"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.D., dots.; STEPANOV, P., red.; LOBKOV, M., red.

[Trace element fertilizers and crops] Mikroudobreniia i urozhai.

[Trace elements in animal husbandry] Mikroelementy v zhivotnovodstve. Stavropol', Stavropol'skoe knizhnoe izd-vo, 1964. (MIRA 18:8)

1. Stavropol'skiy sel'skokhozyaystvennyy institut (for Rudin).

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

USSR / Soil Science. Physical and Chemical Properties of Soil. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6079.

Author : Rudin, V. D.; Shcherbakova, S. S.
Inst : Not given.
Title : The Cobalt Content of Several Soils of the Stavropol'skiy Kray.

Orig Pub: Materialy po izuch. Stavropol'sk. kraya, Vyp. 8, 1956, 349-354.

Abstract: For the determination of cobalt in soil a colorimetric method was employed using nitroso-R salt (1-nitro-2 naphthol-3,6, sodium disulphonate). The latter forms with cobalt a characteristic complex compound of orange-red coloration. Fe, Ni, Cu, Mn and Zn do not interfere with the use of R-nitroso salt. Data is cited as to the co-

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

USSR / Soil Science. Physical and Chemical Properties. J
of Soil.

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6079.

Abstract: balt content of various Stavropol' soils. The greatest cobalt content was observed in Cis-Caucasian chernozem soils with an average thickness (0.90-0.31), while the smallest amount was observed in brown sandy soils (0.35 - 0.05 mg. per 100 grams of soil). In samples of investigated soils the cobalt content in the tillable horizon A was everywhere greater than in horizon B. Sinking deeper into horizon C, the cobalt content increases. This explains the loss of cobalt by the plant roots. Bibliography contains 8 titles. -- L. N. Fankratova.

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.D.

Effect of trace elements on grain yields and quality in different farm crops. Nauch. dokl. vys. shkoly; biol. nauki no.3:143-146 '61. (MIRA 14:7)

1. Rekomendovana kafedrami farmakologii i biologicheskoy, organicheskoy i fizicheskoy kolloidnoy khimii Stavropol'skogo sel'skokhozyaystvennogo instituta.

(STAVROPOL TERRITORY—GRAIN)
(TRACE ELEMENTS)

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PROCESSES AND PROPERTIES INDEX

Photocolorimetric method for the determination of P_2O_5 in fertilizer materials. V. D. Rudin and I. V. Chernovskaya. *Zavodskaya Lab.* 10, 213(1941); *Chem. Zentr.* 1943, II, 2390.—This is a brief notice on the possibility of detg. P_2O_5 in fertilizer materials by measuring the color depth of the Mo blue with a Se photocolorimeter and a mirror galvanometer. Colin W. Whittaker

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

ACC NR: AP6033445 SOURCE CODE: UR/0051/66/021/004/0522/0523

AUTHOR: Rudin, V. L.

ORG: none

TITLE: Use of an optical-acoustic method for the measurement of absorption of electromagnetic energy in gases at centimeter wavelengths

SOURCE: Optika i spektroskopiya, v. 21, no. 4, 1966, 522-523

TOPIC TAGS: optic method, acoustic effect, electromagnetic wave absorption, gas absorption

ABSTRACT: The author describes an experiment which demonstrates the feasibility of measuring the absorption of electromagnetic energy in gases at microwave frequencies by using an optical-acoustic method wherein the acoustic oscillations in a gas, corresponding directly to the energy absorbed in the gas, are observed directly. The experiments make it possible to compare the change in the signal at the output of a crystal detector with the signal developed by the optical-acoustic receiver at different concentrations of the absorbing gas in air, and to demonstrate that the optical-acoustic method has advantages in the sense of producing a larger change in signal in response to a change in concentration. The gas tested was Freon-22 ($CHClF_2$). The absorption was produced in a resonator which served as part of the optical-acoustic equipment (Fig. 1), and is a modification of apparatus described by the author earlier (Opt. i spektr. v. 20, 364, 1966). The results showed that the signal developed by

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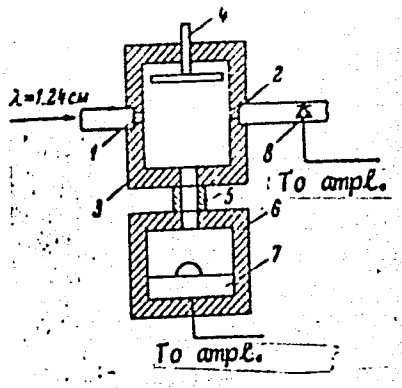

Fig. 1. Measurement setup. 1,2 - Resonant diaphragms, 3 - electromagnetic cavity resonator, 4 - tuning plunger, 5 - tube, 6 - acoustic resonator, 7 - electrodynamic microphone, 8 - crystal detector

the optical-acoustic receiver was much larger than the relative change in signal obtained with a crystal detector. The maximum signal is obtained at an approximate concentration 50 - 70%. Allowance for the change in the specific heat of the gas during the experiment shifts the maximum to the region of 30% concentration but does not change the character of the dependence of the absorption on the concentration. Other advantages and possible applications of the method are discussed. The author thanks M. L. Veyngerov for directing the work. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 26Apr66/ ORIG REF: 004/ OTH REF: 002

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 20178-66 EWT(d)
ACC NR: AP6007021 SOURCE CODE: UR/0051/66/020/002/0364/0365

AUTHOR: Rudin, V. L.

ORG: none

20
19
B

TITLE: An opticoacoustic receiver for centimeter waves

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 364-365

TOPIC TAGS: opticoacoustic receiver, centimeter wave, acoustic resonance

ABSTRACT: The author describes a highly sensitive opticoacoustic receiver designed for quantitative studies in the centimeter wavelength range. The device consists of a centimeter wave generator (λ = 1.25 cm), a waveguide channel, an opticoacoustic receiver, an amplifier, a synchronous detector, and d-c recording device. The receiver contains a system which consists of a resonator for centimeter waves and a resonator for the acoustic oscillations generated by pressure pulsations in the gas (see figure). The centimeter waves pass through a resonance iris which has a mica window *1* into the resonator *2* tuned to their frequency. Piston *3* is used for tuning.

UDC: 621.317.794-14

Card 1/2

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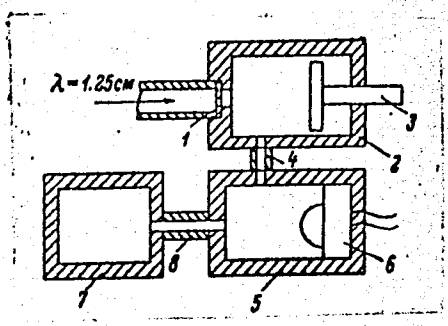
L 20178-66
ACC NR: AP6007021

The resonator is coupled by connection tube *4* to vessel *5* containing moving-coil microphone *6*. This system is a double resonator for acoustic oscillations. The frequency response of the microphone is used for calculating the diameter and length of tube *4*, which determine the resonance properties of the system. The resonance properties are improved by using an additional resonator *7* and tube *8* which amplify the useful signal. The signal-to-noise ratio for the instrument was greater than 100 when a mixture of freon and air was used (3% freon) and the time constant for the measuring device was 0.25 sec. "The author thanks M. L. Veyngerov for directing this work." Orig. art. has: 2 figures.



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SUB CODE: 20/ SUBM DATE: 18Jun65/ ORIG REF: 004/ OTH REF: 002
ATD PRESS: 4214

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

3

: USSR
: Soil Science. Physical and Chemical Properties of Soil
: Pochvovedeniye, No. 5, 1956, No. 20079

: Rodin, V.L.; Shcherbakova, S/S/
: Stavropol' Agric. Inst.
: Manganese and Molybdenum Micronutrient Content in the Soils of Stavropol'skiy Kray and Their Effect on the Corn Yield Boost.
: Tr. Stavropol'sk. s.-kh. in-ta, 1955, vyp. 7, 53-62

: The Mn content in soils of the Stavropol'skiy Kray ranges within the limits of $2.01 \cdot 10^{-2}$ to $7.86 \cdot 10^{-2}$%. Chernozems, dark-chestnut and Solonetz soils have more Mn than the soils on the shores of the Caspian Sea. The soil upper horizons contain more Mn than the lower ones. The largest Mo content was found in Solonetz soils, $10.8 \cdot 10^{-4}$%. In other soils its content varies between $4.7 \cdot 10^{-4}$ to $7.0 \cdot 10^{-4}$%. The smallest Mo content was found in dark

CARD : 1/2

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[illegible] :

ABS. JOUR : [illegible] Biologiya, No. 5, 1951, No. 20079

[illegible] :

[illegible] :

[illegible] :

[illegible] :

[illegible] : chestnut soils wich have an average of [illegible] %. The placement of these micro-elements in soils planted with corn has increased the yield of this crop by 6.5 to 9.7%. -- S.A. Nikitin

[illegible]

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

GORODINSKIY, G.M., kand. tekhn. nauk; ROMIN, V.I., insh.

Laboratory control method of the roughness of ground glass surfaces. Stek. i ker. 22 no.4:28-29 Ap '65. (MIRA 18:5)

1. Leningradskiy institut tochnoy mekhaniki i optiki.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

PROCESSES AND PROPERTIES INDEX

116

Qualitative and quantitative changes in the protein metabolism of tuberculosis patients as result of cold aerotherapy. V. P. Rudin. *Sovet. Zdravookhranenie Turkmenii* 1942, No. 1, 37–42; *cf. Problemy Tuberculyosa* 1941, No. 1.—In 20 patients suffering from pulmonary tuberculosis total blood protein was below normal. In 13 cases the albumin/globulin ratio showed abnormal rise in globulin concns.; fibrinogen also was above normal. After a single air bath the total proteins increased in 14 patients; in 6 the value fell even lower than before treatment. Hyperglobulinemia increased in 7 patients; in 5 it decreased. In one case there was no change and in 4 cases the albumin/globulin ratio increased. The polypeptide N increased in 14, decreased in 3 and was unchanged in 3. The increase occurred in subcompensated tuberculosis and amounted to a max. of 20 mg. % in 66% of these cases. In general, the polypeptide N was higher, the greater the calorie loss. In fully compensated tuberculosis there was no change. Amino N was increased in 16 cases to 13-15 mg. %. Nonprotein N was unchanged in one case; in 17 cases it rose considerably above normal. Proteolytic activity of the serum increased in 12 cases. All this shows an increased rate of protoplasm autocatabolism. Hence air baths induce complex changes in the tissues. Protein catabolism increased after the first such bath. After 15 treatments the anabolism of proteins also increased, and after 40-5 daily air baths the system was definitely improved in a majority of the patients. In 15 cases the total proteins of the blood rose above normal, and in 5 instances they were only slightly below. The albumin/globulin ratio became normal in 17 cases and in 3 cases it was above normal, owing to overabundance of albumin. Polypeptide N and amino N were increased in 16 patients. Nonprotein N was lowered almost to normal in 14 patients. The distribution of amino acids was abnormal in untreated patients; after the full course of air baths the compn. became normal in 19 patients.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

PROCESSES AND PROPERTIES INDEX

Ca

11C

Qualitative changes of catalase in patients suffering from tuberculosis in connection with aerotherapy. V. P. Rudin. *Sovet. Zdravookhranenie Turkmenii* 1942, No. 2, 35-9; cf. preceding abstr.—The velocity consts. and the vant'Hoff temp. coeff. Q_{10} were studied in catalase studies on 64 patients. The energy of activation, E^a was also calcd. In 39 cases of severe chronic infection both Q_{10} and E^a were very low (0.7-1.0 and 71-117 cal., resp.). In 11 cases of local tuberculosis slight changes were noted: Q_{10} = 1.0-1.07 and E^a = 117-1114. In 14 cases (infiltration processes in subcompensated state) high values were observed (Q_{10} 2.0-2.87 and E^a 11416-17960). Low values show depression of oxidation rate and, possibly, adsorption of antibodies by coarsely dispersed colloid substances in tissues. High values indicate high activity of the catalase, possibly destruction of products formed by tuberculosis. After a single air bath the low Q_{10} and E^a were raised due to stimulation of catalase activity. In 32 cases the rise was gradual at first, but sharp toward the end of treatment. Seven patients with slight intoxication and local foruses showed further lowering of Q_{10} and E^a after the air bath; 19 patients with symptoms of severe intoxication showed a sharp decrease in both these values, in spite of treatment. The rise of Q_{10} and E^a is thus possible only in absence of intoxication, as result of stimulated oxidation rate by the air bath. In 58 patients Q_{10} and E^a were normalized on continued application of air bathing.

