

MENITSKIY, L.F.; ARKHIPOV, P.V.

Idle run regulator for electric motors of shoe and stitching
machines. Leg.prom. 14 no.8:50-51 Ag '54. (MLRA 7:8)
(Shoe machinery) (Electric motors)

MENITSKIY, Yu.L.

Structure and taxonomic position of *Ichthyophaga subcutanea*
Syromiatnikova 1949, a turbellarian parasitizing in fishes. Paraz.
sbor. 21:245-258 '63. (MIRA 17:4)

1. Kafedra zoologii bespozvonochnykh Leningradskogo gosudarstvennogo
universiteta.

MENITSKIY, Yu.L.

Aberrant karyotypes in tissue cells of aborted fetus.
Vest. AMN SSSR 18 no.12:22-25 '63. (MIRA 17:7)

1. Institut onkologii AMN SSSR, laboratoriya meditsinskoy
genetiki, Leningrad.

MENITSKIY, Yu.L.

Significance of electron microscopic studies of the walls of
pollen, spores and other cells for plant morphology and taxonomy.
Bot. zhur. 48 no.11:1706-1710 N '63. (MIRA 17:4)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

L 40066-66 EWT(1) / FSS-1 / EWT(1)

ACC NR: AT6019742

SOURCE CODE: UR/3192/65/000/011/0081/0086

AUTHOR: Baumgart, V. F.; Menke, M. E.

38
B11

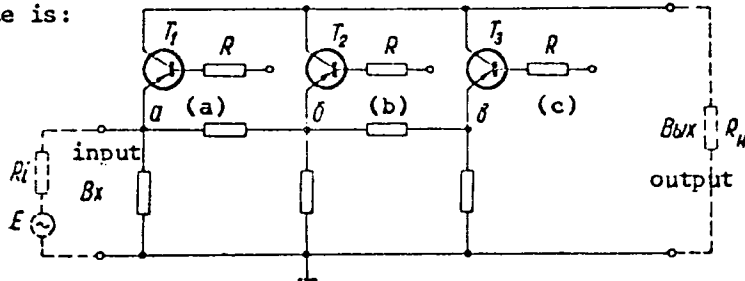
ORG: none

TITLE: Some possibilities for step attenuation of a high frequency signal with the help of constant voltages

SOURCE: Akademiya nauk Latvyskoy SSR. Institut elektroniki i vychislitel'noy tekhniki. Avtomatika i vychislitel'naya tekhnika, no. 11, 1965, 81-86

TOPIC TAGS: HF component, step attenuator, logic circuit

ABSTRACT: A step attenuator for high frequency signals (100 kc-20 Mc) is described. The switching is performed by germanium alloy transistors. The basic circuit of the device is:



Card 1/2

UDC: 621.317.727.4-2 : 621.396.66

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ACC NR: AT6019742

When transistor T_1 or T_2 or T_3 is conducted (while the others are cut off) the output voltage will be connected to the output from point a or b or c of the step attenuator. The conduction of the transistors is controlled by the base current through resistors R . To obtain better switching, an additional transistorized device is added to each stage to provide minimal input base resistance R (when the transistor is cut off) and maximal R during conduction. The attenuator is controlled by logical circuits working between levels of $-10v$ to $+10v$, and 0 to $+20v$. The maximum error of the output voltage at frequencies between 100 kc and 20 Mc was $\pm 5\%$. Orig. art. has: 6 figures.

[14]

SUB CODE: 09/ SUBM DATE: Nov64/ ORIG REF: 002

Card 2/2 11b

MUSKELI, M. F.

"On the Fundamentals of the Theory of Stream Flow Utilization."

Iz. Ak. Nauk, Otdel Tekh. Nauk, No. 2, 1946

MENTEL, M. F.

USSR/Floods
Flow, Hydrodynamic

Dec 1960

"The Principles of Maximum Flood Flow Estimates for the Design of Outlets and Spillways," S. M. Kritskiy, M. F. Mentel, 12 pp

"Izv Ak Nauk Otd Tekh" No 12

Detailed discussion on the above subject, with comparisons as to how similar estimates are carried out in foreign countries. Author draws examples from the work accomplished by the Tennessee Valley Authority.

PA 44742

MENKEL', M. F. Dr. Tech. Sci.

Dissertation: "Elements of the Theory of River Runoff Regulations." Moscow Hydraulic Engineering and Soil Improvement Inst., imeni V. R. Vil'yams, 31 Oct 47.

SO: Vechernyaya Moskva, Oct, 1947 (Project #17836)

MENKEL', M. F.

KRITSKIY, S. N. and ROSSINSKIY, K. I. and MENKEL', M. F., The Winter Thermal System of Reservoirs, Rivers, and Canals: Elements of Theory and Engineering Calculations. State Power Press, Moscow-Leningrad; 1947. 155 pp.
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

MENKEL¹, M. F.

"Bases of the Theory of Regulation and Utilization of River Flow," 1948

MEKEL N. F.

Kritskiy S. N. and Mekel N. F., "Agreement of Theoretical Curves of the Distribution of River Run-off with Observation Data", Izobrazheniya i resheniya tekhniko-stokov, No 2, 1957 (5-69)

SI:U-3039, 11 Mar 1953

MENTEL M. F.

Kritskiy G. M. and Mentel M. F. "Winter Conditions in Water Reservoirs and Canals",
Problemy zemel'n. resnabno stoka (Problems of Reclaiming Rivers Run-off) No. 3, 1953 (70-194)

SO: U-3139, 11 Mar 1953

MENKEL', M. F.

"Selection of Graph Curves Representing the Distribution of Potential When Calculating the Flow of a River Current," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No.6, 1948.

Sec. for Sci. Solution of Problems of Hydraul. Econ., AS USSR

MENKEL, M. F. and KRITSKIY, S. N.

"Using the Method of Greatest Probability for Selective Evaluation of the Statistical Parameters of River Flow," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 4, 1949

Sec. for Sci. Solution of Problems of Water Economy, AS USSR

MENKEL', M. F., and KRITSKIY, S. N.

↑ 115-10144-0011

"The Hydrological Basis of Hydraulic Stream Engineering," Publ. House Acad. Sci. USSR, M., 1950.

KRITSKIY, S. N. ; MENKEL', M. F.

Rivers

Fundamentals of Hydraulic engineering applied to rivers. Gidr. stroi. 20, no. 5, 1951.

Monthly List of Russian Accessions, Libray of Congress. November 1952. UNCLASSIFIED

МЕНКЕЛ', М.Ф.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
Kritskiy, S.M. <u>Menkel', M.F.</u>	"Water Economy Calculations"	Section for the Scientific Development of Problems of Water Economy, Academy of Sciences USSR

SO: W-30604, 7 July 1954

KRITSKIY, S. N. and MENKEL', M. F.

"Contemporary Conditions and Means of Developing of Soviet Methods of Calculating River Currents," News of the AS of the Soviet Union, 1952.

KRITSKIY, S.N., doktor tekhnicheskikh nauk; MENKEL', M.F., doktor tekhnicheskikh nauk; CHEBOTAREV, A.I., redaktor; BRAJNINA, M.I., tekhnicheskij redaktor; KOKONOVA, L.B., tekhnicheskij redaktor.

[Calculations of water resources; river run-off control, water supply and hydraulic power computations] Vodokhoziaistvennye raschety; regulirovanie rechnogo stoka, vodokhoziaistvennye i vodnoenergeticheskie raschety. Leningrad, Gidrometeorologicheskoe izd-vo, 1952. 392 p. [Microfilm] (MLRA 8:5)
(Water resources development)

KRITSKIY, S. N. : MENKEL', P. F.

Stream Measurements

Present state and development of Soviet methodology in calculating river discharge.
Izv. AN SSSR Otd. tekhn. nauk no. 6, 1952.

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

MENKEL, M.

Hydrographic Congress held in Budapest, September 14-17, 1955.
Izv.AN SSSR Otd.tekh.nauk no.2:142-144 P '56. (MIRA 9:7)
(Budapest--Hydrography--Congresses)

MEMORANDUM

KRITSKIY, S.N.; MENKEL', M.F.

Estimating the probable recurrence of rarely observed hydrological phenomena. Probl.reg.rech.stoka no.6:188-217 '56. (MLRA 10:2)

(Hydrology)

MEMORANDUM

KRITSKIY, S.N.; MENKEL', M.F.

Double finite curve of probability distribution and its
application to hydrological calculations. Probl.reg.rech.
stoka no.6:218-229 '56. (MLRA 10:2)

(Hydrology)

MENKEL, M.F.

KRITSKIY, S.N.; MENKEL', M.F.

