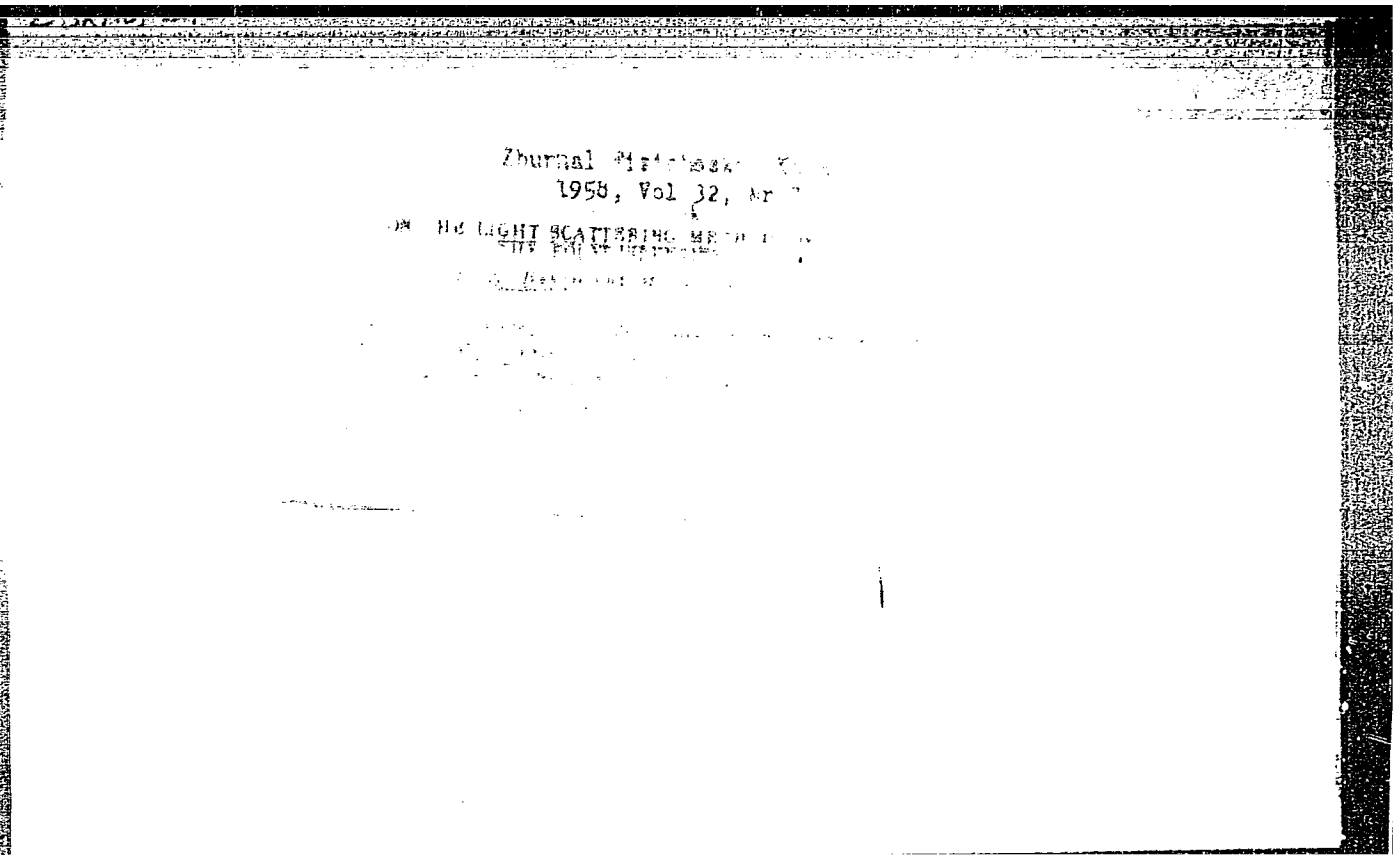

Zhurnal
1958, Vol 32, Nr
ON THE LIGHT SCATTERING

ESKIN, B.Ye.

Light diffusion indicator for polymer solutions and volumetric effects. Vysokom.soed. 1 no.1:138-142 Ja '59. (MIRA 12:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR, Leningrad.
(Polymers) (Light--Scattering)

ESKIN, G.G.; BOGDANOV, I.B.

Method of manufacturing straps for women's summer open shoes.
Obm. tekh. opyt. [MLP] no.37:3-7 '57. (MIRA 12:9)
(Shoe manufacture)

ESKIN, G.G.

Change in stamping head design of the "Svit" firm's machines used for stamping shoe parts. Obm. tekh. opyt. [MLP] no.37:7-8 '57. (MIRA 12:9)

(Shoe machinery)

ESKIN, G.G.

Clamp equipped with spring support for the Class 36 stitching machine. Obm. tekh. opyt. [MLP] no.37:8-9 '57. (MIRA 12:9)
(Shoe machinery)

BOGDANOV, I.B.; ESKIN, G.G.

Guiding support for the Class 34 PMZ stitching machine used for stitching inner belts to the lining. Obm. tekh. opyt. [MLP] no.37: 9-10 '57. (MIRA 12:9)

(Shoe machinery)

ESKIN, G.G.

Apparatus for cleaning uppers and dyeing edgings of shoes.
Obm. tekh. opyt. [MLP] no.37:11-12 '57. (MIRA 12:9)
(Shoe machinery)

ESKIN, G.G.

Attachment to the "Svit" universal heel press for controlling the filling of the matrix with nails. Obm. tekh. opyt. [MLP] no.37:20-21 '57. (MIRA 12:9)

(Shoe machinery)

Influence of ultrasonic vibrations on dispersion hardening and processes in the tempering of several alloys. [illegible] Pogodina-Alekseeva and G. I. Esk[illegible] Metalloved. [illegible] Metallov 19[illegible] No. [illegible] [illegible] Specimens of [illegible] V95 contg. Zn 5.5, Mg 1.95, Cu 1.[illegible], Mn [illegible]45 [illegible] Si 0.10% in the form of disks 14 mm in diam. and [illegible] high were water quenched from 470 ± 5° and then placed in an oil bath where they were subjected to vibrations of [illegible] cycles/sec. at a specific power of 1.6 w./sq. cm. from quartz crystal. Tests were made at 20 and 125°. At 20 the specimen was placed on the crystal. At 125° the crystal was placed on the specimen which was on a supporting member in the oil bath. The as-quenched Brinell hardness was 85. The increase in hardness with time under the action of the ultrasonic vibrations was similar to that of untreated specimens except that the hardness was about 20 units higher. Even when the ultrasonic energy was cut off after about 70% of the total hardening had occurred, the curve for the treated specimen continued to rise almost as fast as that for the untreated specimen. The results at 125° were similar except the treated specimen was about 10 units harder. Thus, ultrasonic vibration improved the results obtained during aging treatments. The effect of ultrasonic vibration on the tempering process in steel U8 contg. [illegible]5% C was to produce a higher hardness. The hardness after 30-min. tempering at 350° was $52R_c$ in a treated specimen and 49 in an untreated specimen. The ultrasonic beam caused little temp. rise in the specimens. A. G. Guy

2

20

On the effect of ultrasonics on the primary crystallisation of aluminium alloys.

macro-structure during primary crystallisation of the above mentioned aluminium alloy in gypsum moulds. Ultrasonic oscillations acting on the solidifying aluminium melt improve the mechanical properties, whereby the strength and hardness increase to a larger extent than the ductility. The method is promising for manufacturing highly stressed small size components.
There are 5 figures, 2 tables and 8 references, 7 of which are Slavic.

SUBMITTED: June 29, 1957.

AVAILABLE: Library of Congress.

Card 2/2

On the Approximation of Abstract Continuous Functions by Unbounded Operator Functions 20-5-4/48

Theorem 2: Let $A(q)$ satisfy the conditions of theorem 1 and let dim $H_1 <$ dim H_2. In order that for every function $f(q)$ continuous on Q with the values in H_2 there exists a unique function $A(q)x_0$ approximating best the function $f(q)$ in Q, it is necessary and sufficient that the equation $A(q)x = \theta_2$ for $x \neq \theta_1$ has no root on Q.

A further theorem contains the transfer of earlier results of the author [Ref 4,5] to operator functions. The two last theorems of the paper give the assertions in Banach spaces corresponding to the theorems 1 and 2. Five Soviet references.

PRESENTED: By N.N.Bogolyubov, Academician, April 26, 1957
ASSOCIATION: Lutsk State Pedagogical Institute imeni Lesya-Ukrainka (Lutskiy gosudarstvennyy pedagogicheskiy institut im. Lesi Ukrainki)
SUBMITTED: April 24, 1957
AVAILABLE: Library of Congress

Card 2/2

SOV/24-58-9-4/31

AUTHORS: Al'tman, M.B., Vinogradova, D.V., Slotin, V.I. and Eskin, G.I.

TITLE: The Effect of Elastic Ultrasonic-frequency Vibrations on the Processes of De-gassing Aluminium Alloys (O vozdeystvii uprugikh kolebaniy ul'trazvukovoy chastoty na protsess degazatsii alyuminiyevykh splavov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 9, pp 25 - 30 (USSR)

ABSTRACT: When elastic vibrations of ultrasonic frequency are induced in a molten metal, the resulting excitation phenomena leads to breaks in the continuity of the liquid phase and to the formation of voids which tend to be filled with the gas dissolved in the melt. Thus, the elastic vibrations of sonic and particularly ultrasonic frequency promote the nucleation of gas bubbles, their subsequent growth and coalescence into bubbles large enough to rise up spontaneously to the surface of the liquid phase. The present paper describes the results of experiments in which this effect of ultrasonic vibrations was utilised for removing hydrogen from an aluminium alloy (AL20) containing 2% Cu, 0.8% Mg, 2.5% Si, 1% Ni, 1% Fe and 0.1% Ti. A 10 kW self-exciting

Card1/3

The Effect of Elastic Ultrasonic-frequency Vibrations on the Processes of De-gassing Aluminium Alloys

generator was used as the source of the high-frequency electromagnetic (20 kc/s) vibrations. These were converted into mechanical vibrations by means of a magnetostrictive converter which is described in detail and shown schematically in Figure 1. Finding a suitable material for the probe (the part transmitting the mechanical vibrations to the melt) presented the main difficulty in the construction of the converter. The cavitation effects in the liquid surrounding the probe resulted in sudden changes of the pressure causing micro-explosions which in a very short time led to a failure of the probe due to erosion. Fused quartz, steel, steel with copper and a titanium alloy end plates and a titanium alloy VT1 were tried. The VT1 alloy was found to be most durable, although this alloy was also eroded to some extent, as shown by the fact that the Ti content of the melt subjected to ultrasonic vibrations for 23 min increased from 0.1 to 0.3%. The degree of de-gassing was determined qualitatively by watching the number and size of the gas bubbles given off in the moment of its solidification by a small sample of the molten metal ladled from the melt with an iron

The Effect of Elastic Ultrasonic-frequency Vibrations on the Processes of De-gassing Aluminium Alloys

spoon and placed under an evacuated glass bell (residual pressure - approx. 0.5 mm Hg). In addition the macro-structure of the solidified samples was examined and the effect of the ultrasonic vibrations treatment of various durations on the gas porosity of the investigated alloy is shown in Figures 2 - 4. Increasing the energy of the ultrasonic vibrations did not affect the results of the experiments. With the average energy output of 1 kW, 5 min treatment of the melt at 720-730 °C was sufficient to obtain an alloy free from gas porosity. There are 4 figures, 1 table and 10 references, 2 of which are Soviet, 7 German and 1 English.

