"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

S/271/63/000/002/014/030
A060/A126

AUTHOR: Babunashvili, T. G.

TITLE: On the dissipativity in the large of a three-dimensional non-autonomic nonlinear automatic regulation system

PERIODICAL: Referativnyy zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, no. 2, 1963, 64, abstract 2A392 (In collection: "Avtomat. regulirovaniye i upr.", Moscow, ANSSSR, 1962, 22 - 27)

TEXT: The author investigates the problem of dissipativity in the large in a three-dimensional autonomic automatic regulation system described by the equations $\gamma + A(t)\gamma + B(t)\mu = 0$, $\mu = f(\sigma)$; $\sigma = k\gamma - \mu$, where γ, γ, μ are coordinates of the system; k is the transfer coefficient of the regulator, σ is a control parameter; A(t), B(t) are time-varying parameters of the object (bounded continuous, positive functions in the interval $0 \leq t < \infty$); $f\sigma$ is an essentially nonlinear function satisfying the condition: $f(\sigma) \leq 0$ for $|\sigma| \leq \sigma_*$, $\sigma f(\sigma) > 0$ for $|\sigma| > \sigma_*$ (σ_* is the insensitivity zone of the regulator). The formulation of the problem is explained using the example of the starting schedule of a symme-

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On the dissipativity in the large of a... S/271/63/000/002/014/030
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trical rocket without resistance with gas steering. The problem is solved by the use of qualitative methods. There is one figure and 7 references.

L. T.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

ACCESSION NR: AP4022708 S/0020/64/155/002/0295/0298

AUTHOR: Babunashvili, T. G.

TITLE: Synthesis of optimal linear systems

SOURCE: AN SSSR. Doklady*, v. 155, no. 2, 1964, 295-298

TOPIC TAGS: cybernetics, control theory, automatic control, automatic control theory, linear control system, optimal linear control system, nonhomogeneous control system, nondegenerate control system

ABSTRACT: This is a description of a new synthesis method which is suitable for any nonhomogeneous (nondegenerate) system. The formulation of the problem is as follows. Assuming

$$\dot{x} = A(t)x + B(t)u + f(t). \qquad (1)$$

In this case, x is an n-dimensional phase column vector; A (t) is the summable n x n matrix (i.e., the matrix whose elements are summable on any bounded interval of the time axis); U is the r-dimensional control column vector; B (t) is the

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ACCESSION NR: AP4022708

summable n x r matrix; f (t) is the n-dimensional summable column vector. Control of U is sought in a class of measurable functions with values in a given convex, compact polyhedron U of an r-dimensional space containing the origin of the coordinates. The problem is to find the optimal control for the given initial position x_0 in the phase space which translates the phase point by the appropriate (optimal) path of equation (1) from x_0 to the coordinate origin at a minimum time. We now write the equation

$$\dot{\psi} = -\psi A(t), \qquad (2)$$

where ψ is the n-dimensional row, and we shall define the norm $\|v\|$ in the space of r-dimentional line vectors v by the equation

$$\|v\| = \max_{u \in U} vu. \qquad (3)$$

The requisite condition for optimability (principle of the maximum) can now be formulated. For any optimal control of u (t), $0 \leq t \leq T$, there exists such a non-zero solution of ψ (t), $0 \leq t \leq T$, in equation (2) that almost anywhere in $0 \leq t \leq T$

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$$\psi(t) B(t) u(t) = |\psi(t) B(t)|. \qquad (4)$$

Equation (1) is assumed to be nondegenerate. Finding an optimal control for $u_{x_0}(t)$, $0 \le t \le T_{x_0}$ is equivalent to solving the equation

$$z(T) = -\left(x_0 + \int_0^T \Phi^{-1}(t) f(t)\, dt\right) = \int_0^T \Phi^{-1}(t) B(t) u(t)\, dt = \int_0^T K(t) u(t)\, dt \qquad (5)$$

with respect to the unknowns T, u(t), $0 \le t \le T$, where the lowest positive root of this equation is taken as T. In order for equation (4) to provide an optimal solution for T_{x_0}, $u_{x_0}(t)$, $0 \le t \le T_{x_0}$, it is necessary and sufficient that there exist a non zero row ψ_{x_0}, satisfying the equation

$$\psi_0 z(T_{x_0}) = \int_0^{T_{x_0}} |\psi_0 K(t)|\, dt = \min_{\chi z(T_{x_0}) = \psi_0 z(T_{x_0})} \int_0^{T_{x_0}} |\chi K(t)|\, dt. \qquad (6)$$

Orig. art. has: 6 formulas.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

ACCESSION NR: AP4022708

ASSOCIATION: Matematicheskiy institut im. V. A. Steklova Akademii nauk SSSR (Mathematics Institute, Academy of Sciences SSSR)

SUBMITTED: 24Oct63 ATD PRESS: 3066 ENCL: 00

SUB CODE: DP, MA NO REF SOV: 002 OTHER: 002

Card 4/4

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

IL'YASHENKO, A.V., kand.med.nauk; BABUR, A.A.

Closed injuries of the liver. Vrach. delo no.11:134-135 N'63 (MIRA 16:12)

1. Kafedra gospital'noy khirurgii pediatricheskogo fakul'teta (zav. - prof. P.A.Nalivkin) i kafedra obshchey khirurgii pediatricheskogo i stomatologicheskogo fakul'teta (zav. zasluzhennyy deyatel' nauki UkrSSSR, prof. I.Ya. Deyneka) Odesskogo meditsinskogo instituta.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUR, A.A., aspirant (Odessa, D-57, ul. Pavlova, d.11, kv.26)

Comparative evaluation of the use of some plastics in an experimental liver resection. Klin.khir. no.9:20-26 S '62. (MIRA 16:5)

1. Kafedra obshchey khirurgii pediatricheskogo i stomatologicheskogo fakul'tetov (zav. - zasluzhennyy deyatel' nauki, prof. I.Ya. Deyneka) i kafedra patologicheskoy anatomii (zav. - prof. Ye.A. Uspenskiy) Odesskogo meditsinskogo instituta imeni N.I. Pirogova.
(PLASTICS IN MEDICINE) (LIVER--SURGERY)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

PODOL'SKIY, Ye.M., kand.tekhn.nauk; BAKURIN, B.L., inzh.

Determining the capacity of flood-control reservoirs with a calculation for seasonal regulation of streamflow. Gidr. stroi. 30 no.6:30-35 Je '60. (MIRA 13:7)
(River--Regulation)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, J.

"Electric power production in Albania."

p. 53 (Technicke Zpravy) No. 5, 1956
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no.4, April 1958

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

Baburek, J.

An improved type of electrodialyzer. p.95

(Stavivo. Vol. 35, no. 3, Mar. 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 10, October 1957. Uncl.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, J.; SVOBODA, J.

Increasing the production of fine grain kaolin by chemical deflocculation. Stavivo 41 no.2:52-54 F '63.

1. UOSKS, Karlovy Vary.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri

Fast method of determining the sorption capacity of kaolins and clays. Sklar a keramik 13:Suppl.: no.8:81-85 Ag '63.

1. Ustav technologie hrube keramiky a upravnictvi keramickych sourovin, Karlov Vary.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri; VONDRAKOVA, Milena

Examination of monodisperse fractions of Sedlec kaolin with the electron microscope. Silikaty 7 no.4:284-293 '63.

1. Ustav technologie hrube keramiky a upravnictvi keramickych surovin, Karlovy Vary; Vyzkumny ustav papiru a celulosy, Praha.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri

On the content of iron compounds in Bozicany kaolin.
Sklar a keramik 13 no. 12: 324-327 D '63.