Tasks in hydrology in connection with hydrotechnical construction
during the sixth five-year plan. Meteor. i gidrol. no.12:9-17 D'56.
(MIRA 10:1)

(Water resources development)

by KELL, M. F.

KRITSKIY, S.N. ; MENKEL', M.F.

~~_____~~
Estimating the probable frequency of hydrological values.
Meteor. i gidrol. no. 3:52-53 Mr '57. (MLRA 10:5)
(Hydrology)

MENKEL, M. F.

PHASE I BOOK EXHIBITION 807/1914

3 (3,17)

Proceedings of the 3rd All-Union Hydrological Convention. Vol. 1: General Information, Resolutions, and Primary Reports. Leningrad, Gidrometeoizdat, 1958. 242 p. Errata slip inserted. 2,000 copies printed.

Rep. Ed.: V.A. Uryayev; Ed.: N.V. Gromova; Tech. Ed.: A.B. Bergayev
PURPOSE: The book is intended for scientists engaged in the fields of hydrophysics, meteorology, hydro-dynamics, hydrometry and general hydrology.

COVERAGE: This is the first of ten volumes to be issued by the Hydrometeorological Service as the Third All-Union Hydrological Convention which took place in Leningrad in October 1957. It reports on the preparation for and the actual proceedings of the convention, the decisions taken in plenary reports, it provides a complete list of the reports brought up for discussion, and a complete list of the participants which participated in the convention, and a complete list of the 1200 participants together with their affiliations. This volume was prepared for publication in the Gidrometeorologicheskoye Izdaniye (Gidrometeorological Publishing Institute) by Candidates of Geographical Sciences O.S. Borauk, I.V. Popov, and O.A. Spengler under the editorship of Candidate of Technical Sciences V.A. Uryayev. There are no references given.

TABLE OF CONTENTS:

Reports in Plenary Sessions	79
Uryayev, V.A. The State of Knowledge of the Land Waters in USSR	81
Further Problems in This Field	
Kritskiy, S.S., M.F. Menkel, and A.I. Chebotarev. Waterworks	93
Construction in the USSR and the Problems of Hydrology	
Bilalov, Yu.V., and V.G. Andreyevskoy. A Study of Lakes and Reservoirs	103
in the USSR	
Vonnesse, A.B. The Hydropower Resources of USSR and the Outlook	117
for Utilising Them	
Kalinin, G.P. The Present State of and the Outlook for the Development of Hydrologic Forecasts	127
Sokolovskiy, D.I. Investigations and Computations of the Runoff in the USSR, Their Condition, and the Outlook for Development	139
Bud'ko, M.I., and O.A. Dvornik. The Climatic Factors of the Water Balance on the Land	143
Kozlovskiy, B.Ye. Investigation and Computation of River-bed Deformations as Related to the Regulation of Rivers	152
Gerasimov, I.P. The Problem of the Sea and Water Conditions of the March's Surface and Its Significance in Physical Geography	160
Ts'ui-Chan. Hydrologic Works in Modern China	168
List of Abbreviated Names of Organizations	177
List of the Reports Heard at the Convention	179
List of Organizations Represented at the Convention	205
List of the Convention Participants	213
List of the Foreign Guests at the Convention	222
AVAILABLE: Library of Congress	
Card 3/3	

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6-18-59

MENKEL, M.F

SOV-98-58-2-18/21

AUTHOR: Shumel', G.S., Engineer, Member of the Presidium, 3rd All-Union Hydrological Congress

TITLE: The Third All-Union Hydrological Congress (III Vsesoyuznyy gidrologicheskiy s"yezd)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1958, Nr 2, pp 60-61 (USSR)

ABSTRACT: The Third All-Union Hydrological Congress took place in Leningrad at the end of 1957. The Congress was attended by 1,240 scientists, engineers and specialists, employed at 300 scientific-research organizations and vuzes, scientific-technical societies of the electric power industry, mining industry and water transport, and 35 specialists from Albania, Bulgaria, Hungary, East Germany, China, Mongolia, Poland, Rumania, Czechoslovakia and Yugoslavia. The Congress examined the conditions and prospects for research into the hydrology continents, and pointed out the great achievements accomplished in the field of hydrology and water resources of the USSR. A number of reports was heard by the Congress, among which may be mentioned the report of Candidate of Technical Sciences V.A. Uryvayev (State Hydrological Institute) "The Study of the USSR Continental Waters and Further Tasks in This

Card 1/4

The Third All-Union Hydrological Congress

SOV-98-58-2-18/21

Field". The Doctors of Technical Sciences S.N. Kritskiy and M.F. Menkel' (Section for the Scientific Development of Problems of Water Economics, USSR Academy of Sciences) and Candidate of Technical Sciences A.I. Chebotarev (GGI) reported on "Water Engineering in USSR and Problems of Hydrology". Professor A.N. Voznesenskiy (Institute "Energoprojekt") spoke on "The Utilization of the USSR Water Resources and the Prospects for Developing Water Power". A total of 9 specialized sections were working at the Congress: Calculations and Prognoses (Chairmen - Doctor of Technical Sciences, Professor D.L. Sokolovskiy, Candidate of Technical Sciences A.I. Chebotarev and Doctor of Geographical Sciences G.P. Kalinin); Hydrophysics (Chairman - Doctor of Geographical Sciences, Regular Member of the RSFSR Academy of Pedagogical Sciences, Professor B.P. Orlov); Lakes and Water Reservoirs (Chairman - Doctor of Technical Sciences, Honored Worker of RSFSR Science and Engineering, Professor Ye.V. Bliznvak); Hydrodynamics and River-Bed Processes (Chairman - Corresponding Member, AS USSR, Honored Worker in RSFSR Science and Engineering, M.A. Melikanov); Water Economics (Chairmen - Doctors of Technical Sciences S.N. Kritskiy and M.F. Menkel'); General Hydrology (Chairman - Doctor of Geographical Sciences,

Card 2/4

The Third All-Union Hydrological Congress

SOV-98-58-2-18/21

Professor L.K. Davydov); Hydrometry and Methods of Hydrological Research (Chairman - Candidate of Technical Sciences A.K. Proskuryakov); Underground Waters and Problems of Underground Feeding of Rivers (Chairman - Doctor of Geological and Mineralogical Sciences, Professor B.I. Kudelin); Hydrochemistry and Sanitary Protection of Waters (Chairman - Corresponding Member, AS USSR, O. A. Alekin). Over 400 reports on all principal problems of the hydrology of continents were delivered and discussed at the sections. The author lists the work performed during the 40 years of Soviet regime and speaks of current needs. The Congress adopted several decisions, approving the resolutions of the sections, and considered it necessary to establish an inter-departmental committee to co-ordinate scientific research work. The Congress decided to take necessary measures for an urgent exploitation of the State Hydrological Institute's River-Bed Laboratory, whose activity should further the solving of important scientific problems in the field of hydrodynamics and river-bed processes. Future hydrological congresses

Card 3/4

The Third All-Union Hydrological Congress

SOV-98-58-2-18/21

will convene once every 5 - 7 years.

1. Hydrology--USSR
2. Water power--USSR

Card 4/4

MENKEL, M.F.

10-58-3-1/23

AUTHOR: Dzens-Litovskiy, A.I., Lopatin, G.V. and Shnitnikov, A.T.

TITLE: The Third All-Union Hydrological Congress (Tretiy vsesoyuznyy gidrologicheskiy s"yezd)

PERIODICAL: Izvestiya Akademii Nauk SSSR - Seriya Geograficheskaya, 1958, Nr 3, pp 3-9 (USSR)

ABSTRACT: From the 7th to the 17th October 1957 the Third All-Union Hydrological Congress took place in Leningrad. There were 1,200 experts on hydrology and adjacent subjects, and guests from people's democracies present; 429 reports were delivered, among them 140 reports from workers of the Gidrometeosluzhba (The Hydrometeorological Service), about 65 from workers of the USSR Academy of Sciences and the same number of reports by workers of Soviet Higher Education Institutions. At the plenary meetings of the conference the following 9 reports were delivered: "Investigations on the Interior Waters of the USSR and Future Tasks in Studying This Subject" by V.A. Uryvayev; "Water Engineering Construction in the USSR and the Tasks of Hydrology" by S.N. Kritskiy, M.F. Menkel and A I. Chebotareva; " Investigating Lakes and water reservoirs of the

Card ~~1/6~~

1/2

The Third All-Union Hydrological Congress

10-58-3-1/29

USSR" by Ye.V. Bliznyak and V.G. Andreyanov; "The Utilization of the USSR Water Resources and the Future development of Water Engineering" by A.N. Voznesenskiy; "The Present Methods of Hydrological Prognosis and Ways Leading to Their Development" by G.P. Kalinin; "The Research and Computation of Water Discharges in the USSR, Their Present State and Future Development" by D.L. Sokolovskiy; "The Climatic Factors of Water Balance on the Continent" by M.I. Budyko and O.A. Drozdov; N.Ye. Kondrat'yev reported on his research regarding the deformation of river beds, and Academician I.P. Gerasimov on "The Transformation of Water and Thermal Conditions Under the Influence of Meliorative Measures". During the continuation of the conference the following reports were delivered in the 9 sections: B.L. Lichkov on "The Unity of Natural Waters and the Formation of Subsurface Waters", based on the theory of the Academician V.I. Vernadskiy; M.I. Livovich on "Complex Geographical Method in Hydrology and the Tasks of Its Development", A.V. Shnitnikov on "The Past and Future of Lake Aral and the Big Climatic Rhythms"; B.A. Apollov on "The Connection Between Solar Activity and the Phenomena Determining the Flow of Rivers", Ye.S. Rubinshteyn and O.A. Drozdov on "Climatic Changes and Variations and the Secular Course of Precipitations". The reports

Card ~~46~~

2/2

KRITSKIY, S.N.; MENKEL', M.F.

