

L 2410/-06 ENT(1)/T JA

ACC NR: AP6014661

SOURCE CODE: UR/0297/65/010/002/0151/0156

AUTHOR: Bukharin, O. V.; Yakovleva, Z. M. 29

ORG: Department of Microbiology/headed by Professor L. Ya. Ebert/, Chelvabinsk Medical Institute 2

TITLE: Concerning the protective nonspecific action of lysozyme in infection

SOURCE: Antibiotiki, v. 10, no. 2, 1965, 151-156

TOPIC TAGS: mouse, rabbit, vitamin, bacteria, drug effect

ABSTRACT: Mice and rabbits were used in experiments which were carried out to determine the efficacy of lysozyme and its combinations with vitamins B₁, B₆, and B₁₂, when used for the prophylaxis of infectious processes induced by Salmonella typhimurium and Bacterium pyocyaneum. Crystalline and liquid forms of the vitamins were tested. In the experiments with Salmonella typhimurium the mice were divided into four groups; group one was administered lysozyme only in doses of one milligram per mouse; the mice of the second group received a mixture of the vitamins; the third group was administered simultaneously lysozyme and a mixture of the vitamins; the fourth group received a physiological solution only. On the day following the administration of the preparations, the animals were subcutaneously infected with LD₁₀₀ (4000 microbic cells) of Salmonella typhimurium. In the experiments with Bacterium pyocyaneum, all of the animals were divided into six groups, each of the groups having received respectively lysozyme,

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UDC: 615.779.935-092.19: 616-022.7/.9

L-2430 -66

ACC NR: AP6014661

lysozyme with vitamin combinations and mixtures of vitamins administered at different periods prior to their infection with the microorganisms which were administered in LD₁₀₀ doses intraperitoneally. The experiments established that lysozyme and its combinations with vitamins B₁, B₆, and B₁₂ are prophylactically effective in relation to infections induced by *Salmonella typhimurium* and *Bacterium pyocyaneum*; that although lysozyme itself stimulates phagocytosis, its stimulating effect on phagocytosis is more intense when applied in combination with the group of B vitamins; the administration of lysozyme and the vitamins elevated the level of normal typhoid, paratyphoid B, and dysentery Flexner C agglutinins in rabbits. Orig. art. has: 1 figure and 3 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 27May64 / ORIG REF: 012 / OTH REF: 006

Card 2/2 *llw*

I. 06685-67 ENT(1) JK
ACC NRI AP6028950

SOURCE CODE: UR/0219/66/062/008/0068/0070
11
16

AUTHOR: Bukharin, O. V.; Yakovleva, Z. M.

ORG: Department of Microbiology /Director-Prof. L. Ya. Ebert/, Chelyabinsk Medical Institute (Kafedra mikrobiologii Chelyabinskogo meditsinskogo instituta)

TITLE: Protective effect of prodigiozan on experimental infections and immunological reactions of the body

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 62, no. 8, 1966, 68-70

TOPIC TAGS: bacterial polysaccharide, immunology, protective effect, prodigiozan, *INFECTIVE DISEASE*

ABSTRACT: The effect of prodigiozan⁰ (series 266 developed in Z. V. Yermol'yeva's laboratory) on *Salmonella typhimurium*⁰ was studied using 120 white mice weighing 18-20 g. Prior to the experiment, the animals were injected subcutaneously with a 1 µg/kg dose of prodigiozan, prodigiozan with vitamins B₁, B₆, and B₁₂, or vitamins alone. They were then injected subcutaneously with a lethal (LD₁₀₀) dose of *Salmonella* (4000 microbe cells). Mean viability was used as the criterion for the effectiveness of the preparation. Humoral factors of immunity were

UDC: 615.779.925-06:616.9-092.9

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L 08685-67

ACC NR: AP6028950

studied using 32 guinea pigs and 150 white mice. Here, normal antibody content and the immunological activity of blood serum in guinea pigs and mice administered 1 μ g/g of prodigiozan were determined. After an hour, mice were then injected intraperitoneally with an LD₅₀ (50 x 10⁶ cells) dose of *Bact. pyocyaneum*. Paired sera were administered in 0.2 ml doses (1:2 dilution). Some results of these studies are given in Table 1. It was concluded that prodigiozan was able to

Table 1. Protective effect of prodigiozan on *Salmonella* infected mice

No.	Preparation	No. of animals	Mean viability (in days)	P
1.	Placebo	30	4.5 \pm 0.4	-
2.	Prodigiozan	30	6.7 \pm 0.4	<0.01
3.	Prodigiozan plus vitamins	30	6.5 \pm 0.4	<0.01
4.	Vitamins B ₁ , B ₆ , and B ₁₂	30	5.6 \pm 0.4	>0.05

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ACC NR: AP6028950

reliably increase the serum immunoactivity of infected guinea pigs. This was also found to be true of *Bact. pyocyaneum*-infected mice. However, the humoral mechanism of the effect of prodigiosan remained unclear and further investigations of this preparation were deemed necessary. Orig. art. has: 1 figure and 1 table. [W.A. 50]

SUB CODE: 06/ SUPM DATE: 20Jan65/ ORIG REF: 010/ OTH REF: 008

Card 3/3 *ml*

YAKOVIEVA, Z.O.; YAROSLAVTSEVA, L.D.

Technological and chemical characteristics and nutritional value
of various Atlantic fishes. Khar. prom. no.1:37-39 Ja-Mr '65.
(MIRA 18:4)

YAKOVLEVA, Z.O.; YAROSLAVTSEVA, I.D.

Canning and cooking of the Indian and Pacific Ocean variety of
spotted tuna (*Euthunnus affinis*). Khar. prom. no. 2:45-47 Ap-
Je '65. (MIRA 18:5)

YAKOVLEVA, Z. YA.

YERMAKOVA, H.D.; YAKOVLEVA, Z. Ya.

Spectrum analysis of AZh-9-4 and OTSS-5-5-5 bronzes. Zav. lab. 23
no. 5:592 '57. (MLBA 10:8)

(Bronze--Spectra)

YAKOVLEVA, Z. Ya.

FOMINA, O.A.; SMIRNOV, N.S.; YERMAKOVA, M.D.; YAKOVLEVA, Z.Ya.; GARVILOV, G.A.

Brief reports. Zav. lab, 23 no.5:593 '57. (MLBA 10:8)
(Spectrum analysis) (Metallurgical analysis)

YAKOVLEVA-KORCHAGINA, I.N.

Effect of nicotinic acid on cholesterinemia in hypertension.
Tr. Akad. med. nauk SSSR, Vol.20:129-134 1952. (GML 25:5)

1. Of the Institute of Therapy (Director -- A.L. Myasnikov,
Active Member AMS USSR), Academy of Medical Sciences USSR.

YAKOVLEVA--SHNIRMAN, I. V.

21061 Yakovleva--Shnirman, I.V. Psikhicheskiye Narusheniya Na pochve dlitel'nogo golodaniya u detey. Voprosu pediatrii i okhrany matepinstva i detstva, 1949, vyp.3, s. 50-54.

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

YAKOVLEVA-SHNIRMAN, I.V.

Analysis of causes of the recurrence of successfully treated cases of epilepsy in children. Zhur.nerv.i psikh. 59 no.7:843-846 '59.
(MIRA 12:11)

1. Detskoye otdeleniye (zav. - prof. G.B. Abramovich) Psikhonevrologicheskogo instituta imeni V.M. Bekhtereva (dir. - prof. V.N. Myesishchev).

(EPILEPSY, in inf. & child,
recur. of successfully treated (Rus))

ABRAMOVICH, G.B.; YAKOVLEVA-SHNIRMAN, I.V.

Some problems in the treatment of epilepsy. Vop. psikh. i nevr.
no.5:168-177 '59. (MIRA 14:5)

1. Iz detskogo otdoleniya (zav. - prof. G.B.Abramovich) Psikhonevrolo-
gicheskogo instituta imeni V.M.Bekhtereva (direktor - chlen-korres-
pondent Akademii pedagogicheskikh nauk RSFSR prof. V.N.Myasishchev).
(EPILEPSY)

ABRAMOVICH, G.B.; ADAMOVICH, V.A.; VOROB'YEV, S.P.; GOSHEV, A.I.; DEMIDENKO,
T.D.; ZAYCHIKOVA, N.A. [deceased]; RUBINOVA, R.S.; TERPUGOV, Ye.A.;
SHATALOVA, A.A.; YAKOVLEVA-SHIRMAN, I.V.

Some investigations of the clinical aspects, pathogenesis, and
treatment of epilepsy. Trudy Gos. nauch.-issl. psikhonevr. inst.
no.20:343-354 '59. (MIRA 14:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy psikhonevrologicheskiy
institut imeni V.M. Bekhtereva, Leningrad.
(EPILEPSY)

SHAPIRO, A.I.; YAKOVLEVA-SHNIRMAN, I.V.

Characteristics of the immunobiological reactivity in epileptic children. Vop.psikh.i nerv. 8:121-132 '62. (MIRA 17:4)

1. Iz serologicheskoy laboratorii (zav. - prof. A.I.Shapiro) i detskogo psikhiatricheskogo otdeleniya Psikhonevrologicheskogo instituta imeni V.M.Bekhtereva (zav. prof. G.B.Abramovich, direktor instituta - B.A.Lebedev).

YAKOVLEVA-STANKEVICH ~~SECRET~~

IA 23/49779

Ye. S.

USSR/Medicine - Sugars, Invert
Medicine - Insulin

Sep/Oct 48

"Experience in Impeding Insulin Shock With Invert
Sugar in the Therapy of Psychio Disorders,"
Ye. S. Yakovleva-Stankevich, Kazan Psychiatric
Hosp, 2½ pp

"Nevropatol i Psikhiat" Vol XVII, No 5

Treatment was applied to 23 patients. Concludes
that invert sugar can completely replace glucose
in the treatment of insulin shock. Submitted
5 Apr 48.

23/49779

YAKOVLEVA-STANKEVICH, YE. S.

Insulin - Therapeutic Use

Insulin therapy in combination with transplantation of preserved placenta in schizophrenic stupor states. Zhur. nevr. i psikh. 52 no. 8, 1952.

MONTHLY LIST OF RUSSIAN ACCESSIONS, LIBRARY OF CONGRESS, NOVEMBER 1952, UNCLASSIFIED.