SUBMITTED: May 15, 1958

Card 3/3

SOV/180-59-3-15/43

AUTHORS: Al'tman, M.B., Slotin, V.I., Stromskaya, N.P. and Eskin, G.I., (Moscow)

TITLE: Change in the Structure and Properties of Aluminium and its Alloys Produced by Ultrasonic Treatment

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 88-91 (USSR)

ABSTRACT: An ultrasonic vibrator UZG-10 was used together with a magnetostriction transducer PMS-9. Alloys tested were A-00 (pure Al), AL-9 (Al-Si-Mg) and high strength AL-20 (Al-Si-Cu-Mg). They were subjected to ultrasound of up to 6-7 W/cm^2 intensity and 19-20 kc/s frequency. Fig 1 shows photographs of macrostructures of A-00 and Al-20 before and after ultrasonic treatment. Micro-structures are given in Fig 2 and here the differences are less noticeable. Mechanical properties, density and Ti content are given in the table. This shows that ultrasonic vibrations are very effective in degassing aluminium melts giving ingots of higher density. Mechanical properties are also improved by ultrasonic vibrations eg the tensile strength of Al-9 is increased from 18.8 to 20.2 kg/mm^2; density and the yield point are also increased. Similar increases are observed for

Card 1/2

Change in the Structure and Properties of Aluminium and its Alloys Produced by Ultrasonic Treatment

other alloys. Ultrasonics were introduced through metal waveguides which were immersed in molten (720-730°C) aluminium. The waveguides were gradually corroded by cavitation and diffusion into molten aluminium. This corrosion effect can be used to introduce refractory materials such as Ti, V, Zr into aluminium and its alloys by using Ti, V, Zr etc as waveguide material. Fig 5 shows the time rate of increase of the Ti content in A-0-0, AL-20 and AL-9 when a Ti waveguide was used. The results obtained are confirmed by X-ray analysis (Fig 3) which showed that ultrasonic vibrations caused grain refinement and polygonisation. There are 5 figures, 1 table and 3 references, 1 of which is English and 2 Soviet.

SUBMITTED: March 4, 1959

ESKIN, Georgiy Iosifovich; AL'TMAN, M.B., red.; EL'KIND, L.M., red. izd-va; EVENSON, I.M., tekhn. red.

[Ultrasonics in metallurgy; improving the structure and properties of metals and alloys]Ul'trazvuk v metallurgii; uluchshenie struktury i svoistv metallov i splavov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii,1960. 46 p. (MIRA 14:9)
(Ultrasonic waves—Industrial applications) (Metallography)

S/137/62/000/004/032/201
A006/A101

18 1210

AUTHOR: Eskin, G. I.

TITLE: The use of ultrasonic oscillations for degassing aluminum alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 34, abstract 4G216 (V sb. "Primeneniye ul'trazvuka i tekhnol. mashinostr." no. 2, Moscow, 1960, 181-190)

TEXT: The author investigated degassing by ultrasonic oscillations of some Al-alloys and pure commercial Al. The experiments were made on a unit consisting of a УЗГ-10 (UZG-10) generator and a ПМС -7 (PMS-7) converter. The oscillation frequency was about 19 - 20 kilocycles, oscillation intensity was 7 - 8 watt/cm^2 at minimum anodic voltage and up to 11 - 12 watt/cm^2 at the maximum. The degree of metal degassing was checked by vacuum samples. From the intensity of liberation of gas bubbles in the vacuum, a point scale was established ranging from 1 point (without liberation) to 5 points (liberation of $>$ 100 bubbles). The optimum degassing conditions which make it possible to obtain point 1 from 5 are: ultrasonic treatment at minimum power for 8 minutes, and 4 - 5 minutes

Card 1/2

S/137/62/000/004/032/201
A006/A101

The use of ultrasonic oscillations ...

standing. Sand or investment-cast specimens made of an ultrasonic-treated alloy show higher mechanical properties. Instruments made of Nb proved to be most suitable in operation, and resistant in Al-alloy melts.

L. Vorob'yeva

[Abstracter's note: Complete translation]

Card 2/2

30905
S/180/61/000/005/017/018
E021/E180

18.7500

AUTHORS: Eskin, G.I., and Fridlyander, I.N. (Moscow)

TITLE: The effect of ultrasonic vibrations on the shape and size of crystals of intermetallic compounds in aluminium alloys

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.5, 1961, 109-112

TEXT: The effect of ultrasonic vibrations (frequency 19-20 k.c.p.s., intensity 17-19 W/cm^2) on the size and shape of intermetallic compounds of aluminium with manganese, chromium and zirconium has been studied. The ultrasonic vibrations were produced by a magnetostriction device. The cast samples were subjected to a quantitative metallographic examination. The vibrations reduced the length of Al6Mn crystals in an alloy containing 3% Mn by a factor of 45-50 when cast in a heated graphite mould (cooling rate 5 °C/min) and by a factor of 20-25 when cast in a chill mould (cooling rate 30°/min). Since low cooling rates produce bigger crystals, the final lengths of the crystals obtained [illegible] cooling rates was about the same. Slow cooling

produced more uniform crystals. The beneficial effect of ultrasonic treatment is retained through the extrusion process. Thus extruded rods of Al - 3% Mn alloy show an increase in yield point from 14-16 to 17-19 kg/mm^2. Similar results were obtained with alloys containing 1% Zr or 0.8% Cr. The ultrasonic field can be used for dispersing brittle platelets of large size in the zone of solidification. The action of ultrasonic vibrations can be explained by fluctuations of energy and density resulting from alternate pressure waves. This breaks up the large crystals and creates conditions for the formation of a large number of nucleating centres. Thus, ultrasonic vibrations enable better quality castings and the possibility of using them in both continuous and semi-continuous casting should be explored. The proposed mechanism of the action of ultrasonic energy should be regarded as a preliminary one. Further experimental work is necessary to obtain a full explanation. There are 3 figures and 11 references: 7 Soviet-bloc and 4 non-Soviet-bloc. The English language references read as follows:

Ref.7: P.D. Southgate. Action of Vibration Solidifying Aluminium Alloys. J. Metals, 1957, v.9, No.9.
Ref.9: P.J. Barton, G.W. Guenwood. The shape, size and growth of some intermetallic compounds in liquid bismuth. J. Inst. Metals, 1958, v.86, August.

SUBMITTED: May 5, 1961

Card 3/3

S/724/61/000/000/016/020

AUTHORS: Al'tman, M. B., Slotin, B. I., Stromskaya, N. P., Eskin, G. I., Loktionova, L. I.

TITLE: The degassing of Aluminum and its alloys by ultrasonic vibrations.

SOURCE: Liteynyye alyuminiyevyye splavi; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Al'tman. Moscow, Oborongiz, 1961, 134-143.

TEXT: The paper describes an experimental investigation which deals with the use of ultrasonic (US) vibrations in the degassing of Al and its alloys. A brief state-of-the-art survey is presented. The equipment involved comprising a magnetostrictive transformer, a concentrator, a wave-guide, and a crucible containing the melt are shown in a cross-sectional diagram. The metals tested by means of US vibrations comprised pure Al of grade A00, a medium-strength alloy with good casting properties, namely AA9 (AL9), an Al-Si-Mg alloy, and a high-strength cast alloy, AA20 (AL20), an Al-Si-Cu-Mg alloy. Following the US treatment, the alloys were cast in sand molds, and tensile specimens 10-mm diam and various practical parts were cast. The parts were subjected to X-ray transillumination and hydraulic tests under a 10-at pressure. An empirical gas-content scale was

Card 1/2

adopted based on the segregation of gas bubbles at the moment of crystallization under vacuum, ranging from 5 points for intensive segregation of gas along the specimen surface to 1 point for crystallization without any visible segregation of gas. In addition, the vacuum specimens were cut in two, and the macrostructure of the sections was inspected after etching with a 10% solution of NaOH. The US treatment of the Al and its alloys was found to be an effective method for degassing. US treatment of an alloy prior to pouring into a mold increases the density and improves the mechanical properties of the castings. The properties are summarized in a full-page table. It was found that during US treatment of an alloy the alloy becomes saturated with the material of certain vibrators (for example, Mo) as a result of their dispersion under the action of the elastic vibration and of the temperature. It is suggested that this phenomenon may be usefully employed to produce intentional inoculation and alloying of the alloys. It is established that Nb is the most stable material for wave-guides, so that it may be recommended for the making of wave-guides from which no inoculation is to occur. There are 4 figures, 2 tables, and 5 references (2 Russian-language Soviet and 3 German-language). Thanks are expressed to the late G. M. Rovenskiy and to G. V. Zhevakina for the performance of the X-ray investigation.

S/724/61/000/000/020/020

AUTHORS: Slotin, V.I., Eskin, G.I.

TITLE: Method for the improvement of the quality of Aluminum-alloy precision castings.

SOURCE: Liteynyye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I.N. Fridlyander and M.B. Al'tman. Moscow, Oborongiz, 1961, 171-180.

TEXT: The paper describes an experimental investigation of precision-casting methods for such complex precision items as rotor disks of aviation air-conditioning and cooling turboblowers, which require a close balance for high-rpm operation, a high ratio of the yield limit to the specific gravity, and which necessitate the use of twisted and variable blade profiles which make the advantages of casting over milling especially conspicuous. The paper endeavors to shed light on various problems of the process regimes of the smelting and the pouring of cast Al alloys in vacuum and with the application of ultrasonic (US) vibrations to obtain high-grade rotor-disk castings. The AL9 alloy employed in this investigation is highly suitable for casting but requires a thorough degassing because of its tendency to absorb H during smelting. Also, the AL9 is strength-limited, both at room temperature (T) and at T of the order of 300°C. The investigation, therefore, covered also the AL19 alloy.

Card 1/2

which exhibits the highest strength of any alloy tested at room T and which also excels by its stress-rupture strength at high T, which however has a tendency toward the formation of microcavities. The investigation, therefore, included the new AL20 alloy (0.8-2.0% Cu, 0.5-1.5% Ni, 2.0-3.0% Si, 0.3-0.8% Mg, 0.8-1.4% Fe, 0.15-0.3% Ti, up to 0.3% Mn, the remainder Al), which was found to be a good compromise alloy for strength and ease of casting. The tests showed degassing by means of the application of US vibration to be the most effective, exceeding by far the quality of the alloys refined by means of volatile chlorides ($AlCl_2$, $ZnCl_2$). The US treatment of the alloy during the process of solidification improves the mechanical properties and the structure of the castings appreciably. The equipment used for the vacuum degassing in the presence of US vibration and the technology of the pouring of AL9, AL19, and AL20 alloys into gypsum molds are described in detail. The mechanical properties of the AL20 alloy, both with and without the action of US vibration, into gypsum molds prior to as well as after heat treatment, are tabulated, and the microstructure of the US-treated and the untreated alloys are shown. A cross-sectional schematic drawing is shown for the equipment used in the combined vacuum and US treatment. There are 7 figures, 3 tables, and 8 references (7 Russian-language Soviet and 1 English-language paper: DePierre, Foundry, v.84, no.12, 1956). The work was performed at the Institute of metal science and physics, TsNIICherMet (Central Scientific Research Institute of Ferrous Metallurgy),conjointly with I. I. Teumin, M. P. Usikov,, and O. N. Guseva.

S/129/62/000/004/005/010
E021/E135

18.7500

AUTHORS: Eskin, G.I., Engineer, and Fridlyander, I.N., Doctor of Technical Sciences, Professor.

TITLE: Crystallization of alloys of aluminium and copper under the effect of ultrasonic vibrations

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.4, 1962, 32-36 (+ 1 plate)

TEXT: Alloys containing 0, 2, 4, 6, 12 and 33% Cu were used. Melts 50 °C above the liquidus were cast in a chill mold (solidification at 120-150 °C/min) and in a mold of a gypsum-asbestos mixture (10-40 °C/min). The melts were degassed before casting. Ultrasonic vibrations were applied to the melt from below. The frequency was 19-21 kcs, the intensity 18-20 w/cm^2, the amplitude 18 μ; in addition, a piezoelectric device with frequency 800 kcs and an intensity 10-12 w/cm^2 was used. Macro- and micro-sections were examined, the grain size of the alloys and the microhardness were measured. Tensile tests were made and the Cu segregation was determined by spectral photography.

Card 1/3

Crystallization of alloys of ...

The most effective action of ultrasonic vibrations occurred on the solid solution type alloy. The vibrations resulted in a finer grain and an increase in tensile strength. At higher Cu contents the effect is less pronounced. The presence of a modifier (0.2% Ti in this case) considerably intensifies the effect. Ultrasonic treatment only slightly affects the copper segregation in the alloys studied; however, it accelerates the diffusion of copper during crystallization of the solid solution. The experiments on pure alloys and alloys containing modifying additions confirmed the theory that the ultrasonic vibrations act by breaking up the solid first formed during solidification. However, the possibility is also put forward that the formation of nucleating crystallites may also be accelerated under the action of the energy given to the melt by the ultrasonic waves or by activation of the impurities. It was also shown that ultrasonic vibrations decreased the interdendritic liquation as a result of acceleration of diffusion of copper in the process of crystallization of the solid solution. Ultrasonic vibrations cause marked changes in the microstructures of the alloys,

Crystallization of alloys of ... S/129/62/000/004/005/010
E021/E135

whereas low-frequency vibrations change only the macrostructure.
There are 6 figures and 1 table.

