

MATIKASHVILI, V.I.

Principles of forest management in resort areas. Trudy Inst. lesa  
AN Gruz. SSR 8:57-72 '58. (MIRA 12:10)  
(Georgia--Forest management)

ABSTRACT : Forestry. General Problems.

ABS. JOUR : Lesn. biologiya, No. 5, 1959, No. 20108

AUTHOR : Matikashvili, V.; Mgeladze, M.

INSTIT. : Institute of Forests, Acad. of Sciences Geor-

TITLE : Forest Experiment Station at Akhaldaba and  
Its Work (Georgia)

ORIG. PUB: Tr. In-ta lesa AN GruzSSR, 1957, 7, 323-327

NOTE : No abstract

\*gian SSR

ORIG: 1/1

VASIL'YEV, A.V.; GULISASHVILI, V.Z., akademik; DOLUKHANOV, A.G.; MANDZHA-  
VIDZE, D.V.; MATIKASHVILI, Y.I.; MAKHATADZE, L.B.; MIRZASHVILI,  
V.I.; ODISHARIYA, K.N.; PRILIPKO, L.I.; HUKHADZE, P.Ye.; SAKHOKIA,  
M.F.; SKHIYERELI, V.S.; AVALLANI, N.M., red.izd-va; TODUA, A.R.,  
tekhred.

[Dendroflora of the Caucasus; wild and cultivated trees and shrubs]  
Dendroflora Kavkaza; dikorastushchie i kul'turnye derev'ia i kustar-  
niki. Tbilisi. Vol.1. [Gymnospermae. Chlamydospermae. Angio-  
spermae - Monocotyledonae] Gymnospermae - golosemennye. Chlamydo-  
spermae - pokrovosemennye. Angiospermae - (Monocotyledoneae) - pokry-  
tosennye (odnodol'nye).1959. 406 p. (MIRA 13:6)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. Institut lesa. 2. AN  
Gruzinskoy SSR (for Gulisashvili).  
(Caucasus--Trees) (Caucasus--Shrubs)

VASIL'YEV, A.V.; GULISASHVILI, V.Z., akademik; IMITRIYEVA, A.A.;  
DOLUKHANOV, A.G.; MATIKASHVILI, V.I.; MAKHATADZE, L.B.;  
MULKIDZHANYAN, Ya.I.; PRILIPKO, L.I.; SAKHOKIA, M.F.;  
MIRZASHVILI, V.I., red.; AVALIANI, N.M., red. izd-va;  
TODUA, A.R., tekhn. red.

[Trees of the Caucasus; wild and cultivated trees and shrubs]  
Dendroflora Kavkaza; dikorastushchie i kul'turnye derev'ia i  
kustarniki. Tbilisi, Izd-vo Akad. nauk Gruzinskoi SSR.  
Vol.2. [Angiosperms. Dicotyledons] Angiospermae - Pokryto-  
semennye. Dicotyledoneae. Dvudol'nye. 1961. 334 p.  
(MIRA 15:2)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. Institut lesa.
2. Akademiya nauk Gruzinskoy SSR, Tiflis (for Gulisashvili).  
(Caucasus--Angiosperms) (Caucasus--Dicotyledons)

MATIKASHVILI, V.I.

Bornbean forests of Georgia. Trudy Inst. lesa AN Gruz. SSR 12:  
19-42 '63. (MIRA 18:2)

USSR / Plant Physiology. Mineral Nutrition.

I-2

Abstr Jour : Ref Zhur - Biol., No 22, 1958, No 99932

Author : Matilkin, G. B.; Boyko, L. I., and Boyko, L. I. (see)  
Inst : Rostov-on-the-Don University  
Title : Chlorine Content in Plants Adapting to Salination of  
Soil.

Orig Pub : Uch. Zap. Rostovsk. n/D Un-ty, 28, 79-84, 1957

Abstract : Vegetative experiments (double repetition) were conducted with barley, millet and tomato on artificially salinated soil. The greatest content of Cl was observed in the tissues of the plants vegetating from the beginning on salinated soil, as distinguished from the plants vegetating on that soil since their 2nd or 3rd year of growth. In all the tested plants, the maximum content of Cl was observed in the vegetative organs (leaves, stalk, roots), and the minimum, in the generative organs (ears, panicles). The leaves

Card 1/2

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USSR / Plant Physiology. Mineral Nutrition.

I-2

Abstr Jour : Ref Zhur Biol., No 22, 1956, No 99932

fulfilled a barricading role with respect to the salts, by hindering their accumulation in the generative organs. The tomato accumulated in its tissues more Cl than did the oats and millet, which is related to the formation of its succulent structure. In the plants adapting to soil salination, the ratio of free to bound Cl changed in favor of the latter kind of Cl. Bibliography, 16 titles. ---  
O. P. Medvedova.

Card 2/2

S/081/62/000/018/053/059  
B168/B186

AUTHORS: Mirschner, Ludvik, Matlik, Otakar

TITLE: A method of producing modified aminoplast

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 18, 1962, 527, abstract  
18P245 (Czechoslovak patent 97493, December 15, 1960) ↓

TEXT: Collagen, treated with urea or thiourea, is modified with an aqueous solution or an emulsion of urea-formaldehyde (molar ratio 1 : 2) or melamine-formaldehyde (1 : 3) resins, using tanning agents for stabilization. 20 parts tannin chips, 10 parts urea and 70 parts water are processed at a pressure of 2 atm and are modified by the products of condensation at a ratio of 1 : 10 - 2 : 1. [Abstracter's note: Complete translation.]

Card 1/1



MATIN, N.Ye., gornyy inzh.; BYCHIN, A.S., gornyy inzh.

Using air spaces in ore breaking at the "Kiialykh-Uzen"  
Mine. Vzryv. delo no.54/11:383-386 '64. (MIRA 17:9)

1. Tuimskoye gornopromyshlennoye upravleniye.

SYROCHEV, V.M., inzh.; MATIN, N. Ye., inzh.

Eliminate the danger of gas poisoning during blasting operations. Bezop. truda v prom. 8 no.9:21-22 S '64 (MIRA 18:1)

1. Rudnik Kiyalykh-Uzen' Tuimskogo gornopromyshlennogo upravleniya.

SYROCHEV, V.M., inzh.; MATIN, N.Ye., inzh.; BYCHIN, A.S., inzh.

Making upraises from a hanging scaffold. Bezop. truda v prom. 3 no.  
10:23-24 0 '64. (MIRA 17:11)

1. Tuimskoye gornopromyshlennoye upravleniye.

L 63454-65 EPT(c)/EPA(s)-2/EWP(L)/EWA(c)/EWT(m)/EWT(S)/T/EWP(v)/EWP(t) IJP(c)  
JD/EM

ACCESSION NR: AB5017406

UR/0137/65/000/006/B013/B013

SOURCE: Ref. zh. Metallurgiya, Abs. 6B81

24  
B

AUTHOR: Matin, Ya. I.

TITLE: Low inertia OKB-3103 covered electric furnace with a hydrogen atmosphere

CITED SOURCE: Elektrotermiya. Nauchno-tekhn. sb., vyp. 40, 1964, 32-33

TOPIC TAGS: low inertia, electric furnace, covered furnace, hydrogen gas, copper, soldering, hermetic sealing/ OKB-3103 covered electric furnace, OKB-724A gas supplier

TRANSLATION: The Leningrad Central Fabrication Office for ultrasonic and high frequency apparatus has developed a low inertia covered electric furnace, type OKB-3103, for heating in a hydrogen atmosphere. The electric furnace is designed for soldering copper pieces which are difficult to solder. The soldering temperature is up to 880C. The design of the electric furnace is intended for its

temperature is up to 880C. The design of the electric furnace is intended for its incorporation with gas supplier OKB-724A with the aim of employing a less explo-

Card 1/2

L 63454-65

ACCESSION NR: AR5017406

sive protective atmosphere. The article describes in detail the basic units of the electric furnace: the stand (the stationary part of the electric furnace on which the article to be soldered is placed); the detachable cover which, hermetically sealed to the stand, forms the hermetic chamber of the electric furnace; the mechanism for raising the cover; systems for cooling and for feeding the gas. Orig. art. has: 2 figures. V. Pryanikova

SUB CODE: MM

ENCL: 00

*mb*  
Card 2/2

MATINCHENF . N.