1. Ustav technologie hrube keramikly a upravnictvi keramickych surovin, Karlovy Vary - Rybare.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

VONDRAKOVA, Milena, inz.; BABUREK, Jiri, inz.

Effect of mineralogical composition on the technological properties of paper coating kaolins. Papir a celulosa 19 no.2:45-48 F'64.

1. Vyzkumny ustav papiru a celulosy, pracoviste Praha (for Vondrakova). 2. Ustav keramiky a keramickych surovin, Karlovy Vary (for Baburek).

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri; VONDRAKOVA, Milena, inz.

Comparison of properties of paper clays. Papir a celulosa 19 no. 7:195-197 Jl '64.

1. Institute of Plain Pottery Technology and Ceramic Material Dressing, Karlovy Vary (for Baburek). 2. Research Institute of Paper and Cellulose, Prague.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, J.

Present state of kaolin preparation for the paper industry.
Stavivo 42 no.9:335-337 S '64.

1. UOSKS, Karlovy Vary.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri

Study of coloring admixtures in kaolin from Podlesi (Karlovy Vary District). Silikaty 8 no.4:321-331 O '64.

1. Institute of Plain Pottery Technology and Ceramic Raw Material Dressing, Karlovy Vary.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABUREK, Jiri

Halloysite in the Unavov kaolin. Geol pruzkum 6 no.12:372-373 D '64.

1. Institute of Plain Pottery Technology and Ceramic Material Dressing, Karlovy Vary.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BASHKIROV, Valentin Dmitriyevich, dots., kand. tekhn. nauk;
BUKHOV, Pavel Petrovich, dots., kand. tekhn. nauk;
VLASOV, A.A., inzh., retsenzent; BABURIN, B.B., inzh.,
retsenzent; VITASHKINA, S.A., red.

[Design of boats of the dredging and maintenance fleet]
Ustroistvo sudov tekhnicheskogo flota. Moskva, Transport, 1964. 275 p. (MIRA 18:2)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, B.L. (Moskva)

Determination of the minimum reserve capacity of the water reservoir of a hydroelectric power station at a specific operating parameters. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.6:54-64 N-D '60. (MIRA 13:12)

(Soviet Far East--Hydroelectric power stations)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, N.N. [illegible]

"Organization and Operation of Soviet Urban Telephone Networks"
Organizatsiya i Ekploatsiya Gorodskikh Telefonnykh Setey
1948 153 pp.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, N. N.

Baburin, N. N. "An ice bit with drill", Meteorologiya i gidrologiya, 1948, No. 6, p. 106-108.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, N.N.

ISTOSHIN, Yuriy Vladimirovich; PREOBRAZHENSKIY, Yu.V., otvetstvennyy redaktor; BABURIN, N.N., redaktor; FLAUM, M.Ya., tekhnicheskiy redaktor

[Oceanography] Okeanografiia. Leningrad, Gidrometeorologicheskoe izd-vo, 1956. 303 p. (MLRA 10:1)
(Ocean)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, N. N.

BLINOV, Leonid Konstantinovich; BABURIN, N.N., redaktor; SOLOVEYCHIK, A.A., tekhnicheskiy redaktor

[Hydrochemistry of the Aral Sea] Gidrokhimiia Aral'skogo moria. Leningrad, Gidrometeor. izd-vo, 1956. 251 p. (MLRA 10:4)
(Aral Sea)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

KARMAZOV, Mikhail Grigor'yevich. Prinimali uchastiye: BABURIN, N.N.; GORSHKOVA, O.I.; MALYSHEVA, N.V., retsenzent; BAZYK, V.K., prepodavatel'; ZAYONCHKOVSKIY, Ye.A., otv.red.; BOGACHEVA, G.V., red.; SHEFER, G.I., tekhn.red.

[Organizing and planning long-distance telephone communication] Organizatsiia i planirovanie mezhdugorodnoi telefonnoi sviazi. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 239 p. (MIRA 14:3)

1. Zamestitel' nachal'nika TSentral'noy mezhdugorodnoy telefonnoy stantsii (for Malysheva). 2. Odesskiy institut svyasi (for Bazyk).

(Telephone)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, N.N.

The technique of depth computation from the readings of depth-gauge thermometers. Trudy AANII 210:126-127 '61. (MIRA 14:11)
(Deep-sea sounding)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

[illegible] EWT(d) IJP(c)
ACCESSION NR: AP50[illegible]

[illegible]

[illegible] Babarin, [illegible] M[illegible]

[illegible] computation of integrals in the sense of principal value, weights, and nodes of quadrature formulas of Gauss

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 5, no. 3, 1965, 454-462

TOPIC TAGS: integration, numerical analysis

ABSTRACT: The authors consider a quadrature formula for

$$\int_{-1}^{1} \frac{f(x)}{x} dx$$

(principal value). They obtain a table of weights and nodes for n = 2(1)101, but in the paper they give values for only n = 60, 100, 101. They relate their formula to that of Gauss, and give an upper bound for their computational error (which is conservative by a factor of about 10). Orig. art. has: 14 formulas and 3 tables.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

L 53808-65
ACCESSION NR: AP5014755

ASSOCIATION: none

SUBMITTED: 24Apr64 ENCL: 00 SUB CODE: MA

NO REF SOV: 004 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, P.F.

Industrial injuries and their control in the lumbering industry of Sakhalin Province. Vop. travm. i ortop. no. 3:13-17 '63. (MIRA 18:2)

1. Glavnyy inzhener Upravleniya lesnoy promyshlennosti Sakhalinskogo soveta narodnogo khozyaystva.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, V.

Collective-farm trade in the markets of Moscow. Sov.torg. no.4: 44-47 Ap '59. (MIRA 12:6)
(Moscow--Farm produce--Marketing)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, V.

The population of the capital must be supplied with potatoes and vegetables all the year round. Sov. torg. 33 no.11:24-26 N '59. (MIRA 13:2)

(Moscow--Vegetable trade)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, V.

Let's improve the supply of vegetables to the urban population. Sov. torg. 35 no.5:19-21 My '62. (MIRA 15:5)
(Moscow--Vegetable trade)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

L 34830-66

ACC NR: AP6021804 SOURCE CODE: UR/0413/66/000/012/0072/0073

INVENTOR: Baburin, V. A.; Kalashnikov, V. P.; Utyamyshev, R. I.

ORG: none

TITLE: Device for measuring arterial blood pressure. Class 30, No. 182848

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 72-73

TOPIC TAGS: arterial pressure, arterial pressure sensor, hemodynamics, human physiology

ABSTRACT: An Author Certificate has been issued for a device which measures arterial blood pressure. It consists of compressed air cylinders, a cuff with an oscillation

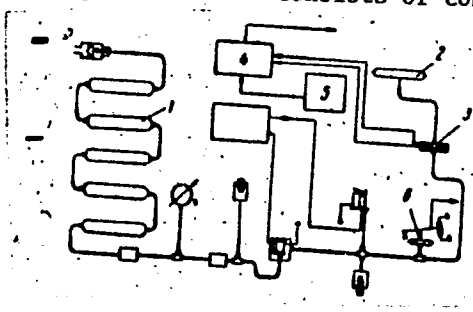

Fig. 1. Device for measuring arterial blood pressure

1 - Compressed air cylinders; 2 - cuff; 3 - oscillation sensor; 4 - amplifier; 5 - stabilized power source; 6 - pressure sensor.

