BRUSOVA, L.V.; GORKIN, V.Z.; ZHELYAKOV, D.K.; KITAYSKIY, K.A.; LEONT'YEVA, G.A.; SEVERINA, I.S.

New spectrophotometric method for determining monoamine oxidase activity in liver homogenates. Vop. med. khim. 10 no.1:83-89 Ja-F '64. (MIRA 17:12)

1. Institute of Biological and Medical Chemistry, Academy of Medical Sciences of the U.S.S.R., Moscow.

GORKIN, V.Z.

Current progress in the study of the nature and physiological role of mitochondrial monoamine oxidase. Vop.med.khim. 10 no.2:125-134 Mr-Ap '64. (MIRA 18:1)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

SEVERINA, I.S.; GORKIN, V.Z.

Selective inhibition of the monoamine oxidase activity in mitochondria of the rat liver by various oxyquinolines. Biokhimiia 29 no.6:1093-1102 N-D '64.

(MIRA 18:12)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva. Submitted April 11, 1964.

GOFKIN, V.Z.; KRIVCHF'IKOVA, R.S.; Prinimali uchastiye: [illegible]SKIY, N.A.; LEONT'YEVA, G.A.

Mechanism of inhibition of the blood amine oxidase (spermine oxidase) activity by isoniazid. Vop.med.khim. 10 no.2:149-154 Mr-Ap '64. (MIRA 18:1)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

VEREVKINA, I.V.; GORKIN, V.Z.; GRIDNEVA, L.I.; LEVMAN, M.I.; ROMANOVA, L.A.
KHODERA, A. [Chodera, A.] (Pol'sha)

Inhibition of the activity of mitochondrial amine oxidases by some tricyclic compounds. Dokl. AN SSSR 157 no.1:191-193 Jl '64 (MIRA 17:8)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR. Predstavleno akademikom A.I. Oparinym.

GORKIN, V.Z.; KLYASHTORIN, L.B.

Simple method for the preparation of the manometric liquid for work with Warburg's apparatus. Lab. delo. no.1:58-59 '65.
(MIRA 18:1)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

BRUSOVA, L.V.; V'YUGOVA, L.A.; GORKIN, V.Z.

Method of determining the monoamine oxidase activity in the brain.
Ukr. biokhim. zhur. 37 no.3:463-471 '65. (MIRA 18:7)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.
2. Sotrudnik Instituta psikhiatrii AMN SSSR, Moskva (for V'yugova).

GORKIN, V.Z.; KARELIN, P.F.

Soviet International Biochemical Congress. Usp. sovr. biol.
59 no.2:318-331 Mr-Ap '65. (MIRA 18:4)

GORKIN, V.Z.; KITROSSKIY, N.A.; KLYASHTORIN, L.B.; KOMISSAROVA, N.V.; LEONT'YEVA, G.A.; [illegible]ICHKOV, V.A.

Substrate specificity of amino acid oxidase. Biokhimiia 29 no.1: 88-96 Ja-F '64. (MIRA 18:12)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR i Institut khimii prirodnykh soyedineniy AN SSSR, Moskva.
Submitted April 28, 1963.

VIKHLYAYEV, Yu.I.; GORKIN, V.Z.; GRIBOVA, L.I.; SKULSKAYA, L.V.

Effect of chloracizin on the activity of mitochondrial monoamine oxidase. Vop. med. khim. 10 no.5:520-526 S-O '64. (MIRA 18:11)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR i Institut farmakologii i khimioterapii AMN SSSR, Moskva.

GORKIN, V.Z.; KRIVCHENKOVA, R.S.

Effect of cysteamine and other mercaptoamino compounds on the activity of mitochondrial monoamino oxidase. Biokhimiia 29 no.5:992-998 Jl-Ag '64. (MIRA 18:11)

1. Laboratoriya biokhimii aminov i drugikh azotistykh osnovaniy Instituta biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

GRINBAUM, F.T., professor, nauchnyy rukovoditel'; KRUTSEV, F.N., zamestitel' glavnogo vracha; MINEYEV, A.M., glavnyy vrach; GORKIN, Ye.N., dotsent, zaveduyushchiy; KULIKOV, Yu.A., starshiy nauchnyy sotrudnik.

Decision of the joint conference of the Gor'kiy branch of the All-Union Mechnikov Society of Microbiologists, Epidemiologists and Specialists in Infectious Diseases and of epidemiologists and bacteriologists of the Gor'kiy Province, Municipal and District Sanitation and Epidemiological Stations of May 15, 1952. Zhur.mikrobiol.epid.i immun. no.3:96-99 Mr '53. (MLRA 6:6)

1. Gor'kovskiy institut epidemiologii i mikrobiologii (for Grinbaum and Kulikov). 2. Gor'kovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya (for Krutsev). 3. Gor'kovskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya (for Mineyev). 4. Klinika detskikh infektsiy Gor'kovskogo meditsinskogo instituta (for Gorkin). (Typhus fever)

GORKIN, Ye.N., dotsent.

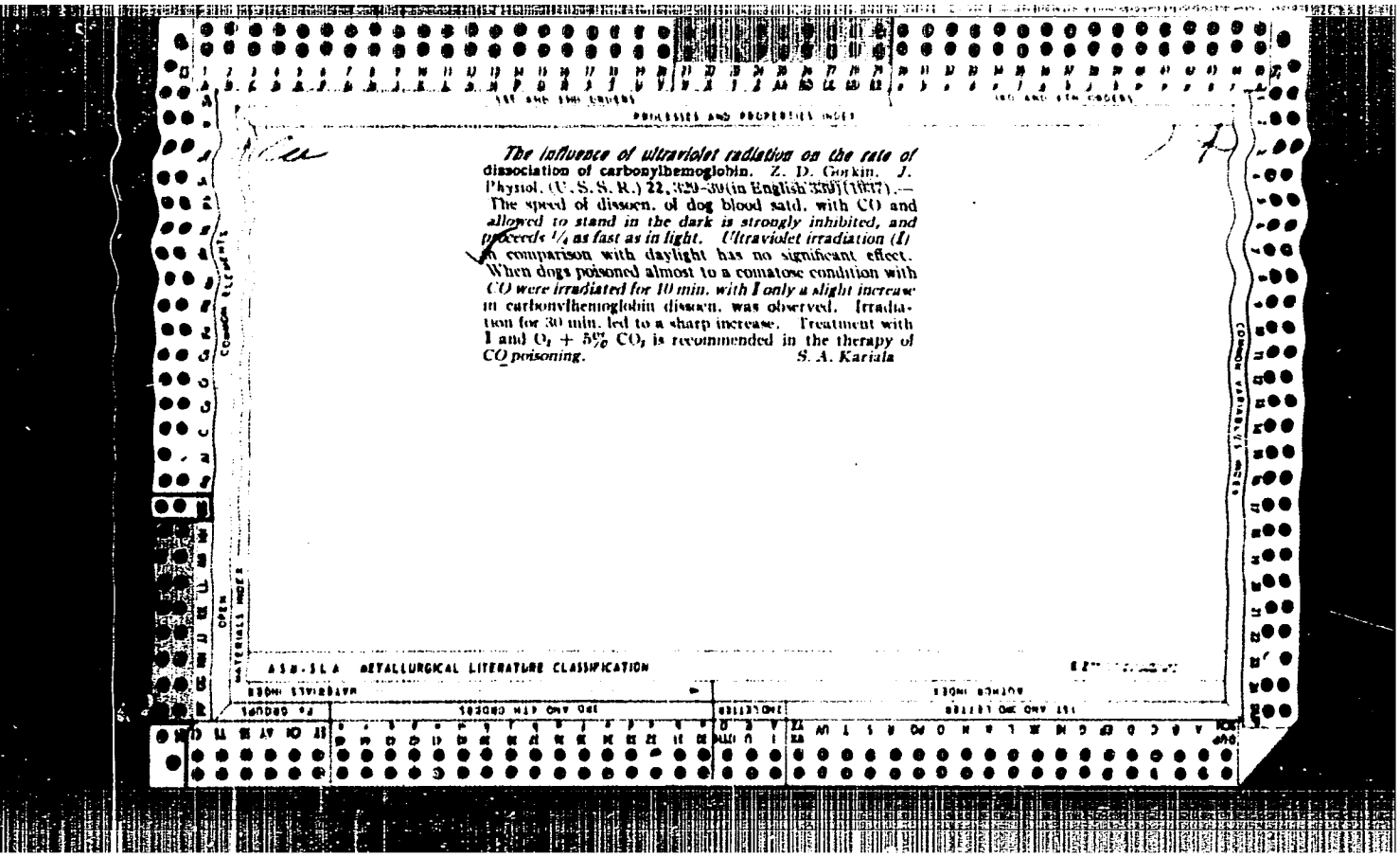
Effect of syntomycin upon the course of measles. Pediatriia no.1: 71-72 Ja-F '54. (MLRA 7:3)

1. Iz kliniki detskikh infektsionnykh bolezney Gor'kovskogo meditsinskogo instituta im. S.M.Kirova (direktor - dotsent N.N.Mizinov). (Measles)

GORKIN, YE. N., KOMOVA, Z. A., YEROFEYEVA, O. P.

