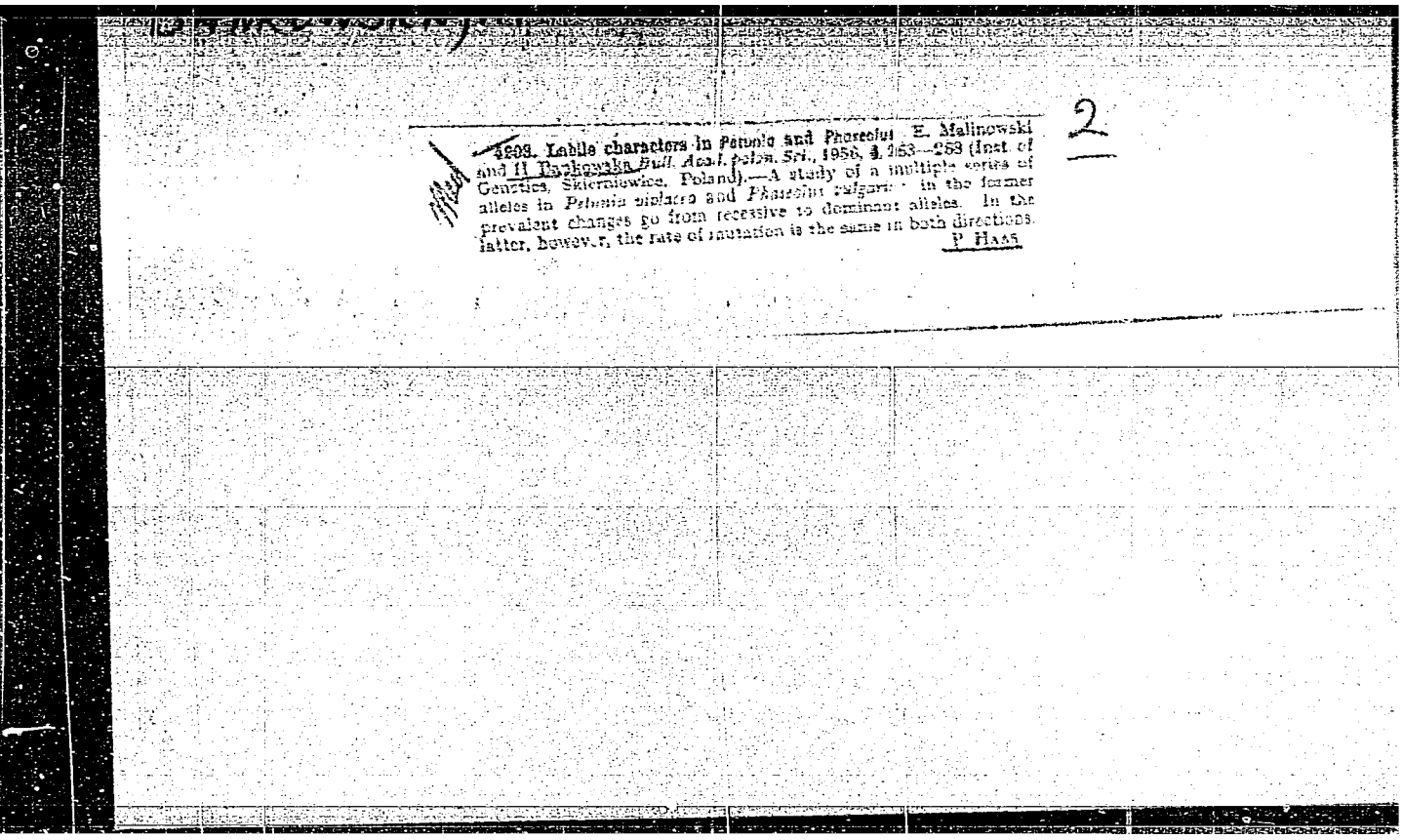
Card 1/1 UDC: 547.233.4.07

PAKULA, Roman; PIECHOWSKA, Miroslawa; BANKOWSKA, Edmunda; WALCZAK, Wlodzimierz

A characteristic of DNA mediated transformation systems of two streptococcal strains. Acta microbiol. polon. 11 no.3:205-222 '62.

