15-57-4-4133

The Stratigraphic Subdivisions of the Upper Jurassic (Cont.)

(?), greenish-gray greasy clays at 1419.8 m to 1407.6 m belonging to the Osfordian (Epistomina stelligeraformis Mjatliuk), olive-gray marly clays and marls at 1407.6 m to 1374 m of Kimmeridgian age (small calcareous foraminifers and Cristellaria russiensis Mjatliuk), and the lower Volga series at 1374 m to 1343 m represented by gray calcareous shales in the lower part and olive-green-gray friable sandstones in the upper part /Ammobaculites haplophragmoides Furss. and Pol. and Ammodiscus tenuissimus (Gümbel)/. It was impossible to subdivide the upper Volga series by microfossils in the Tyumen' exploratory well. Neocomian deposits were identified in the interval 1343 m to 1098 m, and the following subdivisions were recognized: Valanginian at 1343 m to 1246 m /a zone of bedded calcareous clay and siltstone with Globulina lacrima (Reuss) and a zone of brownish- and greenish-gray laminated mudstones, containing seams of glauco- nitic siltstone and friable sandstone with Haplophragmoides nonioninoides (Reuss)/; Hauterivian variegated coal-bearing beds at 1246 m to 1098 m (with fresh-water ostracods and characeous algae). A sequence of siltstones and variegated clays at 1098 m to 986.9 m, in which no microfossils were found, is provisionally referred to Card 2/5

15-57-4-4133

The Stratigraphic Subdivisions of the Upper Jurassic (Cont.)

the Aptian-Albian. In the interval 986.9 m to 638 m, arenaceous
foraminifers are abundant, and in the lower part (at 887.8 m)
lagenids are occasionally encountered. Sandy argillaceous rocks at
986.9 m to 887.9 m are referred to the Cenomanian-Turonian
(Verneuilina asanoviensis Zasp.). Siltstones, clays, sandy clays,
and sandstones in the interval 887.8 m to 652 m are assigned to
undifferentiated Turonian, and the deposits above, at 652 m to
639.9 m, belong to the Gaudryina filiformis zone of the Turonian.
The rocks between 638 m and 477 m are Lower Cretaceous. An abundance
and variety of radiolarians are found in sandy clays in the lower
part of the Cretaceous sequence at 638 m to 514 m (Coniacian,
Santonian, and Campanian stages, forming the Lower Radiolarian beds).
Green calcareous clays at 508 m to 477 m are characterized by a new
group of fossils, principally calcareous foraminifers (Campanian and
Maestrichtian). Very sandy clays at 475 m to 437 m are referred to
the Danian (?) stage by sandy foraminifers (Ammobaculites incultus
Ehrem). Light brown and dark brown Paleogene clays are characterized
by a mixed group of sandy and calcareous foraminifers. Dark gray,
sandy, silicified clays of the Eocene at 353.3 m to 154.2 m contain
Card 3/5

15-57-4-4133

The Stratigraphic Subdivisions of the Upper Jurassic (Cont.)

an abundance and variety of radiolarians and represent the Upper Radiolarian beds. Above these beds, from 154.2 m to 26 m, occur grayish-green clays, which do not effervesce in acid and in which, rarely, are found calcareous foraminifers and ostracods of the lower Oligocene (Cibicides khanabadensis Mjassn.). The interval from 26 m to 4 m contains no microfossils. Pollen-spore analyses of these sediments, which consist of clays, sands, sandy clays, and sandy loams, indicate their age to be Neogene (Miocene). Almost the entire section in the Tyumen' region (from 26 m downward) is marine. Different groups of fossils point to changes in the conditions of sediment accumulation. Foraminifers are by far the most widespread. Radiolarians are found in Cretaceous and Paleogene rocks, but they are most abundantly developed in the Santonian-Campanian and the Eocene. Ostracods are found only in the Jurassic and the lower Oligocene. In comparison with other regions, the Tyumen' section has a rather poor microfossil content. There are no great similarities between the microfossils of Tyumen' and those of Emba, the Volga region, the Northern Urals, and Central Asia. The Western Siberian Card 4/5

15-57-4-4133
The Stratigraphic Subdivisions of the Upper Jurassic (Cont.)

Lowland was a special zoogeographic province with specific physical
and geographic environments.
Card 5/5   V. A. L.

LIPMAN, R.Kh.

Distribution of organic remains in sediments of the sea Paleogene
in Western Siberia. Trudy SNIIGGIMS no.2:41-52 '59.   (MIRA 12:11)
          (Siberia, Western--Paleontology)

LIPMAN, R. Kh.

Significance of Radiolaria for stratigraphic correlation of
sedimentary rocks. Biul. MOIP. Otd. geol. 34 no.6:67-88 N-D
'59.   (MIRA 14:3)
          (Radiolaria, Fossil)
          (Rocks, Sedimentary)

GLAZUNOVA, A.Ye.; BALAKHMATOVA, V.T.; LIPMAN, R.Kh.; ROMANOVA, V.I.;
     KHOKHLOVA, I.A.; YASHURZHINSKAYA, A.N., tekhn.red.

[Gretaceous stratigraphy and fauna of the West Siberian Plain]
Stratigrafiia i fauna melovykh otlozhenii Zapadno-Sibirskoi
nizmennosti. Leningrad, 1960. 346 p. (Leningrad. Vsesoiuznyi
geologicheskii institut. Trudy, vol.29)   (MIRA 13:6)
          (West Siberian Plain--Geology, Stratigraphic)

LIPMAN, R.Kh.

Microfaunal characteristics of the Saksaul'skaya series of the upper Eocene in the northern part of the Aral region. Dokl.AN SSSR 132 no.6:1388-1390 Je '60.   (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Predstavleno akademikom A.L. Yanshinym.
    (Aral Sea region—Paleontology, Stratigraphic)

LIPMAN, R. Kh.

Microfaunal composition of mummulite strata of Cape Izyndy-Aral on the northern shore of the Aral Sea. Dokl.AN SSSR 138 no.3:651-654 My '61.
(MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Predstavleno akademikom A.L.Yanshinym.
(Izyndy-Aral, Cape—Paleontology, Stratigraphic)

LIPMAN, R.Kh.; KHOKHLOVA, I.A.

Stratigraphy of Upper Cretaceous and Paleogene sediments in the
northern Aral Sea region. Inform.sbor.VSEGEI no.47:37-49 '61.
                                                  (MIRA 15:4)

(Aral Sea region---Paleontology, Stratigraphic)

LIPMAN, R.Kh.

Late Cretaceous radiolarians of the West Siberian Plain and Turgay
Gates. Trudy VSEGEI 77:271-321 '62.   (MIRA 15:12)
        (West Siberian Plain--Radiolaria, Fossil)
        (TurgayGates --Radiolaria, Fossil)

ZHAMOYDA, A.I.; LIPMAN, R.Kh.; MIKHAYLOV, A.F.; TITOV, V.A.

Age of siliceous igneous formations in the Koryak upland based
on Radiolaria study data. Trudy VSEGEI 81:75-103 '63
(MIRA 17:7)

LIPMAN, R.Kh.; KHOKHLOVA, I.A.

Microfaunal characteristics of Upper Cretaceous and Paleogene sediments
in the northern part of the Ural Mountain region. Trudy VSEGEI 93:181-
190 '64.   (MIRA 18:7)

LIPMAN, R.Kh.; AIZENSHTAT, I.M.; KAZIMIROVA, L.Kh.

New data on the microfaunal characteristics of the stratigraphic
section of the Paleogene Tasaran series in the northern part of
the Ural Mountain region. Trudy VSEGEI 102:185-191   '64.

(MIRA 18:2)

ZHAMOYDA, A.I.; LIPMAN, R.Kh.

First seminar on radiolarians. Paleont. zhur. no.1:157-160 '65.
(MIRA 18:4)

CA
LIPMAN, S.I.