C. S. Shapiro

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

PROCESSES AND PROPERTIES INDEX

116

ca

Qualitative changes, in pulmonary tuberculosis, of catalase and their displacement in treatment with aerobaths in the cold season. V. P. Rudin. *Byull. Eksptl. Biol. Med.* 14, No. 9, 71-4(1942); cf. *C.A.* 38, 1024[9].
The van't Hoff temp. coeff. and activation energy of catalase show variations in pulmonary tuberculosis, in proportion to the degree of intoxication and reactivity of the organism. The values of these factors can be used as rather sensitive indexes for the estn. of organism reaction in the course of cold aerotherapy. In a majority of cases cold therapy activates the oxidation-reduction systems and raises the stability of the organism to the tuberculous toxin.
G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V. P.

Investigation of heterogeneous equilibriums of lithium chloride with the chlorides of the metals of the second group. V. P. Rudin. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1954, 400-9; cf. *C.A.* 48, 13393a.—The isotherms of the systems $LiCl-MCl_2-H_2O$ were detd. at 25° and 40° for M = Be, Ca, Sr, Ba, Zn, and Cd; for M = Hg the isotherm at 30° was obtained. The systems with M = Be, Ca, Sr, Ba, and Hg did not form any compds. The systems with Zn and Cd chlorides formed $ZnCl_2.2LiCl.5H_2O$ and $LiCl.CdCl_2.2.5H_2O$. The presence of LiCl increased the soly. of $HgCl_2$.

I. Bencowitz

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor; DOBROVINSKAYA, Ye.K.; PODDUBNIY, A.F.

Errors in diagnosing tuberculous meningitis in adults. Vrach. delo no.3:227-231 Mr '57 (MLRA 10:5)

1. Kafedra fiziologii (zav.-prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta.
(MENINGITIS--TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor; OKHRIMENKO, R.D.

Acute miliary tuberculosis in young people. Vrach.delo no.7:701-705 Jl '57. (MLRA 10:8)

1. Kafedra ftiziatrii (zav. - prof. V.P.Rudin) Kiyevskogo meditsinskogo instituta
(TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

OKREMA, V.Ya.; RUDIN, V.P., prof., nauchnyy rukovoditel' raboty

Immediate and late results of antibacterial treatment of pulmonary tuberculosis in elderly and senile patients. Sov. med. 27 no.2:14-17 F '64. (MIRA 17:10)

1. Tul'chinskiy protivotuberkuleznyy dispanser (glavnyy vrach V.Ya. Okrema) Vinnitskoy oblasti.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof. (Kiyev)

Differential diagnosis of lung cancer and tuberculosis. Vrach. delo no.9:85-89 S '61. (MIRA 14:12)

1. Ukrainskiy nauchno-issledovatel'skiy institut tuberkuleza.
(LUNGS—CANCER) (TUBERCULOSIS—DIAGNOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.; OKHRIMENKO, R.D.

Acute miliary tuberculosis in young persons. Pat.,klin.i terap. tub. no.8:192-196 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.

Early detection and treatment of tuberculosis in diabetes mellitus patients. Vrach.delo no.11:1163-1167 N '59. (MIRA 13:4)

1. Kafedra ftiziatrii (zaveduyushchiy - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta.
(TUBERCULOSIS) (DIABETES)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.

Pulmonary tuberculomas. Vrach.delo no.8:799-805 Ag '58 (MIRA 11:8)

1. Kafedra ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta.
(LUNGS--TUMORS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.; MARTYNOVA, S.I., starshaya meditsinskaya sestra

Organizing care of patients with tuberculous meningitis. Med. sestra 16 no.11:18-21 N '57. (MIRA 11:2)

1. Kafedra ftiziatrii Kiyevskogo meditsinskogo instituta.
(MENINGES--TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor; SIN'KOVSKIY, P.V.; PODDUBNYY, A.F.

Cardiovascular system in tuberculous meningitis in adults.
Pat., klin.i terap.tub. no.8:58-63 '58. (MIRA 13:7)

1. Iz kafedry tuberkuleza (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(MENINGES--TUBERCULOSIS) (CARDIOVASCULAR SYSTEM)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor

Mixed form of tuberculous meningitis in adults. Pat.,klin.i terap.tub. no.8:64-67 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(MENINGES--TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.

Digestive apparatus in tuberculous meningitis in adults. Pat., klin.i terap.tub. no.8:68-74 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(MENINGES--TUBERCULOSIS) (DIGESTIVE ORGANS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor; GRIB, N.I.

Blood transfusion as a method of stimulating therapy for patients with tuberculosis. Pat., klin.i terap.tub. no.8:162-165 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(BLOOD--TRANSFUSION) (TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., prof.; TROFIMETS, V.V., assistent

Clinical aspects and treatment of spontaneous pneumothorax.
Pat., klin.i terap.tub. no.8:179-182 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(PNEUMOTHORAX) (TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.P., professor; OKHRIMENKO, R.D.

Miliary tuberculosis in middle-aged and old people. Pat.,klin. i terap.tub. no.8:187-191 '58. (MIRA 13:7)

1. Iz kafedry ftiziatrii (zav. - prof. V.P. Rudin) Kiyevskogo meditsinskogo instituta im. akad. A.A. Bogomol'tsa.
(TUBERCULOSIS)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.Ya.; YARYM-AGAYEV, N.L.

Method for calculating the crystallization region of sodium chloride in the quaternary system $CaCl_2$--$MgCl_2$--NaCl--H_2O. Zhur.prikl.khim. 30 no.6:941-944 Je '57. (MIRA 10:10)

1. Donetskiy industrial'nyy institut imeni N.S.Khrushcheva.
(Sodium chloride) (Crystallization) (Systems (Chemistry))

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

YARYM-AGAYEV, N.L.; RUDIN, V.Ya.; TSEYTLENOK, T.A.

Refractometric determination of the composition of solutions containing potassium chloride and sodium nitrate. Zhur.anal.khim. no. 6:701-705 Je '63. (MIRA 16:9)

1. Donetsk Polytechnical Institute.
(Potassium chloride) (Sodium nitrate) (Refractometry)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

Rudin, V. Ya.

USSR/Physical Chemistry - Thermodynamics, Thermochemistry, Equilibria, Physical-Chemical Analysis, Phase Transitions. B-8

Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7171.

Author : V. Ya. Rudin, N.L. Yaryn-Agayev.
Inst :
Title : Computation Method of Sodium Chloride Crystallization Zone in Quaternary System $CaCl_2$ - $MgCl_2$ - NaCl - H_2O.

Orig Pub: Zh. prikl. khimii, 1957, 30, No 6, 941-944.

Abstract: A computation method for the determination of salt concentrations of the quaternary system $CaCl_2$ - $MgCl_2$ - NaCl - H_2O in the crystallization zone of NaCl is proposed. Known values of NaCl solubility in ternary systems $CaCl_2$ - NaCl - H_2O and $MgCl_2$ - NaCl - H_2O are used in this method. The computed values differ from experimental ones by magnitudes which do not exceed experimental errors.

Card : 1/1

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YARYM-AGAYEV, N.L.; RUDIN, V.Ya.; TSEYTLENOK, T.A.

Salt solubility isobar in the system K, Na $\|Cl_2$ No_3 - H_2O.
Zhur.neorg.khim. 10 no.4:976-980 Ap '65. (MIRA 18:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

YARYM-AGAYEV, N.L.; KOGAN, Ye.A.; RUDIN, V.Ya.; TITOVA, V.A.

Orthobaric heats of mixing of pyridine and acetic acid vapors. Zhur.fiz. khim. 37 no.7:1445-1449 Jl '63. (MIRA 17:2)

1. Donetskiy politekhnicheskiy institut.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

YARYM-AGAYEV, N.L.; RUDIN, V.Ya.; TITOVA, V.A.; KOGAN, Ye.A. (Stalino)

Orthobaric heats of mixing of pyridine and water vapors. Zhur.-fiz.khim. 35 no.10:2285-2290 O '61. (MIRA 14:11)

1. Donetskiy politekhnicheskiy institut.
(Pyridine) (Water vapor) (Heat of mixing)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

5(4)

AUTHORS: Rudin, V. Ya., Yarym-Agayev, N. L. SOV/78-4-3-26/34

TITLE: On the Form of the Isothermal Lines in the Case of a Variation of the Molar Properties of the Binary System With Formation of Rational Compounds (O forme izoterm izmeneniya mol'nogo svoystva dvoynykh sistem s obrazovaniyem ratsional'nogo soyedineniya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3, pp 662-670 (USSR)

ABSTRACT: The variation of the isothermal lines of the molar properties of the binary system in which the rational compound S forms from the components A-B was investigated. The general equation (19):

$$G_{A-B} = G^{*}\frac{s}{n} N_B + G_{A-S}\frac{n - (m + n - s)N_B}{n}$$

gives the dependence between the molar composition and the molar properties in the system A-B in the case of formation of the rational compound S. It was shown that the branch isothermal lines A-B and A-S are adiabatic. The isothermal line A-B corresponds with or without maximum to the

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On the Form of the Isothermal Lines in the Case of a Variation of the Molar Properties of the Binary System With Formation of Rational Compounds SOV/78-1-3-26/34

isothermal line A-S with a maximum. In the case of formation of the compound S a maximum or a minimum may occur. Isothermal lines that do not show a bending point in the case of a variation of the molar composition have a maximum on the branch isothermal lines A-B. The behavior of several types of branch isothermal lines was discussed in the case of variation of the molar composition in the system A-B and is given in table 1. There are 3 figures, 1 table, and 3 Soviet references.

ASSOCIATION: Donetskiy industrial'nyy institut im. N. S. Khrushcheva (Donetskiy Industrial Institute imeni N. S. Khrushchev)

SUBMITTED: April 17, 1957

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

YARYM-AGAYEV, N.L.; KLYASHTORNAYA, F.M.; RUDIN, V. Ya.

Aqueous system of potassium and sodium nitrates and chlorides.
Zhur. neorg. khim. 9 no.11:2639-2644 N '64 (MIRA 18:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

AID P - 3752

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 16/22

Authors : Uspenskaya, L. N., A. G. Bergman, and V. Ya. Rudin

Title : Effect of thermal conditions under which the manufacture of "red ferric oxide" from ferrous sulfate takes place on the change of the hue of its color

Periodical : Zhur. prikl. khim. 28, 1006-1009, 1955

Abstract : Removal of water and decomposition of $FeSO_4 \cdot 7H_2O$ were studied at 600, 650, 700, 750 and 800°C over periods of from 2-10 hours. Samples containing less than 95% Fe_2O_3 are darker than those containing over 96% Fe_2O_3. Higher temperatures (750-800°C) and prolonged heating (9-10 hrs.) cause darkening of the samples due to increase in the size of the Fe_2O_3-particles. Two diagrams, 3 references, all Russian (1944-1949).

Institution : Rostov-na-Donu State University im. V. M. Molotov

Submitted : Ja 3, 1954

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, V.Ya.; YARYM-AGAYEV, N.L.

Shape of isotherms of change in the molar property of binary systems which form proportional compounds. Zhur. neorg. khim. 4 no.3:662-670 Mr '59. (MIRA 12:5)

1.Donetskiy industrial'nyy institut im. N.S. Krushcheva.
(Systems (Chemistry))

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

KUDIN, Ya.M., begermeyster-nastavnik; [illegible], V.G.

Working rock with a multibucket suction dredge. Transp. stroi. 15 no.1:20-23 Ja '65. (MIRA 18:3)

1. Nachal'nik zemlecherpatel'nogo karavana "Volkhov" (for M. tyunin).

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

LAVRINOVICH, Ye.V., kand. tekhn. nauk; GOLDSTYNSKIY, D.M., inzh.; PERLEY, Ye.M., inzh.; RUDIN, Ye.I., inzh.

Conserving vertical seams of cylindrical shells. Transp. stroi. 14 no.3:45-48 Mr '64. (MIRA 17:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUBIN, Yu.S., inzh.

Manufacture of welded housings for electric motors in place of cast housings. Svar.proizv. no.12:23-24 D '64. (MIRA 18:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDIN, IU. V.

Iz praktiki remonta porshnevykh parovykh mashin. (Moskva) Gizlegprom, 1946. 26 p. illus. (Bibliotechka tekstil'shchika)

Practice in repairing reciprocating steam engines.

DLC: TJ471. R8

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

DENISOV, Nikolay Mitrofanovich; SAMOYLENKO, P., otv. red.; VARNAKOVA, N., red.; RUDINA, G., red.; YURMANOVA, A., red.

[Reinforced-concrete supports and their use in Kuznets Basin mines]Zhelezobetonnaia krep' i ee primenenie na shakhtakh Kuzbassa. Kemerovo, Kemerovskoe knizhnoe izd-vo, 1959. 177 p. (MIRA 15:11)

(Kuznetsk Basin--Mine timbering)
(Reinforced concrete construction)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDINA, L. A.: Master Biol Sci (diss) -- "The nutrition conditions and structure of the sod-meadow soils of the flood plain of the Moscow River". Moscow, 1959. 20 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov, Soil-Biol Faculty), 120 copies (KL, No 17, 1959, 107)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDINA, L.A.