1. From the Department of Bacteriology, State Institute of Hygiene, Warsaw.

(DNA, BACTERIAL) (STREPTOCOCCUS)



4203. Labile characters in *Petunia* and *Phaseolus*. E. Malinowski and H. Tarkowska. *Bull. Acad. polon. Sci.*, 1956, 4, 253—258 (Inst. of Genetics, Skierniewice, Poland).—A study of a multiple series of alleles in *Petunia violacea* and *Phaseolus vulgaris* in the former prevalent changes go from recessive to dominant alleles. In the latter, however, the rate of mutation is the same in both directions.
P. Haas

2

BAN K, H

POLAND/Cultivated Plants - Potatoes, Vegetables, Melons, M-3

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10778

Author : Malinowski, E., Bankowska, H., Oskierka, I.
Inst : -
Title : Experiments with Potato Grafting. III. Grafting Solanum Rybinii on Tomato.

Orig Pub : Acta agrobot., 1956 (1957), 5, 33-42

Abstract : An attempt was made through grafting to induce blossoming in varieties which ordinarily blossom only slightly or not at all. The cultivated tomato and the wild variant Lycopersicon esculentum (L.c.) were grafted in the following ways: 1) on the tomato rootstock without any auxiliary shoots, 2) with one or two young auxiliary shoots, 3) with several blossoming auxiliary shoots. The greatest number of blossoms appeared both on the tomato and on L.e. in the first variant. With self-pollination one berry appeared only in the first variant.

Card 1/2

POLAND/Cultivated Plants - Potatoes, Vegetables, Melons. M-3

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10778

In order to study the formation of air tubers and stolons, tuber shoots of potato were grafted onto the main stem of a Golden Jubilee tomato from which all auxiliary shoots had been removed. The tomato stem was cut off above the second leaf, and the potato shoot was attached there, using a forked graft. Part of the plants received supplementary P_s fertilization (variant No 4), and part were grown under conditions of a ten-hour day (variant No 5). The plants in variant No 5 hardly formed any blossoms, but air tubers did form on their stems. The greatest amount of blossoming occurred in the No 4 variant, the stalks seeming to form new, independent plants, upon whose base there appeared a large number of air stolons. The new shoots had large, dark-colored leaves, and tubers appeared on some of the stolons.

Card 2/2

BA[illegible]A, H

POLAND/Cultivated Plants - Potatoes, Vegetables, Melons. M-3

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10779

Author : Malinowski E., Bankowska H., Oskierka I.
Inst : -
Title : Experiments with Potato Grafting. IV. Grafting Solanum Commersonii on Tomato.

Orig Pub : Acta. agrobot, 1956, (1957), 5, 43-54

Abstract : Solanum commersonii (S.C.) blossoms profusely but has no fruit; when grafted onto tomato, it gives normal fruit and seed even after self-pollination. The largest number of racemes and blossoms came from variant No 1 (cf. Part III); the plants of the third variant blossomed much worse than the control. The largest number of air tubers and stolons formed on the first variant also. Seedlings were grown from seed of fruit grown in the first variant, and then these seedlings were grafted onto Lycopersicum esculentum. Stolons formed on the graft seedlings much

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2

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10779

earlier (June) than on grafts from tuber sprouts. (September). S.C. forms fewer air stolons when grafted onto tomato than does S.Rybinii. In the beginning the stolons appear at the place of grafting and then on the newly formed shoots where they accumulate reserves of nutritive substances in special tuberous growths. These growths may be analyzed in the same way as organs of vegetative reproduction. The S.C. air tubers are different from S. Rybinii and S. tuberosum in that they are formed from a thickened part of the new-grown shoot and leaf base. Similar stolon growths and fascicles are also formed on the racemes at the end of the vegetation period.

BANKOWSKA H.