The action of potassium fertilizers upon undesirable nitrogen in the sugar beet. S. I. Lipman. *Nauch. Zapiski Tsukrovoi Prom.* 12, 101-12(1929).—K fertilizers do not always decrease in beets the percentage of N interfering in sugar manuf. The action of K on the N content is detd. by the ratio of nutritive elements in the soil. In the presence of a large excess of N, small portions of K (with an increase of beet crop) increase the amt. of N in the beets. On the other hand, in the presence of a small amt. of N in the soil, K decreases the percentage of N in the beets. Among K fertilizers sylvinite is the most powerful in decreasing the N content in beets. V. E. B.

METALLURGICAL LITERATURE CLASSIFICATION

LIPMAN, S.I.

Q-1

USSR / Farm Animals. General Problems

Abs Jour : Ref. Zhur-Biol., No 6, 1958, 26092

Author   : Kalashnikov A.P., Chistov V.O., Lipman S.I.,
           Kalashnikova A.P.

Inst   : Not given

Title   : The Nutritiousness of Corn at Different Stages of its
           Development (Pitatel'nost' kukuruzy v raznyye fzy eye
           razvitiya)

Orig Pub : Vestn. s.-kh. nauki, 1957, No 5, 142-146

Abstract : On the basis of the study of the dynamics of the accumu-
           lation of nutritive substances in the corn of tardy varieties -
           Krasnodar hybrid 1/49 and Sterling - according to the sta-
           ges of development, it is recommended in regions other than
           the black earth zone to use corn as a green foddor in the

Card 1/2

LIPMAN-KESSEL', A.U. (London)

Surgical treatmen t of permanent paralysis of the upper extremities.
Ortop.travm. i protez. no.5:39-42 S-O '55.   (MIRA 9:12)
        (ARM, paralysis
            surg.)

VANAGS, G.; LIPMANIS, M.

Quantitative analysis of salts of 2-nitro-1,3-indandione. Kim. Inst.
Zinātnisk, Raksti, Latvijas PSR Zinātnm Akad. 1, 78-80 '50.
(CA 47 no.19:9865 '53)

1. VANAGS, G., LIPMANIS, M.

2. USSR (600)

4. Iodine

7. Interaction of bis-indandione wit h iodine. Latv. PSR Zin Akad Vestis No. 7 1951.

9. Monthly List of Russian Accessions, Library of Congress, ———April———1953, Uncl.

LIPMANOV, E. M.

PA 3/50178

USSR/Nuclear Physics - Meson : Quantum Theory   1 Aug 49

"Invariant Permutable Relations and Exclusion of Additional Conditions in the Quantum Theory of the Meson Field," E. M. Lipmanov, Leningrad State U'imeni A. A. Zhdanov, 4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 4

Generalizes Heisenberg and Pauli's "Canonical" quantizing method for the meson field. Finds that operators representing transverse and longitudinal oscillations of the meson field or the operators of radiation and absorption of transverse and longitudinal radiation differ by a numerical multiple and longitudinal mesons differ by a numerical multiple that

USSR/Nuclear Physics - Meson (Contd)   1 Aug 49

3/50178

this difference shows the influence of the condition excluded quantizing of vector components as independent scalars, which they are not). This formulation of the theory makes it possible to apply Dirac's theory of radiation to transverse and longitudinal mesons. Submitted by Acad V. A. Fok 2 Jun 49.

Magnetic moments of the proton and the neutron in a

generalized meson theory. B. M. Lipman, Uchenye Zapiski Leningrad. Gosudarst., No. 8, 146-71(1952).—A generalized meson field theory is based on the equation (1 - $a^2\Box)\Box\psi - \mu^2\psi = 0$ ($\Box$ four-dimensional Laplace operator). The vector and the pseudoscalar version of the theory are worked out separately. The generalized pseudoscalar theory leads to finite values of the right sign for the magnetic moments of proton and neutron and for the elec. quadrupole moment of the deuteron. No definite numerical values are obtained. To det. the consts. appearing in the formulas one would have to evaluate other effects like nucleon-nucleon scattering. The theory in its present form is also incomplete from the point of view of general theory, since no adequate interpretation has as yet been found for neg. field energies appearing in it. Relations between the formalism of this theory and procedures used by other authors for the elimination of divergencies are pointed out. R. Gora

LIPMANOV, E. M.

USSR/Nuclear Physics - Meson Decay   21 Jun 53

"Radiative Corrections to the Decay of μ-mesons,"
E. M. Lipmanov, Leningrad State Pedagog Inst im
A. I. Gertsen

DAN SSSR, Vol 90, No 6, pp 999-1001

Studies radiative corrections to the decay of
μ-mesons into 3 particles and establishes cases
in which all divergences may be eliminated by re-
normalization of the masses of electron, meson and
bond constant of 3 fields. This is possible only
in case of meson decay into electron and 2 neutrinos.
Indebted to S. V. Izmaylov and Prof L. E. Gurevich.
Presented by Acad V. A. Fok 22 Apr 53. 269T91

FD-789

LIPMANOV, E. M.

USSR/Physics - Electrodynamics

Card 1/1   Pub. 146-2/21

Author   : Lipmanov, E. M.

Title   : Relativistically invariant form of electrodynamics without longitudinal
              and scalar fields

Periodical : Zhur. eksp. i teor. fiz., 27, 135-141, Aug 1954

Abstract   : The calibration of electromagnetic potential according to Ginzburg is
              applied to the relativistically invariant expansion of the field into
              generalized longitudinal and transverse parts in classical and quantum
              electrodynamics. The obtained formulation of quantum theory is simpler
              than that of J. Schwinger (Phys. Rev., 74, 1439 (1948)). Four references
              including 1 American.

Institution : Novozybkovsk State Pedagogical Institute

Submitted   : October 10, 1953

LIPMANOV, E. M.

B-6

Category   : USSR/Theoretical Physics - Quantum Field Theory

Abs Jour   : Ref Zhur - Fizika, No 3, 1957, No 5700

Author   : Lipmanov, E. M.
Inst   : Novozybkov Pedagogical Instituto
Title   : Regularization Theory of a System of Fields

Orig Pub   : Zh. eksperim. i teor. fiziki, 1956, 30, No 1, 214-216

Abstract   : In many works a connection was established between the formal
             rules for the relativistically invariant regularization in
             modern quantum field theory and field equations that contain
             higher-order derivatives. It is known that these equations
             describe a field system with a mass spectrum with positive
             (Usual fields) and negative (unusual fields) onergies. In
             view of the presence of the latter, the question of the physical
             interpretation of the theory has not yet been solved. By
             way of an example, the author considers an equation of order
             $2(2n + 1)$, describing $(n+1)$ usual and n unusual neutral
             scalar fields. The author takes an S-matrix, averaged over
             the vacuum of n unusual fields, as the fundamental law,

Card   : 1/2

LIPMANOV, E.M.

USSR/Theoretical Physics - Quantum Electrodynamics.   B-5

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, 8442

Author   : Lipmanov, E.M.
Inst   : Novoxybkov Pedagogical Institute
Title   : Concerning the Relativistically-Invariant Formulation
               of Electrodynamics Without Longitudinal and Scalar Fields.

Orig Pub   : Zh. eksperim. i teor. fiziki, 1956, 30, No 3, 583-584

Abstract   : It is shown that the relativistically-invariant formula-
               tion of electrodynamics without longitudinal and scalar
               fields (Referat Zhur Fizika, 1955, 6221) can be obtained
               in the Heisenberg representation from the variational
               principle, starting out with the Lagrangian function with
               a density

$$L = -\frac{\hbar c}{2}\,\bar{\psi}(x)\left[\gamma_\mu\left(\frac{\partial}{\partial x_\mu} - \frac{ie}{\hbar c}\,a_\mu(x)\right) + \chi_0\right]\psi(x) -$$

Card 1/3

USSR/Theoretical Physics. - Quantum Electrodynamics.   B-5

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, 8442

$$-\frac{1}{2}\left(\frac{\partial a_\mu(x)}{\partial x_\nu}\right)^2 -$$

$$-\frac{\hbar c}{2}\,\overline{\psi}'(x)\left[\gamma_\mu\left(\frac{\partial}{\partial x_\mu}+\frac{ie}{\hbar c}\,a_\mu(x)\right)+\chi_o\right]\psi'(x)+$$

$$\frac{1}{2c}\,m_\mu\,j_\mu(x)\,\varphi(x)-\left(\frac{\partial a_\mu(x)}{\partial x_\nu}-\frac{\partial a_\nu(x)}{\partial x_\mu}\right)n_\mu\,\frac{\partial\varphi(x)}{\partial x_\nu}$$

where a_μ , and ψ , ψ', $\overline{\psi}$, $\overline{\psi}'$ are operators
of the photon and electron-positron fields, and φ is
an operator that is linear with respect to the current
components j_μ .

