SEMENOVA-TYAN-SHANSKAYA, V.V., prof. (Leningrad, V.O., 8-ya liniya, d.39, kv.2.)

Problems in neuromorphology treated at the Second International Congress of Neuropathology, London, September 12-17, 1955. Arkh. anat.gist.i embr. 33 no.3:94-98 Jl-S '56. (MIRA 12:11)
(NERVOUS SYSTEM--DISEASES)

SOV/177-58-1-5/25

17(14)

AUTHOR: Semenova-Tyan-Shanskaya, V.V. Professor, Colonel of the Medical Corps

TITLE: Remote Sequelae of Neural Trunk Wounds of Extremities (Otdalennyye posledstviya raneniy nervnykh stvolov konechnostey)

PERIODICAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 1, pp 17-22 (USSR)

ABSTRACT: The author quotes investigations carried out by G.Ye. Ostroverkhov, B.G. Yegorov, and Zakari during World War II. Zakari concluded that a nerve's function cannot be restored after suturing. In the Clinic for Neural Diseases of the Voyenno-meditsinskaya ordena Lenina akademiya imeni S.M. Kirova (Military Medical Order of Lenin Academy imeni S.M. Kirov) the author and M.I. Popova carried out 133 operations on damaged nerves. The following results are given: 24 operations resulted in a partial restoration of the nerve's function (18%), 42 operations produced

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Remote Sequelae of Neural Trunk Wounds of Extremities

neural sensitivity after injury. Based on case histories and his examinations, the author stresses the importance of timely diagnosis of neural damage and its early treatment.

SEMENOVA-TYAN-SHANSKAYA, V.V.

Changes in the nervous system in acute leukosis. Zhur. nevr. i psikh. 61 no.11:1668-1674 '61. (MIRA 15:2)

1. Kafedra nervnykh bolezney (nachal'nik - prof. S.I.Karchikyan) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(LEUCOSIS) (NERVOUS SYSTEM--DISEASES)

SEMENOVA-TYAN-SHANSKAYA, Vera Viktorovna; SHVAREV, A.I., red.; LEBEDEVA, G.T., tekhn. red.

[Acute leukemia and the nervous system] Ostryi leikoz i nervnaia sistema. Leningrad, Medgiz, 1963. 95 p. (MIRA 16:12)

(LEUKEMIA) (NERVOUS SYSTEM--DISEASES)

TASHCHININA, M.V.; SEMENOVA-TYAN-SHANSKAYA, Ye.R.

Upper Paleozoic Zhantau Volcano in central Kazakhstan.
Trudy VSEGEI 98:99-116 '63. (MIRA 17:5)

L 34398-66 EWT(d)/T/EWP(1) IJP(c) BB/GG/GD/JXT(BF)

ACC NR: AT6009443 SOURCE CODE: UR/0000/65/000/000/0051/0054

AUTHOR: Semenova, Ye. T.

ORG: none

TITLE: Analysis of the criteria for speech recognition

SOURCE: AN SSSR. Nauchnyy sovet po kompleksnoy probleme Kibernetika. Bionika (Bionics). Moscow, Izd-vo Nauka, 1965, 51-54

TOPIC TAGS: sound recognition computer, oscillograph, spectrum, spectrum analysis, speech recognition, computer application

ABSTRACT: The author proposes a method and apparatus for analyzing the criteria for speech recognition. The first part of the work consists of studying the Russian vowel sounds [a], [o], [y], [u], [bl], and [ɔ]. Oscillograms were made for each of these sounds. The spectrum of each sound was examined. The spectral analysis of the vowels was carried out on the ASChKh-1 spectral analyzer. The controlled analysis of the frequency spectrum was carried out on the Ural-1 computer. On the basis of a preliminary analysis of the oscillograms, an apparatus was set up for discerning vowel sounds recorded by one informant. The same procedure was followed for the consonants. These were divided into three groups: nasals, fricatives, and

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ACC NR: AT6009443

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occlusives. Seven informants took part in this study, four men and three women. Preliminary analysis of the oscillograms showed the feasibility of studying the amplitude-frequency-time characteristics of these sounds. An apparatus was set up for conducting the above study. The sound under study is recorded on a tape, amplified, and passed through a system of filters with variable frequency tuning, it is then demodulated and quantized according to levels. The equipment used in this experiment is not objective in recognizing sounds. It is useful only for recognizing the sounds of a single speaker. Z. Filina, K. Roleder, V. Kreychi, and A. Yanoshtak participated in the work. Orig. art. has: 6 figures.

SUB CODE: 09, 05/ SUBM DATE: 26Oct65

Card 2/2 BLG

SEMENOVA -ZABRODINA, S. P.

42434. Kratkiy Pochveinnyy ocherk (Erastovskogo opyttnogo polya.)V SP: osnovnyye vyvody po polevym opytam) ZA 1945-1947 GG (URR. Nauch-Issled. In-T Zerhovogo Khoz-Va Im. Kuybysheva. Erast. Opyt. Pole) Dnepropetrovsk. 1948, S. 8-11.

SEMENOVA-ZABRODINA, S. P.

Dry Farming

Farming on solonetz soils in the Sivash area by deep plowing where irrigation is not available, Pochvovedenie, No. 5, 1952.

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, October 1952 Uncl.

SEMENOVICH, A.F. CAND PHYSICOMAT SCI.

Dissertation: "Concerning the Calculation of Points."

20 October 49
Moscow Oblast Pedagogical Inst.

SO Vecheryaya Moskva
Sum 71

BARKOV, I.Ya., otv. red. (g. Chelyabinsk), BUDANTSEV, P.A., red., (g.Orenburg), GONIN, Ye.G., red., (g. Perm'), KOCHETKOVA, Ye. S., red.,(g.Chelyabinsk), NAGIBIN, F.F., red.,(g. Kirov), SEMENOVICH, A.Z., red.,(g. Sverdlovsk), CHAYKOVSKIY, N.A., red.,(g. Ural'sk), YAKOVKIN, M.V., red., MAKHOVA, N.N., tekhn. red.

[Problems in teaching mathematics in secondary schools; a collection of articles] Voprosy prepodavaniia matematiki v srednei shkole; sbornik statei rabotnikov kafedr pedagogicheskikh institutov Ural'skoi zony. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosveshcheniia RSFSR, 1958. 350 p. (MIRA 11:10)

(Mathematics --Study and teaching)

BEKAREVICH, A.N. (Gomel');BERESLAVSKIY, M.D. (Uzhgorod);GROMOV, A.P. (Melekess); DUBINCHUK, Ye.S.;TESLENKO, I.F.(Kiyev);ZOLOTOVITSKIY, Ye.M. (Reutovo); KAZHDAN, B.I. (Leningrad);KLIMENCHENKO, D.V. (Berdyansk);MEL'NIKOV, K.S. (Sterlitamak);MIKHAYLOV, K.F. (Magnitogorsk);NASYROV, A.Z. (Sterlitamak);NEFEDOV, D.I. (Moskva);NOVOSELOV, S.I. (Moskva);PRAVILOV, B.R. (s.Kanino Ryazanskoy obl.);PRINTSEV, N.A.(Kursk);SEMENOVICH, A.F. (Sverdlovsk)

Discussion of the plans for the programs. Mat. v shkole no.6:5-28 N-D '59. (MIRA 13:3)
(Mathematics--Study and teaching)

SEMENOVICH, A.F. (Ul'yanovsk)

Constructing an angle equal to the given one. Mat. v shkole no.4:64-65 Jl-Ag '61. (MIRA 14:8)
(Geometry--Study and teaching)
(Angle)

SEMENOVICH, A.F. (Ul'yanovsk)

Parallel straight lines. Mat. v shkole no.2:41-44 Mr-Ap '62.
(MIRA 15:3)
(Parallels (Geometry))

SEMENOVICH, A.F. (Sverdlovsk)

Constructions in a Lobachevskii space using a rule with parallel edges. Izv. vys. ucheb. zav.; mat. no.3:149-152 '63. (MIRA 16:4)

(Geometry, Non-Euclidean)

SEMENOVICH, A.F.