YAKOVLEVA-STANKEVICH, Ye.S.
YAKOVLEVA-STANKEVICH, Ye.S.

Psychosis in extrauterine pregnancy. Zhur.nevr. i psikh. Supplement:
75-76 '57. (MIRA 11:1)

1. Kafedra psikhatrii (zav. - prof. M.P.Andreyev) Kazanskogo
meditsinskogo instituta.
(PSYCHOSIS) (PREGNANCY, EXTRAUTERINE)

DANILEVSKAYA, Sof'ya Ivanovna; YAKOVLEVSKAYA, Nonna Viktorovna;
KAMANINA, L.G., kand. geogr. nauk, red.; ABLOVA, A.A., red.;
PLAKSHE, L.Yu., tekhn. red.

[Abridged Polish-Russian geology-geography dictionary]Krat-
kii pol'sko-russkii geologo-geograficheskii slovar'. Pod red.
L.G.Kamanina. Moskva, Glav.red. inostr. nauchno-tekhn. slo-
varei Fizmatgiza, 1962. 243 p. (MIRA 15:10)

(Polish language--Dictionaries--Russian)
(Geology--Dictionaries) (Geography--Dictionaries)

YAKOVLEVSKAYA, T.A.

USSR/Cosmochemistry. Geochemistry. Hydrochemistry.

D

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957, 18919.

Author : T.A. Yakovlevskaya.

Inst : Moscow Geological-Prospecting Institute.

Title : Concerning Berthierite from Belukhinskoye Occurrence in Eastern Transbaykal Region.

Orig Pub : Tr. Mosk. Geol.-Razved. In-ta, 1956, 29, 66-68

Abstract : Berthierite (FeSb_2S_4) found in an unusual paragenetic association with ferberite, pyrite and marcasite is described. The above mentioned minerals produce inclusions in quartz-hornstone veins crossing the main quartz-wolframite veins of the occurrence; hornblende-biotite granodiorites are the country rocks. The chemical composition of berthierite is (in %): Fe 13.03, Sb 56.50, S 29.74, total 99.27. The following elements were discovered in addition by spectral analysis: Mg, Mn - lines of medium strength; Cu, Ag, W - feeble lines; Ni, Ga, Ti, Si and V - traces. The obtained data confirm the low temperature genesis of berthierite.

Card 1/1

-29-

RUKAVISHNIKOVA, I.A. [deceased]; YAKOVLEVSKAYA, T.A.; POKHOVSKAYA, A.I.

Coronadit and cryptomelane from the Mayskiy complex ore deposit
in central Kazakhstan. Kora vyvetr. no. 3:26-32 '60.
(MIRA 13:12)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimi AN SSSR.
(Kazakhstan--Coronadite) (Kazakhstan--Cryptomelane)

ZALASHKOVA, N.Ye.; YAKOVLEVSKAYA, T.A.

Low-temperature phenacite from Altai granitic pegmatites.
Trudy Min.muz. no.9:172-175 '59. (MIRA 12:6)
(Altai Mountains--Phenacite)

CHEPIZHNYI, K.I.; YAKOVLEVSKAYA, T.A.

Bertrandite from the cavities of rare metal pegmatites. Vest.Mosk.
un.Ser. 4: Geol. 16 no.3:41-43 My-Je '61. (MIRA 14:6)

1. Kafedra mineralogii Moskovskogo universiteta.
(Bertrandite) (Pegmatites)

GENKIN, A.D.; VASIL'YEVA, Z.V.; YAKOVLEVSKAYA, T.A.

Occurrences of apatite in copper-nickel sulfide ores in the
Noril'sk deposit. Geol. rud. mestorozh. no.2:100-108 Mr-Ap
'61. (MIRA 14:5)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR.
(Noril'sk region--Apatite)

YAKOVLEVSKAYA, T.A.

Hibonite from Gornaya Shoriya. Zap.Vses.min.ob-va 90 no.4:458-461
'61. (MIRA 14:9)

1. Institut geologii, rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.
(Gornaya Shoriya--Minerals)

NADEZHINA, Ye.D.; YUDINA, V.V.; YAKOVLEVSKAYA, T.A.

Zonal fassaites from the metasomatically altered trap rock in
the middle Vilyuy Valley. Trudy IGEM no.77:307-318 '62.

(MIRA 16:2)

(Vilyuy Valley--Fassaites--Analysis)

GURENOVA, Y.I.; YAKOVLEVSKAYA, T.A.

Powellite from the Iceland spar deposit in the Lower Tunguska
Valley. Trudy Min.muz. no. 13:169-171 '62. (MIRA 16:2)
(Lower Tunguska Valley—Powellite)
(Lower Tunguska Valley—Iceland spar)

YAKOVLEVSKAYA, T.A.; SEMENOV, Ye.I.

Some new data on chkalovite. Trudy Min. muz. no.14:265-267 '63.
(MIRA 16:10)
(Chkalovite)

BONSHTEDT-KUPLETSKAYA, E.M.; YAKOVLEVSKAYA, T.A.

New minerals. Part 14. Zap. Vses. min. ob-va 92 no.5:566-578
'63. (MIRA 17:1)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii (IGEM) AN SSSR, Moskva.

YAKOVLEVSKAYA, T.A.; YEFIMOV, A.F.

New data on the crystallography of minerals in the batisite-shcherbakovite series. Dokl. AN SSSR 151 no.6:1413-1415 Ag (MIRA 16:10) '63.

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR i Institut mineralogii, geokhimii i kristalloghimii redkikh elementov AN SSSR. Predstavleno akademikom D.S.Korzhinskim.

BONSHTEDT-KUPLETSKAYA, E.M.; YAKOVLEVSKAYA, T.A.

New minerals. Part 15. Zap. Vses. min. ob-va 93 no. 11444-459
'64 (MIRA 18:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralologii i geokhimi (IGEM) AN SSSR, Moskva.

SHLYUKOVA, Z.V.; SOKOLOVA, M.N.; YAKOVLEVSKAYA, T.A.; RUDNITSKAYA, Ye.S.;
BUROVA, T.A.

Labuntsovite from the Khibiny Mountains. Zap. Vses. min.
ob-va. 94 no.4:430-436 '65. (MIRA 18:9)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,
mineralogii i geokhimii AN SSSR, Moskva.

SVESHNIKOVA, Ye.V.; ZHABIN, A.G.; YAKOVLEVSKAYA, T.A.; ALEKSANDROV, V.I

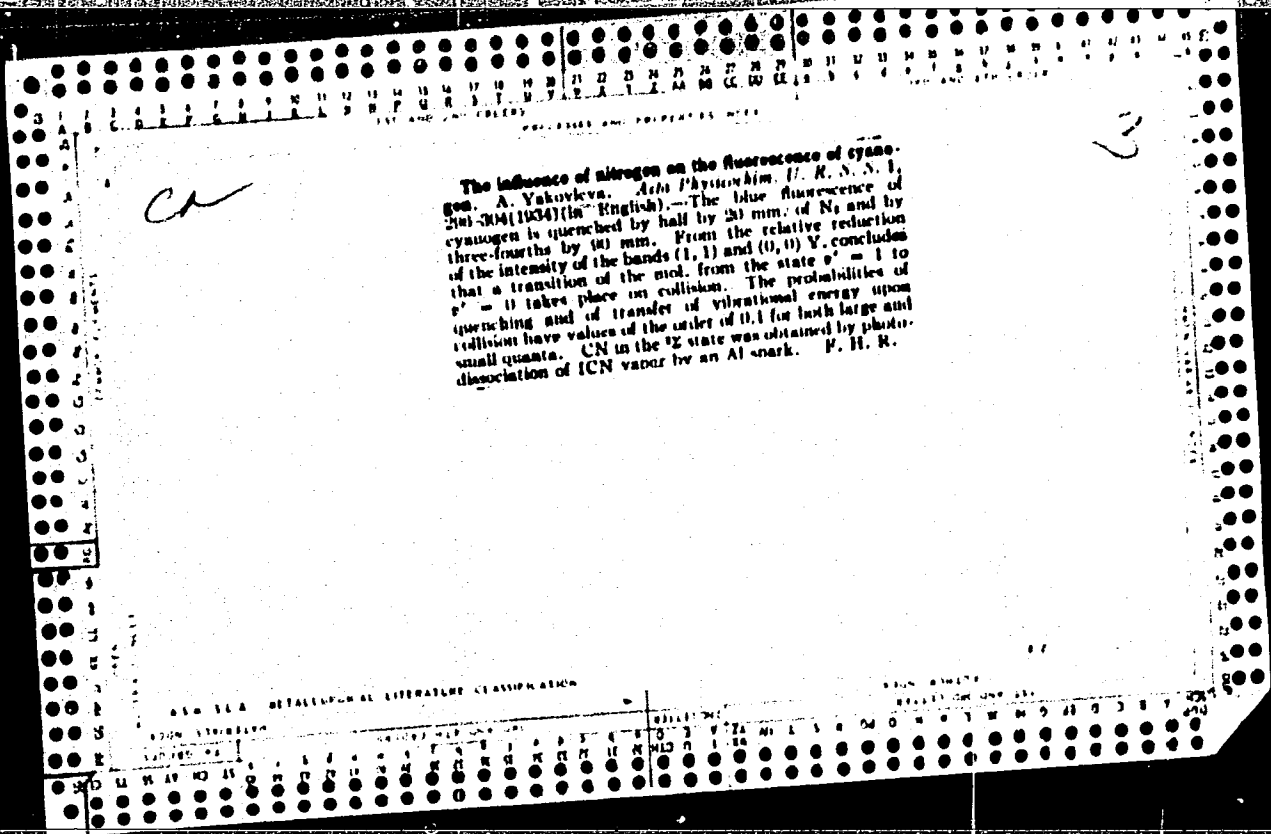
Columbite containing titanium from alkali massifs. Trudy Mln.muz.
no.16:266-270 '65. (MIRA 19:8)