Card 3/3

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

ESKIN, G.I. (Moskva); FRIDLYANDER, I.N. (Moskva); RUBLEVA, M.K. (Moskva)

Formation of structural components in aluminum alloys under the effect of ultrasonic waves. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.1: 109-112 Ja-F '63. (MIRA 16:3)

(Aluminum alloys—Metallography)
(Ultrasonic waves—Industrial applications)

ESKIN, G.I.; SLOTIN, V.I.

Industrial application of ultrasonic waves for the degassing of aluminum alloys. Alium. splavy no.1:139-149 '63. (MIRA 16:11)

L 57542-65 EWT(m)/EPF(c)/EPF(n)-2/EWP(t)/EWP(b) Pr-4/Pu-4 IJP(c) JD/MW/JG

ACCESSION NR: AR5015153 UR/0137/65/000/005/G027/G027

47
44
B

SOURCE: Ref. zh. Metallurgiya, Abs. 5G162

AUTHOR: Eskin, G. I.; Slotin, V. I. ; Kiryushin, G. S.

TITLE: The influence of the material of an emitter of ultrasonic oscillations on the process of degassing aluminum alloys in an ultrasonic field

CITED SOURCE: Sb. Primeneniye ul'trazvuka v mashinostr. Minsk, Nauka i tekhnika, 1964, 69-76

TOPIC TAGS: degassing, aluminum, aluminum base alloy, chemical sorbent, titanium, columbium, tantalum, cerium, zirconium, hydrogen removal, ultrasonic vibration emitter, ultrasonic field

TRANSLATION: A number of experiments were carried out to determine the capacity of several metals (titanium, columbium, tantalum, cerium, and zirconium) to chemisorb hydrogen contained in melts of aluminum and its alloys. For this purpose, 10-12 kilograms of cast aluminum alloy was melted in a crucible

Card 1/3

L 57542-65

ACCESSION NR: AR5015153

3.1

furnace and the metal absorber was introduced into the melt in the form of a thin rod at a temperature of 710-720C. The chemisorbtive effect of titanium was the most effective. Introduction of other metals into the melt produced a smaller effect. The process of absorption of hydrogen from an aluminum alloy by a titanium rod proceeds more energetically at a low temperature of the melt. A titanium rod is capable of absorbing hydrogen from a melt up to determined limits, so long as the average hydrogen content in it is less than or equal to 500-550 cm^3/100 grams, at a melt temperature of 710C. To determine the influence of ultrasonic oscillations on the process of absorption of hydrogen by titanium, a titanium rod was introduced into the melt and then the melt was subjected to the action of ultrasonic oscillations. The effectiveness of ultrasonic degassing increases with an increase in the temperature of the melt, while with the use of a metal absorber a reverse effect is observed. On the basis of the experiments the conclusion is drawn that the effectiveness of degassing with the use of one or another material for the ultrasonic emitter cannot be explained merely by the chemisorptive capacity of the material and the speed of its dispersion in the melt. It is proposed that the main factor which determines the effectiveness of degassing by ultrasonic

Card 2/3

L 57542-65
ACCESSION NR: AR5015153

oscillations is the acoustic properties of the material of the emitter. G. Svodtseva

SUB CODE: MM ENCL: 00

Card 3/3

L 3139-66 EPA(s)-2/EWT(m)/EWP(w)/EWT(c)/SPF(n)-2/T/EWP(t)/ETI(n)
IJP(c) JD/WW/JG/WB

AM5022845 BOOK EXPLOITATION UR/
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Eskin, Georgiy Iosifovich

Ultrasonic treatment of molten aluminum (Ul'trazvukovaya obrabotka rasplavlennogo alyuminiya) [Moscow] Izd-vo "Metallurgiya," 1965. 223 p. illus., biblio. 1895 copies printed.

TOPIC TAGS: aluminum, aluminum alloy, ultrasonic treatment, aluminum ultrasonic treatment, molten aluminum treatment, ultrasonic vibration, ultrasonic equipment

PURPOSE AND COVERAGE: This book is intended for scientific and engineering personnel of machine-building and metallurgical plants and institutes. It may also be useful to students and aspirants specializing in this field of metallurgy. The book discusses problems of the physics and technology of ultrasonic treatment of molten aluminum and its alloys. Although the author used mostly his own findings, he nevertheless attempted to summarize all available theoretical and experimental data on the effect of ultrasound on the structure and properties of aluminum and its alloys. The

Card 1/4

L 3139-66
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book reviews the physical principles of ultrasonic treatment of melts and the results of experimental investigations of degassing and crystallization processes in the ultrasonic field. Methods of bringing elastic vibrations into melts, and the equipment used in the industry for treating molten aluminum with ultrasound are described.

TABLE OF CONTENTS:

Card 2/4

L 3139-66
AM5022845

Card 3/4

L 3139-66
AM5022845

3

SUB CODE: MM SUBMITTED: 14Apr65
NO REF SOV: 199 OTHER: 064

Card 4/4

L 4178-66 EPA(s)-2/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/WW/JG

ACC NR: AP5024393 SOURCE CODE: UR/0286/65/000/015/0073/0073

INVENTOR: Slotin, V. I.; Eskin, G. I.; Kiryushin, G. S. 51 B

ORG: none

TITLE: Method of degassing molten aluminum and aluminum alloy. Class 31, No. 173384

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 73

TOPIC TAGS: degassing, aluminum degassing, aluminum alloy degassing

ABSTRACT: This Author Certificate introduces a method for the degassing of molten aluminum and aluminum alloys. To achieve the most complete degassing and simultaneous alloying, getter metals such as titanium, niobium, zirconium, vanadium, thorium, or lanthanum are added to the molten metal in the form of sponge or chips. [AZ]

SUB CODE: MM/ SUBM DATE: 03Dec63/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4128

Card 1/1 UDC: 669.714.069.84

L 29931-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(l)/EWP(v)/EWP(t)/ETI JD/HM

ACC NR: AP6018011 (A) SOURCE CODE: UR/0413/66/000/010/0126/0126

INVENTOR: Voronin, G. I.; Slotin, V. I.; Zaretskiy, B. S.; Krylov, A. I.; Shvetsov, P. N.; Barannikov, G. I.; Eskin, G. I.

ORG: none

TITLE: Ultrasonic unit for fluxless brazing of metals. Class 49, No. 181967

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 126

TOPIC TAGS: brazing, metal brazing, ultrasonic brazing, brazing unit

ABSTRACT: This Author Certificate introduces a unit for fluxless brazing of metals equipped with a heater and ultrasonic emitter. To increase efficiency, the ultrasonic

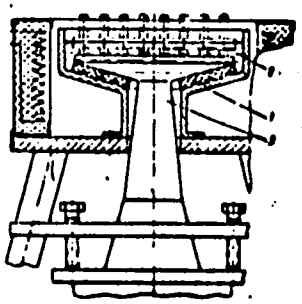

Fig. 1. Fluxless brazing unit

1 - Crucible; 2 - brazing alloy;
3 - ultrasonic emitter.

Card 1/2 UDC: 621.791.351.6.03

L 29931-66
ACC NR: AP6018011

emitter is located inside the crucible containing molten brazing alloy, forming the bottom of the latter (see Fig. 1.). Orig. art. has: 1 figure. [AZ]

SUB CODE: 11,13/SUBM DATE: 29Jan65/ ATD PRESS: 5011

Card 2/2 CC

ESKIN, G.I.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 629
AUTHOR ESKIN G.I.
TITLE On a minimal problem in the space $\mathcal{L}$.
PERIODICAL Doklady Akad. Nauk 111, 547-579 (1956)
reviewed 2/1957

The theorem proved in the present paper is an analogue of a theorem of R.Rado (Math.Z. 63, 486 (1956)).
Theorem: Let $x_1(t), x_2(t), \ldots, x_m(t)$ be linearly independent elements of the space $\mathcal{L}(a,b)$ of the complex-valued functions which on $[a,b]$ are summable with respect to the modul. Let $c_1, c_2, \ldots, c_m$ be complex numbers. Let Φ be the set of kernels $\alpha(t)$ of all linear functionals $f(x) = \int_a^b x(t)\alpha(t)\,dt$ which satisfy the condition $f(x_i) = \int_a^b x_i(t)\alpha(t)\,dt = c_i$ $(i=1,2,\ldots m)$. Then in the set Φ there exists a single kernel $\gamma(t)$ which possesses the following properties:
1. There exists an integer n $(1 \leq n \leq m+1)$ and a splitting up of the interval $[a,b]$ into n sets $N_1, N_2, \ldots, N_n$ with positive measure and pairwise empty

intersection such that $|\gamma(t)| = \varrho_\nu$ almost everywhere on N_ν $(\nu=1,2,\ldots n)$, where $\varrho_1 > \varrho_2 > \ldots > \varrho_n$.

2. For every other kernel $\alpha(t)$ of Φ there exists a non-negative integer ν $(0 \leq \nu \leq n)$ such that $\alpha(t) = \gamma(t)$ almost everywhere on $N_1+N_2+\ldots+N_\nu$ and thereby

$$\varrho_\gamma \geq \|\alpha(t)\|_{N_{\nu+1}+\ldots+N_n} = \operatorname{vrai}\max_{t \in N_{\nu+1}+\ldots+N_n} |\alpha(t)| > \varrho_{\nu+1}.$$

AUTHORS: Eskin, G.I., Zukhovitskiy, S.I. SOV-21-58-4-3/29

TITLE: Some Theorems on the Chebyshev Approximation of Functions with Values Belonging to a Commutative C^*-Algebra (Nekotoryye teoremy o Chebyshevskom priblizhenii funktsiy so znacheniyami v kommutativnom vpolne regulyarnom kol'tse)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 4, pp 368-371 (USSR)

ABSTRACT: A continuous function f(q) on some compact Q is considered with values in the Banach commutative regular ring R with unity (R is a commutative of C^* -algebra with unity) by means of polynomials $\sum_{k=1}^{n} \alpha_k \varphi_k(q)$ .In these polynomials $\alpha_1, \ldots, \alpha_n$ are complex numbers and $\varphi_1(q) \ldots, \varphi_n(q)$ are some fixed continuous functions on Q to R. A polynomial $\sum_{k=1}^{n} \alpha_k^{(0)} \varphi_k(q)$ is sought which satisfies the requirement:

Card 1/3

Some Theorems on the Chebyshev Approximation of Functions with Values Belonging to a Commutative C*-Algebra

$$\max_{q\in Q}\left\|\sum_{k=1}^{n}\alpha_k^{(0)}\varphi_k(q)-f(q)\right\|=\inf_{\alpha_k}\max_{q\in Q}\left\|\sum_{k=1}^{n}\alpha_k\varphi_k(q)-f(q)\right\| \qquad (1)$$

The author formulates three theorems and states that they can be proven, starting from the corresponding theorems of the Chebyshev approximation of numerical functions and the Gel'fand-Naymark theorem [Ref. 3]. The necessary condition is given for the polynomial to be a Chebyshev polynomial as well as the necessary condition for the uniqueness of such a polynomial. A similar problem is then considered, related to the ring engendered by an Hermitian operator in Hilbert space, that is the uniqueness of a polynomial $\sum_{k=0}^{n-1}\alpha_k^{(0)}A^k$ is asserted for which holds the following requirement:

$$\left\|\sum_{k=0}^{n-1}\alpha_k^{(0)}A^k-B\right\|=\inf_{\alpha_k}\left\|\sum_{k=0}^{n-1}\alpha_kA^k-B\right\| \qquad (2)$$

Some Theorems on the Chebyshev Approximation of Functions with Values Belonging to a Commutative C* -Algebra

where A is an arbitrary Hermitian operator in Hilbert space and B is any operator $B \in R(A)$. There are 3 Soviet references.