Card 1/2 UDC: 615.471:612.143

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

L 34857-66

ACC NR: AP6014075

ordinary or oxygen-enriched air are assumed. The gas temperatures were assumed: before the channel: 2500, 2600, 2700C; after the channel: 2250, 2100C. Initial steam parameters for turbines, 240 atm, 580C. These conclusions are offered: (1) With ordinary-air preheating to 1500—2000C, the power-plant efficiency could reach 50—60% which considerably exceeds that of any other type of power plant; (2) The most important problem for materialization of such power plants is the constructing of magnetic systems with an induction of 4—6 web/m^2; (3) Methods are needed for obtaining high temperatures of the combustion products with limited air preheating. The flue loss of the ionizing agent (K_2CO_3) can appreciably offset the MHD-plant savings if the fuel is cheap; hence, the MHD plants seem to be promising for the areas of high- or medium-price fuels. Orig. art. has: 3 figures, 2 formulas, and 2 tables.

SUB CODE: 10 / SUBM DATE: 01Dec65

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

L 44567-66 EWT(1) SCTB DD

ACC NR: AP6030593 (A) SOURCE CODE: UR/0413/66/000/016/0076/0076

36
B

INVENTOR: Maklyukov, M. I.; Kalashnikov, V. P.; Zaykin, M. G.; Baburin, V. A.; Gavrikov, Yu. N.; Utyamyshev, R. I.

ORG: none

TITLE: Multichannel device for recording human physiological functions. Class 30, No. 185005

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 76

TOPIC TAGS: human physiology, body temperature, skin galvanic reaction, respiratory system, biometrics, biotelemetry

ABSTRACT: An Author Certificate has been issued for a device used to record human physiological functions. Its components include amplifiers of biopotentials, high- and low-frequency filters, a body and skin temperature monitor, a circuit recording respiratory rate and respiratory movements of the thorax, a circuit measuring skin galvanic reactions, and a stabilized power source. Increased operating reliability and accuracy of several simultaneous measurements are achieved by suppressing synphased interference and by assuring necessary signal amplification using cascaded low-frequency amplifiers. Some signals are fed

Card 1/2 UDC: 615.471:612.2:621.38

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ACC NR: AP6030593

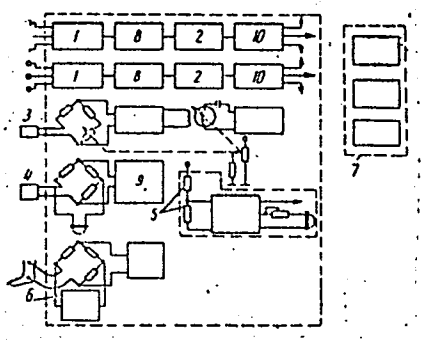

Fig. 1. Device for recording human physiological functions

1 - Amplifiers of biopotentials; 2 - high- and low-frequency filters; 3 - body temperature monitor; 4 - skin temperature monitor; 5 - circuit recording respiratory rate and thoracic movements; 6 - circuit recording skin galvanic reactions; 7 - stabilized power source; 8 - low-frequency amplifiers; 9 - transformer; 10 - output stages.

to bridges, in which the arms are automatically balanced by controlling each arm using a tube grid connected via resistance to the cathode. A variation of the above is distinguished by the fact that the temperature measurement bridge is fed by a synchro. A second variation is designed to record incoming signals from measurement channels via telemetry, and uses various types of oscillographs. It contains output stages with current and voltage switches. A general diagram of the system is given in Fig. 1. Orig. art. has: 1 figure. [CD]

SUB CODE: 06/ SUBM DATE: 28Jan65/ ATD PRESS: 5079

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURIN, V. M.

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

LERNER, A. Ya., - "The application of a self-adjusting system of automatic control"
MALOV, V. S., PSHENICHNIKOV, A. M., and [illegible] A. - "Industrial telemeasurement systems and digital technique"
MEYEROV, M. V. - "Some peculiarities of the structure of multi-communications regulation systems"
MIKHAYLOVSKIY, V. N. - "Evaluation indexes and the possibility of increasing the quality of telemeasurement systems"
[illegible]SKIY, V. V. - "Concerning the problem of established routines in automatic regulation systems"
NETRERENKO, K. A. "Principals of construction of digital double code automatic compensators"
NEKMARK, Yu. I. - "Concerning the relation of systems of automatic regulation with the parameters of periodic movements"
NIKOLAYEV, N. S., and EPSHTEYN, V. L. - "System of automatic control of cutting of rolled metal on a continuous bar mill with the use of digital calculating machines"
ORDYNTSEV, V. M. - "Some principles of organizing systems of complex automation of large scale chemical production and optimization of these systems"
OSTROVSKIY, G. M. - "Systems of automatic regulation with intermittent change of parameters"
PEROV, V. P. - "Statistical synthesis of impulse systems"
PETROV, B. N. - "The invariant principle and its application in the calculation of linear and nonlinear systems"
PIVEN, V. D. - "The problem of autonomy in the technique of automatic control"
POPOV, E. P. - "Some problems of synthesis of automatic control non-linear systems"
PUGACHEV, V. S. - "Method of determining the optimum system with non-linear relation of the observed function with the parameters of the signal"
PUTSILLO, V. P., PETROV, V. V., KORDINOV, R. V., and VOLODIN, E. E. - "Principles of construction of a single class of extra control systems for automating production processes"
ROGINSKIY, V. N. - "The development of the theory of relay devices in the USSR"
ROZENBLAT, M.A. - "Dynamic characteristics of cores with right angle hysteresis winding and their influence on magnetic boosters"
ROZONER, L.I. - "Varied methods of investigating the quality of automatic control systems"
RUSHINSKIY, V. M. - "Dynamics of automatic regulation of boiler-turbine units"
SHUMILOVSKIY, N. N., MEL'TTSER, L. V., NAUMOV, A. A., MEN-CHEHI-CHEHUN, and FIVOVAROV, L. A. - "Automatic control of composition of multi-ingredient mixtures"
SHAGOVSKIY, E. S., and SEGALIN, V. G. - "Some results of work for the utilization of radioactive radiation for automatic control of mining machinery"
SOLODOVNIKOV, Y. V., BATKOV, A. M., BABURIN, V. M., VAL'DEYBERG, Yu. S., MATVEYEV, P. S., and POKROVSKIY, A. K. - "Analyses and synthesis of automatic control systems with the aid of calculating machine facilities"
STAKHOVSKIY, R. I., FITSNER, L. N., and [illegible] - "Automatic optimizers and their use for solution of variation problems in automatic synthesis"
STRAKHOV, S. V. - "A system of alternating current electric drives with autonomous power supply"
TAKBAR, I. M., and YANUSHKOVSKIY, V. A. - "Apparatus for technical control of production with the use of nuclear radiation"
TEODORCHIK, K. F., and BENDRIKOV, G. A. - "Methods of organizing the trajectory of roots of linear systems and qualitative determination of type of trajectory"
TSYPKIN, Ya. Z. - "Elements of the theory of digital automatic systems"
VENCHKOVSKIY, D. B., KASHIRIN, V. A., CHUGIN, Yu. I., and SHASTOVA, G. A. - "Static stability of telemeasurement"
VENIKOV, V. A. - "Interactions of a mathematical modeling and calculating technology experiment in calculating loads in electrical systems"

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AUTHORS: Solodovnikov, V.V., Batkov, A.M., Baburin, V.M., Val'denberg, Yu.S., Matveyev, P.S., Pokrovskiy, A.N.