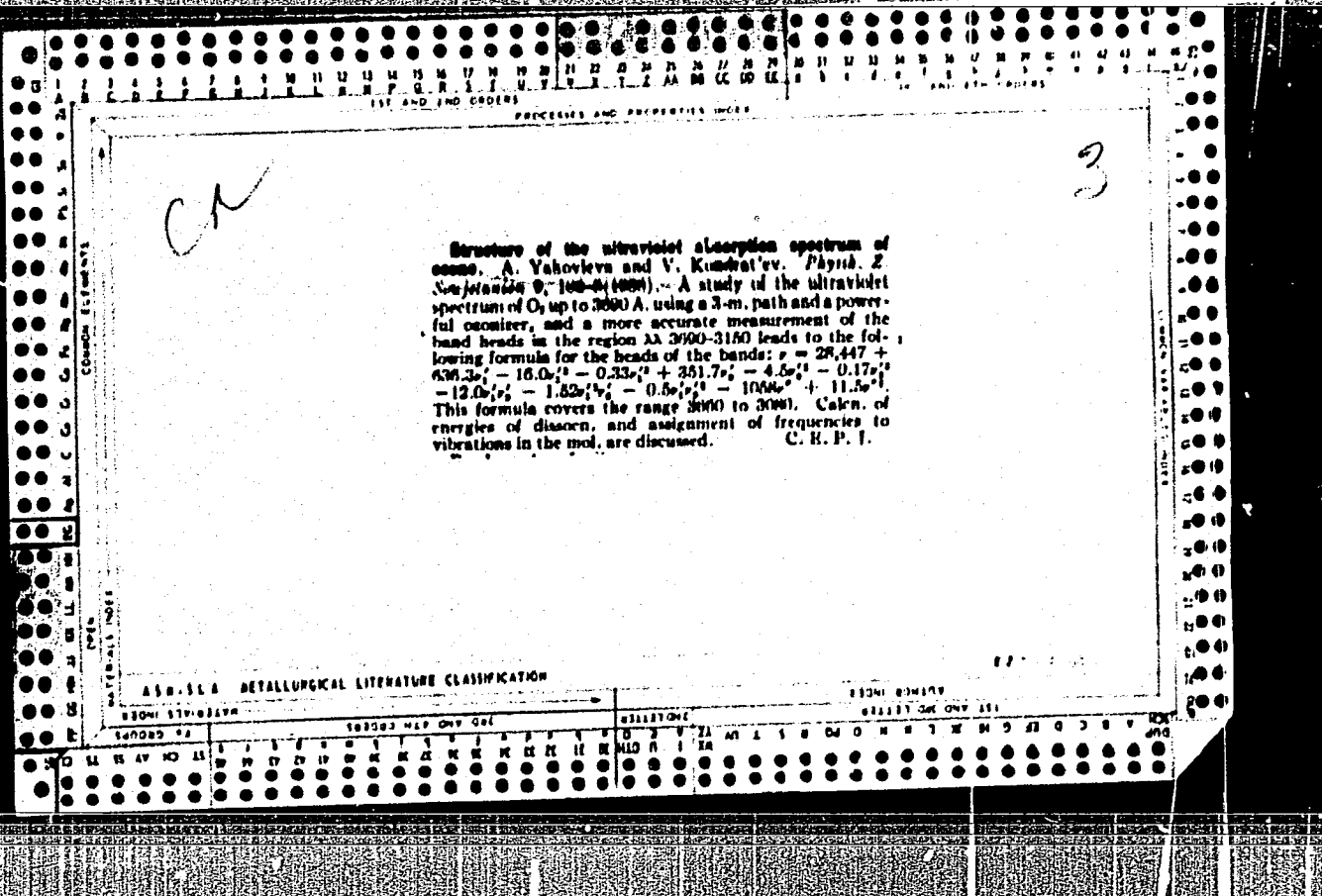
YAKOVLEVAYA, T.A.; MINSKY, D.A.

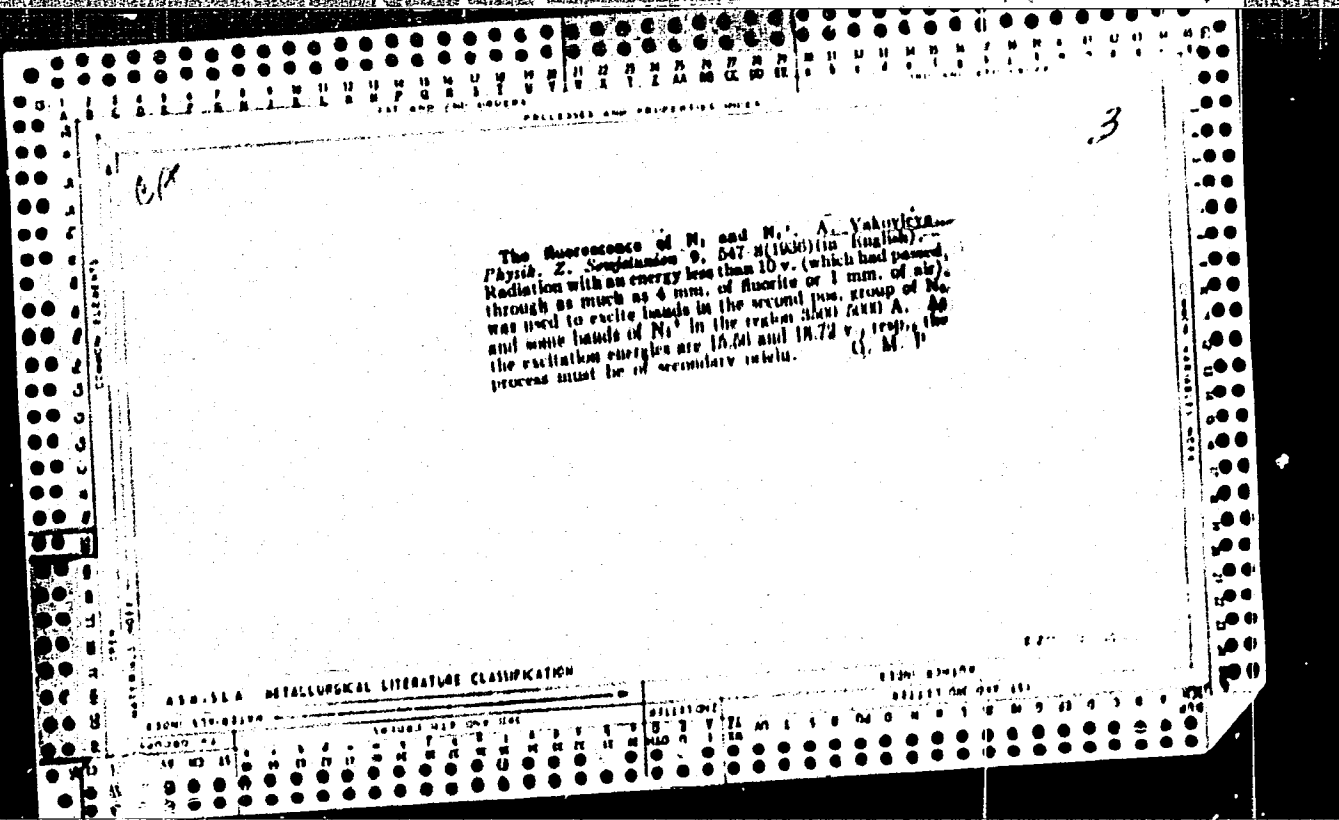
Crystals and optical orientation of bafertsite. Izv. Akad. Nauk SSSR Ser. Khim. Nauk. (MIRA 13:8)
no.16:293-294 '65.

The ultra-violet absorption spectrum of ozone and the structure of the O_3 molecule. V. KONDRAT'EV AND A. YAKOVLEVA. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 2, 20-8 (1932).--Seventy-five bands measured in the region 20-33,000 cm^{-1} may be represented by the equation $\nu = 20,404 + 335.5(v_1' + 1/2) - 7.5(v_1' + 1/2)^2 + 50(v_2' + 1/2) - 433(v_2' + 1/2)$. The term 433 cm^{-1} is due to transverse vibrations of the O_3 mol. and is linear in form. In the region 33-42,000 cm^{-1} a set of diffuse bands with sept. 300 cm^{-1} was found.

F. H. RATHMANN







PROCESSES AND PROPERTIES INDEX

157 AND 158 GROUPS

A

Photodissociation of ICN and BiCN molecules and the transfer of rotational energy on collision of the CN radical with foreign molecules. A. V. Yakovleva. *Acta Physico-Chim. U. R. S. S. R.* 9, 645-80 (1958) (in English); *J. Exptl. Theoret. Phys. (U. S. S. R.)* 9, 10 (1959); cf. C. A. 33, 8112. The fluorescence of CN in ICN consists of bands at 3883 and 4216 Å, and is accompanied by fluorescence of I_2 molecules. In the region 3800-3850 Å, the I_2 molecule shows 3 bands with max. at 3825, 3870 and 3900 Å. The photodissociation of ICN is accompanied by the formation of CN radicals in the electronic state ${}^2\Sigma^+$ and in the vibrational states $v' = 0, 1, 2$. The rotational energy of the CN radical for $v' = 0$ corresponds with 1140°K. With BiCN, CN fluorescence shows the same groups as with ICN. The magnitude of the effect of foreign gases in increasing the rotational temp. of the CN radical decreases in the order $A > N_2 > CO_2 > H_2$. B. C. P. A.

METALLURGICAL LITERATURE CLASSIFICATION

E 271

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND GROUPS

100 AND 1TH GROUPS

SR

Luminescence of the cyanogen radical due to photo-dissociation of cyanogen molecules. A. V. Yakovlevs, *J. Exptl. Theoret. Phys.* (U. S. S. R.) **9**, 302-01 (1930) (in Russian); *Acta Physicochim.* **U. R. S. S.** **10**, 433-00 (1930) (in English).—When dicyanogen is irradiated through a fluorite window by Schumann rays of ca. 1700 and 2500–3000 Å. from a hydrogen discharge, the (CN) radicals dissociate, as shown by the blue emission lines of CN radicals, λ 3883, 4216, and 4000 Å. On addn. of A, N₂, and CO, the max. of the P-branches was shifted ca. 0 Å. at 20 mm., less at higher pressures. From the shift of the spectrum due to collisions, Y. concludes that the rotational energy equiv. to a temp. of ca. 1500°K. and the rotational quantum no. of the CN radicals increase in proportion to the mass of the colliding mol. The translational velocity of the excited CN radicals is 1.9×10^4 cm./sec., most of which it loses on its first collision in a poly-quantum energy exchange. F. H. Rathmann

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

140000	150000	160000	170000	180000	190000	200000	210000	220000	230000	240000	250000	260000	270000	280000	290000	300000	310000	320000	330000	340000	350000	360000	370000	380000	390000	400000	410000	420000	430000	440000	450000	460000	470000	480000	490000	500000	510000	520000	530000	540000	550000	560000	570000	580000	590000	600000	610000	620000	630000	640000	650000	660000	670000	680000	690000	700000	710000	720000	730000	740000	750000	760000	770000	780000	790000	800000	810000	820000	830000	840000	850000	860000	870000	880000	890000	900000	910000	920000	930000	940000	950000	960000	970000	980000	990000
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PROCESSING AND PROPERTIES INDEX

C 4

Nature of certain bands in the spectrum of active nitrogen. *Ac. Nauk Yakovleva, Bull. acad. sci. U. R. S. S., Ser. phys.* 4, 59-61 (1940).--The vapors of C_2N_2 , NO, BrCN and N at pressure of about 1 mm., illuminated by wave length from the Schumann spectral region, give rise to a spectrum similar to that of active N in the afterglow. The brightest bands belong to mol. ion N_2^+ . With the decreasing intensity of illumination these bands show but a slow decrease of intensity, whereas the bands belonging to the N_2 and CN disappear much faster. The presence of vapor of CN induces a spectrum of unknown character, consisting of several diffuse bands in the region $\lambda = 4000 - 4850 \text{ \AA}$, and probably belonging to cyanogen mols. Roksalana Gamow.