Dynamics of mobile nitrogen, phosphorus, and potassium compounds in turf-meadow soils of the Moskva River bottom lands. Vest.Mosk.un. Ser.biol., pochv., geol., geog. 13 no.3:91-100 '58. (MIRA 12:1)

1. Kafedra pochvovedeniya Moskovskogo gos. universiteta.
(Moskva Valley--Soil chemistry)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDINA, L.A.

Dynamics of water-stable structure in the top layer of Turf-Meadow soils in bottom lands of the Moskva River. Nauch.dokl. vys.shkoly;biol.nauki no.4:179-183 '58. (MIRA 11:12)

1. Rekomendovana kafedroy pochvovedeniya Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova.
(Moskva Valley--Soil structure)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

YEVDOKIMOVA, T.I.; RUDINA, L.A.

Role of the herbaceous vegetation in the process of soil formation in the Moskva River floodland [with summary in English]. Pochvovedenia no. 9:80-88 '58. (MIRA 11:10)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Moskva Valley--Soil formation)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

KUDINA L. K.

p. 2

PHASE I BOOK EXPLOITATION 846

U.S.S.R. Ministerstvo geologii i okhrany nedr

Metody opredleniya radioaktivnykh elementov v mineral'nom syr'ye (Methods of Determining Radioactive Elements in Mineral Raw Materials) Moscow, Gosgeoltekhizdat, 1958. 68 p. 3,000 copies printed.

Compilers: Sochevanov, V.G. and Titov, V.I.; Ed.: Krasnova, N.E. Tech. Ed.: Averkiyeva, T.A.

PURPOSE: This book is for those engaged in geochemical prospecting for radioactive ores.

COVERAGE: The chemical determination of radioactive substances in minerals and rock formations is described in this publication. Chemical treatment of materials in preparation for radiometric analysis is also included. The proposed methods are considered to be the most

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reliable for geochemical research. Methods are presented in the form of separate procedure instructions with the inclusion of: principle of the method, elimination of interfering factors, application limits, necessary reagents, procedure of analysis. Specifications for high purity reagents are given whenever necessary. There is a bibliography with 26 references, 17 of which are Soviet, 4 English, 3 German, 1 Czech, and 1 Swiss.

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URANIUM

Titov, V.I., Volkov, I.I. Colorimetric Determination of Uranium by the Trilon-Phosphate Method 4

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDINA, M.A., arkhitektor

Rolled materials made of polymers for interior finishing of walls.
Sbor. trud. VNIINSM no.7:151-158 '63. (MIRA 17:11)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

LOSKUTOVA, L.T.; MAKOTINSKIY, M.P., kand. arkh.; RUDINA, M.A., arkh.; SHPANOV, I.A., arkh. Prinimal uchastiye LIVSHITS, A.M., inzh.; GROMOV, V.L., kand. tekhn. nauk, retsenzeng; KRASNOVSKIY, N.V., kand. tekhn. nauk, retsenzent; PAVLOV, V.P., kand. tekhn. nauk, retsenzent; PODZOROVA, N.G., inzh., retsenzent; FOLOMIN, A.I., doktor tekhn. nauk, retsenzent; GURVICH, E.A., red.

[Catalog of finishing materials and elements] Katalog otdelochnykh materialov i izdelii. Moskva, Gosstroiizdat. Pt.6. [Wood and paper] Derevo i bumaga. 1962. 56 p. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov.

(Finishes and finishing)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

KOSHKIN, V.G., kand. tekhn.nauk; MAKOTINSKIY, M.P., kand. arkh.; MUNTS, V.O., kand. arkh.; RUDINA, M.A., arkh.; SILUANOVA, G.V., arkh.; SHORYGINA, N.V., kand. khim. nauk; Priminali uchastiye: BOGUSLAVSKIY, A.I., inzh.; ZARUBITSKIY, A.Ye., inzh.; LIVSHITS, A.M., inzh.; MASHINA, N.N., inzh.; OTLIVANCHIK, A.N., kand. tekhn. nauk; ROMANOVA, L.A., inzh.; CHERKINSKIY, Yu.S., inzh.; ANDREYEV, V.S., retsenzent; IOFAN, B.M., retsenzent; KRIPPA, A.I., arkh., retsenzent; GURVICH, E.A., red.izd-va; BRUSINA, L.N., tekhn. red.

[Catalog of finishing materials and products] Katalog otdelochnykh materialov i izdelii. Moskva, Gosstroiizdat. Pt.1.[Plastics; polymer finishing materials] Plastmassy; polimernye otdelochnye materialy. 1962. 119 p. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. 2. Chleny-korrespondenty Akademii stroitel'stva i arkhitektury SSSR (for Andreyev, Iofan, Krippa).
(Plastics) (Building--Details)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

KOSHKIN, V.G., kand. tekhn. nauk; MAKOTINSKIY, M.P., kand. arkh.; MUNTS, V.O., kand. arkh.; RUDINA, M.A., arkh.; SILUANOVA, G.V., arkh.; SHORYGINA, N.V., kand. khim. nauk. Prinimali uchastiye: BOGUSLAVSKIY, A.I., inzh.; ZARUBITSKIY, A.Ye., inzh.; LIVSHITS, A.M., inzh.; MASHINA, N.N., inzh.; OTLIVANCHIK, A.N., kand. tekhn. nauk; ROMANOVA, L.A., inzh.; CHERKINSKIY, Yu.S., inzh.; ANDREYEV, V.S., retsenzent; IOFAN, B.M., retsenzent; KRIPPA, A.I., arkh., retsenzent; GURVICH, E.A., red.izd-va; BRUSINA, L.N., tekhn. red.

[Catalog of finishing materials and articles] Katalog otdelochnykh materialov i izdelii. Pod red. M.P.Makotinskogo. Moskva, Gosstroiizdat. Pt.1.[Plastics; polymer finishing materials and articles] Plastmassy; polimernye otdelochnye materialy i izdeliia. 1962. 119 p. (MIRA 16:4)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Andreyev, Iofan, Krippa).
(Finishes and finishing--Catalogs) (Plastics)

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S/169/61/000/003/015/022
A005/A005

9.9100

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 3, p. 28, # 3G247

AUTHORS: Rudina, M. P., Serebrennikova, N. I.

TITLE: The Structure of the Ionosphere According to the Sped up Recording of Ionograms

PERIODICAL: "Tr. Sibirsk. fiz.-tekh. in-ta pri Tomskom un-te", 1959, No. 37, pp. 363-368

TEXT: Results are presented from a comparison of ionograms taken at Tomsk by the manual station at hourly times and ionograms recorded with intervals of 10 min by the panoramic station of the N. D. Bulatov system at stable state (March 4-5, 1956) and disturbed state (April 23) of the ionosphere. It is shown that the sped up observations by the panoramic station give a more detailed information on the ionosphere structure and high-speed processes. /B

N. P.

Translator's note: This is the full translation of the original Russian abstract.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

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A005/A001

9,9110

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1960, No. 20, pp. 12-13, # 6.16403

AUTHOR: Rudina, M.P.

TITLE: Preliminary Results From Measuring the Radiowave Absorption in the Ionosphere

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, 1959, No. 37, pp. 394-396

TEXT: The measurements have been carried out since July 1957 at Tomsk correspondingly to the program of the International Geophysical Year. The measuring unit consists of: the transmitter covering the frequency band of 1-16 Mc with the pulse power of 1 kw, the receiver of the superheterodyne type with the 40 kc-pass-band, and the photo-recorder. The photorecording was carried out at the frequency of 2.2 ± 0.2 Mc. The monthly average value of the reflection coefficient was calculated from 2 reflections at visual measurements and photorecordings in night time, on the basis of which the absorption was calculated. The coefficient of reflection from the F2-layer changed on the average in July - March, in the

Card 1/2

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S/112/60/000/020/003/004
A005/A001

Preliminary Results From Measuring the Radiowave Absorption in the Ionosphere

lightless diurnal time, in the limits from 0.4 to 1. It is shown that the value of the averaged absorption coefficient at the local noon at Tomsk was $<$ 20 db. It is noted that a considerable increase of absorption was detected in single days in November - December and January. Hereat, the minimum reflection frequency attained in some cases 3 Mc.

V.I.B.

Translator's note: This is the full translation of the original Russian abstract.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 16852-63 EWT(1)/BDS/EEC-2/ES(v) AFFTC/ASD/AFMDC/ESD-3/APGC Pi-4/
Po-4/Pe-4/Pq-4 RB/PT-2
ACCESSION NR: AR3006327 S/0058/63/000/007/H030/H030

79

SOURCE: RZh. Fizika, Abs. 7Zh203

AUTHOR: Rudina, M.P.

TITLE: Connection between ionospheric absorption of radio waves and magnetic activity

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vy*p. 41, 1962, 72-74

TOPIC TAGS: radio wave absorption, ionosphere, anomalous absorption, terrestrial magnetism

TRANSLATION: Data of the measurement of absorption and the behavior of the horizontal component of the earth's magnetic field for 14, 15, and 16 July 1959, as observed in Tomsk, are compared. The results obtained confirm the connection between the anomalous absorption of radiowaves in the ionosphere and the state of the earth's magnetic field in the upper ionosphere.

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 16840-63 EWT(d)/EWT(1)/FCC(w)/BDS/EEC-2/ES(v) AFFTC/ASD/AFMDC/ESD-3/
APGC Pe-4/Pg-4/Pl-4/Pl-4/Po-4/Pq-4 PT-2/GW
ACCESSION NR: AR3006328 S/0058/63/000/007/H030/H031

96

SOURCE: RZh. Fizika, Abs. 7Zh204

AUTHOR: Rudina, M. P.

TITLE: Absorption of radio waves in the ionosphere and solar activity

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vy*p. 41, 1962, 75-79

TOPIC TAGS: radio wave absorption, ionosphere, solar activity, sunspot number

TRANSLATION: Measurements were made of the absorption coefficient L in the ionosphere at frequencies 2.2 and 3 Mcs, in 1958--1960. The course of L over the indicated period is compared with the change in the monthly average of the relative number of sun spots W.

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L 16840-63

ACCESSION NR: AR3006328

A correlation analysis shows that L and W are connected during the time of large solar activity. This connection breaks down with decreasing solar activity.

DATE ACQ: 15Aug63 SUB CODE: PH, GE ENCL: 00

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 16839-63 EWT(1)/BDS/EEC-2/ES(v) AFFTC/ASD/AFMDC/ESD-3/APGC Pe-4
Pi-4/Po-4/Pq-4 PT-2/GW

ACCESSION NR: AR3006329 S/0058/63/000/007/H031/H031

78

SOURCE: RZh. Fizika, Abs. 7Zh205

AUTHOR: Rudina, M. P.

TITLE: Reflection coefficient from the F2 layer (Rho) and the parameter Beta

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vy*p. 41, 1962, 80-81

TOPIC TAGS: radio wave reflection, ionosphere, reflection coefficient, turbidity coefficient

TRANSLATION: Results are presented of an analysis of 2.2 Mc signals reflected from the ionosphere. It is shown that the reflection coefficient ρ and the "turbidity coefficient" β are in most cases reciprocally related. The dependence of ρ and β on the height of re-

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 19655-63 EWT(1)/BDS/EEC-2/ES(v) AFFTC/ASD/AFMDC/ESD-3/APGC Pe-4/
Pi-4/Po-4/Pq-4 PT-2/GW
ACCESSION NR: AR3007000 S/0058/63/000/008/H032/H032

80

SOURCE: RZh. Fizika, Abs. 8Zh208

AUTHOR: Rudina, M. P.; Grokhotova, B. A.

TITLE: Rate of vertical drift in the F region and number of collisions, as obtained by measuring the reflection coefficient

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vy*p. 41, 1962, 92-97

TOPIC TAGS: F region, vertical drift, collision number, ionosphere radio sounding, reflection coefficient

TRANSLATION: Results are presented of the analysis of photographs of fluctuating signals of first and second multiplicity, reflected from the F_2 layer in vertical radio sounding of the ionosphere at 2.5--3.5 Mc during February-March 1958. The signals were recorded

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

L 19655-63

ACCESSION NR: AR3007000

without separating one of the components of the magnetoionic splitting. The analysis has shown the following: 1) in ~50% of the cases the reflection coefficient is $\rho > 1$; 2) values $\rho > 1$ cannot characterize the degree of absorption of the radio waves in the ionosphere, but can characterize the diffraction by ionization inhomogeneities of the E and F regions, where the reflected signal is produced; 3) the appearance of periodic oscillations in the magnitude of the signal during the periods when the signal increases, when the illumination of the ionosphere decreases, is a more sensitive indicator of the existence of vertical motion than is the variation of h_0, and can be used to calculate the vertical drift; 4) the frequency of collisions in the F layers, determined from the measured values of the reflection coefficient and from the ionograms agrees with those previously known.

DATE ACQ: 06Sep63 SUB CODE: PH, AS ENCL: 00

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

RUDINA, M. P.

"On the Morphology of Radio Wave Absorption in the Lower Ionosphere."

summary to be presented at the 13th Gen Assembly, IUGG, Berkeley, 19-31 Aug 63.