POLAND/Cultivated Plants - Potatoes, Vegetables, Melons. M-3

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10780

Author : Malinowski, E., Bankowska, H., Oskierka, I.
Inst : -
Title : Experiments with Potato Grafting. V. Solanum polyadenium Air Stolons.

Orig Pub : Acta. agrobot, 1956 (1957), 5, 55-61

Abstract : Solanum polyadenium was grafted onto Golden Jubilee tomato with the aim of getting fruit from the self-pollinating S. polyadenium blossoms. When grafted with two young shoots the graft's flowering increased markedly, and fruit was produced by the self-pollination. When two old shoots were left on the rootstocks, no fruit grew on the graft; an average of 40 blossoms formed on each plant (126 in the first case). The seedlings from the self-pollination were grafted onto Lycopersicon esculentum. The variants from the graftings were as before (see parts 3

Card 1/3

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Abs Jour : Ref Zhur - Biol., No 3, 1958, 10789

and 4). The first variant flowered best, while the third variant flowered worst. Self-pollination produced fruits only in the first variant; this one also produced the largest amount of stolons. The total length of all air stolons in the first variant was 447.15 cm., in the second -- 261.7 cm., and in the third -- 100.5 cm. On the grafts from seedlings the stolons emerged approximately two months earlier than on grafts from potato sprouts. There were fewer stolon fascicles on S. polyadenium, and tubers formed on them only when the stolons took root in the ground. Stolons forming in spots where the components grew together were usually horizontal. The stolon lateral shoots grow out at about a 90° angle. Above the place where they grow together the stolons bend over and down, frequently indicating normal leaf development. The author views these stolons as occupying an intermediate position between genuine air stolons and

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10780

lateral shoots. The stolons become progressively shorter in proportion to their distance from the place of graft. No stolon formation was noted on the racemes.

4/-

POLAND / General Biology. Plant Genetics. B

Abs Jour: Ref Zhur-Biol., No 23, 1958, 103364.

Author : Bankowska, Helena.
Inst : Not given.
Title : Research on Variable Characteristics of Phaseolus vulgaris L.

Orig Pub: Acta agrobot. 1956 (1957), 6, 71-137.

Abstract: The character of the inheritance of color distribution on the seed capsule of the kidney bean was investigated. For the purpose of cyclic crossings two white-seeded forms of the kidney bean were used --Kaiser Wilhelm and Vitry--and one form which had seeds of a pale flesh color with a slight sandy-colored tessellation near the hilum. In direct and reverse crossings of the kidney bean with the flesh-colored seeds with the Vitry and Kaiser Wilhelm

Card 1/3

POLAND / General Biology. Plant Genetics. B

Abs Jour: Ref Zhur-Biol., No 23, 1958, 103364.

Abstract: sorts plants were obtained in the F_1 generation with very different types of tessellation on the seeds of various beans. In the F_2 generation from the crossing of the kidney bean having the flesh-colored seeds with the Vitry sort there were 100 plants with tessellated seeds, 89 with a solid black-violet coloration and 62 with white seeds, whereas in the F_2 generation after crossing with the Kaiser Wilhelm sort there were observed four solid colors and numerous mosaics. The mosaic was observed only on a flesh-colored or sandy background, but never on white. The results of the dissociation in the F_2 and subsequent generations are explained by the author by the presence of an R factor in the kidney beans with flesh-colored seeds, the presence of which accounts for the formation of the background,

POLAND / General Biology. Plant Genetics. B

Abs Jour: Ref Zhur-Biol., No 23, 1958, 103364.

Abstract: and of I and B genes which are responsible for the flesh and sandy color of this background, as well as by the homozygotic nature of the white-seeded Vitry bean with respect to the R factor, which is epistatic to the other color factors. By comparing the extremely complex dissociation observed in the hybrids with the fact of the indubitable occurrence of somatic mutations in them the author concludes, in addition, that s specific hereditary factor is present in them which is responsible for the mutation of the seed capsule color genes. -- A. I. Kuptsov.