A50-55A METALLURGICAL LITERATURE CLASSIFICATION

3

pu

Photochemical oxidation of carbon disulfide vapors.
 V. N. Kondrat'ev and A. Yakovleva. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 10, 1168-42(1940). -At pressures of CS₂ 10-55 mm. and of O₂ 40-100 mm., at room temp. the primary process produced by radiation of 2500 Å. is a photolysis of CS₂ mole. to CS radicals and meta- stable S atoms. The chief final products are SO, and COS; the latter undergoes further oxidation under the same conditions. V. H. Rathmann

ASD 51 A METALLURGICAL LITERATURE CLASSIFICATION

GROUPS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CLASSIFICATION: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

CIA

production of sulfur monoxide by photochemical processes. A. Yakovleva and V. Kondrat'ev. *Acta Physicochim. U.S.S.R.* S. 13, 241-6(1940)(in English).— S_2O_2 was obtained by photochem. decomn. of SO_2 in 110-cm. tubes at pressures of around 0.5 mm. by illumination with a H-discharge tube. The effective wave length lies below $\lambda = 2000 \text{ \AA}$, as interposition of H_2O or a KBr soln. prevents S_2O_2 formation. The course of formation of S_2O_2 was followed by means of the absorption above $\lambda = 3140 \text{ \AA}$. The spectrum below 10° contains bands at $3000 + 0.5, 41.3, 77.8, 115.1, 151.8, 193.6$ and 231.6 \AA . The formation of S_2O_2 during the illumination of $COS + SO_2$ mixts. but not of pure COS by light of $\lambda > 2200$ is due to primary decomn. to $CO + S$ followed by $S + SO_2 = S_2O_2$. Traces of CS_2 prevent the formation of S_2O_2 by interaction with the long-lived active centers. The $\lambda\lambda 2400-3200$ region cannot be effective in producing a reaction $SO_2 + COS = CO + S_2O_2$, since the lifetime of SO_2 is too short to account for the effect of CS_2 . T. and K. calc. that the reaction $S + SO_2 = 2SO$ is endothermal with $Q = -29 = 8 \text{ Cal.}$, so that only S_2O_2 and not SO mols. come into question as the carriers of the spectrum.

P. H. Rathmann

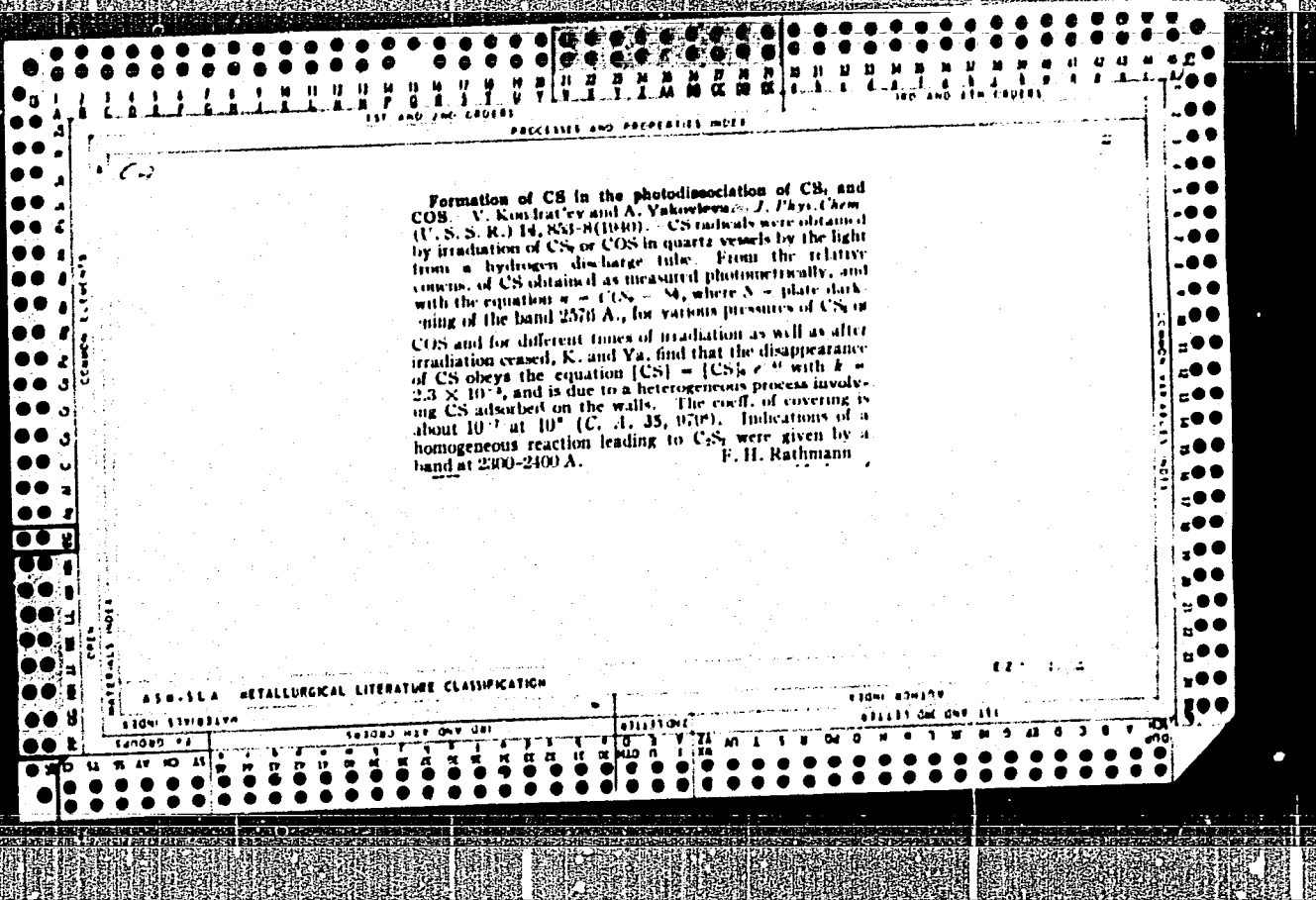
450-51.4 METALLURGICAL LITERATURE CLASSIFICATION

KONDRAT'YEV, V.: YAKOVLEVA, A.

Laboratory of Elemental Processes, Institute of Chemical Physics, (-1949-).

"Obtaining Sulfur Monoxide by Photochemical Means."

Zhur. Fiz. Khim., Vol. 14, No. 7, 1949.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSES AND PROCEDURES INDEX

CA

Photochemical formation of sulfur monoxide. V. N. Kondrat'ev and A. Yakovleva. *J. Phys. Chem. (U. S. S. R.)* 14, 850-82 (1940).—See C. A. 35, 17021, where the author names are reversed. F. H. Rathmann

ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CA

3

Absorption of cyanogen iodide vapor in the vacuum and ultraviolet spectral regions. A. V. Yakovleva. *Izv. Akad. Nauk S.S.S.R., Ser. Fiz.* 14, 817-19(1960).--The absorption of H lamp radiation was measured in the range 2900-1650 Å. with a fluorite vacuum spectrograph. The curve shows continuous bands with max. at $\lambda = 2500, 1800, 1700, 1600,$ and 1730 Å. and discrete bands at $\lambda = 1710, 1700, 1697, 1681, 1673,$ and 1660 Å. From these data different mechanisms of photodissocn. of the CNI mol. are calcd.

S. Pakswar

1951

CA

3

Intensity distribution in the spectrum of the hydrogen lamp of the State Optical Institute in the region 2300-1700 Å. M. K. Ivanova and A. V. Yakovieva. *Izv. Akad. Nauk S.S.S.R., Ser. Fiz.* 14, 501-3 (1950).—By using a vacuum fluorite spectrograph, the radiation of a H lamp with fluorite window was photographed on plates covered with fluorescent material (Na salicylate, esculin, transformer oil, or U-glass) in the region 2300-1700 Å. Intensities of the low-voltage arc were observed at 1.3-4.0 amp. The curve shows a continuation of curves obtained elsewhere with quartz spectrographs. The data are close to data obtained on high-voltage discharges, and calens. can be made by using the method of Coullidge (*Phys. Rev.* 65, 274 (1948); *C.F.* 33, 2705'). S. Pakswar

1951

YAKOVLEVA, A.V.

(J)

Ultraviolet absorption spectrum of lead-containing glasses. V. A. Florinskaya, A. V. Yakovleva, R. S. Pechenkin, and M. K. Ivanova. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 17, 730-9 (1953).—Absorption spectra of Na₂O-SiO₂-PbO glasses contg. 0, 0.2, 0.8, 3.0, 27% PbO and Flint-glass TP-5 are plotted in the region 2000-4100 Å. When the concn. of PbO is small, a band appears between 2300 and 2400 Å. At higher PbO concn. the absorption is so high that even 0.34-mm. films are completely opaque. Reflection measurements were made under an angle of 45° with a Beckman spectrophotometer to $\lambda = 2050$ Å. and with a vacuum fluoride spectrograph to 1550 Å. In the sample with 27% PbO a max. appears at 2300-2400 Å., which is shifted in heavy flint to 2540 Å. Another max. was found in heavy flint at 1700 Å. The observed spectra resemble spectra of alkali halide phosphors contg. Tl and Pb halide activators and also spectra of Pb salts in H₂O solns. of alkali halides. The electron system of the Pb⁺⁺ ion is different in such cases from the electron system of the Pb⁺⁺ in Pb vapor. S. Pakiwer

11/19/54

YAKOVLEVA, A.V.; GROMOVA, I.I.; PROTAS, I.R.