"Salmonelloses in adults."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.



The influence of ultraviolet radiation on the rate of dissociation of carbonylhemoglobin. Z. D. Gorkin. *J. Physiol. (U. S. S. R.)* 22, 329-39 (in English 339) (1937).— The speed of dissocn. of dog blood satd. with CO and *allowed to stand in the dark is strongly inhibited, and proceeds ¼ as fast as in light. Ultraviolet irradiation (I)* in comparison with daylight has no significant effect. When dogs poisoned almost to a comatose condition with *CO were irradiated for 10 min. with I only a slight increase* in carbonylhemoglobin dissocn. was observed. Irradiation for 30 min. led to a sharp increase. Treatment with I and O_2 + 5% CO_2 is recommended in the therapy of *CO poisoning.* *S. A. Kariala*

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Influence of ultraviolet irradiation on changes in the red blood of animals poisoned with chloronitrobenzene. D. [illegible]hkin. *Farmakol. i Toksikol.* 3, No. 6, 77-81 (1940).—Dogs poisoned with a eutectic mixt. of *o*- and *p*-$ClC_6H_4NO_2$ recovered more rapidly by regeneration of damaged blood cells when exposed to ultraviolet light. Irradiation was effected with a quartz Hg-vapor lamp at a distance of 50 cm., alternately on the right and left sides over an area 20 × 20 cm. in 4 treatments of 15 min. each, shortly after receiving the poison and on the 4th, 7th and 9th days. Blood recovery was measured, in comparison with controls, by detg. hemoglobin, methemoglobin and erythrocyte count. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GORKIN, Z. D.

GORKIN, Z. D.

Ultraviolet irradiation as a factor increasing physiological activity in subterranean work. Gig., sanit., Moskva No. 11, Nov. 50. p. 19-22

1. Of the Ukrainian Central Institute of Labor Hygiene and Occupational Diseases.

CLML 20, 3, March 1951

1. GORKIN, Z.; KAMINSKIY, M.; KARLSON, L.; AL'BITSKAYA, YE.; EVTUSHENKO, G.

2. USSR (600)

4. Industrial Hygiene

7. Manual on practical studies in industrial hygiene, M. K. Berezova, Z. I. Israyel'son, YE. V. Kleneva, O. YA. Kopilevskaya; reviewed by Z. Gorkin, M. Kaminskiy, L. Karlson, YE. Al'bitskaya, G. Evtushenko, Gig. i san., no. 4, 1953.

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

GORKIN, Z.D.; KARMINSKIY, M.S.; MIKHAYLOVSKAYA, Ye.F.; AL'BITSKAYA, Ye.S.; SMIGIREV, Ye.S.

Physiological and hygienic basis for an effective program of industrial training for locksmiths in trade schools. Gig.i san. no.12: 18-22 D '53. (MLRA 6:12)

1. Iz Khar'kovskogo meditsinskogo instituta i remeslennogo uchilishcha no. 4.
(Technical education--Curricula) (Fatigue)

GORKIN, Z.D., doktor meditsinskikh nauk, professor.

Ultraviolet ray clinics in the coal industry. Svetotekhnika 2 no.4: 4-7 Jl '56. (MLRA 9:10)

1.Khar'kovskiy meditsinskiy institut.
(Coal miners--Diseases and hygiene)(Ultraviolet rays--Therapeutic use)

LETAVET, A.; KHOTSYANOV, L.; ARKHIPOV, A.; SMELYANSKIY, Z.; KIMBAROVSKIY, Ya.; PASTERNAK, A.; FONDAUZ, M.; ARNOL'DI, I.; BYKHOVSKIY, B.; GORKIN, Z.; ZHISLIN, L.; ZAIDENNUR, I.; KOYRANSKIY, B.; MILLER, S.; NAVTROTSKIY, V.

Professor S.M.Aranovskii; obituary. Gig. i san. 21 no.10:62 O '56.
(MLRA 9:11)

(ARANOVSKII, SOLOMON MOISEEVICH, 1885-1956)

GORKIN, Z. D.

AL'BITSKAYA, Ye.F.; GORKIN, Z.D., professor

Time reflex as an index of the state of the higher nervous activity in trade school students in connection with their industrial education [with summary in English]. Gig. i san. 22 no.1:43-46 Ja '57. (MIRA 10:2)

1. Iz kafedry gigiyeny truda Khar'kovskogo meditsinskogo instituta.
(REFLEX, CONDITIONED,
conditioned time reflex in students of vocational schools as higher nervous funct. test (Rus))
(SCHOOLS,
same)

AL'BITSKAYA, Ye.F., GORKIN, Z.D., KARMINSKIY, M.S., MIKHAYLOVSKAYA, YE.F.
SNEGIREV, Ye.S.

Physiological and hygienic basis for the organization of stop training in machinery trade. Gig. i san. 23 no.9:35-38 S'58 (MIRA 11:11)

1. Iz kafedry gigiyeny truda Khar'kovskogo meditsinskogo instituta.
(INSDUSTRY AND OCCUPATIONS,
machinery indust. schools in Russia (Rus))
(SCHOOLS,
hygiene (Rus))

[illegible], [illegible]; [illegible], V. V., [illegible]

"Physiological hygienic principles of industrial training in the trade schools of machine building."

Report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

GORKIN, Z.D. (Khar'kov)

Ultraviolet radiation of industrial workers and experience in its application. Gig.truda i prof.zab. 3 no.4:36-39 Jl-Ag '59. (MIRA 12:11)

1. Kafedra gigiyeny truda Meditsinskogo instituta.
(ULTRAVIOLET RAYS--THERAPEUTIC USE)

GORKIN, Z.D., prof.; POPOV, I.D., dotsent (Khar'kov)

Introduction of new technology and further tasks in the improvement of labor conditions. Vrach.delo no.6:621-623 Je '60. (MIRA 13:7)

(INDUSTRIAL HYGIENE)

GORKIN, Z.D.; CHERNYAVSKIY, M.I. (Khar'kov)

Teaching labor hygiene in the 12th term at the Sanitation and Hygiene Faculty of the Kharkov Medical Institute. Gig. truda i prof. zab. 4 no.2:36-37 F '60. (MIRA 15:3)
(KHARKOV--INDUSTRIAL HYGIENE--STUDY AND TEACHING)

GORKIN, Z.D.; SAKHNOVSKIY, Ya.D.

Construction of buildings without skylights and windows.
Gig. i san. 26 no.7:120 Jl '61. (MIRA 15:6)
(INDUSTRIAL BUILDINGS—HYGIENIC ASPECTS)

ACC NR: AP6018714 SOURCE CODE: UR/0240/66/000/006/0017/0020

AUTHOR: Al'bitskaya, Ye. F.; Gorkin, Z. D.

ORG: Department of Labor Hygiene, Kharkhov Medical Institute (Kafedra gigiyeny truda Khar'khovskogo meditsinskogo instituta)

TITLE: The effect of ultraviolet irradiation on the functional condition of basic cerebral nervous processes in man

SOURCE: Gigiyena i sanitariya, no. 6, 1966, 17-20

TOPIC TAGS: ultraviolet radiation, cerebral cortex, human physiology, central nervous system, conditioned reflex, stimulus

ABSTRACT: The effect of ultraviolet radiation on the higher nervous activity of 15—16-yr-old technical school students was studied. The motor-speech method of Ivanov-Smolenskiy and the method of directed speech reactions (association test) were used to estimate the function of both signal systems (Pavlov). The radiation source was a PRK-2 mercury-quartz lamp with a wavelength of 136—400 mμ. Biodoses were determined for each student, since individual sensitivity to UV radiation varies widely. Doses were given singly (1 1/2, 1, 1/2 biodose) or repeatedly (1 1/2 and 1 biodose). The subjects, placed 75 cm from the source, were exposed (to the waist) to UV rays simultaneously from two sides. Indices of higher nervous activity employed included the accuracy of conditioned reflexes, the length of the latent period of

Card 1/2 UDC: 615.831.76-039.71-07:612.825.1

L 39820-66
ACC NR: AP6018714

motor and speech reactions, the quality of responses, absence of responses or repetition of words, and errors in pressing buttons. Ten students were studied in 500 experiments with repeated irradiation with 1 1/2 biodose (237.9 μv/cm^2/min). Experiments showed no change in the accuracy of conditioned reflexes or in the length of the latent period of a motor reaction to a word stimulus. However, repeated irradiation with this dose improved the functional condition of the second signal system in the following ways: the latent period of the speech reaction decreased in length, response reactions improved, and the number of avoidance reactions dropped. The incompleteness of this improvement in the functional condition of the second signal system was demonstrated by the number of repetitive or erroneous responses. It was concluded that this second signal system, based on speech, is more excitable than the first system (sensory), since it can be stimulated by ultraviolet irradiation. Orig. art. has: 4 tables. [JS]

SUB CODE: 06/ SUBM DATE: 19Jul65/ ORIG REF: 007/ ATD PRESS: 5119

Card 2/2

GORKINA, I.S.