Card 3/3

MALINOWSKI, E.; BANKOWSKA, H.; BIURKOWSKA, M.

Heterosis in maize (Zea mays). I. Correlation phenomena between vigorous growth and time of flowering in F_2. II. Fixing vigorous growth. Bul Ac Pol biol 8 no.1:23-33 '60. (EEAI 10:1)

1. Institute of Genetics (Skierniewice), Polish Academy of Sciences. Presented by E.Malinowski.
(CORN (MAIZE)) (HETEROSIS) (GROWTH (PLANTS))

BANKOWSKA, Helena

On heterosis in general. Postepy nauk roln 10 no.6:25-34 N-D'63.

BANKOWSKA, Helena

Observations on heterosis in Zea mays L. Acta agrobot 15:5-12 '64.

1. Department of Genetics, Central College of Agriculture, Warsaw.

BANKOWSKA, Helena

Observations on heterosis in Zea Mays L. Pt.2. Acta agrobot 16:175-179 '64.

1. Department of Genetics of the Central College of Agriculture, Warsaw. Submitted February 25, 1964.

BANKOWSKA, R.

Studies on the family Syrphidae (Diptera) Helenomyia gen. nov.
Bul Ac Pol biol 10 no.8:311-314 '62.

1. Institute of Zoology, Polish Academy of Sciences, Warsaw.
Presented by T. Jaczewski.

BANKOWSKA, Regina

Studies on the Palaearctic species of the genus Sphaerophoria St.Farg. et Serv. (Diptera, Syrphidae). Annales zool 22 no.15: 285-353 '64.

BANKOWSKI

POLON

Preparation of chloride and nitrate of 2-(1-naphthylmethyl)imidazoline. Z. Bankowski, T. Urbański, and T. Wellisch (Warsaw, Poland). *Przemysł Chem.* 9, 463-4 (1953) (English summary).—The method consists of condensing 1-$C_{10}H_7CH_2CO_2H$ (I) with $(H_2NCH_2)_2.H_2O$ (II) in the presence of HCl. In three-neck flask, with stirrer, dropper, and condenser were placed 27 g. powd. NaCN and 35 ml H_2O, the flask warmed in H_2O bath until the NaCN dissolved, 72 g. 1-$C_{10}H_7CH_2Cl$ in 100 g. EtOH added dropwise for 30–45 min., the mixt. warmed to boiling 5 hrs. with const. stirring, cooled, the NaCl filtered off, washed with 50 ml. EtOH, the latter distd. off, and the remainder distd. in vacuo. The product, 1-$C_{10}H_7CH_2CN$, 54.2 g., bp 176–81°, 40 g. NaOH, 200 ml. H_2O, and 80 ml. EtOH in a flask were heated to boiling 3.5 hrs., the EtOH was distd. off, the remainder decolorized with C, and pptd. with 20% H_2SO_4, yielding 56.3 g. I, crystd. from H_2O, m. 120–1°. To 186 g. I in distn. flask was added slowly 86 g. $(H_2NCH_2)_2.H_2O$, then 113 g. concd. HCl, and the mixt. distd. on the bath, increasing the temp. to 240° in 1 hr. The theoretical amt. of H_2O distd. within 1 hr. The temp. of the bath was kept 1 hr. at 240–50° and then another hr. at 250–70°. The brown, glassy, residue was washed with 2500 ml. hot H_2O, the suspension heated to boiling, the residue (80 g.) filtered and washed with 100 ml. hot H_2O, the filtrate decolorized with activated C, alkalized with 100 g. NaOH in 150 ml.