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L 38557-65 EWT(1)/EWG(v)/FCC/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Peb/Pi-4
GW

ACCESSION NR: AT5009242 S/2831/64/000/013/0016/0018

44
B+1

AUTHOR: Rudina, M. P.; Zholdubayeva, G. Kh.

TITLE: Additional ionization in the E-layer

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. V razdel programmy MGG: Ionosfera. Sbornik statey, no. 13, 1964, 16-18

TOPIC TAGS: ionospheric station, electronic density, critical frequency, ionization

ABSTRACT: Use of an automatic ionospheric station made it possible to determine supplemental reflections between the E- and F1-layers. The maximum electronic density in those layers is characterized by a consistent number of supplemental reflections at heights of 200—250 km. The critical frequency of the maximum density changes from 4—5 Mc. One submaximum is found on the illuminated side, and it is considered as the E2-layer, and the other is observed simultaneously with the reflection from the F1-layer, and it is referred to as F0. The critical frequencies of these layers differ from those of the E-layer. The reflections from E2- and F0-layers are connected with a decrease of ionization in the E- and F1-layers. It is probable that the E2-, F0-, and E_s-layers exchange positions. This phenomenon would seem to be caused by vertical translocations of the E-layer. Orig. art. has: 4 figures and 1 table. [EG]

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RUDINA, M.V., kand. fiziko-matem. nauk

Academy of Sciences of the Kazakh S.S.R. and ionospheric research during the International Years of the Quiet Sun. Vest. AN Kazakh. SSR 21 no.9:88-89 S '65. (MIRA 18:9)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

LIVSHITS, G.Sh.; FESENKOV, V.G., akademik, red.; IDLIS, G.M., doktor fiz.-matem.nauk, zamestitel' red.; PYASKOVSKAYA-FESENKOVA, Ye.V., doktor fiz.-matem.nauk, red.; ROZHKOVSKIY, D.A., doktor fiz.-matem. nauk, red. toma; RUDINA, M.P., kand.fiz.-matem.nauk, red.; ROZHKOVSKIY, D.A., doktor fiz.-matem.nauk, red.

[Light scattering in the atmosphere. Pt.1.] Rasseianie sveta v atmosfere. Alma-Ata, Nauka. Pt.1. 1965. 176p (Akademiia nauk Kazakhskoi SSR. Astrofizicheskii institut. Trudy, vol.6) (MIRA 18:5)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

ZINCHENKO, V.A.; RUDINA, S.I.

Colorimetric determination of titanium in aluminum and magnesium by means of diantipyrylmethane. Zav.lab. 27 no.8:956-958 '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy alyuminiyevo-magniyevyy institut.
(Titanium--Analysis) (Aluminum--Analysis) (Magnesium--Analysis)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

ACC NR: AP7005675 (A) SOURCE CODE: UR/0413/67/000/002/0147/0147

INVENTOR: Motovilov, O. A.; Rozhdestvenskiy, V. N.; Rudina, O. G.

ORG: none

TITLE: A method of producing films from a mixture of substances by cathodic sputtering. Class 48, No. 190757

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 147

TOPIC TAGS: thin film, ~~multiple substrate~~ metal film, film deposition, ~~method~~, cathodic sputtering, ~~method~~ metal deposition, cathode

ABSTRACT: This Author Certificate introduces a method of producing films from mixtures of substances by cathodic sputtering. To obtain films with a given composition and thickness, the film is deposited on the substrate successively from each of the cathodes, which are insulated from one another. The deposition time under each cathode depends on the required thickness of a porous layer from the component of a corresponding cathode. [MS]

SUB CODE: 11,09/ SUBM DATE: none/ ATD PRESS: 5117

UDC: 621.793.7

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26381
S/032/61/027/008/001/020
B107/B206

5.5210

AUTHOR: Zinchenko, V. A., and Rudina, S. I.

TITLE: Colorimetric determination of titanium in aluminum and magnesium by using diantipyryl methane

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 8, 1961, 956-958

TEXT: A method for the determination of from $1 \cdot 10^{-4}$ to $5 \cdot 10^{-5}$% of Ti in highly pure aluminum is described. The determination of titanium with diantipyryl methane was proposed by A. A. Minin (Ref. 2: Uchenyye zapiski Permskogo gosudarstvennogo universiteta, v. XI, no. 4, 177(1956)). In acid solution diantipyryl methane forms a bright yellow titanium complex; the reaction is 20 times more sensitive than that with H_2O_2. Al, Mg, V, fluoride, and phosphate do not interfere; with diantipyryl methane, Zn, Cd, Hg form difficultly soluble compounds, and may thus be filtered off; Cr, Ni and Co interfere by their proper color. The interfering Fe^{III} is reduced with ascorbic acid. Diantipyryl methane was prepared from antipyrine and formalin according to a formula by V. P. Zhivopistsev

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(Ref.3: Zavodskaya laboratoriya, XXVI, 10, 1187 (1960)). The determination may be carried out in sulfuric acid or in the mixture HCl - H_2SO_4. Between 0.5 and 8 N the acidity does not affect the optical density. Complex formation is completed after 15 minutes; coloring then remains unchanged for a long time. If Fe^{III} exists in the solution, 30 to 40 minutes are necessary for a complete reduction by ascorbic acid. The minimum amount of titanium which may thus be determined, is $1 \cdot 10^{-4}$% of Ti for a weighed portion of 1 g of aluminum. The method was tested by adding certain amounts of titanium to the weighed portion of high-purity aluminum. The sensitivity of the method may be increased by precipitating titanium together with ferric hydroxide, manganese(IV)hydroxide, or magnesium hydroxide, and separating it. In this way, even $5 \cdot 10^{-5}$% of Ti may be determined in a weighed portion of 2 g of aluminum. For the determination of titanium in metallic magnesium larger weighed portions (3-5 g) are used, and titanium is separated by coprecipitation with aluminum hydroxide. There are 2 tables and 3 Soviet references.

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Colorimetric determination of...

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ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy alyuminiyevo-magniyevyy institut (All-Union Scientific Research Institute of Aluminum and Magnesium)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445920015-0

KAKABADZE, N.A.; SARKISOVA, M.G.; RUDINA, Z.B.

Feldspar-quartz sands and granites of Georgia considered as new-type raw materials for the fine-ceramic industry. Soob. AN Gruz.SSR 18 no.2:167-174 F '57. (MIRA 10:7)

1. Kavkazskiy institut mineral'nogo syr'ya, Tbilisi. Predstavleno akademikom R.I. Agladze.
(Georgia--Ceramic materials)

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Proteins and amino acids III Synthesis of γ-L-glutamyl-L-tyrosine F. Šorm, and J. Rudinger (Tech. Univ., Prague). *Collection Czech. Chem. Communs* 15, 491-500(1950)(in English); cf. C.A. 45, 1175de; Le Quesne and Young, C.A. 45, 1956f. — N-(γ-L-Glutamyl)-L-tyrosine has been synthesized by an unequivocal method. The compd. prepd. by Bergmann and co-workers (C.A. 28, 4075[9]) is shown to be the α-deriv. The "α"-Me ester of carboxy-L-glutamic acid prepd. by Harington and Mead (C.A. 29, 7284[4]) is shown to contain the γ- in addition to the α-isomer. The homogeneity of the compds. was tested by paper chromatography. N-Carbobenzyloxy-γ-L-glutamyl hydrazide (L. and Y., C.A. 43, 6978g) was converted to the Me ester (I) by CH_2N_2, then by BzH to the α-*Me ester* of the *γ-benzylidene hydrazide* of *N-carbobenzyloxy-L-glutamic acid*, m. 123.5-4.5°. α-*Me ester* of *N-(N-carbobenzyloxy-γ-glutamyl)glycine Et ester*, m. 89-90°, from I by conversion to the azide and coupling with $H_2NCH_2CO_2Et$. *N-(γ-L-Glutamyl)-L-tyrosine*, m. 220-2° (decompn.), was prepd. from N-(N-carbobenzyloxy-γ-L-glutamyl)-L-tyrosine with H- and Pd.

Alfred Hoffman

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CA

Lithium aluminum hydride and kindred agents in organic chemistry. Josef Rudinger, Miloslav Ferles, and Miroslav Protiva. *Chem. Listy* 45, 399-710(1951).—An exhaustive review with 550 references (literature reviewed up to the end of June, 1951). M. Hudlický

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RUDINGER, JOSEF

Syntheses in the oxytocin field. I. New synthesis of S-benzyl-L-cysteinyl-L-prolyl-L-leucylglycin amide. Milan Zaoral and Josef Rudinger (Czech. akad. věd, Prague). [illegible] *Collection Czechoslov. Chem. Com-* [illegible] 20 [illegible] English [illegible] of preceding abstr. [illegible] *prolyl-L-leucylgly-* [illegible] *L-prolyl-L-leucyl-* [illegible] The synthesis of the tetra-peptide is shorter [illegible] 2 steps than the original synthesis of Du Vigneaud [illegible] 48, [illegible] 49 6108g). $H_2NCH_2CO_2Et$ (0.8 g.) in $CHCl_3$ was added at −5° to a mixed anhydride prepd. from 2 g. carbobenzyloxy-L-leucine (I) and 1.1 g. $ClCO_2CHMeEt$ in 5 ml. $CHCl_3$ in the presence of 0.80 g. 1-$EtC_6H_{10}N$, the mixt. was cooled 10 min. allowed to stand at lab. temp. 30 min., the $CHCl_3$ evapd., the residue dissolved in AcOEt, the solvent evapd., and the residue extd. with 20 ml. H_2O and 30 ml. AcOEt. The AcOEt layer was washed 3 times with 10% HCl, 3 times with 5% $NaHCO_3$, and evapd. to give 2.3 g. *Et ester* (II of *carbobenzyloxy-L-leucylglycine*, m. 105-6° (from AcOEt-petr. ether). Treating 22 g. II with 20 ml. 37% HBr in AcOH, pptg. the HBr salt, washing the ppt. with Et_2O dissolving it in $CHCl_3$, treating the soln. with NH_3 in $CHCl_3$, filtering off the NH_4Br, evapg. the solvent *in vacuo* at 30–5°, and dilg. the residue with $CHCl_3$ gave *Et ester* of *L-leucylglycine* (III). This soln. was mixed with a mixed anhydride prepd. from L-carbobenzyloxyproline (14.2 g.) and 7.8 g. $ClCO_2CHMeEt$ in the presence of 6.5 g. 1-$EtC_6H_{10}N$ and worked up as above to give 20.2 g. of the *Et ester* of *carbobenzyloxy-L-prolyl-L-leucylglycine* (IV), m. 150–1° (from AcOEt-Et_2O). Decarbobenzyloxylation of II could be carried out by catalytic hydrogenation over 5% Pd-C in EtOH in the presence of an equiv. amt. of HCl. The N-carboxy anhydride of L-leucine (850 mg.) in 5 ml. AcOEt added at −70° to 570 mg. $H_2NCH_2CO_2Et$ in 5 ml. $CHCl_3$, the mixt. kept at −70° 30 min., heated to room temp., cooled to 0° after the CO_2 evolution ceased, and treated during 30 min. with carbobenzyloxy-L-proline chloride (prepd. from 1.5 g. carbobenzyloxy-L-proline and 1.3 g. PCl_5) in $CHCl_3$ gave 1.1 g. IV (recrystd. from AcOEt-petr. ether). Satg. a soln. of 1.9 g. IV in 20 ml. MeOH with NH_3 at 0°, leaving the mixt. closed 3 days at room temp., distg. off the MeOH, and crystg. the residue from EtOH-petr. ether gave 1.7 g. *carbobenzyloxy-L-prolyl-L-leucylglycin amide* (V), m. 162–3°. Hydrogenation of 3.2 g. V in 30 ml. EtOH (contg. an equiv. amt. of HCl) over 5% Pd-C, evapn. of the solvent, treatment of the residue with a $CHCl_3$ soln. of NH_3, removal of the NH_4Cl, and evapn. of the filtrate *in vacuo* gave 80% *L-prolyl-L-leucylglycin amide* (VI) hemihydrate, m. 122–3°

