UKOLOV., kapdidat technicheskikh nauk; NEL'NIK, inshener.

Determining the velocity of air blown through ventilated grain.
Nuk.-elex.pros. 2 = 12:10-11 D '56. (NURA 10:2)

1. Veesoyusnyy nauchno-iseledovatel'skiy institut serna i produktov ego pererabotki.

(Grain elevatore—Heating and ventilation)

MEL'NIK, B., inzh.

Determining the optimal distance between pipes when ventilating bulk grain. Muk. elev. prom. 24 no.11:10-11 H *58.

(MIRA 11:12)

1. Vsesoyuznyy nauchne-issledovatel'skiy institut zerma i preduktev yege pererabetki. (Ventilation) (Grain-Storage)

MEL'NIK, B. Ye., Cand Tech Sci -- (diss) "Research into the active ventilation of grain hoppers by means of moving pipe assemblies."

Moscow, 1960. 22 pp; with illustrations; (Ministry of Higher and Secondary Specialist Education REFER, Moscow Technological Inst of the Food Industry); 150 copies; price not given; list of author's work on pp 21-22 (19 entries); (KL, 22-60, 137)

UKOLOV, V., kand.tekhn.nauk; MEL'NIK, B., kand.tekhn.nauk

Visual observations on the circulation of air in ventilated bulk grain. Muk.-slev. prom. 27 no.11:29 N '61.

(MIRA 14:12)

1. Vsesoyuznyy nauchnc-is-sledcvatel'skiy institut zerna i produktov Yego perenbotki.

(Grain--Storage)

(Ventilation)

L 56037-65

ACCESSION NR: AP5018356

aUR/0020/64/157/004/1003/1005

AUTHOR: Mol'nik, B. Yo.

TITLE: Melanophore response of amphibians upon inducing a change in the state of

their nervous system by means of neurotropic agents

SOURCE: AN SSSR, Doklady, v. 157, no. 4, 1964, 1003-1005

TOPIC TAGS: nervous system, neurology, nervous system drug, experiment animal, hormone, animal physiology, skin physiology

ABSTRACT: A major adaptation response of the lower vertebrates is thier ability to change color on change in their external environment. The author investigated whether amphibia retain an adaptation melanophore response when neurotropic agents that act mostly on the cerebral regions (corazol, Caffeine) and on cerebrospinal functions (dibasol), as well as ganglion-blocking agents (hexamethonium) are administered to them. The animals used in the experiments were light and dark lake frogs (Rans ridibunds). The change in the color of the frogs was produced by exposing them against

Card 1/3

AP5018356 a white background and illuminating them with scattered light for 12 hours. The author's assumption that corazol and caffeine produce contraction of the pigment of the melanophores and lighter color of the skin regardless of the illumination was confirmed by repeating these experiments on placing light-colored frogs against a black background. This is attributed to the blocking of the secretion of the melanophore hormone of the hypophysis due to the intensification of efferent impulses from the mesencephalon and diencepholon, i.e., regions of the brain which are the most stimulated by corazol and caffeine. Hexamethonium and dibasol were found to be much less effective in inducing the melamophore response. It is concluded that the principal coordinating mechanism ensuring the adaptive nature of the pigment response of amphibia is the central nervous system rather than the hypophysis. The hypophysis is merely the link of the nervous system whose melanophore hormone directly affects the dispersion of pigment in the Orig. art. has: 1 table. melanophores. Card 2/3

ACCESSION HRI APSO18356			
ASSOCIATION: Kishinevskiy go	audarstvennyy universitet (Kishinev State University	1)
SUBMITTED: 13Mar64	Encl: 00	SUB CODE: L8	
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$\mathcal{A}^{\mathcal{O}}$			
BC Carà 3/3			

MEL'NIK, B. Ye., kand. tekhn. nauk

Improve the technology of continuous processing of food and feed corn. Inform. biul. VINKH no.10:24-25 0 164 (MIRA 18:1)

L 33083-66 EWT(1) RO SOURCE CODE: UR/0020/66/166/001/0253/025	5 .0
AUTHOR: Mel'nik, B. Ye.	
ORG: Kishinov State University (Kishinovskiy gosudarstvennyy universitet)	
TITLE: Effect of some psychotropic drugs on the melanophore reaction of amphibias	i
SOURCE: AN SSSR. Doklady, v. 166, no. 1, 1966, 253-255	
TOPIC TAGS: drug effect, dermatology, nervous system drug, hormone, tranquilizer, endocrinology, brain, gland	
ABSTRACT: The effects of a neuroleptic (rausedil), a tranquilizer (meprotane), and of psychoanaleptics (melipromine and centedrine) on the melanophore reaction of Rana ridibunda frogs were studied. Rausedil on being injected to the frogs produced darkening of the skin, presumably by stimulating the melanophore	
function of the hypophysis. Meprotane did not produce any effect psychoanaleptics, particularly centedrine, had a pronounced lightening effect on the skin. They apparently blocked the outflow of the melanophroic hormone	
from the hypophysis, acting through the mesencephalon (extirpation of the frontal part of the brain had no effect on the reaction to these drugs). Introduction of a hypophysis homogenate to hypophysectomized frogs which had	
been given an injection of centedrine 30-40 min earlier did not produce the darkening of the skin observed on hypophysotomised frogs to which no centedrine had been administered. This article was presented by Academician E. N. Pavlovskiy 26 Feb 1965. Orig. art. has: 1 table. [JPRS]	on
SUB CODE: 06 / SUBM DATE: 22Feb65 / ORIG REF: 004 / OTH REF: 002	
Card 1/1 pa	

AUTHOR:

Mel'nik, D.F.

Theorems of Liouville Type for Some Elliptic Systems of Differential Equations (Teoremy tipa teoremy Liuvillya nekotorykh ellipticheskikh sistem differentsial nykh uravneniy)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958,
Nr 5, pp 165-171 (USSR)

ABSTRACT:

Theorem: Let the system with constant coefficients

(1) \[
\begin{align*}
\begin{align*}
(-1) & k_1 \cdots & k_1 \

sov/140 -58-3-20/34 Theorems of Liouville Type for Some Elliptic Systems of Differential Equations

 $\sum_{k_1+\cdots+k_n=s_0}^{A_{k_1\cdots k_n}(id_1)^{k_1}\cdots(id_n)^{k_n}},$

where so is the smallest order of the derivatives in (1), possess inverse matrices for every real non-vanishing of = = (d1, ..., dn). Let the s-times continuously differentiable solution of (1) satisfy the estimation $O(|x|^1)$, 1>0 for $|x| \to \infty$. Then this solution is a polynomial of degree [1], where [] denotes the integer part of the number. The proof uses the ellipticity of the system. A further theorem of Liouville type is proved in a special case for elliptic systems with variable coefficients. There are 5 references, 4 of which are Soviet, and 1 American.

ASSOCIATION: L'vovskiy pedagogicheskiy institut (L'vov Pedagogical

Institute)

November 26, 1957 SUBMITTED:

Card 2/2

MEL'NIK, D. F., Candidate Phys-Math Sci (diss) -- "The fundamental matrix of linear elliptical systems of differential equations for infinite space". L'vov, 1959. 6 pp (Min Higher Educ Ukr SSR, L'vov State U im I. V. Franko), 150 copies (KL, No 24, 1959, 126)

MEL'NIK, D. G. Cand Agr Sci -- (diss) "The Results of the Testing of Grades of Grape and Studies of the Influence of Terrain Relief on the Biology of the Grape Under Conditions of tixthex Koz'modem'yansk in Ascrbaydzhan SSR."

(Mos Order of Lenin Agricultural Academy im K. A. Timiryazev), 120 copies (KL, 25-57, 116)

XXX**03-104-**

MEL'NIK, D.G., aspirant.

Influence of a vineyard's southern exposure on grape biology in the Meri ASSE, Izv. TSKhA no.1(20):147-152 '58. (MIRA 11:4) (Mari ASSE-Grapes)

MEL'NIK, D.K., inzh. Inclination angle of the conveyor of the SMT-2,14 sugar beet loader. Mekh. i elek. sots. sel'khoz. 21 no.1:48 '63. (MIRA 16:7) 1. Ukrainskaya mashinoispytatel'naya stantsiya. (Sugar beets) (Conveying machinery)

MEL'NIK, E.K., inzh.

Susceptibility of sugar beet roots to damage during the process of loading. Trakt. 1 sel'khozmash. no.1:33-34 Ja '65.