ASSOCIATION: Lutskiy pedinstitut imeni Lesi Ukrainki (Lutsk Pedagogical Institute imeni Lesya Ukrainka)

PRESENTED: By Member of the AS USSR, N.N. Bogolyubov

SUBMITTED: September 5, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Functions--Theory 2. Polynomials--Applications 3. Complex numbers--Applications 4. Operators (Mathematics)--Applications

AUTHOR: Zukhovitskiy, S.I. and Eskin, G.I. (Lutsk) 20-118-5-5/59

TITLE: Chebyshev Approximation in a Hilbert Ring (O Chebyshevskom priblizhenii v gil'bertovom kol'tse)

PERIODICAL: Doklady Akademii Nauk, 1958, Vol 118, Nr 5, pp 870-872 (USSR)

ABSTRACT: Let $f(q)$ and $\varphi(q)$ be continuous functions on the compact Q with values in the Hilbert ring H. The problem of the Chebyshev approximation of the function $f(q)$ with the aid of the functions $a\varphi(q)$, $a \in H$ consists in determining such an $a^{(0)} \in H$ that

$$\max_{q \in Q} \| a^{(0)}\varphi(q) - f(q) \| = \inf_{a \in H} \max_{q \in Q} \| a\varphi(q) - f(q) \|$$

Let S denote the orthogonal complement in H of the subspace T of the vectors a, for which $a\varphi(q) \equiv \theta$ on Q.
Theorem 1: In order that for each function $f(q)$ continuous on Q the values of which lie in H, there exists an $a^{(0)}\varphi(q)$, it is necessary and sufficient that the smallest closed right ideal containing all the values $\varphi(q)$ is the orthogonal sum of a finite number of certain minimum right ideals $p_1H, \ldots, p_k H$ of the ring H, i.e. $\varphi(q) \in p_1H \oplus \ldots \oplus p_kH$ for all $q \in Q$ or $S = H \ominus T = H p_1 \oplus \ldots \oplus H p_k$, where

Card 1/2

Chebyshev Approximation in a Hilbert Ring; [illegible]-118-5-5/39

$p_1, \ldots, p_k$ are irreducible Hermitian idempotents.

Theorem 2: Let $\varphi(q)$ satisfy the suppositions of theorem 1. In order that each $f(q)$ possesses a unique approximative function it is necessary and sufficient that for all $a \in S$, $a \neq \theta$ the equation $a\varphi(q) = \theta$ possesses no roots on Ω. There are 4 Soviet references.

ASSOCIATION: Lutskiy pedagogicheskiy institut imeni Lesi Ukrainki (Lutsk Pedagogical Institute imeni Lesya Ukrainki)

PRESENTED: September 6, 1957, by N.N. Bogolyubov, Academician

SUBMITTED: September 5, 1957

Theorem: In order that there exists a polynomial of best approximation for every f(q) it is necessary and sufficient that S is finite-dimensional.

Theorem: Let dim S = tl, where t is an integer and l is the number of indices α so that $\varphi_{\alpha_k}(q) \not\equiv 0$ on Q for at least one k=1,2,..,n. In order that there exists a single polynomial of best approximation $\sum_{k=1}^{n} a_k^{(o)} \varphi_k(q)$, $(a_1^{(o)},\ldots,a_n^{(o)}) \in S$ for every f(q) it is necessary and sufficient that every polynomial $\sum_{k=1}^{n} a_k \varphi_k(q)$, $\sum_{k=1}^{n} \|a_k\| > 0$, $(a_1,..,a_n) \in S$ does not vanish in more than t-1 points of Q.

Theorem: Let $\varphi_k(q)$ satisfy the condition that every $\sum_{k=1}^{n} a_k \varphi_k(q)$ $(\sum_{k=1}^{n} \|a_k\| > 0)$ does not vanish in more than n-1 points of Q, where Q has more than n points. Let the function f(q) possess a polynomial of best approximation. In order that

$\sum_{k=1}^{n} a_k^{(o)} \varphi_k(q)$ is this polynomial it is necessary that the deviation $\max_{q \in Q} \left\| \sum_{k=1}^{n} a_k^{(o)} \varphi_k(q) - f(q) \right\|$ is attained in at least n+1 points of Q.

Theorem: In order that every function f(q) possessing a polynomial of best approximation admits only exactly one such polynomial it is necessary and sufficient that every polynomial $\sum_{k=1}^{n} a_k \varphi_k(q)$ $\left(\sum_{k=1}^{n} \|a_k\| > 0\right)$ does not vanish in more than n-1 points of Q.

There are 6 Soviet references.

ASSOCIATION: Lutskiy gosudarstvennyy pedagogicheskiy institut imeni Lesi Ukrainki (Lutsk State Pedagogical Institute imeni Lesya Ukrainka)

PRESENTED: December 4, 1957, by N.N.Bogolyubov, Academician
SUBMITTED: December 2, 1957

16(1)

AUTHORS: Zukhovitskiy,S.I., and Eskin,G.I.

SOV/20-127-6-3/51

TITLE: Some Remarks on the Best Approximation of Differential Equations by Polynomials

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 127,Nr 6,pp 1158-1160 (USSR)

ABSTRACT: In the domain G let be given the system of differential equations

(1) $Lu = f$ $(u = (u_1,\ldots,u_n);\ f = (f_1,\ldots,f_n))$

with the boundary conditions $lu|_\Gamma = \psi$. The approximate solution is sought in the form of a polynomial $u_m = \sum_{k=1}^{m} \xi_k \varphi_k$ for which

$$\inf_{\xi} \max \left\{ \max_{\bar{G}} \left| \sum_{k=1}^{m} \xi_k L\varphi_k - f \right|,\ \max_{\Gamma} \left| \sum_{k=1}^{m} \xi_k l\varphi_k - \psi \right| \right\}$$

is reached. This problem of the Cauchy approximation of a function continuous on a compactum, by a polynomial is reduced to the problem of the best approximation of a system of non-compatible linear algebraic equations by the introduction of sufficiently dense nets on G and Γ so that the algorithm of

Card 1/2

Some Remarks on the Best Approximation of Differential Equations by Polynomials SOV/20-127-6-3/51

[Ref 1,2] is applicable. The uniform convergence of the approximations for an increasing degree of the approximating polynomial is discussed by an example of the Dirichlet problem for the Laplace equation and an other case. The authors give proposals for the choice of the functions φ_k. They mention I.N.Vekua.
There are 3 Soviet references.

PRESENTED: May 8, 1959, by N.N.Bogolyubov, Academician

SUBMITTED: May 3, 1959

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~~16(1)~~ 16.4600 S/038/60/024/01/004/006

AUTHORS: Zukhovitskiy, S.I., and Eskin, G.I.

TITLE: Some Theorems on the Best Approximation by Unbounded Operator Functions

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, Vol 24, Nr 1, pp 93-102 (USSR)

ABSTRACT: The authors consider the existence and uniqueness of the best approximation of a continuous function with values in the Hilbert space and reflexive Banach space, respectively, with the aid of a closed operator function. The results of the paper are already published [Ref 1].
The authors mention S.Ye. Stechkin.
There are 9 references, 6 of which are Soviet, 1 American, 1 Polish, and 1 French.

PRESENTED: December 15, 1958

SUBMITTED: by N.N.Bogolyubov, Academician.

Card 1/1

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S/020/60/133/003/023/031XX
C 111/ C 333

11.4600

AUTHOR: Eskin, G. I.

TITLE: A Sufficient Condition for the Solvability of a Two-Dimensional Problem of Moments

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 540-543

TEXT: Let Φ_1 and Φ_2 be linear spaces with involution, let A and B be linear operators in Φ_1, Φ_2 which are real relative to the involution, i. e. $A\varphi^* = (A\varphi)^*$ for all $\varphi \in \Phi_1$ and similar for B. Let $\Phi = \Phi_1 \otimes \Phi_2$ be the tensor product of Φ_1 and Φ_2. A, B and the involution are defined in Φ in a natural way. Let the scalar product (x,y) be given in Φ, where $(x^*, y^*) = \overline{(x,y)}$ and A, B are symmetric in this scalar product. Let H be the completion of Φ with respect to (x,y). For fixed $\psi_0 \in \Phi_2$ one has the scalar product $(\varphi_1 \otimes \psi_0, \varphi_2 \otimes \psi_0)$ in Φ_1.

Theorem 1: Let the Hilbert space H_{ψ_0} arise by completion of Φ_1 with respect to the scalar product $(\varphi_1 \otimes \psi_0, \varphi_2 \otimes \psi_0)$. Let $\overline{A}_{\psi_0}$ be the closure of A in H_{ψ_0}. Let $\overline{A}_{\psi_0}$ be a self-adjoint operator for every fixed $\psi_0 \in \Phi_2$. Let $\bar{A}$ be the closure of A in H.

Card 1/4

85521 S/020/60/133/003/023/031XX
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A Sufficient Condition for the Solvability of a Two-Dimensional Problem of Moments

Then $\overline{A}$ is a self-adjoint operator and there exists in H a self-adjoint extension $\widetilde{B}$ of B such that $\overline{A}$ and $\widetilde{B}$ commutate in H, i. e. their spectral families commutate.

Theorem 1 generalizes the results of R. S. Ismagilov (Ref.2).

Applications of theorem 1:

1. Let c_{mn} be a double sequence of moments. When does exist (see (Ref.3)) a non-negative measure $\sigma(\lambda, \omega)$ so that

$$c_{mn} = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \lambda^m \omega^n \, d\sigma(\lambda, \omega)$$

(i.e. the two-dimensional moment problem is solvable).

Theorem 2: The two-dimensional moment problem is solvable, if for every fixed n_o the unidimensional problem

Card 2/ 4 $a_m = c_{m,2n_o} + c_{m,2(n_o+1)}$

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C 111/ C 333

A Sufficient Condition for the Solvability of a Two-Dimensional Problem of Moments

is uniquely solvable; then $\sigma(\lambda, \mu)$ is in general not unique.

2. Let $f(x,y)$ be a continuous function which is positive-definite in the sense of Bochner in $[-a, a; -b, b]$.

Theorem 3: If $f(x,0)$ admits a unique continuation onto the whole x-axis as a positive-definite function, then $f(x,y)$ has the representation

$$f(x,y) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} e^{i(\lambda x + \mu y)} \, d\sigma(\lambda, \mu),$$

where $\sigma(\lambda, \mu)$ is a positive measure, in general not uniquely determined, so that $f(x,y)$ can be continued onto the whole plane as a positive-definite function.

The author indicates generalizations of theorem 1 to the case $\Phi = \Phi_1 \otimes \ldots \otimes \Phi_k$, of theorem 2 to the multidimensional case and of theorem 3 to the case $f(x_1, \ldots, x_n)$.

Card 3/4

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C 111/ C 333

A Sufficient Condition for the Solvability of a Two-Dimensional Problem of Moments

A. G. Kostyuchenko and B. S. Mityagin are mentioned.

There are 4 references: 3 Soviet and 1 Swedish.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: March 30, 1960, by S. L. Sobolev, Academician

SUBMITTED: March 25, 1960

Card 4/4

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AUTHORS: Kostyuchenko, A.G., and Eskin, G.I.

TITLE: Cauchy's problem for Sobolev-Gal'pern equations

SOURCE: Moskovskoye matematicheskoye obshchestvo. Trudy, v. 10, 1961, 273 - 284

TEXT: The authors state that Cauchy's problem for a general system of linear differential equations with constant coefficients which is not a Kovalevskaya-type system, i.e. is not soluble with respect to $\partial u/\partial t$ has the form

$$P\left(i\frac{\partial}{\partial x}\right)\frac{\partial u}{\partial t} = P_1\left(i\frac{\partial}{\partial x}\right)u, \qquad (1)$$

$$u(x, 0) = u_0(x), \qquad (2)$$

where $x = (x_1, \ldots, x_n)$, $u = (u_1, \ldots, u_m)$ and P and P_1 are m-order matrices. In the current work uniqueness and correctness classes are constructed for Cauchy's problem for the following cases:

Card 1/5

Cauchy's problem for Sobolev- ...

1) Det $P(\sigma) \neq 0$ for all real $\sigma = (\sigma_1, \ldots, \sigma_n)$; 2) Det $P(\sigma)$ coincides with zero for some real σ, where $P(\sigma)$ is the matrix with polynomial coefficients, obtained from $P(i\partial/\partial x)$ by replacing $i\partial/\partial x$ by σ. In the case when det $P(\sigma) \neq 0$, then there exists a region $G_\mu = \{s = \sigma + i\tau : |\tau| \leq C(1 + |\sigma|)^\mu\}$, in which also det $P(s) \neq 0$. Theorem 1: The solution of Cauchy's problem (1)-(2) with the condition that det $P(\sigma) \neq 0$ for real σ is unique in the class of functions $f(x) \leq Ce^{|x|^{1+\varepsilon}}$ for some $\varepsilon > 0$ if $\mu < 0$ and in the class $f(x) \leq Ce^{a|x|}$ if $\mu \geq 0$. A proof and discussion of this theorem follows. Theorem 2: For some $\lambda > 0$ Cauchy's problem (1)-(2) with the conditions that det $P(\sigma) \neq 0$ and $\Lambda(\sigma) \leq C$ is correct in the class of initial functions $u_0(x)$ having an increase of power not greater than $1 - (n + 1)$ together with derivatives of order up to $r_1 + n$. In the case $\mu_1 \geq 0$, Cauchy's problem is correct in the class of initial functions $u_0(x)$ such that $|u_0^{(q)}(x)| \leq$ ... where $|q| \leq$

Card 2/3

Cauchy's problem for Sobolev- ...