More attention to automobiles operating in difficult climatic  
conditions. Avt.transp. 35 no.6:31 Je '57. (MIRA 10 7/  
(Automobiles--Cold weather operation)

MATINCHEV, B.

Diseases with the clinical picture of hemorrhagic nephros-  
nephritis in the Chiklik section of the Troian district.  
Suvrem. med., Sofia 7 no.10:27-33 1956.

1. Iz Okoliiskata bolnitsa - Troian (Gl. lekar: D. Popov).  
(EPIDEMIC HEMORRHAGIC FEVER, epidemiol.  
in Bulgaria)



MATINCHEV, B.

Case of acute hemolytic anemia. Suvrem. med., Sofia 8 no.11:134-136 1957.

1. Iz Pradskata bolnitsa - Stara Zagora (Gleven Lekar: St. Dragnev).  
(ANEMIA, HEMOLYTIC, case reports,  
(Bul))

MATINCKI, Dobrinka

From the Institute for the Promotion of the Organization of Work and Education of cadres in Economy of the People's Republic Serbia. Produktivnost 3 no.11:748-751 N '61.

MATINYAN, A. B.

Flax

Subtropical Flax. Nauka i zhizn' 19 No. 9, 1952.

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

**MATINYAN, A.B.**

Preliminary materials on the fruiting of exotic plants in the Batum Botanical Garden. Izv.AN Arm.SSR.Biol.i sel'khoz. nauki 6 no.2: 81-85 '53. (MLRA 9:8)

1. Batumskiy botanicheskiy sad, Botanicheskiy institut Akademii nauk Armyanskoy SSR.  
(Batum--Botanical gardens) (Acclimatization (Plants))

**MATINYAN, A.B.,** nauchnyy sotrudnik.

Boxtree and lignum vitae. Nauka i zhizn' 20 no.9:48 S '53. (MLBA 6:11)

1. Batumskiy botanicheskiy sad.

(Box) (Lignum vitae)

*MATINYAN, A. B.*

USSR/ Biology - Botanical gardens

Card 1/1 Pub. 26 - 7/36

Authors : Glonti, M. D., and Matinyan, A. B.

Title : The Batumi botanical garden

Periodical : Priroda 2, 54-60, Feb 1954

Abstract : Scientific data are given concerning the variety of tropical and semi-tropical plants growing in the botanical garden of Batumi at the Black Sea. One USSR reference (1950). Illustrations.

Institution : .....

Submitted : .....

MATINYAN, A.B.

Germinability and storage periods of seeds of exotic plants from the  
Batumi coastal region. Biul.Glav.bot. sada no.17:61-68 '54.

(MIRA 8:3)

1. Botanicheskiy sad Akademii nauk Gruzinskoy SSR.  
(Batumi--Germination) (Seeds--Storage)

KATINYAN, A.

USSR/Biology - Botany

Card 1/1 : Pub. 77 - 15/21

Authors : Matinyan, A.

Title : Interesting trees

Periodical : Nauka i zhizn' 21/9, page 37, Sep 1954

Abstract : An account is given of the acclimatization in subtropical parts of the Soviet Union of three species of trees taken respectively, from China, the Himalayas and Mediterranean countries. Illustration.

Institution : .....

Submitted : .....



GLONTI, M.D.; MATINYAN, A.B.

Batumi Botanical Garden. Priroda 43 no.2:54-60 P '54. (MLBA 7:3)  
(Batumi--Botanical gardens) (Botanical gardens--Batumi)

MATINYAN, Ashot Bagratovich; NERONOVA, M.D., redaktor; KONYASHINA, A.D.,  
tekhniceskiy redaktor.

[The cultivation of the magnolia in the U.S.S.R.] Kul'tura magnolievykh  
v SSSR. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1956. 43 p.

(MLRA 10:5)

(Magnolia)

MATINYAN, A.B.

Plants of the magnolia family in the Batum Botanical Garden.  
Biul. Glav. bot. sada no.24:3-11 '56. (MLRA 9:11)

1. Batumskiy botanicheskiy sad Akademii nauk Gruzinskoy SSR.  
(Batum--Magnolia)

MATINYAN, A.B.

How transportation after winter storage affects the germination of  
acorns. Izv. Bat. bot. sada no.8:212-215 '57. (MIRA 14:6)  
(Acorns)

USSR / Forestry. Forest Cultures.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29579.

Author : Matinyan, A. B.

Inst : Not given.

Title : Oaks, Acclimatized in the Batumi Botanical Garden.

(Duby, akklimatizirovaniye v Batumskom botanicheskom Sadu).

Orig Pub: Byul. Gl. botan. sada, 1957, No 27, 3-10.

Abstract: It is reported that foreign oaks have been acclimatized in the Batumi Botanical Garden. Descriptions are given of 20 deciduous and evergreen species of Asian, North American and Mediterranean origin. The saw oak, the burr, blue, laurel and bog oaks successfully bore fruit. Among the acclimatized oaks for

Card 1/2

USSR / Forestry. Forest Cultures.

K

Abs Jour: Rer Zhur-Biol., No 7, 1958, 29579.

Abstract: use along the shores of the Black Sea in the Caucasus the most suitable are the ostryy, blue, laurel, holm, saw, bog, cork and several other oaks. Suggestions are given for methods of acorn treatment, periods and agrotechnics of sowing.

Card 2/2

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AUTHOR: Matinyan, A.B. SOV/26-58-1-21/36

TITLE: Selection of the Tea Plant in the USSR (Selektsiya chaynogo rasteniya v SSSR)

PERIODICAL: Priroda, 1958, Nr 1, pp 104-108 (USSR)

ABSTRACT: In 1955, 64,000 hectares were cultivated with tea plants in Georgia, 6,500 in Azerbaydzhan and over 3,000 in Krasnodarskiy Kray. Maximum crops of tea leaves attain 9,403 kg per hectare. Seventy factories at present are engaged in tea processing. These enterprises have the best modern equipment. Tea leaves are harvested when the plants are 4 years old. This is a continuous process between May and October. The coarser leaves and shoots are taken for brick tea. The parts obtained during the spring clipping are used for the extraction of caffeine, the by-products being considered a valuable fertilizer. The oil of the seeds is used in soap manufacture. Both, the shrub-like Chinese and the tree-like Indian tea plants are cultivated, the latter having a longer vegetation period, while the Chinese shrub is more robust. The Chakvinskiy filial Vsesoyuznogo instituta chaya i subtropicheskikh kul'tur (Chakva Branch of the All-Union Institute of Tea and Subtropic Cultures) near Batumi is engaged

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Selection of the Tea Plant in the USSR

SOV/26-58-1-21/36

in cross-fertilization, hybridization and selection under Professor K.Ye. Bakhtadze. A rich collection of hybrids for cultivation in various Soviet districts has now been assembled. All new plants are subdivided into 3 groups: southern hybrids, winter-resistant hybrids of the large-leaf tea, and winter-resistant hybrids of the medium-leaf tea. Each group has its own biological characteristics. There are 4 photos.

ASSOCIATION: Batumskiy botanicheskiy sad (The Batumi Botanical Garden)

Card 2/2



MATINYAN, A.B.

Fruit-bearing exotic trees and shrubs at the Batum Botanical  
Garden. Izv.AN Arm.SSR.Biol. i sel'khoz.nauki 11 no.11:51-55  
N '58. (MIRA 11:12)

1. Batumskiy botanicheskiy sad AN GruzSSR.  
(Batum--Plant introduction)

MATINYAN, A.B.

Results of acclimatizing subtropical trees and shrubs in  
Batum. Biul.Glav.bot.sada no.32:7-10 '58. (MIRA 12:5)

1. Batumskiy botanicheskiy sad AN GruzSSR.  
(Batum--Tropical plants) (Trees) (Shrubs)

MATINYAN, A.B.; SAMKHARADZE, T.L.

Nut-bearing exotic plants in the Batum shore area. <sup>Biul. Glav.</sup>  
bot.sada no.35:13-21 '59. (MIRA 13:2)

1. Batumskiy botanicheskiy sad AN GruzSSR.  
(Batum--Nut trees) (Plant introduction)

KHKLADZE, V.S.; MATINYAN, A.B.