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(from H_2O). VI was also obtained by heating 3.4 g. V with 15 ml. 15% HBr in AcOH 10 min. at 60°, pptg. the HBr salt with Et_2O, repptg. it with Et_2O from the EtOH soln., and crystg. from EtOH-Et_2O gave 2.5 g. VI.HBr, m. 191–2°. Shaking a mixt. obtained by adding the hemihydrate (or HBr salt) of VI in $CHCl_3$ to a mixed anhydride prepd. from *N*-carbobenzyloxy-*S*-benzyl-L-cysteine (800 mg.), $ClCO_2CHMeEt$ (320 mg.), and 1-$EtC_5H_{10}N$ (270 ml.) in 5 ml. $CHCl_3$ gave 80% *carbobenzyloxy-S-benzyl-L-cysteinyl-L-prolyl-L-leucylglycine* (VII), m. 170–1° (from EtOH-H_2O). Decarbobenzyloxylation of 800 mg. VII by heating 10 min. at 60° with 3 ml. 15% HBr in AcOH, pptn. of the HBr salt with Et_2O, decantation with Et_2O, dilu. with H_2O, extn. with AcOEt, treatment of the aq. layer with 500 mg. Ag_2CO_3, removal of the Ag with H_2S, and evapn. of the filtrate after the removal of Ag_2S gave 470 mg. amorphous hygroscopic *S-benzyl-L-cysteinyl-L-propyl-L-leucylglycinamide* (VIII), *HBr salt*, decompg. above 125°, *picrate monohydrate*, decompg. 105°. Adding 2.9 g. of the Et ester of L-leucine in 5 ml. $CHCl_3$ to a mixed anhydride prepd. from 4.5 g. carbobenzyloxy-L-proline (m. 79–7°), 2.5 g. $ClCO_2CHMeEt$, and 2.1 g. 1-$EtC_5H_{10}N$ in 10 ml. $CHCl_3$ yielded 6 g. *Et ester of carbobenzyloxy-L-prolyl-L-leucine* m. 68–9° (from AcOEt-petr. ether), *hydrazide* (VIIa), m. 133–5° (from the same solvent). VIIa (2 g.), 20 ml. 10% HCl, and 30 ml. Et_2O treated while cooling and stirring with 400 mg. $NaNO_2$ in 3 ml. H_2O, sepg. the ether layer, washing with H_2O, and drying over Na_2SO_4; adding this to 800 mg. benzyl ester of glycine in 10 ml. $CHCl_3$ gave, after 12 hrs. at room temp., 1.2 g. *benzyl ester of carbobenzyloxy-L-prolyl-L-leucylglycine*, m. 116–17° (from Me_2CO-petr. ether). Adding under ice-cooling 6.2 g. 1-$EtC_5H_{10}N$ and tosyl-L-proline chloride (prepd. from 5.2 g. tosyl-L-proline and 3.7 g. PCl_5) in $CHCl_3$ to the Et ester of L-leucylglycine-HCl (prepd. by hydrogenation of 6 g. of the Et ester of carbobenzyloxy-L-leucylglycine) in $CHCl_3$, stirring the mixt. 30 min., distg. off the solvent, and extg. the residue with AcOH yielded 6.9 g. *Et ester of tosyl-L-prolyl-L-leucylglycine*, m. 145–6° (from AcOEt-petr. ether). R_f values for VI and VIII in BuOH-AcOH-H_2O were 0.55 and 0.73, resp. II. **Syntheses of L-cysteinyl-L-tyrosyl-glycine, L-cysteinyl-L-tyrosyl-L-leucine, and L-cysteinyl-L-tyrosyl-L-isoleucine derivatives.** Jan Honzl and Josef Rudinger. *Chem. Listy* 49, 751–8; *Collection Czechoslov. Chem. Communs.* 20, 1100–8(1955)(in English).—Dissolving 21.1 g. *S*-benzyl-L-cysteine in 75 ml. 2*N* NaOH, adding 30 ml. Me_2CO, and, simultaneously, with cooling and stirring, a soln. of 20 g. *p*-$MeC_6H_4SO_2Cl$ in 60 ml. Me_2CO and 28 ml. 4*N* NaOH, stirring the mixt. 1 hr., neutralizing the mixt., distg. the Me_2CO *in vacuo*, and acidifying the mixt. with HCl gave an oil which crystd. after seeding to give 20–25.5 g. *tosyl-S-benzyl-L-cysteine* (I), m. 125–6° (from C_6H_6); *acid chloride* (from $SOCl_2$ in 70–80% yield), m. 112–14° (from $CHCl_3$-petr. ether). Adding 5.7 g. of the chloride of I in AcOEt to a cooled satd. soln. of 7.3 g. Et ester of L-tyrosine in AcOEt, washing the AcOEt soln. with dil. HCl, H_2O, N-$NaHCO_3$, and H_2O, and evapg. the solvent *in vacuo* gave, after crystn. from C_6H_6, 7.6 g. *Et ester of tosyl-S-benzyl-L-*

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cysteinyl-L-tyrosine (II), m. 115–16° (from AcOEt-petr. ether). Sapon. of the Et ester of II with 4*N* NaOH at room temp. gave 88% II, m. 150–8° (from aq. EtOH); *hydrazide* (from the ester and 80% $N_2H_4.H_2O$ in EtOH), m. 201° (from aq. EtOH). Dissolving 0.8 g. of the hydrazide of II in a mixt. of 3 ml. *N* HCl and 5 ml. AcOH, adding 14 ml. Et_2O, and, in a special app. allowing to work at −18°, 0.102 g. $NaNO_2$ in 1 ml. H_2O, stirring 1 min., adding 60 ml. 28.5% satd. NaCl soln. cooled to −18° and 18 ml. Et_2O of the same temp. stirring the mixt. intensively for 0.5 min., draining the aq. layer and washing the org. layer twice with satd. NaCl soln. at −18° (the whole operation has to be finished in 7 min.) transferring the ether soln. of the azide into a precooled flask, drying it with Na_2SO_4, adding to a precooled soln. of 0.17 g. freshly distd. Et ester of glycine (III) in 3 ml. AcOEt, and allowing the mixt. to stand at 0° overnight gave an oil which crystd. The ether soln. and the crystals were separately worked up with dil. HCl, H_2O, 5% $NaHCO_3$, and H_2O, the solvent evapd., and the crystals recrystd. from C_6H_6 to give 0.63 g. *Et ester of tosyl-S-benzyl-L-cysteinyl-L-tyrosylglycine* (IV), m. 134.5° (from aq. EtOH). Treating a suspension of 2.5 g. HCl salt of *O*-acetyl-L-tyrosine in 50 ml. tetrahydrofuran at 40–50° with $COCl_2$ 3.5 hrs., passing dry air through the soln. 2 hrs., distg. off the solvent *in vacuo*, and dissolving the residue in Et_2O gave on standing at 0°, 2 g. *L-4-(p-acetoxybenzyl)-oxazolidin-2,5-dione* (V), m. 118–20° (from AcOEt-petr. ether). Dissolving 0.2 g. III and 0.8 ml. $EtNC_4H_{10}$ in 20 ml. AcOEt, cooling the mixt. to −60°, adding a soln. of 0.5 g. V in 10 ml. AcOEt, shaking the mixt. occasionally at −60°, heating up to room temp., cooling to −15°, treating with 0.7 g. of the chloride of I in 10 ml. AcOEt, heating up to room temp., washing with dil. HCl, H_2O, 5% $NaHCO_3$, H_2O, drying with Na_2SO_4, evapg. the solvent, and crystg. the residue from AcOEt and petr. ether gave 0.57 g. *Et ester of tosyl-S-benzyl-L-cysteinyl-(O-acetyl-L-tyrosyl)glycine* (VI), m. 154–5° (from aq. EtOH). Hydrolysis of the ester of IV (0.2 g.) with 0.4 ml. 4*N* NaOH and 0.5 ml. H_2O 45 min. at room temp. gave 0.11 g. IV (*hydrate*), m. 125° (from aq. EtOH). The same compd. IV was obtained in 50% yield by hydrolyzing 0.13 g. of the Et ester of VI with 0.17 ml. 4*N* NaOH. Hydrazide (VII) of IV, prepd. in 90–3% yields from esters of IV and V with 80% $N_2H_4.H_2O$, m. 217–18° (from aq. EtOH). VII (0.8 g.) and 0.35 g. Et ester of L-leucine (VIII) gave 0.66 g. *Et ester of tosyl-S-benzyl-L-cysteinyl-L-tyrosyl-L-leucine* (IX), m. 154° (from aq. EtOH). Treating 2 g. of the hydrazide of II in 14 ml. AcOH, 4 ml. *N* HCl, 2 ml. H_2O and 35 ml. Et_2O with 0.3 g. $NaNO_2$ in 2 ml. H_2O in the manner described above, and adding the soln. of the azide to a soln. of 0.65 g. of the Me ester of leucine in AcOEt gave 1.53 g. Me ester of IX, m. 193° (from aq. MeOH). V (1.84 g.), 1.18 g. VIII, and 2.35 g. acid chloride of I gave 0.4 g. *Et ester of tosyl-S-benzyl-L-cysteinyl-(O-acetyl-L-tyrosyl)-L-leucine*, m. 160–8° (from iso-PrOH). Sapon. of this ester with 4*N* NaOH (45 min. at

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room temp.) gave 88% IX.$^1/_2H_2O$, m. 93–101°. The same compd. IX was obtained from the Et and Me esters of IX. *Hydrazide* of IX, m. 227°, was prepd. in 30% yield by refluxing the Me ester with 80% $N_2H_4.H_2O$. *Hydrazide* (1.8 g.) of II, 0.22 g. $NaNO_2$, and 0.49 g. Me ester of L-isoleucine gave 33–66% *Me ester* of *tosyl-S-benzyl-L-cysteinyl-L-tyrosyl-L-isoleucine* (X), m. 193–5° (from aq. MeOH). Sapon. of this ester gave 50% X, m. 119–23°. *Hydrazide* of X, prepd. from the Me ester and abs. N_2H_4 in 7 days at room temp., 80% yield, m. 242–3° (from aq. EtOH). Transforming the hydrazide of IX (0.33 g.) in 2 ml. *N* HCl, 3 ml. H_2O, 8 ml. AcOH, and 15 ml. Et_2O with 0.06 g. $NaNO_2$ in 0.5 ml. H_2O to the azide, and adding the azide soln. to 0.1 g. III in AcOEt gave 0.28 g. *Et ester* of *tosyl-S-benzyl-L-cysteinyl-L-tyrosyl-L-leucylglycine* (XI), m. 194–5° (from 75% EtOH). The same compd. was prepd. by adding a mixt. obtained from 0.06 g. III, 1 ml. $HOP(OEt)_2$, and 0.15 ml. Et pyrophosphite to 0.34 g. IX (obtained by azeotropic dehydration of its hemihydrate), by heating the mixt. 30 min. at 80–90°, pouring into 50 ml. H_2O, and allowing to stand in the icebox overnight. Washing the ppt. with H_2O, hot 5% $NaHCO_3$, dissolving it in hot EtOH, pptg. with H_2O, and recrystg. from aq. EtOH gave 0.2 g. of the Et ester of XI. M. Hudlický

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RUDINGER, JOSEF

Chloramphenicol series. V. Analogs containing chlorine in the side chain and oxazolines. Jiří Parkná and Jiří Sicher (Czech. akad. ved., Prague). *Collection Czechoslov. Chem. Communs.* 18, 460-80(1953)(In English).—See *C.A.* 49, 2185. VI. Steric course of the reduction of dehydrochloramphenicol and related compounds. Jiří Sicher, Miroslav Svoboda, Magdalena Hrdá, Josef Rudinger, and František Šorm (Czech. akad. ved., Prague). *Ibid.* 487-99.—See *C.A.* 49, 2195. H. L. H.

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ZHUZE, A.L.; JOST, K.; KASAFIREK, E.; RUDINGER, J.

Amino acids and peptides. Pt.45. Chem Cz Chem 29 no.11:2648-2662 N '64.

1. Institute of Organic Chemistry and Biochemistry of the Czechoslovak Academy of Sciences, Prague. 2. Visiting scientist from the Institute of Chemistry and Natural Products, Academy of Sciences of the U.S.S.R., Moscow (for Zhuze). 3. Present address: Institute of Pharmacy and Biochemistry Prague (for Kasafirek).

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YANG CHEN-SU; BLAHA, K.; HUDINGER, J.

Amino acids and peptides. Pt.44. Chem Cz Chem 29 no.11: 2611-2617 N '64.

1. Institute of Organic Chemistry and Biochemistry of the Czechoslovak Academy of Sciences, Prague (for Blaha and Hudinger). 2. Institute of Chemistry of Academia Sinica, Peking (for Yang Chen-Su).

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RUDINGER, J.

SICHER, J.; SVOBODA, M.; HRDA, M.; RUDINGER, J.; SORM, F.

Studies in the chloramphenicol series. Part 6. Steric course of the reduction of dehydrochloramphenicol and related compounds [in English with summary in Russian]. Sbor.Chekh.khim.rab.18 no.4:487-499 Ag '53. (MLRA 7:6)

1. Department of Organic Synthesis, Institute of Organic Chemistry, Czechoslovak Academy of Science, Prague. (Chloromycetin)

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RUDINGER, JOSEF

Amino acids and peptides. VIII. Peptides of 2,4-diaminobutyric acid. Milan Zaoral, Josef Rudinger, and František Šorm (Czech. akad. ved., Prague). Collection Czechoslov. Chem. Communs. 18, 530-48(in Russian; English summary, 548-9)(1953).—See C.A. 49, 179a. IX. Constitution of phalloidine. 2. Bedřich Meloun, Bořivoj Keil, and František Šorm. Ibid. 19, 153-60(1954)(in German).—See C.A. 49, 180d. H. L. H.