Standardizing the resources and utilization techniques of water
power. Probl. reg. rech. stoka no.7:7-31 '58. (MIRA 11:9)
(Hydroelectric power)

AVRAMENKO, F.D.; VEYTS, V.I.; GUREVICH, B.A.; DENISOV, V.I.; ZAKHARIN,
A.G.; KARAULOV, N.A.; KOLOSOV, I.S.; KRACHKOVSEIY, N.N.;
KRITSKIY, S.N.; LEBEDEV, M.M.; LEONT'YEVA, T.K.; MENKEL', M.F.;
NEKRASOV, A.S.; ROSSIYEVSKIY, G.I.; SHVORIN, B.I.; KRZHIZHA-
NOVSKIY, G.M., akademik, red.; MARKOVICH, S.G., tekhn.red.

[Principal problems in designing a unified power system in
the U.S.S.R.] Osnovnye voprosy planirovaniia edinoi energo-
ticheskoi sistemy SSSR. Pod red. G.M.Krzhizhanovskogo,
V.I.Veitsa. Moskva, 1959. 174 p. (MIRA 12:6)

1. Akademiya nauk SSSR, Energeticheskiy institut. 2. Chlen-
korrespondent Akademii nauk SSSR (for Veyts).
(Electric power)

KRITSKIY, S.H.; MENKEL', M.F.

A survey of French periodical literature on the calculation
of hydroelectric power station reservoirs. Probl.reg.rech.
stoka no.8:257-265 '59. (MIRA 13:4)
(France--Hydraulic engineering)
(Reservoirs)

KRITSKIY, S.N.; MENKEL', M.F.

Concerning P. Moran's article "A probability theory of dams
and storage systems." Probl. reg. rech. stoka no. 8:266-271
'59. (MIRA 13:4)

(Reservoirs) (Moran, P.)

ERITSKIY, S.N.; MENKEL', M.F.

Calculation of long-term regulation of stream flow considering the correlation of the flow of consecutive years. Probl. reg.rech.stoka no.8:5-36 '59. (MIRA 13:4)
(Reservoirs)

FEDOROV, L.T., kand.tekhn.nauk; LEONT'YEVSKIY, B.B.; GIL'DENBLAT, Ya.D.,
 kand.tekhn.nauk; KORENISTOV, D.V.; ROSSINSKIY, K.I., kand.tekhn.
 nauk; KUZ'MIN, I.A., kand.tekhn.nauk; KONDRATSKAYA, A.A., inzh.;
 NISAR-MUKHAMEDOVA, G.N., inzh.; PANOVA, G.M., inzh.; ROZHDESTVENSKIY,
 G.L., inzh.; SEMIKOLENOV, A.S., inzh.; TSAREVSKIY, S.V., inzh.;
 ZHUKOVA, M.F., inzh.; GRISHIN, M.M., retsenzent; KRITSKIY, S.N.,
 doktor tekhn.nauk, red.; MENKEL', M.F., doktor tekhn.nauk, red.;
 GALAKTIONOV, V.D., kand.geol.-min.nauk, red.; ZAVALISHIN, I.S., inzh.,
 red.; MALYSHEV, N.A., inzh., red.; MIKHAYLOV, A.V., doktor tekhn.
 nauk, red.; PETROV, G.D., inzh., red.; RAPOPORT, Ya.D., red.; RUSSO,
 G.A., kand.tekhn.nauk, glavnyy red.; SEVAST'YANOV, V.I., inzh., red.;
 TITOV, S.V., inzh., red.; TISTROVA, O.N., red.; LARIONOV, G.Ye.,
 tekhn.red.

[Hydrology and water economy of the Volga-Don] Gidrologiya i vodnoe
 knoziaistvo Volgo-Dona. Pod red. S.N.Kritskogo i M.F.Menkeliya.
 Moskva, Gos.energ.izd-vo, 1960. 146 p. (MIRA 13:11)

1. Moscow. Vsesoyuznyy proyektno-izyskatel'skiy i nauchno-issledo-
 vatel'skiy institut "Gidroproyekt" imeni S.Ya.Zhuk. 2. Deystvitel'-
 nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin).
 (Don River--Water resources development)

FEDOROV, N.N., kand.tekhn.nauk; POPOV, I.V., kand.geogr.nauk; BORSUK, O.N.,
kand.geogr.nauk; GRUSHEVSKIY, M.S., kand.tekhn.nauk; VELIKANOV,
M.A., prof., doktor tekhn.nauk, red.(Moskva); URYVAYEV, V.A., otv.
red.; ALEKIN, O.A., red.; BLIZNYAK, Ye.V., red. [deceased];
BORSUK, O.N., red.; DAVYDOV, L.K., red.; DOMANITSKIY, A.P., red.;
KALININ, G.P., red.; KRITSKIY, S.N., red.; KUDELIN, B.I., red.;
MANOIM, L.F., red.; ~~MENKEL~~, M.F., red.; OHLOV, B.P., red.;
PROSKURYAKOV, A.K., red.; SOKOLOVSKIY, D.L., red.; SPENGLER, O.A.,
red.; CHEBOTAREV, A.I., red.; CHERKOVSKIY, S.K., red.; SHATILINA,
M.K., red.; VLADIMIROV, O.G., tekhn.red.

[Transactions of the Third All-Union Hydrological Congress] Trudy
III Vsesoiuznogo gidrologicheskogo s"ezda. Vol.5. [Section of
Hydrodynamics and River-Bed Evolution] Seksiaia gidrodinamiki i
ruslovykh protsessov. 1960. 421 p.

(MIRA 13:11)

1. Vsesoyuznyy gidrologicheskii s"ezd. 3d, Leningrad, 1957.
2. Gosudarstvennyy gidrologicheskii institut (for Fedorov, Popov).
3. Chlen-korrespondent AN SSSR (for Velikanov).
(Hydrology--Congresses)

KRITSKIY, S.N., doktor tekhn.nauk; MENKEL', M.F., doktor tekhn.nauk

Defining more precisely the norms and technical conditions for
the calculation of maximum discharges in the design of hydraulic
structures on rivers. Trudy Gidroproekta no.4:9-23 '60.
(MIRA 15:2)

(Hydraulic engineering)

S/050/60/000/05/08/020
B007/B014

AUTHORS: Kritskiy, S. N., Menkel', M. F.