Constructions by means of a double-sided ruler in a Lobachevskii plane. Trudy Ural. politekh. inst. no.113:87-91 '61. (MIRA 16:8)

(Geometry, Non-euclidean)

SEMENOVICH, A.F.

Constructions in a Lobachevskii plane with a straightedge and oricycle compass. Izv. vys. ucheb. zav.; mat. no.5:101-104 '63. (MIRA 16:11)

SEMENOVICH, B.V., inzh.

Standardization and means for decreasing unit expenditures of electric power in the manufacture of ferroalloys. Prom.energ. 20 no.12:8-12 D '65. (MIRA 18:12)

S/133/61/000/007/009/017
A054/A129

AUTHORS: Dekhanov, N. M., Semenovich, B. V., Engineers

TITLE: The diameter of self-baking electrodes for ferro-alloy smelting furnaces

PERIODICAL: Stal', no. 7, 1961, 616 - 617

TEXT: When calculating the electrode consumption required for smelting ferro-alloys, two contradictory circumstances have to be taken into account: When the furnace capacity remains unchanged for the $t_1 = 60/P$ period in min (where P = rated furnace capacity, megawatt) the specific electrode-paste consumption (kg/1,000 kwh) must be raised to maintain the same burning rate of the electrode, due to the radiation of the charge and the heat conductivity of the electrode), the electrode diameter has to be increased and the current density decreased accordingly. The tendency, however, to maintain the heating of the electrode with the heat imparted by the current with the simultaneous increase in the electrode-paste (p) consumption during period t_1 results in the necessity to increase the current density and consequently to reduce the electrode diameter. When calculating the heating of the electrode due to radiation of the charge and to the heat conductiv-

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The diameter of self-baking electrodes for...

ity of the electrode, it is found that uniform electrode heating conditions by the heat sources mentioned upon smelting alloys with various specific electrode consumption are obtainable when the current densities are in reverse ratio to the values of p:

$$\frac{\Delta I_1}{\Delta I_2} = \frac{p_2}{p_1} \qquad (8)$$

To maintain the analogous conditions of the burning of the electrode due to the effect of current, the quantity of energy developed in one unit volume of the electrode (for instance, 1 cm^3) during its burning down, for instance, 1 cm must be kept invariable. The calculation carried out yielded a direct proportion:

$$\frac{\Delta I_1}{\Delta I_2} = \frac{p_1}{p_2} \qquad (14)$$

i. e., in order to maintain the conditions of electrode burning due to the heat of the current unchanged, the electric densities must be in direct proportion to the electrode consumption. This shows that the effect of heat transferred by the charge of the heat conductivity and of the heat imparted by the current balance each other and therefore cannot be used in calculating the current density in the

electrode. The practice of the Zaporozhskiy zavod ferrosplavov (Zaprozh'ye Plant of Ferroalloys) gives more aid to solve these problems than theory. In this plant current densities of 5.8 and 7.1 amp/cm^2 are usually applied to electrode diameters of 940 and 840 mm with a specific electrode consumption of up to 9.8 kg/1,000 kwh, a current density of 5.5 - 6.0 amp/cm^2 can be applied to electrode diameters of 1,300 - 1,400 mm. Experience shows that in determining the electrode diameter the consumption of the electrode paste is not such a decisive factor as the shape of the electrode and the construction of the furnace. The calculations carried out by the authors of the article and the experience gained in the Zaporozh'ye Plant refute the views put forth by Ye. M. Alekseyev and published in his article in Stal', 1956, no. 10.

ASSOCIATION: Zaporozhskiy zavod ferrosplavov (Zaporozh'ye Plant of Ferroalloys)

SEMENOVICH, B.V.

Efficient use of electric power and choice of electrical parameters of ferroalloy furnaces. Prom.energ. 16 no.10:6-9 O '61. (MIRA 14:10)

(Electric furnaces) (Iron alloys--Electrometallurgy)

SAPKO, A.I., kand.tekhn.nauk; DOBROV, V.P., kand.tekhn.nauk; DEM'YANETS, L.A., inzh.; DEKHANOV, N.M., inzh.; VOLKOV, V.F., inzh.; KRAVCHENKO, V.A., inzh.; BOYTSOV, L.I., inzh.; SEMENOVICH, B.V., inzh.; FRISH, M.I., inzh.

Investigating power regulators with electromechanical and electrohydraulic drives on ferroalloy refining furnaces. Stal' 22 no.4:321-324 Ap '62. (MIRA 15:5)
(Electric furnaces)

SEMENOVICH, B.V.; MIRONCHENKO, V.L.; MOSOL, A.A.

Introducing automatic control of devices used in proportioning the charge mixture for large ferroalloy furnaces. Stal' 23 no.1:50-54 Ja '63. (MIRA 16:2)
(Iron alloys—Metallurgy) (Automatic control)

SEMENOVICH, I. (g. Vologda)

Boron-magnesium fertilizers increase the yield of cabbage seed. Nauka i pered. op. v sel'khoz. 8 no.4:22 Ap '58. (MIRA11:5)
(Cabbage)
(Plants, Effect of boron on)
(Plants, Effect of magnesium on)

SEMENOVICH, I.I.

Rammed lining of the walls and arch of a steelmaking arc furnace. (MIRA 18:5)
Lit. proizv. no.6:36 Je '64.

SEMENOVICH, I.M.

Experiments in growing corn mixed with forage beans. Uch. zap. VGPI 27:3-10 '62. (MIRA 16:8)

(Vologda Province--Corn (Maize))
(Vologda Province--Beams)

MAZEL', Ya.I.; SEMENOVICH, N.I.; BOGOSLAVSKIY, R.V.

Hemodynamic and respiratory changes in adhesive pericarditis and its surgical therapy. Sovet. med. 16 no. 8:13-19 Aug 1952. (CLML 23:3)

1. Of the Faculty Therapeutic Clinic (Director -- Prof. P. Ye. Lukomskiy) and of the Faculty Surgical Clinic (Director -- Active Member of the Academy of Medical Sciences A. N. Bakulev), Second Moscow Medical Institute imeni I. V. Stalin.

MAZEL', Ya.I.; SEMENOVICH, N.I.

Respiratory function in patients with non-specific pulmonary affections and its changes following pulmonary surgery. Sov. med. no.2:7-12 F '54. (MLRA 7:1)

1. Iz fakul'tetskoy terapevticheskoy kliniki pediatricheskogo fakul'teta (direktor - professor P.Ye.Lukomskiy) II Moskovskogo meditsinskogo instituta im.I.V.Stalina.
(Lungs--Diseases) (Lungs--Surgery) (Respiration)

SEMENOVICH, N. I., Cand of Medit Sci -- (diss) "Study of the function of external breathing and hemodynamic indicies in patients with pulmanary purulent processes." Moscow, 1956, 23 pp (2nd Moscow State Medical Institute im Stalin), 100 copies (KL, 31-57, 106)

SEMENOVICH, N. I.

Protein fractions of the blood serum in acute myocardial infarction following thrombosis. Terap. arkh. no.9:39-42 '61. (MIRA 15:2)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. M. I. Zolotova-Kostomarova) pediatricheskogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N. I. Pirogova.