Effectiveness of a progressive piecework system for paying the wages of drilling crews and ways to perfect this system. Trudy VNIIBT no.10:127-135 '63. (MIRA 17:4)

GORKINA, I.S.

Economic efficiency in the use of drilling pipes made from light alloys. Trudy VNIIBT no.12:93-97 '64. (MIRA 18:4)

GORKINA, [illegible] (Kuznetsk Penzenskoy oblasti).

After 42 years in the public health services. Fel'd. i akush. 23 no.11:59-60 N'58 (MIRA 11:11)
(VITUSOVSKAYA, NATAL'IA GRIGOR'EVNA, 1896-)

TONGUR, V.S.; SPITKOVSKIY, D.M.; TSEYTLIN, P.I.; GORKINA, N.B.

Relation between the configurational stability of desoxyribonucleic acid and its molecular weight; radiosensitive and radioresistant forms of desolyribonucleic acid. Biofizika 6 no. 1:9-14 '61. (MIRA 14:2)

1. Institut eksperimental'noy biologii AMN SSSR, Moskva.
(DESOXYRIBONUCLEIC ACID) (RADIATION—PHYSIOLOGICAL EFFECT)

KUZIN, A.M.; GORKINA, N.B.; KOPYLOV, V.A.; KRYUKOVA, L.M.

Nature of metabolites produced in irradiated plant leaves.
Radiobiologiia 1 no.5:659-662 '61. (MIRA 14:11)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.
(PLANTS--EFFECT OF RADIATION ON) (PLANTS--METABOLISM)

S/205/61/001/005/003/005
D299/D304

AUTHORS: A.M. Kuzin, N.B. Gorkina, V.A. Kopylov, and L.M. Kryukova

TITLE: The nature of the metabolites which form in the irradiated leaves of plants

PERIODICAL: Radiobiologiya, v. 1, no. 5, 1961, 659 - 662

TEXT: Experiments were conducted to determine whether extracts from Vicia faba leaves inhibit cell devision only in homologous tissue or whether this inhibiting action extends to the cells of other species. An attempt was made to determine whether extracts from irradiated and non-irradiated leaves affect the cell division of Escherichia coli B. The leaves were irradiated with an РУП-1 (RUP-1) apparatus in a dose of 15 kr at an intensity of 212 r/min. Some 24 hr after irradiation, extracts were made from the leaves and were added to the meat-peptone broth in which the E. coli were cultured. The results confirmed the authors' previous observations (Ref. 6: Dokl. AN SSSR, 137, 4, 970, 1961) that substances form in the irradiated leaves of plants which strongly inhibit cell multiplication. It was found that the semiproducts of the fermentative oxidation

Card 1/ 2

S/205/61/001/005/003/005
D299/D304

The nature of the ...

of tyrosine had a similar effect on E. coli B as did the meristematic radicle cells of Vicia faba. Only the low-molecular products of tyrosine oxidation, and not the high-polymer melanines, inhibited cell division. The results conform to a hypothesis that the phenol compound metabolism is disturbed in irradiated leaves, in which there form oxidation semiproducts of a polyphenol and semiquinoid nature, responsible for disturbance of cell division. There are 5 tables and 7 references. 6 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biophysics, AS USSR), Moscow

SUBMITTED: May 19, 1961

Card 2/2

BOGATSKIY, V.V., otv. red.; GOR'KIY, Yu.I., red.; DOBROVOL'SKIY, M.N., red.; KOROPETS, I.P., red.; KURTSERAYTE, Sh.D., red.; PEL'TEK, Ye.I., red.; FAYNBERG, F.S., red.; KHAZAGAROV, A.M., red.; SHESTAKOV, Yu.G., red.; LIFSHITS, L., red.

[Geology and geochemistry of the mineral resources of Krasnoyarsk Territory] Geologiia i geokhimiia poleznykh iskopaemykh Krasnoiarskogo kraia; sbornik statei. Krasnoiarsk, Krasnoiarskoe knizhnoe izd-vo, 1964. 197 p. (MIRA 18:9)

1. Krasnoyarskaya kompleksnaya ekspeditsiya.

GOR'KOV, A.A.

AID P - 611

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 15/35

Author : Gor'kov, A. A., Eng., Moscow

Title : An improvement in the use of welding transformers

Periodical : Elektrichestvo, 8, 65-67, Ag 1954

Abstract : The arrangement described permits a considerable improvement in the efficient utilization of the transformers and the obtaining of 15 to 20 per cent of economy in power consumption. Three diagrams.

Institution : Not given

Submitted : Ap 6, 1954

Gor'kov, A.A.

AID P - 3001

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 16/28

Author : Gor'kov, A. A.

Title : Voltage stabilization in a lighting network

Periodical : Energetik, 6, 23-25, Je 1955

Abstract : The author describes methods employed in large city networks to remove voltage vibrations. He presents stabilization connection diagrams and gives formulae for the computation of transformer capacity and other data. Two diagrams.

Institution : None

Submitted : No date

GOR'KOV, A.A.

Operating system for welding transformers. Elektrichestvo no.2: 64-65 F '56. (MLRA 9:5)

(Electric transformers)

GOR'KOV, A.A., inzh.

Using mounted synchronous generators in construction machinery.
Stroi. pred. neft. prom. 2 no.12:25-27 D '57. (MIRA 11:3)
(Electric Generators)

GOR'KOV, A.A., insh.

Electric safety measures in pipeline constructions. Stroi. truboprov. 3 no.9:22-25 S '58. (MIRA 11:12)
(Electric machinery--Safety measures)

GAL'PERIN, A.I., kand.tekhn.nauk; GOR'KOV, A.A., inzh.

We need machines with electric and hydraulic driving. Stroi. truboprov. 5 no.11:14-16 N '60. (MIRA 13:11)
(Pipelines)

GOR'KOV,A.M.; SOKOLOV,L.S.; CHEREPANOV,V.A.

On the problem of a radical improvement in Moscow's municipal and suburban transportation system. Gor.khoz. Mosk. 29 no.6: 3-7 Je '55. (MLRA 8:8)

1. Metrogiprotrans (for Gor'kov). 2. Moskovskiy metropoliten (for Sokolov) 3. Institut general'nogo plana g. Moskvy (for Cherepanov)
(Moscow--Rapid transit)

1. GOR'KOV, A. V., Eng.

2. USSR (600)

4. Sieves

7. Sifting in stationary sieves. Mekh. trud. rab. 6, No. 9, 1952.

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

GOR'KOV, A.V., inzhener, laureat Stalinskoy premii.

Loading of sand into barges and reloading it from barges into railroad cars. Mekh.trud.rab. 7 no.7:43-45 Jl '53. (MLRA 6:7)
(Sand--Transportation)

GOR'KOV, A.V., inzhener, laureat Stalinskoy premii.

Quarrying at the Kuybyshev hydroelectric construction project. Mekh.trud.rab. 7 no.10:38-42 O-N '53. (MLRA 6:10)
(Quarries and quarrying) (Kuybyshev hydroelectric power station)

GOR'KOV, A. V.

USSR/Miscellaneous

Card 1/1 : Pub. 70 - 7/9

Authors : Gor'kov, A. V., Engineer, Recipient of Stalin Award

Title : Experiments from the stone crushing plants (quarries) of the Kuybyshev Hydroelectric Plant

Periodical : Mekh. stroi. 3, 27-30, March 1954

Abstract : Data on the machinery (stone crushers, sifters, load feeders, etc.), employed by quarries supplying structural materials for the Kuybyshev Hydroelectric Plant on the Volga River, are presented. Drawings; illustration.

Institution : .....

Submitted : .....