$\leq p + n + 1$ and $a < d$, and the solution $u(x, t)$ in the case $\mu_1 < 0$ has power increase not greater than 1 and in the case $\mu_1 \geq 0$, $|u(x, t)| \leq Ce^{a|x|}$. Here $\Lambda(\sigma) = \max \operatorname{Re} \lambda_j(\sigma) \leq C$. [Abstractor's note: Other symbols not explained]. Theorem 3: Cauchy's problem (1)-(2) with the condition that

$$\det P(\sigma) \neq 0, \quad \Lambda(\sigma) \leq C_1 |\sigma|^h + C_2,$$

where $h < 1$, is correct in the class of infinitely differentiable initial functions $u_0(x)$ which satisfy the conditions

$$|u_0^{(q)}(x)| \leq C A^q q^{q\alpha} e^{b|x|^{\frac{n}{h-|\mu|}}} \quad (q = 0, 1, 2, \ldots)$$

where $1 < \alpha < 1/h$, and the solution

$$|u(x, t)| \leq Ce^{b|x|^{\frac{h}{h-|\mu|}}}$$

Card 3/5

Cauchy's problem for Sobolev- ...

The case when det $P(\sigma)$ becomes zero for some real σ is then considered. In this case Cauchy's problem may not have a solution even for bounded initial functions. An example of this is discussed, and the following theorem is established: Theorem 4: Let the problem (1)-(2) fulfill the following conditions: 1) The real zeros of det $P(\sigma)$ are distributed in a finite region of the real plane; 2) $\Lambda_1(\sigma) = \max_{1 \leq j \leq m} \operatorname{Re} \lambda_j(\sigma) \leq C$ and for sufficiently great σ there exists a strip $|\tau| \leq C_1$ such that $\Lambda_1(\sigma + i\tau) \leq C_2$ in that strip. 3) If det $P(\sigma_0) = 0$ then as $\xi \to \sigma_0$, $\Lambda_1(\xi) \to \infty$. Then Cauchy's problem is correct in the class of initial functions $\varphi_0(x)$ satisfying the following conditions: a) $|u_0^{(q)}(x)| \leq C_\varepsilon e^{\varepsilon |x|^\alpha}$, where $\varepsilon > 0$ is arbitrary, $|q| < r$ and $\alpha < 1$; b) $\varphi_0(\sigma)$ has in the neighborhood of the zeros of det $P(\sigma)$ the form $|\det P(\sigma)|^k \varphi_0(\sigma)$, where $\varphi_0(\sigma)$ is a functional of the type of the functions, and the solution $u(x, t)$

Card 4/5

Cauchy's problem for Sobolev- ...

satisfies the estimate $|u(x, t)| \leq C_\varepsilon e^{\varepsilon |x|^\alpha}$ and $\widetilde{u(x, t)}$ is a fun-
tional of the type of the functions in the neighborhood det $P(\sigma)$
= 0. There are 7 references: 4 Soviet-bloc and 3 non Soviet-bloc.
The references to the English-language publications read as fol-
lows: L. Hörmander, On the theory of general partial differential
operators, Acta math. 94, 1955, 161 - 248. A. Seidenberg, A new de-
cision method for elementary algebra. Ann. of Math. (2) 60, 1954, 7.
L. Hörmander, On the division of distributions by polynomials. Arkiv
für Math. no 6, 1958 555 - 568.

SUBMITTED: June 12, 1960

Card 5/5

16.3500

S/044/62/000/002/023/092
C111/C333

AUTHOR: Eskin, G. I.

TITLE: On the uniqueness of the solution of the Cauchy problem for equations which are not of Kovalevskaya type

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 54-55, abstract 2B245. ("Tr. Mosk. matem. o-va", 1961, 10, 285-295)

TEXT: For the equation

$$\sum_{k=0}^{m} P_k \left(i \frac{\partial}{\partial x} \right) \frac{\partial^k u}{\partial t^k} = 0 \qquad (1)$$

where x is a spatial variable, the Cauchy problem

$$u(x,0) = \frac{\partial u(x,0)}{\partial t} = \ldots = \frac{\partial^{m-1} u(x,0)}{\partial t^{m-1}} = 0 \qquad (2)$$

is considered. Let $\lambda_j(s)$ $(j = 1,\ldots,m)$ be the roots of the

Card 1/3

On the uniqueness of the solution ...

characteristic polynomial $\sum_{k=0}^{m} \lambda^k P_k(s)$. Let the equation (1) be correct according to Petrovskiy: $\Lambda(\sigma) = \max \operatorname{Re} \lambda_j(\sigma) \neq 0$ for real σ. Let $P_m(s)$ possess the real zeros s_i. The problem (1), (2) can be written as follows:

$$\ldots A_1\left(i\frac{\partial}{\partial x}\right)\frac{\partial \bar{u}}{\partial t} = A_2\left(i\frac{\partial}{\partial x}\right)\bar{u}, \qquad (3)$$

$$\bar{u}(x,0) = 0 \qquad (4)$$

where

$$\bar{u} = (u, \partial u/\partial t, \ldots, \partial^{m-1} u/\partial t^{m-1})$$

and A_1, A_2 are $m \times m$ matrices. The polynomials $P_m(s)$ and $\det A_2(s)$ are assumed to possess no common real zeros. For $s \to s_i$ it holds

$$\lambda_j(s) \ldots a_{ij}(s - s_i)^{\ldots} \delta_{ij}$$

Card 2/3

On the uniqueness of the solution . . . S/044/62/000/002/025/052
C111/C333

Let $p = \min_i (\max_j a_{ij})$. Under the given assumptions the solution of (1), (2) is unique in the class $|u(x,t)| \leq C_1 e^{C_2 |x|^k}$, where $k = p/(p+1)$. A. G. Kostyuchenko and the author have formerly proved that the solution of problem (3), (4) is unique under an additional restriction relative to the structure of $u(x,t)$ (Ref. 2B244).

[Abstracter's note: Complete translation.]

Card 3/3

ESKIN, G.I.

Generalization of the Paley--Wiener--Shvarts theorem. Usp. mat. nauk 16 no.1:185-188 Ja-F '61. (MIRA 14:6)
(Functions, Analytic)

S/199/62/003/006/001/002
B172/B112

AUTHOR: Eskin, G. I.

TITLE: A boundary value problem for an equation $\frac{\partial}{\partial t} P\left(\frac{\partial}{\partial t}, \frac{\partial}{\partial x}\right)u = 0$ in which $P\left(\frac{\partial}{\partial t}, \frac{\partial}{\partial x}\right)$ is an elliptic operator

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 3, no. 6, 1962, 882-911

TEXT: The boundary value problem $\frac{\partial}{\partial t} P\left(\frac{\partial}{\partial t}, \frac{\partial}{\partial x}\right)u = 0$, (1)

$$u|_{\Gamma} = \varphi_0(\xi), \ldots, \left.\frac{\partial^{m-1}u}{\partial n^{m-1}}\right|_{\Gamma} = \varphi_{m-1}(\xi), \left.\frac{\partial^m u}{\partial n^m}\right|_{\Gamma/2} = \varphi_m(\xi) \quad (2)$$

is considered in a limited convex domain G with the boundary Γ; n denotes the normal of Γ, and $\Gamma/2$ the upper (or the lower) part of Γ which is limited by two tangents to Γ, parallel to the t-axis (parts of Γ running in parallel to the t-axis do not belong to $\Gamma/2$). $P(\lambda,\sigma)$ is an elliptic polynomial of order 2m, i. e. for the main part P_0 of P, $P_0(\lambda,\sigma) \neq 0$ for real λ and σ. $P_0(\lambda,i\sigma)$ should not have multiple zeros. If P has complex coefficients then $P(\lambda,i\sigma) = 0$ should have roots $\lambda_1(\sigma), \ldots, \lambda_m(\sigma)$ with

Card 1/2

A boundary value problem for...

Re $\lambda_j(\sigma) \leq -C_1|\sigma| + C_2$, $C_1 > 0$ for real σ. The following postulates are made for the solutions u: (1) all derivatives of u contained in (1) are continuous in D; (2) for each $p(0 \leq p \leq m)$, $\frac{\partial^p u(x,t)}{\partial x^i \partial x^j}$ and $\frac{\partial^{m+1} u}{\partial x^i \partial t^{j+1}}$ are continuous in the closed domain $\bar{D}(i+j=p)$. Proofs for the existence and uniqueness are given for the following cases: (1) $P(\lambda,\sigma)$ is homogeneous and has real coefficients; (2) $P(\lambda,\sigma)$ is a formally symmetrical operator with real coefficients for which the corresponding Dirichlet problem has a unique solution; (3) $P(\frac{\partial}{\partial t},\frac{\partial}{\partial x})$ is an arbitrary elliptic operator. Furthermore, under the conditions (2) also equations $P_1(\frac{\partial}{\partial t})P(\frac{\partial}{\partial t},\frac{\partial}{\partial x})u = 0$ are considered where P_1 is an arbitrary polynomial of $\frac{\partial}{\partial t}$.

SUBMITTED: March 27, 1961

Card 2/2

ESKIN, G.I. (Moskva)

Boundary value problems for equations with constant coefficients on a plane. Mat. sbor. 59 (dop.):67-104 '62. (MIRA 16:6)
(Boundary value problems) (Differential equations)

ESKIN, G.I. (Moskva)

General boundary value problems for equations of the main type in two independent variables. Mat. sbor. 59 (dop.):105-124 '62.
(MIRA 16:6)

(Boundary value problems)
(Differential equations, Partial)

DIKOPOLOV, G.V. [deceased]; GRUSHIN, V.V.; ESKIN, G.I.

Boundary value problems for differential equations with constant coefficients in a half-space. Mat. sbor. 59 (Supp.):215-228 '62. (MIRA 16:6)

(Boundary value problems) (Differential equations)

ACCESSION NR: AP4022946 S/0020/64/155/001/0024/0027

AUTHOR: Vishik, M. I.; Eskin, G. I.

TITLE: Boundary value problems for general singular equations in a bounded space

SOURCE: AN SSSR. Doklady*, v. 155, no. 1, 1964, 24-27

TOPIC TAGS: singular integral, integral equation, singular equation, boundary value problem, elliptic equation, analysis, integrodifferential equation, theory of functions

ABSTRACT: An equation of the type

$$K\varphi \equiv K_\alpha\varphi + T\varphi \equiv \int_G K_\alpha(x, x-y)\varphi(y)\,dy + \int_G T(x, y)\varphi(y)\,dy = F(x), \quad (1)$$

where $x \in G$ is examined in a bounded domain $G \subset R^n$ with sufficiently smooth boundary Γ. In this particular case, $K_\alpha(x,z)$ and $T(x,z)$ are generalized functions with respect to z, smoothly dependent upon x, and the integrals in (1) are understood in the sense of the theory of generalized functions. The following conditions are assumed: (a) $\widetilde{K}_{x\alpha}(x, \xi)$, and (b) that the analogue of ellipticity condition $\widetilde{K}_{x\alpha}(x, \xi) \neq 0$ for all $\xi \neq 0$, $x \in G \cup \Gamma$, is fulfilled. When $\alpha = 0$, the equation

Card 1/3

ACCESSION NR: AP4022946

is a singular integral equation in the bounded space G. In par... (1) can be an elliptic differential equation. However, equation ... see elliptic integral differential equations and the case ... rational function with respect to ξ. The first homogeneous ... lem is to find a solution to equation (1) from $B_{H(x)}$. The ope... maps $H_{(x)}$ in $H_{(x)-\alpha}$. The operator $K = K_\alpha + T$ is the Φ operator from $H_{(x)}$ into $H_{(x)-\alpha}$ when conditions (a) and (b) are fulfilled. Under these conditions, equation (1) is normally soluable and the estimate

$$\|\varphi\|_{H} \leqslant C\,(\|f\|_{H-\alpha} + \|\varphi\|_{H-1}), \quad \varphi \in H_{(x)}, \quad \text{holds true.}$$

The nonhomogeneous first boundary value problem is normally soluable, i.e. the operator $K\varphi = (F, f(x))$ is the Φ -operator from $H_{(x)}(R^n)$ into $[H_{(x)-\alpha}(G), H_{(x)}(R^n \setminus G)]$. Analogous methods were used to ... system of singular equations and their application to boundary value proble... with discontinuous boundary conditions. All the results were transferred to ... case of singular equations of the parabolic type. In this particular case, general mixed boundary value problems were studied. Orig. art. has: 12 equations.