(HEART--INFARCTION) (BLOOD PROTEINS)
(THROMBOSIS--COMPLICATIONS AND SEQUELAE)

SEMENOVICH, N.I., dotsent; KAYGORODOVA, G.Ye., dotsent; NOZDRYUKHINA, L.P., kand.med.nauk

Use of ismelin in various forms of hypertension. Terap.arkh. no.8:109-113 '62. (MIRA 15:12)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. M.I. Zolotova-Kostomarova) pediatricheskogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.
(HYPERTENSION) (GUANETHIDINE)

SEMENOVICH, N.I., dotsent

Corchoroside treatment of cardiovascular diseases during the circulatory disorder stage. Sovet. med. 26 no.5:106-109 My'63 (MIRA 17:1)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. M.I.Zolotova-Kostomarova) pediatricheskogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.

SEMENOVICH, N.I.

Electrophorograms of the blood serum in combination with fibrinogen and amino acids in patients with chronic coronary insufficiency. Terap. arkh. 35 no.2:48-54'63. (MIRA 16:10)

1. Iz kafedry fakul'tetskoy terapii pediatricheskogo fakul'teta (zav. - prof. M.I. Zolotova-Kostomarova) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.
(ELECTROPHORESIS) (CORONARY HEART DISEASE)
(BLOOD PROTEINS)

SEMENOVICH, M. I.

"The Hydrology of Lake Tanganyika," Priroda, No. 3, 1948; "The Annual Amount of Energy of a Lake," ibid., No. 10, 1948; "New Data on the History of Lake Bonneville (US)," ibid., No. 10, 1949

SEMENOVICH, N. I.

"The Distribution of the African Snail," Priroda, No. 11, 1949.

SEMENOVICH, N. I.

Biological Laboratories

In the Laboratory of Limnology. Vest AN SSSR 22, no. 3, 1952.

Monthly List of Russian Accessions. Library of Congress. October 1952 UNCLASSIFIED

SEMENOVICH, N.I.

Vivianite in the Muolan-Yarvi Lake. N. I. Semenovich. *Trudy Lab. Ozerovedeniya, Akad. Nauk S.S.S.R.* 2, 221–31 (1953); *Referat. Zhur. Khim.* 1954, No. 30474.—Vivianite in the form of ferro-ferri phosphate was found in bottom deposits in the N.-W. part of the lake. This part receives a good deal of drainage from marshes and areas of lacustrine ores. It is assumed that Fe and P are extd. from bog deposits by the action of humic acids and are carried into the lake in the form of complex org. compds. or its peptized suspensions. S. contends that the phosphates are adsorbed by colloidal humous substances and are subsequently ppted. in the lake. M. Hasch

SEMENOVICH, N.I.

[Limnological condition of the accumulation of iron deposits in lakes; dissertation] Limnologicheskie usloviia nakopleniia zhelezistykh osadkov v ozerakh; dissertatsiia. [n.p.] 1954. 335 p.
(Lakes) (Iron) (MIRA 11:10)

SEMENOVICH, N.I.

Study of thermal conditions of bottom deposits of lakes. Trudy Lab.ozeroved. 3:162-172 '54. (MLRA 8:2)
(Lakes--Temperature)

SEMENOVICH, N. I.

SEMENOVICH, N. I. --"Limnological Conditions of the Accumulation of Ferruginous Sediments in Lakes." (Dissertations For Degrees In Science and Engineering Defended at USSR Higher Educational Institutions)(29) Inst of Georgraphy of the Acad Sci USSR, Moscow, 1955

SO: Knizhnaya Letopis' No 29, 16 July 1955

* For the Degree of Candidate in Chemical Sciences

SEMENOVICH, N.I.

20-1-35/54

AUTHOR SEMENOVICH, N.I.

TITLE On Oxygen Absorption by Lake-Silts
(O Poglosnchenii kisloroda ozernymi ilami. Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 115, Nr 1, pp 130-132(U.S.S.R.)

ABSTRACT

The study of oxygen absorption by ground deposits is of great importance for the understanding of substance-exchange processes between the bottom and the waters of lakes. A certain conception of the content of easily oxidizable (on the whole organic) substances may be obtained from a determination of the decrease of oxygen in the water of containers into which a certain quantity of clay was put and which were left standing for some time. The common error of the majority of such works which were carried out under employment of various types of methods lies in the fact that clay incubation is much too short and that too great quantities of clay are introduced in proportion to water. The author made observations on this problem on clays of the mesotrophoic Puunus-Yarvi Lake, in the Karelian straits. Incubations of 10 days were carried out. At the same time observations were made in the lake itself. A special equipment for taking up water was installed 10,5 m deep on the bottom of the lake. The results of laboratory tests showed that the biochemical oxygen consumption (denoted BOC in the following) was consistently reduced by the lake-silt. At present it cannot yet be determined whether this decrease in BOC is

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On Oxygen Absorption by Lake-Silts

the rule for that reservoir in general of whether it is restricted to the limnologic and hydrometeorologic conditions of summer 1955 (absence of "water blossoming", insignificant supply of terrigenous material due to summer draught, etc.). In the bottom test equipement oxygen also decreased in the boundary layer with the bottom deposits. But toward the end of August a stabilization took place. The water within the equipment was isolated from the influence of the dynamic factor and the curve concerned took a smooth course. The similar curve of the outside water forms a number of peaks under the influence of decreasing and increasing circulation. They are highest when winds blow along the narrow and long peak. For the purpose of determining the intensity and the course of oxygen absorption the speed constant K_{20} was calculated from a number of incubations. K_{15} was also calculated from the modifications of oxygen content in the water layer near to the ground in the equipment. Although the decrease in oxygen in the layer near the bottom is a consequence of the summary influence of a number of processes, the results nevertheless indicate that the biochemical decomposition of unstable organic substances is the most important of conditions prevailing in the investigated lake. Its quantity depends on the regime of sedimentation of the reservoir.

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On Oxygen Absorption by Lake-Silts

This decomposition proceeds very intensively and apparently develops according to the logarithmic curve.
(With 1 illustration, 5 Slavic references).

ASSOCIATION Limnologic Station on the Punnus-Yarvi Lake of the laboratory Limnology of the Academy of Sciences of the U.S.S.R.
(Limnologicheskaya stantsiya na oz. Punnus-Yarvi Laboratorii ozero-vedeniya Akademii nauk SSSR. -

PRESENTED BY NALIVKIN, D.V., Academician, February 11, 1957
SUBMITTED 6.2.1957
AVAILABLE Library of Congress

SEMENOVICH, N.I.; KALESNIK, S.V., otv. red.; MATVEYEV, V.P., red. izdaniya; ZENDEL', R.Ye., tekhn. red.