TITLE: Analysis and synthesis of automatic control systems using the means of computer technology

PERIODICAL: Referativnyy zhurnal, Matematika, no. 9, 1962, 43, abstract 9V229 ("Tr. I Mezhdunar. kongressa Mezhdunar. federatsii po avtomat. upr., 1960. (T. 4). Tekhn. sredstva avtomatiki", Moscow., AN SSSR, 1961, 191 - 206. Discussion, 206 - 207)

TEXT: The problem of analyzing an automatic control system which is affected by several perturbing forces reduces to the solution of integral equations of the form:

$$R_{x_i y_k}(t) = \int_0^\infty R_{y_k y_k}(t - \tau) K_k(\tau)\, d\tau \quad \text{for } i = 1, 2, \ldots, n; \quad (1)$$

$$k = 1, 2, \ldots, m.$$

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The problem of system synthesis reduces to the solution of an integral equation

$$\int_0^T R(t-\tau)\,K(\tau)\,d\tau = F(t); \quad 0 \leq t \leq \infty; \tag{2}$$

with constraints of the form

$$\int_0^T f_i(\tau)\,K(\tau)\,d\tau = \mu_i \,. \tag{3}$$

The paper considers: first, the general method of solution in closed form of the class of synthesis problems which reduce to the integral equation (2); second, the application of the method of inverse systems to the analysis of linear systems by means of electronic simulating installations in the case of nonstationary random forces at the input; third, special-purpose computers elaborated by the authors and, fourth, some problems of applying general-purpose digital computers to the solution of problems which reduce to the expressions (1) and (2). The method of solution set forth does not require the application of artificial methods and includes as special cases all the analyzed problems of statistical dynamics in the class of systems with constant parameters. The theorems set forth in the article make it possible to: 1) determine the correlation

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function of the output signal of an automatic control system with variable parameters in the presence of white noise at the input; 2) determine the differential equation of the shaping filter for a nonstationary stochastic process with a correlation function of the form

$$R(t, \tau) = \sum_{i=1}^{n} \varphi_i(t)\, \psi_i(\tau) \quad (t > \tau),$$

where φ_i and ψ_i are linearly independent functions continuously together with their derivatives; n is bounded. A similar method may be applied to automatic control systems containing inertialess elements. The system of equations thus obtained may be solved with the aid of a simulator. The correllograph described is a special-purpose analog computer. It is designed for the computation of correlation functions of processes with a low-frequency spectrum of 0 ÷ 20 cps. The error of the solution is 5 ÷ 10% of the maximum value. The synthesizer is a special-purpose computer for the solution of linear one-dimensional integral equations of the Fredholm and Volterra type of the first and second kind with a convolution kernel and also for calculating autocorrelation and correlation

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Analysis and synthesis of automatic S/044/62/000/009/059/069
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functions. The time of solving an equation is 10 ÷ 40 sec. The error of solution of the problems is 5 ÷ 10%. The method of solving the integral equations is based upon approximating them with a system of algebraic equations and solving this system by Zaydel's iteration method. The possibility of applying general-purpose computers to the analysis and synthesis of automatic control systems is analyzed, and the required sequence of operations is proposed.

A.D. Zaikin

[Abstracter's note: Complete translation]

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41924
S/194/62/000/009/004/100
D222/D309

AUTHOR: Baburin, V. M.

TITLE: Correlograph - a device for the calculation of correlation functions for low-frequency processes

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 9, 1962, abstract 9-1-44 a (In collection: Primeneniye vychisl. tekhn. dlya avtomatiz. proiz-va, M., Mashgiz, 1961, 483-502)

TEXT: This is a detailed description of the device for calculating the correlation function of low-frequency processes, designed at the Tsentral'nyy n.-i. in-t kompleksnoy avtomatizatsii (Central Sci. Res. Inst. of Complex Automation). In connection with the use of statistical methods for the determination of the dynamic characteristics of objects (transfer and pulse transfer functions) it became necessary to construct correlographs which could calculate the correlation functions from the data on the normal operation of the objects. The following requirements were formulated: 1) the

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automatic calculation of correlation functions; 2) the investigated processes must have a frequency spectrum of 0 - 0.0001 - 20 cps; 3) to give a recording directly from the objects, and also to give recordings by means of ЭПП-09 (EPP-09) and other types of instruments. The block diagram of the correlograph includes a delay line, blocks for multiplication, integration and for the control of the recording instrument, and an automatic control block. The circuit diagrams of the principal units of the correlograph are given. The recording instrument consists of two blocks: electronic (amplification, frequency conversion, pulse formation), and mechanical (recording on magnetic tape). The transport speed is 60 mm/sec which allows a continuous recording for 3 hours. The density of the pulses on type 2 tape is 40 imp/mm. Magnetic tape is the information carrier for the delay line. The mechanical unit for the delay line consists of a tape transport mechanism with two loops of magnetic ~~tape and two~~ pressure rollers. The length of the loop and the corresponding shift between the two recordings of the signals is varied by moving the carriages with the rollers. The maximum delay is 30 sec, the step of the shift is 0.0193 sec. The

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signals from the delay line enter the multiplier block which consists of an inverter, four summing stages, two commutating circuits, a subtraction circuit, low-frequency filter, saw-tooth voltage generator and a threshold signal source. The operation of the multiplier block is based on the following relationship:

$$u_x + u_y)^2 - (u_x - u_y)^2 = 4\, u_x u_y$$

where u_x and u_y are the input signals of the multiplier. The integrator block, which processes the signals of the multiplier, contains an RC circuit, a summator, capacitive commutator with synchronous drive and a selective amplifier. The points of the correlogram are registered on the paper tape of an electronic recording instrument EPP-09. The correlograph contains 50 bantan tubes. In order to test the accuracy of the correlograph, a process (a sinusoidal signal with a frequency of 5 and 0.037 c/s) was also investiga-

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Correlograph - a device ... S/194/62/000/009/004/100
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ted on a Ural computer. The error was ≤ 10 per cent. of the maximum value. 15 figures. 47 references. /Abstracter's note: Complete translation./

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D407/D301

6.9200

AUTHORS: Baburin, V.M., Matveyev, P.S., Rozhdestvenskiy, Yu.B., and Sorkin, Yu.I. (Moscow)

TITLE: On calculating the distribution function of a random process from experimental data

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 5, 1962, 571 - 580

4

TEXT: The error which arises in calculating the distribution function of a random stationary process, is estimated. Numerical results are obtained for the case of an exponential correlation-function. Criteria are obtained for testing the hypothesis of a normal distribution. Let F(x) denote the distribution function of the stationary random process $\xi(t)$. In the references, the following estimate is used for F(x):

$$F_T(x) = T_x/T \qquad (1)$$

where T_x is the total time during which $\xi(t) \leqslant x$. In the experimen-

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tal determination of F(x), the total error is composed of the theoretical- and the instrument error. In the following, only the theoretical error is considered. The latter depends on the time T, on the number of points x_k, at which $F_T(x)$ is calculated, and on their disposition. The mean-square error

$$\delta^2(x) = MF_T^2(x) - F^2(x) = M\left[\frac{1}{T}\int_0^T \eta(t)\,dt\right]^2 - F^2(x) \qquad (3)$$

is considered, where

$$\eta(t) = \eta_x(t) = \begin{cases} 1 \text{ for } \xi(t) \leqslant x \\ 0 \text{ for } \xi(t) > x \end{cases} \qquad (4)$$

represents a new process. Denoting by $R_\eta(\tau)$ the autocorrelation function of the process $\eta(t)$, and assuming that $\xi(t)$ is a Gaussian process, it is possible to express F(x) in the form of a normal distribution function $\Phi(x)$. Further, the correlation function $R_\eta(t)$ is calculated by the formula

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$$\delta^2(x) = \frac{2}{T}\int_0^T \left(1 - \frac{\tau}{T}\right)[R_\eta(\tau) - \Phi^2(x)]d\tau. \qquad (22)$$

