

L 1552-66

ACCESSION NR: AT5023628

those connected with the 11-year period of solar activity, and fast variations, with a period of the order of two weeks. The 11-year period variations grew in intensity at the rate of about 2 percent per month during the first half of 1964. During the second half of the year the intensity reached a ceiling and in October indicated a tendency to decline. These data are in fair agreement with those of the Fort Churchill and Deep River observation posts. Certain indications of a phase shift between the periods of solar activity and the intensity of cosmic rays were discerned in the sequence of monthly averages of the intensity of cosmic radiation, the relative number of solar spots, and the solar flux of 10.7-cm radio waves. These observations, however, are not considered conclusive. The short-period variations of radiation with a 1.5-percent amplitude periodically acquire a clearly cyclic character. The same observation was made in April 1963 by the Luna-4 interplanetary station. In general, however, the cyclicity is not very regular and the nature of these variations remains obscure. There are also indications of a 27-day period in the data for 1964. An attempt was made to correlate these periods with the sun's rotation. A regular coincidence was not observed, but in some cases (rotations 1792, 1793, and 1794) there was a fair indication of parallelism. The absence of a conclusive connection with the sun's rotation suggests the possibility that the short-period variations have a common

Card 2/3

L 1552-66

ACCESSION NR: AT5023628

origin with the 11-year variations. It is also possible that the intensification of cosmic radiation during decline of solar activity is not monotonic, but displays ups and downs stemming from changes in the condition of its propagation or dimensions of the region of its effective scattering within the solar system. Orig. art. has: 4 figures. [FP]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: AA, SV

NO REF SOV: 003

OTHER: 001

ATD PRESS: 4094

Card 3/3 SD

L 1535-66 EWT(1)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5923644

UR/0000/65/000/000/0615/0618

AUTHOR: Vakulov, P. V.

TITLE: On the influence of satellites on radiation in the radiation belts

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 615-618

TOPIC TAGS: radiation belt, electron, proton, artificial satellite, exponential law, artificial radiation belt

ABSTRACT: The radiation belts of the earth consist of electron and proton flows which menace travelers in space. Artificial satellites may be used for destroying radiation belts. S. F. Zinger proposed this method, calling it a "cosmic broom." A satellite flying through the radiation belt absorbs electrons and protons on its surface, thus weakening the flow. A satellite traveling a long time in a closed region of space could totally absorb all electrons and protons, but this is possible only along its orbit. An attempt was made to solve this problem in a closed region of space at a given flow intensity of particles. The final result of the particle decrease obeys an exponential law which is applied to the case of the artificial

Card 1/2

L 1535-66

ACCESSION NR: AT5023644

belt caused by the explosion of the U. S. "Starfish". A spherical satellite with a circular orbit of radius r in the equatorial plane at a distance of 2000 km from the earth could diminish the lifetime of electrons in the artificial belt to three months instead of computed ten years if the diameter of the satellite is 150 m. The same effect could be attained by launching many smaller satellites at distances more than 1000 km from the earth. The idea of electron absorption by satellites is applied to Mars, whose two satellites are large enough and at suitable distances for destroying radiation belts. Orig. art. has: 7 formulas and 1 figure. [EG]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUE CODE: AA,SV

NO REF SOV: 001

OTHER: 002

ATD PRESS: 4097

Card 2/2

VAKULOV, P.V.; GORCHAKOV, Ye.V.; LOGACHEV, Yu.I.; CHUDAKOV,
A.Ye., doktor fiziko-matem. nauk, otv. red.; ISAKOVICH,
T.D., red.

[Collection of articles] Sbornik statei. Moskva, Nauka.
No.6. 1965. 112 p. (MIRA 18:5)

1. Akademiya nauk SSSR. Mezhduevdomstvennyy komitet po
provedeniyu Mezhdunarodnogo geofizicheskogo goda. VII raz-
del programmy MGG: Kosmicheskiye luchy.

ACC NR: AP6030010

SOURCE CODE: UR/0020/66/169/005/1044/1047

AUTHOR: Vernov, S. N. (Corresponding member AN SSSR); Vakulov, P. V.; Gorchakov, Ya. V.; Logachev, Yu. I.; Lyubimov, G. P.; Nikolayev, A. G.; Pereslegina, N. V.

ORG:

TITLE: Measurement of intensity of penetrating radiation on the Moon's surface
[Paper presented at the Seventh COSPAR Meeting held in Vienna in May 1966]

SOURCE: AN SSSR. Doklady, v. 169, no. 5, 1966, 1044-1047

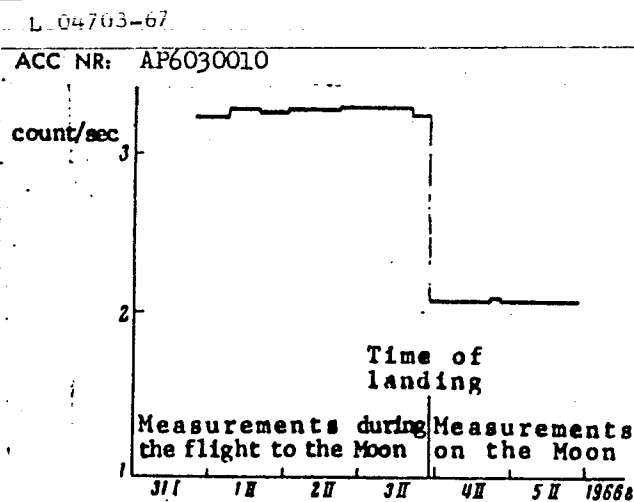
TOPIC TAGS: moon, radiation intensity, lunar probe, radiation measurement/
Luna-9 lunar probe

75
69
B

ABSTRACT: The lunar probe "Luna-9" launched by the Soviet Union on 30 January 1966 made a soft landing on the Moon on 3 February at 24 hr, 45 min, 30 sec (Moscow time); it was equipped with an instrument containing a 6 x 10-mm discharge counter to measure the intensity of radiation. The minimum shielding of the counter mounted inside the probe near its jacket was ~ 1 gm/cm².

The instrument was switched on immediately after "Luna-9" was put into orbit and was kept in operation until the probe stopped functioning. The data on the intensity detected with the gas counter averaged over 14 time intervals are shown in Fig. 1. The first five time intervals are those for the flight from the Earth to the

Card 1/8



Moon. The next (sixth) interval is that for the flight near the Moon (beginning with at a distance of $\sim 50,000$ km from the Moon), the landing, and the first 5 minutes on the Moon's surface. The subsequent eight intervals are related to operations on the Moon's surface. Table 1 shows the accurate values of the time intervals and the mean-count rates recorded in these intervals. The basic errors in determining the count rate are statistical.

Fig. 1. The mean-count rate of "Luna-9" discharge counter

The data in Table 1 show that the mean-count rate recorded on the Moon's surface was about 63% of the count rate of the same counter in free space. In other words, if only primary cosmic rays had been detected, the counter on the Moon's surface would have counted not quite half as much as during the flight in free space. The detected excessive radiation

Card 2/8

L 54703-67

ACC NR: AP6030010

Table 1.

	Interval boundaries	Averaging interval	Mean-count rate	Note
31 Jan 1966	18 h 38 min 40 sec	10 h 12 min 30 sec	3.229±0.010	During the flight
1 Feb 1966	04 h 51 min 10 sec	10 h 54 min 20 sec	3.277±0.010	"
	15 h 45 min 30 sec			
	23 h 01 min 45 sec	07 h 16 min 15 sec	3.267±0.011	"
2 Feb 1966	16 h 29 min 00 sec	17 h 27 min 15 sec	3.278±0.007	"
3 Feb 1966	15 h 34 min 15 sec	23 h 05 min 15 sec	3.286±0.006	"
	21 h 50 min 00 sec	06 h 15 min 45 sec	3.245±0.012	Near the Moon and on the Moon
4 Feb 1966	00 h 06 min 54 sec	02 h 16 min 54 sec	2.065±0.016	On the Moon
	06 h 35 min 04 sec	06 h 28 min 10 sec	2.069±0.010	"
	17 h 02 min 00 sec	10 h 26 min 56 sec	2.074±0.008	"
	19 h 52 min 30 sec	02 h 50 min 30 sec	2.077±0.014	"
5 Feb 1966	04 h 00 min 40 sec	08 h 08 min 10 sec	2.058±0.009	"
	19 h 01 min 40 sec	15 h 01 min 00 sec	2.055±0.006	"
	20 h 37 min 30 sec	01 h 35 min 50 sec	2.059±0.020	"
	22 h 42 min 20 sec	02 h 04 min 50 sec	2.059±0.017	"

The mean-count rate during the flight is 3.272±0.004

The mean-count rate on the Moon is 2.064±0.004

Card 3/8

1. 04703-67

ACC NR: AP6030010

is 0.43 count/sec or ~26% of half the cosmic-ray intensity. This excessive radiation may be due to the radioactivity of the Moon's surface and to the secondary cosmic radiation produced by the primary cosmic radiation in the matter on the Moon's surface region closest to the station (cosmic-ray albedo).

Until now, no experimental data have been available on the radioactivity of the Moon's surface. The "Luna-9" measurements make it possible to evaluate the radioactivity of the Moon's surface in the landing area near the Ocean of Storms. Assuming that the total detected additional radiation is due to the radioactive gamma radiation from the Moon's surface, the radioactivity of the Moon's surface may be ~20 times greater than that of the Earth's surface (the count rate of "Luna-9" from the natural radioactivity on Earth was 0.02 count/sec). However, the radioactivity on the Moon's surface has been evidently overestimated, because the effect of multiplication of the primary cosmic radiation producing the cosmic-ray albedo particle fluxes may explain the major part or even all of the additional radiation detected. Using the data from an earlier Soviet paper, it can be shown that the albedo particle flux is 20% of the total cosmic-ray flux or 40% of half the cosmic-ray flux. Additional considerations show that at least in the region of the "Luna-9" landing, cosmic rays will be the main source

Card 4/8

L 04703-67

ACC NR: AP6030010

of radiation hazard and that the radioactivity on the surface of the Moon is close to the radioactivity on the surface of the Earth.