[Limnological conditions for the accumulation of ferrous sediments in lakes] Limnologicheskie usloviia nakopleniia zhelezistykh osadkov v ozerakh. Moskva, Izd-vo akad. nauk SSSR, 1958, 178 p. (Akademiia nauk SSSR. Laboratoriia ozerovedeniia, Trudy, vol.6). (MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Kalesnik).
(Lakes) (Iron ores)

3(5)

AUTHOR: Semenovich, N. I. SOV/20-127-6-36/51

TITLE: The Types of Layer Structure in the Bottom Sediments of Lake Ladoga

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 6, pp 1273-1275 (USSR)

ABSTRACT: The stratified structure of the sediments mentioned in the title and known since 1918 (Ref 1) was analyzed (Ref 2) as an index of the changes in meteorological conditions within a period of several years. The thickness of individual layers was considered corresponding to annual formations. According to the weather conditions of individual years, these layers are deposited more or less intensively. During the expedition in 1958, the author extracted ground cores in various parts of the lake by means of Perfil'yev's stratometer. The pelotomic sections thus made showed the layer textures (Fig 1). 3 types of this texture are separated: 1) S t r a t i f i e d m u d d y a l e u r i t e s (Fig 1 ye). 2) B a n d e d c l a y s (Figs 1 v-d). Wide sand-aleuritic intermediate layers (Fig 1 d) were ascertained in some sections. In the central part of the lake, the banded clays are covered by a

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considerable layer of brown mud (25.5 cm at the most). This may be due to a change in the sedimentation character between the post-glacial period and the present time (Fig 1 d).
3) S t r a t i f i e d l o a m y m u d s . In most sections of these muds, there are brown or black intermediate layers, as well as fine black lamination. It was stated in publications (Refs 6-8) that artificial layers of Lizegang can be produced experimentally. This phenomenon has not yet been known as a bottom sediment of the lakes. The author arrives at the conclusion that the above-mentioned rhythmic layer textures are not an annual phenomenon, but are due to a diagenesis in the mass of sediments. Only the banded clays may be assigned to the textures influenced by seasonal conditions. These clays, however, can hardly be recent sediments. There are 1 figure and 8 references, 3 of which are Soviet.

ASSOCIATION: Laboratoriya ozerovedeniya Akademii nauk SSSR (Laboratory of Limnology of the Academy of Sciences, USSR)

PRESENTED: April 20, 1959, by D. V. Nalivkin, Academician

SUBMITTED: April 15, 1959

SEMENOVICH, N.I.

Investigation of chemical exchange between the bottom and the water mass of a lake. Trudy Lab.ozeroved. 11:3-47 '60.
(MIRA 14:8)
(Karelian Isthmus--Limnology)

SEMENOVICH, N.I.; BARANOVA, I.N.

General characteristics of zooplankton in some lakes of the Karelian Isthmus. Trudy Lab.ozeroved. 11:178-187 '60.
(MIRA 14:8)

(Karelian Isthmus--Zooplankton)

SEMENOVICH, N.I.

Stratification of bottom deposits and conditions governing the sedimentation in Lake Ladoga. Izv.Vses.geog.ob-va 95 no.3:222-230 My-Je '63. (MIRA 16:8)
(Ladoga, Lake--Geology, Stratigraphic)

SEMENKOVICH, M.I., kand. med. nauk; STEPANOV, N.C., kand. med. nauk; GALITSKIY, G.A., kand. med. nauk; POROSHIN, K.K., kand. med. nauk

Some data on the clinical and morphological aspects of Chiari's disease. Sov. med. 28 no.8:26-31 Ag '65. (MIRA 18:9)

SEMENOVICH, V.G.; MARKUSHKIN, V.G.; ZAYONCHKOVSKIY, A.D.; ZOLOTOV, V.I.; BERNSHTEYN, M.Ch.; YABKO, Ya.M.; SMETKIN, Yu.A.

The KhOM-2 machine for the manufacture of continuous disoriented fiber bases. Kozh.-obuv.prom. 4 no.11:20-24 N '62. (MIRA 15:11)

(Leather, Artificial) (Nonwoven materials)

GABRIELYANTS, G. A.; DENISEVICH, V. V.; DIKENSHTEYN, G. Kh.; ZHUKOVSKIY, L. G.; ZUBOV, I. P.; IMASHEV, N. U.; MASHRYKOV, K. K.; SEMENOVICH, V. V.

"Oil- and gas deposits in mesozoic rocks of the Epi-Hercynian Platform in Middle Asia."

report submitted for 22nd Sess, Intl Geological Cong, New Delhi, 14-22 Dec 1964.

VISTELIUS, A.B., KOROBKOV, I.A., ROMANOVA, M.A., SEMENOVICH, V.V.

On the age of the lower layers of red beds on the Cheleken peninsula. Dokl. AN SSSR 105 no.4:786-789 D '55. (MLRA 9:3)

1. Laboratoriya aerometodov Akademii nauk SSSR. Predstavleno akademikom D.V. Nalivkinym.
(Cheleken--Geology, Stratigraphic)

SEMENOVICH, V. V.

15-57-4-5451

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, pp 191-192 (USSR)

AUTHOR: Semenovich, V. V.

TITLE: The Geologic Structure of Aligul Upland (O geologicheskom stroyenii urochishcha Aligul)

PERIODICAL: Tr. In-ta geol. AN TurkmSSR, 1956, Vol 1, pp 280-284.

ABSTRACT: The Aligul upland occurs on the Cheleken Peninsula five kilometers from its western shore. It is a mesa-like upland surrounded by lowland districts. The rocks in this upland may be divided into three groups: 1) Pliocene red beds (clays, sands, sandstones, and siltstones; 2) the Akchagyl and Apsheron series (clays and sands); and 3) Quaternary deposits (clays and sands). Among all these deposits, rocks of the Aligul massif are sharply distinguished. They consist of dense greenish limestones, hard gray and dark brownish sandstones and olive-green clays. In the eastern part of the massif, these rocks occur in a huge block. The

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The Geologic Structure of Aligul Upland (Cont.)

remaining part of the massif is composed of mud-volcano breccia formed from olive-green clays and occurring as a layer on the eroded surface of lower Apsheron beds. Some of these rocks are Mesozoic. Structurally the area is characterized by a great number of faults and fractures trending northwesterly and westerly. Large mud-volcanoes, which began to form in lower Apsheron time, occur in the Aligul area. The cause of these volcanoes is the deep faulting. Along the fault planes, masses of water, gas, and rock have been ejected to the surface. Large blocks have been deposited at the site of the ejection. The mud-volcano breccia has been scattered over a great distance. The study of the geological structure of Aligul has aided in deciphering the geological structure of the peninsula.

Card 2/2

T. A. G.

SEMENOVICH, V. V. Cand Geol-Min Sci -- (diss) "The geological structure and petroleum capacity of the Cheleken peninsula." Cheleken, 1957. 16 pp (Mos Order of Labor Red Banner Petroleum Inst im Academician I. M. Gubkin. Association "Turkmenneft'"), 200 copies (KL, 5-58, 100)

SEMENOVICH, V.V.

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1.Nefteprom yslovoye upravleniye "Chelekenneft'."
(Cheleken Peninsula--Water, Underground)

SIMAKOV, A.N.; SEMENOVICH, V.V.; DIKENSHTEYN, G.Kh.

Prospecting for oil and gas fields in the central and eastern parts of the Turkmen S.S.R. Sov.geol. 2 no.1:16-25 Ja '59. (MIRA 12:4)

1. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR i Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Turkmenistan--Petroleum geology)
(Turkmenistan--Gas, Natural--Geology)

SEMENOVICH, V.V.; SIMAKOV, A.N.

Conference on trends in oil and gas prospecting in the western regions of Central Asia. Sov.geol. 2 no.4:151-153 Ap '59. (MIRA 12:7)

1. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkm. SSR.
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(Soviet Central Asia--Gas, Natural--Geology)

BORISOV, Aleksandr Aleksandrovich; VASIL'YEV, Viktor Grigor'yevich; ZHUKOVSKIY, Leonid Grigor'yevich; KAYESH, Yuriy Vladimirovich; SEMENOVICH, Vladimir Vladimirovich; GRATSIANOVA, O.P., red.; DEMENT'YEVA, G.A., vedushchiy red.; GANINA, L.V., tekhn.red.

[Studies of the geology, and oil and gas potentials of Central Asia] Ocherki geologicheskogo stroeniia i neftegazonosnost' Srednei Azii. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1960. 174 p. (MIRA 13:11)
(Soviet Central Asia--Petroleum geology)
(Soviet Central Asia--Gas, Natural--Geology)

GABRIELYANTS, G.A.; DIKENSHTEYN, G.Kh.; SEMENOVICH, V.V.