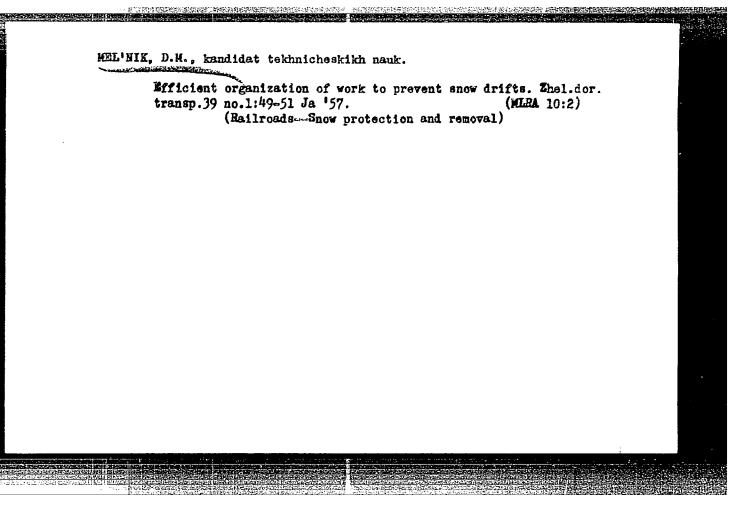
(MIRA 18:3)

1. Ukrelnskaya mashinoispytatel'naya stantsiya.

MEL'NIK, D.M., kandidat tekhnicheskikh nauk.

Prospective development in mechanizing time-consuming snow removal work. Vest. TSHII MPS 15 no.1:27-31 Ag '56. (MLRA 9:12)

(Railroads--Snow protection and removal)



NEL'NIK, D.M., kand. tekhn. nauk

Foreign technology; combatting snow on foreign reilroads. Put' i put. (khoz. no.3:45-46 Mr '58. (MHA 11:4)

(Reilroads--Snow protection and removal)

MELINIK, D. M., kand. tekhn. nauk; OBUKHOV, L.M., inzh.

Removal of snow from switch boxes. Zhel. dor. transp. 40 no.2:63-67
F *58. (MIRA 11:3)

(Railroads---Snow protection and removal)

(Railroads---Switches)

MEL'NIK, D.M.; KOMAROV, A.A.; ANTONOV, F.I.; OBUKHOV, L.M.; LYAKHOVICH, V.B.;

FUFOV, A.V., inzh., red.; BCEROVA, Ye.M., tekhn.red.

[Mechanization of snow protection and removal on railroads]

Mekhanizatiia snegouborki i snegozashchita na zheleznykh

dorogakh. Moskva, Gos. transp.zhel-dor. zd-vo. 1959. 112 p.

(Moscow. Vsesoiusnyi nauchno-issledovatel'skii institut

zheleznodorozhnogo transporta. Trudy, no.166) (MIRA 12:4)

(Railroads--Snow protection and removal)

MELINIK D. M.

AL'BREKHT, Vladimir Georgiyevich, prof.; LIDERS, Georgiy Vladimirovich, dotsent; NIKIFOROV, Pavel Aleksandrovich, prof. [deceased]; CHLENOV, Mikhail Timofeyevich, kand.tekhn.nauk; CHERNYSHEV, Mikhail Andreyevich, kand.tekhn.nauk; FRISHMAN, M.A., prof., retsenzent; ANDREYCHENKO, A.V., inzh., retsenzent; BABKIN, A.R., inzh., retsenzent; BEZRUCHKO, V.S., inzh., retsenzent; ZHEREBIN, M.I., inzh., retsenzent; MEL'NIK, D.M., inzh., retsenzent; MURAV'YEV, I.V., inzh., retsenzent; NOVITSKIY, G.I., inzh., retsenzent; PASHININ, S.A., inzh., retsenzent; POTOTSKIY, G.I., inzh., retsenzent; TYUTYUNNIK, F.R., inzh., retsenzent; ULYUYEV, D.I., inzh., retsenzent; SHEPELEV, V.N., inzh., retsenzent; BOBROVA, Ye.N., tekhn.red.

[Track work] Putevce khoziaistvo. Pod red. M.A. Chernysheva. Moskva, Gos. transp. zhel-dor.izd-vo, 1959. 435 p. (MIRA 12:12)

1. Kafedra "Put' i putevoye khozyaystvo" Dnepropetrovskogo instituta inzhenerov zheleznodorozhnogo transporta (for Frishman).

(Railroads--Track)

Combined operations for the prevention of snow blocks. Zhele dor.transp. 41 no.12:20-23 D *59. (MIRA 13:4)

(Railroads——Snow protection and removal)

Machine for cleaning track, Put' 1 put.khoz. 4 no.3:5
Mr '60. (MIRA 13:5)
(Railroads—Frack) (Railroads—Snow plows)

MELINIK, D.M., kand.tekhn.nauk

Micient ways to protect tracks from snow blocks.

42 no.11:14-18 N '60.

(Railroads—Snow protection and removal)

(Railroads—Snow protection and removal)

MEL'NIK, D.M., kand.tekhn.nauk

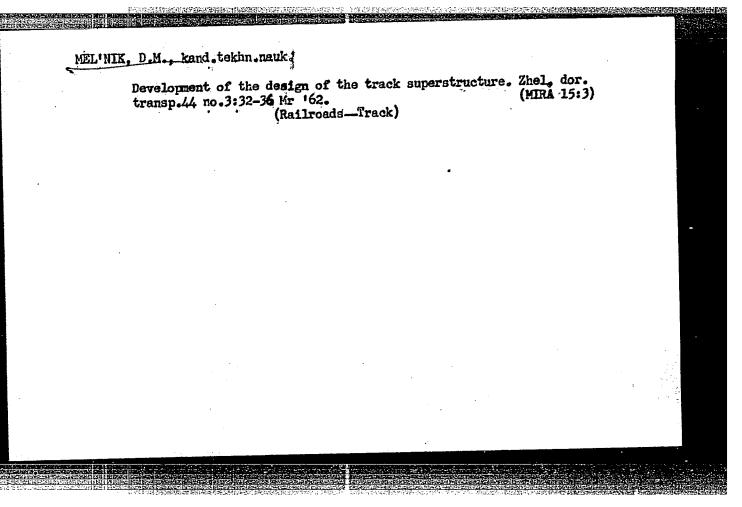
Make full use of the initiative of Perm! railroad workers. Put! 1 put. khoz. 5 no.3:10-11 Mr !61. (MIRA 14:3)

1. Rukovoditel' laboratorii snegobor'by Vsesoyuznogo nauchnoissledovatel'skogo instituta zheleznodorozhnogo transporta. (Railroads—Snow protection and removal)

MEL'NIK, D.M., kand.tekhn.nauk

Problems in the planning of snow protection on railroads.
Vest. TSNII MPS 21 no.1:49-53 '62. (MIRA 15:2)

(Railroads—Snow protection and removal)



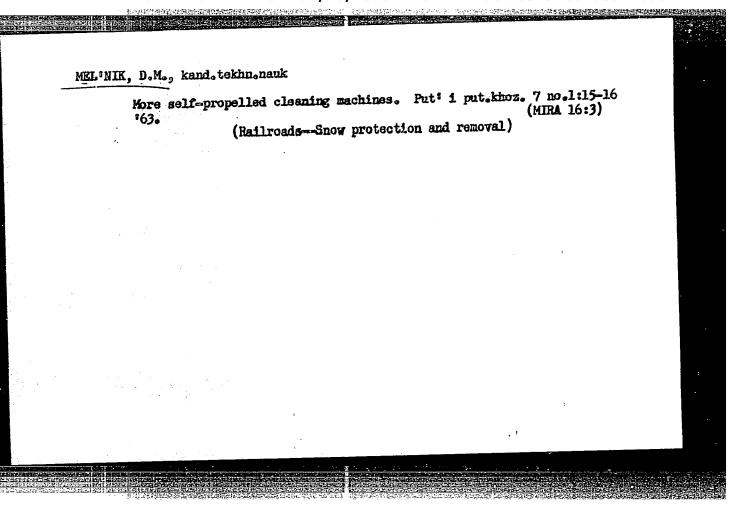
THE STREET STREET STREET STREET

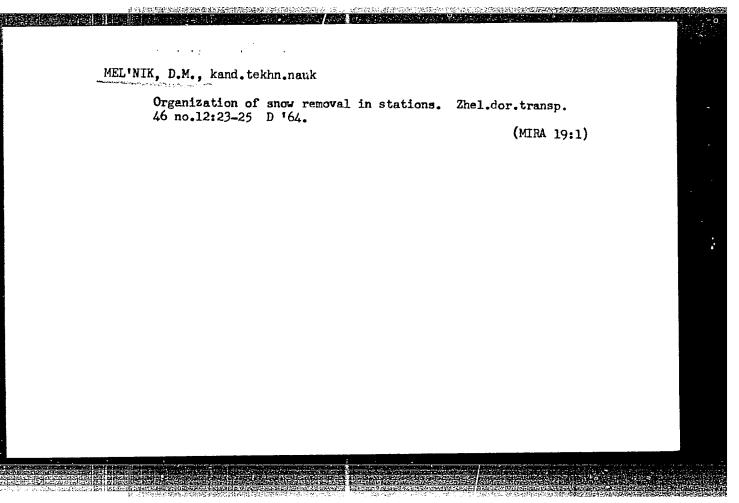
MEL'NIK, Daniil Mikhaylovich, kand. tekhn. nauk; FILIPPOVA, L.S., red.; SERGEYEVA, A.I., red. izd-va; DROZDOVA, N.D., tekhn. red.