Card 2/3

ACCESSION NR: AP4022946

ASSOCIATION: none

SUBMITTED: 06Nov63 ENCL: 00

SUB CODE: MA NO REF SOV: 006 OTHER:

Card 3/3

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

ACCESSION NR: AP4036709 S/0020/64/156/002/0243/0246

AUTHOR: Vishik, M. I.; Eskin, G. I.

TITLE: Singular elliptic equations and systems of variable series

SOURCE: AN SSSR. Doklady*, v. 156, no. 2, 1964, 243-246

TOPIC TAGS: closed manifold, singular elliptic equation, variable series, space function, boundary value, finite region, complementary potential, Fourier conversion

ABSTRACT: The authors studied equations representing a closed manifold and the space function of a variable series of evenness. The boundary value problem for singular elliptic equations in a finite region was examined, where the finite region was equated by $G \subset R^n$ having a smooth boundary. Problems with complementary potentials were investigated using

$$L_{\alpha(x)}\left(u(x) + \sum_{k=1}^{|M|} G_k g_k(x')\right) = f(x),\ x \in G,\ x' \in \Gamma \qquad (8)$$

Orig. art. has: 12 equations and 5 theorems.

Card 1/2

ACCESSION NR: AP4036709

ASSOCIATION: none

SUBMITTED: 11Jan64 DATE ACQ: 03Jun64 ENCL: 00

SUB CODE: MA NO REF SOV: 003 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041222(

L 8518-65 EWT(d) IJP(c)/AFTC(p)/ESD(dp)/RAEM(t)

ACCESSION NR: AP4045088 S/0020/64/158/001/0025/0028

AUTHORS: Vishik, M. I.; Eskin, G. I.

TITLE: General boundary value problems with discontinuous boundary conditions

SOURCE: AN SSSR. Doklady*, v. 158, no. 1, 1964, 25-28

TOPIC TAGS: boundary problem, boundary condition, existence theorem, elliptic differential equation, operator equation

ABSTRACT: Several theorems concerning the existence of solutions are presented for the following cases: 1. Case of elliptical differential equation of order 2n. 2. Systems of paired equations. 3. General problems with discontinuous boundary conditions. The general elliptic differential equation of order 2m is presented in the form

$$A(x, D)\,u(x) = f(x) \qquad (1)$$

Card 1/3

in a domain having a smooth boundary Γ. This domain is broken up into two parts, Γ^+ and Γ^-, on which the boundary conditions are

$$B_{lj}(x, D)\, u|_{\Gamma^+} = \varphi_{lj}(x'), \quad B_{lj}(x, D)\, u|_{\Gamma^-} = \varphi_{lj}(x') \quad (1 \leqslant j \leqslant m). \tag{2}$$

It is further shown that if u(x) in (1) is of the form

$$u(x) = v(x) + \sum_{j=1}^{m} \sum_{l=1}^{k_j} \int_{\gamma} G_{lj}(x, x - y')\, g_{lj}(y')\, dy' \equiv v(x) + \sum_{j=1}^{m} \sum_{l=1}^{k_j} G_{lj} g_{lj}, \tag{6}$$

then the resultant equation permits investigation of the smoothness of u(x) in the vicinity of $\gamma = \Gamma^+ \cap \Gamma^-$ [smooth (n - 2)-dimensional surface]. The systems of paired equations are defined in the form

$$\sum_{j=1}^{p} B_{kj}^{(1)} u_j = f_{k1}(x'), \quad x' \in \Gamma', \quad k = 1, \ldots, p; \tag{7}$$

$$\sum_{j=1}^{p} B_{kj}^{(2)} u_j = f_{k2}(x'), \quad x' \in \Gamma', \quad k = 1, \ldots, p, \tag{8}$$

where $B_{kj}^{(1)}$ and $B_{kj}^{(2)}$ -- singular operators on all of Γ, and $u_j(x')$ --

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ACCESSION NR: AP4045088

unknown functions on Γ. The spaces in which the system (7) and (8) are solvable are defined. 3. General problems with discontinuous boundary conditions of the form

$$L_{a(x)}u(x) = f(x). \qquad (9)$$

An upper bound is found for the possible solution. This report was presented by I. G. Petrovskiy. Orig. art. has: 13 formulas.

ASSOCIATION: None

SUBMITTED: 29Mar64 ENCL: 00

SUB CODE: MA NR REF SOV: 002 OTHER: 002

Card 3/3

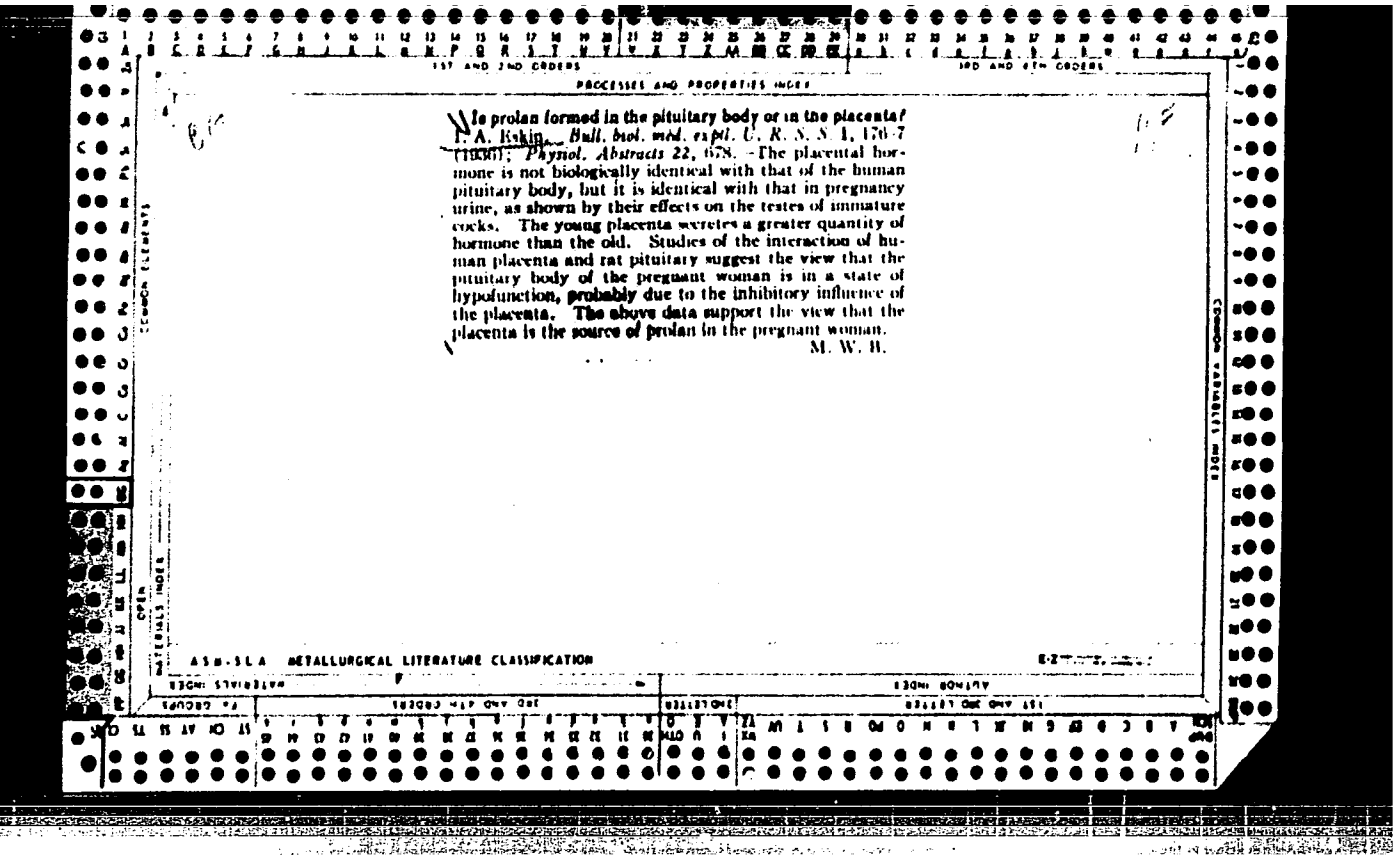
VISHIK, M.I.; ESKIN, G.I.

Convolution equations in a bounded region. Usp. mat. nauk 20 no.3: 89-152 My-Je '65. (MIRA 18:6)

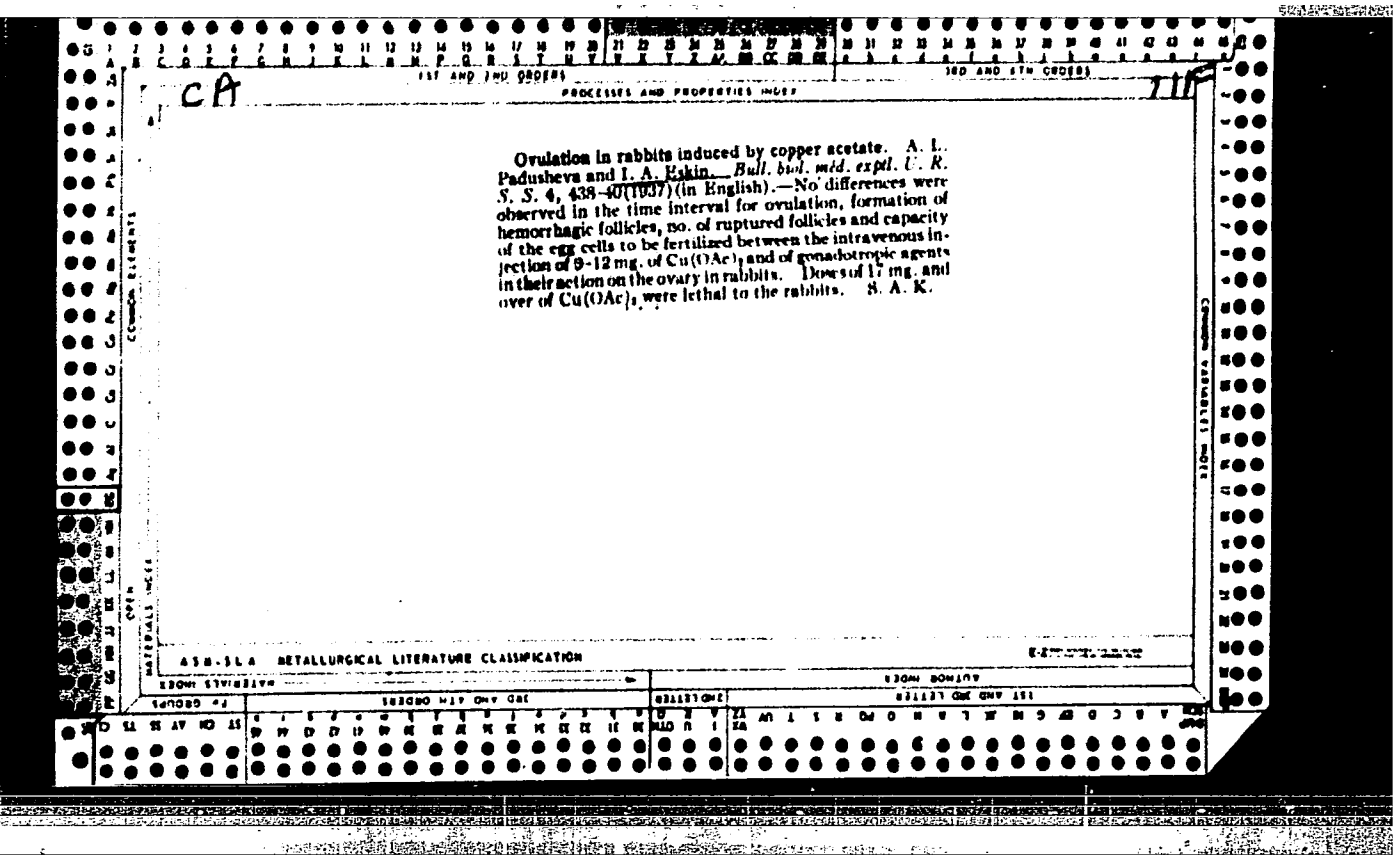
VISHIK, M.I. (Moskva); ESKIN, G.I. (Voronezh)

Equations in convolutions in a bounded region in spaces with weight norms. Mat. sbor. 69 no.1:65-110 Ja '66.
(MIRA 19:1)