As an example, the case of an exponential correlation-function is considered:

$$\rho(\tau) = e^{-\gamma(\tau)}. \qquad (24)$$

With $T > 20$, one obtains for the upper estimate of the error:

$$\varepsilon^2(x) = \frac{2\Delta\tau}{T}\sum_{i=0}^{16}[R_\eta(i\Delta\tau) - \Phi^2(x)]. \qquad (26)$$

The results of the calculations are shown in the form of graphs (for T = 50, 100, 500 and 1000). From the latter it is evident that the largest error occurs with x = 0; then it decreases monotonically to x = 2 approximately, and then increases again. Thus it is possible to solve the following two problems: 1) With a pre-assig-

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ned mean-square error δ it is possible to determine the time T required, so that this error is not exceeded in calculating the distribution function. 2) Knowing T, it is possible to estimate the error δ, which arises in determining the distribution function. Up to now it was assumed that x is fixed, i.e. F(x) is calculated at one point only. Further, the case is considered when $F_T(x)$ is calculated at n points x_i (i = 1, 2, ..., n). The minimum number of points is determined, required for the construction of the distribution function. The steps involved in calculating F(x) are as follows: 1) The time T is selected in accordance with the required accuracy of δ (by means of the graphs); thereby the correlation time τ_c is determined either by the correlation function $\delta(\tau)$, which is more accurate, or by the frequency range (a rougher estimate). 2) The number of levels n is chosen in accordance with δ and with the required maximum deviation Δ_{max} ($\Delta_{max} \leqslant (c + 2)\delta$). 3) $F_T(x)$ is calculated by formula (1). 4) The normal-distribution hypothesis of the process $\xi(t)$ is tested: if the calculated $F_T(x)$ does not exceed

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the limits of a band of width $2\Delta_{max}$, constructed according to the hypothetical distribution function, then the hypothesis agrees with observation; if $F_T(x)$ leaves this band, the hypothesis is rejected. Two numerical examples are given. There are 9 figures, and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc (in translation).

SUBMITTED: October 6, 1961

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

SOLODOVNIKOV, V.V.; MATVEYEV, P.S.; VAL'DENBERG, Yu.S.; BABURIN, V.M.; STROGANOV, L.P., inzh., red.; GORDEYEVA, L.P., tekhn. red.

[Computer techniques for use in statistical studies and calculations of automatic control systems] Vychislitel'naia tekhnika v primenenii dlia statisticheskikh issledovanii i raschetov sistem avtomaticheskogo upravleniia. Mashgiz, 1963. 166 p. (MIRA 16:5)
(Automatic control) (Electronic computers)

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ACCESSION NR: AT5009736 UR/0000/65/000/000/0183/0220

AUTHOR: Baburin, V. M.; Lenskiy, V. L.; Matveyev, P. S.; Rozhdestvenskiy, Yu. B.

TITLE: Errors during the use of the statistical method for the study of control objects

SOURCE: Analiticheskiye samonastraivayushchiyesya sistemy avtomaticheskogo upravleniya (Analytical adaptive control systems). Moscow, Izd-vo Mashinostroyeniye, 1965, 183-220

TOPIC TAGS: statistical method accuracy, random process, correlation characteristic, spectral density, integral equation solution accuracy, automatic control system

ABSTRACT: V. V. Solodovnikov based the design of analytic adaptive systems and the statistical determination of the dynamic characteristics of controlled objects under normal operating conditions on an extensive use of computers (Statisticheskaya dinamika lineynykh sistem avtomaticheskogo upravleniya, Fizmatgiz, 1960). These machines evaluate the correlation characteristics and spectral densities of random processes and generate solutions of equations of the

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type

$$R_{xy}(\tau) = \int_0^\infty R_y(\tau - \lambda)\, k(\lambda)\, d\lambda \qquad (0.1)$$

from given experimental data. The present article: 1) analyzes in detail the errors in the determination of the statistical characteristics of random processes computed from experimental data; and 2) analyzes the accuracy and authenticity of the solutions of the above integral equation obtained by substituting it by a system of linear algebraic equations. "The calculations were carried out by N. P. Chernysheva." Orig. art. has: 184 formulas, 17 figures, and 1 table.

ASSOCIATION: None

SUBMITTED: 15Dec64 ENCL: 00 SUB CODE: IE, MA

NO REF SOV: 011 OTHER: 005

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ACC NR: AP6017385

SOURCE CODE: UR/0410/65/000/003/0069/0082

AUTHOR: Baburin, V. M. (Moscow); Roos, M. L. (Moscow)

ORG: none

32
B

TITLE: Errors in determining the integral distribution function from experimental data using analog devices and digital computers

SOURCE: Avtometriya, no. 3, 1965, 69-82

TOPIC TAGS: digital computer, distribution function, integral function, approximation

ABSTRACT: This work is devoted to an evaluation of the error in an integral distribution function determined from experimental data; relations are presented for mean square error depending on the time of observation and for selection of discretization interval of a random process when the distribution function is calculated with a digital computer. The authors show how the instrument error of a specialized device may be calculated for determining distribution functions. The relationship between the number of points of the function and the approximation error and methodological error are determined. Orig. art. has: 9 figures and 31 formulas. [JPRS]

SUB CODE: 12, 09 / SUBM DATE: 25Jan65 / ORIG REF: 015 / OTH REF: 003

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UDC: 681.142.82

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77523
SOV/80-33-1-32/49

AUTHORS: Koton, M. M., Glukhov, N. A., Baburina, A. N., Shcherbakova, L. M.

TITLE: Synthesis and Polymerization of 3,3'-Bis(chloromethyl) oxacyclobutane

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 182-185 (USSR)

ABSTRACT: This is the first paper of a series on synthesis and polymerization of 3,3'-bis(chloromethyl)oxacyclobutane (I). Polymerization of (I) in ethyl chloride or dichloroethane solution in the presence of boron trifluoride and water under the conditions of cationic polymerization at -20° was studied. A short review of the properties and preparation of (I) and its polymers ("Penton," produced by Hercules Powder Co., U.S.A.) are given. (I) was obtained from pentaerythritol according to the A. Moradien and J. B. Cloke, and also the A. Farthing methods (see references).

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

Synthesis and Polymerization of 3,3'-Bis (chloromethyl)oxacyclobutane

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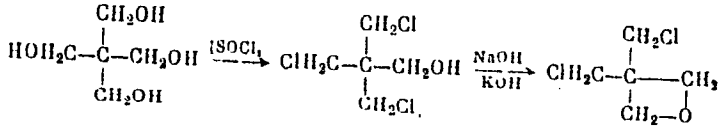
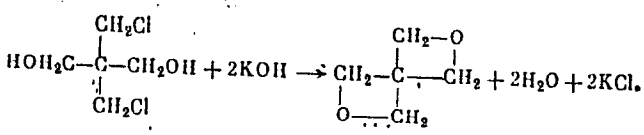


(I) was purified using a 50-60 theoretical-plate column to remove the traces of dioxaspiroheptane (II), which is also formed in the reaction



Removal of (II) is important since its presence leads to the formation of nonmelting, insoluble polymers. Effect of the temperature on the yield and the characteristic viscosity of the (I) polymers is given in Table 1. Effect of concentration of I in the reaction mixture on

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Synthesis and Polymerization of 3,3'-Bis (chloromethyl)oxacyclobutane

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Table 1. Key to Dependence of yield and characteristic viscosity on temperature: (a) experiment Nr; (b) temperature (in °C); (c) polymerization time (in min); (d) yield of polymer (in %).