It was shown during the flight of the second Soviet space probe in September 1959 that at the distances greater than 1000 km from the Moon's surface, the intensity of the radiation trapped by a possible lunar magnetic field does not exceed 10% of the cosmic-ray intensity. The "Luna-9" data make it possible to evaluate the fluxes of the trapped radiation at distances less than 1000 km from the Moon's surface.

The mean-count rate just before and during the first minutes after the landing was 3.25 ± 0.012 count/sec (see Table 1). If this count rate is corrected for the geometric shielding of the counter by the Moon during the approach of the station to the Moon and during the period of radiation detection on the Moon's surface (this correction is about 1%), the resulting count rate is 3.28 count/sec. This practically coincides with previous measurements. The time required for the "Luna-9" to cover the last 1000 km to the Moon's surface was $\sim 2\%$ of the time measured in the given interval. At the measuring accuracy mentioned above, an increase of 50% in the count rate during this time interval would be noticeable.

Card 5/8

L 04703-67

ACC NR: AP6030010

3

Thus the upper limit for the possible radiation flux penetrating the "Luna-9" jacket and trapped by the hypothetical magnetic field of the Moon at the altitudes below 1000 km from the Moon's surface is not more than half the primary cosmic-radiation flux. The variation which would decrease the intensity of cosmic rays might somewhat change the evaluation of the upper limit of the hypothetical trapped radiation near the Moon, but the main conclusions that the Moon has no radiation belts and consequently no marked magnetic field remain unchanged.

Fig. 2 shows the mean-count rates in free space and on the Moon's surface. The intensity in the transition interval has been corrected for the geometric shielding by the Moon.

It can be seen from Fig. 2 that the cosmic-ray intensity undergoes slow gradual changes (solid curve) similar to those recorded during the flight of "Luna-4." This makes it possible to assume that during the period of the station's approach to the Moon, no appreciable variation in cosmic-ray intensity occurred. Neither the available neutron-monitor data nor the stratospheric data of A. N. Charakhchyan and T. N. Charakhchyan (unpublished) revealed any considerable decrease in the cosmic-ray intensity.

Card 6/8

L 04703-67

ACC NR: AP6030010

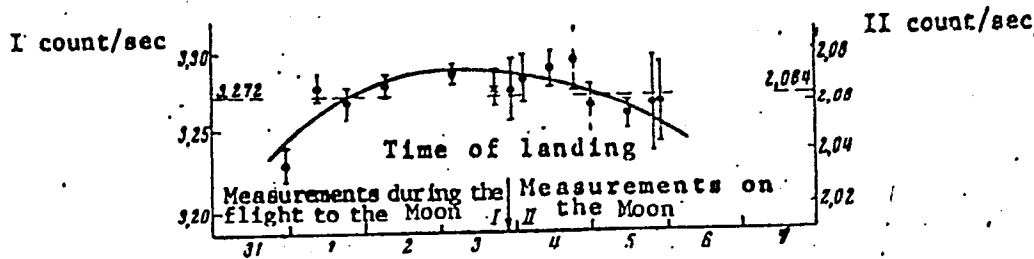


Fig. 2. The count rates of the discharge counter during the "Luna-9" flight in free space and on the Moon's surface. The mean-count rate on the Moon's surface has been reduced to the mean-count rate during the flight, and the scale has been changed in proportion to the mean-count rates during the flight and on the Moon's surface.

The absolute flux of the cosmic-ray particles detected by "Luna-9" was equal to $5.35 \pm 0.5 \text{ cm}^{-2} \text{ sec}^{-1}$. The great error in the determination of the absolute fluxes is due to the 10% uncertainty in the operational dimensions of the counter. Analogous measurements from "Luna-7" and "Luna-8" stations performed on 4-6 October and 3-6 December 1965 have shown the particle fluxes to be 5.4 and 5.9 $\text{cm}^2 \text{ sec}$, respectively. The cosmic-ray intensity in February 1966 decreased compared to December 1965. This

Card 7/8

I. C4703-67

ACC NR: AP6030010

is likely to be associated with the beginning of a new cycle of solar activity.

Thus the cosmic-ray intensity maximum occurs during the period December 1965—January 1966, and the lag in the cosmic-ray intensity maximum behind the solar maximum detected for the protons of energies higher than 30 Mev is about 1.5 years. This conclusion is also confirmed by the data of the "Zond-3," "Venus-2," and "Venus-3" space probes.

[FSB: v. 2, no. 10]

SUB CODE: 22 / SUBM DATE: 11May66 / ORIG REF: 003 / OTH REF: 001

Card 8/8

fv

ACC NR: AP7001549 SOURCE CODE: UR/0020/66/171/003/0583/0586

AUTHOR: Vernov S. N. (Corresponding member AN SSSR); Chudakov, A. Ye. (Corresponding member AN SSSR); Vakulov, P. V.; Logachev, Yu. I.; Lyubimov, G. P.; Pereslegina, N. V.

ORG: Moscow State University im. M. V. Lomonosov (Moskovsky gosudarstvennyy universitet)

TITLE: Cosmic ray variations according to data from Zond-3 and Venera-2

SCURCE: AN SSSR. Doklady, v. 171, no. 3, 1966, 583-586

TOPIC TAGS: cosmic ray, cosmic ray intensity, cosmic ray measurement

ABSTRACT: At the end of 1965 and beginning of 1966 two Soviet space stations, Zond-3 and Venera-2, were in space simultaneously measuring cosmic ray intensity. The first was in motion away from the Sun and the second toward the Sun, which made it possible to determine both variations in the intensity of cosmic rays and their dependance on the distance from the Sun (i.e., their radial gradient). Data obtained by STS-4-type gas-discharge counters onboard the spacecraft revealed the radial gradient as $\delta = (3.1 \pm 0.4)\%$ per 1 astronomic unit. The radial

Card 1/2

ACC NR: AP7001549

gradient was irregular; this phenomenon was attributed to changes in the character and magnitude of the Forbush effect. Detectors of the n-p type onboard the space stations measured the radial gradient of protons with energies of 1—5 Mev. In addition to a sharp temperature increase, the detectors revealed a very stable and time-independent noise which exceeded by about 10 times the possible noise of high-energy particles. It was also found that the intensity of protons increased in moving away from the Sun. When the distance from the Sun was increased from 130×10^6 to 190×10^6 km, the intensity of 1—5-Mev protons, whose origin is known to be solar, increased 5 times. A mechanism is proposed for explaining this paradox. The nature of the radial gradient may possibly be explained by Parker's diffusion theory. Orig. art. has: 4 figures. [WA-75]

SUB CODE: 04/
OTH REF: 002

SUBM DATE: 11Aug66/
ATD PRESS: 5111

ORIG REF: 002/

Card - 2/2

ACC NR: AP7001894

SOURCE CODE: UR/0020/66/171/004/0847/0850

AUTHOR: Vernov, S.N. (Corresponding member AN SSSR); Chudakov, A.Ye. (Corresponding member AN SSSR); Vakulov, P.V.; Logachev, Yu.I.; Lobimov, G.P.; Nikolayev, A.G.; Perslegina, N.V.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Measurement of solar protons with energies of 1—5 Mev by the Venera-2, Venera-3, and Zond-3 space probes

SOURCE: AN SSSR. Doklady, v. 171, no. 4, 1966, 847-850

TOPIC TAGS: solar radiation, solar radiation intensity, proton counter

ABSTRACT: During the flights of the Zond-3, Venera-2, and Venera-3 space probes, the counting rate of proton detectors and Geiger counters on board increased markedly on six occasions. The semiconductor surface-barrier proton detectors had an area of about 0.2 cm²; the p-n junction was 35 μ thick. On the side of free space within a solid angle of ~1 sterad, the detectors were shielded with 2 mg/cm²-thick aluminum foil; on other sides the shielding was more than 1 g/cm² thick. The detectors were tuned to record protons with energies varying from 1 to 5 Mev. The intensity range measured corresponded to 1.1 x 10⁻³ to 1.1 pulse/sec.

Card 1/2

UDC: none

ACC NR: AP7001894

An analysis of the recorded data indicates that the protons are accelerated on the Sun and are propagated without hindrance along the magnetic force lines in interplanetary space. The width of proton fluxes with energies of 1—5 Mev was estimated at 3×10^{12} cm. It is concluded that these protons of comparatively low energies are generated periodically from the active areas on the Sun. They reach distant regions in interplanetary space through a "tunnel" produced by the corpuscular streams.

[WA-75]

03/
SUB CODE: 04/ SUBM DATE: 11Jul66/ ORIG REF: 002/ OTH REF: 002/
ATD PRESS: 5113

Card 2/2

VAKULOV, V.

With Zhlobin incrustators. Prom.koop. no.10:15 0 '56. (MIRA 9:11)

1. Metodist oblastnogo Doma narodnogo tvorchestva, g. Gomel'.
(Zhlobin--Art industries)

SAMOKHVALOV, G.I.; MIROPOL'SKAYA, M.A.;
VAKULOVA, L.A.; PREOBRAZHENSKAYA, N.A.

Ionones

Complete synthesis of pseudo-ionone, ionones, geraniol, and nerol. Dokl. AN SSSR 84
No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

Vakulova, L. A.