1. Submitted July 12, 1965.

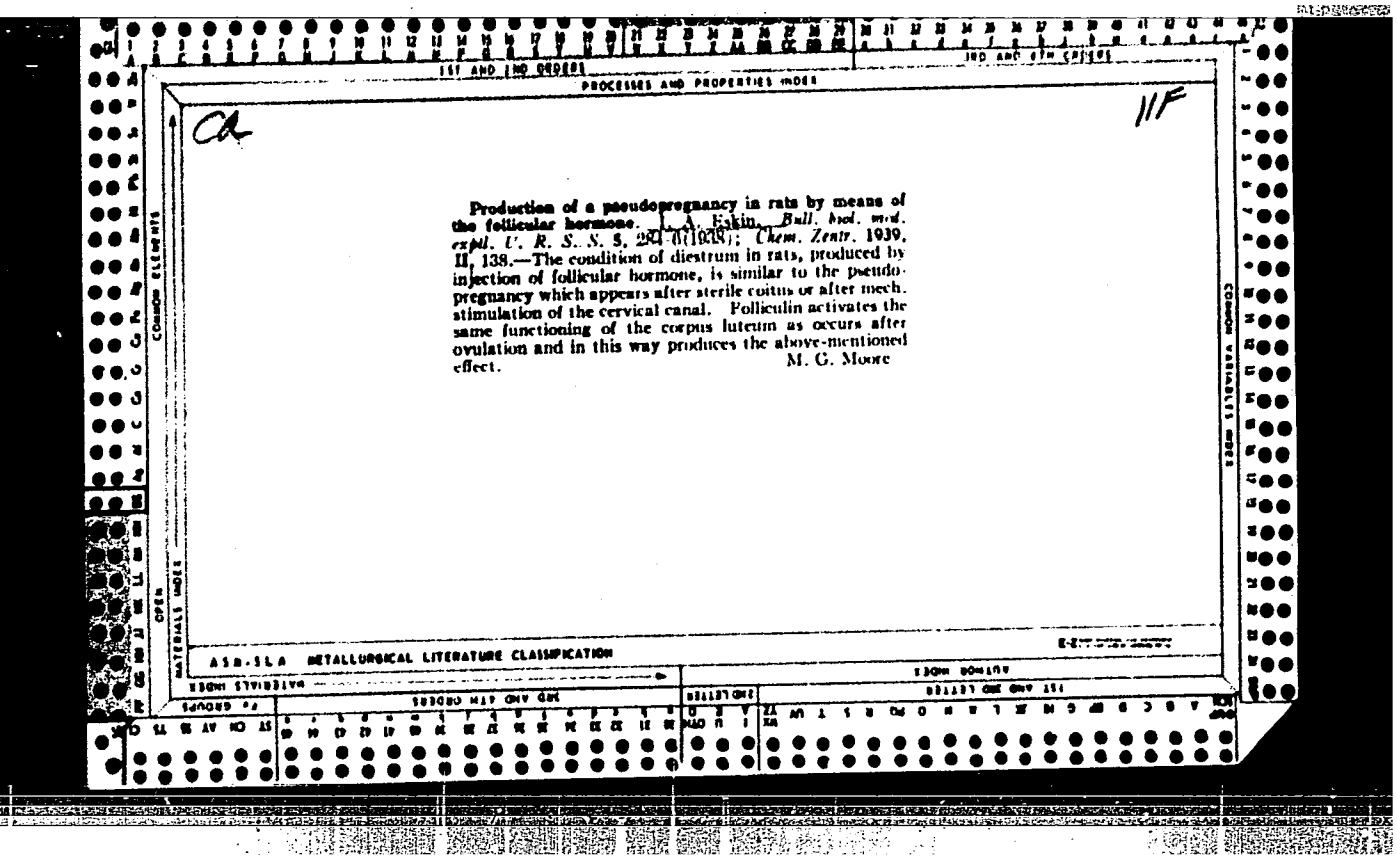


Is prolan formed in the pituitary body or in the placenta? P. A. Rykin. *Bull. biol. méd. expl. U. R. S. S.* 1, 176-7 (1936); *Physiol. Abstracts* 22, 678. —The placental hormone is not biologically identical with that of the human pituitary body, but it is identical with that in pregnancy urine, as shown by their effects on the testes of immature cocks. The young placenta secretes a greater quantity of hormone than the old. Studies of the interaction of human placenta and rat pituitary suggest the view that the pituitary body of the pregnant woman is in a state of hypofunction, probably due to the inhibitory influence of the placenta. The above data support the view that the placenta is the source of prolan in the pregnant woman.
M. W. B.



CA

Ovulation in rabbits induced by copper acetate. A. L. Padusheva and I. A. Eskin. *Bull. biol. méd. expl. U. R. S. S.* 4, 438–40(1937)(in English).—No differences were observed in the time interval for ovulation, formation of hemorrhagic follicles, no. of ruptured follicles and capacity of the egg cells to be fertilized between the intravenous injection of 9–12 mg. of $Cu(OAc)_2$ and of gonadotropic agents in their action on the ovary in rabbits. Doses of 17 mg. and over of $Cu(OAc)_2$ were lethal to the rabbits. S. A. K.



Production of a pseudopregnancy in rats by means of the follicular hormone. [illegible] A. Fiskin. *Bull. biol. med. exptl. U. R. S. S.* 5, 29[illegible]; *Chem. Zentr.* 1939, II, 138.—The condition of diestrum in rats, produced by injection of follicular hormone, is similar to the pseudopregnancy which appears after sterile coitus or after mech. stimulation of the cervical canal. Folliculin activates the same functioning of the corpus luteum as occurs after ovulation and in this way produces the above-mentioned effect.
M. G. Moore

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

11F

Ca

The vegetative nervous system and the gonadotropic function of the pituitary body in rabbits. I. A. Eskin. *Bull. biol. méd. exptl. U. R. S. S.* 8, 44-7(1939); *Chem. Zentr.* 1940, I, 2965.—If the formation of blood follicules in female rabbits after coitus is taken as a test then blocking of the sympathetic nerve (extirpation, ergotoxin) or stimulation of the parasympathetic (pilocarpine, acetylcholine) would intensify the reaction while stimulation of the sympathetic (electricity, adrenaline) and blocking of the parasympathetic (atropine) would have an inhibiting action.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

ca

11F

The source of prolan formation in the organism of the pregnant woman. I. A. Eskin. *Vsesoyuz. Akad. Sel'-skokhoz. Nauk V. I. Lenina, Inst. Zhivotnovodstva* 11, 167-79(1939); *Chem. Zentr.* 1940, II, 2323.—The investigation included the effect of pituitary and placenta exts. on the testicles and combs of infantile roosters, the content of the placenta in gonadotropic hormones after abortion and after birth and the activity of the pituitary glands of rats which had been treated with placenta ext. The results indicated that the placenta hormone corresponds to the prolan obtained from the blood and urine of pregnant individuals and is not identical with the hormone of the pituitary. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

2ND AND 4TH ORDERS

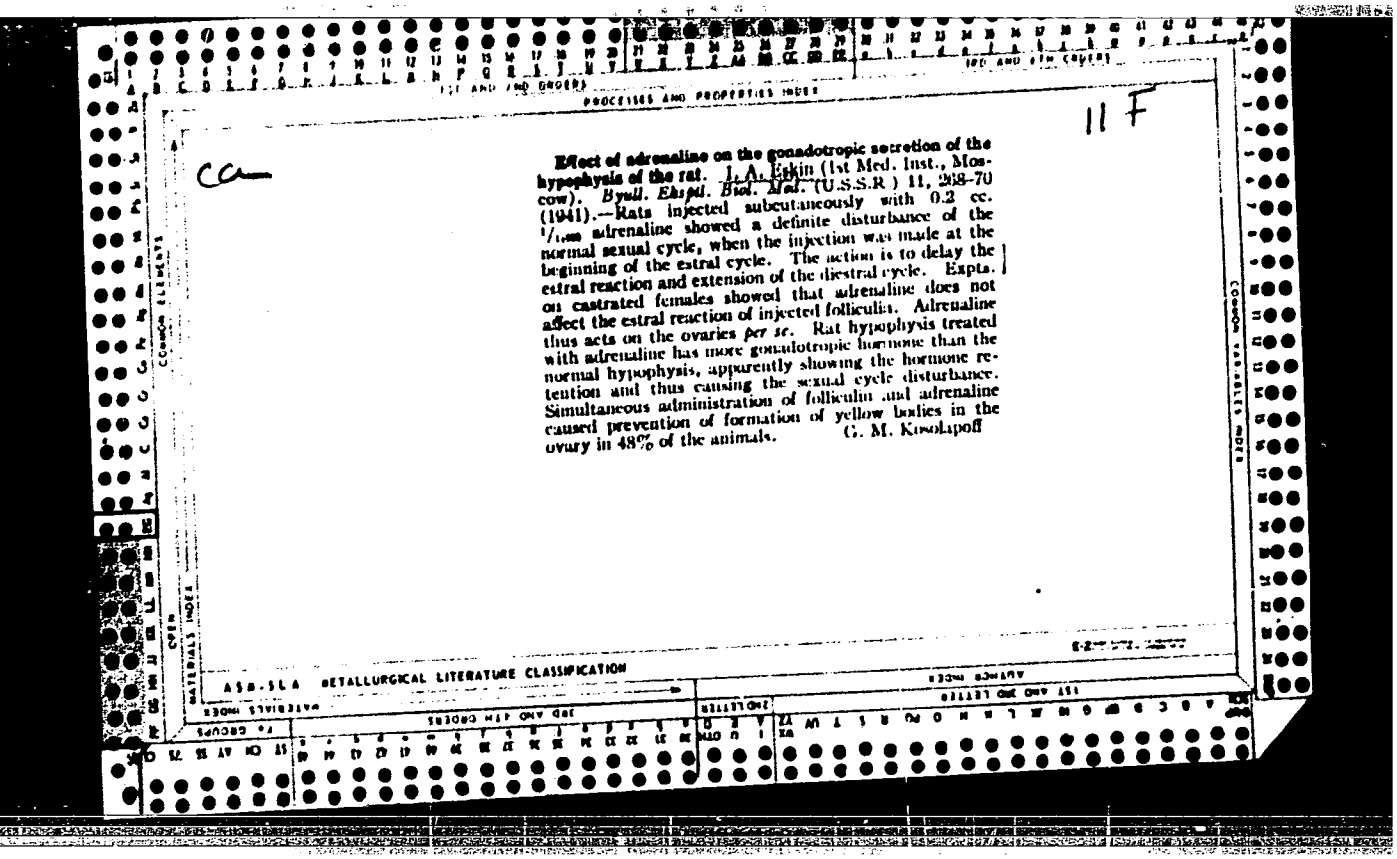
Ca

115

Comparative investigation of the pituitary activity in women of various ages. I. A. Eskin. *Vsesoyuz. Akad. Sel'skokhoz. Nauk V. I. Lenina, Inst. Zhivotnovodstva* 11, 180-5(1939); *Chem. Zentr.* 1940, II, 2322.—The gonadotropic hormone content of the pituitary of 2 groups of normal women was detd. by expts. on mice. The first group was 18-35 years old and the 2nd group was made up of women in the stage of menopause. In the 2nd group the content in follicle-stimulating hormone corresponded to 1500-2500 mouse units and that of luteinizing hormone to 250-500 mouse units. In the younger group of women the content of both hormones was found to be only 250 mouse units. These findings suggest the probability of a pituitary prolan formation in women during the menopause.