In this case the Coulomb field does not enter into the
theory at all, and the equations for the operators of the
electron-positron field turn out to be nonlinear, owing

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USSR/Theoretical Physics - Quantum Electrodynamics.   B-5

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, 8442

            to the Coulomb interaction of the charges. It is noted
            that to change over from the Heisenberg representation
            to the interaction representation one cannot use the
            Schroedinger formulas for the transformation of the de-
            rivatives of the operator fields, since the Hamiltonian
            of the interaction does not commute in this case with the
            operators of the electron-positron field at various
            points of the spacelike surface. The author establishes
            the form of the formulas for the transformation of the de-
            rivatives of the field operators, which are applicable
            also to the case considered here.

Card 3/3

AUTHOR: Lipmanov, E. M.   SOV/139-58-4-8/30

TITLE: On the Relativistic Formulation of Quantum Electrodynamics
            Without Longitudinal and Scalar Photons (K relyativistskoy
            formulirovke kvantovoy elektrodinamiki bez prodol'nykh i
            skalyarnykh fotonov)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika,
            1958, Nr 4, pp 57 - 63 (USSR)

ABSTRACT: The known difficulties in quantum electrodynamics
          relating to the divergence of the state vector which is
          subjected to an additional condition were eliminated by
          Gupta (Ref 1) by means of a quantum scalar potential
          along the indefinite metric. According to earlier work
          of the author (Ref 2) and Heitler (Ref 3), there is a
          second possibility of eliminating these difficulties,
          namely, by excluding the longitudinal and the scalar field
          from the Hamilton function in the classical theory and
          subjecting to quantisation only the field of the trans-
          verse photons. In this case, the state vector is not
          subjected to any additional condition and the basis of the
          theory is simplified. The opinion is frequently expressed
          that the here mentioned second possibility disturbs the
          apparent relativistic invariance of the theory and complicates

Card 1/4

On the Relativistic Formulation of Quantum Electrodynamics Without Longitudinal and Scalar Photons

SOV/139-58-4-3/30

the calculation of the scattering matrix. In earlier work (Ref 2), the author presented the obvious relativistic-invariant formulation of electrodynamics in accordance with this second possibility. In this paper, he shows that in the general case the operators of the longitudinal and the scalar fields can be completely excluded from the S-matrix, changing accordingly the expression for the "interrelation" of the photon operators. In this case the S-matrix will be coincident with the ordinary expression of Feinmann-Dyson, the difference being that in the normal derivatives only those operators of the transverse photons will be present which have a physical meaning. It is shown by direct calculation that the relativistic-invariant formulation of the quantum electrodynamics without longitudinal and scalar fields justifies the "symmetrical" treatment of all the 4 components of the electromagnetic potential in the virtual states which is the important feature of the formalism of the Feinmann-Dyson S-matrix, the only difference being that in the

Card2/4

On the Relativistic Formulation of Quantum Electrodynamics Without
Longitudinal and Scalar Photons

SOV/139-58-4-8/30

normal derivatives only the operators of the transverse
photons occur; the longitudinal and the scalar photons
will not appear in the theory at all. Therefore, the
state vector will not be subjected to any additional
conditions and thus it is not necessary to utilise
indefinite metric.

There are 1 figure and 6 references, 3 of which are Soviet
and 3 English.

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SOV/139-58-4-8/30

On the Relativistic Formulation of Quantum Electrodynamics Without
Longitudinal and Scalar Photons

ASSOCIATION: Stalingradskiy gosudarstvennyy pedagogicheskiy
               institut imeni A.S. Serafimovicha
               (Stalingrad State Pedagogic Institute imeni
               A.S. Serafimovich)

SUBMITTED: February 19, 1958

Card 4/4

·21(8), 21(1)

SOV/139-59-1-14/34

AUTHOR: Lipmanov, E.M.

TITLE: Coupling Between Derivatives of Neutrino Functions in the Theory of Muon Decay (Svyaz' s proizvodnymi funktsiy neytrino v teorii raspada μ-mezona)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, 1959, Nr 1, pp 82-87 (USSR)

ABSTRACT: A non-local field theory approach is presented for the calculation of second- and higher-order scattering and radiative corrections to the theory of muon decay. The general expression for these higher order terms is given formally by:

$$\left(\overline{\psi}_n(x)\varphi_m(x)\right)^{(2)}_\infty = \frac{\alpha}{8(2\pi)^2} \ln \frac{K_{max}}{\ell} \left(\overline{\psi}(x)\gamma_\rho\gamma_\nu\right)_n \left(\gamma_\rho\gamma_\nu\psi(x)\right)_m \quad (1)$$

Here K_{max} represents the maximum transferable momentum of the system, ℓ is a gauge parameter, φ ψ are the usual wave functions, the γ's are Dirac matrices and all other symbols have their standard significance. Various alternative forms for the interaction Hamiltonian are:

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SOV/139-59-1-14/34

Coupling Between Derivatives of Neutrino Functions in the Theory of Muon Decay

$$H_1 = g_Q (\overline{\psi} Q \varphi)(\overline{u} Q u) \tag{2}$$

$$H_2 = g_Q (\overline{\psi} \gamma_\xi \, Q \varphi) \left(\frac{\partial \overline{u}}{\partial x_\xi} \, Q \, u \right) \tag{3}$$

$$H_3 = g_Q (\overline{\psi} Q \, \gamma_\xi \, u) \left(\frac{\partial \overline{u}}{\partial x_\xi} \, Q \, \varphi \right) \tag{4}$$

In these equations Q represents the generalized Lorentz-invariant interaction operator and g_Q its associated coupling constant; Q may in principle contain any or all of the following interactions: scalar, pseudoscalar, vector, pseudovector, tensor. The significance of the subscript ξ is that different values of ξ may be assigned to different particles (electron, neutrino, etc.). The Hamiltonian H_1 corresponds to a point interaction, while H_2 and H_3 correspond to forms of non-localized interaction involving derivatives of the neutrino wave-functions. The application of H_3 is illustrated by substitution in Eq (4). A fourth

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SOV/139-59-1-14/34

Coupling Between Derivatives of Neutrino Functions in the Theory of Muon Decay

interaction Hamiltonian involving derivatives of the electron wave-function is also briefly discussed. The final section of the paper considers a specific form of interaction involving coupling between derivatives of the neutrino wave functions. This is used to calculate the second-order corrections to the electron energy-spectrum and angular-distribution in muon decay; the application of these corrections improves the agreement between measured and calculated energy and angular distributions.

Card 3/3 Acknowledgement is made to V.A. Yakovlev for advice. There are 8 references, 5 of which are English, 2 Soviet and 1 Italian.

ASSOCIATION: Stalingradskiy Pedinstitut imeni A.S. Serafimovicha (Stalingrad Pedagogical Institute imeni A.S. Serafimovich)

SUBMITTED: June 20, 1958

LIPMANOV, E.M.

Two types of neutrinos, isotopic spin of leptons, and universal
four-fermion interactions. Zhur.eksp.i teor.fiz. 37 no.4:
1054-1057 O '59.   (MIRA 13:5)

1. Stalingradskiy gosudarstvennyy pedagogicheskiy institut.
        (Particles (Nuclear physics)) (Nuclear reactions)

83733

S/056/60/038/004/026/048
B006/B056

24.b9o0

AUTHOR: Lipmanov, E. M.