TITLE: On the Estimation of the Probabilities of Excess Maximum
Water Deliveries in Rivers Fed by High Waters of Different
Origins

PERIODICAL: Meteorologiya i gidrologiya, 1960, No. 5, pp. 34-36

TEXT: In many rivers, high water is at times caused by the snow melt,
and at other times, by heavy rainfalls. The following paradox arises from
calculations made at home and abroad (Ref. 2): in the range of rarely
reoccurring maxima, the probability curve drawn after the rain course is
higher than the curve of the highest maxima during the year (maxima due
to snow melts or rainfalls, respectively). This paradoxical situation is
explained here, and a calculation procedure satisfying the nature of
objective phenomena is shown. When setting up the curves, the parameters
of the three curves (of water amounts caused by snow melts, such caused
by rainfalls, and the curve of the yearly maximum amounts) are estimated
on the basis of data available. The third parameter, the coefficient of

Card 1/3

On the Estimation of the Probabilities of
Excess Maximum Water Deliveries in Rivers Fed
by High Waters of Different Origins

S/050/60/000/05/08/020
B007/B014

asymmetry, however, is assumed on the strength of general considerations. Its values are assumed for the common curve and do not correspond to the distribution laws of each individual high water type. This gives rise to the mentioned discordance which can be eliminated by a proper selection of the coefficient of asymmetry. The correct procedure is illustrated by the diagram in Fig. 1. This diagram contains the probability curves for each of the high water types. It is assumed in this connection that there be no statistic relation between the two high water types observed during the same year. The formula from paper (Ref. 1) is written down. It is possible by this formula to set up a curve of the yearly maxima, based on the given probability curves of the maximum water deliveries of each of the high water types. In the upper part of the diagram, this curve forms, so to speak, an envelope for the curves of the two high water types. In the range of low probabilities of an excess in the maximum water deliveries it practically coincides with the curve giving the higher values of the very rare peaks. Usually, the rain maxima fluctuate less, from one year to another, than is the case with the snow maxima. Therefore, the upper branch of the common probability curve approaches the

Card 2/3

On the Estimation of the Probabilities of
Excess Maximum Water Deliveries in Rivers Fed
by High Waters of Different Origins

S/050/60/000/05/08/020
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corresponding branch of the rain-peak curve. For an illustration of the
foregoing, the example shown in the Fig. is given in all details.
There are 1 figure, 1 table, and 2 references, 1 of which is Soviet.



Card 3/3

KRITSKIY, S.N., doktor tekhn.nauk; MENKEL', M.F., doktor tekhn.nauk

Method of technical and economic comparisons. Gidr.stroi. 32
no.4:40-42 Ap '62. (MIRA 15:4)
(Hydroelectric power stations)

NOVIKOV, I.T.; NEPOROZHNIY, P.S.; GINZBURG, S.Z.; BELYAKOV, A.A.;
ERISTOV, V.S.; VOZNESENSKIY, A.N.; IVANTSOV, N.M.;
BOROVOY, A.A.; TERMAN, I.A.; ALEKSANDROV, B.K.;
YURINOV, D.M.; NCSOV, R.P.; MIKHAYLOV, A.V.; NICHIPOROVICH, A.A.;
ABELEV, A.S.; PROSKURYAKOV, B.V.; MENKEL', M.F.; KRITSKIY, S.N.;
BELYIY, L.D.

Mikhail Evgen'evich Knorre. Gidr. stroi. 32 no.5: My '62.
(MIRA 15:5)
(Knorre, Mikhail Evgen'evich, 1876-1962)

KRITSKIY, S.N., doktor tekhn. nauk; MENKEL', M.F., doktor tekhn. nauk
Water level fluctuations of closed inland seas and lakes.
Meteor i gidrol. no. 32-36 JI '64 (MIRA 17:8)

1. Sovet po izucheniyu proizvoditel'nykh sil pro Gosplane
SSSR.

MENKES, B.

Present research of Prof. O.B. Lepeshinskaia. Analele biol 7
no.15:5-18 O-D '52.

1. Membru corespondent al Academiei R.P.R.

MENKES, B.; LITVAC, B.

Phase contrast and electron microscope research on the necrobiotic process of the neuroblasts brought about by intraependymary injection of J: n is green in the chick embryo. Rev Roum embryol 1 no.2:193-197 '64.

1. Medicial School, Timisoara.

RUMANIA/General Biology - Individual Development.

B-4

Abs Jour : Ref Zhur - Biol., No 15, 1958, 66724

Author : Menkes, B., Litvas. B.

Inst : Academy RPR.

Title : The Study of Allantoic Blood Circulation in Chick Embryo.

Orig Pub : Studii si cercetary stiint. Acad. RPR. Baza Timisoara,
Ser. stiinte med., 1956, 3, No 1-2, 25-28.

Abstract : In vivo investigation of the chorion - allantoic circulatory system of a chick embryo on the ninth and the fourteenth day of the incubation showed (by introducing India ink) that its functional structure is similar to the type of blood circulation in liver.

Card 1/1

- 5 -

Rumania/General Biology. Individual Development B

Abs Jour : Ref Jour-Biol., No 13, 1958, 57151

Author : ~~Manke E.~~ Litvak B.

Inst : Not given

Title : Investigation of Vitellin Blood Circulation in the Chicken Embryo. Vitellin Blood Circulation Hemopoiesis in the Vitellin Sac

Orig pub : Studii si cercari stint., c d. RPR, Baza Sti-misoara, Ser. Stiinte Med., 1958, 3, No 1-2, 29-37

Abstract : Investigation of the formation of capillaries in the wall and folds of the vitellin sac and their connection with the vitellin blood circulation in the period of the development of the chicken embryo was conducted following the injection of India ink into the vessels, and the

Card 1/2

2/3

Rumania/General Biology. Individual Development B

Abs Jour : Ref Jour-Biol., No 13, 1958, 57151

Abstract : application of the benzedrine reaction with the help of an ultraopaque lamp and a microprojector. The blood and hemopoietic vessels were demonstrated on macro- and microphotos on the 7th, 10th, 12th, 13th, 15th, and 17th day of incubation, and the folds of the vitellin sac on the 15th day of incubation with the central artery in the sac and the spiral and the nearby arterial system of hemopoietic capillaries being seen.

Card 2/2

MENKES, B.; COTAESCU, E.; DELEANU, M.

Studies of the development of certain malignant tumors on the body or chorio-allantoid membrane of the chick embryo and of the reaction of the embryonic epithelia and mesenchyma in presence of such transplants. Bul. stiint. sect. med. 8 no. 1:307-322 Jan-Mar 56.

1. Membru coresp. al Academ. RPR, (for Menkes).

(NEOPLASMS, transplantation
mouse sarcoma & Rous sarcoma to chick embryo,
reaction of epithelia & mesenchyma in presence of
transplants.)

MENKES, B.

Cercetari de embriologie experimentală.

Bucuresti, Rumania. Editura Academiei Republicii Populare
Romine. Vol. 1. 1958. 807 p.

Monthly List of East European Accession (EEAI), LC. Vol. 8, No. 9 September,
1959.

Uncl.

COUNTRY : HUNGARY B
CATEGORY : General Biology.
Individual Development. Embryonal Development.
ABS. JOUR. : RZhBiol., No. 5, 1959, No.19085
AUTHOR : Menkes, B.
INST. : Hungarian AS
TITLE : Experimental Studies of the Development
Process and Differentiation of Hen Embryos.
ORIG. PUB. : Magyar tud. akad. Biol. csop. kozl., 1958, 1
No 3-4
ABSTRACT : In experiments with homeo- and heterotrans-
plantations the author found that already at
the initial stage of individual development an
ontogenesis type reveals itself through the
very minute properties of the organism. The
nerve terminals play an important role here as
well. In this paper, the phylogenetic corre-
lations for the formation of the placenta are
also investigated. The results of these investi-
gations are supported by numerous figures.

CARD: 1/1

MENKES, B.

RUMANIA/General Biology - Individual Development. Embryonal Development. 3

Abs Jour: Ref Zhur - Biol., No 21, 1958, 94617

Author : Menkes, B.; Rimniceanu, C.; Miclea, C.
Inst : Rumanian Academy
Title : Research on the Development and Significance of Mesonephrosis and Metanephrosis in a Chicken Embryo

Abstract: Research on the morpho-physiological characteristics of meso- and metanephrosis and their interrelationship in the normal embryonic development of chickens was carried out by different methods. The author found a definite presence of a specific function of mesonephrosis beginning with the 5th day of incubation. The excretory functions of the mesonephrosis increased, reaching an established level by the 8th to 9th day of incubation. During this period the increased

Card 1/2

10

MENKES, B.M. (Timishoara, Rumynskaya Narodnaya Respublika)

Comparative study of the reactivity of the chorion-allantois and
the body of the embryo. Arkh.anat. gist. 1 embr. 38 no.4:72-76
Ap '60. (MIRA 14:5)

(EMBRYOLOGY--BIRDS)

(TUMORS)

MENKES, B.; SHANDOR, S.; MIKLIA, K.; DELIANU, M.

Experimental studies on homo- or heterological cells introduced into the embryonic organism. I. Behavior of Ehrlich ascites tumor cells introduced into the circulation of chick embryos. Rev. sci. med. 7 no.1/2:59-62 '62.

(CARCINOMA EHRlich TUMOR) (EMBRYO)

MENKES, B.; SANDOR, S.

Experimental investigations concerning the fate of homologous and heterologous cells introduced into the blood stream of embryonic organisms. II. The behavior of Ehrlich's ascites tumor cells introduced into the circulation of chick embryos. Rev. sci. med. 7 no.3/4:163-166 '62.