A vacuum fluorite spectrograph, photographic material for it and some data on investigations. Izv. AN SSSR. Ser. fiz. 19 no.1:84-86 Ja-F '55.

(Spectrum analysis) (Spectrometer)

(MIRA 8:9)

YAKOVLEVA, A.V.

KULIKOV, S.A.; YAKOVLEVA, A.V.

A fluorite vacuum monochromator. Izv. AN SSSR. Ser. fiz. 19
no.1:86-87 JA-F '55.

(MIRA 8:9)

(Spectrum analysis) (Spectrometer)

G.ERASIMOVA, N.G.; YAKOVLEVA, A.V.

High-illuminance spectographs with diffraction gratings. Prib.
i tekhn. eksp. no.1:83-86 J1-Ag '56. (MLRA 10:2)

1. Gosudarstvennyy opticheskiy institut.
(Spectrograph)

Yakovleva AV

4600

Causes of "secondary potentials" during the cathodic deposition of metals from acetone solutions. A. M. Ozerov and A. V. Yakovleva. *Zhur. Priklad. Khim.* 29, 124-9 (1956). *cf. C.A.* 44, 10547f. The relation between the cathode potential E and the current strength i for electrode processes at a dropping Hg electrode in Me_2CO solns. was detd. at 25° for $CdCl_2$, $CuCl_2$, $ZnCl_2$, $Bi(NO_3)_3$, $Sr(NO_3)_2$, and $CuCl_2$ with and without $LiNO_3$. Without $LiNO_3$, the curves E vs. i increased gradually to large values of E ; this was attributed to an appreciable increase of the ohmic resistance of the electrode film in the range of high values of i . In the presence of $LiNO_3$ (0.5N) 2 distinct breaks appeared in the curves. The 1st break E_1 corresponded to the deposition of the simple ions and the formation of dense deposits on the cathode; E_1 was different for the different ions. The 2nd break E_2 occurred at values approaching 2 v., and was the same for all salts and in solns. acidified with HCl. Thus, the occurrence of secondary potentials could not be due to complexes (cf. Kudra, *et al.*, *C.A.* 45, 8378b) and could be accounted for only by the assumption of partial reduction of Me_2CO and the discharge of some Li^+ .

2

Chem

L. Benicovitz

DM *2/24*

PRIKHOTKO, N.F.

24(7) 3 PHASE I BOOK EXPLOITATION 807/1365

L'vov. Universitet

Materialy I Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizichnyy sbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Larvisterg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitavskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Miliyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

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| Dianov-Klokov, V.I. Absorption Spectra of Liquid Oxygen | 310 |
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IVANOVA, H.K.; LOMONOSOVA, T.N.; YAKOVLEVA, A.V.

Investigating the reflecting power of aluminum and rhodium mirrors in the vacuum ultraviolet. Fiz.sbor. no.4:143-146. '58. (MIRA 12:5)

1. Gosudarstvennyy ordena Lenina opticheskiy institut imeni S.I.Vavilova.

(Ultraviolet rays) (Reflection (Optics))

GERASIMOVA, N.G.; IVANOVA, M.K.; KULIKOV, S.A.; LOMONOSOVA, T.N.;
YAKOVLEVA, A.V.

Investigating the reflection and transmission of various
materials in the vacuum ultraviolet. Fiz.sbor. no. 4:146-148
'58. (MIRA 12:5)
(Ultraviolet rays) (Reflection (Optics))

Sov/51-4-4-20/24

AUTHOR: Ivanova, M.K., Lomonosova, T.N. and Yakovleva, A.V.

TITLE: Action of Ultraviolet Radiation on Metallic Mirrors
(Deystviye ul'trafioletovogo izlucheniya na metallicheskiye zerkala)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 4,
pp 535-536 (USSR).

ABSTRACT: The authors measured the reflectivity of aluminium and rhodium mirrors in the Schumann region of the spectrum under the action of ultraviolet light in vacuum. The source of light was a hydrogen lamp GOI, which was placed opposite the slit of a vacuum fluorite spectrograph at an angle of 57° to the sample. The error in measurement was about 5%. Reflectivity of aluminium mirrors was found to depend strongly on the method of evaporation. Stringent precautions were necessary to ensure purity of the materials used and cleanliness of the base. The evaporation was produced using high currents through tungsten spirals. Figure 1 shows the reflectivity curves for aluminium mirrors obtained by various authors; Curves 1, 2, 4 and 5 correspond to Refs 7, 6, 8 and 4, respectively. Curve 3 in Figure 1 represents the present authors' results. Irradiation with ultraviolet in the Schumann region (beginning from 1700 Å)

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Sov/51-4-4-20/24

Action of Ultraviolet Radiation on Metallic Mirrors

reduces reflectivity of aluminium and rhodium mirrors. The latter were obtained by electrolytic deposition and were stable under the action of atmospheric air. In Figure 2, Curve 1 gives the reflectivity of aluminium measured immediately after deposition; Curve 2 shows reflectivity after 8 hours of ultraviolet irradiation and Curve 3 after 15-25 hours of irradiation. Decrease of reflectivity of aluminium mirrors was found to reach a certain limit and further ultraviolet irradiation did not affect it. In Figure 2, Curve 4a (black circles) and Curve 5 represent rhodium mirrors, freshly prepared and after 8 hours of ultraviolet irradiation, respectively. Again, a fall of reflectivity was observed. Decrease of reflectivity is due to oxidation by residual oxygen in the apparatus where all measurements were made. This is confirmed by the reverse effects on reduction of mirrors by irradiation of them in an atmosphere of hydrogen. Figure 2, Curve 6, shows the reflectivity of aluminium, which was decreased by previous irradiation, after irradiation for 15 hours in an atmosphere of hydrogen. Figure 2, Curve 7, shows the effect of the same treatment for rhodium mirrors. Rhodium mirrors can be also reduced by treatment with nitric

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Sov/51-4-4-20/24

Action of Ultraviolet Radiation on Metallic Mirrors

acid, as shown by Curve 4b (half-black circles). All these curves show that a considerable improvement or even a complete recovery of reflectivity is obtained by irradiation in a reducing atmosphere. Ultraviolet radiation affects also lithium fluoride and calcium fluoride crystals, both natural and synthetic. In this case, crystals lose some of their transparency. Again, ultraviolet irradiation in an atmosphere of hydrogen does not have harmful effects, as shown by the very long service (3 - 5 years) of hydrogen lamps with fluorite windows. There are 2 figures and 8 references, 4 of which are in English, 3 Soviet and 1 German.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I.Vavilova
(State Optical Institute imeni S.I. Vavilov)

SUBMITTED: August 5, 1957

Card 3/3 L. Ultraviolet radiation--Reflective effects

SCV/51-5-5-20/23

AUTHORS: Vasil'yev, R.I. and Yakovleva, A.V.

TITLE: The Spectrum of Tungsten in the Vacuum Ultraviolet Region (Spoktr vol'frama v vakuumnoy ul'traioletovoy oblasti)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 5, pp 620-621 (USSR)

ABSTRACT: The tungsten spectrum was recorded in the region 250-1500 Å using an oblique incidence spectrograph (79°) with a glass diffraction grating of 1 m radius of curvature and 591 lines/mm. The spectrum was recorded on cine film of 35 m length, stretched along Rowland's circle. A spark produced in vacuum between tungsten rods was used as a source of light. A capacitor battery of 0.3 μF charged to 50 kV was used to produce the spark. The best conditions for recording the spectrum were obtained with 20-40 sparks per minute. The film was exposed for ten or more hours. The authors observed, in addition to tungsten lines, carbon, oxygen and nitrogen lines which were used as wavelength standards. The wavelengths were measured within 0.3-0.4 Å. The spectrograms obtained contained a large number of lines. Since the spark is a decaying discharge, its spectrum contains lines corresponding to various stages of ionization of the tungsten atom. Table 1 gives ionization energies of tungsten and the corresponding wavelengths of the short-wavelength

Card 1/2

The Spectrum of Tungsten in the Vacuum Ultraviolet Region

SOV/51-5-5-20/23

edges. In the 1450-1500 Å region the results obtained by the present authors were compared with those of E. and L. Bloch (Ref 1). It was found that the Blochs obtained a larger number of lines using a spark working in atmospheric air, than the number obtained using a vacuum spark. Table 2 gives the wavelengths and intensities of the most intense and sharpest lines of tungsten. Their intensities were estimated visually. There are 2 tables and 3 references 1 of which is Soviet, 1 French and 1 translation.

SUBMITTED: May 9, 1958

Card 2/2

1. Tungsten--Spectrum 2. Tungsten--Testing equipment 3. Electric discharges--Performance 4. Ultraviolet spectroscopy

SOV/49-59-8-10/27

AUTHORS: Kachalov, V. P., Pavlenko, N. A. and Yakovleva, A.V.

TITLE: The Ultraviolet Solar Spectrum¹⁾ in the Region of
2636-2937 Å ✓

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
1959, Nr 8, pp 1177-1185 (USSR)

ABSTRACT: The data were calculated by means of photographs obtained
with a spectrograph having a concave diffracting mesh.
The results are presented in a table where the following
data are included:

Column 1 - wavelength,

Column 2 - intensity and character of line,

Column 3 - probable identification.

There are 1 table and 4 references, 2 of which are Soviet
and 2 English.

ASSOCIATION: Gosudarstvennyy opticheskiy institut (State Optical
Institute) ✓

SUBMITTED: October 14, 1958
Card 1/1

SOV/49-58-9-4/14

AUTHORS: Kachalov, V.P., Pavlenko, N.A. and Yakovleva, A.V.