Experiment in treating seeds with trace elements before seeding.  
Biol. Glav.bot.sada no.36:103-104 '60. (MIRA 13.7)

1. Botanicheskiy sad Akademii nauk Gruzinskoy SSSR, Batumi.  
(Germination) (Trace elements)

TSITSVIDZE, A.T.; MATINYAN, A.B.

Rare exotic trees and shrubs of the Batum shore area. Fl. Glav.  
bot. sada no. 38:14-21 '60. (MIRA 14:5)

1. Botanicheskiy sad AN Gruzinskoy SSR, Batumi.  
(Batumi--Trees) (Batumi--Shrubs)

MATINYAN, A.B.

North American plants on the Batumi coast. *Biul.glav.bot.sada*  
no.43:8-12 '61. (MIRA 15:2)

1. Botanicheskiy sad AN Gruzinskoy SSR, Batumi.  
(Batumi region--Plant introduction)

MATINYAN, A.B.

North-American exotic woody plants growing wild in the Batum coastal area. Izv. AN Arm. SSR. Biol. nauki 15 no.1:87-89 Ja '62.  
(MIRA 15:2)

1. Batumskiy botanicheskiy sad.  
(BATUM REGION\_WOODY PLANTS)

MATINYAN, A.B.

Interesting specimen of the American elm. Biul. Glav. bot.  
sada no.45:32-33 '62. (MIRA 16:2)

1. Botanicheskiy sad AN Gruzinskoy SSR, Batumi.  
(Batumi--Elm)  
(Batumi--Plant introduction)



MANDZHAVIDZE, D.V.; MATINYAN, A.B.

Batum Botanical Garden; 1912-1962. Biul. Glav. bot. sada no.50:103-  
106 '63. (MIRA 17:1)

1. Botanicheskiy sad AN Gruzinskoy SSR, g. Batumi.

MANDZHAVIDZE, D.V.; MATINYAN, A.B.

Naturalization of some exotic plants in the wild flora of the  
Black Sea coast of Adzharistan. Biul. Glav. bot. sada no.54:  
3-9 '64.

(MIRA 17:11)

1. Botanicheskiy sad AN GruzSSR, Batumi.

MANDZHAVITZE, D.V.; MATINYAN, A.B.

*Hamamelis virginiana* L. on the Batum coast. Biul.Glav.bot.sada.  
no.58:109-111 '65. (MIRA 18:12)

1. Botanicheskiy sad AN Gruzinskoy SSR, g. Batumi.

MATINYAN, B. YA.

27150. MATINYAN, B. YA. Vulkanicheskiye peply kirovabadskoy zony, kak gidravlichesaya dobavka k portlandtsementu. Izvestiya azerbaydzh. S.-Kh. In-ta im. beriya, 1949. No. 1, s. 73-80. -Rezyume na azerbaydzh. Yaz.

So: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

MATINYAN, G. B.

"Scientific Sessions on Production," Meteor. i Hidrol., No. 5, p. 69, 1955

Translation M-1185, 27 Jul 56

**MATINYAN, L.A.**

Immediate and late aftereffects of anemization in turtles with a  
cut spinal cord and intact nervous system. Nauch.trudy Inst.fiziol.  
AN Arm.SSR. 3:51-69 '50. (MIRA 9:8)  
(SPINAL CORD) (ANEMIA) (REFLEXES)

MATINYAN, L.A.

Effect of mineral water Dshermak on renal function. Tr. Vsesoiz. obsh.  
fiziol. no. 1:133-134 1952. (GLML 24:1)

1. Delivered 31 May 1950, Yerevan.

GAMBARIAN, L.S.; MATINYAN, L.A.

Valuable monograph ("Study of the reflex activity of salivary and lacrimal glands." K.S. Abuladz. Reviewed by L.S. Gambarian, L.A. Matinian). Izv. AN Arm. SSR Biol. i sel'khoz. nauki 6 no. 10 93-96 '53. (MRL 10 10)

(SALIVARY GLANDS) (LACRYMAL ORGANS)  
(REFLEXES) (ABULADZE, K.S.)



MATINYAN, L.A.

Study on the compensatory functional adaptation of one kidney after the removal of the other. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 8 no.6:87-94 Je '55. (MLRA 9:8)

1. Institut fiziologii AN Armyanskoy SSR.  
(KIDNEYS--SURGERY)

**MATINYAN, L.A.**

Consequences of the transection of the posterior half of the  
spinal cord in Chelonia. Dokl. AN SSSR 110 no.5:871-873 0 '56.  
(MIRA 10:1)

L. Institut fiziologii Akademii nauk Armyanskoy SSR. Predstavleno  
akademikom L.A. Orbeli.

(CHELONIA) (SPINAL CORD)

USSR/Human and Animal Physiology. Nervous System. Spinal Cord. T-10

Abs Jour: Ref Zhur-Biol., No 12, 1958, 56000

Author : Matinyan, L.A.

Inst : Academy of Sciences Armenian SSR.

Title : The Removal of the Forebrain, of the Midbrain, and  
of the Cerebellum Effecting the Reflectory Activity  
in Normal and Spinally Anesthetized Turtles.

Orig Pub: V Sb.: Vopr. vyssh. nervn. deyat-sti i kompensatsion.  
prispobleniy. Vyp 2. Yerevan, AN ArmSSR, 1957,  
207-225.

Abstract: The removal of the forebrain in Caspian Sea water  
turtles caused a diminishing of strength in reflectory  
muscular contractions, lowering of the contraction  
time, and weakening of the extremity muscles, an in-  
crease in their sensitivity to electric current, and

Card : 1/2

USSR/Human and Animal Physiology. Nervous System. Spinal Cord. T-10

Its Jour: Ref Zhur-Biol., No 12, 1958, 56000.

destruction of locomotion ability. Compensatory processes developed more rapidly in young turtles than in adult turtles. The removal of the cerebellum caused more strongly expressed impairment. The removal of the midbrain led to grave locomotion impairment which could not be compensated, as well as to destruction of the position reflex, etc.

Card : 2/2

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L. A. MATINYAN

USSR/ Human and Animal Physiology. The Nervous System.

V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27330.

Author : L.A. Matinyan

Inst : Not given.

Title : Reflex Activity in Turtles With Transected Spinal  
Cords.

Orig Pub: In the Collection: Vopr. vyssh. nerv. seyat-sti i kom-  
pensatorn. prisposobleniy. Vyp. 2, Yerevan, AN ArmSSR,  
1957, 227-240.

Abstract: In 36 turtles (*Clemmys caspica caspica*) a reduction  
was observed in the force of reflex contraction of  
the muscles of the hind legs as well as a hastened  
onset of weakness following total transection of  
the spinal cord between the cervical and thoracic  
divisions. The corresponding measurements of the

Card : 1/2

USSR/Human and Animal Physiology. The Nervous System.

V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27330.

forelegs revealed no departure from their initial levels. The excitability of the reflex centers of the cord immediately after transection was augmented caudal to the site of trauma, but remained unchanged cranial to it. The reflex activity of the hind legs was exhausted earlier after transection than before, and many times more rapidly than the activity of the fore limbs.

Card : 2/2

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*MATINYAN, L.A.*

YEPREMYAN, G.A.; MATINYAN, L.A.

Histophysiological characteristics of compensatory adaptations in turtles following transaction of the posterior half of the spinal cord. Izv.AN Arm.SSR. Biol.i sel'khoz.nauki 10 no.7:99-106 J1 '57.  
(MIRA 10:10)

1. Kafedra gistologii Yerevanskogo meditsinskogo instituta i Institut fiziologii AN Armyanskoy SSR.  
(SPINAL CORD) (TURTLES)

YEPREMYAN, G.A., dotsent; MATINYAN, L.A.

Compensatory adaptations following ligation of the posterior half of the spinal cord in chickens. Trudy Erev.med.inst. no.11:91-96 (MIRA 15:11) '60.

1. Iz kafedry gistologii i embriologii Yerevanskogo gosudarstvennogo meditsinskogo instituta - zav. kafedroy dotsent G.A.Yepremyan i Instituta fiziologii AN Armyanskoy SSR - direktor prof. A.M. Aleksanyan.

(ADAPTATION (BIOLOGY))  
(SPINAL CORD—LOCALIZATION OF FUNCTIONS)



ADAMYAN, F.A., ANDREASYAN, A.S., MATINYAN, L.A., OVSERYAN, A.H.,  
URGANOV, T.O.  
ՄՀԿԿԻ

"On the evolutionary theory of compensation of disturbed functions."