(a)	(b)	(c)	(d)	[η]
48	−10	480	82	0.18
17	−20	480	44	0.50
23	−40	480	7	0.2

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Synthesis and Polymerization of 3,3'-Bis (chloromethyl)oxacyclobutane

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the yield of polymer is given in Table 2. Ionic polymerization of (I) in the presence of BF_3 and water in a solution of ethyl chloride and dichloroethane was conducted in a glass apparatus, shown in Fig. A. The prepared polymer of (I) is a white powder, insoluble in the usual solvents, soluble in cyclohaxanone and o-dichlorobenzene at 50-80°. Yield under optimal conditions, 82-85%, mp 175-176°, specific viscosity $[\eta]$ 1.1-1.25. The experimental part was conducted with participation of I. P. Morozova. There is 1 figure; 2 tables; and 7 references, 4 U.S., 2 U.K., 1 Japanese. The 5 most recent U.S. and U.K. references are: A. Farthing, J. Appl. Chem., 8, 186 (1958); E. Cronin, Mod. Plastics, 34, 150 (1957); E. Cronin, Rubber World, 135, 571 (1957); Plastics, 127 (1957); A. Moradien, J. B. Cloke, J. Am. Chem. Soc., 67, 942 (1945).

SUBMITTED: July 2, 1959

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

Synthesis and Polymerization of 3,3'-Bis (chloromethyl)oxacyclobutane

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Table 2. Key to Dependence of polymer yield on the concentration of monomer: (a) experiment Nr; (b) temperature (in °C); (c) polymerization time (in min); (d) concentration of monomer (in mole/liter); (e) yield of polymer (in %).

(a)	(b)	(c)	(d)	(e)	[η]
24	−20	480	1.0	26	0.3
36	−20	480	1.2	38	0.45
38	−20	480	1.43	54	0.85
32	−20	480	2.21	82	1.05
40	−20	480	2.83	80	1.10

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

Synthesis and Polymerization of 3,3'-Bis (chloromethyl)oxacyclobutane

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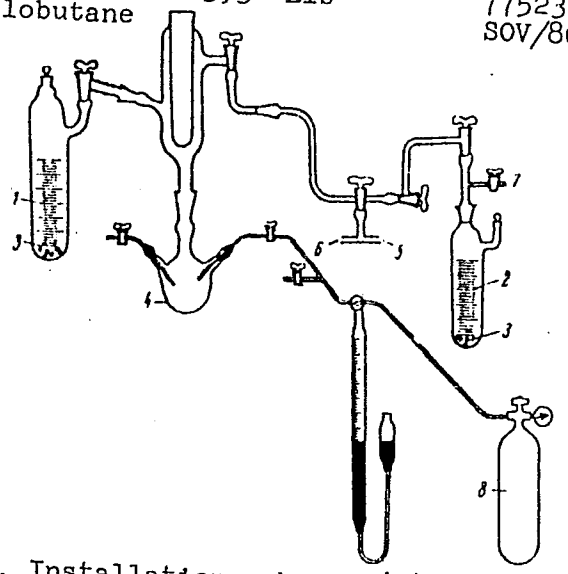

Fig. A. Installation scheme: (1) vessel for monomer; (2) vessel for solvent; (3) calcium hydride; (4) reactor; (5) to the pump; (6) to the MacLeod gage; (7) dry air supply; (8) cylinder with BF_3.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

ACC NR: AP7005658 (A, N) SOURCE CODE: UR/0413/67/000/002/0115/0115

INVENTOR: Zbar, N. R.; Baburina, G. Ya.; Korotkov, M. F.; Kurdyumova, G. V.; Ebel', I. I.

ORG: None

TITLE: A memory unit. Class 42, No. 190661 [announced by the Design Office of the Main Administration for Signalling and Communications, Ministry of Means of Communication SSSR (Konstruktorskoye byuro Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 115

TOPIC TAGS: computer memory, thyratron, binary code

ABSTRACT: This Author's Certificate introduces a memory unit of the static type which uses metallized paper for recording binary coded information together with attachments for changing the paper by winding from a feed drum to a take-up drum. The recording process also involves the use of indicator and control units based on cold-cathode thyratrons and commutation elements. The design provides for simplification of the units for monitoring and signalling of a completed recording without erasing previously recorded data with repeated use. An elastic pad holds a contact plate against the metallized paper. Holes cut in this plate form informatic. storage cells. Within

Card 1/2

UDC: 681.142.07

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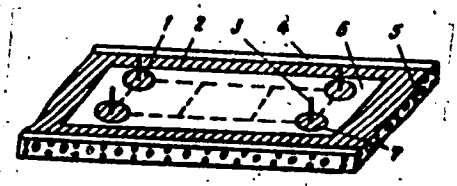
ACC NR: AP7005658

these holes are contact springs which are used for recording information in the storage cells and also for readout of this information and signalling by current which is respectively sufficient and insufficient for breakdown of an electrically conductive layer. These operations are carried out by connecting the contact springs to all or some of the indicator elements based on thyratrons through the contact elements of the control systems.



1--areas of the electrically conductive layer; 2--electrically conductive layer; 3--contact springs; 4--metallized paper; 5--elastic pad; 6--metal plate; 7--holes

SUB CODE: 09/ SUBM DATE: 29Mar65

Card 2/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

1

25653
S/080/60/033/012/007/024
D209/D305

5.3700

AUTHORS: Shakhparonov, M.I., Lel'chuk, S.L., Korchemskaya, K.M., Martynova, M.Ye., Baburina, I.I., and Voronina, R.D.

TITLE: Investigation of pressure and vapor density in binary systems methyldichlorosilane - trimethylchlorosilane and silicochloroform - benzene

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 12, 1960, 2699 - 2703

TEXT: The authors studied pressure and vapor density of liquid systems CH_3SiHCl_2 - $(CH_3)_3SiCl$ and $SiHCl_3$ - C_6H_6 in order to obtain data necessary for determining the conditions for rectifying haloalkylsilanes. The measurements were carried out in an apparatus described in an earlier work (Ref. 1: ZhFKh 8, 1734, 1960). Throughout the experiment the composition of liquids was controlled by measuring their densities at 20°C with the use of a pycnometer. The accuracy of P and γ measurements for individual li-

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

quids was within 0.1 %. The molecular weight of vapors was calculated from the equation $M = \gamma RT/P$. Liquids used in the experiments were obtained by chemical purification and fractionation. The constants of Antuan's equation $P = A - [B/(C + t)]$ and the values of enthalpy and entropy at P = 760 mm Hg are given in tabulated form. Vapor composition and partial vapor pressures of components may be calculated from the equation $M = M_1 x_1^{\gamma} + M_2 (1 - x_1^{\gamma})$. Fig. 2 gives the relation of total and partial vapor pressures against the composition of methyldichlorosilane - trimethylchlorosilane solutions at 30 and 40°C. The relation between total and partial pressures and concentrations of silicochloroform - benzene at 30°C is also presented graphically. The graphs show that at 30-40°C CH_3SiHCl_2 - $(CH_3)_3SiCl$ solutions are characterized by slight deviations from the ideal solutions. In C_6H_6 - $SiHCl_3$ solution at 30°C similar deviations from Raoult's law are observed. The authors calculated concentrations of components in vapors in equilibrium with the li-

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Investigation of pressure ... S/080/60/033/012/007/024
D209/D305

quid phase at 760 mm Hg and the results are given in tabulated form. There are 6 tables, 3 figures and 1 Soviet-bloc reference.