OVER

Z. BANKOWSKA

H_2O. A yellow oil sepd., and the soln. extd. several times with 100-ml. portions of C_6H_6. The exts. were added to the yellow oil, the combined soln. dried with KOH, then at 90°, and crystd. giving 108.6 g. 2-(1-naphthylmethyl)imidazoline (III), m. 116–20°. To 15 g. III dissolved in 20 ml. EtOH 7.7 g. concd. HCl was added, the soln. heated several min. to boiling, decolorized with C, the resulting III.HCl filtered & pptd. from the soln. with Et_2O yielding almost 100% HCl salt, crystg. from anhyd. EtOH, m. 253–5° (decompn.), sol. in EtOH and H_2O. Similarly, III.HNO_3, m. 152° (decompn.) was obtained by mixing 4.3 g. III in 2 ml. H_2O and 2.2 g. concd. HNO_3 in 4 ml. EtOH.

Gene A. Wozny

2/2

BANKOWSKA, ZOFIA

Wanda Polaczkowa and Zofia Bankowska: "Chlorination of Acetone. Preparation of 1,1,3-Trichloroacetone," Roczniki Chemii, Vol 30, No 1, Warsaw, 1956, Published from the Chair of Organic Chemistry, Warsaw Polytechnic, 1 Dec 55.

Distr: 4E2c(j)/4E3d

The mechanism of enolization and halogenation of ke-
tones and α-halo ketones. Zofia Bańkowska (Politechnika,

Distr: 4E2c(j)/4E3d

3
1-BW(BW)
1-JAJ(NB)
1-JAJ(MAY)
2

Enolization of bromo- and chloroacetone in the presence of hydrogen chloride. I. Some chloro derivatives of bromoacetone. Z. Bańkowska (Politech., Warsaw). *Bull. acad. polon. sci., Sér. sci. chim., géol. et géograph.* 7, 469–72 (1959)(in English).—1-Chloro-1-bromoacetone (I), n_D^{20} 1.4858, b_{12} 47.5°, was prepd. by ketonic decompn. of Et α-bromo-α-chloroacetoacetate. 1-Chloro-3-bromoacetone (II), n_D^{20} 1.5072, was prepd. from chloroacetyl bromide and diazomethane and isolated by freezing out at −50°. Br in II was partially substituted by Cl by shaking with aq. HCl. On distn., II underwent partial diamutation and gave fractions contg. dichloro, dibromo, and chlorobromo derivs. Exhaustive chlorination of $BrCH_2COCH_3$ (III) (1 mole Cl to 1 mole ketone) with dry HCl gave I mixed with other derivs. The ratio II:I in the products was estd. at 0.286:1 for III and 0.145:1 for $ClCH_2COMe$. 1,1-Dichloroacetone b_{20} 117.5–18.0°, n_D^{20} 1.4472, and 1,3-dichloroacetone b_{22} 81–3°, n_D^{20} 1.4711. II. Enolization of chloro-bromo- and 1,1-dichloro-acetone in the presence of hydrogen chloride. *Ibid.* 473–7.—Quant. ratios of $XClCHCOMe$ to XCH_2COCH_2Cl derivs. obtained by chlorination of XCH_2COMe with dry HCl (X = Cl, Br) (I, II) were 1:0.14–1:0.19 for I, 1:0.28 for II, and similarly 1:3.8 for $Cl_2CHCOMe$ (III). They were assumed to be equal to the ratios of the corresponding enols existing before chlorination. Amts. of KI liberated 5 min. after titration of halo acetone compds. with $Na_2S_2O_3$ in neutral (*n*) and acid (*a*) solns., were in the following order III(*n*) < 1,1-ClBr(*n*) < I(*a*) < 1,1-ClBr(*a*) < II(*a*). Inductive effects in those mols. were discussed. J. Stecki