Report submitted, but not presented at the 22nd International  
Congress of Physiological Sciences.  
Leiden, the Netherlands 10-17 Sep 1962

ALEKSANYAN, A.M., prof., otv. red.[deceased]; BAKLAVADZHYAN, O.G., red.; KARAPETYAN, A.A., red.; BAKUNTS, A.A., red.; GRIGORYAN, G.Ye., red.; KARAPETYAN, S.K., red.; MATINYAN, L.A., red.; URGANDZHYAN, T.G., red.; FANARDZHYAN, V.V., red.; CHILINGARYAN, A.M., red.

[Problems of the physiology of the vegetative nervous system and cerebellum; collection of reports] Voprosy fiziologii vegetativnoi nervnoi sistemy i mozzhechka; sbornik dokladov. Erevan, Izd-vo AN Arm.SSR, 1964. 610 p. (MIRA 17:8)

1. Vsesoyuznoye soveshchaniye po voprosam fiziologii vegetativnoy nervnoy sistemy i mozzhechka. 1st, Erevan, 1961.
2. Chlen-korrespondent AN Arm.SSR i direktor Instituta fiziologii im. L.A.Orbeli AN Arm.SSR (for Aleksanyan).
3. Institut fiziologii im. L.A.Orbeli AN Arm.SSR, Erevan (for all except Karapetyan, Matinyan).

MATINYAN, L.A.; YEPREMYAN, G.A.

Histophysiological characteristics of the spinal cord after its complete severing and the use of lidase, hyaluronidase, and proserine. Zhur.eksp. i klin.med. 4 no.3:3-12 '64.

(MIRA 18:1)

1. Institut fiziologii imeni akademika L.A.Orbeli AN Armyanskoy SSR i Kafedra gistologii Yerevanskogo meditsinskogo instituta.

MATINYAN, L.A.

Restoration of the functions of the totally resected spinal  
cord following enzyme therapy. Zhur. eksp. i klin. med. 5  
no.3:3-13 '65. (MIRA 19:1)

MATINYAN, N. I.

Landscape gardening - Leningrad

Fruit plants in landscape gardening of Leningrad. Sad i og. No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, \_\_\_\_\_ 1953. Unclassified.

MATINYAN, N I

PETROV, B.P., redaktor; MATINYAN, N.I., redaktor

[Experience in growing vegetables under cover] Opyt ovoshchevodov  
sakrytogo grunta. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 299 p.  
(Vegetable gardening) (MLRA 10:8)  
(Greenhouses)

USSR / Farm Animals. Cattle.

Q-2

Abs Jour: Ref Zhur-Biol., No 12, 1958, 54746.

Author : Agiyan, E. T., Matinyan, R. M., Minasyan, E. C.  
Inst : Not given.  
Title : The Problem of the Frequency of the Feeding of Calves.

Orig Pub: Byul. nauchno-tekhn. inform. Arm. n.-1. in-ta zhivotnovodstva i veterinarii, 1957, No 1, 11-14.

Abstract: During the first two months of feeding milky rations to calves twice and thrice daily, no differences in their development were ascertained. In the second half of the milk-feeding period, during which rations were supplemented with roughages and concentrates, the calves fed thrice daily, according to the author's opinion, were developing more uniformly and intensively.

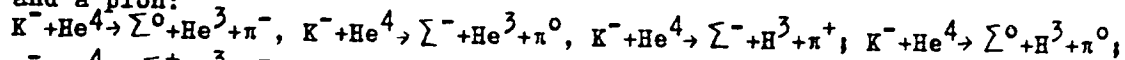
Card 1/1

MATINYAN, S.G.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1622  
 AUTHOR MATINJAN, S.G.  
 TITLE On the Absorption of  $K^-$  Mesons by Helium Nuclei.  
 PERIODICAL Zurn.eksp.i teor.fis, 31, fasc.3, 528-529 (1956)  
 Issued: 12 / 1956

Considerable interest is caused by the experimental confirmation of the hypothesis of the isobaric invariance of the strong interactions (which play the decisive part in M.GELL'MANN'S scheme) applied to those strong interactions to which the production, scattering, and absorption of the heavy mesons and hyperons are due. One of the possible ways is the experimental verification of the relations between the cross sections of various processes which differ only by the charge states of the participating particles. Previous works dealing with this topic are mentioned.

The present report is intended to contribute towards determining additional relations between the cross sections of various processes on the occasion of the absorption of  $K^-$ -mesons by helium. On the occasion of the absorption of a  $K^-$ -meson by helium the following reactions take place with the emission of a  $\Sigma^-$ -hyperon and a pion:



$K^- + He^4 \rightarrow \Sigma^+ + H^3 + \pi^-$ . The initial state has the isotopic spin  $T = 1/2$ .

By decomposition of the corresponding wave function according to the wave functions of the final state and taking into account the conservation of the total isobaric spin, the following equations are found for the



Žurn. eksp. i teor. fis, 31, fasc. 3, 528-529 (1956) CARD 2 / 2 PA - 1622

differential cross sections:  $\sigma_1(\Sigma^+ + H^3 + \pi^-) = (1/3) |A_0^{1/2} + 2^{-1/2} A_1^{1/2}|^2$ ;

$\sigma_2(\Sigma^0 + H^3 + \pi^0) = (1/3) |A_0^{1/2}|^2$ ;  $\sigma_3(\Sigma^0 + He^3 + \pi^-) = (1/3) |A_1^{1/2}|^2$ ;

$\sigma_4(\Sigma^- + He^3 + \pi^0) = (1/3) |A_1^{1/2}|^2$ ;  $\sigma_5(\Sigma^- + H^3 + \pi^+) = (1/3) |A_0^{1/2} - 2^{-1/2} A_1^{1/2}|^2$ . Here  $A_t^{1/2}$

denotes the amplitude of the transition into the state with the total isobaric spin 1/2 and the isobaric spin  $t$  of the system pion-hyperon. Herefrom there follows as a special case the result obtained by T.D. LEE, Phys. Rev., 99, 337 (1955):

$\sigma_3(\Sigma^0 + He^3 + \pi^-) = \sigma_4(\Sigma^- + He^3 + \pi^0)$  and besides:

$\sigma_1(\Sigma^+ + H^3 + \pi^-) + \sigma_5(\Sigma^- + H^3 + \pi^+) = 2\sigma_2(\Sigma^0 + H^3 + \pi^0) + \sigma_4(\Sigma^- + He^3 + \pi^0)$ ;

$\sigma_2(\Sigma^0 + H^3 + \pi^0) + \sigma_4(\Sigma^- + He^3 + \pi^0) \geq (2/3) \sigma_5(\Sigma^- + H^3 + \pi^+)$ . From the aforementioned relations there result the following inequations:

$\sigma_1(\Sigma^+ + H^3 + \pi^-) + \sigma_3(\Sigma^0 + He^3 + \pi^-) \geq (1/3) \sigma_5(\Sigma^- + H^3 + \pi^+)$

$\sigma_1(\Sigma^+ + H^3 + \pi^-) + (1/3) \sigma_5(\Sigma^- + H^3 + \pi^+) \geq \sigma_2(\Sigma^0 + H^3 + \pi^0)$ . The author thanks

G.R. CHUCIŠVILI for his valuable advice.

This is an only slightly abridged translation of this short report.

INSTITUTION: Institute for Physics of the Academy of Science of the Grusinian SSR

MATINJAN, S.G.