[Mechanized snow entrapping on railroads] Mekhanizirovannoe snegozaderzhanie na zheleznykh dorogakh. Moskva, Transzhel-

(Railroads-Snow protection and removal)

dorizdat, 1963. 20 p.





MEC'NIK, D.M., kand. tekhn. nauk

Need for self-propelled snow removal machines. Pat' i put. khoz.
9 no.1817 *65

(MIRA 18:2)

DEV'YAKOVICH, G.M., kand. tekhn. nauk; MEL'NIK, D.M., kand. tekhn. nauk; NEDASHKOVSKIY, P.P., nauchnyy sotrudnik

Mechanization of track cleaning operations. Put i put. khoz. 9 no.10:20-22 '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovateliskiy institut zheleznodo-rozhnogo transporta Ministerstva putey soobshcheniya.

ACC NR: AP7004587	SOURCE CODE: UR/0050/66/000/008/0033/0035
AUTHOR: Hel'nik, D. H. (Camidate of	tochnical sciences)
ORG: Institute of Railroad Transporte	ation (Institut zhelesnodorozhnogo transporta)
TIME: Nateorological servicing of re	ailroad transportation
SOUNCE: Noteorologiya i gidrologiya,	no. 8, 1966, 33-35
TOPIC TAGS: wind velocity, atmospher:	io wind
example, until recently permanent of net were designed for a single wind velocities are taken into account adequate. The country should be did of different wind regimes. A knowledge show drifting would make it possible factors in the construction of many	reat importance in railroad work. For snow fences along the entire railroad divelocity of 35 m/sec. Now two wind 25 and 33 m/sec. This still is invivided into five regions on the basis ledge of wind velocities and associated le to dispense with excessive safety of structures, thereby saving construction of Railroads, especially
Card 1/2	UDC: 551.5:656.2

ACC NR: AP7004587 the All-Union Scientific Research Institute of Railroad Transportation, have carried out considerable work on the transport of snow during blizzards. The greater part (90%) of blizzard snow is transported directly in the surface layer with a height of 20 cm. The weight of the mass of snow particles carried by the wind through a cross section of the surface layer 2 m in height and with a width of 1 cm is proportional to the cube of wind velocity. The Ministry of Railroads now is constructing wind roses showing the probable directions of snow transport by the wind during winter for each direction of the horizon for different places. Such roses should be available for each railroad station and section of tracks. In the past it has been suggested that a special "transportation meteorology" be established, but this has too much in common with the needs of construction and engineering in general and the author therefore suggests establishing an "engineering" meteorology, with engineering snow science being an integral part of it. JPRS: 38,460/ SUBH DATE: 03Aug65 ORIG REF: 003 2/2

MEL'NIK D.P. [Mel'nyk, D.P.]

Fundamental solutions of elliptic simultaneous equations with a parameter for an unlimited space. Nauk. zap. L'viv. un. 44 no.6: 204-209 '57. (MIRA 11:6)

MEL'NIK, D.P. [Mel'nyk, D.P.]

Fundamental matrix of variational type systems for an unlimited space.
Dop. AN URSR no.6:602-604 158. (HIRA 11:9)

1.L'vovskiy gosudarstvennyy pedagogicheskiy institut. Predstavil akademik AN USSR B.V. Gnedenko [B.V. Hnedienko].
(Matrices) (Functional analysis)

SOURCE CONE: UR/0226/66/000/002/0006/0009 Lakomskiy, V. I.; Mel'nik, G. A. AUTHOR: ORG: Institute of Electric Welding im. Ye. O. Paton (Institut elektrosyarki) TITLE: Spheroidization in high-frequency plasma discharge of aluminum oxide powder SOURCE: Poroshkovaya metallurgiya, no. 2, 1966, 6-9 TOPIC TAGS: spheroidization, aluminum oxide, high temperature plasma, plasma arc, argon, heat transfer, metal powder, dissociation constant, plasme discharge 2114455 ABSTRACT: The paper deals with the spheroidization of aluminum oxide in a high frequency plasma, which is a very promising source of high temperatures. High frequency plasmotrons have no electrodes; therefore, the plasma generated by them is purer than arc plasma. In addition, oxidizing gases may be used to create the plasma. A short description of the apparatus used in the procedure of powder shperoidization is given. It is shown that on adding 10% oxygen to argon, heat transfer from the plasma to the powder particles increases. Furthermore, addition of oxygen depresses dissociation of aluminum oxides. The author notes the participation of Engineer V. A. Chudakov in the study. Orig. art. has: 3 figures. [Based on author's abstract. SUB CODE: 11,20/SUBM DATE: 26Ju165/ OTH REF: 002/ Card 1/1 22/

KOVALENKO, Daniil Naumovich; SEMENOV, Viktorin Grigor'yevich [Semenov, V.H.]; TKACHUK, L.G. [Tkachuk, L.H.], doktor geol.-miner. nauk prof., otv. red.; MEL'NIK, G.F. [Mel'nyk, H.F.], red.

[Phosphorites of the Ukraine] Fosforyty Ukrainy. Kyiv, Naukova dumka, 1964. 177 p. (Seriia geologii rodovyshch korysnykh kopalyn, no.13) (MIRA 19:1)

YARYM-AGAYEV, N.L.; MEL'NIK, G.V.

Thermodynamic properties of fused salt mixtures. Part 6.
Zhur.fiz.khim. 39 no.11:2650-2655 N '65.

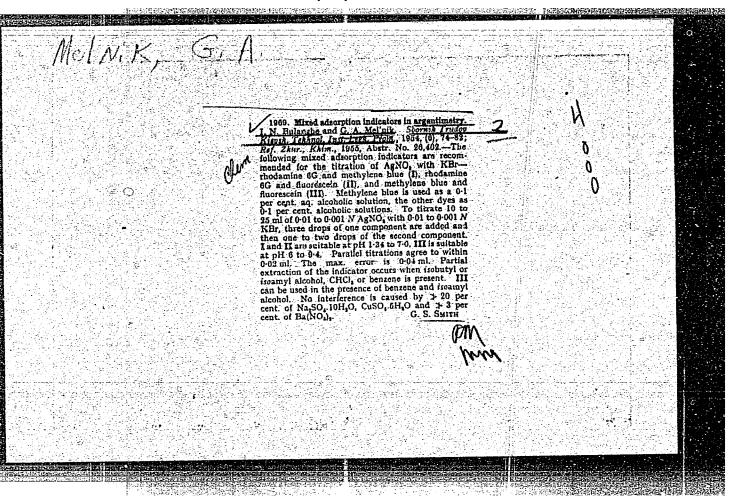
(MIRA 18:12)

1. Donetskiy politekhnicheskiy institut.

MEL'NIX, F., mashinist pod youngy mashiny.

Many thanks. Mast. ugl. 7 no.11:26 N '58. (MIRA 11:12)

1. Shakhta Ne.14 kembinata Intangel'. (Ceal miners--Diseases and bygiene)



KOVALENKO, Daniil laumovich; SEMENOV, Viktorin Grigor'yevich; TKACHUK, L.G., doktor geol.-mineral. nauk, prof., otv. red.; MEL'NIK, G.F., red.

[Phosphorite of the Ukraine.] Fosforyty Ukrainy. Kyiv, Naukova dumka, 1964. 177p. (Akademiia nauk URSR. Instytut geologichnykh nauk. Pratsi. Seriia geologii rodovyshch korysnykh kopalyn, no.13).

(MIRA 18:3)

MITSKEVICH, Boris Fedorovich [Mitskevych, B.F.]; IVANTISHIN, M.M.[Ivantyshyn, M.M.], doktor geol.-miner. nauk, otv. red.; MEL'NIK, G.F.[Mel'nyk, H.F.], red.

[Geochemical methods of prospecting and the conditions for their use in the Ukraine and in Moldavia] Geokhimichni metody rozshukiv ta umovy ikh zastosuvannia na Ukraini i v Moldavii. Kyiv, Naukova dumka, 1965. 127 p. (MIRA 18:9)

KHARCHENKO, A.S., dots., otv. red.; MEL'NIK, G.F. [Mel'nyk, H.F.], red.