AGAPOV, D.S.; ARTIBILOV, B.M.; VIKTOROV, A.M.; GINTS, A.N.; GOR'KOV, A.V.; GUSYATINSKIY, M.A.; KARPOV, A.S.; KOLOT, I.I.; KOMAREVSKIY, V.T.; KORYAGIN, A.I.; KRIVSKIY, M.N.; KRAYNOV, A.G.; NESTEROVA, I.N.; OBES, I.S., kandidat tekhnicheskikh nauk; SOSNOVIKOV, K.S.; SUKHOTSKIY, S.F.; CHLENOV, G.O.; YUSOV, S.K.; ZHUK, S.Ya., akademik, glavnyy redaktor; KOSTROV, I.N., redaktor; BARONENKOV, A.V., professor, doktor tekhnicheskikh nauk, redaktor; KIRZHNER, D.M., professor, doktor tekhnicheskikh nauk, redaktor; SHESHKO, Ye.F., professor, doktor tekhnicheskikh nauk, redaktor; AVERIN, N.D., inzhener, redaktor [deceased]; GOR'KOV, A.V., inzhener, redaktor; KOMAREVSKIY, V.T., inzhener, redaktor; ROGOVSKIY, L.V., inzhener, redaktor; SHAPOVALOV, T.I., inzhener, redaktor; RUSSO, G.A., kandidat tekhnicheskikh nauk, redaktor; FILIMONOV, N.A., inzhener, redaktor; VOLKOV, L.N., inzhener, redaktor; GRISHIN, M.M., professor, doktor tekhnicheskikh nauk, redaktor; ZHURIN, V.D., professor, doktor tekhnicheskikh nauk, redaktor; LIKHACHEV, V.P., inzhener, redaktor; MEDVEDEV, V.M., kandidat tekhnicheskikh nauk, redaktor; MIKHAYLOV, A.V., kandidat tekhnicheskikh nauk, redaktor; PETROV, G.D., inzhener, redaktor; RAZIN, N.V., redaktor; SOBOLEV, V.P., inzhener, redaktor; FERINGER, B.P., inzhener, redaktor; TSYPLAKOV, V.D., inzhener, redaktor; ISAYEV, N.V., redaktor; TISTROVA, O.N., redaktor; SKVORTSOV, I.M., tekhnicheskiy redaktor

[The Volga-Don Canal; technical report on the construction of the Volga-Don Canal, the TSimlyanskaya hydro development and irrigation works (1949-1952); in five volumes] Volgo-Don; tekhnicheskii otchet

(continued on next card)

AGAPOV, D.S. --- (continued) Card 2.
o stroitel'stve Volgo-Donskogo sudokhodnogo kanala imeni V.I.Lenina. TSimlianskogo gidrouzla i orositel'nykh sooruzhenii (1949-1952) v piati tomakh. Glav.red. S.IA. Zhuk. Moskva, Gos.energ. izd-vo. Vol.5. [Quarry management] Kar'ernoe khoziaistvo. Red.toma I.N. Kostrov. 1956. 172 p. (MLRA 10:4)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona. 2. Deystvitel'nyy cheln Akademii stroitel'stva, i arkhitektury SSSR (for Razin)
(Quarries and quarrying)

GOR'KOV, A.V., laureat Stalinskoy premii.

Providing the Kuybyshev Hydroelectric Power Station site with nonmineral building materials. Mekh.trud.rab. 9 no.12:18-22 D '55. (MLRA 9:5)

1. Glavnyy inzhener upravleniya nerudnykh materialov Kuybyshev-gidrostroya.
(Building materials) (Kuybyshev Hydroelectric Power Station)

GOR'KOV, A.V., inzhener, laureat Stalinskoy premii.

Problems of supplying non-mineral building materials to large hydraulic engineering projects. Mekh.stroi.12 no.3:14-18 Mr '55. (MLRA 8:4)
(Quarries and quarrying)

GOR'KOV, A.V., inzhener.

Experience in operating rock crushing plants. Mekh.trud.rab.13 no.7: 28-3 of cover Jl '56. (MLRA 9:9)
(Crushing machinery)

GOR'KOV, Aleksandr Vasil'yevich, inzh.; GERASIMOV, N.A., inzh., nauchnyy red.; CHEBOTAREV, P.A., red. izd-va.; STEPANOVA, E.S., tekhn. red.; MAGISHKINA, T.M., tekhn. red.

[Construction and operation of large stone crushing plants] Stroitel'stvo i ekspluatatsiia krupnykh kamnedrobil'nykh zavodov. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit., 1957. 130 p. (MIRA 11:10)

(Stone, Crushed)

100-9-3/11

AUTHOR: Gor'kov, A.V., Engineer

TITLE: Increased Attention to the Production of Natural Building Materials (Bol'she vnimaniya proizvodstvu kamennykh stroitel'nykh materialov)

PERIODICAL: Mekhanizatsiya Stroitel'stva, 1957, No.9, pp. 8 - 11 (USSR).

ABSTRACT: According to the directives of the 20th Congress of the Soviet Communist Party, unproductive stone quarries and ballast- and sand-pits should be closed and large regional crushing and sorting plants for stone aggregates should be built. A 1.8-fold increase in the output of natural stone material is foreseen during the 6th Five-year Plan. However, this branch of the industry has been rather neglected and even the Moscow building organisation faces chronic shortage of these materials. There is no modern sorting and crushing plant in the Moscow region. Various building organisations have erected small crushing plants in different places, e.g. in Karansk (in the Stalingrad region). 2 crushing plants were erected: one by the Ministry for Coal Production and the second by the Donbasskanalstroy. The Soksk stone-crushing plant, together with the Kuybyshevgidrostroy are working a number of small quarries; the output reaches 2 million m^3 of

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Increased Attention to the Production of Natural Building Materials

ballast/year. The Soviet Ministry for Transport is completing the assembly of a stone-crushing plant in Ishinsk with an annual output of 100 000 m^3. The Ministry of Power Stations envisages the construction of a stone-crushing plant with an annual output of 400 000 m^3. Roads and all necessary bridges, as well as ancillary services are constructed to all these plants. Small quarries are not equipped with excavators and up-to-date machinery. Large regional plants are to be erected to achieve complete mechanisation (capacity 350 000 to 400 000 m^3/year). The first Volga-Donstroy plant appears to be the best planned plant, although it is not quite up-to-date in design. Basic changes were carried out in the design of the crushing plants of the Kamsk, Kakhovsk and Novosibirsk Power Stations. The expected output could not be achieved at the Kamsk stone-crushing plant. The crushing machines KA -1500 - 1200 mm cannot be used in conjunction with CM-11. The plant has only 1 sieve, CM-60, which does not grade to 25 mm fractions. In consequence, these fractions are wasted. The drive to the receiving bunker is in the form of a header which limits the supply and consequently lowers the output. The crushing plant at Novosibirsk was built at the same time

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as the concreting plant. Both are 100 km from the quarry. The materials have to be conveyed by rail and up to 40% of the material is returned by rail, the rest being waste. There are many shortcomings with regard to the planning. The receiving bunker is not dimensioned correctly, the concreting yard is too small and the work of the crushing plant is virtually paralysed. A second crushing plant had to be designed to secure the supply of ballast necessary for the construction of the Novosibirsk Hydro-electric Power Station. The Kakhovsk Power Station has a very large output (800 - 850 m^3/hour). So far, the improvements planned by the Gosstroy, to arrive at a standard type of crushing plant, have not been very successful. Gipronemetrud have proposed a scheme for purifying sand the planned output being 400 000 m^3/year. 1 - 2 mm grain sand containing 10% impurities is used. The receiving bumker of the Zhirnovsk stone-crushing plant of the Ministry for Ferrous Metallurgy is constructed with a restricting wall. Fig. 1 shows the correct coupling of the bunker with the conveyor belt. NIIOMS has carried out tests on the grading of ballast using vibrating sieves. A formula was calculated, giving the output capacity of these plants. This formula, showing that the output is independent of the accuracy of sieving and trying to

prove that the larger the quantity passed through the sieve the bigger the output, was proved incorrect. The Bratsk Hydro-electric Power Station is located on the crossing of the Angara and the diabasic strata, the latter being a hard building material. On the site of the power station sand gravel deposits, containing 25% sand, are found. This site was chosen because sand occurred there and large quantities of gravel are obtained which hitherto could not be used because the majority of machinery was designed for crushing of diabase. Only 50% of the required quantity of sand is produced. To increase the output of sand, the small fractions of ballast should be crushed. A large variety of crushing and gravel sorting machines has been manufactured recently. However, defects have been observed on some of these machines, e.g. the lamellar feeders are made without devices for cleaning the drums (which often causes breakdowns). The height of the border does not permit correct jointing of the bunker and of the lamellar feeder. The side plates of the "jaw" crushing machines are fixed with protruding bolts which tend to break off due to the constant impacts caused by the stones. This also causes frequent breakdowns. These defects can be eliminated

100-9-3/11

Increased Attention to the Production of Natural Building Materials

by the type of fixing indicated in Fig.2.
There are 2 figures.

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Card 5/5

1. Construction materials 2. Construction-Equipment
3. Construction industry-USSR

GOR'KOV, A. V.

MEDVEDEV, V.M., kandidat tekhnicheskikh nauk; GOR'KOV, A.V., inzhener.

Conference of workers of the nonmineral materials enterprises. Gidr.stroi. 26 no.6:61-62 Je '57. (MLRA 10:7)
(Building materials--Congresses)

GOR'KOV, A.V., inzhener.