1/1 art bz

Distr: 4E3d

1-Chloro-1-bromo- and 1-chloro-3-bromoacetone. Zofia Bańkowska (Politechnika, Warsaw). *Roczniki Chem.* 33, 1039–48(1959) (English summary).—Ethyl α-chloro-α-bromoacetylacetate (222 g.), b_{20} 112°, $n_D^{19.3}$ 1.4724, $d_{M.3}$ 1.5322, was heated 4.5 hrs. at 105° with 1400 g. 36% H_2SO_4. The oily layer was dried and distd. many times *in vacuo* to give 1-chloro-1-bromoacetone (I), b_{19} 47.5°, 1.4858, 1.7062, yield 17.6%. HBr soln. (46%, 29.9 g.) was added dropwise to 22.5 g. diazochloroacetone in 50 ml. Et_2O at 0°, the Et_2O layer neutralized with MgO, and dried with $MgSO_4$. The resulting 1-chloro-3-bromoacetone (II), m. 26–8°, 1.5072, —, 37.4%, was crystd. by successive evapn. of Et_2O at −50°. II, when distd., disproportionated partly to 1,3-dichloro- and 1,3-dibromoacetone. Both in acid and in neutral medium Cl^- ions promoted the exchange of Br for Cl in II but not in I. In presence of dry HCl no replacement of Br by Cl was observed in bromoacetone, I, and II.

A. Kręglewski

Katedra Chemii Organicznej Politechniki, Warszawa

BANKOWSKA, Z.

Influence of the halogen on the enolization direction of chloro-bromo-and 1,1-dichloroacetone in the presence of hydrogen chloride. II. Bul Ac Pol chim 7 no.7:473-478 '59. (EEAI 10:4)
(Chloropropanone) (Bromopropanone) (Hydrochloric acid)
(Isomerization) (Halogens) (Dichlorpropanone)
(Trichloropropanone) (Bormochloropropanone)

BANKOWSKA, Zofia

Effect of halogen on the direction of enolization of chloro- and bromoacetone in acid medium. Rocz chemii 33 no.6:1319-1332 '59. (EEAI 9:9)

1. Katedra Chemii Organicznej Politechniki, Warszawa.
(Halogens) (Chloropropanone)
(Bromopropanone) (Isomerization)

BANKOWSKA, Z.

Enolization direction of brono- and chloroacetone in the presence of hydrogen chloride. I. Some chloroderivatives of bromoacetone. Bul Ac Pol chim 7 no.7:469-472 '59. (EEAI 10:4)

1. Department of Organic Chemistry, Technical University, Warsaw. Presented by T.Urbanski.

(Bromopropanone) (Chlorine) (Chloropropanone)
(Isomerization) (Hydrochloric acid)

BANKOWSKA, Zofia, dr.,akiunkt

Moddrn aspects on tautomerism of β-dicabonyl compounds. Wiad chem 14 no.6:376-399 Je '60.

1. Politechnika, Warszawa.

BANKOWSKA, Z.

Enolization of ethyl α- and γ- chloroacetoacetates. Bul chim PAN 10 no.8:401-405 '62.

1. Department of Organic Chemistry, Technical University, Warsaw and Institute of Organic Synthesis, Polish Academy of Sciences, Warsaw. Presented by T. Urbanski.

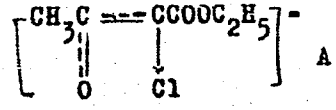
S/081/63/000/004/012/051
B166/B196

AUTHOR: Bańkowska, Zofia

TITLE: Enolization of α-chloroacetoacetic ester

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 203-204, abstract 42h5 (Roczn. chem., v. 36, nos. 7-8, 1962, 1159-1171 [Pol.; summaries in Russ. and Eng.])

TEXT: Freshly distilled α-chloroacetoacetic ester (I) containing 30 - 36% enol form reaches equilibrium in a few days with a 14.7% enol content. In polar solvents equilibrium is achieved very rapidly, with an enol content in CH_3OH, C_2H_5OH and ether of 10.2, 18.6 and 37.4%, respectively. In nonpolar solvents I forms an equilibrium mixture with an enol content in CCl_4, C_6H_6 and C_7H_{16} of 60, 32.5 and 40-45%, respectively, only when pyridine is added, which is explained by a reduction in the basicity of I as a result of the induction effect of the Cl atom. Anomalously, the low enol content (5-8%)



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Enolization of α-chloroacetoacetic ester

in I precipitated from its Na derivative is explained by the formation of a mesomeric anion (A). The UV and IR spectra of I, as well as the UV spectrum of the methyl ester of I (II), show that the enol in I exists exclusively in the cis form. The enol-form content in I was determined by bromometric titration. To 0.34 moles I is added CH_2N_2 ether solution (from 70 g nitroso-methylurea), then 2 ml CH_3OH; after 3 days the solution was evaporated, cooled to -50°C, giving II, $C_7H_{11}ClO_3$, b.p. 120-123°C/18 mm Hg, m.p. 35.5-38°C, $n^{40}D$ 1.4863. [Abstracter's note: Complete translation.]