Central Kara Kum as a new large oil- and gas-bearing region of Central Asia. Sov. geol. 3 no. 9:3-16 S '60. (MIRA 13:11)

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(Kara Kum--Gas, Natural--Geology)

SEMENOVICH, V.V.

Prospecting results achieved in Turkmenia in 1960 and problems for 1961. Geol. nefti i gaza 5 no. 3:7-12 Mr '61. (MIRA 14:4)

1. UGiON Soveta Ministrov Turkmenskoy SSR.
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(Turkmenistan—Gas, Natural—Geology)

DENISEVICH, V.V.; DIKENSHTEYN, G.Kh.; ZHUKOVSKIY, L.G.; SEMENOVICH, V.V.; SOKOLOV, I.P.

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1. Ob"yedineniye Turkmenneft'; Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut; Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov Uzbekskoy SSR; Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR i Sovnarkhoz Uzbekskoy SSR.
(Soviet Central Asia--Petroleum geology)
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MARKOVA, Leonila Pavlovna; [illegible]MENOVICH, V.V., kand. geol.-miner. nauk, otv. red.

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(Turkmenia--Geology, Stratigraphic)

MASHRYKOV, K.K., akademik; SEMENOVICH, V.V., kand.geol.-mineral.nauk (Ashkhabad); SMIRNOV, L.N., kand.geol.-mineral.nauk (Ashkhabad)

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ALIYEV, I.M.; ARZHEVSKIY, G.A.; BORISOV, A.A.; GABRIELYANTS, G.A.; DENISEVICH, V.V.; DIKENSHTEYN, G.Kh.,doktor geol.-miner. nauk; ZHUKOVSKIY, L.G.; IL'IN, V.D.; KAYESH, Yu.V.; KRAVCHENKO, N.Ye.; REZVOY, D.P.; SEMENOVICH, V.V.; TAL'-VIRSKIY, B.B.; SHEBUYEVA, I.N.; IONEL', A.G., ved.red.; VORONOVA, V.V., tekhn. red.

[Tectonics, and oil and gas potentials of the western regions of Central Asia] Tektonika i neftegazonost' zapadnykh raionov Srednei Azii. Pod red. G.Kh.Dikenshteina. Moskva, Gostoptekhizdat, 1963. 309 p. (MIRA 16:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut.
(Soviet Central Asia--Petroleum geology)
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VOL'VOVSKIY, B.S.; VOL'VOVSKIY, I.S.; ISHUTIN, V.V.; SEMENOVICH, V.V.; TAL'-VIRSKIY, B.B.; CHAMO, S.S.

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1. Nauchno-issledovatel'skaya sredneaziatskaya geofizicheskaya ekspeditsiya kontory "Spetsgeofizika" i Uzbekskiy geofizicheskiy trest.

SEMENOVICH, V.V.; DIKENSHTEYN, G.Kh.

Results of geological-prospecting operations for oil and gas in Central Asia for 1963 and the trend for 1964-1965. Geol. nefti i gaza 8 no.5:1-6 My '64. (MIRA 17:9)

1. Sredneaziatskiy sovet narodnogo khozyaystva i Vsesoyuznyy nauchno issledovatel'skiy geologorazvedochnyy neftyanoy institut.

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Zonality of reservoir waters in Turkmenistan. Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.6:47-59 '64. (MIRA 18:4)

1. Glavnoye upravleniye neftyanoy i gazovoy promyshlennosti Sredneaziatskogo soveta narodnogo khozyaystva i TSentral'naya kompleksnaya tematicheskaya ekspeditsiya Upravleniya geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR.

SEMENOVICH, V.V.

Methodology of a geological study of Turkmenistan to assess its prospective petroleum-gas deposits. Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.5:16-26 '64. (MIRA 17:12)

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SEMENOVICH, V.V.

Faults in the Kara Kum platform and adjacent areas. Sov. geol. 7 no.5:75-84 My '64 (MIRA 18:2)

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DIKENSHTEYN, G.Kh.; [illegible], P.N.; MAKSIMOV, S.P.; SEMENOVICH, V.V.

Development of petroleum production in Central Asia. Geol. nefti i gaza 8 no.9:37-43 S '64. (MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut, Moskva, Gosudarstvennyy geologicheskiy komitet SSSR i Sredazsovnarkhoz.

ROZYREVA. T., kand. geol.-miner. nauk, glav. red.; SMIRNOV, L.N. kand. geol.-miner. nauk, zam. glav. red.; MASHRYKOV, K., akademik, red.; KALUGIN, P.I., akademik, red.; SEMENOVICH, V.V., kand. geol.-miner. nauk, red.; GABRIELYANTS, G.A., geol.-miner. nauk, red.; SHCHETININA, Yu.M., red.

[Problems of the geology of Turkmenia; materials for the 22nd International Geological Congress] Voprosy geologii Turkmenii; materialy k XXII Mezhdunarodnomu geologicheskomu kongressu. Ashkhabad, Turkmenskoe izd-vo, 1965. 242 p. (MIRA 18:6)

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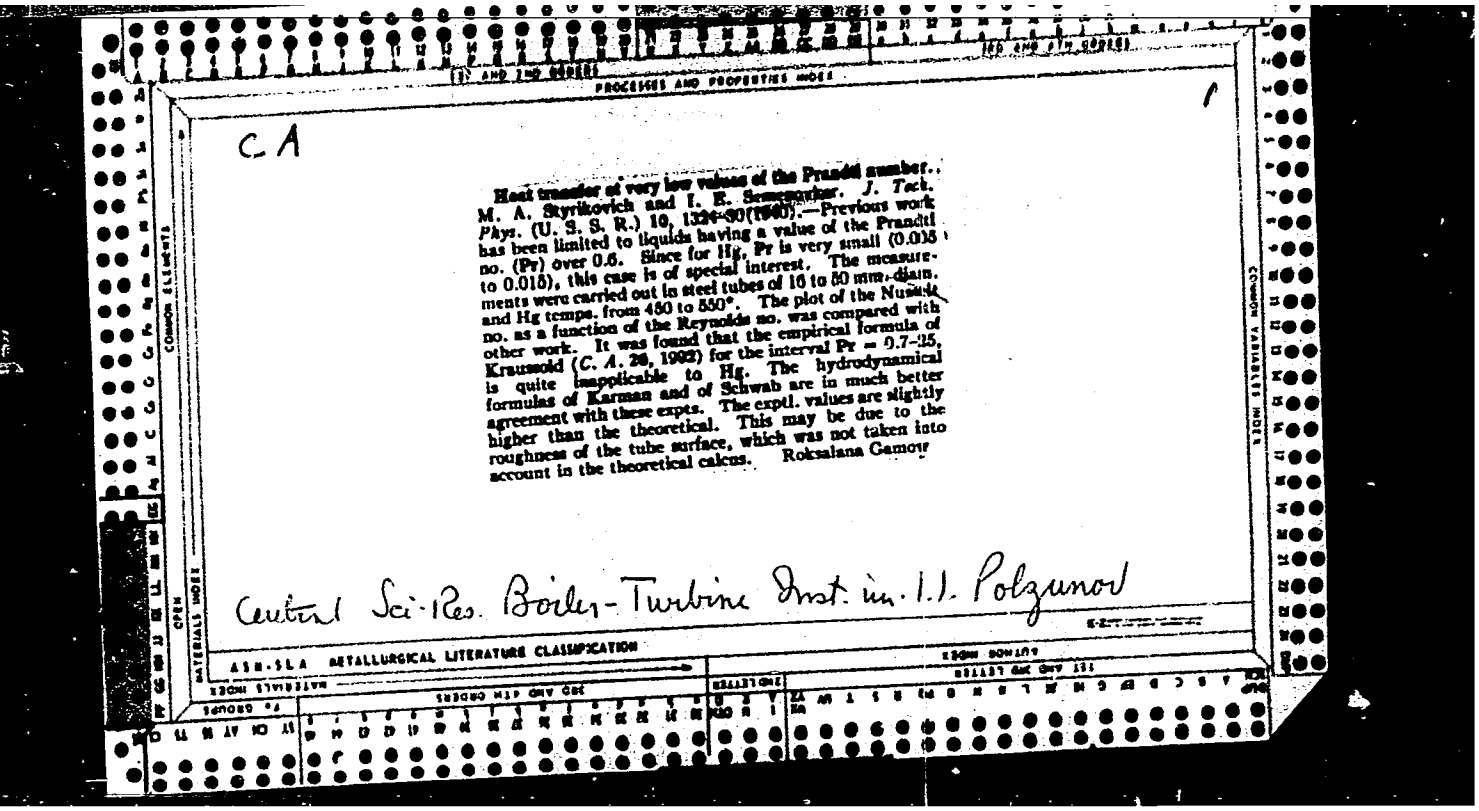