TITLE: An Analogy Between Weak and Electromagnetic Interactions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
            Vol. 38, No. 4, pp. 1233 - 1236

TEXT: According to the hypothesis by S. S. Gershteyn, Ya. B. Zel'dovich
(Ref. 1) and Feynman and Gell-Mann (Ref. 2) on the conservation of the
vector current in weak interaction, an analogy may be assumed to exist
between weak- and electromagnetic interactions. The author aimed at
obtaining a concrete expression for this analogy, which is represented in
such a form that the electric current and the charge currents in weak
interaction can be derived from a single symmetric expression containing
the operators $1/2 + \tau$ and $1 + \gamma_5$ after satisfying the requirements of
conservation of electric-, lepton-, and baryon charges and after the
vanishing of the photon mass. A certain "chirality" is ascribed to half-
integral spin particles, which is conserved in weak interaction. A

Card 1/3

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An Analogy Between Weak and Electromagnetic
Interactions

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B006/B056

complete expression for the weak flux of "bare" particles is found, which
is in qualitative agreement with all known experimental data concerning
the decay of ordinary and strange particles. The hypothesis on the
existence of two isotopic lepton doublets $(\nu_1 e^-)$ and $(\nu_2 \mu^-)$ is used, and
the isospins of all baryons are assumed to be 1/2 (according to global
symmetry - Gell-Mann, Ref. 4). The table containing the properties of
fermions (including hyperons) is given in its new form by Table 1 (l,n
and e denote lepton-, baryon-, and electric charge respectively, γ_5 is
the chirality in weak interaction, while the new strangeness (last column
of the table) is defined by $e = I_z + \frac{1}{2}(1+n+S')$). Among other things it is
shown that the violation of isotopic invariance in weak and electro-
magnetic interaction is of exactly the same nature. The demand made for
chirality to be conserved is automatically satisfied. The description of
all experimental decay data by the expressions obtained here is made
possible only by the selection of the chirality values of hyperons and by
the demand that chirality be conserved in weak interaction. This selec-
tion is not merely made at random, but it is the result of considerations

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An Analogy Between Weak and Electromagnetic   S/056/60/038/004/026/048
Interactions   .B006/B056

concerning the possible lepton doublets (cf. Table 2) and baryon doublets
(Table 3). The author finally thanks Ya. B. Zel'dovich and B. Pontekorvo
for their interest and comments and A. Z. Dolginov for discussions. There
are 3 tables and 12 references: 5 Soviet, 1 Canadian, 3 US, 2 Italian, and
1 German.

ASSOCIATION: Stalingradskiy gosudarstvennyy pedagogicheskiy institut
             (Stalingrad State Pedagogical Institute)

SUBMITTED: October 31, 1959

Card 3/3

LIPMANOV, E.M.

Classification of two-component fermions and the analogy between weak and electromagnetic interactions. Izv.vys.ucheb.zav.; fiz. no.3:140-146 '61. (MIRA 14:8)

1. Stalingradskiy pedagogicheskiy institut im. A.S.Serafimovicha.
(Particles (Nuclear physics)) (Electromagnetism)
(Nuclear reactions)

LIPMANOV, E.M.

Hypothesis of the preservation of the vector current and the global symmetry of weak interactions. Zhur.eksp.i teor.fiz. 40 no.3:980-981 Mr '61. (MIRA 14:8)

1. Stalingradskiy gosudarstvennyy pedagogicheskiy institut.
(Nuclear reactions)

S/056/63/044/004/037/044
B102/B186

AUTHOR: Lipmanov, E. M.

TITLE: Lepton γ_5-symmetry in weak interactions and decays with
                 $\Delta S = - \Delta Q$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
                 no. 4, 1963, 1396 - 1400

TEXT: The author discusses the hypothesis of an additive lepton charge
conservation law (cf. Lipmanov, ZhETF, 37, 1054, 1959) in connection with
the recently discovered asymmetry of electrons and muons with respect to
the neutrino arising in pion decay (Phys. Rev. Lett. 9, 36, 1962). A
unique definition of the lepton pairs ν_e, e^- and ν_μ, μ on the assumption of
the additive conservation law and the existence of definite electron and
muon chiralities in weak interactions is only possible in the case of V-
coupling. In this case the γ_5-symmetry of the gauge transformations
$e^\pm \to \pm \gamma_5 e^\mp$, $\mu^\mp \to \pm \gamma_5 \mu^\mp$ leads to lepton chirality conservation in weak inter-
action as a new quantum number, together with electric and leptonic charges.
Card 1/3

Lepton γ_5-symmetry in weak...

	ν_e	ν_μ	$\tilde{\nu}_e$	$\tilde{\nu}_\mu$				e^-	μ^-	e^+	μ^+	
l	+1	−1	−1	+1	(1)		l	+1	−1	−1	+1	(3)
γ_5	+1	+1	−1	−1			Q	−1	−1	+1	+1	

When neutral currents are ignored, in all weak interactions only the lepton pairs

$$L_1 = (\nu_e, e^-), \qquad L_2 = (\nu_\mu, \mu^-) \qquad\qquad (4)$$

are involved; considering, however, four-fermion interactions between leptons and baryons, V-coupling could be violated without affecting conservation of charge and γ_5-invariance, and consequently also the pairs

$$L_3 = (\tilde{\nu}_\mu, e^-), \qquad L_4 = (\tilde{\nu}_e, \mu^-). \qquad\qquad (10)$$

might be involved. In leptonic interactions of strange particles with $\Delta S = + \Delta Q$, (V−A)-coupling is possible; it is also possible that in recently

Card 2/3

Lepton γ_5-symmetry in weak...

S/056/63/044/004/037/044
B102/B186

discovered strange particle decays, including change in strangeness
($\Delta S = -\Delta Q$), there is no (V-A) coupling. Subsequently it is discussed what
would result from assuming the two types of currents of strongly interacting
particles, with $\Delta S = +\Delta Q$ and $\Delta S = -\Delta Q$ in leptonic interactions to be
vectorial and scalar (tensorial). This leads to the following conclusions:
only the lepton pairs (4) and (10) may arise, not (ν_μ, e^-) or $(\nu_e \mu^-)$; the
anomalous lepton pairs (10) are not vectorial but scalar or tensorial which
leads to baryonic currents with $\Delta S = -\Delta Q$. Therefore only the μ^--decay mode
$\mu^- \to e^- + \tilde{\nu}_e + \nu_\mu$ is possible.

ASSOCIATION: Volgogradskiy pedagogicheskiy institut (Volgograd Pedagogical
               Institute)

SUBMITTED: November 23, 1962 (initially)
               December 20, 1962 (after revision)

Card 3/3

LIPMANOV, E.M.

A model of universal weak interaction. Zhur. eksp. i teor. fiz.
43 no.3:893-899 '62.   (MIRA 15:10)

1. Volgogradiskiy pedagogicheskiy institut.
            (Nuclear reactions—Models)

LIPMANOV, E.M.

On γ_5-symmetry of leptons in weak interactions and decays with $\Delta S = -\Delta Q$. Zhur. eksp. i teor. fiz. 44 no.4:1396-1400 Ap '63.   (MIRA 16:4)

1. Volgogradskiy pedagogicheskiy institut.
          (Baryons)   (Nuclear reactions)

LIPMANOV, E. M.

Regularized theory of the system of fields. Uch. zap. Volg.
gos. ped. inst. no.11:3-18 '59.   (MIRA 16:1)

(Field theory)   (Quantum field theory)
          (Quantum electrodynamics)

ACCESSION NR: AP4042409   S/0056/64/047/001/0360/0365

AUTHOR: Lipmanov, E. M.

TITLE: Violated isotopic symmetry of weak interactions

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 360-365

TOPIC TAGS: weak interaction regime, boson, isospin, fermion, elementary particle

ABSTRACT: It is shown that the formulation of violated isotopic symmetry of weak interactions between strongly-interacting particles and intermediate bosons, on the basis of the representation of the existence of off-diagonal masslike terms in the Lagrangian of the free intermediate fields, makes it possible to satisfy in a natural manner the selection rules $\Delta S < 2$ and $\Delta|T| = 1/2$ in non-lepton weak processes. In the resultant model of weak interaction of elementary particles, this isotopic symmetry is violated only by the terms

1/3

ACCESSION NR: AP4042409

which have the form of the "off-diagonal mass" of the intermediate
bosons. A natural consequence of the model is the violation of
the universality of the four-fermion interaction with change of
strangeness. The total number of isotopic states of intermediate
field in this model is equal to eight, and this is apparently the
minimum number of intermediate bosons compatible with isotopic sym-
metry and with the selection rules indicated above. Some of the
remaining difficulties of the field theory of weak interactions
with intermediate vector bosons, which still remain in this model,
are pointed out. "I am sincerely grateful to L. B. Okun' for a
discussion of the work and valuable remarks, and also to V. M.
Shekhter and A. A. Komar for interest in the work." Orig. art.
has: 22 formulas.