BANKOWSKI, Czeslaw

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Pharmaceuticals, Cosmetics, and Perfumes

Quantitative fluctuations of oil and menthol contained therein in peppermint plant, *Mentha piperita*. Czeslaw Bańkowski (Zakład. Med., Zakład Botan. Farm. i Ogrodu Roślin Leczniczych, Wrocław). *Acta Polon. Pharm.* 10, 169-74(1953)(English summary).—The peppermint oil content of the leaves of *M. piperita* was 1.8-3.3%, and in the herb 1.25-2.35%, calcd. on a dry-wt. basis; the oil contained 53.2% of menthol. The oil content increases with a rise of temp. and decreases when the temp. falls with simultaneous increase of menthol up to 69.9%. R. Ehrlich

OLECHOWSKA-BARANSKA, Krystyna; BANKOWSKI, Czeslaw.

Opium produced at the Pharmacognosic Station of the Academy of Medicine in Wroclaw. Farm.polska 11 no.1:10-11 Jan '55.

1. Z Zakladow Farmakognozji i Botaniki Farmaceutycznej A.M. w Wroclawiu.
(OPIUM, preparation of)

BANKOWSKI, Czeslaw, Mgr.

Comparison of medicinal properties of Matricaria chamomilla with properties of Matricaria suaveolens. Farm.polska 11 no.2:30-31 Feb. '55.
(PLANTS, Matricaria chamomilla & M. suaveolens, comparison of medicinal properties)

Bankowski, C.

Radix rumicis hydrolapathi, raw material for tannins. Z. Olszewski and C. Bankowski (Zakład Farm. Stosowanej A.M., Wrocław). *Acta Polon. Pharm.* 12, 121–7(1955) (English summary).—Sorrel (*Rumex hydrolapathum*) was found to contain catechol and pyrogallol tannins, reducing sugars (3.02%), and nonreducing sugars (9.98%). The alc. solns. gave yellow-green fluorescence with ultraviolet light. Extn. by means of the Koch app. yielded at 50° 13.4%, at 60–100° 18.95%, and at 100° 27.83% tannin.
L. J. Piotrowski

(1)

BANKOWSKI, C

SCIENCE

PERIODICAL: WIADOMOSCI BOTANICZNE, Vol. 1, no. 3, 1957

BANKOWSKI, C. New method of conducting study groups in botany. p. 127

Monthly List of East European Accessions (EEAI) LC Vol. 8, No. 4
April 1959, Unclass

POLAND/Cultivated Plants. Medicinal, Ether Oleaginous, and Poisonous Plants. M

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68399

Author : Bankowski, Czeslaw
Inst : Wroslaw Academy of Medical Sciences.
Title : The Content of Ether Oils in Certain Bazalik (Ocimum L.) Species Grown at the Garden of Medicinal Plants of the Academy of Medical Sciences in Wroslaw.

Orig Pub : Farmac. polska, 1957, 13, No 6, 145-148

Abstract : The facts about the history of the cultivation of bazalik since ancient times are pointed out. Since 1952, the following plants were grown at the garden of medicinal plants of the Academy of Medical Sciences in Wroclaw: O. basilicum L., O. canum Sims., O.