SUBMITTED: October 26, 1959

Card 3/4

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

5.3700

25554
S/080/60/033/012/007/024
D209/D305

AUTHORS: Korchemskaya, K.M., Shakhparonov, M.I., Lel'chuk, S.L., Martynova, M.Ye., Baburina, I.I., and Voronina, R.D.

TITLE: Investigating pressure and vapor density of binary solutions of silane chloro-derivatives

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 12, 1960, 2703 - 2708

TEXT: In the present work, carried out to obtain the necessary data for determining conditions for the rectification of haloalkylsilanes, the authors submit the results of investigations concerning pressure and vapor density under pressures of 150 - 800 mm Hg. The measurements were concerned with determining pressure P, density γ, and the molecular weight of saturated vapor pressure of individual liquids and solutions. The values of Antuan's equation constants and the enthalpy and entropy values for liquid vaporization at 760 mm are given in tabulated form. Graphically, the au-

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

thors give the isotherms of total and partial vapor pressures of liquids at 30, 40, 50 and 56°C. Total pressures were calculated from the vapor composition data obtained from $\bar{M}$ values derived from the equation $\bar{M} = \Sigma x_i M_i$. The average molecular weight of saturated vapors $\bar{M}$, used for partial vapor pressures determinations were chosen such that the deviations from Raoult's law corresponded to the Gibbs - Duhem equation. In all cases, values of $\bar{M}$ used in calculations differed by not more than 1 - 1.5 % from the experiment values. In this manner the values of partial vapor pressures and vapor compositions were controlled by the conditions of thermodynamics and the experimental data, with sufficient accuracy. Other tables represent the contents of vapor components in equilibrium with liquid phase at 760 mm Hg and the activity coefficients of the components of various temperatures. The results submitted show that the solutions of methyldichlorosilane - tetrachlorosilane are characterized by only slight positive deviations from the ideal solution, and in many cases may be considered as such. Solu-

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

25654
S/080/60/033/012/008/024
D209/D305

Investigating pressure and ...

tions of chlorosilane solutions at 40, 50 and 56°C. There are 3 figures, 7 tables and 2 Soviet-bloc references.

SUBMITTED: October 26, 1959

Card 3/3

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

KORCHEMSKAYA, K.M.; SHAKHPARONOV, M.I.; LEL'CHUK, S.L.; MARTYNOVA, M.Ye.; BABURINA, I.I.; BORONINA, R.D.

Pressure and density of vapors from solutions of chlorine derivatives of silane. Part 4. Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.4:584-587 '61. (MIRA 15:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra fizicheskoy khimii.

(Silane) (Vapor pressure)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

KORCHEMSKAYA, K.M.; SHAKHPARONOV, M.I.; LEL'CHUK, S.L.; KORABLINA, T.P.; BABURINA, I.I.; VORONINA, R.D.

Investigation of the vapor pressure and vapor density of binary solutions of silane chloro derivatives. Part 4. Izv.vys.ucheb. zav.; khim.i khim.tekh. 5 no.1:65-69 '62. (MIRA 15:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra fizicheskoy khimii.
(Silane) (Vapor pressure) (Vapor density)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

UL'YANOVA, V.N.;BABURINA, O. Ye.

Pneumonia in newborn infants. Sborn. nauch. trud. Ivan. gos. med. inst. no. 28: 23-27 ' 63

1. Iz kafedry akusherstva i ginekologii (zav. - prof. Ye. K. Aleksandrov) i kafedry patologicheskoy anatomii (zav. - prof. N. Ye. Yarygin) Yaroslavskogo meditsinskogo instituta (rektor - prof. N. Ye. Yarygin).

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

GUTYANOVA, V.N.; BABURINA, O. Ye.

Hyaline membranes in the lungs of newborn infants. Sbor. nauch. trud. Ivan. gos. med. inst. no. 28:69-73 '63.

(MIRA 19:1)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. Ye.K. Aleksandrov) i kafedry patologicheskoy anatomii (zav. - prof. N. Ye. Yarygin) Yaroslavskogo gosudarstvennogo meditsinskogo instituta (rektor - prof. N. Ye. Yarygin).

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

28-3-18/33

AUTHOR: Baburina, T.P., Engineer

TITLE: Life Boats for Seagoing Ships (Spasatel'nyye shlyupki dlya morskikh sudov)

PERIODICAL: Standartizatsiya, 1957, # 3, May-June, p 64-65 (USSR)

ABSTRACT: Five new ГОСТ standards which will be effective from 1 Oct 57 are given. Revision of the old standards was necessary to meet the new conditions as well as the requirements of the international convention for protection of human life on the sea and of the International Standard Organization (ISO). The new ГОСТ 8116-56 - for manually operated life-boats and motor driven life-boats of wood, steel, light alloys and other materials, was established in accordance with ISO recommendations. It includes conditions of stability (not included in the old standards). The other 4 new ГОСТ 2406-56, 2243-56, 3527-56 and 3649-56, relate to wooden row boats, first class only. ГОСТ 2243-56 is in conformity with the international standard project in dimensions and capacity. ГОСТ 2406-56 is for glued boat designs and hence permits application of cheaper materials instead of high-quality oak without impairing the quality of the boats. ГОСТ 3527-56 regulates the fittings of life boats and the locations of seats on the upper and lower benches to

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Life Boats for Seagoing Ships.

28-3-18/33

increase stability. Supplies and equipment are increased. The new standards will enable organization of life boat supply by specialized plants.

ASSOCIATION: Committee for Standards, Measures and Measuring Devices (Komitet standartov, mer i izmeritel'nykh priborov)

AVAILABLE: Library of Congress

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, T.P.

Steel flanges for pipes. Standartizatsiia 24 no.4:29-30 Ap '60.
(Pipe flanges--Standards) (MIRA 13:9)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, T.P.

Pipe fittings. Standartizatsiia 26 no.7:43-44 Jl '62.
(Pipe fittings--Standards) (MIRA 15:7)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, T.P.

Ship illuminators. Standartizatsiia 26 no.6:46-47 Je '62.
(Shipbuilding--Standards) (MIRA 15:7)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

...ye A.

"Morphology of cells of central nervous system in lice," 1944, with E. M. Vermel.

BABURINA, E. A., Disinfection Inst. Moscow.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

SADOKINA, Ye. A.

Inst Evolutionary Morph imeni A. N. Severtsov

"Adaptive Importance of Structural Variations in the Growth of Retina of Carp (Carassius Carassius L.)"

SO: Dok AN, 60, No 7, 1948

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye. A.

Inst of Evolutionary Morphology im. A. N. Severtsov

"The Significance of Light in the Development of the Carp's Retina"

SO: Dok AN, 61, No 4, 1948

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye. A.

PA 29/49T61

USSR/Medicine - Environment
Medicine - Morphology

Feb 49

"The Development of a Network in Amur 'Persicaria' -- Acanthorhodeus Asmussi (Dybowski) and Acheilo Gnathus Sp. -- in Relation to the Conditions of Their Existence," Ye. A. Baburina, Inst of Evolutionary Morph imeni A. N. Severtsov, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 6

Studies connection between morphological changes in the developing network and changes in the relation of the embryos and larvae to the surrounding medium. Submitted by Acad K. I. Skryabin, 21 Dec 48.

29/49T61

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

USSR/Medicine - Histology, Teaching Mar 49
Medicine - Crabs

"Adaptive Properties of the Integument of Embryos of the Amur Mussel Crabs: Acanthorhodeus Asmussi (Dybowski) and Acheilo Gnathus Sp.," Ye. A. Baburina, 4 pp

"Dok Ak Nauk SSSR" Vol LXV, No 1

Detailed study of peculiarities in the integument of Amur mussel crab embryos and an attempt to determine their adaptive value. Concludes that the scalelike cells of Acanthorhodeus asmussi and the glandular fields of Acheilo gnathus sp. serve to fasten the embryos to the gill-like setae of the mollusk. Submitted by Acad K. I. Skryabin, 20 Dec 48.