ASSOCIATION: Volgograndskiy gosudarstvenny*y pedagogicheskiy insti-
tut. (Volgograd State Pedagogical Institute)

2/3

ACCESSION NR: AP4042409

SUBMITTED: 15Feb64

SUB CODE: NP   NR REF SOV: 005

ENCL: 00

OTHER: 007

3/3

LIPMANOV, E.M.

On the possible existence of heavy charged leptons. Zhur. eksp.
i teor. fiz. 46 no.5:1917-1918 My '64.   (MIRA 17:6)

1. Volgogradskiy pedagogicheskiy institut.

LIFMANOV, E.M.

Disturbed isotopic symmetry of weak interactions. Zhur. eksp. (MIRA 17:9)
i teor. fiz. 47 no.1:360-365 Jl '64.

1. Volgogradskiy gosudarstvennyy pedagogicheskiy institut.

L 43745-65   EWT(m)/T/EWA(m)-2
ACCESSION NR: AP5006529   S/0056/65/048/002/0750/0752

AUTHOR: Lipmanov, E. M.

TITLE: Concerning possible disruption of CP-invariance and neutral lepton currents
in weak interactions

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965,
750-752

TOPIC TAGS: lepton current, CP-invariance, CP-invariance disruption

ABSTRACT: The purpose of the article is to indicate the possibility of disruption
of CP-invariance and neutral lepton currents in weak interactions. It is proposed
that symmetrical neutral lepton currents are completely absent in CP-invariant
weak interactions, but form the combined even neutral current. Therefore these
currents can participate in weak interactions with disruption of CP-invariance. In
such a case it is possible to expect neutral lepton currents in CP-noninvariant
processes with variation of oddness, for example,

$$K^+ \rightarrow \pi^+ + e^+ + e^-, \quad K^+ \rightarrow \pi^+ + \mu^+ + \mu^-, \quad K^+ \rightarrow \pi^+ + \nu + \bar{\nu}.$$
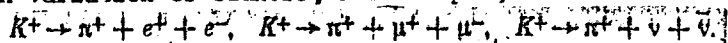
Card 1/2

ACCESSION NR: AP5006529

Electromagnetic contribution in disintegrations of $K^+ \to \pi^+ + \upsilon + \bar{\upsilon}$ is negligible, and their detection would be a singular indication of primary neutral lepton currents. "The author expresses gratitude to I. S. Satsunkevich for discussion." Orig. art. has: 3 formulas.

ASSOCIATION: Volgogradskiy pedagogicheskiy institut (Volgograd Pedagogical Institute)

SUBMITTED: 11Oct64	ENCL: 00	SUB CODE: NP
NO REF SOV: 003	OTHER: 006	

Card 2/2

L 6359-66   EWT(m)/T/EWT(m)-2

ACC NR: AP5026093   SOURCE CODE: UR/0386/65/002/005/0201/0205

AUTHOR: Lipmanov, E. M.

ORG: Volgograd Pedagogical Institute im. A. S. Serafimovich (Volgogradskiy pedago-
gicheskiy institut)

TITLE: Parity nonconservation effects induced by weak interactions in nuclear and
electromagnetic forces

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu
(Prilozheniye), v. 2, no. 5, 1965, 201-205

TOPIC TAGS: parity principle, weak nuclear interaction, nuclear force, boson, selec-
tion rule

ABSTRACT: The author calls attention to several characteristic predictions with
respect to parity nonconservation effects in nuclear and electromagnetic forces which
result from generalization of a model proposed by him earlier (ZhETF v. 47, 360, 1964),
and which it would be desirable to verify experimentally. In this model, in which
there is minimum violation of isotopic symmetry of hadron weak interactions, the
parity nonconserving nuclear interactions have exact isotopic invariance and in this
respect do not differ from ordinary forces. It is shown from an analysis of "prelim-
inary" isotopical- and CP-invariant Lagrangian of semi-weak interactions and from a
consideration of the effect of boson mixing that the unified model of broken isotopic
symmetry of weak interactions predicts definite correlations of the parity nonconser-

Card 1/2

L 6359-66

ACC NR: AP5026093

vation effects in nuclear and electromagnetic interactions. In particular, if the magnitude of the electromagnetic parity nonconservation effects differs appreciably from the estimated electromagnetic parity-nonconservation effects, then transitions with $|\Delta \vec{T}| = 0$ and 1, and possibly also $|\Delta \vec{T}| = 2$, should be comparable in parity non-conserving nuclear forces, and the absence in the latter of transitions with $|\Delta \vec{T}| = 1$ and 2 calls for the presence of parity nonconserving electromagnetic effects of the electromagnetic parity-nonconservation effects. The author concludes that it is de-sirable to formulate experiments for the observation of parity nonconservation effects in electromagnetic phenomena, such as e-p scattering, mixing of levels of different parity in the hydrogen atom, etc. Such research is desirable in spite of the lack of interactions between neutrino paris and nucleons. Particularly promising are investi-gations at large momentum transfers. Orig. art. has: 4 formulas.

SUB CODE: NP   SUBM DATE: 24Jun65/   ORIG REF: 005/   OTH REF: 009

B.V.K

Card 2/2

L 36127-66   EWT(m)/T

ACC NR: AP6018810   SOURCE CODE: UR/0056/66/050/005/1309/1321

AUTHOR: Lipmanov, E. M.

ORG: Volgograd Pedagogical Institute (Volgogradskiy pedagogicheskiy institut)

TITLE: Model for broken isotopic symmetry in an unified electromagnetic-weak hadron interaction

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1309-1321

TOPIC TAGS: electromagnetic interaction, photon, boson, parity principle, perturbation theory, isotopic symmetry, hadron, hadron interaction

ABSTRACT: The possibility has been studied for constructing a model of a unified electromagnetic-weak hadron interaction possessing broken isotopic symmetry. Vanishing of the photon mass and conservation of parity in electromagnetism are a consequence of violation of the primary isotopically unified symmetry and CP invariant interaction due to mixing of vector bosons from different isotopic multiplets. The empirical selection rules appear for weak hadron interactions and their minimum electromagnetic interaction as specific manifestations of violated symmetry at low energies. An interesting effect of restora-

Card 1/2

L 36127-66

ACC NR: AP6018810   3

tion of the violated symmetry has been discussed at high 4-pulse
transmissions obtained in the e^2 approximation of the perturbation
theory. The author thanks M. V. Terent'yev and L. B. Okun' for their
valuable discussions and Ya. B. Zel'dovich for his interest to the
study. Orig. art. has: 37 formulas. [Based on author's abstract]
                                                                  [NT]

SUB CODE: 20/   SUBM DATE: 17Nov65/   ORIG REF: 010/   OTH REF: 010

Card 2/2 ppv

LIPMANOVICH , A.S., Cand Med Sci—(diss) "Dynamics of neurosyphilis according to clinical and autopsies data." Simferopol', 1958. 16 pp with graphs (Crimean State Led Inst im I.V. Stalin), 300 copies (KL,30-58, 132)

-/47-

LIPMANOVICH, A.S.