Experience operating rock products supply organizations at sites for hydraulic structures. Gidr.stroi. 26 no.8:8-15 Ag '57. (MIRA 10:10)

(Quarries and quarrying)

GORKOV, A.V.

AUTHOR: Gor'kov, A.V., Mining Engineer

127-58-6-17/25

TITLE: On the Planning of Crushing and Grading Units (O proyektirovanii drobil'no-sortirovochnykh ustanovok)

PERIODICAL: Gornyy Zhurnal, 1958, Nr 6, pp 60-63 (USSR)

ABSTRACT: Almost all new crushing and grading units are faulty and need readjustment after a few days. The author describes many such cases. He finds that the main cause of it is an inadequate approach to the problem of the construction of such units. At the request of Gosstroy, different organizations designed various types of such units, but every one of them is adaptable only to a specific requirement of a given industry. Gosstroy must revise the methods of preparing general projects and instead, collect projects for individual units and from this mass find a satisfactory project-type. There are 3 figures.

ASSOCIATION: Gidroproyekt

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Card 1/1 1. Graders-Maintenance

GOR'KOV, Aleksandr Vasil'yevich; CHLEK, Yuriy Isaakovich; SHLAYN, I.B., kand.tekhn.nauk, retsenzent; MEYBOM, R.V., inzh., retsenzent; PETROV, G.D., inzh., nauchnyy red.; MAR'YANSKIY, L.P., red.; AKULOV, D.A., red.; SOKOL'SKIY, I.F., tekhn.red.

[Reconstruction of quarries supplying building materials to the Stalingrad Hydroelectric Power Station] Rekonstruktsiia kar'ernogo khoziaistva dlia stroitel'stva Stalingradskoi GES. Moskva, Gidroproekt, 1959. (MIRA 13:6)

(Stalingrad Hydroelectric Power Station)
(Quarries and quarrying) (Sand and gravel plants)

GOR'KOV, Aleksandr Vasil'yevich; BOGOSLOVSKIY, V.A., inzh., red.; MIKHAYLENKO, Yu.Ya., red.; LEBEDEVA, L.V., tekhn.red.

[Organization of storage and transportation of nonmetallic materials at construction sites of large hydroelectric power installations] Organizatsiia transporta i skladov nerudnykh materialov na stroitel'stvakh krupnykh gidrouzlov. Moskva, Orgenergostroi, 1959. 62 p. (MIRA 12:10)
(Hydroelectric power stations)

28(1) SOV/118-59-4-22/25

AUTHOR: Gor'kov, A.V., Engineer

TITLE: Engineering Abroad - The Production of Non-Metallic Building Materials in the GDR

PERIODICAL: *Mekhanizatsiya i avtomatizatsiya proizvodstva*, 1959, Nr 4, pp 58-61 (USSR)

ABSTRACT: The article deals with exploitation methods in the quarries of the GDR and describes various drilling machines for the boring of inclined and horizontal blast holes, rock crushers, a machine for the washing and sorting of sand and pit gravel mixtures, and various transportation means (belt conveyers, elevators, etc.) There are 7 diagrams.

Card 1/1

GOR'KOV, A.V., inzh.

Means and methods for improving the quality of crushed stone.
Stroi.mat. 5 no.7:18-21 Jl '59. (MIRA 12:10)
(Stone, Crushed)

GOR'KOV, A.V., inzh.; CHLEK, Yu.I., inzh.

Automation of stone-crushing plants. Mekh.stroi. 16 no.11: 10-14 N '59. (MIRA 13:5)
(Crushing machinery) (Automation)

RAT'KOVSKIY, Leonid Petrovich; BOGOSLOVSKIY, V.A., inzh., retsenzent, nauchnyy red.; GOR'KOV, A.V., inzh., retsenzent; BUSHUYEVA, M.A., red.izd-va; RUDAKOVA, N.I., tekhn.red.

[Producing concrete aggregates using rock products] Proizvodstvo nerudnykh materialov - zapolnitelei dlia betona. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 203 p. (MIRA 13:5)
(Aggregates (Building materials)) (Quarries and quarrying) (Sand and gravel plants)

16.1000 67243 5

~~16(1), 16(2),~~ 30(5)

AUTHORS: Kantorovich, L.V., Corresponding Member SOV/20-129-4-5/68
of the AS USSR, and Gor'kov, L.I.

TITLE: Some Functional Equations That Arise in Analysing a Single-Product Economic Model

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 732-735 (USSR)

ABSTRACT: For the investigation of economic processes the authors recommend mathematical models which lead to differential- and integro-differential equations which can be integrated numerically step by step. Thus it is possible to determine the influence of several factors (parameters of the model) to the economic characteristics of the process. The models may serve also for an examination of the exactness and legality of several methods of calculation usual in economy. Three cases are considered, e.g.: Let t be the time, T(t) be the set of work at one's disposal, R(t) be the raw materials at one's disposal. Let U(R,T) be the set of goods produced in the unit of time. If U(R,T) is assumed to be a homogeneous function, then

$$(1) \qquad U(R,T) = \int_0^n R^{\alpha} T^{n-\alpha} dp(\alpha),$$

Card 1/2

67243

Some Functional Equations That Arise in Analysing a Single-Product Economic Model

SOV/20-129-4-5/68

where $p(\alpha)$ is a weight function. Let $n=1$. Let the function $U(R,T)$ characterize optimal methods of production. Then the curves $U=\text{const.}$ are convex; for this it is sufficient that $p(\alpha)$ is not decreasing. Let the part $(1-\gamma)$ of the production be consumed, let the remainder be stored; then

$$(3) \qquad \frac{dR}{dt} = \gamma U(R(t),T(t)).$$

ASSOCIATION: Leningradskoye otdeleniye matematicheskogo instituta imeni V.A. Steklova Akademii nauk SSSR (Leningrad Section of the Mathematical Institute imeni V.A.Steklov AS USSR)

SUBMITTED: August 22, 1959

X

Card 2/2

L 22249-66 EWT(1) IJP(c) GG

ACC NR: AP6010996 SOURCE CODE: UR/0056/66/050/003/0738/0758

AUTHOR: Bychkov, Yu. A.; Gor'kov, L. P.; Dzyaloshinskiy, I. Ye.

ORG: Institute of Theoretical Physics, Academy of Sciences, SSSR (Institut teoreticheskoy fiziki Akademii nauk SSSR)

51
B

21

TITLE: The possibility of effects similar to superconductivity in a one-dimensional system

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 3, 1966, 738-758

TOPIC TAGS: superconductivity, superconductor, Fermi particle, BCS theory, electron pair

ABSTRACT: It is shown that the Fermi state of a one-dimensional system is unstable relative to an arbitrarily weak attraction between the particles. In distinction to the three-dimensional case, it is the particle quartets near the Fermi surface which exhibit specific properties similar to those of the electron pairs in the BCS theory. Instability changes the ground state in such a way that a spectrum gap appears and the structure period doubles. However, the new ground state is capable of passing a current without energy dissipation. Interaction with the lattice leads to the appearance of an effective interaction between the electrons. If the effective interaction be-

L 22249-66

ACC NR: AP6010996

between the electrons. If the effective interaction is repulsive (but weak), the system remains in the metallic state of all temperatures. The problem of fluctuations is discussed.

[CS]

SUB CODE: 20/ SUBM DATE: 06Oct65/ ORIG REF: 006/ OTH REF: 005/

Card 2/2 nst

Inst. Physical Problems im. S. I. Vavilov AS USSR

2110

ON THE ASYMPTOTIC APPEARANCE OF GREEN'S ELECTRON FUNCTION. L. P. Gor'kiy (Vavilov Inst. of Physical Problems). Doklady Akad. Nauk S.S.S.R. 105, 65-8(1955) Nov. 1. (In Russian)

Using the Gell-Mann and Low method (Phys. Rev. 95, 1300(1956)), some corrections are introduced in Green's electron function for the e^4 order of the excitation theory. (R.V.J.)

GOR'KOV, L. P.