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RUDINGER, JOSEF

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

Lithium aluminum hydride and kindred agents in organic chemistry. III. Miloslav Ferles and Josef Rudinger (Tech. Univ., Prague, Czech.). *Chem.* [redacted] (1953).—A supplement to an earlier review (*C.A.* 46, 4463h) involving literature from July 1951 to June 1952. The review contains 413 references and tables of all compds. reduced by $LiAlH_4$-type agents. M. Hudlicky

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CZECH

Amino acids and peptides. VIII. Peptides of 2,4-diaminobutyric acid. Emil Zagral, Josef Rudinger, and František Šorm (Czech. Akad. Věd., Prague, Czech.). *Chem. Listy* 47, 427–39(1953); cf. *C.A.* 48, 3903e.—[In this abstr., R = *carbobenzyloxy* throughout.] Several peptides and intermediates of L-$H_2NCH_2CH_2CH(NH_2)CO_2H$ (I) were prepd. L-Glutamic acid gave by the Schmidt degradation 26% I; *di-HCl salt*, m. 195–0°; *dipicrate*, m. 181°; 2-naphthalenesulfonate, $C_{24}H_{24}N_2O_6S_2.2H_2O$ (the formula in the original is wrong), m. 215° (from H_2O). L-$RNHCH_2CH_2CH(NHR)CO_2H$ (II), m. 90–1°; *hydrazide*, m. 150–2°, prepd. through II Et ester or by treating 1-carbobenzyloxy-3-carbobenzyloxyamino-2-pyrrolidinone (IIA) with 80% N_2H_4.H_2O soln. in EtOH. I.2HCl (16 g.) in 240 ml. *N* NaOH with 12 g. $ClCO_2CH_2Ph$ (III) gave 7.5 g. (24.8%) II, m. 90–2°, 8.4 g. (39.6%) $RNHCH_2CH_2CH(NH_2)CO_2H$ (IV), m. 234–5° (from H_2O), and 3.7 g. (23.1%) I. Similarly, 3 g. $H_2N(CH_2)_3CH(NH_2)CO_2H.HCl$ in 47 ml. *N* NaOH and 2.8 g. III in 32 ml. *N* NaOH yielded 1.6 g. (34.5%) L-$RNH(CH_2)_3CH(NH_2)CO_2H$, m. 255° (from H_2O). *HCl salt of* IV *Et ester* (65.5% from IV with 8% HCl in EtOH), m. 152–3°. II (4 g.) was transformed into 3.3 g. (86.5%) IIA, m. 113–14° (from AcOEt-petr. ether), which in turn was converted to 57.3% *amide* of II, m. 167° (from aq. AcOH). IV with $COCl_2$ in dioxane gave L-4-(2-*carbobenzyloxyaminoethyl*)-2,5-oxazolidinedione. The hydrazide of II (1.8 g.) in 20 ml. AcOH treated with 10 ml. HCl (1:10), 50 ml. Et_2O, and, with cooling and stirring, 380 mg. $NaNO_2$ in 3 ml. H_2O, the mixt. poured into 50 ml. ice water, the ether layer washed with H_2O to remove the mineral acid, the dried ether soln. added dropwise to $H_2NCH_2CO_2Et$ in $CHCl_3$, the mixt. let stand overnight, the solvents distd. off at 40° *in vacuo*, the residue dissolved in AcOEt, the soln. washed 3 times with HCl (1:5), 3 times with a satd. soln. of Na_2CO_3, and finally twice with 10% Na_2CO_3 soln., dried, evapd. *in vacuo*, and the residue crystd. from aq. EtOH gave 1.5 g. (70.8%) L-$RNHCH_2CH_2CH(NHR)CONHCH_2CO_2Et$ (V), m. 130–1°, also obtained (75%) by heating 0.4 g. IIA with 0.5 ml. $H_2NCH_2CO_2Et$ 5 min. at 135°. V is hydrolyzed with *N* NaOH to 79.5% free *acid*, m. 142–3°. V (500 mg.) in 5 ml. AcOH heated at 60° with a soln. prepd. by mixing 3.1 g. 50% HI with 5.2 g. Ac_2O, the $PhCH_2I$ removed by Et_2O extn., the iodine pptd. from the aq. layer as PbI_2, the Pb ions removed with H_2S, and the soln. evapd. several times to dryness yielded 194 mg. (98.2%) L-$H_2NCH_2CH_2CH(NH_2)CONHCH_2CO_2H$; *dipicrolonate monohydrate*, m. 202–3° (from aq. EtOH). II (1.8 g.) and L-$BuCH(NH_2)CO_2Et$ (from 1 g. of the HCl salt) gave by the azide method 1.95 g. (82%) L-$RNHCH_2CH_2CH(NHR)CONHCHBuCO_2Et$-L (VII), also prepd. by the anhydride method by treating at −5° 2 g. II in 20 ml. $CHCl_3$, 0.9 g. III, and 0.5 g. $MeNC_6H_{11}$ with a $CHCl_3$ soln. of L-$BuCH(NH_2)CO_2Et$ (from 1 g. HCl salt), letting the mixt. stand 14 hrs., and evapg. it *in vacuo* to give 1.05 g. (40%) VII, m. 108°; the free *acid*, m. 155° (from aq. EtOH), treated with HI, gave 88% L-$H_2NCH_2CH_2CH(NH_2)CONHCHBuCO_2H$ [*dipicrolonate*, m. 225–7° (from H_2O)]. L-$RNHCH_2CH_2CH(NHR)CONHCH(CO_2Et)CH_2CH_2CO_2Et$-L, m. 130–1° (from aq. EtOH), prepd. in 70.1% yield by the anhydride method from 4 g. II, 1.75 g. di-Et glutamate-HCl, 1.8 g. III, and 1 g. $MeNC_6H_{11}$, gave by

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TILAN ZAORAL

71 *dicarbobenzyloxydipeptide*, m. 189–90° (from aq. EtOH), from which was obtained 91.2% L-2,4-*diaminobutyryl-L-glutamic acid monohydrate*, m. 192–3° (from aq. EtOH). L-*RNHCH₂CH₂CH[NHCOCH(NHR)CH₂CH₂NHR-L]CO₂Et*, m. 140–2° (from aq. EtOH), prepd. in 61.8 g. yield by the azide method and in 50.2% yield by the anhydride method, was hydrolyzed quantitatively to the free *acid*, m. 100–2° (from aq. EtOH), which, hydrogenated in EtOH over 15% Pd-C, yielded 75% L-*H₂NCH₂CH₂CH[NHCOCH(NH₂)CH₂CH₂NH₂-L]CO₂H; trihydrochloride dihydrate*, m. 232° (from H₂O); *rufianate*, m. 228–7° (from H₂O). The monocyst. L-*RNHCH₂CH₂CH(NHCOCH₂NHR-L)CO₂Et* (1.7 g.), prepd. by the anhydride method) was hydrolyzed to the free *acid*, m. 142–3° (from aq. EtOH), which, hydrogenated in AcOH over Pd-C, gave 91% L-*H₂NCH₂CH₂CH(NHCOCH₂NH₂)CO₂H* [*rufianate*, m. 213–15° (decompn.) (from H₂O)]. *RNHCH₂CH₂CH[NHCOCH(NHR)Bu-L]CO₂Et*, m. 98–9° (from aq. EtOH), prepd. in 63% yield by the anhydride method and in 38% yield by the azide synthesis, was sapond. to 74% free *acid*, m. 143–5° (from aq. EtOH), which with HI gave 87.5% L-*H₂NCH₂CH₂CH[NHCOCH(NH₂)Bu-L]CO₂H* [*bis-(2-naphthalenesulfonate)*, m. 190–1° (from H₂O)]. *RNHCH₂CH₂CH[NHCOCH(NHR)CH₂CH₂CO₂Et-L]CO₂Et*, m. 153° (from aq. EtOH), prepd. in 25.5% yield, was sapond. to 84.5% free *acid*, m. 177–8° (from aq. EtOH), and decarbobenzyloxylated to L-*H₂NCH₂CH(NHCOCH(NH₂)CH₂CH₂CO₂H-L]CO₂H*, decomp. 193–5°. V was transformed with $N_2H_4.H_2O$ to 77% L-*RNHCH₂CH₂CH(NHR)CONHCH₂CONHNH₂*, m. 178–9° (from aq. AcOH), which by the azide synthesis yielded 60.5% L-*RNHCH₂CH₂CH[NHCOCH₂NHCOCH(NHR)CH₂CH₂NHR-L]CO₂Et*, m. 151–3° (from AcOEt-petr. ether). This was transformed to 92% corresponding *hydrazide*, m. 202–3° (from aq. AcOH), which with $H_2NCH_2CO_2CH_2Ph.HCl$ gave 44.5% L-*RNHCH₂CH₂CH[NHCOCH₂NHCOCH(NHR)CH₂CH₂NHR-L]CONHCH₂CO₂CH₂Ph*, m. 203–5° (from aq. AcOH). Decarbobenzyloxylation by hydrogenation in AcOH on Pd-C liberated 78% L-*H₂NCH₂CH₂CH[NHCOCH₂NHCOCH(NH₂)CH₂CH₂NH₂-L]CONHCH₂CO₂H; rufianate*, m. 215–17° (from H₂O). IV (4 g.) in 10 ml. $CHCl_3$ treated at −65° with $H_2NCH_2CO_2CH_2Ph$ (from 3.2 g. of its HCl salt), and 1.6 g. $MeNC_5H_{10}$ in 5 ml. $CHCl_3$, and finally with *p*-$C_6H_4(CO)_2NCH_2COCl$ (from 3.2 g. $C_6H_4(CO)_2NCH_2CO_2H$) in 15 ml. $CHCl_3$ gave L-*RNHCH₂CH₂CH[NHCO₂CH₂N(CO)₂C₆H₄-o]CONHCH₂CO₂CH₂Ph*, m. 230–1° (from aq. AcOH); *Et ester*, prepd. similarly in 44.5% yield, m. 198–9° (from aq. AcOH). IX. Constitution of phalloidine. 2. Bedřich Meloun, Bohivoj Keil, and František Šorm. Čzech. Akad. Věd. Prague, Czech.). *Chem. Listy* 47, 1504–10(1953); cf. *C.A.* 47, 3237*b*.—New expts. with *phalloidin* show the sequence of L-threonyl-L-cysteinyl-L-alanyl-L-allohydroxyprolyl in the mol. The following possibilities for the structure of phalloidine are suggested:

OT = hydroxytryptophanyl, TH = threonyl, CY = cysteinyl, AL = alanyl, OP = hydroxyprolyl. The dotted lines show the possible S bridges. DL-*hydroxytryptophan* m. 242°, R_f: H_2O 0.70, BuOH-AcOH-H_2O (4:1:5) 0.34, PhOH contg. 25% H_2O 0.85, BuOH-EtOH-H_2O (4:1:5) 0.48. M. Hudlický