Dynamics of mortality from neurosyphilis based on autopsy data for
24 years (1933-1956). Vest. derm. i ven. 32 no.6:54058 N-D '58.
                                        (MIRA 12:1)
1. Iz 3-go kozhno-venerologicheskogo dispansera Moskva (glavnyy vrach
B. N. Vernikov).
        (NEUROSYPHILIS, statist.
            mortal., autopsy data (Rus))

STEPANOVICH, A.A., kand.med.nauk

Visceral syphilis according to autopsy data for the past 24 years. Vest.derm.i ven.   no.1:42-46 '62.   (MIRA 15:1)

1. Iz polikliniki imeni Dzerzhinskogo (glavnyy vrach - zasluzhennyy vrach RSFSR I.G. Karakozov).
                              (SYPHILIS)

LIPMANOVICH, A.S., kand.mod.nauk

Injury of the peripheral nervous system in diabetes mellitus
(diabetic polyneuritis). Sbor.nauch.-prak.rab.Poliklin.im.
F.E.Dzerzh. no.2:105-111 '61.   (MIRA 16:4)
                   (NEURITIS)   (DIABETES)

LIPMANOVICH, A.S., kand.med.nauk; NIKHAMKIN, A.B.

Some problems in the course of neurosphilis. Sbor.nauch.-prak.
rab.Poliklin.im.F.E.Dzerzh. no.2:112-117 '61.   (MIRA 16:4)
(NERVOUS SYSTEM—SYPHILIS)

LIPMANOVICH, S. G.

"Magaloblastic Erythropoiesis," Klin. Med.,

26, No. 1, 1948. Cand. of Med. Sci., Physical

Therapy Clinic of the Second Moscow Med.

Inst. im. I. V. Stalin, -c1948-.

LIHACHEVA, S.A.(Leningrad, P-101, Kirovskiy prospekt, 26/28, kv.177);
SEMENOVA, I.I. (Leningrad, D-104, ul. Chekhova, d.17, kv12)

Treatment of malignant tumors of the adnexa uteri. Vop. onk. 10
no.5:100-102 '64.   (MIRA 18:8)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. Zasluzhennyy
deyatel' nauki I.I.Yakovleva) 1-go Ieningradskogo meditsinskogo
instituta imeni akademika Pavlova (rektor - dotsent A.I.Ivanov).

LIPMANOVICH, S. G.

"Some Data on the Determination of the Fetal

Presentation", Akueher i Ginkol, No. 1, 1949.

First Obstet Gynecological Clinic, Second Moscow

Med. Inst., im. I. V. Stalin. -c1949-.

VARSHAVSKAYA, F.E., KAZANSKAYA, N.I., LIPMANOVICH, S.G.

Course and outcome of abnormal labor [With summary in English].
Akush. i gin. 34 no.2:40-44 Mr-Ap '58   (MIRA 11:5)

1. Iz kafedty akusherstva i ginekologii (zav. - prof. S. G.
Yakovlev) I Leningradskogo meditsinskogo instituta imeni akad.
I. P. Pavlova.
          (LABOR, compl.
               abnorm. labor, etiol. and course (Rus)

[illegible], [illegible]
[illegible]
[illegible]
zasluzhennyy deyatel' nauki [illegible], prof.; KOMANOVSKIY, N.N.,
kand. med. nauk; TUMANOVA, Ye.S., prof.; YAKOVLEV, I.I.,
zasluzhennyy deyatel' nauki RSFSR, prof.; LANKOVITS, A.V., prof.,
nauchnyy red.;PERSIANINOV, L.S., prof., otv. red.; BEKKER, S.M.,
prof., red.; BELOSHAPKO, P.A., prof., red. [deceased]; ZHMAKIN,
K.N., prof., red.; ZHORDANIA, I.F., prof., red.; LEBEDEV, A.A.,
prof., red.; MANENKOV, P.V., prof., red.; STEPANOV, L.G., kand.
med. nauk, red.; SYROVATKO, F.A., prof., red.; FIGURNOV, K.M.,
prof., red.; PORAY-KOSHITS, K.V., red.; LANKOVITS, A.V., red.;
SENCHILO, K.K., tekhn. red.

[Multivolume manual on obstetrics and gynecology] Mnogotomnoe
rukovodstvo po akusherstvu i ginekologii. Moskva, Gos.izd-vo
med. lit-ry. Vol.6. 1961. 679 p.   (MIRA 15:4)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for
Persianinov, Beloshapko, Figurnov).
    (OBSTETRICS—SURGERY)   (GYNECOLOGY, OPERATIVE)

ROMANOVSKIY, R.M.; KAZANSKAYA, M.V.; LIPMANOVICH, S.G.

Outcome of labor complicated by anomalies in its intensity for the mother and fetus. Vop. okh. mat. i det. 6 no.10:58-63 O '61.
(MIRA 14:11)

1. Iz kafedry akusherstva ginekologii (zav. - prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta imeni akademika I.P.Pavlova (dir. A.I.Ivanov).
(LABOR, COMPLICATED)

LIPMANOVITSJ, A. S.

1286

Moskow Tuberculous neuritis and neuralgia in the shoulder region Probl. Tuberk. (Moscow)
1950, 3 (67-68)
The clinical features are discussed in connection with 53 cases (15 of neuritis of the
brachial plexus, 22 of plexalgia and 16 without any marked neurological changes). In 6
cases the disturbances developed 10 days after croupous pneumonia. The plexalgias were
generally on the same side as the active tb process. The ulnar type generally predominated.
Brachialgias or paraethesias (or even paresis) sometimes occur after a. p. t. The manifes-
tations may last from a few days (usually) to several months.

Van der Molen - Terwolde

Exc. Medica Medica, Section, Vol. 5, No. 4, April 1952

UL'YANOV, G. (g.Gorodets, Gor'kovskoy oblasti); LIPNER, S. (Kherson);
     BARANOVA, M.; KHANSUVAROVA, F.; BARANOVA, M.; KRUGLOVA, O.
     (Murmansk); KUPTSOV, F. (Moskva); TISHCHENKO, A., Geroy
     Sotsialisticheskogo Truda

Kindergartens and nurseries should be placed under the control
of women's committees. Rabotnitsa   40   no.6:14-15   Je '62.
                                                  (MIRA 16:3)

1. Predsedatel' zhenskogo soveta stroitel'stva Krasnoyarskoy
gidroelekticheskoy stantsii (for Khansuvarova). 2. Predsedatel'
zhenskogo soveta tralovogo flota, Murmansk (for Kruglova).
3. Predsedatel' pravleniya detskogo sada zhilishchno-
ekspluatatsionnoy kontory No.10 Kiyevskogo rayona Moskvy (for
Kuptsov). 4. Predsedatel' zhenskogo soveta Novo-Kramatorskogo
mashinostroitel'nogo zavoda (for Tishchenko).
                    (Kindergartens) (Nurseries)

LIPNER, S.V.

Kherson center for young technicians. Politekh.obuch. no.11:
90-93 N '58.   (MIRA 11:12)
            (Kherson--Technical societies)

631. PATHOGENICITY OF L FORMS AND OF PLEUROPNEUMONIA-LIKE
ORGANISMS (L FORMS AND PPLO). Chorobotwórczość l-form bakterii i
organizmów typu pleuropneumonii (otpp). - Lipnicki B. Zakł. Mikrobiol.
AM Wrocław. - POST. HIG. MED. DOSWIAD.(Warsz.) 1956, 10/3 (271-297)
Tables 6 Illus. 5

Results of investigations about PPLO isolated from the vagina of sick and healthy
women. It is stated that the PPLO cannot be considered as the pathogenic factor
because no biological or serological difference has been recorded between the
strains isolated from sick and healthy persons. The same is true for the Reiter
syndrome. Data concerning isolation of PPLO in cases of urethritis non-gonorrhoi-
ca, endocarditis and arthritis have been discussed. The question of pathogenicity
of L and PPLO forms still remains open and does not allow final conclusions to be
drawn.

LIPNICKI, Bogdan

Role of L form of bacteria in Reiter's disease. Polskie arch.
med. wewn. 27 no.3:399-404 1957.