(CARCINOMA, EHRLICH TUMOR) (NEOPLASMS, EXPERIMENTAL)
(NEOPLASM METASTASIS)

KULEV, F.A.; MENKIN, E.M.; L. V. YAKOV, M.Ye., DDEI, NIYa. 1965, 1965, V.1.

Thermal decontamination of the wastes of chemical industries
with consecutive utilization of the waste heat. Khim. prom.
41 no.5:380-383 My '65. (MIRA 18:6)

MILKAMANOVICH, K. A.; MENKH, V. A.; BUREYKO-KLESHCHOVA, I. F.; GRISHCHINSKAYA, L. L.

"Investigation of the process of the transfer of heat and matter in pyrolysis of sulfur mazut for its disulfuration."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Inst of Heat & Mass Transfer, AS BSSR.

8/121/63/000/001/010/014
A004/A126

AUTHOR: Men'khart, Shash (HPR)

TITLE: New mechanisms in machine tool construction

PERIODICAL: Stanki i instrument, no. 1, 1963, 33 - 34

TEXT: The author describes mechanisms for accurate setting and clamping of machine tables, which are, e.g., used for the drilling of accurately positioned holes in plates, for carrying out a probable summation of tolerances. He presents a description of the design and operation function of a table-displacement mechanism, a mechanism for accurate table setting and a fixing mechanism, and states that the practical operation results have proved that it is possible with these new devices to attain an accuracy exceeding even the theoretical one, not only in unit production, but also in large-scale production. There are 5 figures.

Card 1/1

MEN'KIN, K.M., kand.sel'skokhozyaystvennykh nauk

Improvement of floodland meadows. Zemledelie 24 no.7:40-41
Jl '62. (MIRA 15:12)

1. Morshanskaya selektsionnaya stantsiya Vsesoyuznogo nauchno-
issledovatel'skogo instituta kormov.
(Tsna Valley—Pastures and meadows)

MEN'KIN, K.M., kand. sel'skokhoz. nauk

Methods for cultivating meadow sod. Zemledelie 27 no.9:56 8 65.
(MIRA 18:10)

1. Morshanskaya selektsionnaya stantsiya.

MURKIN, VALY

"Dynamics of Inflammation. An Inquiry into the Mechanism of Infections. Processes." (p. 349) by Murkin, Valy (New York, Macmillan, 1940, 244 pp.) Reviewed by L. N. Karlik.

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologii) Vol. 16, No. 3, 1943.

MENKIN, V.

"Dinamika vospaleniya, Analiz mekhanizma infektsionnykh protsessov (Dynamics of Inflammation. Analysis of the Mechanism of Infectious Processes), Medgiz, Moscow, 1948

MENKINA, Łaszak, mgr inż.

Design and calculation of roller free-wheel clutches. Przegł
mech 21 no.3:69-75 10 F '62.

1. Politechnika, Szczecin.

MENKINA, M.M.

Category: USSR/Analytical Chemistry - Analysis of inorganic substances.

G-2

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 31039

Author : Menkina M. M., Fridman L. A., Ganchel' L.E.

Inst : not given

Title : New Procedure for the Analysis of Nickel Baths

Orig Pub: Sb. Mashinostroitel' Belorussii, No 1 (2). Minsk, 1956, 115-116

Abstract: Description of a method for the determination of boric acid in nickel electrolyte baths by titration with a solution of NaOH, to phenol-phthalein, in the presence of mannite. Ni is first removed by precipitation as hydroxide, by means of NaOH.

Card : 1/1

-58-

Translation from: Referativnyy zhurnal, Metallurgiya, SOV/137-57-6-11203
1957, Nr 6, p 260 (USSR)

AUTHORS: Menkina, M.M., Fridman, L.A., Ganchel', L.E.

TITLE: Photocolorimetric Determination of Nickel Sulfate in a Nickel Plating Bath (Fotokolorimetriceskoye opredeleniye sernokislogo nikelya v nikel'evoy vanne)

PERIODICAL V sb. Mashinostroitel' Belorussii. Nr 1 (2). Minsk. 1956 pp 117-118

ABSTRACT: The method is based on the determination of NiSO₄ in a FEK-M type photocolorimeter with a red light filter. The cells used have a working length of 3 mm. A comparative table of the variations of the optical density in relation to the variation of NiSO₄ contents in the bath is adduced. The calibration curve is drawn according to precisely weighed amounts of chemically pure NiSO₄. The NiSO₄ content in standard solutions is checked by three methods: volumetric, electrolytic, and photocolorimetric. The colorimetric method permits one to analyze solutions containing 350-400 g/l. Fluctuations in H₃BO₃ and NaCl content and variations in the pH have no effect on the result of the determination.

Card 1/1

K.K.

SOV/137-57-6-11199
Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 6, p 259 (USSR)

AUTHORS: Menkina, M.M., Fridman, L.A.

TITLE: Photocolorimetric Determination of Copper in Aluminum Alloys
(Fotokolorimetricheskoye opredeleniye medi v alyuminiyevykh splavakh)

PERIODICAL: V sb.: Mashinostroitel' Belorussii. Nr 1 (2) Minsk, 1956, pp
119-120

ABSTRACT: 0.4 g of the specimen are placed into a 200 cc volumetric flask, 15 cc of 1:1 HCl are added, and after one minute 3 cc of HNO_3 . The whole is boiled to a complete dissolution of the specimen. 100 cc H_2O and 40 cc NH_4OH are added, and the solution is diluted up to the mark. The first portion of the filtrate is discarded, the second is investigated on an FEK-M photoelectric colorimeter with a red light filter in a 20-cc cell. The calibration curve is drawn with the aid of specimens of Al alloys with known Cu contents.

K.K.

Card 1/1

USSR/Chemical Technology - Chemical Products and Their Applications - Electrochemical Manufacturing. Electrodeposition. Chemical Sources of Electric Current. I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8909

Author : Zhinivich, N.I., Menkina, M.M., and Rubenchik, K.F.

Inst : Belorussian Polytechnical Institute.

Title : Nickel-Plating with an Electric Current of Periodically Changing Direction.

Orig Pub : Sb. nauch. rabot Belorus. politekhn. in-ta, 1956, No 55, 103-108

Abstract : The effect of periodic changes in the direction of the current during the electrolytic deposition of Ni under various conditions of composition and acidity in the bath, temperature,

Card 1/3

USSR/Chemical Technology - Chemical Products and
Their Applications - Electrochemical
Manufacturing. Electrodeposition.
Chemical Sources of Electric Current.

I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8909

D, plating time, switching frequency, and holding time of the articles in the anodic or cathodic position has been investigated. The direction of the current was reversed by means of a throw-switch; the switching frequency was controlled with a stop watch. Before plating, the steel specimens were cleaned with emery paper followed by boiling in alkali and dipping in HCL solution. The current efficiency of the plating process was determined by the use of a copper coulometer. The experiments were repeated 2-3 times and the control experiment in which