GOR'KOV, L. P. --"The Quantum Electrodynamics of Charged Particles with Zero Spin." Moscow, 1956. (Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

So.: Knizhnaya Letopis', No 7, 1956.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1225
AUTHOR GOR'KOV, L.P.
TITLE The GREEN'S Functions of Charged Particles within the Domain of the "Infrared Catastrophe".
PERIODICAL Zurn. eksp. i teor. fis, 30, 790-791 (1956)
Publ. 4 / 1956 reviewed 8 / 1956

This report deals with a derivation which explains the additional singularity $(m^2/(p^2-m^2))^{(e^2/2\pi)(3-d_1(0))}$ in the GREEN'S function of a charged particle independently of the nature (spin) of this particle. GREEN'S function is here defined in the usual manner: $G(x,x') = \langle (\Psi(x), \Psi(x'))_+ \rangle_0$ and the FOURIER'S component of $G(x,x')$ within the domain $p^2 \quad m^2$ is defined by the matrix element $\langle 0 | \Psi(x) | p \rangle$, where $p^2 \sim m^2$, i.e. it is sufficient if, in the FOURIER series of the operator $\Psi(x)$, only the part of the spectrum with $p^2 \sim m^2$ is determined. In the state with $p^2 \sim m^2$ there exists a particle which is in interaction with the electromagnetic field, and the quantity $\Delta = | p^2-m^2 | m^{-2}$ is a measure for the energy of the photons which this particle is able to emit or to absorb. The assumption is made, which is confirmed later, that with this effect only coupling with the low frequency part of the electromagnetic field is of essential importance. On the occasion of the selection of a system of reference in which the motion of a particle is nonrelativistic, the following

Zurn.eksp.i teor.fis, 30, 790-791 (1956) CARD 2 / 2 PA - 1225

nonrelativistic SCHROEDINGER equation applies:
$i\partial\Psi(x)/\partial t = \left\{ m + eA_o(x) + (1/2\ m)(\vec{\hat{p}} - e\vec{A}(x))^2 \right\} \Psi(x)$, where $\hat{p} = -i\nabla$.
This equation is suited for the description of the interaction of the "free" part of FOURIER'S series $\Psi(x)$ $(p^2 \sim m^2)$ with the low frequency part of the electromagnetic field. After some transformations the following GREEN'S function is herefrom obtained:
$G(x,x') = G_o(x,x') \left\langle P_\tau P_{\tau'} \left(\exp\left\{-i\int^t j_\mu A_\mu(\vec{x},\tau)d\tau\right\} \exp\left\{i\int^t j_\nu A_\nu(x',\tau')d\tau'\right\}\right)_+ \right\rangle_o$
where $G_o(x,x')$ is the GREEN'S function of the free particles. This expression is averaged over the vacuum of the photons and is several times transformed. In the case of an adiabatic interaction the values of all integrals extending over the lower limit may be omitted. Integration is described. The high frequency domain leads to renormalization effects which, however, cannot be worked with accuracy by means of this method. Eventually
$$G(p) = G_o(p)\ (m^2 / (p^2 - m^2))^{(e^2/2\pi)(3-d_1(o))}$$
is found. $G_o(p)$ is thus distinguished from the GREEN'S function of the free particle by a renormalization factor. Thus, the occurrence of the aforementioned singularity in the GREEN'S function of the particle on the occasion of interaction with the electromagnetic field is connected only with the classical properties of the electric current due to the uniform motion of the particle.
INSTITUTION: Institute for Physical Problems of the Academy of Science in the USSR.

GOR'KOV, L.P.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1885
AUTHOR GOR'KOV,L.P., CHALATNIKOV,I.M.
TITLE The Electrodynamics of the Charged Scalar Particles.
PERIODICAL Žurn.eksp.i teor.fis,31,fasc.6,1062-1078 (1956)
Issued: 1 / 1957

L.D.LANDAU, A.A.ABRIKOSOV and I.M.CHALATNIKOV investigated the asymptotic behavior of GREEN'S functions in the case of high momenta of electrodynamics with spin 1/2 by means of the direct solution of integral equations. The corresponding steps are taken in the course of the present work with respect to the electrodynamics of the particles with spin zero in KEMMER'S formalism.

At first KEMMER'S β-formalism is discussed; it is very similar to DIRAC'S equation for the electron. Also the interaction between mesons and the electromagnetic field can be described by means of the KLEIN-GORDON- and also by means of β-formalism. The scattering of light by light results in a finite expression in the case of summation over all permutations of the emitted quanta. The following is discussed in detail: GREEN'S function of the photon, GREEN'S function of the meson, the basic equations, and the gradient transformation of GREEN'S function of the meson.

Summary: The present investigation shows that the electrodynamics for spin zero is formally similar to that for spin 1/2, but conditions in this instance are, in general, more complicated. When deriving the integral equations the results obtained by the perturbation theory must be widely used.

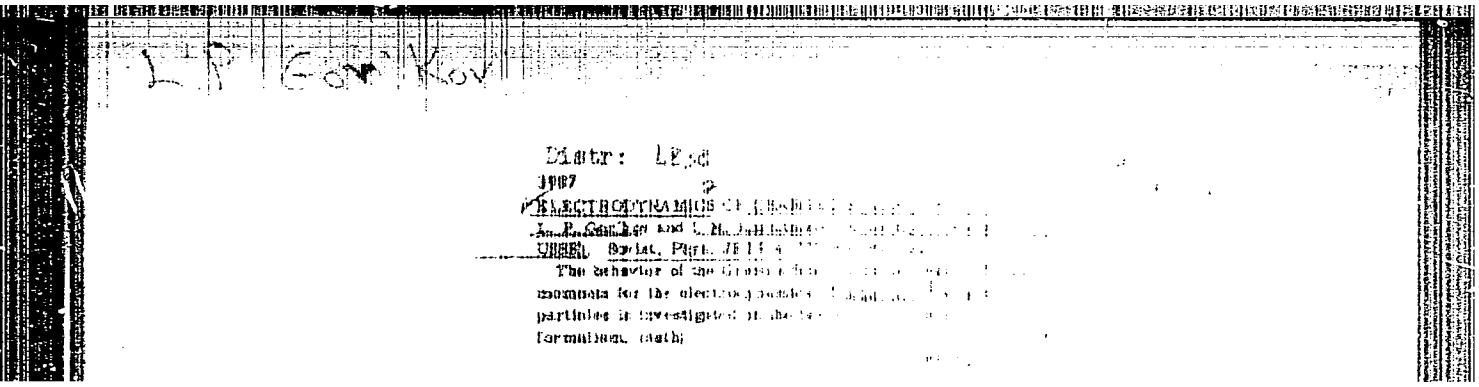
Zurn.eksp.i teor.fis,31,fasc.6,1062-1078 (1956) CARD 2 / 2 PA - 1885

When selecting $d_1=d_t$ an equation with three "summits" can be written down for summit parts. If d_1 is selected in this manner, it is sufficient, in the approximation investigated, to determine GREEN'S function of the photon and meson and of the summit part. The COMPTON diagrams are then equal to their zero-th approximation. In this case employment of the equation with three summits leads to the correct expression for GREEN'S function of the photon. This is brought about by comparison with the results obtained by other methods which make use only of the perturbation theory and the postulate of renormalizability. For GREEN'S function of the meson both methods furnish the same results.

At $d_1 \neq d_t$ the equation for the summit part cannot be applied. In this case the expression for GREEN'S function of the meson must be determined by gradient transformation (any d_1) of such expressions as were determined on the condition $d_1 = d_t$. It is interesting that the difference between the exact GREEN'S function of the meson and its zero-th approximation is not reduced to gradient transformation alone as is the case in ordinary electrodynamics.

INSTITUTION: Institute for Physical Problems of the Academy of Science in the USSR.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R000616220005-9"



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ELECTRODYNAMICS OF [illegible]
[illegible] and [illegible]
USSR, Soviet Phys. JETP [illegible]
The behavior of the [illegible]
moments for the electron [illegible]
particles is investigated [illegible]
formalism (math)

PA - 2685

AUTHOR GOR'KOV L.P.

TITLE Two Limiting Momenta in Scalar Electrodynamics
(Dva predel'nykh impul'sa v skalarnoy elektrodinamike - Russian)

PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki, 1957,Vol 32, Nr 2, pp 359-362 (USSR)
Received 5/1957 Reviewed 6/1957

ABSTRACT In connection with the conclusion drawn by I. Ya. POMERANCHUK (Dokl.Akad. nauk.1957, Vol 1o3, 1oo5 (1955), that charge, on the occasion of transition to punctiform interaction, becomes equal to zero, the two-limit-value scheme becomes especially interesting. The present work investigates this problem in the electrodynamics of the particles with spin zero. Two cases are possible: I. $\Lambda_k \gg \Lambda_p$. Here the integration domain can be subdivided into two partial domains: a) $\Lambda_p \gg p \gg k$, b) $\Lambda_k \gg p \gg \Lambda_p \gg k$.

The author investigates the summit part at $p \gg 1$. Integration over k is carried out in the domain $\Lambda_p \gg k \gg p$. The domain b) makes no contribution to the expression for the polarization tensor. Thus, at $\Lambda_k \gg \Lambda_p$ only the limit value Λ_p is noticeable in theory. II. $\Lambda_p \gg \Lambda_k$. The author investigates the equation of the summit part for this case. Let $p \gg 1$ apply. For the summit part and for G(p) the solution is sought in the following form: $G^{-1}(p) = \left[\hat{p} - m_1(p^2)\right]/\beta(p^2)$, $B_\sigma(p,p-1,1) = \beta_\sigma \alpha(p^2)$. For the limits of the integration domain $\Lambda_k \gg k \gg p$ be valid. At $\Lambda_k \gg p \gg 1$, $B_\sigma(p,p-1,1) = \beta_\sigma \alpha(p^2) + (\hat{1}1_\sigma - \beta_\sigma 1^2)p^{-2}\alpha^2(p^2)d(p^2)S_0(p^2,1^2)$ applies, but in the case of $p \gg \Lambda_k \gg$ the integral furnishes no logarithmic contribution and $B_\sigma(p,p-1,1) \to \beta_\sigma$. applies.