1. Z Instytutu Immunologii i Terapii Doswiadczalnej PAN im.
Ludwika Hirszfelda we Wroclawiu. Dyrektor: prof. S. Slopek.
Adres autora: Wroclaw, ul. Chalubinskiego 4. Instytut Immunologii
i Terapii Doswiadczalnej PAN im. Ludwika Hirszfelda.
        (REITER'S DISEASE, microbiology,
            L form of bact. (Pol))

BACTERIA MEDICA Ser. II Vol. 12/B Med. Mikros. Aug 59

4141 L. FORMS OF SALMONELLA TYPHI ISOLATED IN TYPHOID PATIENTS
The L-forms of Salmonella typhi and Salmonella paratyphi B isolated in chloramphenicol...
Liznicki, H. Zakl. Mikrobiol. Lek. AM. Wrocław POSTEPY HIG. MED.
DOSW. 1958, 12/2 (113-159) Tables 18 Illus. 5

L-forms of S. typhi and S. paratyphi B were isolated in blood cultures in 22 out of
38 chloramphenicol-treated patients. The L-forms were characterized by the ab-
sence of H-antigens.   Adamski - Poznań (IV, 50)

LIPNICKI, Bogdan

Studies on the serum γ- globulin level in patients with bacillary
dysentery. Arch.immun.ter.dosw. 8 no.4:739-746 '60.

1. Wojskowe Laboratorium Sanitarne we Wroclawiu, Zaklad Mikro-
biologii Lekarskiej Akademii Medyeznej we Wroclawiu.

(DYSENTERY BACILLARY immunol)
(GAMMA GLOBULIN)

LIPNICKI, Bogdan

Statistical analysis of the sensitivity of some types of microorganisms
to antibiotics. Arch. immun. ther. ex. 10 no.1:171-185 '62.

1. Wojskowe Laboratorium Sanitarno-Higieniczne we Wroclawiu.
(ANTIBIOTICS pharmacol)

SKRZYPCZAK, Kazimierz E.; LIPNICKI, Bogdan B.

Attempted treatment of inflammatory diseases of the eye with typhoid endotoxin. Klin. oczna 33 no.3/4:339-344 '63.

1. Z Oddzialu Ocznego Szpitala Wojskowego i Laboratorium Sanitarnego we Wroclawiu.
(TYPHOID-PARATYPHOID VACCINES)
(VACCINE THERAPY)
(ENDOTOXINS)   (OPHTHALMOLOGY)

LIPNICKI, Bogdan

The antifungal properties of hexylresorcinol. Arch. immun.
ther. exp. 11 no.3:417-422 '63.

1. Sanitary-Hygienic Laboratory, Wroclaw.
        (HEXYLRESORCINOL)   (FUNGICIDES)
        (DERMATOMICOSIS)   (TRICHOPHYTON)
        (EPIDERMOPHYTON)   (CANDIDA)
                (HISTOPLASMA)

CICHOCKI, Waclaw; LIPNICKI, Bogdan

An epidemic of diarrhea in newborn infants. Pediat. Pol. 38 no.12: 1065-1068 D'63

1. Z Oddzialu Noworodkow 4 Wojskowego Szpitala Okregowego we Wroclawiu i z Wojskowego Laboratorium Sanitarno-Higienicznego we Wroclawiu.

*

LIENICKI, Bogter; REIC , Julius

On the use of immunofluorescent diagnosis infectious diseases.
Postepy hig. med. dosw. 18 no.4:663-680 J -Ag '64

1. 7 Pracowni Mikrobiologii Wojskowego Laboratorium Sanitarno-
Higienicznego we Wroclawiu. (Kierownik Pracownia dr. B.Liznicki).

LIPH... , P. ...

..ication of fluorescent antibodies in studies on the
structure of eyeball. Postepy big. med. dosw. 19 no.3:
...-467 My-Je '65.

1. Z Kliniki Ocznej AM we Wroclawiu (Kierownik: prof. dr.
W.J. Kapuscinski).

LIPNICKI, J.

Problems in control of disease in cattle in Poland. Med.
wet. 6 no.5:274-280 May 1950.   (CLML 20:1)

1. Warsaw.

LIPNICKI, J.

Diseases of the group of "Rocky Mountain spotted fever". Med. wet.
7 no.1:15 Jan 51.   (CIML 20:7)

1. Warsaw.

COUNTRY   : POLAND
CATEGORY   : Diseases of Farm Animals. Diseases Caused by
                 Viruses and Rickettsiae
ABS. JOUR.   : RZhBiol., No.13, 1958, No. 59766

AUTHOR   : Miorioki, J.
INST.   : -
TITLE   : The First Hidus of Q Fever in Poland

ORIG. PUB.   : Med. weteryn., 1957, 13, No 5, 263-268

ABSTRACT   : No abstract

                         E N D

    #1016

Card: 1/1

─────────────────────── R - 27 ──────────────────────

LIPNICKI, Janusz
SURNAME (in caps); Given Names

Country: Poland

Academic Degrees:

Affiliation:

Source: Warsaw, Medycyna Weterynaryjna, No 4, April 1961, pp 212-220

Data: "Control of Tuberculosis of Cattle in Various Countries and in Poland."

LIPNICKIJ, J.F.

> Treatment of seborrhea with novocaine. Przegl. derm. 49 no.6:505-508 '62.
>
> 1. Z Bialoruskiego Skorno-Wenerycznego Naukowo-badawczego Instytutu Dyrektor: akademik A.J. Prokopczuk.
>   (SEBORRHEA)   (PROCAINE)

LIPNIK, A. A.

AUTHOR: Lipnik, A. A.   57-12-11/19

TITLE: Exoiton Decay on Interaction with Phonons in Atomic Semi-
            conductors (Raspad eksitona na fononakh v atomnykh
            poluprovodnikakh).

ABSTRACT: In this paper the probability of an exciton decay on an
            interaction with sound oscillations is computed according to
            the theory of quantum transitions, (using an approximated
            effective mass). For the energy operator of the interaction
            with the phonones the deformation potential of Bardin and
            Shockley (Shokli) was employed, identical to reference 1:
            $H_T = C_1 \operatorname{div} U(r_1) - C_2 \operatorname{div} U(r_2)$, C_1 and C_2 denoting constants
            and $U(r)$ the displacement of a point of the continuum,
            which is considered to have the shape of an elastic harmonic
            wave. The wave function of the initial state, that is the
            product of the function waves of the exciton in its normal
            state multiplied by the wave functions of the harmonic
            oscillator, and then the wave function of the final state is
Card 1/3   given. Plane waves are assumed, for the Coulomb interaction

Exciton Decay on Interaction with Phonons in Atomic Semi-   57-12-11/19
conductors

is weak in an exciton and only little distorts the plane
waves of the particles flying in different directions.
The matrix element of the transition in the case of a phonon
absorption is written down and the corresponding equation
of probability (PAbsorption) is obtained. The complete
probability of decay (with absorption) is expressed as a
function of $\xi/\Delta E$) and (m_2/m_1). It is known on the basis
of the conservation theorem of energy and momentum, that
the exciton as such is unable to decay, although it possesses
sufficient kinetic energy. For this process a phonon is
necessary, which ensures the satisfaction of the conservation
theorem of momentum, but does not add energy to the kinetic
energy of the exciton which is expended at decay. Using such
an approximation, it is shown, that the probability of a
decay with the omission of phonons is exactly equal to the
probability of a decay with absorption. From the equations
given here it appears, that the decay consists of three
stages: 1) The first part is proportional to C_1^2 (corresponding

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Exciton Decay on Interaction with Phonons in Atomic Semi-   57-12-11/19
conductors

to the interaction of the phonon with the electron.
2) The second part is proportional to C_2^2 (interaction with
the hole) and 3) the third part is proportional to $2C_1C_2$
(caused by the Coulomb interaction of the electron
with the hole). After the integration has been completed,
the equation for the probability of decay P_{decay} is obtained.

Finally two special cases are investigated, that is the case
of $\xi \to 1$ and of $\xi \to \infty$.
m_1 and m_2 denote the effective masses of the electron and
the hole respectively. The diagrams for the curves of P_{decay}
over ξ at various (C_1/C_2) and σ^2 are to be given in a
more detailed paper

$$\sigma^2 \text{ denotes } \frac{m_2}{m_1} \text{ and } \xi = \frac{\xi}{\Delta E}$$

There is 1 reference., 1 of which is Slavic.

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LIPNIK, A.A.

Decay of excitons on phonons in atomic semiconductors. Fiz.tver.
tela 1 no.5:726-733 My '59.   (MIRA 12:4)

1. Chernovitskiy otdel narodnogo obrazovaniya.
                (Semiconductors)   (Excitons)

S/181/60/002/009/038/047/XX
B004/B070

AUTHOR: Lipnik, A. A.