Chemical investigations in the field of vitamin A. I. Structure of the condensation products of β -ionone with γ -bromocrotonic acid esters by the Reformatskii reaction. G. I. Samokhvalov, M. A. Miropol'skaya, L. A. Vakulova, and N. A. Preobrazhenskii. *Vysokomol. Soedin.* 1962, 4, 5-10 (1962). The Reformatskii reaction of β -ionone (mp 151-152, purified through semicarbazone, m. 146°) and $\text{BrCH}_2\text{CHCO}_2\text{R}$ in the course of the Dorr and Arens synthesis of vitamin A proceeds through $\text{R}'\text{CH}:\text{CHCMe}(\text{OZnBr})\text{CH}_2\text{CH}:\text{CHCO}_2\text{R}$ (I), where $\text{R}' = 6,6$ -dimethyl-1-cyclohexen-1-yl, which is readily decomposed to $\text{R}'\text{CH}:\text{CHCMe}:\text{CHCH}:\text{CHCO}_2\text{R}$ (II). On standing, the CH₃ soln. yields a yellow-green ppt. consisting of an org. complex contg. Zn. Zn 31.7, Br 38.4, and the org. residue 19.2%, resp., which polymerizes on vacuum distn. I treated with dil. AcOH hydrolyzes to an ester (IV) which saponifies to II (R = Me), m. 161.5-162.5°, absorption max. 324 m μ . IV by chromatography through an Al_2O_3 column was shown to be nonhomogeneous. II. Synthetic reactions in the field

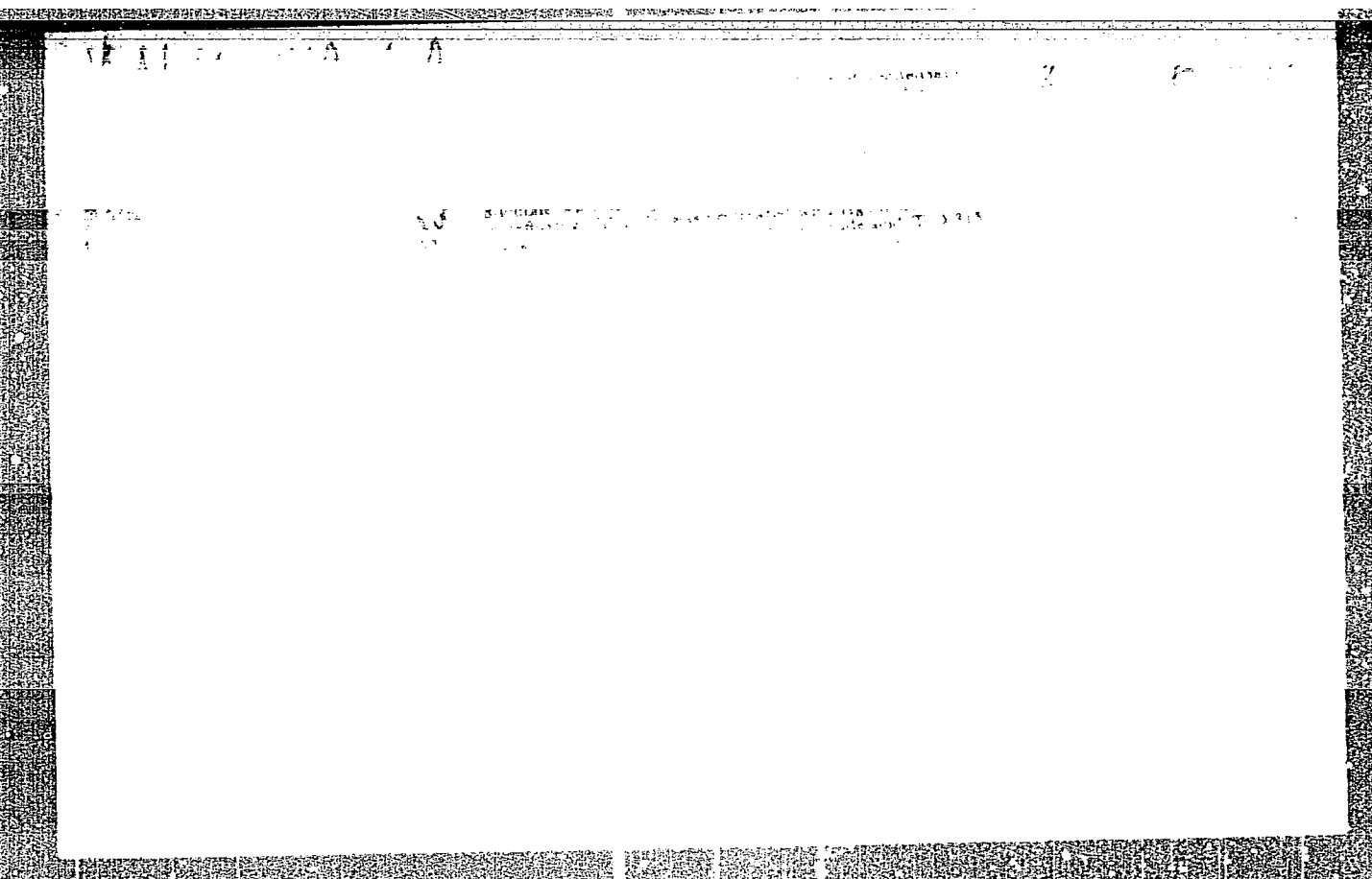
of polyenic compounds with the aid of metal organic derivatives of alkoxyvinyl acetylenes. G. I. Samokhvalov, J. A. Rgbtsov, M. A. Miropol'skaya, and N. A. Preobrazhenskii. *Izv. Akad. Nauk SSSR Ser. Khim.* 1962, 10, 13. By the method of A. A. Petrov (Zh. Khim. 1959, 35, 3593) $\text{RCH}:\text{CHCMeCHO}$ (I, R = MeC_6H_4)

$\text{CH}_3\text{CH}:\text{CHCMeCHO}$ was condensed with $\text{LiC}\equiv\text{CC}(\text{OEt})_2$

CH_3 (II) to give $\text{RCH}:\text{CHCMeCH}(\text{OH})\text{C}\equiv\text{C}(\text{OEt})_2$ (III) which with 1% H_2SO_4 in alc. yielded $\text{RCH}:\text{CHCMe}:\text{CHC}:\text{CAc}$ (IV); semicarbazone, m. 200-1°. The conjugated system of the unsatd. bonds of IV is shown by a characteristic ultraviolet absorption max. at 384 m μ ($\log \epsilon = 4.17$). Upon hydrogenation of the acetylenic group of IV the compd. $\text{RCH}:\text{CHCMe}:\text{CHCH}:\text{CHAc}$ (V) was obtained which was used for the synthesis of vitamin A by treatment with $\text{BrMgC}\equiv\text{COEt}$ to give $\text{RCH}:\text{CHCMe}:\text{CHCH}:\text{CHCMe}(\text{OH})\text{C}\equiv\text{COEt}$ from which was prepared $\text{RCH}:\text{CHCMe}:\text{CHCH}:\text{CHCMe}:\text{CHCO}_2\text{Et}$ (VII). Reduction of VII gave VI. The mechanism of the reaction of polyenic carbonyl compds. with metal-org. derivs. of alkoxyvinylacetylenes to form new polyenic conjugated carbonyl compds. is discussed. E. Wierzbicki

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858420004-9



APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858420004-9"

VAKULOVA, L. A.

USSR/ Physics - Spectral analysis

Card 1/1 Pub. 43 - 30/62

Authors : Slovokhotova, N. A.; Samokhvalov, G. I.; Miropol'skaya, M. A.; Vakulova, L. A.; Zhukova, L. P.; and Preobrazhenskiy, N. A.

Title : Spectroscopic investigation of the mechanism of condensation reaction of beta-ionone with ethyl ether of gamma-bromocrotonic acid

Periodical : Izv. AN SSSR. Ser. fiz. 18/6, 692-693, Nov-Dec 1954

Abstract : The products of beta-ionone condensation with esters of gamma-bromo-crotonic acid were investigated in a benzene solution under the effect of metallic zinc. It was established that the reaction is concluded by total dehydration and formation of unsaturated ester. The product of beta-ionone reaction with ethyl ether of gamma-bromocrotonic acid was subjected to rectification in vacuo and the properties of the 22 fractions obtained therefrom are described. The basic condensation product was found to be an unstable ester, a product of anionotropic regrouping and dehydration of the intermediate hydroxyester. Graph.

Institution: The L. Ya. Karpov Phys-Chem. Inst.

Submitted :

62 VAKULOVA, L. A. (1964).
 Anionotropic and prototropic rearrangements in the synthesis of polyene compounds. G. I. Samokhvalov, M. A. Miropol'skaya, L. A. Vakulova, L. P. Zhukova, N. A. Sloverokhotova, ~~and~~ R. M. Staryusov, and N. A. Preobrazhenskii (All-Union Vitamin Sci. Research Inst., Moscow). *Doklady Akad. Nauk S.S.R.* 99, 277-8 (1964). - β -ionone with $\text{BrCH}_2\text{CH}=\text{CHCO}_2\text{R}$ in C_6H_6 in the presence of Zn gave an unsat. ester (cf. Heilbron, *et al.*, C.A. 41, 719g) which has a wide absorption band 290-324 m μ . Hydrolysis of the ester gave a mixt. of acids as an oil which yielded 7-8% cryst. β -ionylidenecrotonic acid, m. 101.5-2.5, and a small amt. of the cis isomer, m. 140-1. If the originally formed ester mixt. is fractionated at 0.1 mm. into numerous small fractions, some 20.5% of the product is β -ionone, and some 40% is material, n_D 1.5365, absorption max. 285 m μ , which is different from the Me ester formed from CH_2N_3 and cryst. β -ionylidenecrotonic acid. The product thus isolated undergoes isomerization simultaneously with sapon. on treatment with bases; the isomerization is shown in the absorption spectra by a 30-m μ shift toward the longer wave. caused by increased length of the conjugated system. While part of the product, treated with bases, undergoes sapon. part is transformed into another substance which is more resistant to hydrolysis and eventually yields some β -ionylidenecrotonic acid. Hence the latter is formed only after isomerization (base-catalyzed) of unstable products isolated by the fractional distn. The acid isolated by hydrolysis of the ester, i.e. the readily saponifiable portion, yields with CH_2N_3 a Me ester with absorption max. 315 m μ , indicating 4 conjugated double bonds (spectrum shown); the infrared spectrum shows max. at 1595-1600 cm^{-1} and 1730 cm^{-1} , which