[Comprehensive geographical mapping of the Ukrainian S.S.R.]
Kompleksne geografichne kartografuvannia Uk.RSR. Kyiv, Naukovadumka, 1964. 173 p. (MIRA 17:12)

VUL'CHIN, Yevgeniy Ivanovich[Vul'chyn, IE.I.]; KALYUZHNYY, V.A. [Kaliuzhnyi, V.A.], kand. geol.-miner. neuk, otv. red.; MEL'NIK, G.F.[Mel'nyk, H.F.], red.

[Trace elements in the rocks of the hiphean formation of the western slope of the Ukrainian Crystalline Shield] Mikroelementy v porodakh ryfeis'koi tovshchi zakhidnoho skhylu Ukrains'koho krystalichnoho shchyta. Kyiv, Naukova dumka, 1964. 117 p. (MIRA 18:2)

Stratigraphy of Ordovician sediments in the cent geol. 3 no.10:133-136 0'60.	ral Pamirs. Sov.	13:10)
 Upravleniye geologii i okhrany nedr pri Sovet Tadzhikakoy SSR. (Pamirs-Geology, Stratigraphic) 	e Kinistrov	

BARKHATOV, B.P.; MEL'NIK, G.G. Lower Paleosoic of the Pamirs and the Darvaza Range. Dokl. AH

(MIRA 14:1) SSSR 136 no.2:408-411 '61. l. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova i Upravleniye geologii i okhrany nedr pri Sovete Ministrov TadzhSSR. Predstavleno akademikom D.V. Malivkinym. (Pamirs—Geology, Stratigraphic) (Darvaza Range—Geology, Stratigraphic)

MELINIK, G.H.

Excretion of 17-ketosteroids in women with tuberculosis. Wrach, delo aupplement '57:29-30 (MIRA 11:3)

1. Kafedra tuberkuleza (zav.-prof. I.T.Stukalo) i kafedra biokhimii (zav.-dots. B.A.Sobchuk) L'vovskogo meditsinskogo instituta.

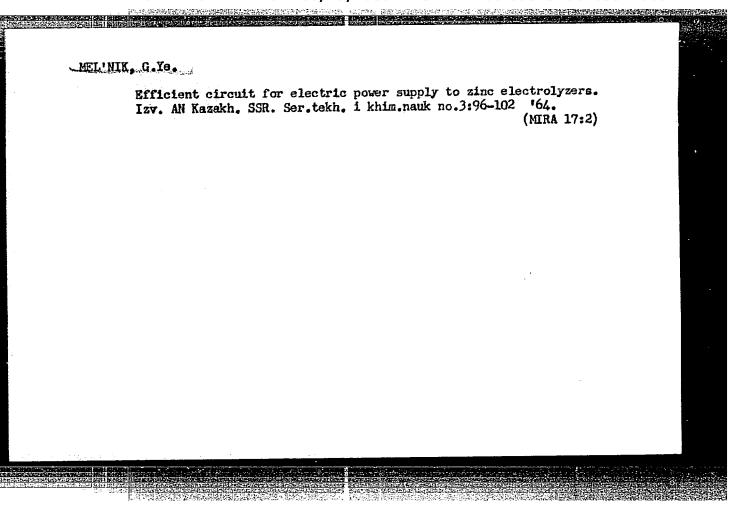
(TUBERGULOSIS) (STEROIDS)

CONTRACTOR AND		
· · ·	MEL'NIK, G.P.	
	Reticulosarcomatosis in an infant. Pediatriia no.7:78-79 161. (MIRA 14:9)	
	1. Iz Kotovskoy rayonnoy bol'nitsy (glavnyy vrach G.V. Yakimenko). (RETICULO-ENDOTHELIAL SYSTEM-TUMORS)	

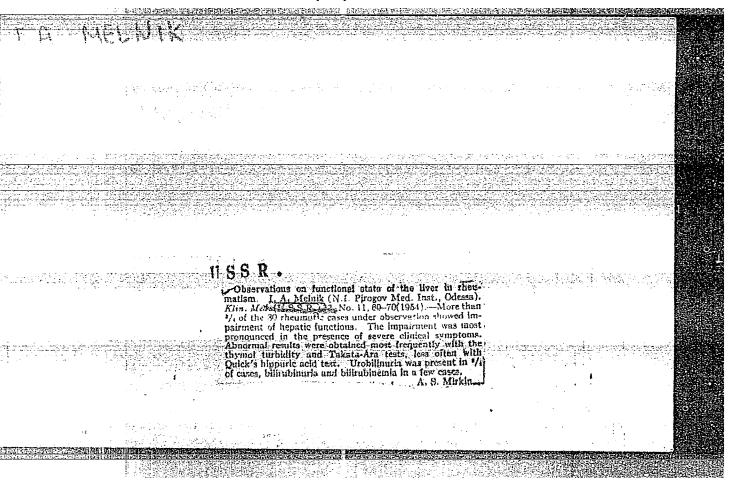
MEL'NIK G.V. inzh.

Heating congesled fats in railroad tank cars without increasing moisture content. Masl.-shir. prom. 24 no. 8:31-35 *58.(MIRA 11:8)

1. Ushgorodskiy margarinovyy savod. (Oil and fats)



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MELMI	K, T.A. I I I I I I I I I I I I I I I I I I
Caratra Saleurus (al-Carlatra)	rana kahinda kanda dan kanda dan kanda dan kanda dan kanda dan kanda dan dan kanda kanda dan kanda kanda dan d
	2012. Bilirabin test with bloth rane Boas 1 January 1951 1951 1967
	urine of patients with paunited was compared with that appearing
	is the infusion of tea. The a force of the support of the support of the support of tea produces a green colour; a support of the support of tea produces a green colour; a support of the
	G.Freien
reger ritti bir karladı.	Chair of Noopital Therapy, Odesan Med Inal.
	in N. Pirago



MEL'HIK, I.A., dotsent (Chernovitsy)

Endemic goiter or endemic thyroid disease? Probl.endok, i gorm.
3 no.1:108-110 Ja-F '57. (MIRA 10:6)

1. Is kliniki gospital'noy terapii Chernovitskogo meditsinskogo instituts (dir. - dotsent M.M.Kovalev).

(GOITER,
endemic, terminol. aspects (Rus))

MEL'NIK, I.A., dots. (Chernovtsy)

Some new data on the dynamics of blood changes in myocardial infarct. Elin, med. 36 no.8860-62 Ag '58 (MEA 11:9)

1. Is gospital'noy terspevticheskoy kliniki (zav. - prof. V.A. Triger) Chernovtskogo meditsinskogo instituta (dir. - dots. M.M. Lovalev)

(MYOCARDIAL HEFARCT, blood in hemogram (Rus))

(BLOOD CELLS, count in myocardial infarct (Rus))

MEL'RIK, I.A., dotsent (Ternopol')

Casoni's test in lymphogramulomatosis. Elin.med. 39 no.4:147-150 '61. (MIRA 14:4)

1. Iz kliniki fakul'tetskoy terapii (zav. - dotsent I.A. Mel'nik)
Ternopol'skogo meditsinskogo instituta (dir. - dotsent P.Ye.

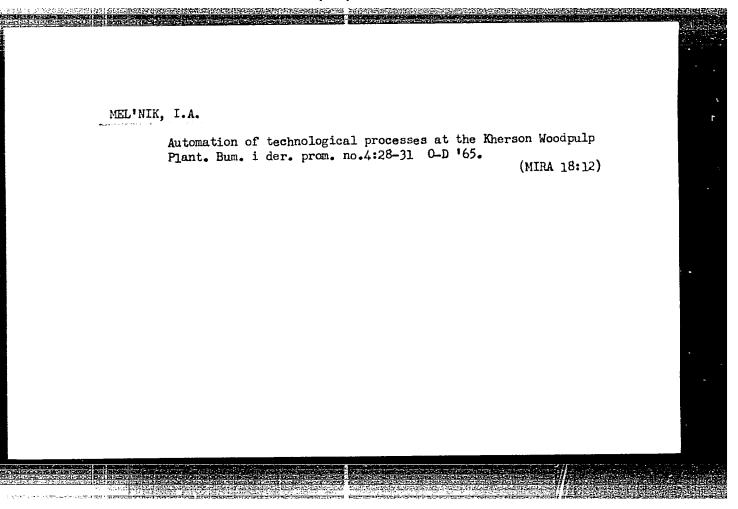
Qgiy). (HODGKIN'S DISEASE)

MEL'NIK, I. A., dotsent

Phases in the course of collagen diseases. Vrach. delo no.7:
77-80 J1 '62. (MIRA 15:7)

1. Fakul'tetskaya terapevticheskaya klinika (zav. - dotsent I. A. Mel'nik) Ternopol'skogo meditsinskogo instituta na baze oblastnoy klinicheskoy bol'nitsy.