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Two Limiting Momenta in Scalar Electrodynamics PA - 2685

Now the equation for GREEN'S function of the photon is dealt with: If $k \gg \Lambda_k$, it applies that $d_t(k^2) = 1$. $k \ll \Lambda_k$ holds. Then, like formerly in the case of the integral for the polarization tensor, two integration domains occur: a) $\Lambda_p \gg \Lambda_k \gg p \gg k$ b) $\Lambda_p \gg p \gg \Lambda_k \gg k$. By this method the following equation are found:

$$d_t(k^2) = \begin{cases} 1+(e_1^2/3\pi)v\ln(\Lambda_p^2/-k^2)^{-1} & \text{at } k \ll \Lambda_k \\ 1 & \text{at } k \gg \Lambda_k \end{cases}$$

For the charge apparently $e^2 = e_1^2\left[1+(e_1^2/3\pi)v\ln(\Lambda_p^2/m^2)\right]^{-1}$ applies.

Polarization of the vacuum of the particles with spin zero changes GREEN'S function of the photons in exactly the same manner as in ordinary electrodynamics. Gradient transformation on any d_1 can be carried out.

ASSOCIATION Institute for Physical Problems of the Academy of Science of the USSR
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SUBMITTED 15.12.1955
AVAILABLE Library of Congress
Card 2/2

GOR'KOV, L. P.

AUTHOR: Gor'kov, L.P., 56-2-13/47

TITLE: Stationary Convection in a Plane Liquid Layer Near the Critical Heat Transfer Point (Statsionarnaya konvektsiya v ploskom sloye zhidkosti vblizi kriticheskogo rezhima teploperedachi)

PERIODICAL: Zhurnal Eksperim. i Teoret, Fiziki, 1957, Vol. 33, Nr 2(8), pp. 402-407, (USSR)

ABSTRACT: The ascertainment of the symmetry and the amplitude of motion in the case of overcritical conditions necessitates the study of non-line equations. The present paper discusses the results from such investigation for the nearly critical conditions. The plane horizontal layer of liquid with the thickness h is bounded by two planes, which are kept at a temperature difference; Three different kinds of boundary conditions can be imagined: a) two fixed planes, b) one fixed plane and one free surface, c) two free surfaces. For the case c) the formulas are particularly simple. At the outset the equations of stationary convection are written down. Then the boundary conditions are given and every quantity occuring here are expanded into fouries series. The solution of the equation derivated here is given; The amplitude of the convection motion is proportional to the square root from the parameter $\Delta\varphi$, which characterizes the overcritical state of the heat transfer. In the equations obtained here only the moduli of the absolute values of the amplitude of the motion X appear, which means, that

Card 1/2

Stationary Convection in a Plane Liquid Layer Near the Critical Heat Transfer Point. 56-2-13/47

the proportion between their phases cannot be determined. With the help of the relation $X = |X| e^{i\delta}$ a connection between the phases is obtained. By a transformation of the coordinate origin all phases can be set equal to zero. The principal term of the solution is given explicitly. This solution shows hexagonal symmetry, and a periodic structure in the x,y plane consisting of regular hexahedron prisms. In the centre of these prisms the liquid moves upwards and near the walls downwards. The solution is also given for the second case. The corresponding flow permits rotations of third order with respect to the vertical axis and it is symmetrical with respect to the x-axis. The intensity of motion in the case of stationary heat convection in a plane layer of liquid under nearly critical conditions is proportional to the root from that parameter, which characterizes the overcriticalistate of the conditions. The significance of Prandtl's number, too, is shown. There is 1 Slavic reference and no figure.

ASSOCIATION: Institute for Physical Problems AN of the USSR (Institut fizicheskikh problem Akademii nauk SSSR)
SUBMITTED: February 5, 1957
AVAILABLE: Library of Congress

Card 2/2

GOR'KOV, L. P.

56-3-14/59

AUTHORS: Gor'kov, L.P., Pitayevskiy, L.P.

TITLE: The Scattering of Light in He^3 - He^4 Mixtures. (O rasseyanii sveta v smesyakh He^3 i He^4)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol.33, Nr 3, pp. 634-636 (USSR)

ABSTRACT: The scattering of light in He^3 - He^4 mixtures below the λ-point is theoretically treated. It is shown that the spectral decomposition of the scattered light contains 5 lines. For these lines formulae for the calculation of their intensity are given. The width of the lines can be estimated and for γ/σ near the critical point $\sim 10^{-9}$ is obtained, which is less than the distance between the lines of the inside doublet. There are 2 Slavic references

ASSOCIATION: Institute for Physical Problems AN USSR (Institut fizicheskikh problem Akademii nauk SSSR)

SUBMITTED: March 25, 1957

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Gor'kov, L. P. SOV/56-34-3-31/55

TITLE: On the Spectrum of Energy of Superconductors
(Ob energeticheskom spektre sverkhprovodnikov)

PERIODICAL: Zhurnal Eksperimental'noy i teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 735-739 (USSR)

ABSTRACT: First, brief reference is made to 4 preliminary works dealing with this subject. A method based upon an idea developed by L. Cooper (Kuper) (Ref 1) is proposed in the present report. According to this idea all results can be determined in a short and simple way by means of the apparatus of the quantum theory of the fields. First the Hamiltonian of the problem is written down explicitely. The interaction is put equal to zero everywhere, except the range of the particle energy $2\varkappa$ in the vicinity of the Fermi-limit ϵ_F (from $\epsilon_F - \varkappa$ to $\epsilon_F + \varkappa$). The author subsequently passes over to the version developed by Heisenberg. The conditions for the operators ψ and ψ^+ which depend on the time, are written down. The Green

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function $G_{\alpha\beta}(x - x')$ is defined as mean value of the basic state of the system: $G_{\alpha\beta}(x - x') = -i\langle T(\Psi_\alpha(x), \Psi^+_\beta(x'))\rangle$, in which case T denotes the chronological operator. It is taken into account here that the ground state of the system differs from the usual state with a filled-up Fermi-ball by the presence of bound electron pairs. In the ground state all pairs rest as a whole. A socalled "Bose-condensation" of the pairs follows when the momentum of their motion as a whole is equal to zero. Due to this fact, the mean values obtained here can be written down in a definite way. The process of calculation is followed step by step and the obtained terms are explicitely written down. The method explained here allows also the investigation at temperatures exceeding absolute zero. In this case a thermodynamically averaged Green function must be investigated.
There are 5 references, 2 of which are Soviet.

On the Spectrum of Energy of Superconductors SOV/56-34-3-31/55

ASSOCIATION: Institut fizicheskikh problem AN SSSR
(Institute for Physical Problems AS USSR)

SUBMITTED: November 18, 1957

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AUTHORS: Abrikosov, A. A., Gor'kov, L. P., Khalatnikov, I. M.

TITLE: A Superconductor in a High-Frequency Field (Sverkhprovodnik v vysokochastotnom pole)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 35, Nr 1, pp. 265-275 (USSR)

ABSTRACT: Bardeen, Cooper and Schrieffer (Bardin, Kuper, Shriffer) developed a microscopical theory of superconductivity (Ref 1). In the present paper the question is investigated as to how superconductors behave in variable weak fields, and a new (not local) equation is derived, which describes the connection between current and field instead of the equation of the phenomenological theory by F. and G. London. Also the question of the depth of penetration of a weak static field into massive superconductors and their dependence on temperature is dealt with. In the present paper the authors investigate the behavior of superconductors in high-frequency fields and derive an equation describing this behavior. The paper is subdivided into 4 sections. The first deals with the setting-up of an equation for the current in superconductors $j(\vec{k}, \omega)$

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in dependence on $\vec{A}(x)$; section two deals with Pippard's limiting case, and section three deals with London's domain ($vk \ll \Delta$). In section four the temperature- and frequency dependence of the impedance of a massive superconductor is determined by means of the equation derived as mentioned above. Finally, the authors thank L.D. Landau, Academician, for the interest he displayed in their work.
There are 5 references, 1 of which is Soviet.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physical Problems, AS USSR)

SUBMITTED: March 4, 1958

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SOV/56-35-6-35/44

24(5), 24(6)

AUTHORS: Abrikosov, A. A., Gor'kov, L. P.