SUBJECT USSR / PHYSICS  
 AUTHOR MATINJAN, S.G.  
 TITLE On  $K\mu_3$  - Decay  
 PERIODICAL Zurn.eksp.i teor.fis, 31, fasc.3, 529 - 530 (1956)  
 Issued: 12 / 1956

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PA - 1658

The most probable decay scheme is  $K\mu_3 \rightarrow \mu + \pi^0 + \gamma$ . Here the energy spectrum of the myons and neutral pions of  $K\mu_3$  - decay is computed, and the decay constant is estimated. In the case of scalar (or pseudoscalar)  $K\mu_3$  - particles the following expression is obtained for the density of the HAMILTONIAN of interaction if attention is confined to direct coupling:  $H' = g(\bar{\psi}_\mu \gamma^\nu \psi_\nu) (\varphi_\pi^+ \varphi_\pi)$ . Here  $\gamma^5 = \gamma^5$  and  $\gamma^5 = 1$  holds for a scalar and a pseudoscalar particle respectively, and  $g$  is a constant of the dimension of one length. The energy distribution of the myons and neutral pions is best determined by the method developed by O.KOFOD+HANSEN, Phil.Mag., 42, 1411, (1951), in which case the following expression is obtained for the energy spectrum (both in the case of scalar and of pseudoscalar  $K\mu_3$  - particles):

$$w_{dE_\mu} = \frac{g^2}{32 \pi^3} \frac{(A - 2ME_\mu) \sqrt{E_\mu^2 - m_\mu^2}}{M(B - 2ME_\mu)^2} \{C + DE_\mu - 2M^2 E_\mu^2\} dE_\mu$$

For the energy spectrum of the neutral pions we find:

$$w_{dE_\pi} = \frac{g^2}{32 \pi^3} \frac{(G - 2ME_\pi)^2}{M(F - 2ME_\pi)} \sqrt{E_\pi^2 - m_\pi^2} dE_\pi$$

Here  $E_\mu$  and  $E_\pi$  denote the total energy of the myons and neutral pions respectively in the rest system of the  $K\mu_3$  - meson. ( $\hbar = c = 1$ ). The expressions for A, B, C, D, F, and G are explicitly given. By the integration of  $w_{dE_\pi}$  from  $m_\pi$  to  $(M^2 + m_\pi^2 - m_\mu^2)/2M$  we find for the total decay probability  $w_{\mu 3} = (gm_\pi)^2 (32 \pi^3)^{-1} 0,95 \cdot 10^{13} \text{sec}^{-1}$

Žurn.eksp.i teor.fis, 31, fasc.3, 529 - 530 (1956) CARD 2 / 2 PA - 1658

Herefrom, with  $\tau \sim 10^{-8}$  results the equation  $(g^2/4\pi)m_\pi^2 \sim 10^{-13}$ . The correctness of the decay scheme mentioned has not yet been proved with sufficient accuracy.

A similar computation for the scheme  $K_{e3} \rightarrow e + \gamma + \pi^0$  furnishes  $w_{e3} = (g'm_\pi)^2(32\pi^3)^{-1} 6,42 \cdot 10^{23} \text{ sec}^{-1}$ . Here  $g'$  is the corresponding coupling constant of the four fields. A comparison results in  $w_{\mu 3}/w_{e3} \sim 0,16(g/g')^2$ . From the data by J. GRUSSARD et al. Nuovo Cim., 3, 731, 1956, there follows  $w_{\mu 3}/w_{e3} \sim 0,5$ . However the data hitherto available are not sufficient for a univocal determination of this ratio  $w_{\mu 3}/w_{e3}$  and for a confirmation of the equality of the constants  $g$  and  $g'$ .

Furthermore, the scheme of  $K_{\mu 3}$  - decay may be brought into connection with that of  $K_{\mu 2}$  - decay as follows:

$K_{\mu 3} \xrightarrow{\eta} (K_{\mu 2}) + \pi^0 \xrightarrow{f} \mu + \gamma + \pi^0$ . Here  $\eta$  denotes the constant of strong interaction and  $f$  that of weak interaction.

INSTITUTION: INSTITUTE for Physics of the Academy of Science of the Grusinian Sak.

MATILIAN, S. G.

12832

ON THE ABSORPTION OF X-RAY RESONANCE BY HELIUM  
CL. E. S. G. Matilian (Academy of Sciences, Georgian  
SSR). Soviet Phys. JETP 4, 481 (1957) Apr.

3

for  
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1/14/57

M. G. MATINIAN, S. G.

12534  
ON  $K_{\beta 1}$ -DECAY. S. G. Matinian (Academy of Science,  
Georgian SSR). Soviet Phys. JETP 4, 424-8(1957) Apr.  
Calculations are given for the energy spectrum of the  
 $\mu$  mesons and  $\pi^+$  mesons in the  $K_{\beta 1}$  decay, and the decay  
constant is estimated. (R.V.J.)

4  
-RML  
-RML

only

*Matinyan, S. G.*

CALCULATIONS: FORMULAS

"Concerning the Problem of the Decay of K-Mesons", by S.G. Matinyan, Academy of Sciences Georgian SSR, Institute of Physics, Tbilisi, Soobsheheniya (Reports) of the Academy of Sciences Georgian SSR, Vol XVIII, No 2, Felman 1957, pp 143-148.

Attempts essentially to calculate the energy spectrum of  $\mu^+$  and  $\pi^0$  mesons resulting from  $K^+_{u3}$  decay. The energy spectrum is calculated by the Bethe method (see O. Kofoed-Hansen, "Effects of the Recoil on Allowed  $\beta$ -Transitions," Philosophical Magazine 1951, 49, 1411).

Card 1/1

~~KATINYAN~~, S.G.

Interaction of  $K^-$ -mesons with helium nuclei and the isobaric invariance. Soob. AN Gruz.SSR 18 no.4:401-404 Ap '57.  
(MLRA 10:7)

1. Akademiya nauk Gruzinskoy SSR, Institut fiziki, Tbilisi.  
Predstavleno chlenom-korrespondentom Akademii V.I.Mamasakhlisovym.  
(Mesons) (Collisions (Nuclear physics)) (Nuclei, Atomic)

~~MATINYAN, S.G.~~

Polarization and correlation phenomena in hyperon disintegration.  
Soob. AN Gruz. SSR 19 no.5:537 H '57. (MIRA 11:6)

1. Institut fiziki AN Gruz. SSR, Tbilisi. Predstavleno chlenom-  
korrespondentom AN V.I. Mamasakhlovym.  
(Particles, Elementary)



AUTHOR MATINYAN, S.G. 56-4-38/52-

TITLE On the Energy Spectrum of Myons on the Occasion of  $K_{\mu 3}^-$  Decay.  
(Ob energeticheskoy spektre  $\mu$ - mezonov  $K_{\mu 3}$ -raspada.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 4, pp 929 - 930 (USSR)

ABSTRACT The energy spectrum mentioned in the title was computed by the author in a previous paper for the case of a scalar (pseudoscalar) particle with a direct coupling of the fields in interaction. The present paper now investigates the decay of the same particle in the presence of a gradient-like coupling of the fields of the fermions ( $\mu, \nu$ ) and bosons with spin 0 ( $K_{\mu 3}, \pi$ ).

The HAMILTONIAN of interaction has the following form:

$$H' = f m_{\pi}^{-2} (\bar{\psi}_{\mu} \gamma_i \psi_{\nu}) (\delta / \delta x_i) (\varphi_{\pi}^* \varphi_{\pi}) \quad (h = c = 1)$$

Here  $f$  denotes a dimensionless coupling constant,  $m_{\pi}$  - the mass of the pion,  $\psi$  and  $\varphi$  - the spinorial and scalar wave functions respectively,  $\gamma$  according to the parity of  $K_{\mu 3}$  is equal to  $\gamma$  or  $\gamma_5$ .

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On the Energy Spectrum of Myons on the Occasion of  $K \mu_3^-$   
Decay-

56-4-38/52 --

Next, an expression is given for the differential probability of the decay of a  $K \mu_3^-$ -meson at rest. Like in the case of the previous paper, the author obtained a result which did not depend upon the parity of the  $K \mu_3^-$ -mesons. The decay probability of the scalar meson in the case of a scalar (vectorial) coupling of the field is equal to the probability of decay of the pseudoscalar meson in the case of pseudoscalar (pseudovectorial) coupling. Experimental data on the spectrum of the myons created on the occasion of the  $K \mu_3^-$  acts of decay are given in various papers (cited here). The characteristic outline of these data is the large number of myons with low energy. According to the computations carried out by the author the maximum of the spectrum of the myons in the case of direct coupling is located within the range of 85 Mev, which does not agree with experimental data. If a gradient-like coupling is assumed, the spectrum of the myons has its maximum at 60 MeV, which agrees better with experimental data. The various spectra are also shown in form of a diagram. An explanation is given for the better agreement of the vectorial (pseudovectorial) coupling with

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56-4-38/52

On the Energy Spectrum of Myons on the Occasion of  $K_{\mu 3}^-$   
Decay.

the experiment. At present no reasons exist for the assumption  
that the spin of the K-meson is not equal to zero.  
In conclusion, some possible expressions for the HAMILTONIAN  
of interaction for a vectorial  $K_{\mu 3}$ -meson at rest are given.  
(1 Illustration)

ASSOCIATION: Physical Institute of the Academy of Science of the Grusinian  
S.S.R.