(COLLAGEN DISEASES)



GORAK. Sergey Vladimirovich [Horak, S.V.]; BONDARCHUK, V.G. [Bondarchuk, V.H.], akademik, vidpovidal'niy red.; KEL'HIK. I.F. [Hel'nyk, I.F.], red. vidavnitetva; MATVIYCHUK, O.O., tekhnichnyy red.

[Ostracoda in certain middle and upper Carboniferous horizons in the Donets Basin and factors governing their existence] Ostrakody deiakykh horysontiv seredn'oho i verkhn'oho karbonu Donets'koho baseinu ta umovy ikh isnuvannia. Kyiv, Vyd-vo Akad. nauk Ukrains'koi RSR. 1958. 74 p.) (Akademiia nauk URSR, Kiev. Instytut geologichnykh nauk. Trudy. Seriia stratigrafii i paleontologii, no.28).

(MIRA 11:9)

1.AN URSR (for Bondarchuk).
(Donete Basin--Ostracoda, Fossil)

18.9100

68178

SOV/58-59-5-10565

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, p 104 (USSR)

AUTHORS:

Bushuyev, Ye.S., Mel'nik, I.G.

TITLE:

Structure and Properties of Ag-Cu Alloys Obtained by Joint and

Alternate Condensation in a Vacuum

PERIODICAL:

Nauk, zap. Chernivets'k,un-t, 1955, Vol 12, pp 97 - 104 (Ukr.; Russ.

resume)

ABSTRACT:

The application of X-rays to the study of the structure of very thin metallic films is extremely difficult in view of the small extent of the scattering material, although in the case of unstable structure it is more expedient to use this method than the electron diffraction method. In this connection it became necessary to work out a method of preparing thin samples in which the metal would present the maximum degree of dispersity and at the same time possess sufficient volume. The authors used the method of alternately overlapping the molecular beams from the evaporating metals by means of a rotating disk with apertures. Cu and Ag samples, obtained by simultaneous and alternate condensation of the metals onto mica, proved to be extremely unstable:

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68178 sov/58-59-5-10565

Structure and Properties of Ag-Cu Alloys Obtained by Joint and Alternate Condensation in a Vacuum

they cracked upon their very first contact with the air. X-ray studies showed that the most non-uniform structure is observed in Cu in the case of its condensation onto cooling mica. On the X-ray photograph of a Cu and Ag mixture, the copper was only represented by two lines: a very intense, somewhat blurred 111 line, and a strongly blurred 200 line with a scarcely noticeable maximum. The remaining lines of Cu, as well as the last lines of Ag, are so blurred that they form a continuous background. The blurring of the diffraction maxima is due to the high degree of dispersity of the crystalline structure and to internal stresses. The stronger line blurring of Cu is explained by the fact that the atoms of this metal, which has a higher melting point, evince a lesser ability to migrate.

The authors' résumé

Card 2/2

3

AUTHORS: Gorodetskiy, A.F., Gutin, S.S., Mel'nik, I.G.,

Serbulenko, M.G. and Shadrin, V.S.

TITLE: Some Electrical Properties of Thin Layers of Tellurium and Germanium (Nekotoryye elektricheskiye svoystva

tonkikh sloyev tellura i germaniya)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, 1958, Nr 4, pp 91-96 (USSR)

ABSTRACT: The dependence of resistivity on temperature, voltage—
current characteristics and limiting current densities
was determined for thin layers of tellurium and germanium
condensed in vacuo onto bases of various materials at
various temperatures. Some relations between resistivity
and deformation were also established. The main
conclusions, derived from measurements described below, were:
1) The resistivity of germanium films is fairly stable
with time. The change in resistivity with deformation
is about 2.3% for a relative deformation of 4.5 x 10⁻⁴.
2) The resistivity of tellurium films is not stable.
Mechanically such films are not durable. The change in
resistivity with deformation is about half that of

Card 1/8 germanium films.

Some Electrical Properties of Thin Layers of Tellurium and Germanium

Preparation of Specimens. The thin films were produced by condensation in a vacuum of the order of 1x10⁻⁴ to 5x10⁻⁴ mm Hg in the form of strips 4 mm across and 30 mm long. The ends of the strips were overlapped for 1 to 2 mm by 5 x 9 mm rectangles of metal, also vacuum-condensed, to which copper wires were soldered. The metal contacts for tellurium were always of nickel, but tin was also tried for germanium. The bases used were mainly glass, but in special cases polymerized VL-7 lacquer on a metal disc, mica and fused quartz were tried. The bases were heated by radiation from a current-carrying tantalum wire placed above the base and the temperature was controlled by a copper-constantan thermocouple attached to the surface of the base. The tellurium from which the specimens were made had less than 10⁻⁴% impurities. The germanium used had a specific resistivity of 4 to 20 0hm.cm. In all cases the conductivities were of the hole type. Experimental Results and Discussion.

a) Tellurium condensed onto a cold base. Fig.l shows Card 2/8 the log of the resistivity (which was of the order of some

Some Electrical Properties of Thin Layers of Tellurium and Germanium

hundred thousand Ohms) plotted against reciprocal of the absolute temperature. The resistivity in air at a given temperature clearly increases after thermal cycling, as it also does for specimens stored at room temperature. This increase is irreversible. b) Tellurium condensed onto a hot base (150-160°C). Fig.2 shows again a rapid resistivity increase after an initial thermal cycle. There is no further change after some 4 to 5 thermal cycles. Fig. 3 shows the difference in characteristics for changes in the atmospheric environment. Experiments started at the moment of preparation of the specimen and carried out in vacuo are shown by the curves beginning at the asterisk and marked by white cycles on the graph. These characteristics are approximately two straight line segments with a break at 90°C. After each cycle a lower resistance was obtained. However, after leaving the specimen in vacuo at 130°C for 30 mins, the resistivity increased - without reaching its initial value. When air was admitted into the system resistance fell and the curves with the

Some Electrical Properties of Thin Layers of Tellurium and Germanium

> black dots were obtained. The final curve was straighter and had a smaller gradient. When the same specimen was examined after 10 days in air, the curves at the bottom of Fig. 3 were obtained. These are approximately straight lines. Subsequent evacuation of the system did not reproduce the original properties of the specimen, though its resistance increased. c) Germanium. Specimens condensed onto a cold base showed resistivities of the order of 10 megohms, while those condensed onto bases heated to 500-550°C showed resistivities between 7 and 30 kOhms (most lay between 10 and 16). It can be verified that in the hot-base specimens the layer structure is crystallographic, (see Refs 1 and 2). Specimens condensed in the same experiment onto bases of glass, mica and fused quartz showed practically identical resistivities, of the order of 12 kOhms. The resistivities of all specimens showed little change after ageing in air: 1.8% increase after 40 days. The resistivity temperature relationship was close to exponential between room temperature and 130°C.

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CIA-RDP86-00513R001033420007-1"

APPROVED FOR RELEASE: 06/20/2000

Some Electrical Properties of Thin Layers of Tellurium and Germanium

The points obtained by repeated thermal cycling lay fairly accurately on a single characteristic curve. is noted in (Ref 3) that there is a significant change in resistivity for extension or compression of specimens of PbS. Furthermore, there are theoretical (Refs 4,5) and experimental (Ref 6) grounds for a deformation-resistivity relationship for germanium monocrystals. The deformation in the experiments, on thin layers of Te and Ge, here described, was produced by the method described in (Ref 3) and measured optically to an accuracy of lu. For tellurium each deformation cycle produced an irreversible increase in resistance. A single cycle is shown in Fig.4. For germanium the results were independent of the cyling history, and are shown in Fig. 5. Current Densities and Voltage-Current Characteristics. Specimen thicknesses were measured by an interference microscope type MII-4 to an accuracy of 0.027 µ. The tellurium specimens had thicknesses between 0.230 and 0.430 μ. the germanium between 0.18 and 0.3 μ. With poor

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Some Electrical Properties of Thin Layers of Tellurium and Germanium

> heat dissipation (measurement in air for specimens on glass bases) current densities of 600 A/cm² were obtained for tellurium and 200 A/cm2 for germanium. The static voltage-current characteristics of tellurium and germanium were strictly linear for current densities up to 300 A/cm² and 400 A/cm² respectively. The dynamic characteristics, taken on an oscilloscope, were strictly linear; increasing voltage and the corresponding heating changed the gradient of the characteristic. Discussion. Takemaro Sakurai et al. (Ref 7) have already noted the irreversible changes in resistivity of thin tellurium layers condensed onto cold bases. They explained the effect by stating that such layers have a micro-crystalline structure with amorphous patches between crystals and that heating causes the crystals to grow at the expense of the amorphous patches. The effect does not occur in layers condensed onto hot bases at temperatures below that at which the specimen was condensed, which is in accordance with the above

Card 6/8 explanation. Such specimens behave in the same way as

Some Electrical Properties of Thin Layers of Tellurium and Germanium

those cut from the solid. The authors point out that this theory is too simple to explain all the effects noted in the experiments described: for example, the coincidence of characteristics for specimen's measured below 90°C in vacuo with those cut from the solid. The effects can be explained by introducing two additional considerations: first, the properties of surface levels, described by E. Clark (Ref 8), which explain the break in characteristics at 90°C when all surface levels are occupied and, secondly, the additional acceptor levels produced by oxygen at the layer surface. Subsidiary considerations are the effect of water vapour which may affect the surface ionic conductivity and the diffusion of oxygen into the depths of the specimens creating conduction electron traps. For tellurium the noise level makes measurement Card 7/8 difficult.