Card 2/3

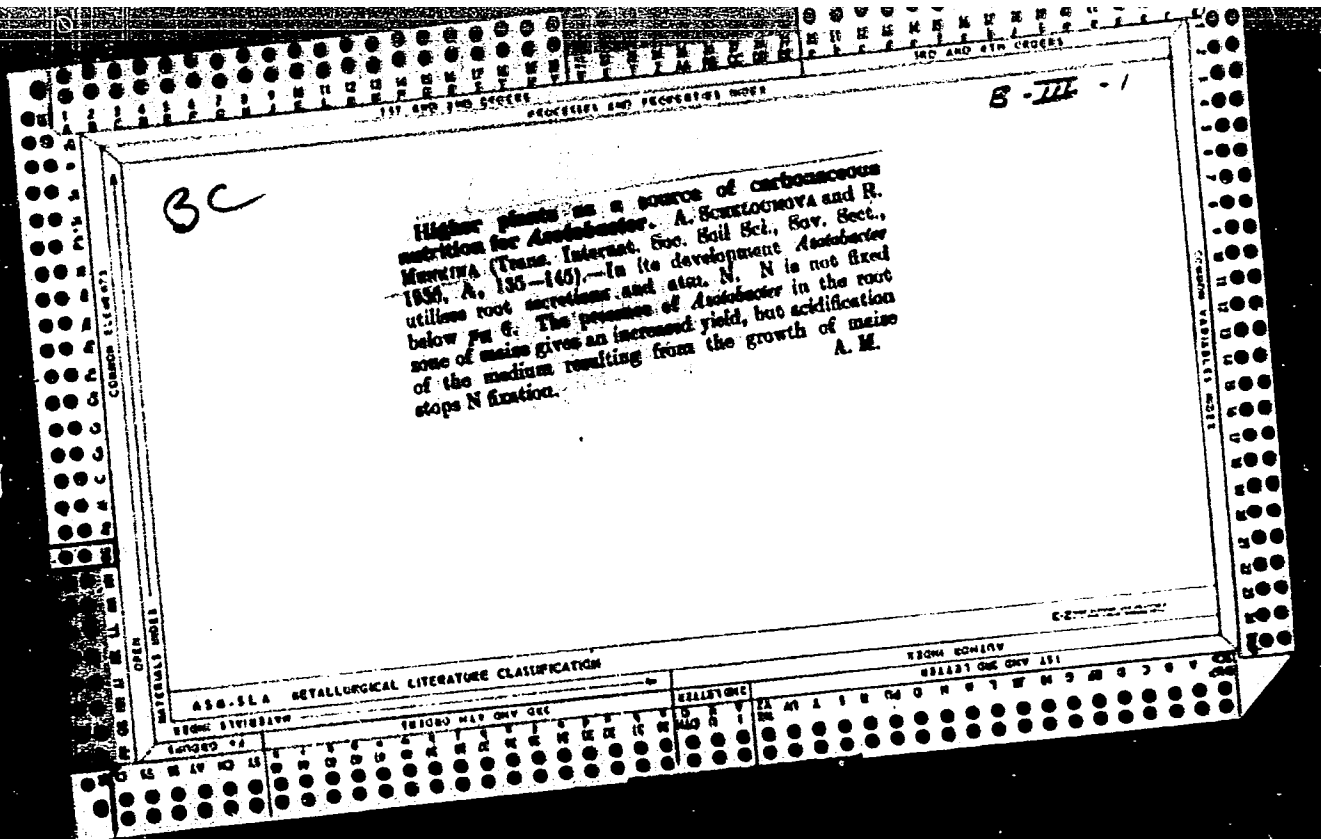
USSR/Chemical Technology - Chemical Products and
Their Applications - Electrochemical
Manufacturing. Electrodeposition.

I-9

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 8909

the current direction was not reversed was carried out in all cases. It has been established that the quality of the deposit, the current efficiency, and the thickness of the deposit all decrease markedly with the length of time that the articles are left in the anodic position: this time was taken at 1 sec. Better results were obtained with electrolytes containing (in gms/liter) $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$, 238; Na_2SO_4 , 20; NaCl , 5; and Na_3BO_3 , 20 at pH 5.3 - 5.1 with 6 reversals of polarity per minute. Smoother and more lustrous deposits are obtained when the articles are left in

Card 3/3



Bacteria which mineralize organic phosphorus compounds. R. A. Menkina (All-Soviet Inst. Agr. Microbiol. Leningrad). *Mikrobiologiya* 19, 388-10(1959).—A new strain, *B. megatherium phosphaticum*, and a new variety, *Serratia* var. *phosphaticum*, were isolated from soil cultures. They form inorg. P compds. from lecithin, nucleic acids, and the like. Of two sporogenic forms, one was more specific to lecithin, the other to nucleic acids. A nonsporogenic form acted strongly on lecithin, feebly on nucleic acids. These organisms, by liberating inorg. phosphate from org. P compds., promote normal plant growth.

Julian P. Smith

MENKINA, R. A.

MENKINA, R. A.

Bacteria mineralizing organic compounds of phosphorus. Mikrobiologiya,
Moskva 19:4, July-Aug., 50. p. 308-16

1. All-Union Institute of Agricultural Microbiology, Leningrad.

GLML 19, 5, Nov., 1950

MENKINA, R. A.

"The Effectiveness of and the Conditions Required for the Application of Phosphobacterins." I. I. Samoylov, E. F. Berezova, A. S. Chernavin, V. V. Bernard, Yu. M. Voznyakovskaya, L. M. Dorosinskiy, R. A. Menkina, and M. Ya. Finkel'shteyn. Trudy Vsesoyuz. Nauch-Issledovatel. Inst. Sel'skokhoz. Mikrobiol. 3, 173-92(1953). Application of phosphobacterins is beneficial to a variety of crops, particularly cereal grains and potatoes, especially in black soil, In soils other than black, the presence of org. matter and of the perennial-grass stratum influence the effectiveness of the added phosphobacterins. Soil treatment with phosphobacterins increases the content of available P in the soil, especially in zones abutting the roots, intensifies the nitrification process and raises the nitrate content of the soil throughout the vegetation period, and increases the content of P in the plants. B. S. Levine

SAMOYLOV, I.I., akademik; BEREZOVA, Ye.F., doktor biologicheskikh nauk;
CHERNAVIN, A.S., kandidat sel'skokhozyaystvennykh nauk; BERNARD, V.V.,
kandidat sel'skokhozyaystvennykh nauk; VOZNYAKOVSKAYA, Yu.M., kandidat
biologicheskikh nauk; DOROSINSKIY, L.M., kandidat biologicheskikh nauk;
MENKINA, R.A., kandidat biologicheskikh nauk; FINKEL'SHTEYN, M.Ya.,
kandidat biologicheskikh nauk.

Effectiveness and conditions of using phosphoro-bacterial fertiliser.
Trudy Vses. inst. sel'khoz. mikrobiol. 13:173-192 '53. (MLRA 8:1)
(Fertilizers and manures)

MENKINA, R.A. /

Effect of selection on some physiological properties of *Bacillus megaterium* var. *phosphaticum*. Trudy Inst. mikrobiol. no.10:143-147 '61.
(MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina.

(BACILLUS MEGATERIUM)

MENKINA, R.A.

Factors determining the effectiveness of phosphobacterin in soil.
Zemledelie 25 no.7:78-82 J1 '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii.

(Bacteria, Phosphorus) (Soil inoculation)

MENKINA, R.A.

Role of *Bacillus megaterium* var. *phosphaticum* in the nutrition of plants. Trudy Inst. mikrobiol. no.11:238-245 '61

(MIRA 16:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennoy mikrobiologii Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina.

*

MENKINA, R.A.

Bacterial fertilizers and their significance for agricultural plants. Mikrobiologiya 32 no.2:352-358 Mr-Apr '65.

(MIRA 17:9)

ZAGORUL'KIN, Vasilii Afanas'yevich; MEN'KO, Pavel Aleksandrovich;
PEREPELKIN, Dmitriy Fedorovich; MAKAROVA, E.A., red.;
SHADRINA, N.D., tekhn. red.

[Regular production conferences] Postoianno deistvuiushchie pro-
izvodstvennye soveshchaniia. Moskva, Profizdat, 1960. 126 p.
(MIRA 15:7)

(Works councils)

ZAGORUL'KIN, Vasilii Afanas'yevich; MEN'KO, Pavel Aleksandrovich;
PEREPELKIN, Dmitriy Fedorovich; MAKAROVA, E.A., red.;
SHIKIN, S.T., tekhn. red.

[Permanent production councils] Postoianno deistvuiushchie
proizvodstvennye soveshchaniia. 2., perer. izd. Moskva,
Profizdat, 1961. 63 p. (Bibliotekha profsoiuznogo akti-
vista, no.3) (MIRA 16:4)
(Industrial management) (Agricultural administration)

L 06387-67 EWT(d)/EWP(1) IJP(c)

ACC NR: AP6021256

SOURCE CODE: UR/0041/66/018/002/0129/0135

AUTHOR: Men'ko, Ya. P. (Kiev)

ORG: none

TITLE: A method for determining intervals of instability of quasi-harmonic systems with a delayed argument

SOURCE: Ukr matem zh, v. 18, no. 2, 1966, 129-135

TOPIC TAGS: linear differential equation, stability condition, approximation method

ABSTRACT: Given a system of second-order equations with delay:

$$\ddot{y}_s(t) + \sum_{k=1}^n a_{sk} y_k(t) = e \sum_{k=1}^n [g_{sk}(\omega t) \dot{y}_k(t) + b_{sk}(\omega t) y_k(t - \Delta(\omega t))] + p_{sk}(\omega t) y_k(t) + r_{sk}(\omega t) y_k(t - \Delta_1(\omega t)) \quad (s = 1, 2, \dots, n), \quad (1)$$

the problem studied is that of determining the interval of variation of ω in which system (1) has unstable solutions. A general method for determining this interval is set forth, and its application is illustrated for an oscillating system described by

Card 1/2

L 06387-67

ACC NR: AP6021256

0

the equation

$$\ddot{y}(t) + \epsilon \dot{y}(t - \Delta) + \Omega^2 y(t) + 2\epsilon \cos \omega t y(t - \Delta_1) = 0, \quad \Delta > 0, \quad \Delta_1 > 0.$$

Orig. art. has: 40 formulas.