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Abs Jour : Ref Zhur-Biol., No 15, 1958, 68399

sanctum L., O. gratissimum L. All species acclimatized well to Wroslaw conditions. O. gratissimum and its variants, the ether oil of which contains eugenol, are worthy of special attention. The racemes contain the largest quantities of aromatic oils, next in content of aromatic oils are the leaves, and finally the seeds, in which aromatic oils are contained in insignificantly small quantities. It was observed that a dried plant which had lain in an ordinary paper bag since 1952, still contained a rather high percentage of oil (0.30 percent). -- Ya. M. Ginevskiy

COUNTRY : Poland
CATEGORY :

ABS. JOUR. : RZKhim., No. 20 1959, No. 72259

AUTHOR : Bankowski, C.; Gamzer, W.
INST. :
TITLE : Content of Tannins in Polish Species of Sanguisorba L.

ORIG. PUB. : Acta polon. pharmac., 1958, 15, No 6, 481-483
ABSTRACT : A description of locations where the plants occur; of conditions of their preliminary treatment; results of analyses of specimens. It is proposed to utilize the plants as pharmaceutical raw material. -- D. Yakesh.

CARD:

BANKOWSKI, Czeslaw; SKULA, Zofia

"Artemizol", preparation used against pediculosis. Przegl.epidem. 15 no.2:199-201 '61.

1. Z Zakladu Botaniki Farmaceutycznej AM we Wroclawiu Kierownik: prof. dr J. Madalski i Wojewodzkiej Stacji Sanitarno-Epidemiologicznej we Wroclawiu Dyrektor: lek. med. S. Przyleski.

(PEDICULOSIS) (PLANTS MEDICINAL)
(INSECT REPELLENTS)

POLAND

BANKOWSKI, Czeslaw, Dr. pharm [Affiliation not given]

"Prof. Dr. Jozef Madalski Appointed Regular Professor."

Warsaw, Farmacja Polska, Vol 18, No 22, 25 Nov 62, p 550

Abstract: Biographic sketch of scientific activities of Prof. Dr. Jozef MADALSKI, director of the Chair of Pharmaceutical Botany (Katedra Botaniki Farmaceutycznej) and the Therapeutic Plants Garden (Ogrod Roslin Leczniczych), Pharmaceutical Division (Wydzial Farmaceutyczny) of the AM [Akademia Medyczna, Medical Academy] in Wroclaw -- on the occasion of his promotion to full professorship. No references.

1/1

BANKOWSKI, Czeslaw; KOWAL, Tadeusz

Investigations on the content of oil in various organs of Ruta graveolens L. subsp. hortensis (Miller) Gams. during 1 year of its growth. Acta pol. pharm. 19 no.6:497-505 '62.

1. Z Katedry Botaniki Farmaceutycznej Akademii Medycznej we Wroclawiu Kierownik prof. dr J. Madalski.
(OILS) (PLANTS) (HERBS)

POLAND

BANKOWSKI, Czeslaw, Department of Pharmaceutical Botany (Zakład Botaniki Farmaceutycznej) and Medical Plant Garden (Ogrod Roslin Leczniczych) of the Medical Academy (Akademia Medyczna) in Wroclaw (Director: Prof. Dr. J. MADALSKI)

"Observations on Geranium macrorhizum L."

Warsaw, Farmacja Polska, Vol 19, No 13-14, 25 Jul 63, pp 282-283

Abstract: The author describes the physical appearance of this plant, gives popular names used for it in East European countries, noting that it is particularly successfully grown in Bulgaria, describes the composition of its distillation products, and notes its uses for perfumery and medicine (volatile substances of the oil, such as geraniol and cytronelol have stronger bactericidal effect than phenol). He tells of bringing the plant from Sofia in 1961 and succeeding in growing it at the Medical Plant Garden (vegetative method, as seed did not germinate), indicating that it can grow in the Polish climate. There are 8 references: one (1) each Soviet, Polish, Czech, and English; and two (2) each Bulgarian and German.
1/1

KOSTECKA-MADALSKA, O.; BANKOWSKI, Cz.

Ethereal oil content in Heracleum Sosnowskyi Manden., cultivated in Poland. Acta agrobot 14 no.1:25-32 '63.

1. Department of Pharmaceutical Botany with Medical Plant Garden, School of Medicine, Wroclaw.