SOV/139-58-4-15/30 Some Electrical Properties of Thin Layers of Tellurium and Germanium

> Paper presented at the Conference of higher educational establishments on dielectrics and semiconductors, Tomsk, February, 1958. There are 5 figures and 8 references, 2 of which are

Soviet, 6 English.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electro-technical Institute)

SUBMITTED: March 12, 1958

Card 8/8

MEL'NIK, I. G., Novosibirsk Institute of Electrical Engineering

"A simple distribution chamber for a vacuum plant"

Report presented at a Conference on Solid Dielectrics and Semiconductors, Tomsk Polytechnical Inst., 3-8 Feb. 58. (Elektrichestvo, '58, Fo. 7, 83-86)

9(5), 24(3)

AUTHORS:

Mel'nik, V. G., Mel'nik, I. G.,

SOV/20-121-5-24/50

TITLE:

On the Electron-Hole Transition in Point-Contact Solid

Rectifiers (Ob elektronno-dyrochnom perekhode v tochechnykh

tverdykh vypryamitelyakh)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 5,

pp 852 - 854 (USSR)

Gutin, S. S. ~

ABSTRACT:

By appliying the method discussed in this paper, the authors discovered the formation of a region with hole conduction around the point contact of the diode.

This formation is caused by the influence of an

electric pulse on electron germanium or electron

silicon. The carrying out of the experiments is discussed. The oscillograms of the thermoelectromotive force and of the volt-ampère characteristics of the germanium diodes before and after the formation of the above mentioned region are similar to the oscillograms of the silicon diodes. For germanium the authors therefore

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On the Electron-Hole Transition in Point-Contact Solid Rectifiers

SOV/20-121-5-24/50

give only the oscillogram of the thermoelectromotive force after formation, since this oscillogram is the most important. Before the above mentioned formation, there is only a region with an electron mechanismof conduction. In this case, the rectifying action is insignificant. After formation, a region of hole conduction is developed around the point contact. This is also confirmed by the lower branch of the oscillogram of the thermoelectromotive force. The sign of the thermoelectromotiv force then becomes negative and the rectifying action of the diodes is improved noticeably. It is possible that the rectifying action of the diodes before the formation of the region with hole conduction is caused by the difference between the contact potentials of the metal and of the semiconductor. After formation, the improved rectifying action may be caused by the p-n-transition developed as a result of the above discussed formation. Thus, in germanium and silicon point rectifiers, there are 2 regions with

Card 2/3

. On the Electron-Hole Transition in Point-Contact Solid Rectifiers

SOV/20-121-5-24/50

different types of conduction which implies the existence of a p-n-transition. The authors thank A.F.Gorodetskiy for his constant interest in this paper. There are 4 figures and 3 references, 2 of which are Soviet.

ASSOCIATION:

Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk In-

stitute of Electrical Engineering)

PRESENTED:

April 14, 1958, by A.F. Ioffe, Academician

SUBMITTED:

April 5, 1958

Card 3/3

GORODETSKIY, A.F.; MEL'NIK, V.G.; MEL'NIK, F.G.

Method of producing ohmic contact with silicon. Fiz.tver.tela
1 no.1:173-174 Ja '59.

(Silicon...Electric properties)

(Electric contactors)

MEL'NIK, I. L.

"Effect of Ultraviolet Light on the Secretion of the Parotid Salivary Glands and Stomach, and on the Motor Activity of the Stomach and Secum of the Horse (Clinical Experimental Investigation)," Cand Vet Sci, L'vov State Zooveterinary Inst, Min Higher Education USSR, L'vov, 1955 (KL, No 8, Feb 55)

SD: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

MEL'NIK, I.M.

Subject : USSR/Geology AID P - 1776

Card 1/1 Pub. 78 - 14/26

: Sofronitskiy, P. A., Trifonova, N. A., and Mel'nik, I. M. Authors

THE RESERVE OF THE PARTY OF THE Title Changed views on the geological structure of the Molotov-

Kama River region

Periodical: Neft. khoz., v.33, no.3, 58-63, Mr 1955

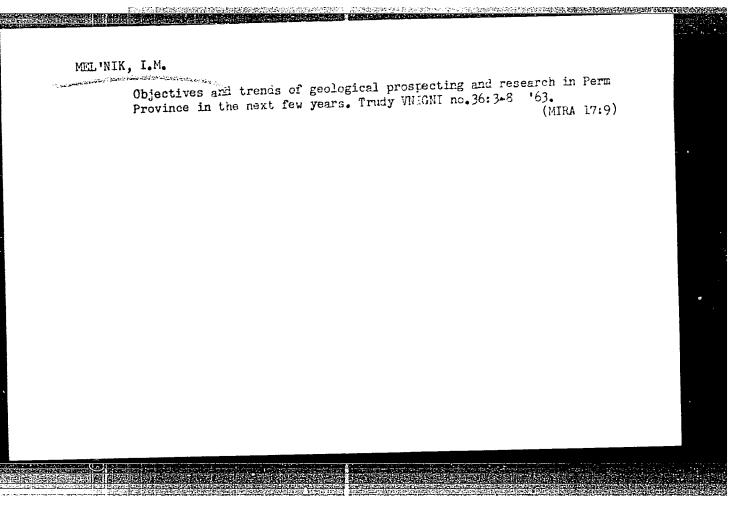
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A detailed analysis is made of the stratigraphy, oil-Abstract

bearing capacity and tectonic structure of the Molotov region west of the Urals in the basin of the Kama River.

Institution: None

Submitted : No date

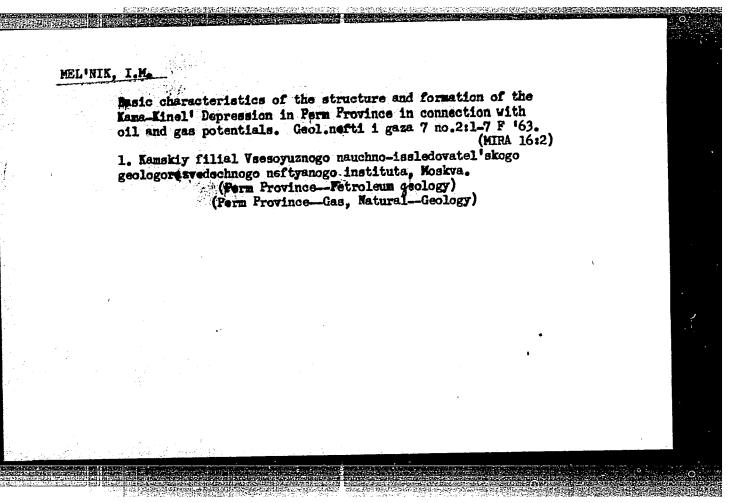


ANDREYEV, V.S.; MEL'NIK, I.M.

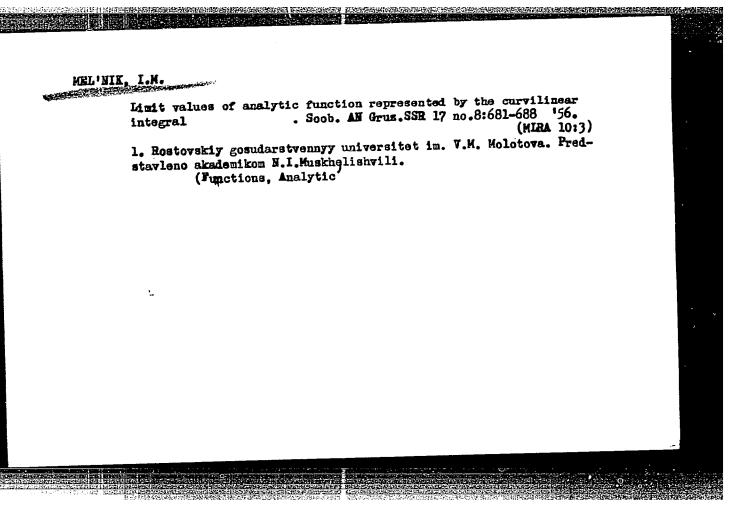
Hydraulic blast hole stemming for dust control. Bezop.truda v prom. 7 no.7:22-23 Jl *63. (MIRA 16:9)

1. Rukovoditel' konstruktorskogo-tekhnologicheskoy gruppy shakhty no.
3-ts kombinata Primorskugol' (for Andreyev). 2. Glavnyy inzh. shakhty
No.3-ts kombinata Primorskugol' (for Mel'nik).