PRESENTED BY: -

SUBMITTED: 24.12. 1956.

AVAILABLE: Library of Congress.

CARD 3,3

MATINYAN, S.G.

AUTHOR: MATINYAN, S.G. 96-4-39/52  
TITLE: On the Strong Interaction of K-Particles with Pions.  
(O sil'nom vsaimedaystviu K-chastits s  $\pi$ -mezenami. Russian).  
PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 4, pp 930 - 931  
(U.S.S.R.)

ABSTRACT: Experimental data on K-mesons lead to two conclusions which differ from each other, and can hardly be brought into agreement. The experiment (within the limits of measuring errors), on the one hand furnishes equal masses and life of the various K-particles, but on the other hand analysis of the  $\tau$ -acts of decay and the existence of the decay scheme  $\Theta^0 \rightarrow 2\pi^0$  confirm the facts that  $\Theta$  and  $\tau$  are different particles. For the purpose of eliminating this discrepancy, LEE and YANG introduced the idea of the doublet of parity and the non-obtaining of parity in the case of weak interactions. SCHWINGER demands a strong interaction between the pions and K-mesons. The present report uses the hypothesis of the strong  $\pi$ -K-interaction for the derivation of some relations between the probabilities of the decay of K-mesons according to various schemes. The author proceeds from the following scheme of strong, isotopic invariant interaction between  $\pi$ - and K-mesons:  $K^0 \leftrightarrow K^0 + \pi$ . By means of this scheme the decay of the  $\tau$ -mesons can, e.g. be brought into connection with the decay of the  $\Theta$ -meson and especially the ratio of the

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56-4-39/52

On the Strong Interaction of K-Particles with Pions.

probability of the acts of decay can be determined:

$\tau^+$  ( $\Rightarrow 2\pi^0 + \pi^+$ ) and  $\tau^0$  ( $\Rightarrow \pi^+ + \pi^- + \pi^0$ ) The scheme of the  $\tau^+$ -decay can be written down as follows:

$\tau^+ \xrightarrow{gK} \pi^+ \Theta^0 \xrightarrow{f} \pi^+ + \pi^-$ . Here  $K$  denotes the constant of the strong  $\pi^+$ -K-interaction (of the  $\Theta$ -field with the  $\pi$ -field),  $f$  denotes the constant of the strong interaction of the  $\Theta$ -field with the  $\pi$ -field. The following two possibilities exist for the  $\tau^+$ -decay:

$$\tau^+ \xrightarrow{gK} \begin{cases} \pi^+ + \Theta^0 \xrightarrow{f} \pi^+ + \pi^0 + \pi^0 \\ \pi^0 + \Theta^+ \xrightarrow{f} \pi^0 + \pi^0 + \pi^+ \end{cases}$$

In the case of an odd spin of the  $\Theta$ -mesons the ratio  $R$  of the probability of the  $\tau^+$ -decay compared to the probability of the  $\tau$ -decay amounts to  $R = w(\Theta^+ | 0^+) / 2w(\Theta^0 | +-)$ . Here  $w(\Theta^+ | 0^+)$  denotes the probability of the decay of a  $\Theta^+$ -meson in  $\pi^+$  and  $\pi^+$ -Mesons. According to GATTO,  $w(\Theta^+ | 0^+) = 2w(\Theta^0 | +-)$  applies for an odd spin of the  $\Theta$ -particle, and this  $R = 1$  applies. In the analogous manner  $R = 0,5$  is found for an even spin of the  $\Theta$ -particles. In conclusion the so-called anomalous  $\Theta^0$ -acts of decay are discussed in short (no illustrations).

Card 2/3

56-4-39/52

On the Strong Interaction of K-Particles with Pions.

ASSOCIATION: Physical Institute of the Academy of Science of the Grusinian S.S.R.  
PRESENTED BY:  
SUBMITTED: December 24, 1956  
AVAILABLE: Library of Congress

Card 3/3

MATINYAN, S.G.

56-5-45/55

AUTHOR MATINYAN, S.G.

TITLE Nonconservation of Parity and the Decay of Hyperons.  
(Nesokhraneniye chetnosti i raspad giperonov - Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 5, pp 1248-1249 (USSR)

ABSTRACT The paper under review investigates the decay of hyperons under the influence of an interaction at which the parity with respect to time is not conserved. For reason of simplicity, the author limits himself in the present paper to the coupling of fields without derivations and to the spin 1/2 of the hyperons. The Hamiltonian of the interaction leading to the decay is of the form  $H = g \bar{\Psi}_N (1 + \lambda \gamma_5) \Psi_Y \phi_\pi$ , with  $\Psi$  denoting the spinorial wave functions and  $\phi_\pi$  standing for the wave functions of the pion. In general,  $\lambda$  is a complex quantity denoting the degree of the nonconservation of parity. The existence of a long-lived  $K^0$ -particle and the nonconservation can be made compatible if the conservation of parity either with respect to time or with respect to charge is assumed. In the first case,  $\lambda$  is a real constant, in the second case it is an imaginary constant.

In the paper under review, the author deals with a hyperon at rest, the spin of which is directed along the unit vector  $\eta$ . First of all the square of the matrix element  $M$  of the above-mentioned interaction is written down. This interaction leads to the emission of a nucleon with given direction of impulse  $n$  and with a spin directed parallelly to the unit vector  $\eta$ . The nonconservation of parity leads to the occurrence of pseudoscalar quantities. If the Hamiltonian  $H$  is invariant with respect to an inversion of time, then one of the

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Nonconservation of Parity and the Decay of Hyperons. 56-5-45/55

pseudoscalar terms disappears. Contrary to the usual state of affairs, we then have even at the decay of nonpolarized hyperons a term of the order of magnitude of the nucleonic velocity ( $v/c$ ) which yields, parallelly to  $\vec{n}$ , polarized nucleons. If  $H$  is invariant with respect to the charge conjugatedness, then other pseudoscalar terms are eliminated and the remaining term yields an additional correlation of the spins of the polarized hyperons and nucleons. This correlation differs from the one valid for the variants with conservation of parity. A similar picture also for the case of gradient-like coupling.

(No reproduction).

ASSOCIATION Institute of Physics, Academy of Science of the Georgian SSR  
PRESENTED BY  
SUBMITTED 24.1.1957.  
AVAILABLE Library of Congress.  
Card 2/2



*MATINYAN, S.G.*

**MATINYAN, S.G.**

Interaction of fermions and the  $K/\mu 3$  -decay. Zhur. eksp. i teor. fiz.  
33 no.3:797-799 S '57. (MLRA 10:11)

1. Institut fiziki AN Gruzinskoy SSR,  
(Particles, Elementary)

MATINYAN, S.G.

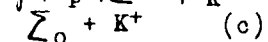
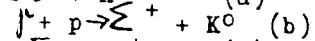
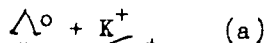
AUTHOR: Matinyan, S.G.

56-45,54

TITLE: On the Photoformation of Strange Particles. (O fotorozhdenii stran-nykh chastits) (Letter to the Editor)

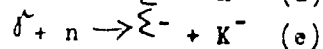
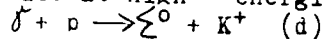
PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 4, pp 1063-1064 (USSR)

ABSTRACT: The process of the photoformation of strange particles from nucleons can be used for the examination of the statistical model of the formation of strange particles established by Peaslee. When the formation probability of the processes:



is compared, the following ratio of the

formation cross sections follows according to Peaslee:  $\sigma(c) / \sigma(a) \approx 1/9$ . In this connection, however, the influence of the magnetic moments of the hyperons was not taken into account, which is justified at high energies. When the following processes are examined



the ratio of the formation cross sections  $\sigma(d)/\sigma(e)$  can theoretically also be given for them.

Card 1/2

On the Photoformation of Strange Particles.

56-4-45/54

ASSOCIATION: Physical Institute AN **Georgian** SSR (Institut fiziki Akademii nauk Gruzinskoy SSR)

SUBMITTED: July 16, 1957

AVAILABLE: Library of Congress.