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RUDINGER, Josef

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Amino acids and peptides. X. Some derivatives and reactions of 1-*p*-toluenesulfonyl-L-pyrrolidin-5-one-2-carboxylic acid. Josef Rudinger (Czech. akad. věd, Prague, Czech.). *Chem. Listy* 48, 235-43; *Collection Czechoslov. Chem. Communs.* 19, 365-74(1954)(in English); cf. preceding abstr.—A new method of prepn. of *1-p-toluenesulfonyl-L-pyrrolidin-5-one-2-carboxylic acid* (I) is described. The lactam grouping of I is aminolyzed to give *γ-amides* of *p*-$MeC_6H_4SO_2NHCH(CO_2H)CH_2CH_2CO_2H$ (II), whereas the *α-amides* of II can be obtained by alk. hydrolysis of the corresponding amides of I. I and MeONa give the γ-Me ester of II. L-$HO_2CCH(NH_2)CH_2CH_2CO_2H$ (147 g.) in 500 ml. 4*N* NaOH treated with cooling with 190 g. *p*-$MeC_6H_4SO_2Cl$ in 500 ml. Me_2CO and, at the same time, with 250 ml. 4*N* NaOH, the Me_2CO distd. off, and the soln. acidified to Congo red with HCl gave 264 g. crude II, yielding on recrystn. 208 g. (69%) II, m. 145-6° (from H_2O). Ether extn. of the mother liquors yielded 27 g. to make the total yield 78%. A small amt. of II *di-Et ester*, m. 76-8°, was obtained as a by-product. II with Ac_2O gave the *hydrate* of I, m. 68-70° (from aq. EtOH); anhyd. I, m. 130°, was also prepd. by shaking 30.1 g. II with 50 ml. $SOCl_2$ 6 hrs., dilg. the mixt. with 50 ml. Et_2O, filtering, dilg. with 50 ml. Et_2O, and pptg. with 350 ml. petr. ether (yield 26.1 g. (92%)). Refluxing 30.1 g. II with 50 ml. $SOCl_2$, gave, after pptg. the product from Et_2O with petr. ether, 28.1 g. (93%) *acid chloride* (IIa) of I, m. 83-5° (from Et_2O). From IIa were prepd. the following derivs. of I: *amide*, m. 191-5°; *Et ester*, m. 115-16° (from EtOH-Et_2O). From I were prepd. the following derivs. of I: *NH_4 salt*, m. 202-4° (from aq. EtOH); *$MeNC_5H_{10}$ salt*, m. 170° (from EtOH); *$PhNH_2$ salt* ($C_{22}H_{27}N_3O_{10}S_3$), m. 142-4°; *C_5H_5N salt* ($C_{22}H_{21}N_3O_{12}S_3$), m. 111°. The treatment of 3 g. II with 2.7 ml. $MeNC_5H_{10}$ and 10 ml. 13% soln. of $COCl_2$ in PhMe, evapn. of the mixt. *in vacuo*, and washing the residue with H_2O gave 1.5 g. *$MeNC_5H_{10}$ salt* of II, m. 170°. I with AcCl or Ac_2O gave the *mixed anhydride* (III) of I and AcOH. III (1.6 g.) in 10 ml. $CHCl_3$ and 20 ml. 3.5% NH_3 in $CHCl_3$ gave 0.85 g. *NH_4 salt* of I, m. 202-4°, and 0.23 g. of *the amide* of I, m. 192-4°. III (0.65 g.) and $PhNH_2$ in C_6H_6 gave 0.35 g. *$PhNH_2$ salt* of I, and 0.1 g. I. The *chloride* of I (0.3 g.) and 0.5 ml. $PhNH_2$ in 2 ml. $CHCl_3$ gave 0.35 g. (98%) of the *anilide* (IV) of I, m. 230-2° (from 90% AcOH). Treating 0.9 g. IV in 5 ml. EtOH with 1.25 ml. 4*N* $NaOH_1$ dilg. the mixt. with 50 ml. H_2O, acidifying, sepg. the ppt., suspending it in 5% $NaHCO_3$, removing the undissolved portion (ester amide), and repptg. with acid gave 0.65 g. of the *α-anilide* of II, m. 198-200°. The ester gave by hydrolysis an addnl. 0.21 g. (0.86 g., 92% total). Treating 0.9 g. IV in 5 ml. MeOH with 5 ml. *N* MeONa 5 min. and pouring the mixt. into 50 ml. 5% HCl gave 0.97 g. (99%) *γ-Me ester α-anilide* of II, m. 138° (from aq. MeOH). Similarly was prepd., from the amide of I, 71% *γ-Me ester α-amide* of II, m. 164-5° (from aq. MeOH). Pouring a soln. of 2.8 g. I in 20 ml. *N* MeONa after 30 min. into 100 ml. 5% HCl gave 2.17 g. (69%) *γ-Me ester* of II, m. 113-14° (from aq. MeOH). Anhyd. I (14 g.) boiled 15 min. with 50 ml. concd. aq. NH_3 and the mixt. acidified with HCl gave 13.3-14.8 g. (89-96%) *p*-$MeC_6H_4SO_2NHCH(CO_2H)CH_2CH_2CONH_2$, m. 166° (from H_2O, aq. EtOH, AcOEt, or petr. ether). The same compd. was obtained by tosylation of L-glutamine. Boiling a mixt. of 1.41 g. anhyd. I 5 min. with 5 ml. $PhNH_2$ and pouring the mixt. into 50 ml. 10% HCl gave 1.25 g. (67%) *γ-anilide* of II, m. 217-18° (from 80% EtOH), and the *dianilide*, m. 232° (insol. in 5% $NaHCO_3$). The *γ-anilide* of II was also prepd. in dioxane soln. (46% yield). Heating 1 g. hydrated I 2 min. at 120° with 2 ml. $C_5H_{11}N$ gave 1.1 g. (83%) *piperidide* of II, m. 68-70° (dihydrate). Refluxing

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2.8 g. anhyd. I with 10 ml. 45% N_2H_4 yielded 2.8 g. (89%) *γ-hydrazide* (V) of II, m. 207° (from H_2O). Treating 3.15 g. V in 20 ml. 3% HCl with 8.5 ml. 10% $NaNO_2$, extg. the oil with ether, evapg. the ether *in vacuo*, treating the residue with 7 ml. $PhCH_2OH$, heating the mixt. 1 hr. at 100°, and dilg. the cooled mixt. with 40 ml. Et_2O gave 0.65 g. (25%) white crystals of the lactam of *Nα-p-toluenesulfonyl-L-α,γ-diaminobutyric acid lactam*(3-p-toluenesulfonamido-2-pyrrolidinone). The filtrate extd. with $NaHCO_3$ yielded, after acidification, 1.5 g. (37%) *Nα-p-toluenesulfonyl-Nγ-carbobenzyloxy-L-α,γ-diaminobutyric acid*, m. 149–50°. XI. A new synthesis of peptides of glutamic acid. *Ibid.* 48, 244–53; *Collection Czechoslov. Chem. Communs.* 19, 375–85(1951)(in English).—A series of α- and γ-glutamyl-peptides and glutaminyl peptides has been prepd. starting with *N-p*-toluenesulfonyl-5-pyrrolidone-2-carboxylic acid (I). The isolation of the products after the removal of the tosyl group with Na in NH_3 was carried out by means of ion exchangers. Anhyd. I (14.15 g.), 7 g. $H_2NCH_2CO_2Et$.HCl, 75 ml. MeCN, and 15 ml. $EtNC_5H_{10}$ refluxed 3 hrs., the mixt. cooled, the solvent distd. off *in vacuo*, the residue triturated with 50 ml. dil. HCl, and the ppt. purified by dissolving in $NaHCO_3$ (5% aq. soln), and repptg. with HCl yielded 15.4 g. (80%) of the *Et ester* of *N-(p-toluenesulfonyl-γ-L-glutamyl)glycine* (II), 190–1°; the same yield was obtained with dioxane as solvent. A compd. insol. in 5% $NaHCO_3$, m. 148° (from 75% EtOH), was isolated as a by-product. Treating 7.7 g. II in 15 ml. H_2O with 15 ml. 4*N* NaOH, filtering the soln. with C after 20 min., and acidifying the filtrate with 7 ml. HCl gave 5.85 g. (82%) *N-(p-toluenesulfonyl-γ-L-glutamyl)glycine*, m. 171–2° (from H_2O). Treating 1.03 g. II in 10 ml. MeOH satd. with NH_3 yielded 1.61 g. (90%) *N-(p-toluenesulfonyl-γ-L-glutamyl)glycinamide* (IIa), m. 208° (from H_2O with EtOH added). Refluxing 1.41 g. I, 1.25 g. *p*-$HOC_6H_4CH_2CH(NH_2)CO_2Et$.HCl (III), and 1.25 g. $EtNC_5H_{10}$ 5 hrs. in 10 ml. dioxane, evapg. the solvent *in vacuo*, dissolving and acidifying the residue gave 1.15 g. (47%) *Et ester* of *N-(p-toluenesulfonyl-γ-L-glutamyl)-L-tyrosine* (IV), m. 181–2° (from aq. EtOH); also obtained in 53% yield by heating 10 min. at 130–5° the mixt. of 1.41 g. I with 2.5 g. *p*-$HOC_6H_4CH_2CH(NH_2)CO_2Et$. Hydrolysis of 1.31 g. IV with 5 ml. 2*N* NaOH gave 1.07 g. (80%) *hydrate* of *N-(p-toluenesulfonyl-γ-L-glutamyl)-L-tyrosine* (V), m. 115–25°; obtained directly by refluxing 7 g. I, 6.3 g. III, and 7 g. $EtNC_5H_{10}$ 5 hrs. in 75 ml. dioxane, evapg. the solvent *in vacuo*, dissolving the residue in H_2O, filtering, acidifying the soln., and saponf. the crude IV (8.7 g.) by shaking 20 min. with 38 ml. 2*N* NaOH. The oil gave 4.5 g. (37%, based on I) V, m. 120–30° (from H_2O with EtOH added). Anhyd. V, a glassy mass, was obtained by heating the hydrate of V 24 hrs. at 100°/0.2 mm. over P_2O_5. Shaking 15.1 g. of the chloride of I in 100 ml. $CHCl_3$ 10 min. with 7.7 g. $H_2NCH_2CO_2Et$.HCl, 9 g. $NaHCO_3$, and 40 ml. H_2O, sepg. the $CHCl_3$ layer, washing it twice with 50 ml. dil. HCl (1:3), evapg. the solvent, and crystg. the residue from 96% EtOH gave 15.55 g. (85%) *Et ester* of *N-(1-p-toluenesulfonyl-L-pyrrolidin-5-one-2-carbonyl)glycine* (VI), m. 132–3°. Similarly, 8.4 g. of the chloride of I, 25 ml. $CHCl_3$, 5.6 g. $H_2NCH_2CO_2CH_2Ph$.HCl, 4.6 g. $NaHCO_3$, and 20 ml. H_2O yielded 9.4 g. (78%) of the benzyl ester (VIa), m. 90–2°. VI (3.65 g.) dissolved in 5 ml. 2*N* NaOEt and filtered after 15 min. into 50 ml. 5% HCl gave 53% *di-Et ester* of *N-(p-toluenesulfonyl-α-L-glutamyl)glycine* (VII), m. 109°; the di-Me ester (VIIa), m. 99–100° (from aq. MeOH), was obtained in 44% yield by filtering the soln. of 3.65 g. di-Et ester of VII in 10 ml. *N* NaOMe into 50 ml. 5% HCl. Hydrogenation of 10.30 g. VIa in 20 ml. AcOH, 50 ml. H_2O, and 50 ml. 96% EtOH over 1 g. 5% Pd on C yielded 7.6 g. (94%) *N-(1-p-toluenesulfonyl-L-pyrrolidin-5-one-2-carbonyl)glycine* (VIII), m. 198–200° (from aq. EtOH). VIII (3.4 g.) dissolved in 7.5 ml. 4*N* NaOH and acidified, after 10 min. with HCl gave 3.25 g. (91%) *N-(p-toluenesulfonyl-α-L-glutamyl)glycine*, m. 208–12°. The same product (m. 212° and 217°) was prepd. in 92% yield by the hydrolysis of VII and VIIa, by the alk. and acidic hydrolysis of VI (72% and 91%, resp.), and by direct synthesis from 3.01 g. chloride of I