(Maritime Territory—Coal mines and mining)



MEL'NIK, I.M.	
Transactions of the Third All-union Mathematical Congress (Co Jun-Jul '56, KTrudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, Mel'nik, I. M. (Rostov-na-Donu). Behavior of a Gauchy Type Integral in the Points of Discontinued Density and	nt.) Moscow.
Exceptional Cases of the Riemann Boundary Froblem.	09
Men'shov, D.Ye. (Moscow). On the Limits of a Subsequence of Partial Sums of a Trigonometric Series.	89-90
Mergelyan, S. N. (Moscow). The Problem of the Best Majorant.	90
Mirak'yan, G. M. (Odessa). On Approximating by Means of Expressions Containing Cylindric Functions.	90-91
Mention is made of Voronovskaya, Ye.V. and Bernshteyn, S. N.	
There is 1 USSR reference.	
Myshkis, A. D. (Minsk). Vigant, Ye.I. (Riga), Lepin, A. Ya. (Minsk). Improper Integrals in ~ -space. Card 28/80	91-92



67083 SOV/44-59-1-287 16(T) 16.4500, 16.3000

Translation from : Referativnyy zhurnal. Matematika, 1959, Nr 1, pp 53-54 (USSR)

Mel'nik, I.M. AUTHOR:

Exceptional Case of the Riemannian Boundary Value Problem PERIODICAL: Tr. Tbilissk.matem.in-ta AN Gruz SSR, 1957, 24, 149-162 ABSTRACT: In the paper the behavior of the integral of Cauchy type

 $\frac{1}{2\pi i}$ $\int_{t}^{\infty} \frac{\varphi(t)}{t-z} dt$ is investigated in the neighborhood of a point c of

the path of integration L, if the density $\varphi(t)$ has the form $\varphi(t)$ = = $\psi_{*}(t)(t-c)^{N}$. $\ln^{p}(t-c)$, where $\psi_{*}(t)$ possesses a discontinuity of first kind in c and satisfies the Hölder condition near c on closed arcs with ends in c; the complex number Y = x + iB is so that $-1 < x \le 0$, while it is p = 0,1,2,.... Starting from N.I. Muskhelishvili who considered the case p = 0 (Singular Integral Equations, M., 1946, page 80).

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16(1)

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Exceptional Case of the Riemannian Boundary Value Problem

the author investigates the case of an arbitrary natural p. This result is applied for the solution of the boundary value problem

 $\phi^{+}(t) = G(t)\phi^{-}(t) + g(t)$.

(concerning this problem see N.I. Muskhelishvili, page 243 of the book mentioned above) in the case, where L consists of finitely many smooth open curves which do not intersedt, G(t) satisfies the Hölder condition, is different from zero on each closed arc belonging to L and having no ends, and possesses the form

 $G(t) = (t - c)^{T} G_{*}(t)$ near each end c, where r is a real number and the function $G_{*}(t)$ satisfies the Hölder condition and is everywhere different from zero including c; g(t) satisfies the Hölder condition.

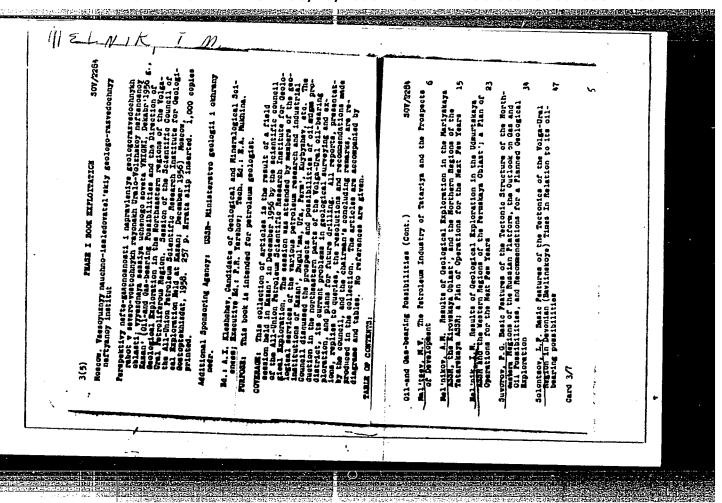
The author proceeds analogously to the case investigated by N.I. Muskhelishvili, where for all ends it is r = 0 (see as above page 239) and decomposes the solutions of the problem into certain classes. Under the assumption that g(t) satisfies certain additional conditions near the ends of L, all the solutions of the problem are obtained in quadratures in correspondingly chosen classes of functions. Card 2/2

B.V. Khvedelidze

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001033420007-1"

MEL'NIK, I.M.: Master Phys-Math Sci (diss) -- "Exceptional cases in the marginal problems of the theory of analytic functions and of special integral equations". Rostov na Donu, 1958. 6 pp, (Rostov State U), 150 copies (KL, No 1, 1959, 113)



CIA-RDP86-00513R001033420007-1 7 68007 SOV/155-58-6-8/36 The Application of an Integral of the Cauchy Type to the In-The application of an integral of the cauchy type to the I vestigation of the Solution of a varied Dirichlet Problem Nauchnyje doklady wysshey shkoly. Fiziko-matematicheskiye nauki. 16.3000 Hel'nik, I.H. The paper completes the publication [Ref 1 7 of R.M. Nasyrov who considered the following problem . Let I be a partial arc AUTHOR: The paper completes the publication ℓ Ref 1 of R.M. Nasyrov who considered the following problem: Let 1 be a partial arc who considered the following problem: Let 1 be a partial arc of the unit circle, $\alpha(t)$, $\alpha(t)$, $\alpha(t)$ be functions satisfying certain conditions: a piecewise holomorphic function $\alpha(t)$ is to tain conditions: TITLE: tain conditions; a piecewise holomorphic function F(z) is to PERIODICAL: be determined which maps the plane cut along L to a bounded do-ABSTRACT: main D, whereby the boundary conditions $\frac{d F_{t}^{+}(t)}{dt} = \mathcal{L}(t) \quad , \quad \left| \frac{d F_{t}^{-}(t)}{dt} \right| = B(t)$ are to be satisfied. In [Ref 1] the sought function F(z) (I)F(z) = (7.(z) dz + C , was explicitly given (1) card 1/2

68007

The Application of an Integral of the Cauchy Type SOV/155-58-6-8/36 to the Investigation of the Solution of a Varied Dirichlet Problem

where $\chi(z)$ is represented by certain integrals. In the present paper the author investigates the properties of the function F(z). He states that F(z) is bounded in the whole plane. Furthermore that the points F(c), where c is one of the end points of the circular arc L, can be cusps as well as joints or ordinary points of the boundary F of D.

The author mentions N.I. Muskhelishvili, Yu.V. Sokhotskiy, Professor F.D. Gakhov (the latter one guided the present paper). There are 2 Soviet references.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

October 7, 1956 (Uspekhi matematicheskikh nauk) SUBMITTED:

October 24, 1958 (Nauchnyye doklady vysshey shkoly. Fiziko-

matematicheskiye nauki)

Card 2/2

CIA-RDP86-00513R001033420007-1 "APPROVED FOR RELEASE: 06/20/2000

16(1) AUTHOR:

Mel'nik, I.M.

SOV/140-59-2-15/30

TITLE:

On the Riemannian Boundary Value Problem With Discontinuous Coefficients (O krayevoy zadache Rimana s razryvnymi koeffits.

yentami)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959.

Nr 2, pp 158-166 (USSR)

ABSTRACT:

The Riemannian boundary value problem with the condition

 $\Phi^+(t) = G(t) \Phi^-(t) + g(t)$ on L was already treated by F.D. Gakhov and N.I. Muskhelishvili. In the present paper the author investigates the case where G(t) has discontinuities of first

and second kind. If L is closed, then it is assumed that $G(c_k+0) \neq 0$, where c_k is a point of discontinuity, while $G(c_k,0)$

either is 0 or a logarithmic-potential infinity. If L is open, then G(t) may become 0 or ∞ (of the above type) at the ends. In all mentioned cases the solutions are constructed according to usual methods. Fig. Tras of Yu.V. Sokhotzkiy is used. The author

thanks Professor F.D.Gakhov for the guidance.