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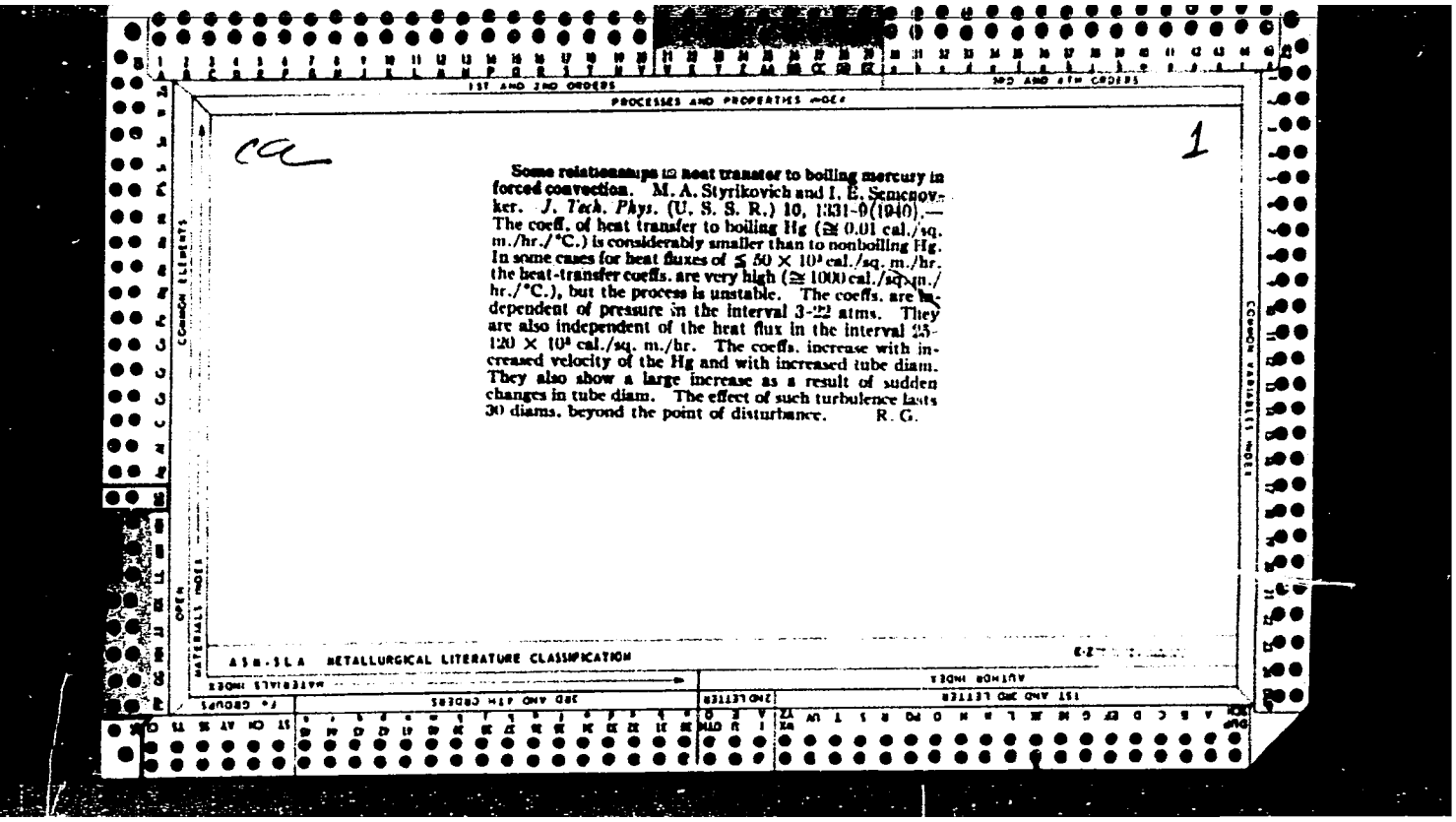
Heat transfer at very low values of the Prandtl number. M. A. Styrikovich and I. E. Semenovker. *J. Tech. Phys.* (U. S. S. R.) 10, 1326-30(1940).—Previous work has been limited to liquids having a value of the Prandtl no. (Pr) over 0.6. Since for Hg, Pr is very small (0.015 to 0.018), this case is of special interest. The measurements were carried out in steel tubes of 16 to 50 mm. diam. and Hg temps. from 480 to 550°. The plot of the Nusselt no. as a function of the Reynolds no. was compared with other work. It was found that the empirical formula of Krasnold (*C. A.* 26, 1992) for the interval Pr = 0.7–25, is quite inapplicable to Hg. The hydrodynamical formulas of Karman and of Schwab are in much better agreement with these expts. The exptl. values are slightly higher than the theoretical. This may be due to the roughness of the tube surface, which was not taken into account in the theoretical calcns. Roksalana Gamow

Central Sci.-Res. Boiler-Turbine Inst. im. I.I. Polzunov



PROCESSES AND PROPERTIES INDEX

1

Some relations in heat transfer to boiling mercury in forced convection. M. A. Styrikovich and I. E. Semenovker. *J. Tech. Phys.* (U. S. S. R.) 10, 1331–9 (1940).—The coeff. of heat transfer to boiling Hg (≅ 0.01 cal./sq. m./hr./°C.) is considerably smaller than to nonboiling Hg. In some cases for heat fluxes of ≲ 50 × 10³ cal./sq. m./hr. the heat-transfer coeffs. are very high (≅ 1000 cal./sq. m./hr./°C.), but the process is unstable. The coeffs. are independent of pressure in the interval 3–22 atms. They are also independent of the heat flux in the interval 25–120 × 10³ cal./sq. m./hr. The coeffs. increase with increased velocity of the Hg and with increased tube diam. They also show a large increase as a result of sudden changes in tube diam. The effect of such turbulence lasts 30 diams. beyond the point of disturbance. R. G.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SEMENOVKER, I. Ye.

"O voznik-novenii pul'satsiy v isparyayushchikh trubakh parovykh kotlov," Hydrodynamics and Heat Transfer During Boiling in High Pressure Boilers. U.S.S.R. Academy of Sciences (Moscow: 1955, 256pp).

A collection of twelve papers describing experimental work on the movement of steam and water, the formation of steam and heat transfer in boiler tubes.

SOV/124-57-3-3204

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 80 (USSR)

AUTHOR: Semenovker, I. Ye.