SUB CODE: 12/

SUBM DATE: 07Dec64/

ORIG REF: 004/

OTH REF: 002

Card 2/2

Ddk

MEMORANDUM

Behavior of selenium, hafnium and iron impurities in the
 vacuum distillation of tantalum. I. A. B. Pavlov, A. A.
 Men'kov, and A. V. Nosovskiy (I. V. Lomonosov State
 Univ. Moscow). *Dokl. Akad. Nauk SSSR*, 246-247 (1979).

Purification of Ta by vacuum distillation. The
 distribution of Se, Hf, and Ir by using radioactive monitors.
 Samples of Ta contg. 0.3 and 0.026% Se showed no separ. by
 distn. A part of the total Hf and Ir showed a decrease in
 the wt content by selecting an appropriate distn. in a 100°C
 still. The distn. of Se, Hf, and Ir was not studied under the
 exptl. conditions. I. A. B. Pavlov.

9
 4E2C
 4E3D
 PML
 1-2077

MT

Handwritten: MONTAGNA, A.A.

Distr: $1E26/1E13$

Handwritten: 5
2

Removal of copper and lead in the purification of tellurium. O. I. *Handwritten:* 21 21
Neorg. Khim. 2, 3629-9(1957). -- To a soln. of Na_2TeO_3 (0.8-0.9 g. Te) contg. <10% Cu or <47% Pb (based on Te) at 70-80° and pH 10, is added a soln. of $CuSO_4$ and $Cu(NO_3)_2$ (for study of Cu removal) or $Pb(NO_3)_2$ (for Pb). The soln. is cooled to 0°, the ppt. filtered off, washed, and the Te in the filtrate pptd. at a lower pH. Te contg. <0.001% Cu or <0.001% Pb is obtained. The first ppt. ($Cu(OH)_2$ or $Pb(OH)_2$) invariably contains Cu and Te in a 4:3 ratio, or Pb and Te 1:1. In the confirmatory analyses, Cu and Pb did not interfere with the periodimetric detn. of Te. An attempt to ppt. pure Te from the mixt. at pH 3-4 failed because of the copptn. of Cu and Pb. M. Anderson

Handwritten: DM

Handwritten: 11

PASHINKIN, A. S., MEN'KOV, A. A., KORNEYEVA, I. V. and NOVOSELOVA, A. V.
(Moscow State Univ im M. V. Lomonosov)

"Investigation of the Sublimation of Tellurium by Using Radioactive Indicators"

Isotopes and Radiation in Chemistry. Collection of reports of
the All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and
Radiation in National Economy and Science, Moscow, 1970. (NY: UN Conf., 1971.)

This volume published the reports of the Department of Chemistry
and All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and Radiation
in Science and the National Economy, sponsored by the State Sci. and Tech.
Admin. for Utilization of Atomic Energy under Council of Ministers, USSR.
Moscow 4-11 April 1971.

5(1, 2)

AUTHORS:

Novoselova, A. V., Pashinkin, A. S.
Men'kov, A. A., Gol'denberg, A. E.

SOV/53-58-6-2/22

TITLE:

Manufacture of Pure Tellurium by Sublimation (Polucheniya
chistogo tellura vozgonkoy)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
khimicheskaya tekhnologiya. 1958, Nr 6, pp 2-13 (USSR)

ABSTRACT:

By way of introduction the field of application (synthesis of tellurides with semiconductor properties) is mentioned, and the main admixtures in tellurium (Ref 1) are enumerated. The purification methods are recalled (Refs 2-6). Due to the fact that tellurium, both in the liquid and in the solid state, possesses a considerable vapor pressure (Refs 7-10), sublimation constitutes a most efficient purification method. The authors studied the process mentioned in the title and the tellurium distribution in the condensation zone. The initial tellurium was highly oxidized and contained a great amount of tellurium dioxide. It was chemically purified and investigated with regard to selenium admixtures. For the determination of the temperatures of the condensation zones a device (Fig 1) was used.

Card 1/3

Manufacture of Pure Tellurium by Sublimation

SOV/157-58-6-2/22

Data on the distribution of tellurium in the condensation zone, at 400 and 500°C, were obtained (Table 1, 2).

Manufacture of pure tellurium by sublimation. Chemically purified tellurium was sublimated in a second device (Fig 3). In order to prevent a mechanical transmission of impurities into the condensate, tellurium was first of all remelted. For this purpose a crucible and nitrogen atmosphere were used. After the cooling of the fusion the crucible was connected with the condenser and put into the sublimator device. In the device a vacuum of

$10^{-4} - 10^{-5}$ mm mercury column was produced and the oven temperature was slowly raised to 400-500°C. The sublimated tellurium accumulated in large crystals on the condenser removed from the glass. The yield of the sublimation, which exceeded 10-15% of the total test quantity and consisted chiefly of tellurium dioxide. Table 3 shows the results of a spectral analysis of the sublimated substances, as well as the content of the sublimator of tellurium which had not been chemically purified. B. A. Popovkin participated in the work. A similar sublimation will lower the contents of most sixfold impurities.

Card 2/3

Manufacture of Pure Tellurium by Sublimation

SOV/153-58-6-2/22

$1 \cdot 10^{-4}\%$ each. However, halogen and selenium admixtures cannot be determined by means of spectral analysis. In an earlier study (Ref 13) it had been found that no separation of selenium from tellurium occurs on sublimation. As already mentioned, the selenium content in tellurium could, however, be lowered to $2 \cdot 10^{-4}\%$ by means of chemical purification. Due to the different volatilities of their dioxides selenium and tellurium can be separated (Refs 14-18). The purification of other admixtures (Ref 19) is discussed. There are 3 figures, 2 tables, and 19 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova, Kafedra neorganicheskoy khimii (Moscow State University imeni M. V. Lomonosov, Chair of Inorganic Chemistry)

SUBMITTED: November 18, 1957

Card 3/3

5 (2)

AUTHORS:

Men'kov, A. A., Komissarova, L. N.,
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TITLE:

On the Selenide and Telluride of Scandium

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 92-94 (USSR)

ABSTRACT:

The selenide and telluride of scandium were synthesized from elements by the authors. They are non-melting crystalline powders, the former of which is of brown-violet color and the latter black. The compounds obtained were investigated roentgenographically according to the powder method. Results of the analysis are given in tables 1 and 2. With the use of bromoform the density of selenide and telluride of scandium was determined pycnometrically at 22° (Table 3). The values of the density 4.52 g/cm³ (Ref 1) found for selenide of scandium are in good agreement with those from publications. The crystalline structure of selenide and telluride of scandium belongs to the type of structure γ' = Al₂O₃ (Ref 9). With respect to scandium ions the structures are defective. The lines Nr 6, 8, 11, 23 (Table 2) present with the telluride of scandium point to a partial transition of the γ' = Al₂O₃-structure to γ = Al₂O₃.

Card 1/2

SOV/20-128-1-24/58

On the Selenide and Telluride of Scandium

structure with an ordered distribution of scandium ions. Similar structures are found with the telluride of indium In_2Te_3 (Ref 10) as well as with the selenide and telluride of gallium Ga_2Se_3 , Ga_2Te_3 (Ref 11). These might be ascribed to the sphalerite type, however, with defects with respect to metal ions. The selenide and telluride of scandium must, however, be ascribed without doubt to the type $\gamma' = \text{Al}_2\text{O}_3$ on account of the presence of strong lines (200). There are 3 tables and 11 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
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Card 2/2

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AUTHORS: Spitsyn, Vikt. I., Academician, Komissarova, L. N., and
Men'kov, A. A.