29/49T68

BABURINA, Ye. A.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye. A.

"The Relation Between Age and Differentiation in the Development of the Retina of Certain Carp Fishes"

SO: Dok AN, 66, No 6, 1949

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye.A.

Adaptive features in the eye structure of the shad, sprat, and anchovy. Trudy Inst.morf.zhiv. no.10:203-218 '53. (MLRA 6:11)
(Fishes--Anatomy) (Eye)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, E. A.

USSR/ Biology - Histology

Card 1/1 Pub. 22 - 37/47

Authors : Baburina, E. A.

Title : The eye and the retina of a Caspian Sea shad

Periodical : Dok. AN SSSR 100/6,1167-1170, Feb 21, 1955

Abstract : Histological data are given regarding the eyes and retina of the Caspian Sea shad and other fish species belonging to the same group. Six references: 4 USSR, 1 German, and 1 French (1925-1953). Table; graph; drawings.

Institution : Academy of Sciences USSR, The A. N. Severtsov Institute of Animal Morphology

Presented by: Academician E. N. Pavlovskiy, November 10, 1954

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

4362. Structure of the eye and its retina in the common northern pilchard. F. A. Baburin

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

Baburina Ye. A.

USSR/ Biology - Zoology

Card 1/1 Pub. 22 - 50/54

Authors : Baburina, Ye. A.

Title : Development of eyes and their functions in sturgeon

Periodical : Dok. AN SSSR 106/2, 359-361, Jan 11, 1956

Abstract : Scientific data are presented on the development and functions of sturgeon eyes. Fourteen references: 12 USSR, 1 French and 1 USA (1878-1955). Illustrations.

Institution : Acad. of Sc., USSR, Inst. of Animal Morphology im. A. N. Severtsov

Presented by: Academician Ye. N. Pavlovskiy, July 9, 1955

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye.A., kand.biol.nauk

Characteristics of the development of eyes and their functions in fishes. Trudy sov.Ikht.kom. no.8:101-110. '58. (MIRA 11:11)

1. Institut morfologii zhivotnykh AN SSSR.
(Sense organs--Fishes) (Eye)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye.A.

Development of the eye and its functions in the sturgeons Acipenser güldenstadti Brandt and Acipenser stellatus Pallas. Trudy Inst. morf. zhiv. no.20:148-186 '57. (MIRA 11:1)

(Sturgeons) (Eye)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

20-6-58/59

AUTHOR: BABURINA, Ye. A., BUZNIKOV, G.A.

TITLE: Hatching glands of the Embryos of the Kuban Bream Vimba Vimba Maculata as a Source of Hyaluronidase and of the Hatching Enzyme. (Zhelezy vylupleniya embrionov kubanskogo rybtsa kak istochnik gialuronidazy i ferment a vylupleniya. Russian).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 6, pp. 1387 - 1390 (U.S.S.R.)

ABSTRACT: Special ferments which loosen the egg-membrane take part in the hatching of embryos of many animals. In the case of osseans the hatching ferment is excreted by 1-cellular ektodermal glands, the so-called hatching glands. These glands were believed to produce also another ferment into the perivitellin fluid: the hyalruronidase (kind I = dark red, kind II = light blue). The authors studied the development of the hatching glands of the Kuban vimba vimba maculata as well as the dynamics of the activity according to the age of this ferment and, finally, of the hatching ferment. An exact coincidence between the results of the histological and physiological studies of the hatching glands of the vimba vimba maculata become evident. The accumulation of hyaluronidase in the body of embryos always coincides with the accumulation of secretion kind I in the hatching glands. Together with the entrance of hyaluronidase into the perivitellin fluid the freeing of the hatching glands of the secretion kind I is ob-

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

20-6-58/59

Hatching Glands of the Embryos of the Kuban Bream Vimba Vimba Maculata as a source of Hyaluronidase and of the Hatching Enzyme.

ASSOCIATION: Institute for Animal Morphology "A.M. SEVERTSOV" of the Academy of Science of the USSR. (Institut morfologii zhivotnykh im A.M. SEVERTSOVA Akademii Nauk SSR.

PRESENTED BY: SHMAL'GAUZEN, I.I., Member of the Academy.

SUBMITTED: 11 December 1956

AVAILABLE: Library of Congress

Card 3/3

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

17(1)

AUTHORS: Baburina, Ye. A., Kovaleva, N. D.

TITLE: The Structure of the Eye Retina in Caspian Clupeonellae (Stroyeniye setchatki glaz kaspiyskikh kilek)

SOV/20-125-6-49/61

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6, pp 1349-1352 (USSR)

ABSTRACT: The Caspian Clupeonella species: 1) Clupeonella engrauliformis (Borodin), 2) C. grimmi Kessler, and 3) C. peonella delicatula caspia Svetovidov (Ref 1) are closely related to one another, differ, however, to a certain extent by their ecology (Refs 2-8). The authors wanted to detect their structural peculiarities of the eye retina characteristic of the first and second species in order to compare their eyes with those of the third species and to clarify as far as possible the biological importance of these differences between the types 1) - 3) by means of the structure of the eye retina. The material was supplied by L. A. Chayanova. The size of the eyes with respect to the length of the body differs in the case of these species (Table 1). On the other hand all three species are equal with respect to many other structural details of the eyes and the optic nerve (Ref 1). The structure of the pigment epithelium is described

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in detail (Table 2). New ecological data emphasize the biological importance of the structural peculiarities of the eye retina of each of the three species. The high differentiation of the area centralis retinae of the first species is used by the latter under dazzling illumination in the case of nutrition under dazzling illumination: this fish is able to seize its food under selection of certain objects (Ref 11). This is favored by a distinctly marked reaction to light. The somewhat denser distribution of the receptors outside the area in the case of the first species compared with the two other species makes a more precise orientation possible and enables it to seize the food in considerable depths as well (Ref 5). In this connection a rather great acuity of sight in a further illumination range of the first species must be emphasized. The area centralis of the second species is not so highly differentiated than that of the other species. The distribution of the receptors is in the other part of the eye retina not so dense than that of the first species. This is caused by the nutrition in mainly considerable depths (Refs 3,5) under dim illumination where no acuity of sight can be used which is determined by a high degree of

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

The Structure of the Eye Retina in Caspian Clupeonellae

SOV/20-125-6-49/61

development of the area centralis. It is known that the second Clupeonella species lives on greater plankton organisms (Ref 3) than the other species. This Clupeonella has an only small selection in the certain plankton species on which it lives. Thus the low differentiation of the area is explained. It needs big eyes in order to exploit more completely the dim illumination in the greater depths in which it lives. There are 1 figure, 2 tables, and 11 references, 8 of which are Soviet.

ASSOCIATION: Institut morfologii zhivotnykh im. A. N. Severtsova Akademii nauk SSSR (Institute of Animal Morphology imeni A. N. Severtsov of the Academy of Sciences USSR)

PRESENTED: January 7, 1959, by I. I. Shmal'gauzen, Academician

SUBMITTED: December 30, 1958

Card 3/3

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, Ye.A.

Development of eyes and their function in embryos and larvae of the pike perch (Lucioperca lucioperca Linné). Trudy Inst.morf.zhiv. no.33:151-172 '61. (MIRA 14:6)

(Eye) (Perch)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102920002-5

BABURINA, E.A. [Baburina, Ye.A.]

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