TITLE: On the Initiation of Pulsations in Evaporating Tubes of Steam Boilers (O vozniknovenii pul'satsiy v isparayayushchikh trubakh parovykh kotlov)

PERIODICAL: V sb.: Gidrodinamika i teploobmen pri kipenii v kotlakh vysokogo davleniya. Moscow, AN SSSR, 1955, pp 155-172

ABSTRACT: A presentation of the results of experiments dealing with flow and pressure pulsations in evaporating tubes of steam boilers. The experiments were conducted on a through-flow boiler and on boilers with multiple forced circulation, as well as on a special stand. The author contends that the initiation of flow pulsations is associated with the horizontal (or nearly horizontal) alignment of heating surfaces, rather than with the forced circulation of the liquid. Pulsation does not occur in vertical pipes even under pulsation-conducive conditions (absence of washers, low velocities of flow, etc.). Flow pulsations are caused by processes which take place in the region of low steam content. The following

On the Initiation of Pulsations in Evaporating Tubes of Steam Boilers

factors contribute to the initiation of the pulsations in that region: Reduction of the weight-flow rate in the pipe, increased intensity of heating, and increased pipe diameters. Such factors as the total length of a coil, the final steam content, and the ratio of the lengths of the economizer sections to the steam-carrying sections do not have any effect on the initiation of pulsations.

Z. L. Miropol'skiy

SEMENOVKER, I.E.

AID P - 2393

Subject : USSR/Engineering

Card 1/1 Pub. 110-a - 7/15

Author : Semenovker, I. E., Kand. Tech. Sci.

Title : Foam impairment of feed water circulation

Periodical : Teploenergetika, 7, 33-38, Jl 1955

Abstract : The author discusses results of tests on separation and circulation of feed water in the water walls of the salt deposit section of the TsKTI 75-39-F boiler. The absence of alkali in the feed water causes foaming and prevents the steam from rising. Three different types of separating installations were tested and their design and functions are described in detail. The cyclone type separator is recommended as the most suitable and efficient. Eight diagrams.

Institution: Central Turbine-Boiler Institute

Submitted : No date

AUTHOR: Semenovker, I.E., Candidate of Technical Sciences, ~~and Bessarab~~, M.F., Engineer. 96-7-5/25

TITLE: Experience of operating boilers with intra-drum cyclones. (Opyt raboty kotlov c vnutribirabannymi tsiklonami.)

PERIODICAL: "Teploenergetika"(Thermal Power), 1957, Vol.4, No.7, pp. 26 - 29 (U.S.S.R.)

ABSTRACT: In order to select an effective separation method for boilers type 75-39- Ф of the Central Boiler and Turbine Institute (TsKTI) four kinds of separation device were tested and operated in service at a heat and electric power station. The first three devices used two-stage evaporation and battery shields in the clean section of the boiler and had two types of boxes and one type of intra-drum cyclone in the salty sections. In the fourth variant cyclones were installed along the entire length of the drum and stepwise evaporation was not used. The arrangement of the separating device in the drum is illustrated in Fig.1.

Card 1/4 The steam water mixture from the screen tubes is delivered to a common collector intended to ensure uniform loading of the cyclones and from there it is

of corrected sulphate residue was less than 0.2 mg/l. This value increased to 0.25 mg/l when the boiler was loaded to 85 t/h with peaks of 90 t/h. The salt content of the steam as a function of the salt content of the boiler water is illustrated in Fig. 3.

Circulation tests which were made at the same time provided data about the influence of the cyclones on circulation characteristics. When cyclones are used foam does not enter the circulation tubes.

This heat and electric power station now has a year's experience of operating three boilers type 75-39-Ф with intra-drum cyclones. The mean annual load on them was 65-75 t/h. For long periods the load was 75-80 with peaks of 90 t/h. The monthly mean alkalinity of the boiler water was 26-33 mg.equiv/litre, the salt content 2 000 - 2 500 mg/litre and the limiting alkalinity 38 mg.equiv/litre. Monthly mean operating data on one of the boilers for the first half of 1956 is given in Table 3. During a year's operation neither the turbines nor the super-heaters were washed

AUTHOR: Semenovker, I. Ye., Cand.Tech.Sci. SOV/96-58-7-14/22

TITLE: Experience with the application and testing of a steam superheat control system with injection of condensate produced in the boiler. (Opyt primeneniya i ispytaniye skhemy regulirovaniye peregreva para s vpryskivaniyem sobstvennogo kondensata.)

PERIODICAL: Teploenergetika 1958, 5 No.7. pp. 63-68 (USSR)

ABSTRACT: The regulation of steam superheat by the injection of condensate produced in the boiler was proposed some years ago in Czechoslovakia by Prof. Dolezhal, and is apparently being used successfully there. This method of condensate injection was used on a number of Soviet boilers including types TP-230-B and PK-10. At present, operating experience is available on a group of boilers with an output of 110 tons/hr at 105 atm and 500°C. This article describes operating experience over a year with three boilers of this type and also tests carried out by the Central Boiler Turbine Institute in 1956-57, and may serve as a basis for design recommendations. The arrangement of the equipment for producing condensate is shown in Fig.1. The principal component is a condenser located 1.5 m above the water level in the drum. Because excess condensate is returned to the drum the condenser does not flood even when the injectors are not operating. Therefore, the temperature of the condenser tubes is almost constant. The cooling medium is feed-water taken after the economiser and at a temperature 80° - 100°C below boiling point. All the feed-water passes through the condenser. The construction of the condenser is described. An important feature is the absence of

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Experience with the application and testing of a steam superheat control system with injection of condensate produced in the boiler.

arrangements for super-cooling the condensate. The condensate is delivered to vertical tanks of 0.35 m^3 capacity, which represents an 80 seconds reserve of water. There is an overflow tube from the top of the tanks to the drum. The injection devices are cylindrical vessels 35 mm diameter with apertures of 3 mm diameter. Shields are used to prevent condensate from the nozzles reaching the pipe walls. In the boilers under consideration, injection devices are used at two successive points in the superheaters one in the radiation section and one in the convection section. In operation only the last of these is used and it is at practically the same level as the storage tanks. Therefore, the head available for injection is only the hydraulic resistance of the radiation part of the superheater, which is about 3.8 atms with full load on the boiler. To ensure the necessary quantity of condensate being injected, Venturi tube ejectors of the type shown in Fig.2. were installed at the points of injection and the number of injecting nozzles was increased to 40. When this had been done 13 tons/hr of condensate could be injected. The only serious defect observed in 1½ years of operation was a reduction in flow of condensate because the nozzles were fouled with burrs and iron scale. Stainless steel filters with a mesh of 2.5 mms were installed to prevent this and they could be cleaned during operation of the boiler by

Experience with the application and testing of a steam superheat control system with injection of condensate produced in the boiler.

reversing the flow of steam. It was feared that when the steam pressure fell in the drum the condensate might boil, so that injection would either cease or be much reduced. However, this did not occur even when the drum pressure dropped by 20 atms. During tests on this system of condensate injection the following questions were studied; irreversible losses associated with the installation of the Venturi tubes; the pressure-drop caused by the Venturis; the resistance of the injection nozzles; the relationship between the quantity of condensate injected and boiler operating factors, such as the load on the boiler, pressure variations, etc.; the completeness of evaporation of the injected water on the screened length of pipe; and finally, the heat-transfer coefficients in the condenser and its hydraulic resistance. As will be seen from the graph given in Fig.3, there were considerable irreversible losses in the Venturi tube; Fig.4. shows the relationship between the losses and the pressure change. From Figs.3. & 4. it can be seen that the resistance of the Venturi tube is about half of the pressure drop that it sets up. The installation of two ejectors in the superheater increased its resistance by more than 6 atms, which greatly reduced the value of this method of regulating superheat. The high relative losses indicated defective construction. The high hydraulic resistance of