There are 4 Soviet references.

ASSOCIATION: Rostovskiy gosudarstvennyy universitet (Rostov State University)

SUBMITTED: March 27, 1958

Card 1/1

16(1)

AUTHORS: Gakhov, F.D., and Mel'nik, I.M. (Rostov- SOV/41-11-1-3/12

TITLE. Singular Boundary Points in Reversion-Boundary Value Problems

of the Theory of Analytic Functions

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1959, Vol 11, Nr 1,

pp 25-37 (USSR)

ABSTRACT: According to M.T. Nuzhin Ref 1 the reversion problem consists

in the determination of the boundary from the given values of an analytic function on this sought boundary. The given functions are chosen sufficiently smooth by the authors in order to avoid

a nowhere smooth boundary as solution, but for the given

functions single simple singularities are admitted so that the boundary becomes also singular in the corresponding points. The kind of these singularities is investigated with function geometrical and differential geometrical methods. The authors

mention G.G. Tumashev.

There are 7 Soviet references.

SUBMITTED: April 17, 1957

Card 1/1

S/044/60/000/007/004/058 C111/C222

16.3000

AUTHOR:

Mel'nik, I.M.

TITLE:

The behavior of an integral of Cauchy type in the neighborhood of the points of discontinuity of the density, and a singular case of the Riemannian boundary value problem

PERIODICAL:

Referativnyy zhurnal. Matematika, no.7, 1960, 65, Abstract no.7489. Uch.zap.fiz.-matem.fak.Rostovsk.-n./D un-t, 1959, 43, no.6, 59-71

The author investigates the behavior of the integral of Cauchy

type for the case where the density of the integral in the neighborhood of some points of the path of integration has the form

 $\varphi(t) = \varphi^{*}(t)(t-c)^{-1} \ln \ln(t-c), \tag{1}$

where $\varphi''(t)$ satisfies the Hölder condition in the neighborhood of c and in c; $\gamma=4+i\beta$, $-i<4\leq0$. The case when in (1) the factor in $\ln(t-c)$ is missing was considered in an earlier paper of N.I.Muskhelishvili (Singular integral equations, M., 1946, 80); these results are extended by the author for his case. Furthermore, the author applies the obtained results again joining N.I.Muskhelishvili - to the investigation of the boundary

Card 1/2

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R001033420007-1"

The behavior of an integral... S/044/60/000/007/004/058 C111/C222

problem of the theory of functions

$$\Phi^{+}(t) = G(t)\Phi^{-}(t)+g(t), \quad t \in L$$

(for this problem cf. N.I.Muskhelishvili, p.243 of the book loc.cit.). The author considers the case where L is a finite set of closed or open smooth curves, G(t) satisfies the Hölder condition and is different from zero on every closed curve if this curve belongs to L and does not contain certain points in the neighborhood of which $G(t)=G_{\pm}(t)\ln^{F}(t-c)$,

where $G_{\phi}(t)$ satisfies the Hölder condition, and r is a real number.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 2/2

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5/038/60/024/006/003/004 C111/C333

Mel'nik, I.M. AUTHOR:

On Topological Methods in the Theory of Functions of one Complex TITLE: Variable

Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, PERIODICAL: Vol. 24, No. 6, pp. 921 - 942

The multivalent function f(z), analytic in G with the eventual exception of a finite number of interior points a, is assumed to be everywhere continuously continuable on the boundary of G except a finite number of boundary points a_k . Let G be bounded by ∞ Jordan curves

 $(\Gamma_1, \Gamma_2, \ldots, \Gamma_k) = \Gamma$. In the neighborhood of a_k let

(I) $f(z) = (z-a_k)^{p_k} \left[g_k(z) \ln^{q_k} (z-a_k) + \psi_k(z) \right] + C$,

if a, is finite, and

(II) $f(z) = z^{-p_k} \left[g_k(z) \ln^{q_k} z + \psi_k(z) \right] + C$,

if a is the finite point. p_k , q_k are arbitrary integers ; $q_k \neq 0$; C is Card 1/5

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a complex constant. Furthermore:

1.) If a_k is an interior point of G, then $g_k(z)$, $\psi_k(z)$ are assumed to be analytic in the neighborhood of a_k ; 2.) if a_k is a boundary point, then $g_k(z)$, $\psi_k(z)$ are assumed to be continuous in a_k and to possess first derivatives in the neighborhood of a_k on the boundary of G.

3.) $|g_k(a_k)| + |\psi_k(a_k)| \neq 0$;

4.) if $q_k \neq 1$ and if a_k lies in the interior of G or on an interior Γ_i , then assume in addition: Im $g_k(x+i\beta_k) = 0$, $x \leq \alpha_k$ ($x \in G$) if $a_k = \alpha_k + i\beta_k$ is an interior point, and Im $g_k(x) = 0$, $x \leq 0$ ($x \in G$), if a_k is the infinite point.

finite point. A point a_k , in the neighborhood of which f(z) has the representations (I) or (II) is denoted as a power-logarithmic point; p_k as its order. Let f(z) = u(x,y) + iv(x,y). Let L_k be a section in G connecting a_k with Card 2/5

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On Topological Methods in the Theory of Functions of one Complex Variable a point of the exterior boundary curve \int_{∞} . If $q_k \neq 1$, then u(x,y) is everywhere continuously continuable over L_k with eventual exception of the point a_k : $u^+(x,y) - u^-(x,y) = 0$. If $q_k = 1$, then, however, $u^+(x,y) - u^-(x,y) = 2\pi$ $v_k(x,y)$. Sections L_k , for which $v_k(x,y)$ is constant or piecewise constant, are denoted as admissible. The author considers only cases in which admissible sections exist. He proves that admissible sections L_k , on which $u^+ - u^- \neq 0$, by adding a real constant to u(x,y) can be replaced by admissible sections C_k which have the following properties:

1.) they do not intersect each other, they have no common points with interior boundary curves, they do not pass through internal critical points of u(x,y) and terminate on Γ in ordinary points of u(x,y). 2.) The boundary values $u^+(x,y)$, $u^-(x,y)$ of the function u(x,y) on C_k possess at most a finite number of relative extremum points on C_k and increase under approach to the point of intersection of C_k with the exterior boundary I_∞ . Card 3/5

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On Topological Methods in the Theory of Functions of one Complex Variable Since the points of intersection of C_k and $\Gamma_{\mathcal{L}}$ are ordinary points, the boundary index of the function u(x,y) over the contour Γ with respect to G can be defined as usual. Theorem 1: Let Γ be the boundary index of u(x,y) over the boundary Γ with respect to Γ . Then

(III)
$$\sum_{j=1}^{m} (1-p_j) = 2 - \infty + I$$
,

where m is the number of the power-logarithmic points of f(z) in G, and p are their orders.

The proof is based on the lemma s Assume that z = a is a power-logarithmic point of f(z) with order p. Let L be an admissible section starting in a on which $u^{\dagger}(x,y) = u^{-}(x,y) = 0$. There exists a sufficiently small r_0 so that

the increase I of the boundary index of the function u(x,y) from the circle $v(|z-a|=r_0)$ with respect to the domain $|z-a|>r_0$ is equal to p. Under a corresponding modification of the definition of the boundary index Card 4/5

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I the relation (III) equally holds, if f(z) possesses a finite number of power-logarithmic points on Γ .

The author considers four examples for calculating the boundary index and

the $\sum_{k=1}^{\underline{m}} (1 - p_k)$.

F.D. Gakhov, Yu.M. Krikunov and T.A. Kolomiytseva are mentioned. There are 4 figures, and 3 references; 2 Soviet and 1 American.

PRESENTED: by M.A. Lavrent'yev, Academician

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PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 5, pp. 1015-1018 TEXT: Let f(z) be analytic in G, continuously continuable on the boundary of G, and let it have finitely many inner singular points ak and such lying on the boundary, in the neighborhood of which it holds

 $f(z) = (z-a_k)^{p_k} (\varepsilon_k(z) \ln^{q_k} (z-a_k) + \psi_k(z)] + C$ for finitely a and

 $f(z) = z^{p_k} \left[\varepsilon_k(z) \ln^{q_k} z + \psi_k(z) \right] + C$ for $a_k = \infty$; $q_k \neq 0$, $g_k(z)$ and $\psi_k(z)$ analytic in the neighborhood of the inner points ak of G and continuously differentiable in ak if ak lies on the boundary of G; $|g_k(a_k)| + |\psi_k(a_k)| \neq 0$; G is bounded by ∞ Jordan curves $(\Gamma_1,\Gamma_2,\ldots,\Gamma_n) = \Gamma$.

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