is decidedly different from Me ester of the ionylidenecrotonic acid. It is suggested that the principal component of the esters formed in the initial reaction of ionone is the product of an allylic shift and dehydration of the initially formed ester of a HO acid, although the infrared spectrum has a 1715 cm^{-1} max. may be caused by the CO group in a chain such as $\text{HO}-\text{CCH}=\text{CH}-\text{CMeCH}_2\text{CH}$ of the side chain. The higher-boiling fractions of the original reaction products appear to be a mixt. of a product of further prototropic shift and the product described above. This is indicated by the absorption max. 275-275 and 305-305 m μ , and infrared spectra showing max. at 1600-1600 and 1730 cm^{-1} . The Me ester of the acid is also confirmed by its absorption max. lowering at 285 m μ and increased absorption in the longer wave-length region. When all these fractions are hydrogenated over Pt and hydrolyzed, all give the same acid as is formed from cryst. β -ionylidenecrotonic acid, this acid yields the pseudobutonium salt, m. 149-9.5°. Thus the Reformatskii reaction with β -ionone leads not only to formation of esters of a HO acid, but also to isomerization and migration of the HO to the end of the conjugated chain, followed by dehydration, yielding an ester with a methoxy group between systems of double bonds. Treatment with bases or heating during distn. leads to prototropic shift with lengthening of the conjugation chain, thus yielding not only esters of *trans*- and *cis*- β -ionylidenecrotonic acids, but also those of 5-methyl 7-2,4,6-trimethyl-2-cyclohexenylidenecrotonic acid and its isomers. G. M. S.

(6)

SAMOKHVALOV, G.I.; MIROPOL'SKAYA, M.A.; VAKULOVA, L.A.; PRMOBRAZHEVSKIY, N.A.

Full synthesis of pseudoionone. Zhur.ob.khim. 25 no.3:545-550 Nr '55
(Pseudoionone) (MLRA 8:6)

VAKULOVA, L. A.: Master Chem Sci (diss) -- "Synthetic investigations of the
~~carotenoid compounds~~". Moscow, 1959. 12 pp (Min Higher Educ, Moscow Inst of
Fine Chem Technology im Lomonosov), 150 copies (KL, No 9, 1959, 113)

AUTHORS: Samokhvalov, G. I., Vakulova, L. A.,
Mayranovskiy, S. G., Luk'yanova, L. V.

SOV/79-29-6-37/72

TITLE: Synthetic Investigations in the Field of the Polyene Compounds
(Sinteticheskiye issledovaniya v oblasti poliyenovykh soyedineniy).
XIV. The Direction of Hydration of the Acetylene Bond in a Mole-
cule Containing a Diene System Conjugated With the Carbonyl Group
(XIV. Napravleniye gidratatsii atsetilenovoy svyazi v molekule, so-
derzhashchey diyatsionnyuyu sistemu, sopryazhennuyu s karbonil'noy
gruppoy)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6,
pp 1936 - 1945 (USSR)

ABSTRACT: A considerably large group of oxygen-containing carotenoids be-
longs to the natural polyene pigments. Mixoxanthin, which has a
vitamin-A effect occurs in marine invertebrates and marine algae.
Its structure has not yet been investigated in detail. Beside the
 β -ionone ring and the polyene chain, characteristic of the ca-
rotenoids, it has a cyclic or an aliphatic grouping with a carbonyl
group in position 4 (formula (I) or (II)). In synthesizing this
part of the molecule of mixoxanthin the authors tried to bring
Card 1/3 about the hydration of 3,7-dimethyl octadiene-2,6-in-4-al accord-

Synthetic Investigations in the Field of the Polyene SOV/79-29-6-37/72
Compounds. XIV. The Direction of Hydration of the Acetylene Bond in a Molecule Containing a Diene System Conjugated With the Carbonyl Group

ing to the scheme 1((III \rightarrow (IV) \rightarrow (V)). In this connection an explanation of the process of hydration is given (Refs 5-8). The synthesis of compound III was carried out according to scheme 2. This hydration was carried out in an aqueous solution of methanol of mercury sulphate with careful heating. The absence of the color reaction with iron chloride in the hydration product indicates the formation of (IV) or (V). From this product a crystalline semicarbazone with a melting point of 152-153° was obtained which according to its composition corresponds to the keto aldehyde $C_{10}H_{14}O_2$. For the purpose of comparing the optical and polarographic properties of this compound the keto aldehyde (XI), with already determined position of the carbonyl groups, was synthesized and its semicarbazones at the aldehyde group (XII) were obtained (melting point 197-198°) with a certain position of the semicarbazone residue at the keto group (XIV)(Scheme 3). The comparison of the ultraviolet absorption spectra of the semicarbazone of the keto aldehyde $C_{10}H_{14}O_2$ (Figs 1,2) as well as the polarographic comparison of the two compounds indicate the same

Card 2/3

Synthetic Investigations in the Field of the Polyene SOV/79-29-6-37/72
Compounds. XIV. The Direction of Hydration of the Acetylene Bond in a Molecule Containing a Diene System Conjugated With the Carbonyl Group

structure with respect to the position of the carbonyl groups (Fig-3). Thus, 3,7-dimethyl octadiene-2,5-on-4-al (V) in the case of which all compounds contained are conjugated, is formed in the hydration of the triple bond in the molecule (III) containing a diene system conjugated with the carbonyl group. The infrared absorption spectra taken confirm the conclusions drawn. The authors thank N. A. Preobrazhenskiy for the interest he showed in the investigations. There are 5 figures, 1 table, and 18 references, 6 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut (All-Union Scientific Research Institute for Vitamins)

SUBMITTED: April 14, 1958

Card 3/3

5(3)

SOV/79-29-8-25/81

AUTHORS:

Samokhvalov, G. I., Vakulova, L. A., Men, T. V., Zhikhareva, L.T., Koltunova, V. I., Preobrazhenskiy, N. A.

TITLE:

Synthetic Investigations in the Field of Polyene Compounds XV. A Complete Synthesis of Citral

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2575-2578 (USSR)

ABSTRACT:

Citral is the initial product for the synthesis of vitamin A, the carotinoids, and a number of fragrant substances. The transition of compound (I)*, which was also synthesized by the authors, from acetone and acetylene (Refs 1,2,3) to citral has so far been carried out by condensation with magnesium bromoethoxy-acetylene, partial hydrogenation, and saponification of the resultant 1-ethoxy-3,7-dimethyl-octadien-2,6-ol-3 (Ref 4), as well as according to reference 5. In the present paper the synthesis of citral from (I) is carried out without organo-metallic compound according to the given scheme. Otherwise, compound (II) is formed when using the easily accessible tetraethoxy-silane in the presence of orthophosphoric acid, a small quantity of p-toluene-sulfonic acid, and 0.3 mole of

Card 1/2

*(I): 6-methyl-heptene-5-one-2.

SOV/79-29-8-25/81

Synthetic Investigations in the Field of Polyene Compounds. XV. A Complete Synthesis of Citral

alcohol per 1 mole of initial ketone (95-97%) (Ref 6). The authors investigated the reaction of the ketal (II) with the ethyl-vinyl ether under the influence of the catalysts ZnCl_2 and $4\text{BR}_3 \cdot 3(\text{C}_2\text{H}_5)_2\text{O}$. ZnCl_2 was found to give less side products on condensation, and to produce compound (III) in a 60-65% yield. In the subsequent saponification reaction, under separation of one molecule of alcohol, citral is formed under the influence of a 15% sodium-acetate solution and acetic acid for 30 min at $108-110^\circ$. The yield is 42-45%. A prolonged reaction time causes an autocondensation of the citral. The purification of citral is carried out via its bisulfite derivative. There are 1 figure and 9 references, 4 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut
(All-Union Scientific Institute for Vitamin Research)

SUBMITTED: July 14, 1958
Card 2/2

SAMOKHVALOV, G.I.; DAVYDOVA, L.P.; ZAKHARKIN, L.I.; KHORLINA, I.M.;
VAKULOVA, L.A.; ZHIKHAREVA, L.T.; PREOBRAZHENSKIY, N.A.

Synthesis studies in the field of polyene compounds. Part 17:
New synthesis of retinal or 9,13-dimethyl-7-(1,1,5-trimethyl-
cyclohexen-5-yl)-7,9,11,13-nonatetraen-15-al. Zhur.ob.khim.
30 no.6:1823-1828 Je '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.
(Nonatetraenal) (Olefins)

VAKULOVA, L.A.; FOKINA, L.N.; FRADKINA, T.S.; LUK'YANOVA, L.V.;
SAMOKHVALOV, G.I.

Pyrophosphoric ester of 3-methyl-2-buten-1-ol.

Dokl. AN SSSR 147 no.1:103-105 N '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy
institut. Predstavleno akademikom M.I. Kabachnikom.
(Pyrophosphoric acid)
(Butenol)

VEYNBERG, A.Ya.; VAKULOVA, L.A.; SAMOKHVALOV, G.I.

Complete synthesis of D-erythro-1- β -lactosyl-N-palmitoylsphingosine,
a component of cytolin H. Zhur. VKHO 9 no. 3:348-350 '64.
(MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

VAKULOVA, L.A.; KUZNETSOVA, V.P.; KOLOT, F.B.; BAB'YEVA, I.P.; SAMOKHVALOV, G.I.

Rapid method of quantitative determination of β -carotene in micro-organisms. Mikrobiologiya 33 no.6:1061-1064 N-D '64.

(MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

VEYNBERG, A. Ya.; VAKULOVA, L.A.; MAYRANOVSKIY, V.G.; SAMOKHVALOV, G.I.