Card 3/ 7 the Venturi tube occurred because half the narrow section was taken

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up by the injection nozzle and also its angle was wrong. A new tube without these defects, that was proposed by the Central Boiler Institute, is illustrated in Fig.5. A graph of the irreversible losses in the new tube as a function of steam flow through the tube with maximum injection and with no injection are given in Fig.6. It will be seen that the resistance of the new Venturi is much less and that with a flow of 90-95 tons/hr the resistance was 0.2 - 0.7 atms, depending on the conditions of injection. Apparently the injected water forms a screen that requires considerable energy to break, and the losses might be reduced by injecting the water more in line with the flow of steam. The ratio of the irreversible losses to the pressure difference set up fell from 50% with the original tube to 5 - 20% with the new one. Data on the resistance of the injection nozzles is given in Fig.8. On the boiler investigated the condensate line was not insulated, so that the condensate was cooled by 2 - 4 kcal/kg before injection. This somewhat reduced the possibility of boiling during injection but did not exclude it, because at full load the pressure in the steam pipe at the point of injection was 7.5 atms lower than in the drum. Special comparative tests were made to investigate the influence of the temperature of

 the injected water on the resistance. It was concluded from these

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tests that the nearness of the water temperature to the saturation temperature has no appreciable influence on the nozzle resistance and that the variable resistances observed in the tests were due to fouling of the nozzles. The tests showed that for a given position of the regulating valve the quantity of water injected is in linear relationship to the flow of steam through the Venturi tubes. Pressure variations in the drum influence the amount injected only to the extent that they affected the steam output of the boiler. Thus, when the pressure fell (if this was not due to changes in the furnace operation) the steam output rose and the quantity of water injected also rose, and vice versa. The fear that the water in the condensate line might boil when the pressure in the drum was reduced was unfounded. A year's experience of operating three boilers, and the tests, show that the condensate need not be supercooled, and in Czechoslovakia the supercooling equipment is not used. The extent of evaporation of the injected water in the shielded part of the tube was studied, and was found to be complete under all the operating conditions observed. The given rates of flow of steam (65 m/sec) and water (11 m/sec) are sufficient to evaporate injected condensate up to 15% of the steam flow in a tube length of 5 m. Similar tests were also made in the intermediate superheater of the boiler at a pressure of 23 atms with injection by pumps directly into the steam

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pipe. The steam velocity at the point of injection was 35 m/sec. If the rate of injection is more than 3% a water film is formed at a section 5 m from the point of injection. The operating conditions of the condenser in this system are the same as in ordinary steam coolers; heat-transfer takes place from condensing steam flowing over transversely-arranged tubes to water moving in the tubes. A special feature is the high water speed of 4 - 5 m/sec. Design figures for the condenser are given. The water resistance is quite small, being only 0.8 atms at 4 m/sec. It is concluded from a year's operating experience with three boilers and from the tests, that this method of injecting condensate is simple, reliable and a fairly economical method of regulating superheat. Injection can take place at any point in the superheater. Temperature control is satisfactory and can be made automatic. The total power losses arise from the resistances of the condenser and the ejector equipment and are about 1.5 - 2 atms. These losses may be reduced by directing the injected water along the flow of steam. The equipment itself is very simple though it is necessary to increase somewhat the dimensions of the economiser. The weight of the equipment is about 7 tons of metal

Experience with the application and testing of a steam superheat control system with injection of condensate produced in the boiler.

for every 100 tons/hr of boiler output. The system can be recommended for boilers of over 100 tons/hr installed in Heat and Electric Power Stations using large quantities of chemically-treated make-up water. There are 8 figures and 2 literature references (Soviet)

ASSOCIATION: TsKTI

1. Steam power plants - Control systems 2. Control systems - Applications 3. Control systems - Test results

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SOV/96-59-7-10/26

AUTHOR: Semenovker, I.Ye., Candidate of Technical Sciences

TITLE: Operating Conditions of a Radiant Super-heater Arranged over the Entire Height of the Furnace (Usloviya raboty radiatsionnogo peregrevatelya raspolozhennogo po vsey vysote topki)

PERIODICAL: Teploenergetika, 1959, Nr 7, pp 41-45 (USSR)

ABSTRACT: The special advantages of radiant super-heaters when steam conditions are high are explained. Data is tabulated to show that the heat transfer to a radiant super-heater is increased as the steam conditions, fuel dryness and air temperature are increased. The limitations of screen-type super-heaters are described. Radiant super-heaters show to best advantage when arranged over the entire height of the furnace. However, there are some doubts about the reliability of this arrangement, particularly in respect of the parts of the super-heater near the flame. This article describes test results on such a super-heater, used in a boiler of 110 tons/hour with steam conditions of 105 atm and 500°C, burning anthracite fines and heavy

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Operating Conditions of a Radiant Super-heater Arranged over the Entire Height of the Furnace

fuels. The furnace has four burners on the front wall. The radiant super-heater panels are on the rear surfaces of the side walls. The lower parts of the panels are covered with a layer of chromite. Steam from the drum is delivered to the left-hand panel, through which it descends and then rises in the right-hand panel. The panels are 15.8 metres high and 2.8 metres wide; other design data are given. The arrangement of thermo-couples used in making the tests is described. A diagram of the temperature differences between the steam and the tube wall, at points round the perimeter of the tube, are given in Figure 1. This relates to a tube 3.5 metres above the burner axis in a boiler burning anthracite fines at a loading of 90 x 10^3 kcal/m^3 hour. It will be seen that the greatest difference between the metal and steam temperatures is 84°C, which corresponds to a local thermal loading of 170 x 10^3kcal/m^{2}hour. The tube metal temperature was not uniform across the width of the panel but

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increased towards the back of the furnace because of the way that the flame was distributed. Graphs of changes in tube wall temperature arising from disturbances in the operating conditions of the boiler are given in Figure 2. These curves were made during an alteration of from 50 to 90 tons per hour accompanied by a change-over from fuel oil to pulverised fuel. It will be seen that the temperature variations on the fronts of the tube are quite large. It was found that the temperature conditions at the tube became much worse when the flame was brought near them. On one boiler the radiant super-heater was on the same wall as the burners and when the flame root was artificially brought near to this wall by reducing the secondary air supply, the tube wall temperature increased to over 600°C. Conditions during lighting-up of the furnace and initial steam-raising are considered. Cooling of the super-heater by steam and by water are compared in some detail and it is shown that both methods are effective; the steam method is simpler but cannot be used in unit-type sets because no steam supply is available. Water cooling involves consider-

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able structural and operating complications. In one of the boilers investigated the super-heater panels were a arranged in the corners of the furnace chambers on the same wall as the burners. The steam temperature was then found to depend on the arrangement of the flame in the furnace. Graphs of variation in super-heated steam temperatures are shown in Figure 5 for various arrangements of burners with constant steam outputs. It is suggested that in order to obtain a stable temperature-characteristic it would be better to arrange the super-heater tubes over the entire width of the wall between the evaporator screen tubes. It is concluded that a radiant super-heater arranged over the whole height of the furnace and made of low-alloy steel type 12KhMF can operate quite reliably in boilers with a pressure of 100 atms with steam flow rates in the tubes of 700 - 1 000 kg/m²sec and a steam temperature beyond the super-heater of 400°C. It has been calculated that under these conditions a radiant super-heater on the furnace wall

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can also operate at a pressure of 140 atms. The rate of flow of steam in the tubes during the initial period of firing should be of the order of 250 kg/m^{2}sec. The radiant super-heater increases the variations in the super-heated steam temperature during transient and unstable boiler operating conditions.
There are 5 figures and 1 table.

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