TITLE: Binding and Decay of the Mott Exciton Under Consideration
               of the Exact Coulomb Functions. I

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2044-2047

TEXT: The probabilities of decay and binding, P_d and P_b, of a Mott

exciton at an acoustic phonon were calculated by the same author in
Refs. 1 and 2, where a plane wave approximation was made. The purpose of
the present work was to check these results while considering the exact
Coulomb functions. The formulations of Ref. 1 have been used.
[Abstracter's Note: It is not possible to understand the equations
derived in this paper without a knowledge of the meaning of the symbols
which are explained in Ref. 1 but not reproduced here.] The estimated
values of the following quantities are given in two tables: steady
concentration n_e of the electrons, steady concentration n_h of the holes,

$\overline{P}_b$, average lifetime $\overline{\tau}_e$ of electrons, the number N_b of excitons being

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Binding and Decay of the Mott Exciton Under   S/181/60/002/009/C38/047/XX
Consideration of the Exact Coulomb Functions.I   B004/B070

bound and the number N_d of decaying excitons, average lifetime of the excitons, and the value of σ_{eff}. The following parameters hold for Table 1: $\rho = 5 g/cm^3$, $v_0 = 5 \cdot 10^5$ cm/sec; $m_1 \approx 0.25 m_0$; $m_2 \approx 0.12 m_0$; $C_1 \sim C_2 \sim 2.5$ ev; $\Delta E = 0.0025$ ev. The following hold for Table 2: $\rho = 5$ g/cm; $v_0 = 3 \cdot 10^5$ cm/sec; $m_1 = m_2 = m_0$; $C_1 \sim C_2 \sim 7$ ev; $\Delta E \doteq 0.15$ ev.

Table 1

	T, °K						
	1°	7°	3°	5°	7°	11°	15°
$n_i = n_h$	10^8	—	$2 \cdot 10^{12}$	$0.5 \cdot 10^{14}$	$0.4 \cdot 10^{14}$	$0.7 \cdot 10^{14}$	$0.9 \cdot 10^{14}$
p_b	$2.2 \cdot 10^{-7}$	—	$1.3 \cdot 10^{-7}$	10^{-7}	—	$0.6 \cdot 10^{-7}$	—
	$5 \cdot 10^{-2}$	—	$4 \cdot 10^{-6}$	$5 \cdot 10^{-7}$	—	$2 \cdot 10^{-7}$	—
$N_b = N_d$	$2 \cdot 10^8$	—	$0.5 \cdot 10^{10}$	$3.6 \cdot 10^{10}$	—	$2.4 \cdot 10^{20}$	—
	$0.5 \cdot 10^6$	$3 \cdot 10^{-4}$	$3 \cdot 10^{-4}$	$3 \cdot 10^{-6}$	$5 \cdot 10^{-7}$	$5 \cdot 10^{-8}$	$2 \cdot 10^{-8}$
	10^{-10}	—	—	—	—	—	—

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Binding and Decay of the Mott Exciton Under   S/181/60/002/009/038/047/XX
Consideration of the Exact Coulomb Functions.I   B004/B070

Table 2

	T, °K		
	30°	50°	300°
$2N_{K_d} + 1$	1.3	3.4	11
$n_e = n_h$	$4 \cdot 10^5$	10^{12}	10^{14}
p_b	$2 \cdot 10^{-6}$	$3 \cdot 10^{-6}$	$6 \cdot 10^{-6}$
t_b, сек. sec	10^3	$3 \cdot 10^{-7}$	$2 \cdot 10^{-9}$
t_d, сек. sec	$2 \cdot 10^{12}$	$3 \cdot 10^{-5}$	$2 \cdot 10^{-11}$
σ_{eq}, см³ cm³	—	$2 \cdot 10^{-13}$	

Professor A. G. Samoylovich, M. I. Klinger, and L. L. Korenblit are
thanked for discussions. There are 2 figures, 2 tables, and 4 references:
3 Soviet and 1 US.

ASSOCIATION: Chernovitskiy Gosudarstvennyy universitet (Chernovtsy State
              University)

SUBMITTED: February 12, 1960

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LIPNIK, A.A.

Bounding and decay of Mott's exciton on phonons and impurity
centers. Fiz. tver. tela 3 no.8:2322-2330 Ag '61.
(MIRA 14:8)

1. Chernovitskiy gosudarstvennyy universitet.
(Excitons—Decay)
(Phonons)

ACCESSION NR: AP4028431   S/0181/64/006/004/1068/1074

AUTHOR: Lipnik, A. A.

TITLE: Some peculiarities in the binding processes of the pair in excitons and the decay of exciton to phonons. The effect of these processes on the behavior of nonequilibrium carriers

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1068-1074

TOPIC TAGS: exciton, phonon, nonequilibrium carrier, exciton decay, Bose Einstein distribution, Maxwell distribution, Mott exciton

ABSTRACT: The author states that the role of excited states must be much smaller in the binding of exciton pairs than in the capture of current carriers by impurity centers. To test this view, he has computed the probability of binding the exciton pair in the 2s state and of the transition of a Mott exciton from the 2s to the 1s state (to a phonon). This first, expressed in lifetime, depends weakly on the temperature, and at 4K is $\sim 2 \cdot 10^{-9}$ sec in Ge, $\sim 10^{-10}$ in Si, and $\sim 2 \cdot 10^{-12}$ in Cu_2O. The dissociation time of the 2s exciton at 4K is $\sim 10^{-8}$ sec in Ge, $\sim 2 \cdot 10^{-8}$ in Si, and

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ACCESSION NR: AP4028431

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OTHER: 011

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ACCESSION NR: AP4028432   S/0181/64/006/004/1075/1077

AUTHOR: Lipnik, A. A.

TITLE: The capture of Mott excitons by current carriers and the effect of zero and negative mobility

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1075-1077

TOPIC TAGS: exciton capture, Mott exciton, current carrier, mobility, drift mobility, impurity center, dissociation probability

ABSTRACT: The author states that a similar effect to the decrease in drift mobility because of carrier capture by impurity centers must take place when electrons are "trapped" by holes (or vice versa), i.e., when electrons and holes are bound together and are then freed during dissociation. He considers the temperature range where dissociation probability is much greater than annihilation probability. In this range the excitons are bound and freed many times more frequently than annihilation occurs. It becomes apparent that as the temperature declines and the hole concentration increases the effective mobility of electrons may become zero or even acquire a negative value. The author considers the effect of exciton capture

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ACCESSION NR: AP4028432

by holes on the mobility of electrons. The lifetime of free electrons is reduced by dissociation at impurity centers. "In conclusion, I express my deep thanks to Professors A. G. Samoylovich, S. G. Kalashnikov, and V. L. Bonch-Bruyevich, to E. I. Rashba, Doctor of the physical and mathematical sciences, and also to M. T. Sheynkman, S. A. Moskalenko, and V. A. Kovarskiy for discussing the work and for valuable suggestions." Orig. art. has: 9 formulas.

ASSOCIATION: L'vovskiy politekhnicheskiy institut (Lvov Polytechnic Institute)

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L 10774-65   EWG(j)/EWT(1)/EWG(k)/EWT(m)/EPF(c)/EPR/T/EWP(b)   Pr-4/Ps-4/Pz-6
IJP(c)/ESD(gs)/AEDC(a)/ESD(t) —AT/JD
ACCESSION NR: AP4044947   S/0181/64/006/009/2737/2744

AUTHOR: Lipnik, A. A.   B

TITLE: Method for investigation of excitons, based on phototransi-
tions between exciton series

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2737-2744

TOPIC TAGS: exciton, recombination, laser action, phototransition,
cuprous oxide, photoionization

ABSTRACT: The absorption of light by excitons is currently an im-
portant subject because laser action may be obtained more easily by
the use of recombination at exciton states. The present paper de-
scribes a method for investigating excitons based on the interseries
transitions (IT). First, the experimental conditions for the obser-
vation of IT are established. For Cu_2O, illuminations of 3--30

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