TITLE: On the Theory of Superconducting Alloys (K teorii sverkhprovodyashchikh splavov) 1. The Electrodynamics of Alloys at Absolute Zero (1. Elektrodinamika splavov pri absolyutnom nule)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 6, pp 1558-1571 (USSR)

ABSTRACT: Bardeen, Cooper and Schrieffer (Bardin, Kuper, Shriffer) (Ref 1) developed an electrodynamics of superconductors and replaced the old phenomenological equation by G. and F. London by a new one, which describes the connection between the current $\vec{j}$ and the vector potential $\vec{A}$. The non-local form of the connection between current and field is based upon Cooper's conception (Ref 2) of the formation of coupled singlet pairs of electrons near the Fermi surface as a result of phonon interaction. The dimensions of these pairs correspond to the electron correlations in the case of distances of $\xi_0 \sim 10^{-4}$ if the penetration depth of the field $\ll \xi_0$ (non-local case, very pure superconductors). By means of these theories it is

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On the Theory of Superconducting Alloys. 1. The Electrodynamics of Alloys at Absolute Zero

possible to develop thermodynamics and electrodynamics of superconductors, and it is possible to investigate their behavior in a high-frequency field (Ref 3). In this connection interest is caused by the so-called "alloys", i.e. superconductors with atomic impurities of other elements and with other lattice dislocations. In the case of very low concentrations, impurities play only a minor part. An increase of impurity concentration leads to a decrease of the spatial electron correlation in the superconductor. In the case of a suitable concentration, it is no longer ξ_0 that acts as a correlation parameter, but the free path of the electrons. In concentrations in which the length of path becomes small in comparision to penetration depth a local coupling between current and vector potential is to be expected. The difference to London's theory consists in the variation of the proportionality factor between $\vec{j}$ and $\vec{A}$. In the following, the authors investigate these questions on the assumption of small impurity concentrations. With detailed explanations and justifications of each individual step, equations are then derived,

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which describe the dependence of the penetration depth on the concentration of impurities, and also the electrodynamical equations in a varying field, this is done on the assumption that the electron free path for the superconductor is smaller than the correlation length. The authors in conclusion thank L. D. Landau, Academician, for his constant interest and valuable comments. There are 8 figures and 7 references, 5 of which are Soviet.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute for Physical Problems of the Academy of Sciences, USSR)

SUBMITTED: July 16, 1958

Gor'kov, L. P.

24(0) SOV/30-59-2-42/60

AUTHOR: Khalatnikov, I. M., Doctor of Physical and Mathematical Sciences

TITLE: Investigations of Low-temperature Physics (Issledovaniya po fizike nizkikh temperatur)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 98-100 (USSR)

ABSTRACT: The 5th All-Union Conference on this problem took place in Tbilisi from October 27 to November 1, 1958. It was attended by physicists from Moscow, Khar'kov, Leningrad, Tbilisi, Sverdlovsk, and Kiyev. 4 fields of low-temperature physics were discussed: superliquidity of liquid helium II, supraconductivity, antiferromagnetism, magneto-resistive effect. The following reports and communications were heard: A. A. Abrikosov, L. P. Gor'kov reported on the investigation of the properties of supraconductive alloys. A. A. Abrikosov, L. P. Gor'kov, I. M. Khalatnikov spoke of properties of supraconductors in the high-frequency magnetic field. D. V. Shirkov and Chen' Chun'-yan' and Chzhou Si-shin', two young Chinese scientists working at Moscow University, described investigations for determination of the influence exercised by the Coulomb (Kulon) interaction of charges on supraconductivity. V. V. Tolmachev explained the

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nature of the so-called collective excitations of the Bose type in supraconductors. D. N. Zubarev, Yu. A. Tserkovnikov spoke of the thermodynamics of supraconductors and B. T. Geylikman, V. Z. Kresin of the thermal conduction of supraconductors. Yu. V. Sharvin, V. F. Gantmakher reported on experimental work with supraconductors. N. V. Zavaritskiy spoke of the measurement of the anisotropy of thermal conductivity in the supraconductive state. In a series of reports problems of the superliquidity of helium were discussed, which was discovered in 1938 by P. L. Kapitsa and the theory of which was set up in 1941 by L. D. Landau. E. L. Andronikashvili and his collaborators investigated the properties of rotating helium. V. P. Peshkov spoke of the effect of the formation of the boundary between superliquid and non superliquid helium. Guan Vey-yan', collaborator of the Institut fizicheskikh problem (Institute of Physical Problems) investigated the properties of the so-called jump in temperature of Kapitsa. I. M. Lifshits, V. D. Peschanskiy investigated galvanomagnetic phenomena in strong magnetic fields for metals with open Fermi surfaces. N. Ye. Alekseyevskiy, Yu. P. Gaydukov experimentally investigated the resistance anisotropy of gold monocrystals in the

magnetic field. L. S. Kan, B. G. Lazarev combine the presence of a temperature minimum with the structural state of the metal. M. Ya. Azbel' reported on the quantum theory of metallic conductivity in the alternating electromagnetic and constant magnetic field. A. S. Borovik-Romanov reported on the weak ferromagnetism in antiferromagnetic samples of $MnCO_3$. N. M. Kreynes, Ye. A. Turov investigated the magnetic anisotropy of the antiferromagnetic monocrystals $CuSO_4$ and $CoSO_4$. R. A. Alikhanov reported on neutronographic investigations of antiferromagnetics. Ye. I. Kondorskiy and collaborators reported on the susceptibility of nickel and nickel-copper alloys at low temperatures. M. I. Kaganov, V. M. Tsukernik reported on kinetic phenomena in ferromagnetics at low temperatures. A. I. Akhiyezer, V. G. Bar'yakhtar, and S. P. Peletminskiy spoke of computations of the relaxation of the magnetic moment in ferromagnetic dielectrics at low temperatures. T. I. Sanadze spoke of observation results of paramagnetic resonance of terbium in the $TbNO_3 \cdot 6H_2O$ nitrate. G. R. Khutsishvili gave a theoretical analysis of the orientation of the nuclear spin in the Overhauser (Overkhauzer)

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AUTHORS: Abrikosov, A. A., Gor'kov, L. P. SOV/56-36-1-48/62

TITLE: Superconducting Alloys at Temperatures Above Absolute Zero (Sverkhprovodyashchiye splavy pri temperaturakh vyshe absolyutnogo nulya)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 319-320 (USSR)

ABSTRACT: In a previous paper the author developed the electrodynamics of superconductors containing impurities (in low atomic concentrations) at T = 0. However, this method cannot be applied to real temperatures. The authors and I. Ye. Dzyaloshinskiy developed a generalization of the method which can be applied to T = 0. They proceeded from a formulation of the thermodynamical theory which was suggested by T. Matsubara. These methods will be discussed in a separate paper. The principal functions for T ≠ 0 are calculated in a similar manner as in the case T = 0. In the case of equilibrium, the entire modification consists practically in replacing the integrals over frequencies by sums over a discrete variable.

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$(1/2\pi)\int_{-\infty}^{\infty} d\omega f(\omega) \rightarrow (i\pi/\hbar) \sum_{n=-\infty}^{\infty} f(i\omega_n)$. It holds that $\omega_n = (\pi T/\hbar)(2n+1)$, and T denotes the temperature in energy units. The authors used this method for the investigation of the equilibrium properties at finite temperatures. As in the case $T = 0$, the functions $G(x,x')$ and $F(x,x')$ (which were apparently defined in the above-mentioned previous paper) are simply multiplied by an exponential factor
$G(x,x') = G_0(x,x') \exp\left\{-|\vec{x}-\vec{x}'|/2l\right\}$
$F(x,x') = F_0(x,x') \exp\left\{-|\vec{x}-\vec{x}'|/2l\right\}$ where l denotes the free path length in the normal state. For the thermodynamic functions it is sufficient to determine the density of the particles as a function of the chemical potential and of the temperature

$N(\mu, T) = N = \langle\psi^+(x)\psi(x)\rangle_a = i\left[G(x,x')\right]_{x=x';\ t=t'-0}$. The function $N(\mu,T)$ is the same as in the case of a pure superconductor. In the investigated model an introduction of

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admixtures does therefore not vary the thermodynamic functions (and, especially, critical temperature). This result naturally holds only in the case of low concentrations of the impurities. The authors also investigated the behavior of alloys in a constant magnetic field. A formula is given for the connection between the current and the vector potential in the London case, and therefrom a formula is deduced for the penetration depth. For great free-path lengths, this formula can be reduced to the usual expression for a pure London superconductor. The corresponding formula is given also for Pippard superconductors. All the formulae deduced in this paper for the penetration depth can be applied to the characteristics of films of a thickness $d \ll \delta$. In this case, δ does, however, not denote the depth of penetration, but it defines magnetic susceptibility and it figures in the expression for the effective dielectric constant at low frequencies. The author thanks Academician L. D. Landau for discussing this paper. There are 3 references, 1 of which is Soviet.