Sphingosine and its natural compounds. Part 1: Conversion of
threo-sphingosine to its erythro derivatives. Zhur.ob. khim. 34
no.12:3979-3982 D '64 (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

KOLOT, F.B.; VAKULOVA, L.A.; GOL'DAT, S.Yu.; SAMOKHVALOV, G.I.

Effect of different light sources on the carotenoid formation by
Penicillium sclerotiorum. Mikrobiologiya 34 no.4:627-630 Cl-Ag
'65.

(MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

L 10367-67 ENP(j), ENI(m) RM

ACC NR: AP7003115

SOURCE CODE: UR/0079/66/036/007/1345/1346

MAYRANOVSKIY, V. G., FOXINA, L. N., VAKULOVA, L. A., SAMOKHVALOV, G. I. 24

ORG: none

"Polarographic Activity of Phosphoric Acid Esters"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 7, 1966, pp 1345-1346

TOPIC TAGS: phosphoric acid, ester, polarographic analysis

Abstract: It was found that certain organic phosphates give distinct polarographic reduction waves in the region of extremely negative potentials, if solutions of quaternary ammonium salts in dimethylformamide are used as the background. Trimethyl, triethyl, tripropyl, triisopropyl, tributyl, triphenyl, tri-o-cresyl, tribenzyl, diphenylbenzyl, and dibenzyl phosphates were studied with a dropping mercury electrode. With the exception of the trialkyl phosphates, which are not detected on the polarogram in an accessible potential region, the triesters of phosphorus acids generally give one reduction wave; in the case of tribenzyl phosphate, a second wave is visible before the discharging of the background. It is proposed that the polarographic activity of the phosphates is due to electrochemical cleavage of the C-O or P-O bond. The triesters of phosphoric acid are arranged in the following series with respect to ease of electrochemical reduction: trialkyl phosphates < triphenyl phosphate < tri-benzyl phosphate. Orig. art. has: 2 formulas and 1 table. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 02Dec65 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC: 547.26'118

0705

2071

PHASE 1 BURN EXPLOITATION SOV/3276

SOV/3276

Problemy kibernetiki, vyp. 2 (Problems of Cybernetics, No. 2)
Moscow, Fizmatgiz, 1959. 323 p. Errata slip inserted. 18,000
copies printed.

Ed.: A. A. Lyapunov; Compilers-Editors: O. B. Lupanov,
B. Yu. Pil'chak, S. V. Yablonskiy, and Yu. I. Yanov; Eds.:
A. A. Konoplyankin, and M. L. Smolyanskiy; Tech. Ed.:
S. M. Akhlanov.

PURPOSE: The purpose of this collection of articles is to organize scientific papers on cybernetics and to unite the efforts and interests of Soviet scientists working in this field.

COVERAGE: This is the second volume of "Problems kibernetiki" dealing with problems of biology, mathematics and engineering as they relate to cybernetics. The first volume, which appeared in 1958, contained problems of programming, machine translation and computer design. Future volumes propose to include a still smaller number of subjects related to cybernetics. The editors list 5 recent Soviet books (including 2 translations) dealing with cybernetics. They thank the following persons for help in preparing the book for publication: G. V. Yakovlevskaya, T. L. Gavrilova, A. A. Muzhnik, B. I. Kozlovskiy, M. L. Tetlin and V. I. Kozlovskiy.

PART IV. CONTROL SYSTEMS AND COMPUTERS

Pyramilin, A.N., and V.K. Seimov (Moscow). *Operational Cathode-ray Tube Storage Device*. The authors describe the principle of operation of the storage device for the Soviet computer "Spiral-1", which consists of cathode-ray tubes of the "Potentsialoskopy" type, with a storage capacity of 100 words of 4 bits. No references are given.

Beydo, M.G., V.S. Gurtinkel', A.Ye. Kobrinskiy, A.Ya. Zvill, M.I. Tselin, and Ya.S. Yakovlev (Moscow). On the Biocellular System of Control. *203*

The article deals with the utilization of biological myoelectric currents in the operation of technical devices. It also describes the principles of operation and design of a model of a servo-drive built for this purpose. There are 12 references. 5 Soviet (1 translation), 2 German and 5 English.

UNIT V CONTROL PROCESSES IN LIVING ORGANISMS

Smirnov-Borovskiy, N.V. (Sverdlovsk), and A.R. Buzina (Berlin). 213
On Statistic and Amplifier Principle in Biology
The article concerns problems of circulation of hereditary in-
formation from generation to generation and the physical process
of its biological storage in living organisms. The authors
summarize investigations in that field. There are 52 references,
16 Soviet (5 translations), 18 English, 14 German, and 4 French.

Trubnikin, I. V. (Moscow). Investigation of Extrapolative Processes in Animals. *Neurophysiology*, 1971, 13, 229.

PART VI. PROBLEMS OF MATHEMATICAL LINGUISTICS

Kulagina, O. S. and G. V. Mendeleyeva (Moscow). Experimental Translations from French into Russian on the "Strat" Machine. *Computational Linguistics*, 1976, 2, No. 1, pp. 1-10. The programming algorithms for the "Strat" machine, which convert mathematical texts from French into Russian were developed by O. S. Kulagina and I. A. Melnikova. These algorithms assume the existence of a specific vocabulary which contains not words but words and phrases. The authors give examples of translations obtained and methods used in eliminating errors. No references are given.

Kulshreya, D. S. (Moscow). Operational Description of Translation 289
Mathematicians of the Soviet Union have developed a programming technique of operational programming based on an external automation that is written linearly across the page. This operational programming was tested on translations from French into Russian. The author describes the class of logical operators used; the sequence of operators will indicate their sequence of performance. The following types of operators are used: a) conditional branching; b) branching with a label; c) branching with a label and a condition; d) the method of jumping to the end of the program; e) a loop. No

KULAGINA, O.S. (Moskva); VAKULOVSKAYA, G.V. (Moskva)

Experimental translations from French into Russian on the "Strela"
machine. Probl. kib. no.2:283-288 '59 (MIRA 13:3)
(Machine translating)

30383

S/582/61/000/005/010/012
D222/D306

9.7000

AUTHORS: Vakulovskaya, G. V., and Kulagina, O. S. (Moscow)

TITLE: Machine translation from French into Russian. III.
Description of the program

SOURCE: Problemy kibernetiki, no. 5, Moscow, 1961, 245-262

TEXT: This is the third part of a series of papers by Kulagina and her associates (Ref. 1: Problemy kibernetiki, no. 3, 1960; Ref.2: Problemy kibernetiki, no. 4, 1960) on their French-Russian translation program. This part gives some details of the programming task and should be read in conjunction with part II (Description of the algorithm). The program is written for the "Strela" computer. Its size is about 8500 instructions and 2000 words of tables and constants; it is divided into 17 independent routines. The first routine looks up the words in the dictionary. For the dictionary look-up the words of each sentence are rearranged in alphabetical order. Their original sequence in the sentence is preserved in the form of a table, the so-called table of correspondences (TC). Each word

Card 1/4

Machine translation from French ...

S/582/61/000/³⁰³⁸³005/010/012
D222/D306

has one line in this table. Dictionary look-up is based on logical multiplication. First the stems are compared, the remaining digits are eliminated by a shift operation. An empty word after this shift indicates that the correct stem has been found. The dictionary information of the word is transferred to a preassigned location of the memory. Mistranslations can occur if a word which is not included in the dictionary matches by chance the stem of another word. The second routine processes the idioms. This is again based on a dictionary of idioms. The information obtained from this dictionary replaces in the TC the original information of the corresponding words. The third routine prepares for analysis of the sentence by rearranging and recoding the information on the words. The original order of the words in the sentence is now restored. This routine prepares also the so-called logical scales of the sentence. These scales are words with marker bits, each bit corresponding to one word of the sentence. Such scales are constructed to mark the position of nouns, formulae, punctuation, etc. in the sentence. During the analysis these scales are used in conjunction with a "running unity", i.e. a marker bit is moved along a word as the

Card 2/4

30383

Machine translation from French ...

S/582/61/000/005/010/012
D222/D306

analysis proceeds, doing logical multiplication with the bits of the scales. The fourth routine deals with the morphological processing of verbs, nouns and adjectives. This routine uses the table of endings; there are 12 such tables. The routines five to seven deal with the resolution of homonymy. The division into three parts is due to their length. The fifth routine processes those cases when one of the homonyms is a verb; pronoun-preposition homonymy, noun-adverb homonymy; and so on. This processing involves several passages through the sentence. Routines six and seven work similarly. Routines eight to twelve deal with the analysis. They obtain data on the form and location of the translation of each word and place these into the scales and into the information of the French words. The thirteenth routine selects the words from the Russian dictionary according to the translation numbers obtained from the French information. Routine fourteen completes the final processing of adjectives, participles and verbs in past tense. This can be done only when the Russian information has been selected. This routine also changes the word order in the French sentence, if necessary. The last three routines, fifteen to seventeen, deal with the synthesis. Routine fifteen selects the stems of verbs, nouns

Card 3/4

+

30383

Machine translation from French ...

S/582/61/000/005/010/012
D222/D306

and adjectives. Routines sixteen and seventeen complete the processing of Russian words. Routine seventeen also prints the resulting sentence. There are 4 figures, 1 table and 2 Soviet-bloc references.

SUBMITTED: September 10, 1959

Card 4/4

S/582/62/000/008/010/013
D405/D301

AUTHORS: Vakulovskaya, G. V. and Kulagina, O. S. (Moscow)

TITLE: On machine translation from French into Russian. IV.
Experimental results and analysis of errors

SOURCE: Problemy kibernetiki. no. 8. Moscow, 1962, 253-291

TEXT: Work done in machine translation from French into Russian is summed up. The main results are listed and the translation errors are analyzed. The texts selected for translation were from works on mathematical analysis by Picard, Cartan and Bourbaki. Prior to introducing the texts into the machine, they were altered in two respects: Complex sentences of more than 43 words were broken up into parts (as the routine provided only for the processing of sentences not longer than 43 words); some words were replaced by others so as to match the text with the dictionary available. The translation errors committed by the machine were divided into 4 groups: A) Errors due to the incompleteness of the algorithm used, i.e. errors which could be eliminated by supplementing and
Card 1/3

On machine translation ...