Card 2/2

MATINYAN, S.G.

AUTHOR: Khutsishvili, G.R., Matinyan, S.G. 56-5-12/46

TITLE: On the Form of  $\beta$ -Interaction (K voprosu o forme  $\beta$ -vzai-  
modeystviya)PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 5,  
pp. 1150-1153 (USSR)ABSTRACT: Until recently it was assumed that  $\beta$ -interaction can be repre-  
sented by a connection of scalar- and tensor variants. This state  
of affairs was changed when the non-conservation of parity in  
 $\beta$ -decay became known. Polarization phenomena in permitted  
 $\beta$ -transitions [ $\Delta I = 0, \pm 1, (\text{none})$ ] are computed theoret-  
ically. Computations were carried out in Born's approximation. The  
following expressions are computed and derived:

$$W(p, q, \eta, \xi)$$

$$W(p, \eta, \xi)$$

$$W(p, q, \eta)$$

There are 7 non-Slavic references.

ASSOCIATION: Physics Institute of the AN of the Georgian SSR (Institut fiziki  
AN Gruzinskoy SSR)

SUBMITTED: April 10, 1957

AVAILABLE: Library of Congress

Card 1/1

MATINYAN. S. G. Cand Phys-Math Sci (diss) "Certain problems of the theory of heavy nonstable particles." Tbilisi, 1958. 10 pp (Tbilisi State Univ im i. V. Stalin), 100 copies. Bibliography: p 9 (14 titles). List of author's works, p 10. (KL, 13 -58, 92)

MATINYAN, S.G.

Some problems in the theory of heavy unstable particles. Trudy  
Inst.fiz.AN Gruz.SSR 6:173-229 '58. (MIRA 15:4)  
(Particles (Nuclear physics)) (Nuclear reactions)  
(Quantum theory)

MATINYAN, S. G.

AUTHORS: Mamasakhlisov, V. I., Matinyan, S. G., 56-1-27/56  
Perel'man, M. Ye.

TITLE: The Photo-Production of Strange Particles on Protons  
(Fotoobrazovaniye strannykh chastits na protonakh)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958,  
Vol. 34, Nr 1, pp. 195-197 (USSR)

ABSTRACT: The present paper investigates the reactions of photo-  
production of strange particles on protons with  
emission of charged K-mesons:  $\gamma + p \rightarrow \Lambda^0 + K^+$  (1'),  $\gamma + p \rightarrow \Sigma^+ + K^+$   
(1''). The cross sections of these processes are calculated  
in second perturbation theoretical order. The authors here  
select the value 1/2 for the spin of the  $\Lambda^0$ -hyperon and the  
value 3/2 for the spin of the  $\Sigma^0$ -hyperon. The proton and the  
 $\Lambda^0$ particle shall satisfy the Dirac equation (where the inter-  
action of the electromagnetic field with the magnetic  
moments of the particles is disregarded) and the  $\Sigma$ -hyperon  
is described by the equation of Rarita-Schwinger (Rarita-  
-Shvinger) for the particle with spin 3/2. The direct  
interaction of the  $\gamma$  quantum with the nucleon as well as its  
interaction with the field of the virtual K mesons are taken  
into account here. The authors here investigate the pro-

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## The Photo-Production of Strange Particles on Protons

56-1-27/56

cesses of production of  $K^+$  mesons and use the hypothesis of the conservation of parity in the electromagnetic interactions. Therefore the two diagrams given here are the only possible diagrams of the process. The angular distribution of the  $K^+$  mesons is calculated by the usual method and is here written down for the case of the center-of-gravity system. The interaction of the  $\gamma$  quanta with the field of the virtual  $K^+$  mesons furnishes a considerably smaller contribution to the cross section than the direct interaction of a  $\gamma$  quantum with the proton. When the system ( $\Lambda^0 K^+$ ) has the same parity as the proton the angular distribution of the  $K^+$  mesons in the center-of-gravity system is shifted toward larger angles. For that of the parity of the system ( $\Lambda^0 K^+$ ) which is opposed to the parity of the proton, the opposite result is obtained. Then the production of  $\Sigma^-$ -hyperons is investigated. In this case the angular distribution in the center-of-gravity system must be isotropic. The total cross section is here written down on the assumption that the square of the mass of the  $K$ -meson can be disregarded with respect to the square of the mass of the  $\Sigma^-$ -hyperon. The comparison of the results obtained here with the experiment will make possible a solution of the problem

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of the parity of the system ( $\Lambda^0 K^+$ ) with regard to the proton. There are 1 figure and 6 references, 3 of which are Slavic.

ASSOCIATION: Institute for Physics AN Georgian SSR  
(Institut fiziki Akademii nauk Gruzinskoy SSR)

SUBMITTED: July 27, 1957

AVAILABLE: Library of Congress

Card 3/3

21(7)

AUTHORS:

Matinyan, S. G., Khutsishvili, G. R.

SOV/56-35-2-52/60

TITLE:

Isotopic Invariance in Processes With Participation of Anti-hyperons (Izotop'cheskaya invariantnost' v protsessakh s uchastiyem antigiperonov)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki. 1958. Vol 35, Nr 1(7), pp 546-547 (USSR)

ABSTRACT:

This paper investigates the production of antihyperons and their interaction with nucleons and light nuclei on the basis of isotopic invariance. The reaction  $K + N \rightarrow \tilde{Y} + N + N$  is very useful for the identification and investigation of the antihyperons. The above-mentioned reaction, applied to protons, gives 2 channels with respect to the charge states (with production of  $\tilde{\Sigma}$ -antihyperons):  $K^+ + p \rightarrow \tilde{\Sigma}^0 + p + p$  (a) and  $K^+ + p \rightarrow \tilde{\Sigma}^- + p + n$  (b). According to the hypothesis of isotopic invariance, the following cross sections are obtained for these reactions:

$$\sigma_a = |A_1^1|^2 \cdot 1/2, \quad \sigma_b = |A_0^1|^2 + |A_1^1|^2.$$

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$A_t^T$  denotes the amplitude of the transition into the final

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Isotopic Invariance in Processes With Participation of Antihyperons

state with the total isotopic spin  $T$  when the total isotopic spin of the system (which consists of 2 nucleons) is equal to  $t(=0,1)$ . This implies  $\sigma_b \gg \sigma_a$ . The authors then investigate the reactions  $\tilde{\Sigma}^+ + d \rightarrow n + \pi^- + K^+$  (a),  $\tilde{\Sigma}^+ + d \rightarrow n + \pi^0 + K^0$  (b),  $\tilde{\Sigma}^+ + d \rightarrow p + \pi^- + K^0$  (c). The amplitudes of these processes are calculated on the basis of isotopic invariance. For the cross sections the relations  $\sigma_a + \sigma_c \gg \sigma_b$ ,  $\sigma_b + \sigma_c \geq \sigma_a/3$  and one more group of inequalities are obtained. The verification of these inequalities is of interest from the point of view of the applicability of the hypothesis of isotopic invariance to interactions which include strange particles and, especially, antihyperons. Such investigations can be generalized immediately for light nuclei with zero isotopic spin ( $He^4$ ,  $C^{12}$ , etc.). There are 2 references, 2 of which are Soviet.

ASSOCIATION: Institut fiziki Akademii nauk Gruzinskoy SSR (Institute of Physics, AS Gruzinskaya SSR)

Card 2/3

21(7)

AUTHOR:

Matinyan, S. G.