TITLE: The Ultra-violet Spectrum of the Sun in the Region
2471 - 2635 Å (Ul'trafiioletovyy spektr solntsa v
oblasti 2471-2635 Å)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,
1958, Nr 9, pp 1099 - 1104 (USSR)

ABSTRACT: 14 spectrograms were obtained at heights up to 100 km.
Lists of lines in the region 2471 - 2635 Å have previously
only been published for low dispersion spectrograms
(40 Å/mm) (Refs 1-3). Ref 4 gives a list of lines with
wavelengths longer than 2635 Å for a dispersion, in the
second order, of 20 Å/mm. These agree well with the
authors'.

The spectrograph had a concave diffraction (600 lines/mm).
The dispersion was 16.7 Å/mm and the slit width 0.02 mm. A
moveable hand was included in the spectrograph to
compensate for the precession of the rocket and thus obtain
constant slit illumination. The exposures were for two
secs. and the dial of a stopwatch was photographed simul-
taneously to correlate the exposure time with height.
Three particularly good spectrograms were chosen from the
fourteen taken and they were measured on a comparator, IZA-2,

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SOV/49-58-9-L/14

The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å

with a magnification of 40. In order to increase resolution by averaging over the photographic grains seen on the plate, a special apparatus was constructed which vibrated the objective at a 50-cycle frequency. The resolution obtained was ~ 0.2 Å. The least blended lines:

2488.143	2591.542
2510.834	(2605.656
2545.977	(2605.697

were used to construct a dispersion equation for the region. The correction required to the equation was up to 0.03 Å. The correction required in the comparison of the measured lines with water vapour lines in the atmosphere was of the same magnitude but opposite sign. Average error in measuring was 0.06 Å.

A microphotometer (MF-4) was used with an Sb-Cs cell. A full photometric survey has not yet been made and the list gives visual intensities on a scale of 10. Owing to the dispersion used, most of the absorption lines were blended. The method of measurement was as follows.

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SOV/49-58-9-4/14

The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å

For each wavelength, lines were chosen from tables (Refs 5 and 6) of elements widely distributed on the sun, which agreed within the measurement error. The majority of lines could have arisen from a variety of ions. Many could be excluded by straightforward comparison (e.g. by considering number and intensity of multiplets). When the superimposed lines had an intensity ratio of 30% or greater, both lines were included in the table in brackets. The measured wavelength is placed opposite the basic contributor to the line.

Elements which are uncommon on the sun, e.g. boron, mercury and phosphorus coincided generally in line position with more common elements, but BeI was observed.

The authors append a list of the lines with the following notation:

- r - sharp bands.
- d - diffused bands
- sh - wide bands.
- fik [f and k] - bands with distorted contours toward the violet and red ends respectively.

Card3/4

SOV/49-58-9-4/14
The Ultra-violet Spectrum of the Sun in the Region 2471-2635 Å

Insufficiently resolved lines are in round brackets and multiplet numbers from C.E. Moore's tables are given in round brackets after the element. There are 1 figure, 1 table and 6 references, 1 of which is Soviet and 5 English.

ASSOCIATION: Gosudarstvennyy opticheskiy institut
(State Optical Institute)

SUBMITTED: October 3, 1957

Card 4/4

44833

S/560/62/000/014/004/011
A001/A101

3,5120

AUTHORS: Yakovleva, A. V., Kudryavtseva, L. A., Britayev, A. S., Gerashev,
V. F., Kachalov, V. P., Kuznetsov, A. P., Pavlenko, N. A.,
Iozenas, V. A.

TITLE: A spectrometric investigation of the ozone layer up to 60-km alti-
tude

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. no. 14, 1962,
57 - 68

TEXT: The vertical distribution of ozone can be determined from the scat-
tered ultraviolet radiation of the Sun, using reversal effect discovered by
G8tz, or by direct measurements from the ground surface and from balloons or
rockets. In order to compare these indirect and direct methods, simultaneous
measurements of altitude ozone distribution with a spectrograph lifted by a
rocket and with a ground spectral equipment for observations of ultraviolet
light scattered from the sky zenith, were carried out in the USSR on June 15,
1960. A photoelectric spectrophotometer with double light decomposition in

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S/560/62/000/014/004/011
A001/A101

A spectrometric investigation of the...

quartz prisms was used for observations from the ground surface. The amount of ozone in various atmospheric layers, total amount and the altitude of the gravity center of the ozone layer from these observations are shown in Table 1. The first ascent of a rocket for ozone measurements took place on July 19, 1955. It turned out that all ozone was concentrated in two layers: 13 - 26 km and 50 - 64 km, between which no ozone was detected. The second rise was on October 1, 1958, at a Sun's declination of 19° . The third attempt was made on June 15, 1960. A diffraction spectrograph provided with a tracking device was lifted on a geophysical rocket. The results of Soviet measurements are compared with American ones and presented graphically in Figure 5. Comparison between indirect determinations and measurements from rockets is shown in Figure 6; the agreement between them was found to be satisfactory, but the final answer on their equivalence can be obtained only after further investigations with rockets. There are 6 figures and 3 tables. X

SUBMITTED: December 12, 1961

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A spectrometric investigation of the...

S/560/62/000/014/004/011
A001/A101

Table 1. Concentration of ozone in various atmospheric layers according to data of ground measurements on June 15, 1960.

Altitude of layers, km	Content of ozone in the layer, cm	Content of ozone per 1 km, cm.km
0 - 12	0.0257	0.00214
12 - 24	0.1130	0.00942
24 - 36	0.1470	0.01225
36 - 42	0.0126	0.00210
42 - 48	0.00348	0.00058
48 - 54	0.000970	0.00016

Total content is 0.303 cm
The gravity center of the ozone layer is at 24 km.

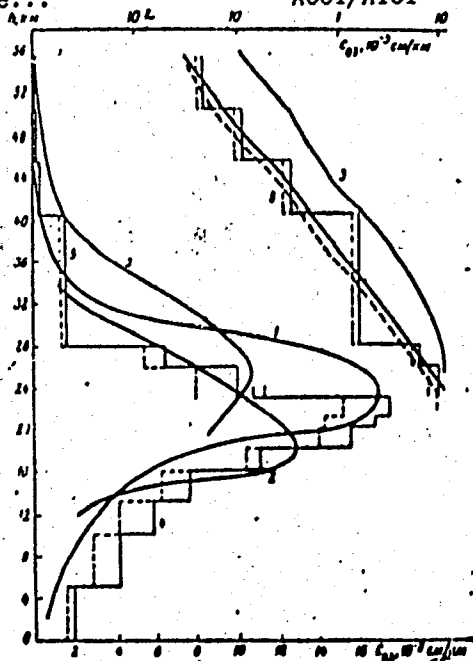
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A spectrometric investigation of the...

S/560/62/000/014/004/011
A001/A101

Figure 5. Rocket measurements of ozone vertical distribution

- Legend: 1 - measurement of October 10, 1946 (USA);
2 - April 2, 1948 (USA);
3 - June 14, 1949 (USA);
4 - October 1, 1958 (USSR);
5 - June 15, 1960 (USSR).

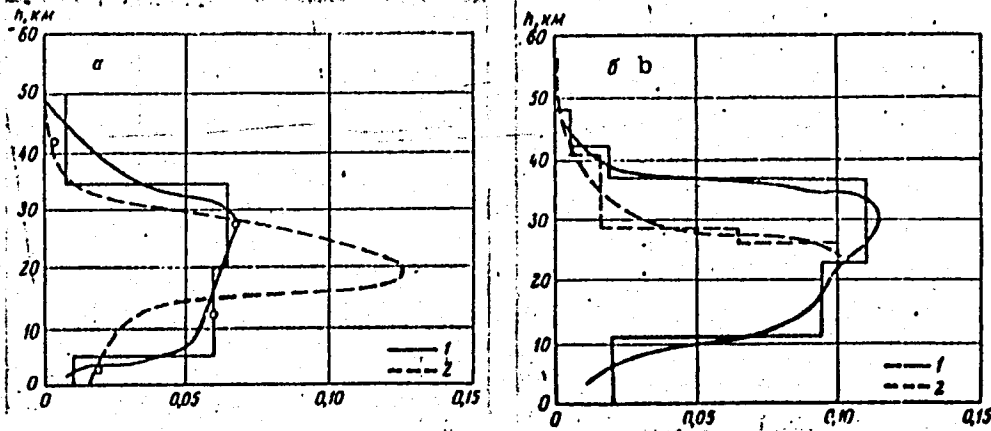


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S/560/62/000/014/004/011
A001/A101

A spectrometric investigation of the...

Figure 6. Comparison of data on ozone vertical distribution obtained in direct measurements from rockets and by calculations: a - measurements of April 2, 1948 (USA); b - measurements of June 15, 1960 (USSR)
Legend: 1 - calculation from the reversal effect; 2 - direct measurements.



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45121

S/712/62/027/000/001/015
A001/A10.

3119/0

AUTHORS: Kachalov, V. P., Yakovleva, A. V.

TITLE: The ultraviolet solar spectrum in the region 2470-3100 Å

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya. Izvestiya. v. 27, 1962, 5 - 43

TEXT: In 1959 five spectrograms of the Sun were taken at heights of about 100 km with a spectrograph of normal incidence of rays, the resolution being 0.15 Å at 2700 - 3100 Å and 0.3 Å at 2470 - 2700 Å. The calibration of films was made under laboratory conditions on an ИСП-28 (ISP-28) spectrograph. A carbon arc was used as a standard source of light. A spectrogram with best resolution was selected for plotting the curve of relative energies in the solar spectrum. Microphotograms were obtained on a recording microphotometer МФ-4 (MF-4). A specially designed device was used to transform the curves obtained into intensity curves. The distribution of absolute energy was found by comparison with a carbon arc crater radiation at λ 2930 Å where both spectra were of the same density. At this wavelength the energy of the Sun above the Earth's

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The ultraviolet solar spectrum in...

S/712/62/027/000/001/015
A001/A101

atmosphere amounted to $2.9 \mu\text{W}/\text{cm}^2 \cdot \text{\AA}$. The equivalent width of absorption by resonance lines of ionized magnesium Mg II, 2795.5 and 2802.7 \AA , is 66 \AA . It is concluded that main radiation in resonance Mg II lines originates in the lower layers of the chromosphere. A list of Fraunhofer lines measured is attached, containing their identification and a visual estimate of intensity in the region 2632 - 2900 \AA . In measuring wavelengths, the following lines were taken as main standards: 2887.806 Fe I (167), 2782.974 Mg I (6), 2664.665 Fe II (263). There are 7 figures and 1 table.