S/582/62/000/008/010/013
D405/D301

refining the available algorithm. B) Errors which could not be eliminated by modifying the algorithm (e.g. syntactic structures of double meaning). C) Errors resulting from preceding errors. D) The translation does not render the meaning exactly, although the Russian sentence is grammatically correct. The machine translation consists of the following stages: Search for words in the dictionary; this amounts to finding for each word the longest stem, entirely contained in this word. Since the available dictionary was limited (about 1200 words), it often happened that so-called "non-provided for" words were met, i.e. words for which a stem was lacking. In the second stage, the machine processes complex sentences, i.e. it searches for the word groups which are not literally translated. The third stage consists in the resolution of homonyms. Then follows the analysis of the parts of speech and, finally, the synthesis (the construction of the Russian sentence). The errors committed at each of these stages are analyzed. The authors arrive at the following general conclusions about machine-translation algorithms: Such algorithms should be constructed in a certain gradation, with each algorithm containing a very general

Card 2/3

On machine translation ...

S/582/62/000/008/010/013
D405/D301

part (which does not even depend on the language for which it is constructed), a part which depends on the language, but not on the special field of the translation, and a part which depends both on the language and on the field. The relationship between these parts has to be decided upon from considerations of design, possibilities and storage capacity (of the various memories) of the machine. The dictionary should be matched to these principles.

Card 3/3

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858420004-9

LAST PROBABLY THEIR METHOD OF WORKING WITH THE

OF PERSONAL EXPERIENCE IN THE FIELD OF THE

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001858420004-9"

L 21005-65

ACCESSION NO: AT5000722

found in all cases. Orig. art. has 2 figures and table.

VAKULOVSKAYA, G.V. (Moskva); KULAGINA, O.S. (Moskva)

A method of analysis of texts. Probl. kib. no.12:233-237 '64.
(MIRA 18:6)

100-801-47
ACCESSION NR AP4045407

parts of resin. Films were made on the faces of glass prisms and heated at 150C
for 12 hours. The films were then cooled to room temperature and then

Chemistry AN SSSR)

SUBMITTED: 02Oct63

ENCL: 00

SUB CODE GC MT

NO REF SOV 1963

OTHER 1963

Card 2/2

VAKUL'SKI, N.

Shoulder to shoulder with other people. Rab. 1 sial. 39
no.7:8-9 J1 '63. (MIRA 16:11)

ACC NR: AT6620473

(A)

SOURCE CODE: UR/0000/65/000/000/0069/0073

AUTHOR: Vakul'skiy, A. A. (L'vov); Fedchishin, A. S. (L'vov)

ORG: none

TITLE: Transient processes in magnetic induction receivers due to primary field pulses

SOURCE: AN UkrSSR. Teoriya i elementy sistem otbora geofizicheskoy informatsii (Theory and elements of systems for selecting geophysical information). Kiev, Naukova dumka, 1965, 69-73

TOPIC TAGS: magnetic field measurement, eddy current, prospecting

ABSTRACT: The paper compares the effect of two such processes: one arising in a buried conductor (i. e., α = an ore body) and the other, in the magnetic receiver. Such processes are induced in the conductor whenever the primary field is suddenly changed, e. g., when the current is shut off. The method of transient processes is based on transient phenomena caused by eddies created in the current. Eddies in the magnetic receiver cause distortions in the signals received. The tentative conclusion reached is that the time interval of the change in the useful signal may be rationally selected from a family of curves. Orig. art. has: 2 figures, 18 formulas.

SUB CODE: C8,14/

SUBM DATE: 10Nov65/

ORIG REF: 003

Card 1/1

S/271/63/000/003/005/049
A060/A126

AUTHORS: Borukhov, M.Yu., Vakulyuk, A.P., Ivashev, V.N., Tsoy, T.G.

TITLE: New types of radio-isotope relays and level indicators

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 3, 1963, 28, abstract 3A153 (In collection "Vopr. sovrem. fiz. i matem.", Tashkent, AN UzSSR, 1962, 65 - 77)

TEXT: The paper describes new relay networks developed at the AN UzSSR, which make it possible to extend considerably the domain of relay application, in particular giving the means for determining the deviation of a parameter in either direction from a specified value, for maintaining a prespecified relationship between engineering parameters, and so on. The authors analyze the operation of a differential radio-isotope relay and a three-position relay. A mathematical designing method is given for the operation of a network for the case of controlling the thickness of a material and which permits of finding the minimum activity for the radiation source ensuring the reliable operation of the radio-isotope relay under thickness deviations of the material exceeding the ad-

Card 1/2

New types of radio-isotope relays and level indicators

S/271/63/000/003/005/049

A060/A126

missible values. A network is described of a radio-isotope multi-position level-indicator distinguished by the fact that, regardless of the number of positions, it has only two amplifier channels located in a single electron tube. The reduction in the number of amplifier channels became possible through the inclusion in the instrument of a stepping switch operating in the stepper mode. On both sides of the vessel in which the level of the contained medium is being measured at every interval of probable values of the level, radioactive sources and counters are set up opposite to each other. The stepping action of the relays is continued until a difference is discovered in the degree of irradiation of two neighboring receivers. A sharp difference in the degree of irradiation of two adjacent receivers is observed in the case when the level of the filling medium is between these receivers. The difference in the signals causes the operation of the relay connected between the plates of a DC bridge rectifier. There are 5 figures.

A. V.

[Abstracter's note: Complete translation]

Card 2/2

✓ Peculiarities of distribution of fresh subterranean waters
in virgin land of Southeastern part of Almatinsk region.
S. M. Shapiro and N. Yu. Yakupova. *Vestnik Akad. Nauk
Kazakh. S.S.R.* 12, No. 8, 13-14 (1959) (in Russian).
Maps, diagrams, and tabulated data are given for the dis-
tribution of subterranean waters and their dissolved con-
tents as found in the southeastern part of the Almatinsk
region of U.S.S.R. G. M. Kosolapov

2

VAKURO, Ye.G.

VACURO, Ye.G.

[Complex forms of the behavior of the anthropoid, based on the formation of distant visual temporary connectors] O slozhnykh formakh povedeniia antropoida, osnovannykh na obrazovanii distantnykh (zritel'nykh) vremennykh svyazei. Tr.Fiziol.laborat. Pavlova 16:76-85 '49. (CML 19:1)

1. Of the Institute of Evolutionary Physiology and Pathology of Higher Nervous Activity imeni Academician I.P.Pavlov of the Academy of Medical Sciences USSR (Director -- Academician L.A. Orbeli)

VAKUROV, I., polkovnik

On the steep slopes of the Dnepr. Voen.znan. 40 no.11:12-13 N 162.
(MIRA 18:1)

VAKUROV, I., polkovnik

Twentieth anniversary. Voen. Znan. 41 no.5:8-9 My '65. (MIRA 18:5)

VAKUROV, I., polkovnik

Symphony. Voen.znan. 41 no.11:8-9 N '65.

(MIRA 18:12)

VAKUROV, KONSTANTIN VIKTOROVICH

LIPATENKOV, Ivan Vasil'yevich; KAPRALOV, Mikhail Karpovich; BITUNOV, Yevgeniy Ivanovich; VAKUROV, Konstantin Viktorovich; KUZOVSKIN, Konstantin Sergeyevich; PAVLOV, Leonid Vasil'yevich; KLOCHKOV, Ivan Nikitich; ZHITS, Margoliya Isayevna; KHROMOV, Vasil'y Vasil'yevich; LIPSHITS, N.V., redaktor; KOPILNICH, Ye.I., redaktor; DMITRIYEVA, N.I., tekhnicheskiiy redaktor

[Assembling and adjusting machinery of looms with picker sticks;
work practices of foremen and assistants in the Monin worsted mills]
Ustanovka i naladka mekhanizmov tkatskikh stankov s verkhnim boem;
obobshchennyi opyt raboty masterov i pomoshchnikov mastera Moninskogo
kamvol'nogo kombinata. Pod red. N.V.Lipshitsa. Moskva, Gos.nauchno-
tekhn.izd-vo M-va legkoi promyshl.SSSR, 1957. 109 p. (MLRA 10:9)
(Looms)

VAKUROV, I., polkovnik

Bykov makes the decision. Voen. znan. 40 no.6:10-11 Je '64.
(MIRA 17:7)

VAKUROV, K.K.

VAKUROV, K.K., inzh.

New rules for the installation and safe operation of hoists.
Bezop.truda v prom. 1 no.10:37-38 0 '57. (MIRA 10:11)
(Hoisting machinery)

VAKUROV, P. S.

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5575

Author: Klimov, K. I., Vakurov, P. S.

Institution: None

Title: Yield Strength and Performance of Lubricants in Rolling Bearings

Original

Publication: Novosti neft. tekhniki. Neftepererabotka, 1955, No 6, 37-44

Abstract: To investigate the throw-off of solid lubricants from separators of tapered roller-bearings, use was made of a thermostatic testing stand with four No 807813 bearings subjected to an axial load of 100 kg. By revolving the shaft of the bearings at different speed, 450-1,500 RPM (at $20 \pm 1^\circ$), and at different temperature, within the range of 20-90° (at 600 RPM), a determination was made of the critical velocity or temperature, respectively, at which the lubricant begins to fly off the separator of the bearing. Duration of the test at a given

Card 1/2

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur' - Khimiya, No 2, 1957, 5575

Abstract: temperature and speed of rotation was of 80 minutes. Tests of commercial solid lubricants (fatty and synthetic Solidols, 1-13 lubricant, TsIATIM-201) revealed that beginning of throw-off corresponds to definite critical values of inertia forces acting upon the lubricant located on the separator, and is determined by the value of the yield strength of the lubricant. At temperatures $>35^{\circ}$ the correlation between yield strength to shearing at temperature of throw-off, $\tau_{\text{throw-off}}$, and shearing stress within the lubricant layer at surface of the separator, τ_{p_0} , is given by the equation: $\tau_{\text{strength}}^{\text{throw-off}} = 4\tau_{p_0}$. Low value of the stress that brings about throw-off of the lubricant is attributed to lowering of τ_{strength} of the lubricant at the boundary with a smooth solid surface, as compared with its value in the bulk. On using separators having a corrugated surface the capability of the lubricant to withstand throw-off is increased, due to an increase in τ_{strength} .