SOV/56-35-3-39/61

TITLE:

The Non-Local Effects in Weak Interactions of Fermions  
(Nelokal'nyye efekty v slabykh vzaimodeystviyakh fermionov)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,  
Vol 35, Nr 3, pp 791-793 (USSR)

ABSTRACT:

T. D. Lee (Li) and C. N. Yang (Ref 1) recently investigated the non-local interactions of 4 fermions with respect to a  $\mu$ -decay. These interactions may be described phenomenologically by means of a Lagrangian which corresponds to the interaction of a pair of fermions which are separated by a spatial interval of the order  $10^{-13} - 10^{-14}$  cm. This paper in a similar manner investigates the non-local effects in the capture of a negative myon by a proton. The neutrino is described by the two-component theory. First, the non-local interaction Lagrangian (which leads to the process  $\mu^- + p \rightarrow n + \nu$ ) is given explicitly. In this expression, a summation of the S, V, T, P, A variants is carried out. Expressions are deduced for the probability of the capture of a negative myon in hydrogen and formulae for the angular distributions of neutrons in the capture

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of polarized negative myons are derived. The author then assumes a universal AV-interaction. In this case, the life of the myon agrees excellently with the experiment if the constant  $G$  in the  $\beta$ -decay is suitably given. In the  $\beta$ -decay, the non-local effects are practically negligible. If there are non-local effects, they must occur in the  $\mu$ -decay and change the value of the coupling constant. Feynman and Gell-Mann apply the expression

$$8^{1/2} G (\bar{\psi}_\mu \gamma_\lambda^a \psi_\nu) (\bar{\psi}_\nu \gamma_\lambda^a \psi_e)$$

to the universal AV-interaction in the  $\mu$ -decay.  $\psi$  denotes the two-component wave-function and it applies that

$$G = (1,01 \pm 0,01) 10^{-5} / M^2, \text{ where } M \text{ denotes the nucleon mass.}$$

This gives the value  $1/\tau_\mu = G^2 m^2 / 192 \pi^3$  for the life of the

myon. For the corresponding non-local interaction, the life of the myon is equal to

$$1/\tau_\mu = (G^2 m^5 / 192 \pi^3) (1 + 3/5 \bar{\xi}_2) \text{ where } \bar{\xi}_2 \text{ denotes the non-local parameter. The upper limit of non-locality } |\bar{\xi}_2| \text{ (which is compatible with the universal constant } G) \text{ is equal to}$$

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$|\bar{\xi}_2| \leq 0,07$ . The formulae deduced in this paper are useful for the calculation of the amount of the non-local effect in the case of a universal AV-interaction. The author thanks Professor G. R. Khutsishvili for his interest in this paper and Yu. G. Mamaladze for discussing the results. There are 9 references, 1 of which is Soviet.

ASSOCIATION: Institut fiziki Akademii nauk Gruzinskoy SSR  
(Institute of Physics, Academy of Sciences, Gruzinskaya SSR)

SUBMITTED: May 23, 1958

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~~MATINYAN, S.~~ CHEISHVILI, O.

Charge-exchange of elementary particles on nucleons and deuterons.  
Soob. AN Gruz. SSR 22 no.3:281-286 Mr '59.

(MIRA 12:8)

1. AN Gruz SSR, Institut fiziki. Predstavleno chlenom-korrespondentom  
AN V.I. Mamasakhlishovym.  
(Particles, Elementary)

21(7)

## AUTHORS:

Matinyan, S. G., Cheishvili, O. D.

SOV/56-36-1-28/62

## TITLE:

The Polarization Effects in the Capture of a  $\Sigma^-$ -Hyperon by a Deuteron (Polyarizatsionnyye yavleniya pri zakhvate  $\Sigma^-$ -giperona deytronom)

## PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 212-215 (USSR)

## ABSTRACT:

The present paper deals with the reaction  $\Sigma^- + d \rightarrow 2n + \Lambda^0$  where the spins of the  $\Lambda$ - and  $\Sigma^-$ -particles are assumed to be equal to  $1/2$ . This reaction is rather interesting as a source of additional information concerning the degree of polarization of a  $\Sigma^-$ -particle. In the present paper, the capture of a  $\Sigma^-$ -hyperon by a deuteron is investigated in momentum approximation. In this approximation, the amplitude of the capture can be written down as  $T_d = J_{12}T(1,2) + J_{13}T(1,3)$ , where the index 1 corresponds to strange particles, and the indices 2 and 3 - to the nucleons of the deuteron. An expression is deduced for the polarization of a  $\Lambda$ -particle produced by the capture of a polarized  $\Sigma^-$ -particle by a deuteron. In the case of an S  $\rightarrow$  S transition the amplitude of the capture of a  $\Sigma^-$ -particle

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by a proton is equal to  $\sigma = a_1 \Pi_t(1, 2) + a_2 \Pi_B(1, 2)$   
where  $a_1$  and  $a_2$  denote the amplitudes of the transitions  
 ${}^3S_1 \rightarrow {}^3S_1$  and  ${}^1S_0 \rightarrow {}^1S_0$  of the system strange particle-nucleon.

Definite information concerning the polarization of a  
 $\Sigma^-$ -particle can be obtained by investigating the asymmetry  
of the  $\Lambda$ -decay for a capture of a  $\Sigma^-$ -particle from a continuous  
spectrum and also from an S-orbit. Analogous considerations  
are given also for the S $\rightarrow$ P, P $\rightarrow$ S and P $\rightarrow$ P transitions. The  
authors thank Professor G. R. Khutsishvili for useful  
discussions and advice. There are 4 references, 2 of which  
are Soviet.

ASSOCIATION: Institut fiziki Akademii nauk Gruzinskoy SSR (Institute  
of Physics of the Academy of Sciences, Gruzinskaya SSR)

SUBMITTED: July 2, 1958

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21(7)

SOV/56-36-4-56/70

AUTHORS: Matinyan, S.G., Okun', L. B.TITLE: On the  $K_{e3}^-$  and  $K_{\mu 3}^-$ -Decays ( $0 K_{e3}^-$  i  $K_{\mu 3}^-$ -raspadakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 4, pp 1317-1319 (USSR)

ABSTRACT: On the publication of a number of experimental papers dealing with V-A-interaction in  $\beta^-$ ,  $\mu^-$ , and  $\pi^-$ -decays and in the decays of strange particles, the authors investigated the three-particle lepton K-decays  $K \rightarrow l + \nu + \pi$ , where l denotes an electron or meson. In the theory of universal V-A-interaction the matrix element describing such a process may be represented in the rest-system of the K-meson by (1):  $M^{-3/2} E_{\pi}^{-1/2} \left( \frac{m_l}{M} X(\bar{l}(\gamma + \gamma_5)) + Y(l\gamma_4(1 + \gamma_5)\nu) \right)$ .  $E_{\pi}$  denotes the total pion energy;  $m_l$  = lepton mass,  $M$  = K-meson mass, X and Y are real functions of  $E_{\pi}$ , which are the same for  $K_{e3}^-$  and  $K_{\mu 3}^-$ -decays. If the dependence of X and Y on  $E_{\pi}$  is neglected and if it is assumed that  $X = \text{const}$  and  $Y = \text{const}$ , these quantities can be determined experimentally.

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On the  $K_{e3}^-$  and  $K_{\mu 3}^-$ -Decays

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which was done e.g. by Gatto (Ref 6). By calculating the probabilities for  $K_{e3}^-$  and  $K_{\mu 3}^-$ -decays by means of (1) and by comparison with experimental data, two possible pairs of values were obtained:  $X/Y = 4.2$  (solution I) and  $X/Y = -0.34$  (II). The authors point out that the choice between the two values can be made much easier by measuring the longitudinal polarization of the muons in  $K_{\mu 3}^-$ -decay. An expression is derived (for V-A-interaction) for the longitudinal polarization  $\bar{P}$  of the muon, which is a function of  $X/Y$ ,  $v$ ,  $\alpha$ ,  $m_1$ , and  $M$ . For the solutions I and II a figure shows the dependence of  $\bar{P}$  on the muon energy  $\kappa$  ( $\kappa = E_{\text{kin}}/E_{\text{kin}}^{\text{max}}$ ). I is in the positive, II in the negative, and also the course taken by the curve differs: I shows a nearly linear rise, II has a minimum. The curves have been plotted for the experimentally determined  $\nu$ -value of 0.96 ( $\nu \equiv \tau(K_{e3})/\tau(K_{\mu 3})$ ). A second figure shows  $\bar{P}$  for different  $\kappa$ -values. If an experimental determination of  $\bar{P}$  (with  $\nu$  being exactly known) furnishes solutions that do not agree with those predicted here, this may mean that either the assumption as to the weak energy dependence

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of Y and X is not correct or that A-V-interaction is not applicable to K-decay. There are 2 figures and 9 references, 1 of which is Soviet.

**ASSOCIATION:** Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute for Theoretical and Experimental Physics of the Academy of Sciences, USSR); Institut fiziki Akademii nauk Gruzinskoy SSR (Institute for Physics of the Academy of Sciences, Gruzinskaya SSR)

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