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in 20 ml. Et_2O and 0.75 g. $H_2NCH_2CO_2H$ in 15 ml. 2*N* NaOH (yield 1.58 g., 43%). *N-p-Toluenesulfonyl-L-glutamic acid* (7.5 g.) refluxed with 25 ml. $SOCl_2$, the chloride treated in 25 ml. $CHCl_3$ with 6.1 g. III, 25 ml. H_2O, and 4.2 g. $NaHCO_3$ until the evolution of CO_2 ceased, and the ppt. filtered and washed with 95% EtOH gave 83% (10.1 g.). Et ester of *N-(1-p-toluenesulfonyl-L-pyrrolidin-5-one-2-carbonyl)-L-tyrosine* (IX), m. 133° (hydrate) (from 96% EtOH). Treating IX (6.4 g.) with 15 ml. 4*N* NaOH and acidifying the soln. yielded 5.5 g. (92%) *N-(p-toluenesulfonyl-α-L-glutamyl)-L-tyrosine* (IXa), m. 218–19°. Refluxing 8 g. VIII 15 min. with 25 ml. concd. aq. NH_3 and acidifying the soln. yielded *N-(p-toluenesulfonyl-L-glutaminyl)glycine* (X), m. 212–13° (from H_2O). *N-p-*Toluenesulfonyl-L-glutamine (Xa) (cf. preceding part) (3 g.) in 100 ml. liquid NH_3 treated with 1.3–1.5 g. Na, then with NH_4OAc until the blue color disappeared, the NH_3 evapd., the residue dissolved in 20 ml. H_2O and ice, treated with 10 g. NH_4 salt of ion exchanger (Amberlite IRC-50), the ion-exchanger filtered off after 30 min., washed with H_2O, and the turbid filtrate evapd. at 40° *in vacuo* to 15 ml., the cooled soln. treated with *M* $Ba(OAc)_2$ until no ppt. was formed (5–10 ml.), filtered, the filtrate evapd. *in vacuo* to 10–30 ml., filtered through a column contg. 20 g. Amberlite (in NH_4 cycle), the column washed with distd. H_2O, and the eluate (150 ml.) evapd. at 40° *in vacuo* to 20 ml. and treated with EtOH gave 1.25 g. (86%) *L-glutamine*, m. 188°, $[\alpha]^{23}_D$ 6.9°. The same product was prepd. by the reduction with Ca: 3 g. Xa in 100 ml. liquid NH_3 was treated with 1.15 g. Ca, the blue soln. decolorized with $AcONH_4$, the NH_3 evap., the residue treated with a satd. soln. of 3 g. $(CO_2H)_2$, the ppt. filtered off, and the filtrate passed over 25 g. Amberlite IRC-50 (in NH_4 cycle), the column washed with H_2O, the eluate (200 ml.) evapd. to 20 ml. *in vacuo* at 40°, and the product pptd. with EtOH gave 0.85 g. (58%) *L-glutamine*. *L-p-MeC₆H₄SO₂NHCH(CO₂H)CH₂CH₂CONHPh* (1.35 g.) reduced in 75 ml. NH_3 with 0.45 g. Na gave 0.63 g. (85%) *γ-anilide* of *L-glutamic acid*, m. 226°, (from aq. EtOH), R_f in PhOH-H_2O-NH_3 0.89. (*p-Toluenesulfonyl-α-L-glutamyl)glycine* (3.58 g.) reduced with 1.4 g. Na in 120 ml. NH_3 and worked up with the ion exchanger yielded 1.40 g. (68.5%) *N-(α-L-glutamyl)glycine*, m. 175–6°, $[\alpha]^{23}_D$ 30°. Reducing 3.58 g. of free acid from II with 1.4 g. Na in 300 ml. NH_3, evapg. the demineralized soln. of the dipeptide to 20 ml., and adding 100 ml. hot EtOH gave 1.85 g. (84%) mono-NH_4 salt of the dipeptide which, treated with H_2O, H_2N-CH_2CH_2OH, AcOEt and excess EtOH, yielded 95% *N-(γ-L-glutamyl)glycine*, $[\alpha]^{23}_D$ 9.4°. Reduction of 2.32 g. IXa in 100 ml. NH_3 with 0.75 g. Na yielded 1.12 g. (70%) *N-(α-L-glutamyl)-L-tyrosine*, m. 186°, $[\alpha]^{23}_D$ 31.2°. The hydrate of V (2.41 g.) reduced with 1 g. Na in 100 ml. NH_3 gave 0.99 g. (70.5%) *dihydrate* of the *mono-NH_4 salt* of *N-(γ-L-glutamyl)-L-tyrosine*, m. 103–4°, also obtained in 35% yield by the reduction with Ca. IIa (1.48 g.) and 0.6 g. Na in 100 ml. NH_3 gave, by pptn. with EtOH, 0.61 g. (73%) *N-(5-L-glutamyl)-glycinamide*, m. 194–5°, R_f (PhOH-H_2O-NH_3) 0.61. X (3.57 g.) reduced with 1.5 g. Na in 100 ml. NH_3 gave, by demineralization and pptn. with EtOH, 1.25 g. (61%) *N-L-glutaminylglycine*. XII. New resolution of DL-glutamic acid; synthesis of D-glutamine and (γ-D-glutamyl)glycine. Josef Rudinger and Hana Czurbová. *Chem. Listy* 48, 251–9; *Collection Czechoslov. Chem. Communs.* 19, 386–91 (1954).—The prepn. of *p-toluenesulfonyl-DL-pyrrolidin-5-one-2-carboxylic acid* (I) and its derivs. is described. Brucine was used for the resolution of I. From I, *D-glutamic acid* (II), *D-glutamine* (III), and *N-(γ-D-glutamyl)glycine* (IV) were prepd. DL-Glutamic acid (95 g.) in 317 ml. 4*N* NaOH treated with 122 g. *p-*$MeC_6H_4SO_2Cl$ in 320 ml. Me_2CO

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and 164 ml. 4*N* NaOH gave, after filtration, removal of the Me_2CO, and acidification with HCl, 130 g. (80%) *N-p-toluenesulfonyl-DL-glutamic acid* (V), m. 171–2° (from H_2O); γ-amide, m. 171°; γ-anilide, m. 196–7°; α,γ-dianilide, m. 218–19°; γ-piperidide, m. 164–5°, γ-hydrazide, m. 178–9°. V (17 g.) refluxed 10 min. with 50 ml. Ac_2O, the excess Ac_2O removed *in vacuo*, the residue dild. with 30 ml. Me_2CO, the boiling soln. treated successively with 70 ml. H_2O, and the Me_2CO distd. off gave, after cooling to 0°, 13 g. (77.5%) I; *hydrate*, m. 120–8°. Anhyd. I, m. 169–70°; C_5H_5N *salt*, I, m. 163–5°; *Me ester*, m. 129–30°; *chloride*, m. 117°; *anilide*, m. 222–3°. I.H_2O (15.07 g.) in 300 ml. hot 96% EtOH added to 19.5 g. brucine in 300 ml. 96% EtOH, and the soln. cooled and inoculated gave, after 6 hrs., 13.7 g. (79%) of the *brucine salt* of I, m. 222–3° (crystd. from 750–850 ml. 96% EtOH); treating 12.65 g. of the salt in 200 ml. H_2O and 50 ml. AcOEt with 10 ml. concd. HCl, extg. the aq. layer with 50 and 25-ml. portions of AcOEt, washing the exts. with dil. HCl and H_2O, drying, evapg. the solvent yielded 4.23 g. (82%) *1-p-toluenesulfonyl-D-pyrrolidin-5-one-2-carboxylic acid* (Va), m. 128–30° (from C_6H_6). From the mother liquors was isolated 0.55 g. (10.5%) Va *hydrate*, m. 68–9°. Va (5 g.) in 27 ml. 2*N* NaOH acidified with HCl after 10 min. yielded 92% *N-p-toluenesulfonyl-D-glutamic acid* (Vb), m. 142–5°. Reduction of 3.01 g. Vb in 100 ml. NH_3 with 1.3 g. Na gave, by a procedure given in the previous paper, 1.05 g. (72%) II, $[\alpha]^{23}_{D}$ −32.4°. Refluxing 2.83 g. Va 15 min. with 20 ml. concd. NH_3 gave 2.62 g. (87%) N^{α}-*p-toluenesulfonyl-D-glutamine* (VI), m. 166°. Reduction of V with Na in NH_3 gave 71% III, m. 186–8° (from H_2O and EtOH), $[\alpha]^{23}_{D}$ −7.1°. Refluxing 2.83 g. Va with 1.5 g. $H_2NCH_2CO_2Et.HCl$, 2.5 ml. $EtNC_6H_{10}$, and 15 ml. MeCN 4 hrs., evapg. the solvent *in vacuo*, dissolving the residue in water, acidifying, filtering off the ppt., washing it with H_2O, and purifying by repptn. from the soln. in $NaHCO_3$ yielded 3.1 g. (80%) of the Et ester of *N-(p-toluenesulfonyl-γ-D-glutamyl)glycine* (VII), m. 189–90° (from 10% EtOH).

Hydrolysis of VII with NaOH gave 87% free acid (VIIa), m. 166–7°. Reduction of 2.26 g. VIIa with 0.9 g. Na in 75 ml. NH_3 gave 1.2 g. (87%) NH_4 salt of IV, which yielded 78% free IV, $[\alpha]^{23}_{D}$ 8.1°. The following derivs. were prepd. as described in the preceding papers: *N-(p-toluenesulfonyl-γ-DL-glutamyl)glycine*, m. 170° (*Et ester*, m. 170°); *N-(p-toluenesulfonyl-DL-pyrrolidin-5-one-2-carbonyl)glycine*, m. 192–3° (*Et ester*, m. 126–7°); and *N-(p-toluenesulfonyl-DL-glutaminyl)glycine*, m. 180–2°. M. Hudlicky

The reactive behavior of the so-called "diazopyrroles." Tommaso Ajello and Salvatore Giambrone (Univ. Palermo, Italy). *Ricerca sci.* 24, 49–54(1954).—The *chloride* of *3-diazo-1,2,4,5-tetraphenylpyrrole* is prepared and studied. It resembles diazonium salts in stability, oxidative power, and loss of diazonium group. Unlike diazonium salts it does not have coupling activity and loses a hydracid with alkali hydroxides and NH_3. Mario V. Conti

Decarboxylation and formylation of certain pyrrole derivatives. Edith Ju-Hwa Chu and T. C. Chu (Immaculate Heart Coll., Los Angeles, Calif.). *J. Org. Chem.* 19, 266–9 (1954).—$H_2NCH_2CH_2OH$ (I) is used as decarboxylation agent for substituted carboxypyrroles. Adding 28.5 g. $AcCH_2CO_2Et$ to Et α-nitroso-α-benzoylacetate (from 38.5 g. $BzCH_2CO_2Et$), then adding gradually 28.5 g. Zn dust with gentle boiling, refluxing the mixt. 2 hrs., and pouring it into H_2O give 63% *2-methyl-4-phenyl-3,5-dicarbethoxypyrrole*, colorless prisms, m. 124–5°. *2,4-Dimethyl-3-carboxy-5-carbethoxypyrrole* (II), 85%, fine prisms, m. 272° (decompn.), and *2-methyl-4-phenyl-3-carboxy-5-carbethoxypyrrole* (III), 78%, platelets, m. 220° (decompn.) are prepd. by partial sapon. of the corresponding diesters. Refluxing 21.1 g. II and 12.2 g. I 1 hr. and pouring the mixt. into H_2O give 90% 2,4-dimethyl-5-carbethoxypyrrole (IV), prisms, m. 124.5–5°; similarly, III gives 84% *2-methyl-4-phenyl-5-carbethoxypyrrole*, needles, m. 134.5–5°. Gradually adding 15.4 g. $POCl_3$ to 13.4 g. IV and 7.3 g. $HCONMe_2$, refluxing

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the mixt. 2 hrs., pouring it into H_2O, and neutralizing it with NaOAc give 95% *2,4-dimethyl-3-formyl-5-carbethoxypyrrole*, needles, m. 145–5.5° (*oxime*, m. 199–200°; *semicarbazone*, decomp. at about 275°). *2-Methyl-4-phenyl-3-formyl-5-carbethoxypyrrole*, prepd. similarly in 97% yield, prisms, m. 144.5–5° (*oxime*, 96%, plates, m. 210–11°; *semicarbazone*, needles, decomp. at about 280° with sublimation).

F. E. Brauns

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RUDINGER, J.

Amino acids and peptides. Part 11. A new synthesis of peptides of glutamic acid [in English with summary in Russian]. Sbor.Chekh.khim. rab. 19 no.2:375-385 Ap '54. (MLRA 7:6)

1. Department of Organic Synthesis, Institute of Organic Chemistry, Czechoslovak Academy of Science, Prague.
(Glutamic acid) (Peptides)

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RUDINGER, J.; CZURBOVA, H.

Amino acids and peptides. Part 12. A new resolution of dl-glutamic acid; synthesis of d-glutamine and γ-d-glutamylglycine [in English with summary in Russian]. Sbor.Chekh.khim.rab. 19 no.2:386-392 Ap '54. (MLRA 7:6)

1. Department of Organic Synthesis, Institute of Organic Chemistry, Czechoslovak Academy of Science, Prague. (Amino acids)

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RUDINGER, J.

"Amino Acids and Peptides. X. Some Derivatives and Reactions of 1-P-Toluensulfonyl-L-Pyrrolid-5-One-2-Carboxylic Acid. XI. New Synthesis of Peptides of Glutamic Acid", P. 235, (CHEMICKE LISTY, Vol. 48, No. 2, Feb. 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

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RUDINGER, J.; CAURBOVA, H.

"Amino Acids and Peptides. XII. New Resolution of DL-Glutamic Acid; Synthesis of D-Glutamine and Y-D-Glutamyglycine", P. 254, (CHEMICKE LISTY, Vol. 48, No. 2, Feb. 1954, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

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RUDINGER, JOSEF

CZECH

Amino acids and peptides. XIII. Synthesis of L-proline from L-glutamic acid. Zdeněk Pravda and Josef Rudinger (Czech. akad. věd, Prague). *Chem. Listy* 48, 1665-6(1954); *Collection Czechoslov. Chem. Communs.* 20, 1-8(1955)(in English); cf. C.A. 49, 3126b.—Treating L-TsN.CO.-$(CH_2)_2$.CHCOCl (I) (Ts = p-$MeC_6H_4SO_2$) with NH_3 gave L-TsN.CO.$(CH_2)_2$.CHCONH$_2$ (II). L-TsN.CO.$(CH_2)_2$.C-HCONHPh (IIa) was prepd. from I. Both II and IIa were reduced by $LiAlH_4$ or, in better yields, with $LiBH_4$ to TsNHCH$(CONH_2)(CH_2)_2$OH (III) and L-TsNHCH(CO-NHPh)$(CH_2)_2$OH (IIIa), resp. Heating IIIa with TsCl and K_2CO_3 gave L-TsN.$(CH_2)_2$.CHCONHPh (IVa). Similar treatment of III failed to give L-TsN.$(CH_2)_2$.CHCONH$_2$ (IV). To prep. IV, III had to be transformed to L-TsNH-CH$(CONH_2)(CH_2)_2$Br (V) which, heated with K_2CO_3, gave IV. Hydrolysis of IV gave L-TsN.$(CH_2)_2$.CHCO$_2$H (VI), also prepd. from TsCl and L-proline (VII). Reduction of IVa with Na in NH_3 gave NH.$(CH_2)_2$.CHCONHPh (VIII) which yielded VII on hydrolysis. The above reactions represent the 1st chem. transformation of L-glutamic acid to L-proline. M.ps. are corrected. I, prepd. according to

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