Card 2/2

SINITSYN, V.V., kand.tekhn.nauk; VAKUROV, P.S., inzh.;
KRAMARENKO, G.V., kand.tekhn.nauk; POKROVSKAYA, L.S., aspirant

Stands for investigating plastic lubricants in antifriction
bearings. Izv.vys.ucheb.zav.; mashinostr. no.10:103-108
'61. (MIRA 14:12)

1. Moskovskiy avtomobil'no-dorozhnyy institut.
(Bearings(Machinery)—Lubrication)

31893
S/081/62/000/003/074/090
B171/B102

11,9700
AUTHORS:

Semenido, Ye. G., Vakurov, P. S., Shchegolev, N. V.,
Sharapov, V. I., Zarubin, A. P., Zakharov, G. V.

TITLE:

Influence of a sulfurous base of condensed oil upon the
engine

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 3, 1962, 493-494,
abstract 3M227 (Sb. "Khimiya seraorgan. soyedineniy,
soderzhashchikhsya v neft'yakh i nefteproduktakh. v. 4" M.,
Gostoptekhizdat, 1961, 212-216)

TEXT: The results are given of investigations of the performance of the
bodied up $AC_{\pi-10}$ (AS_{p-10}) test oil obtained from sulfurous petroleum. It
has been shown that the bodied up sulfurous base (without multifunctional
additive) has a relatively low corrosive effect (9 g/m^2 in 50 hrs) and is, ✓
in this respect, superior to the Baku petroleum base. This is explained
by the positive influence of the natural S-compounds present in the oil of
Novo-Ufinskiy zavod (Novo-Ufa Plant). Investigations of effectiveness of
different additives permitted the selection of the ВНИИИПТ-365а (VNIINP-365a)
Card 1/2

Influence of a sulfurous base ...

S/081/62/000/003/074/090
B171/B102

multifunctional additive, to the test oil. This additive is a mixture of Ba alkylphenolate and of a sulfurous compound. It has been established by 600-hr tests in a ГАЗ-51 (GAZ-51) engine that the test oil with S-content $\leq 1\%$ and with the above additive shows a performance superior to the industrial-50 and AH_п-10 (AN_п-10) Baku oils. [Abstracter's note: Complete translation.]

4

Card 2/2

SENICHKIN, M.A., kand. tekhn. nauk; GOROBETS, V.I., inzh.; VAKHONOV, P.S., inzh.

Stand tests of oils. Tekhn. - tekhn. svoist. i prim. avt. top. stat.
mat. i spetszhid. no. 2:56-65 '63.

(MIRA 17:10)

L 20366-66 INT(m)/T DJ

ACC NR: AP6006147 (A)

SOURCE CODE: UR/0065/66/000/002/0027/0030

AUTHORS: Ishchuk, Yu. L.; Sinit'syn, V. V.; Goshko, N. S.; Nakonechnaya, M. B.;
Prokopchuk, V. A.; Vakurov, P. S.

ORG: none

TITLE: Complex calcium greases derived from synthetic fatty acids

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 2, 1966, 27-30

grease, viscosity, organic synthetic process,
TOPIC TAGS: lubricant, lubricant property, organocalcium compound / GOST 1707-51
No. 50 lubricant

ABSTRACT: The properties and performance of a number of calcium greases derived by adding 98% acetic acid and various synthetic fatty acids (containing from 7 to 25 carbon atoms in the molecule) to GOST 1707-51 industrial oil No. 50 were studied. The acid number, saponification number, iodine number, average molecular weight, melting point, and composition of the fatty acid fractions used are tabulated. Electronmicrophotographs of the synthesized greases are presented. The viscosity characteristics of the calcium greases were determined (see Fig. 1). It is concluded that the complex calcium greases derived from C₁₀ - C₂₀ and C₁₇ - C₂₀ fatty acids possess a sufficiently high mechanical stability, low viscosity at 0C,

Card 1/2

UDC: 621.892.8

L 20366-66

ACC NR: AP6006147

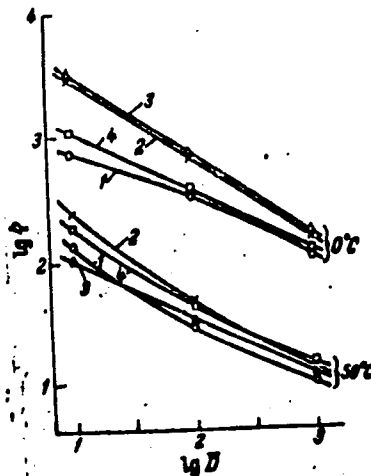


Fig. 1. Viscosity characteristics of synthetic complex calcium greases derived from synthetic fatty acid fraction.
1 - C₁₀ - C₁₆; 2 - C₁₇ - C₂₀;
3 - larger than C₂₁; 4 - C₁₀ - C₂₀. η - viscosity in poise;
 \bar{D} in revolutions per sec.
[Abstracter's note: the meaning of \bar{D} is not made clear. Its units are sec⁻¹]

and high water stability to be useful in various applications up to a temperature of 120—175°C and over short periods of time at a temperature of 200°C. Orig. art. has: 2 tables and 3 graphs.

SUB CODE: 11/
Card 2/2 vmb

SUM DATE: none/

ORIG REF: 009/

OTH REF: 001

ACC NR: AP7000331

SOURCE CODE: UR/0413/66/000/022/0084/0084

INVENTOR: Vakusevich, L. A.; Klebanov, D. L.; Terpagosova, I. Z.;
Chukalin, V. I.

ORG: none

TITLE: High-alumina borosilicate glass [announced by the Scientific Institute of
Electrovacuum Glass Research (Nauchno-issledovatel'skiy institut elektrovakuum-
nogo stekla)] Class 32, No. 188634

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 22, 1966,
84

TOPIC TAGS: silicate glass, glass property, optic spectrum

ABSTRACT: To make borosilicate high-alumina glass with SiO_2 , B_2O_3 , Al_2O_3 ,
 CaO , MgO , and BaO transparent with respect to the visual region of the spectrum
under conditions of severe irradiation, the components have been combined as
follows (wt %): 50—53 SiO_2 , 7—10 B_2O_3 , 23—25 Al_2O_3 , 7.5—8.5 CaO ,
3.5—4.5 MgO , 3—5 BaO . In addition, the glass contains 0.1—1.5% of CeO_2 .
[Translation]

SUB CODE: 11/SUBM DATE: 17Sep64/

[KP]

UDC: 666.113.655'621'431'46'41'28'27

Card 1/1

KOPELEVICH, L.Kh., inzh.; BLEKHMAN, I.Ye., inzh.; MASENKO, I.D.,
inzh.; OVCHAROV, V.I., kand. tekhn. nauk; DEKHTYAR, D.E.,
kand. tekhn. nauk; VAKUSOV, V.G., inzh.; FINKINSHTEYN, V.A.,
inzh., red.

[Technology of manufacturing large prestressed concrete
elements for industrial construction] Tekhnologiya izgotov-
leniya krupnorazmernykh predvaritel'no napriazhennykh zhe-
lezobetonnykh konstruktsii dlia promyshlennogo stroitel'stva.
Moskva, Gosstroizdat, 1963. 99 p. (MIRA 17:7)

1. Moscow. Nauchno-issledovatel'skiy institut organizatsii,
mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu.

KHAVKIN, L.M., inzh.; VAL, D.I., inzh.; KURILENKO, Ye.S.

Placeability of lime-sand mixes under vibration in relation to
their specific surface and the type of lime. Sbor. trud.
ROSNIIMS no.17:141-145 '60. (MIRA 14:12)
(Sand-lime products)

VERNER, Ye.V., inzh.; VAL, G.A., inzh.; BELYKH, P.G., inzh.

Automated power truck. Stroi. 1 dor. mash. 6 no.2:26-30 P '61.
(MIRA 14:5)

(Conveying machinery)

VAL, G.A., inzh.

Modernization of the machinery for assembling and disassembling
molds. Stroi. i dor. mash. 7 no.12:25-28 D '62. (MIRA 16:1)
(Concrete plants--Equipment and supplies)

ALEKSANDROV, Stanislav Konstantinovich, inzh.; LIFSHITS, Yuliya
Lazarevna, inzh.; VAL, Grigoriy Aleksandrovich,, inzh.;
KREYNDLIN, A.N., nauchn. red.; TELINGATER, L.A., red.

[Advanced methods of prefabrication and assembly of large
panel buildings] Peredovye metody zavodskogo izgotovleniia
i montazha krupnopanel'nykh zdanii. Moskva, Vysshiaia shko-
la, 1965. 65 p. (MIRA 18:7)

VLASOV, K.F., kand. med. nauk; VAL' V.V. (Moskva)

Side effects of noxiron. Klin. med. 40 no.11:130-131 N°62
(MIRA 16:12)

15-57-12-17271

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 12,
pp 82-83 (USSR)

AUTHOR: Vala, A. I.