SUBMITTED: May 1961

Card 2/2

45122

S/712/62/027/000/002/015
A001/A101

31840
AUTHORS: Kachalov, V. P., Khokhlov, M. Z., Khokhlova, V. L., Yakovleva, A.V.

TITLE: Ultraviolet Be I-lines in the solar spectrum

SOURCE: Akademiya nauk SSSR. Krymskaya astrofizicheskaya observatoriya.
Izvestiya. v. 27, 1962, 44 - 51

TEXT: The problem of beryllium abundance is of importance in connection with the problem of origin of elements and intermixing of substance in stellar interiors. Two multiplets of Be I, λ 2651 and λ 2494 were identified in the solar ultraviolet spectrum obtained by rockets at heights of about 100 km. These multiplets, as well as multiplet λ 3321, have a common lower level $2s2p^3P_{0,1,2}$ with excitation potential 2.71 ev. The problem of oscillator strengths of these multiplets is considered. The relative values of $\sum gf_{exp}$ for these multiplets are determined from absorption spectra in a King furnace by comparing equivalent widths of these lines in the region of rectilinear portion of the curve of growth. Absorption spectra were obtained for various temperatures from 2,300 to 3,000°K and the pressure in the King furnace of the order of

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Ultraviolet Be I lines in the solar spectrum

S/712/62/027/000/002/015
A001/A101

100 mm Hg. The comparison of experimental $\sum gf$ with theoretical ones shows a considerable difference. Calculations by the Bates-Damgaard tables for Ca I leads also to results diverging from experimental values. Therefore the use of these tables for calculating absolute f of the Be I multiplets considered is not justified. The introduction of a corresponding correction will lead to reduction of beryllium abundance in the solar atmosphere and to increasing difference between its abundance there and in the Earth and meteorites. Analyzing the relative variation of the observed equivalent widths of Be I lines in the solar spectrum, the authors conclude that the coefficient of continuous absorption decreases from $\lambda 3321$ towards shorter wavelengths. However this problem calls for a further study from both experimental and theoretical viewpoints. There are 4 figures and 3 tables. X

SUBMITTED: May 1961

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L 18137-63 EWT(1)/BDS/ES(w)-2 AFFTC/ASD/ESD-3/APGC/IJP(C)/SSD
P1-4/Po-4/Pab-4/Pq-4 GW

ACCESSION NR: AP3004509 S/0048/63/027/003/1097/1101

79
78

AUTHOR: Gromova, I. I.; Yakovleva, A. V.

TITLE: Step excitation and ionization of nitrogen /Report presented at the Second All-Union Conference on the Physics of Electronic and Atomic Collisions held in Uzhgorod 2-9 Oct 1962/

SOURCE: AN SSSR, Izvestiya, ser.fiz.,v.27, no.8, 1963, 1097-1101

TOPIC TAGS: fluorescence, N, atmospheric optics

ABSTRACT: As was shown earlier (A.V.Yakovleva, Phys.Z.USSR,9,547,1936 and Izv.AN SSSR,4,59,1940, and I.I.Gromova and A.V.Yakovleva, Materialy* X soveshchaniya po spektroskopii,1,308,1957), UV irradiation of nitrogen by the light of hydrogen discharge tube gives rise to fluorescence which consists of the bands due to the molecular ion ($B^2\Sigma_u^+ \rightarrow X^2\Sigma_g^+$) and bands of the second positive system ($C^3\pi_u \rightarrow B^3\pi$); in both cases the highest intensity is exhibited by the 0'0" band. Excitation of the $C^3\pi_u$ level requires 11 eV; ionization and excitation to the $B^3\Sigma_u^+$ level requires an energy of 18.7 eV, yet the supplied energy does not exceed 9.7 eV, which indicates that a step excitation mechanism must be involved. In view of the fact that inter-

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I 18137-43

ACCESSION NR: AP3004509

action of nitrogen with short wavelength radiation is of interest from the standpoint of high-altitude atmospheric physics,⁹ it was deemed desirable to investigate the fluorescence of nitrogen at low pressures (0.1 to 3 mm Hg) and with variation in pressure (0.005 mm Hg to 1 atm). The radiation source in the experiments was a hydrogen tube with a fluorite window transparent to 1250 Å. Tubes of this type yield a multiple H₂ line spectrum in the 1200 to 1670 Å region. The fluorescence was excited in a glass vessel to which the tube was optically coupled and photographed or detected by a photomultiplier, directly or via a spectrograph, at right angles to the direction of the incident radiation. Under the given experimental conditions it was impossible to eliminate all oxygen from the vessel in order to exclude its influence on the fluorescence. The luminescence intensity in a vessel with the valve to the vacuum system closed remains constant only in the case of weak excitation; at higher intensities the luminescence builds up to a maximum with time. At very low pressures the ion bands predominate, but with increasing pressure are quickly quenched. The bands of the second positive group appear at about 0.03 mm Hg and exhibit two maxima with increasing pressure (one at 0.2, the other at 3-10 mm Hg). The variation in intensity of fluorescence with the excitation intensity (tube current) exhibits a square-law increase with increasing excitation intensity, but the curve obtained for decreasing intensity differs radically from

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L 18137-63

ACCESSION NR: AP3004509

the initial curve (see Figure in the Enclosure). This anomalous behavior is tentatively attributed to formation of metastable molecules on the walls of the vessel. Orig.art.has: 4 figures.

ASSOCIATION: none

SUBMITTED: OO

DATE ACQ: 26Aug63

ENCL: 01

SUB CODE: PH, AS

NO REF SOV: 004

OTHER: 008

Card ^{3/4}

L 49017-65 ENT(1) P1-4 IJP(c)

ACCESSION NR: AR5012281

UR/0058/65/000/003/D066/D066

SOURCE: Ref. zh. Fizika, Abs. 30534

AUTHOR: Yakovleva, A. V.; Gromova, I. I.

13
B

TITLE: Wall fluorescence during recombination of nitrogen atoms

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 541-506

TOPIC TAGS: nitrogen atom recombination, nitrogen fluorescence, metastable nitrogen molecule

TRANSLATION: Hydrogen lamp lumination of nitrogen through a fluorite window results in fluorescence, consisting of primary negative and secondary positive systems. The energy input is insufficient for direct excitation of nitrogen at these levels. Tests showed that one of the elements of fluorescence excitation is atomic nitrogen which recombines on the wall with creation of metastable molecules in the state $^5E_g^+$. After prolonged lumination of the vessel its walls lose the property to give off metastable molecules and fluorescence decays. Thus, there is bright wall fluorescence in the form of continuous radiation with a maximum near the red hydrogen line. In the background of this fluorescence an absorption

Card 1/2

L 49017-65

ACCESSION NR: AR5012281

spectrum is observed which consists of narrow bands of various widths and intensities, without clear conformities corresponding to a molecular series. The spectrum carrier was not established. 0

SUB CODE: OP

ENCL: 00

Card 2/2 *Am*

L 15034-65 EWT(a)/EWT(b)/EWT(c) IJP(e)/ESD/ASD(r)-3/RAEM(a)/RAEM(c)/ESD(r)
ACCESSION NR: AP5000158 8/0032/64/030/012/1469/1469

AUTHOR: Yakovleva, A. V.

TITLE: Spectral method for determining thallium in high purity lead

SOURCE: Zavodskaya laboratoriya, v. 30, no. 12, 1964, 1469

TOPIC TAGS: spectrum analysis, lead, high purity metal

ABSTRACT: A spectral method for determining thallium in high purity lead is described. The sample in the form of a 400-mg briquet is placed between copper electrodes and vaporized by an a.c. arc. The lines Tl 3775 Å and Pb 1340.3 Å are analyzed photometrically and compared with standard samples. The sensitivity is 10⁻⁵%, and the analysis time is 2½ - 3 hours for three samples.

ASSOCIATION: Chirkentskiy svintsovyy zavod im. M. I. Kalinina (Chiriken; Lead Plant)

SUBMITTED: 00
SUB CODE: IC, OP

NO REF SOV: 000

ENCL: 00
OTHER: 000

Card 1/1

L 1473-66 EWT(m)/EWP(t)/EWP(b) 1JP(c) JD

ACCESSION NR: AP5022169

UR/0032/65/031/009/1090/1090

AUTHOR: Ustimov, A. M.; Chalkov, N. Ya.; Yakovleva, A. V.

40
B

TITLE: Determination of sodium in high-purity lead

SOURCE: Zavodskaya laboratoriya, v. 31, no. 9, 1965, 1090

TOPIC TAGS: flame photometry, sodium, lead, quantitative analysis, photometric analysis

ABSTRACT: A flame-photometric method of determining sodium in lead with a sensitivity of 5-10-7% is proposed in which use is made of the 5895.9-5889.9 A doublet. The flame-photometric device employed is described briefly. A 50 g sample of lead is placed in a quartz flask, 20 ml of mercury and 100 ml of 1% nitric acid are added, and the mixture is brought to a boil. After cooling, the lead amalgam is separated from the solution, which contains all of the sodium. The solution is then analyzed by the flame-photometric method. Orig. art. has: 1 formula.

ASSOCIATION: Chimkentskiy svintsovy zavod (Chimkent Lead Plant)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM,CC

NO REF SOV: 000

OTHER: 000

Card 1/1

SOV/24-58-10-31/34

AUTHOR: Yakovlevskiy, O. V. (Moscow)

TITLE: On the Thickness of the Zone of Turbulent Mixing; on the Boundary Between Two Currents of Gas of Different Velocity and Density (O tolshchine zony turbulentnogo peremeshivaniya na granitse dvukh potokov gaza raznoy skorosti i plotnosti)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, 1958, Nr 10, pp 153-155 (USSR)

ABSTRACT: Abramovich (Ref.2) has shown that the rate of increase of the thickness of the mixing region is given by:

$$\frac{db}{dx} = \text{const} \frac{u_1 - u_2}{u_1 + u_2}$$

Since the velocities u_1 and u_2 are constant along the mixing region the following relations hold:

$$b^* = b_{m=0}^* \frac{u_1 - u_2}{u_1 + u_2} = b_{m=0}^* \frac{1-m}{1+m} \quad \left(b^* = \frac{b}{x}, m = \frac{u_2}{u_1} \right) \quad (2)$$

Card 1/3

SOV/24-58-10-31/34

On the Thickness of the Zone of Turbulent Mixing on the Boundary
Between Two Currents of Gas of Different Velocity and Density

These results hold for an incompressible liquid. However, the present authors have found that the quantity b^* at $m=0$ depends on the ratio of the mixing currents in the case of nonisothermic gas flow. The experimental values of b^* as functions of m are plotted in the figure on p 154 for different values of the density ratio. It is shown that these experimental results are well represented by:

$$b^* = c \frac{1+r}{2} \frac{1-m}{1+rm} \quad (6)$$

where c is a constant which is determined experimentally.