TITLE: Production and properties of metallic scandium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 4, 1961, 903-906

TEXT: The production of metallic scandium from its anhydrous chloride ScCl_3 was studied, and its still little known properties were analyzed. The relatively high melting point of 1539°C , low specific gravity, considerable mechanical strength, and (under certain conditions) low chemical activity render scandium a promising material in several fields of modern technology. Spectroscopically pure scandium oxide obtained by thiocyanate extraction and precipitation of scandium oxalate from commercial Sc_2O_3 was used as initial substance to produce Sc. Anhydrous ScCl_3 was obtained by chlorination of the mixture scandium oxide + charcoal from sugar (3:1) in a quartz tube at 1000°C , and sublimed. It was reduced with metallic

Card 1/5

25860
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B103/B220

Production and properties of metallic ...

calcium in pure argon at 900°C. The reaction mixture containing about 5% Ca was filled into a tantalum crucible. The reaction products contained Ca, CaO, ScCl₃, and Si. They were pulverized (grain size <0.2 mm), treated with water, with 10% NaOH, again with water, and finally with methanol and ether. The solvent was decanted. The powdery metallic scandium obtained was dried in air (10-15min) and in vacuo (10⁻⁴ mm Hg, ~30min). Then, scandium was melted at reduced argon pressure (200 mm Hg) in an arc furnace. Previously, the metal had been pressed into tablets under a pressure of 100 kg/cm², and heated in high vacuum (10⁻⁵ - 10⁻⁶ mm Hg). The molten metallic scandium is a silvery metal with a characteristic yellow glimmer. It contains 97 - 97.5% Sc (analysis by the hydrogen method), whereas the gravimetric and volumetric methods gave corresponding values of 98 - 99% by weight. Small quantities of Si (0.1% by weight) and Ca (0.001%) were spectroscopically identified in most specimens. The analysis of molten Sc yielded in %: Sc 98 - 99; Cl <0.05; Ca <0.001; Si 0.1; O₂ <0.9. Zr, Th, Y, Yb, Fe in total <0.1. For further purification molten Sc was sublimed in high vacuum from a tantalum crucible to a

Card 2/5

25860

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B103/B220

Production and properties of metallic ...

tantalum plate at 1500-1600°C by using a high-frequency apparatus with tube generator. The Sc content in the sublimate was <99%. Radiographs of Sc sublimed in vacuo were analyzed. All 29 lines of the picture were easily indicated in an Mg-type hexagonal lattice with $a = 3.302 \pm 0.005$ kX and $c = 5.255 \pm 0.005$ kX, $c/a = 1.591$; $Z = 2$. The radiographic density is 2.992 g/cm^3 , the pycnometric density = 3.0 g/cm^3 . The cubic phase described in Ref. 13 (K. Meisel, Naturwiss., 27, 230 (1939)) and Ref. 6 (J. C. Achard et al., C. R., 243, 493 (1956)) is explained as being due to considerable impurities, mainly ScN, in the Sc metal. The device with diamond pyramid was used for determining the microhardness. For Sc > 99%, it was $75 \pm 5 \text{ kg/mm}^2$, whereas $145 \pm 10 \text{ kg/mm}^2$ was measured for Sc 97-97.5%. Further data refer to Sc 97 - 97.5%. The yield strength was determined on turned specimens of 2 mm diameter by means of a tensile-testing machine. The yield strength decreases considerably with increasing content of non-metallic additions. The stability in air was tested (a) isothermally at 20°C, and (b) polythermally between 20 and 800°C. Ad (a): A damped quartz balance was used (with assistance of V. A.

Card 3/5

25860
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Production and properties of metallic ...

Arslambekov, Institut fizicheskoy khimii AN SSSR, Institute of Physical Chemistry AS USSR). The tests showed that the metal surface was coated by an oxide film $\sim 600 \text{ \AA}$ thick, whereupon oxidation stopped. Au (b): Oxidation in air was studied by using a continuous balance. Metal powder ($< 0.2 \text{ mm}$) begins to oxidize at 250°C . The kinetics of interaction with aqueous HCl solutions was recorded on Sc plates (apparent surface $3\text{-}4\text{cm}^2$, weight $0.3 - 0.5 \text{ g}$) based on the rate of H_2 separation, and checked by the decrease in weight of Sc. The two methods gave corresponding data. Interaction between metallic Sc and HCl solutions occurs rather rapidly at HCl concentrations between 0.05 and 0.1 N and more. If the concentration of HCl is reduced, the dissolution of metal is rapidly slowed down. In 0.001 N HCl (pH 3), the dissolution constant K is very low ($< 5 \cdot 10^{-5} \text{ mg/cm}^2 \cdot \text{min}$). Consequently, the authors state that practically no further dissolution of Sc takes place at this concentration, and the more so in H_2O . Yu. P. Simanov is thanked for discussing data obtained by X-ray analysis. There are 4 figures, 1 table, and 16 references: 6 Soviet-bloc
Card 4/5

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Production and properties of metallic ...

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and 10 non-Soviet-bloc. The most important references to English-language publications read as follows: Ref. 7: Chem. Age 82, 2106, 742 (1959); Ref. 9: F. H. Spedding & al. Trans Metallurg. Soc. AIME 218, No. 4, 608 (1960).

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Card 5/5

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AUTHORS: Men'kov, A. A., Komissarova, L. N., Simanov, Yu. P., and
Spitsyn, Vikt. I., Academician

TITLE: Scandium chalcogenides

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 2, 1961, 364-367

TEXT: High-purity Sc_2O_3 (of 99.9% purity), Sc_2S_3 , and ScTe (the latter two synthesized from elements) were studied by x-ray diffraction. Compounds of the composition 1:1 were not found in the systems Sc - S and Sc - Se. PKA-57 (RKD-57) and PKU-86 (RKU-86) cameras with filtered CuK_α radiation were used for taking x-ray photographs. Results are given in Tables 1 - 3. All Sc_2O_3 lines are satisfactorily indicated in a cubic, body-centered Mn_2O_3 lattice with $a = 9.835 \pm 0.005$ kX, $Z = 16$, which is somewhat more than the lattice constants given in publications. The density of Sc_2O_3 (g/cm^3) determined by x-ray diffraction is 3.84, the
Card 1/9

. Scandium chalcogenides

S/020/61/141/002/014/027
B103/B110

pycnometrically determined density is 3.75. As to their intensities, Sc_2S_3 lines may be clearly classified into two groups: (1) very strong ones, (2) weak ones. The former are indicated in a primitive cubic lattice with $a_0 = 2.591 \text{ kX}$ which represents a subcell. The latter are due to a superstructure. In analogy with the structure of $\beta\text{-In}_2\text{S}_3$ (Ref. 12, see below), a tetragonal face-centered lattice, $a = 10.37 \pm 0.01 \text{ kX}$ ($a = a_0 \cdot 4$) and $c = 31.11 \pm 0.03 \text{ kX}$; $c/a = 3$, $Z = 32$, is assumed. The existence of lines which cannot be indicated is explained by an additional Sc_2S_3 superstructure, or by small impurities. The calculated packing density of such a tetragonal lattice was 2.96 g/cm^3 , the pycnometrically determined one (in chloroform) 2.80 g/cm^3 . All 25 lines of the ScTe photograph are well indicated in a hexagonal NiAs lattice with $a = 4.112 \pm 0.005 \text{ kX}$ and $c = 6.735 \pm 0.005 \text{ kX}$, $c/a = 1.634$, $Z = 2$. The density of ScTe determined by x-ray diffraction is 5.75 g/cm^3 , the pycnometrically determined one (in bromoform) is 5.65 g/cm^3 . The results obtained are not in agreement with those of Ref. 13 (see below). The color of Sc chalcogenide changes regularly from white to black with increasing

Card 2/ 0

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. Scandium chalcogenides

chalcogen polarizability. Sc_2O_3 : white, Sc_2S_3 : yellow, Sc_2Se_3 : brown-violet, Sc_2Te_3 : black, ScTe : black. The crystal lattices of these chalcogenides is of high symmetry. There are 4 tables and 13 references: 4 Soviet and 9 non-Soviet. The three references to English-language publications read as follows: H. E. Swanson, R. K. Fuyat, G. M. Ugrinik, National Bureau of Standards, Circular 539, 3, 1954; C. J. M. Rooymans, J. Inorg. and Nucl. Chem., 11, no. 1, 78 (1959); L. H. Brixner, J. Inorg. and Nucl. Chem., 15, No. 1/2, 199 (1960).

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Card 3/0 3

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AUTHORS: Men'kov, A. A., Komissarova, L. N., Karelin, V. V.,
Friselkov, Yu. A., Nesmeyanov, An. N., and Spitsyn, Vikt. I.,
Academician

TITLE: Investigation of high-purity metallic scandium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 1, 1962, 122 - 125

TEXT: 99.5% pure Sc was produced by high-vacuum distillation of 97 - 97.5% Sc. The pure metal was studied metallographically and tested for its behavior to O_2 , N_2 (in a device designed by R. D. Shapovalova and L. A. Vasil'yeva), and differently concentrated solutions of HCl , H_2SO_4 , HNO_3 , and $NaOH$ at 25, 50, and $100^\circ C$. The results were compared with those obtained for 97% Sc. The polished, non-etched surface of 97% Sc reveals the grain boundaries in polarized and nonpolarized light. No second phase appears in spite of 0.9% oxygen content. With high-purity Sc, the grain boundaries are only visible in polarized light. 99.5% Sc starts reacting at $200^\circ C$ with O_2 , at more than $600^\circ C$ with N_2 (formation of ScN). Dissolving

Card 1/2