TITLE: Lower Triassic and Upper Permian Variegated Formations
of Lithuania (Nizhnetriasovyye i verkhnepermiskiye pes-
trotsvety Litvy)

PERIODICAL: V sb: Tr. Vses. soveshchaniya po razrabotke unifitsir.
skhemy stratigr. mezozoyskikh otlozheniy Russkoy
platformy, Leningrad, 1956, pp 174-179

ABSTRACT: The author analyzes a formation composed of variegated
kaolinite and hydromicaceous clays, marls, and sands.
This formation differs from the one below it and the
one above it by its lithological features, its scarce
paleontological contents and by the mode of its
deposition. After conducting a thorough petrographic
study of this formation, the author subdivides it into
horizons. Every horizon represents a cyclic formation.

Card 1/4

15-57-12-17271

Lower Triassic and Upper Permian Variegated Formations (Cont.)

Separate series of strata are characterized by a definite mineral content. Durable minerals such as zircon, garnet, tourmaline and others; autogenous minerals, such as pyrite, gypsum, rock salt; and clay minerals like kaolinite, are characteristic of Kaunas strata (6 m to 38 m). The Klaipeda layers (3 m to 38 m) contain hornblende, pyroxene and other durable minerals. Barite represents the most characteristic occasional mineral, while beidellite and montmorillonite are found in a small quantity. The Zhiyezhmarskiye sloi (strata) (4 m to 44 m) are distinguished by a large quantity of zircon and rutile and by clays of hydromica-kaolinite type. The Jena strata (8 m to 42 m) contain garnet, staurolite, hornblende and others. Barite, pyrite and other minerals can be found among the autogenous group. Clay is mainly of the hydromica-kaolinite type with an admixture of beidellite and montmorillonite. The most characteristic minerals in the Vadaksskiye sloi (strata) (5 m to 61 m) are hornblende, monazite, epidote, anatase, mica, chlorite, glauconite and others. Here the clays are of the kaolinite-hydromica type. The Al'kishskiye sloi (strata) (3 m to 35 m) are distinguished by the presence of magnetite, tourmaline, muscovite and biotite.

Card 2/4

15-57-12-17271

Lower Triassic and Upper Permian Variegated Formations (Cont.)

These clays differ little from those described above. The Yotiyiskiye sloi (strata) (5 m to 63 m) contain zirzon (in a large amount), staurolite, biotite, chlorite. These clays are of the kaolinite-hydromica type. The Tauragskiye sloi (strata) are characterized by the following mineral associations: zircon, garnet, tourmaline, rutile, disthene, the epidote group minerals, sphene, sphene pseudomorphs after ilmenite, and brookite. Kaolinite predominates among clay minerals. The author comes to the conclusion that the strata of the variegated formation were deposited in different and extremely variable climatic conditions. The main influx of material came from the east, northeast and southeast. It was deposited by the intermittent streams, in the river deltas which formed in the lagoons of the Upper Permian epoch and in the lakes of variable salinity in the Lower Triassic, as well as on the bottom of fresh water lakes of the Lower Jurassic time. Paleontological finds indicate that the layers of the variegated formation, except for Kaunas and Tauragskiy sloi (strata), should be referred to (according to Ye. M. Lyutkevich) the Vetluzhskiy yarus (stage) of Lower Triassic, Kaunas strata--sloi to Card 3/4

15-57-12-17271

. Lower Triassic and Upper Permian Variegated Formations (Cont.)

the Tatar stage of Upper Permian, and Tauragskiy sloi (strate)--to
the Rhaetian-Lias stage.

Card 4/4

G. A. Prokhoreva

VALA, A. 1.

GEOGRAPHY & GEOLOGY

HOKSLIANI PRAVESIMAI.

VALA, A. A contribution ^{to} the question of Upper Permian facies in
Lithuania. p. 197.

Vol. 8, 1958.

Monthly List of East European Accession (EEAI) LC Vol. 8, No. 3
March 1959, Unclass.

VITA, A.I.

Classic of the world. Discussion of the
Tudy (NICH) 1919-1920, vol. 1 (1919). (MIRA 12.7,
(English) (1919) (Geology, Stratigraphic)

VALA, F.

Our main task is to help practical farming. p. 204 (Sbornik Rada Jasnictvi Vol. 4, no. 4, 1957 Praha)

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

VALA, F.

"Work in the department and commissions on the land reclamation in agriculture and forestry."

p. 219 (Vestnik, Vol. 5, no. 4, 1958, Praha, Czechoslovakia)

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

VALA, F.

"Delimitation, classification, and inventory of meadows and pastures." p. 195

VESTNIK. Praha, Czechoslovakia, Vol. 6, No. 4, 1959

Monthly list of East European Accession Index (EEIA), Library of Congress,
Vol. 8, No. 7, July, 1959, Unclassified

VALA, J. "A Study of Systems of Slope Lines on Surfaces Subjected to a Transformation by Motion." p. 167.
(Sbornik. Bulletin, Vol.2, No.24- 29, 1953, Brno.)

Vol. 3, No. 3.

SO: Monthly List of East European Accessions,/Library of Congress, March 1954, Uncl.

VALA, Josef (Brno)

Cartan parameter on nonlinear surfaces. Cas pro pest mat 85 no.3:
300-310 Ag '60. (EEAI 10:1)
(Surfaces)

VALA, Josef

On congruences of straight lines intersecting the hyperplanes of a projective four-dimensional space P_4 in tangential planes of its surface ϕ . Mat fyz cas SAV 11 no.4:263-274 '61.

1. Katedra matematiky a deskriptivni geometrie, Vysoke uceni technicke, Brno, Barvicova 85.

VALA, Josef

The congruence W with linear focal surfaces. Mat fys cas SAV 12
no.4:271-279 '62.

1. Katedra matematiky a deskriptivni geometrie, Vysoke uceni
technicke, Brno.

L 38906-66 EWP(1) IJF(c)

ACC NR: AP6029573

SOURCE CODE: CZ/0045/65/000/002/0126/0142

AUTHOR: Vala, Josef--Vala, I. (Brno)

ORG: Department of Mathematics and Descriptive Geometry, Civil Engineering Faculty,
Technical Institute, Brno (Katedra matematiky a deskriptivni geometrie, stavebna
fakulta, Vysoka uceni technicka)

TITLE: Special Riccati systems

SOURCE: Matematicko-fyzikalny casopis, no. 2, 1965, 126-142

TOPIC TAGS: first order differential equation, differential equation system

ABSTRACT: The properties of Riccati systems which have their principal lines in the lines C_1 and C_2 , called $R(y, z)$ systems, are investigated. In addition, the local properties of quadratic $R(y, z)$ systems along the generating line p of the surface \emptyset and the properties of isogonal R systems on the surface \emptyset are investigated. Orig. art. has: 40 formulas. [Orig. art. in German] [JPRS]

SUB CODE: 12 / SUBM DATE: 12Mar64 / ORIG REF: 004 / OTH REF: 002

Card 1/1

2917 2667

VALA, M.

Traumatic interruption of the lower direct muscle. Cesk.
oftal. 20 no.1:67-68 Ja'64.

1. Očni oddeleni nemocnice z poliklinikou v Mor.Trebove;
vedouci: MUDr. J.Grepl.

*

VALA, M.

Treatment of corneal diseases with 20 per cent hydrogen peroxide solution. Cesk. oftal. 21 no.4:357-359 J1 '65.

1. Očni oddeleni nemocnice s poliklinikou v Moravske Trebove (vedouci MUDr. J. Grepl).

VALA, Stefan

Now ore transshipment station in Gierna nad Tisou. Zel dop tech
ll no.7:204-205 '63.

VALA, Stefan

Freight yard of the Kosice railroad station. Zel dop tech
11 no. 12: 367-368 '63.

VALA, Stefan

Some observations on the investment activity of Czechoslovak
Railroads. Zel dop tech 12 no. 4:107 '64.

VALACH, A.

Cardiovascular and respiratory function test "Flack test" in
sport medicine. Cas. lek. cesk. 89 no.29:811-815 21 July 1950.
(CJML 20:1)

1. Of the Medical Physical Education Center of Prof. J. Kral,
M. D. in Prague.

DEJDAR, R.; WIDIMSKY, J.; VALACH, A.; FEJFAR, Z.; BERGMANN, K.

Radiological changes in cor pulmonale & their diagnostic significance.
Cas. lek. cesk. 98 no.21:654-661 22 May 59.

1. Ustav pro choroby obehu krevniho, Praha-Krc, reditel prof. dr. Weber.
Ustav pro vyzkum tuberkulozy, Praha-Bulovka. R.D., Praha-Krc, Budejovicka
800.

(PULMONARY HEART DISEASE, manifest.
x-ray changes, diag. significance (Cz))

Valach, A.

VALACH, A.
Country: CZECHOSLOVAKIA

Country: CZECHOSLOVAKIA

Academic Degrees:

Affiliations: Tuberculosis Research Institute (Vyskumny ustav tuberkulozy), Prague. Director: docent Dr. Rudolf KRIVICKA.

Source: Prague, Rozhledy v Tuberkulose a v Muzkach Pitavich, No 4, Apr 61, pp 271-275

Date: "1 Contribution to the Question of Strain on the Right Heart and on Pulmonary Circulation, Following Rheumatism for Tuberculosis."

Co-authors: HANE, H. HEDRICK, J. DUBEC, S. VALACH, A.

Note: Four affiliations are given for the five (including VALACH) co-authors, in the following order:

1. Institute for Postgraduate Medical Training (Ustav pro dokalovani lekaru). Director: Professor Jan KROVINEK, doctor of medical sciences.

2. Chair of Pathology (Katedra Patologie). Head: docent Dr. Rudolf KRIVICKA.

3. Tuberculosis Research Institute (see above).

4. Institute for Circulatory Diseases (Ustav pro choroby cirkulace), Prague-Kra. Director: Professor Dr. K. HANE.

Since Professor VALACH's mail address (Tuberculosis Research Institute), there is no clue to the affiliation or affiliations of the individual co-authors.

(P) (114)