Card 2/3

SOV/24-58-10-31/34

On the Thickness of the Zone of Turbulent Mixing on the Boundary
Between Two Currents of Gas of Different Velocity and Density

For example, when $b^* = 2c = 0.27$ for $m = 0$ and $r = 1$.
The semi-empirical formula (6) gives the continuous lines in
the figure on p 154. The agreement with experiment is good.
There are 1 figure and 6 references, of which 4 are Soviet
and 2 are English.

SUBMITTED: May 22, 1958.

Card 3/3

ABRAMOVICH, Genrikh Naumovich. Priniimeli uchastiye: YAKOVLEVSKIY, O.V.;
AVDUYEVSKIY, Y.S.; SHIRNOVA, I.P.; CHERKEZ, A.Ya. APEL'BAUM,
S.O., red.; TUMARKINA, N.A., tekhn.red.

[Theory of turbulent jets] Teoriia turbulentnykh strui. Moskva,
Gos.izd-vo fiziko-matem.lit-ry, 1960. 715 p. (MIRA 13:10)
(Turbulence) (Jets)

YAKOVLEVSKIY, O.V. (Moskva)

Hypothesis of the universality of ejection properties of turbulent
gas jets and its applications. Izv. AN SSSR. Otd. tekhn. nauk. Mekh. i
mashinostr. no. 3:40-54 My-Je '61. (MIRA 14:6)
(Jets) (Turbulence)

YAKOVLEVSKIY, O.V. (Moskva)

Laws of turbulent mixing of coaxial flows in a channel with a
constant lateral cross section. Inzh.zhur. 1 no.4:39-50 '61.
(MIRA 15:4)

(Gas dynamics) (Turbulence)

37139

S/179/62/000/001/008/027
E191/E435

11.7480
26.2160

AUTHOR: Yakovlevskiy, O.V. (Moscow)

TITLE: Mixing of jets in a channel of variable cross-section

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Mekhanika i mashinostroyeniye.
no.1, 1962, 66-72

TEXT: An attempt is made to devise a method of analysis for a fluid with a non-uniform velocity distribution of the jet type flowing in a channel of variable cross-section. The problem is applicable to the mixing chambers of ejectors, double-flow jet engines and other gas dynamic devices. In the mixing of coaxial flows in a channel, there is a primary flow zone, in which the dimension of the mixing region is smaller than the cross-section of the channel, and a secondary zone, in which the channel is filled out. The present analysis deals with the secondary zone. The non-dimensional velocity distribution retains a similarity along the length of the channel. This similarity is illustrated in graphs of the velocity distribution across the section at various points along the channel obtained by the present author and
Card 1/3

Mixing of jets ...

S/179/62/000/001/008/027
E191/E435

others. The so-called Schlichting law derived for a free turbulent jet is assumed to hold inside the channel. This law is shown on the same graphs to represent adequately the experimental velocity distribution. In the analysis, the fluid is assumed incompressible, the static pressure uniform across the sections and friction against the channel wall is neglected. The problem reduces to the determination of the velocity along the channel axis, the mean velocity and the static pressure as functions of the length coordinate. A differential equation is derived which turns out to be an Abel equation of the second kind. This equation can be integrated in the two cases of a cylindrical and a conical channel. The variation of the peak velocity along the channel axis is shown in a graph for a cylinder and for straight-sided divergent and convergent cones, illustrating the well-known fact that the velocity profile evens out in a convergent nozzle. When the divergence reaches a certain value, the non-uniformity increases because in this case the non-uniform deceleration becomes more powerful than the turbulent mixing process. Good agreement between the present analysis and earlier Card 2/3

Mixing of jets ...

S/179/62/000/001/008/027
E191/E435

experimental results is shown, referring, among others, to W.G.Richards and W.C.Osborne (J. Inst. Heat and Ventilat. Engrs., v.27, 1959, 172-179). The present author's experiments with a convergent nozzle of about 8° , an outlet diameter of 100 mm and a length of 1 m, in which two controllable air jets were mixed, are shown to agree well with the theory. There are 8 figures.

SUBMITTED: April 13, 1961

X

Card 3/3

IZYUMOV, M. A. (Moskva); KHZMALYAN, D. M. (Moskva); YAKOVLEVSKIY, O. V.
(Moskva)

Propagation of a plane jet system. Inzh. zhur. 2 no. 4:269-277
'62. (MIRA 16:1)

(Jets)

YAKOVLEVSKIY, O.V. (Moskva); SEKUNDOV, A.N. (Moskva)

Investigating the interaction of a jet with close screens. Izv.AN
SSSR. Mekh.i mashinostr. no.1:104-114 Ja-F '64. (MIRA 17:4)

YAKOVLEVSKIY, O. V. (Moskva); SEKUNDOV, A. N. (Moskva)

Fluid flows induced by turbulent jets. Izv. AN SSSR. Mekh. i
mashinostr. no.3:39-46 My-Je 64.

L 6972-65 EWT(1)/EPA(b)/EPR/FCS(k)/EMA(1) Pd-L/PS-L AMD/AEWI/SSD/AFTC(w)/
AFETH/ASD(f)/AEDC(a) W6

ACCESSION-NR: AP4018430

S/0179/64/000/001/0104/0114

AUTHOR: Yakovlevskiy, G. V. (Moscow); Sekundov, A. N. (Moscow)

TITLE: Investigation of the interaction of a jet flow with an adjoining plate B

SOURCE: AN SSSR. Izv. Otd. tekhn. nauk. Mekhanika i mashinostroyeniye, no. 1, 1964, 104-114

TOPIC TAGS: hydraulics, jet propulsion, ventilation, aerodynamics, jet flow

ABSTRACT: The authors have investigated the action of a turbulent jet stream at the surface of an adjoining solid body (plate). This problem is encountered in industrial ventilation, when intake flow is distributed in rooms, and in studying the behavior of jet planes near the earth when the lifting force of the jet is decreased. A diagram is given on the testing unit. Various combinations of turbulent jet flow, distances, plates and plate shapes were used. Depending on these factors, different pressures (vacuums) were obtained at various points on the plate. The authors used the following equation

$$\langle \Delta p \rangle = \frac{1}{N} \sum_{i=1}^N \Delta p_i$$

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L 6972-65

ACCESSION NR: AP4018430

3

in calculating the gauge pressure. The loss of lifting force relative to the jet impulse was calculated by the following equation

$$\Delta L^0 = \frac{\Delta L}{T_0} = \frac{1}{T_0} \int \Delta p ds = -(\Delta p^0) \frac{\Delta S}{2S_0} \quad (\Delta s = s - s_0)$$

Several configurations of the testing unit were used. Model D1 has axisymmetrical pressure distribution, while Model P1, with one jet at the center, results in an unequal vacuum distribution on the plate. A triangular plate with one jet at the center is designated as model T1. The loss of pressure or lifting force of the jet in relation to distance from the plate is shown in Figs. 1 and 2 of the Enclosure. The experimental data were close to the results of the theoretical equations. In conclusion, the authors wish to thank G. B. Krayushkin and P. I. Dvoryanchikov who took part in the experiments, and are sincerely thankful to G. N. Abramov for the close attention paid to the investigation and for taking part in the discussion of its results. The original has 9 figures and 24 equations.

ASSOCIATION: none

SUBMITTED: 28Apr63

ENCL: 012

CUB CODE: AC, ME

NO REF SOV: 003

OTHER: 005

Card 2/4

ACCESSION NR: AP4043904

S/0179/64/000/004/0169/0172

AUTHOR: Yakovlevskiy, O. V. (Moscow)

TITLE: An approximation method for solving jet problems

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniya, no. 4, 1964, 169-172

TOPIC TAGS: turbulent flow, jet stream, tangential stress profile, turbulence theory, plane jet, boundary layer condition, differential motion equation, horizontal turbulent layer

ABSTRACT: The approximation method based on the representation of the tangential stress profile in a jet stream as a polynomial has been critically reviewed for its credibility. This method was developed by A. S. Ginevskiy and is similar to another method used for computing the turbulent boundary layer on the curved surface of a solid. The coefficients of the polynomial are determined using boundary conditions resulting from the differential equation of motion and from other physical considerations. Contrary to the opinion held previously, it has been shown that selection of an approximated velocity profile or

Card 1/2

ACCESSION NR: AP4043904

frictional stress can not be made unambiguously because there is an infinite group of profiles described by polynomials which fully satisfy the boundary conditions of a horizontal turbulent layer. Orig. art. has: 25 formulas.

ASSOCIATION: none

SUBMITTED: 08Jul63

ATD PRESS: 3093

ENCL: 00

SUB CODE: HE

NO REF SOV: 004

OTHER: 003

Card 2/2

YAKOVLEVSKIY, O.V.

(Moskva)

Approximate solution of jet problems. Izv. AN SSSR Mekh. i
mashinostr. no.4:169-172 JI-Ag '64 (MIRA 17:8)

L 43998-66 EWT(1)/EWT(d)/EWT(m)/EWP(m)/EWP(f)/T-2 RM

ACC NR: AP6030124

SOURCE CODE: UR/0421/66/000/004/0192/0197

AUTHOR: Yakovlevskiy, O. V., (Moscow); Krashennikov, S. Yu., (Moscow)

ORG: none

TITLE: Spread of a turbulent jet impinging on a flat surface

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no..4, 1966
192-197

TOPIC TAGS: jet flow, turbulent jet, vstol aircraft

ABSTRACT: An experimental study has been conducted of the spread of a turbulent air jet impinging on a disk, 400 mm in diameter, at angles $\theta = 30, 45, 60,$ and 90° , and at distances of 35 and 100 mm. The jet nozzle radius R_0 was 5 mm. The air velocity at the nozzle exit was kept constant at 103 m/sec. The obtained distribution of maximal velocities in the disk plane are shown in Fig. 1. The results show: that the boundary layer thickness, i.e., the distance from the disk

57
56
B

Card 1/2