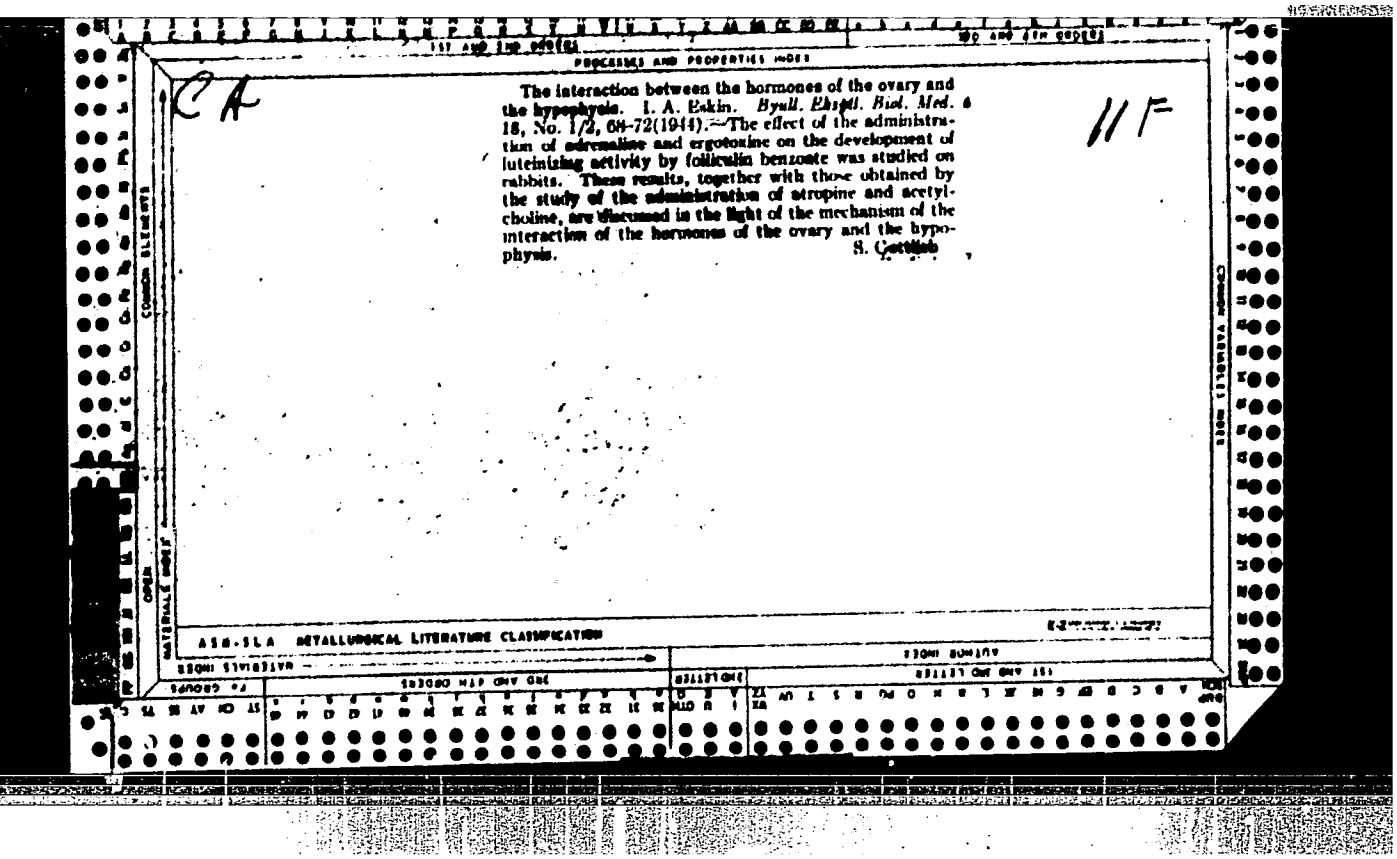
M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



11 F

Effect of adrenaline on the gonadotropic secretion of the hypophysis of the rat. I. A. Etkin (1st Med. Inst., Moscow). *Byull. Eksptl. Biol. Med.* (U.S.S.R.) 11, 268–70 (1941).—Rats injected subcutaneously with 0.2 cc. 1/1,000 adrenaline showed a definite disturbance of the normal sexual cycle, when the injection was made at the beginning of the estral cycle. The action is to delay the estral reaction and extension of the diestral cycle. Expts. on castrated females showed that adrenaline does not affect the estral reaction of injected folliculin. Adrenaline thus acts on the ovaries *per se*. Rat hypophysis treated with adrenaline has more gonadotropic hormone than the normal hypophysis, apparently showing the hormone retention and thus causing the sexual cycle disturbance. Simultaneous administration of folliculin and adrenaline caused prevention of formation of yellow bodies in the ovary in 48% of the animals. G. M. Kosolapoff

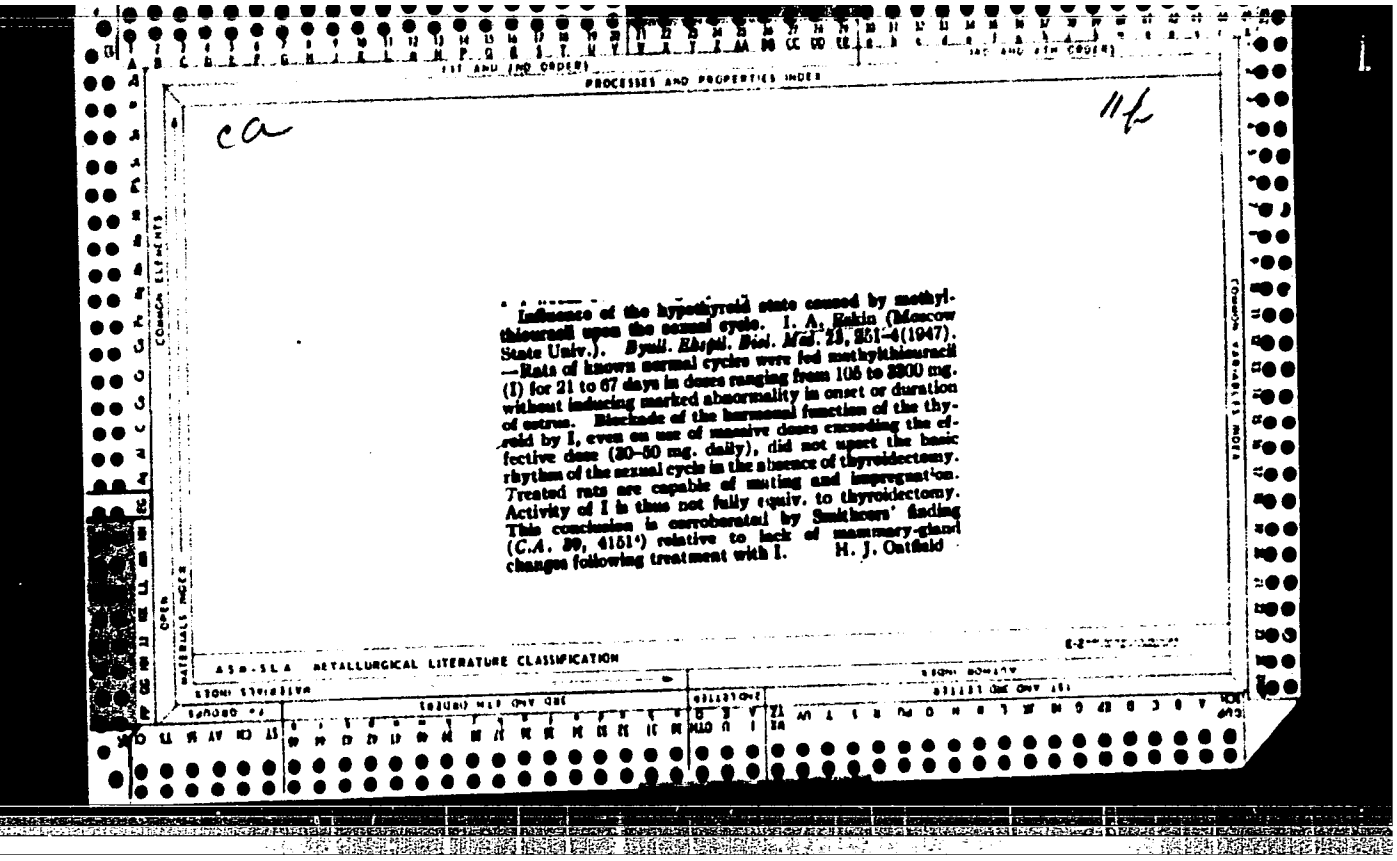


The interaction between the hormones of the ovary and the hypophysis. I. A. Eskin. *Byull. Eksptl. Biol. Med.* 18, No. 1/2, 68-72(1944).—The effect of the administration of adrenaline and ergotosine on the development of luteinizing activity by folliculin benzoate was studied on rabbits. These results, together with those obtained by the study of the administration of atropine and acetylcholine, are discussed in the light of the mechanism of the interaction of the hormones of the ovary and the hypophysis.
S. Gottlieb

ESKIN, I. A.

"Factors which control the rhythmus of sexual cycles." (p. 319) by Eskin, I. A.

SO: Advances in Modern Biology (Uspekhi Sovremennoi Biologie) Vol. XXII, No. 3, 1946.



PROCESSES AND PROPERTIES INDEX

CA

11f

Influence of the hypothyroid state caused by methylthiouracil upon the sexual cycle. I. A. Rakin (Moscow State Univ.). *Byull. Eksptl. Biol. Med.* 23, 251–4(1947). —Rats of known normal cycles were fed methylthiouracil (I) for 21 to 67 days in doses ranging from 105 to 3300 mg. without inducing marked abnormality in onset or duration of estrus. Blockade of the hormonal function of the thyroid by I, even on use of massive doses exceeding the effective dose (30–50 mg. daily), did not upset the basic rhythm of the sexual cycle in the absence of thyroidectomy. Treated rats are capable of mating and impregnation. Activity of I is thus not fully equiv. to thyroidectomy. This conclusion is corroborated by Smithcors' finding (*C.A.* 39, 4151[1]) relative to lack of mammary-gland changes following treatment with I. H. J. Ostfeld

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ESKIN, I. A.

USSR/Medicine - Hypophysis, Pituitary Jun 49
Medicine - Physiology

"Investigating the Thyrotropic Activity of the Frontal Part of the Hypophysis While Retarding Its Gonadotropic Function," I. A. Eskin, Th. B. Shabel'skaya, All-Union Experimental Inst of Endocrinol, Moscow, 4 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 4

Studied dependence of thyrotropic activity of rat hypophysis upon its gonadotropic function. Authors obtained new data strengthening their previous assumption on absence of mutal dependency

46/49T59

USSR/Medicine - Hypophysics, Pituitary Jun 49
(Contd)

in implementation of thyrotropic and gonadotropic functions of the hypophysis. Normal gonadotropic activity is retained when thyrotropic function of frontal part of hypophysis is inhibited, and normal thyrotropic activity is retained when gonadotropic function is inhibited. Submitted by Acad A. D. Speranskiy, 4 Apr 49.

46/49T59

YESKIN, I. A.

29919

I Rabkina, A. Ye. Zavisimost' "Zobnoy" ryeaktsii shchitovidnoy zhyedyezy na myetiltiouratsil ot khirurgichyeskoy travmy. Doklady akad. Nauk sssr, novaya syeriya, T. LXVIII, No 3, 1949, s. 637-40 — Bibliogr: 6 Nazv.

12. Myeditsinskaya mikrobiologiya, immunologiya, parazitologiya. Infyektsyeonnyye bolyezni. Epidemiologiya.

a. Myeditsinskaya mikrobiologiya, immunologiya I parazitologiya. Epidyemiologiya

SO: LETOPIS' NO. 40

ESKIN I A

30978. ESKIN, I. A. AND SKEBEL'SKAYA, YU. B.

Bliyanie khrurgicheskoy travmy na struktury shchitovidnoy zhelezy Krys. Doklady Akad. Nauk SSSR, Novaya seriya, t. LXVIII, No. 4, 1949, s. 801-04

ESKIN I. A.,

PA 151143

USSR/Medicine - Endocrinology 11 Oct 49
Thyroid

"Variation in Sensitivity of the Thyroid Gland to Thyrotropic Hormone of the Hypophysis Under the Influence of Surgical Trauma," I. A. Eskin, Yu. B. Skebel'skaya, A. Ye. Rabkina, All-Union Inst of Experimental Endocrinol, 3 pp

"Dok Ak Nauk SSSR" Vol LXVIII, No 5

Experimental data led to conclusion that lower functional activity in thyroid glands of rats after surgical trauma was related to decreased ability of the gland to react to thyrotropic hormone. Methylthiouracil does not produce a complete [redacted] 151T43

USSR/Medicine - Endocrinology (Contd) 11 Oct 49

"goiter" reaction because the increase in the gland under its influence is a reaction to greater secretion of the hormone. Fact that surgical trauma has a definite effect on the thyroid gland in both rats and chickens confirms the assumption that the described conditions may be valid in higher organisms. Submitted by Acad A. P. Speranskiy 23 Jul 49.

[redacted] 151T43

CH

Accelerated hormone test for pregnancy. I. A. Lukin and A. L. Frieklovich. *Akusherstvo i Ginekol.* 1950, No. 2, 43-5.—Adult white mice are injected with 1 ml. fresh urine and after 48 hrs. their ovaries are examd. for blood "spots." If the test is pos. for 3 out of 5 mice, pregnancy is indicated.
C. M. Kosolapoff

1. YESKIN, I.A.

2. USSR (600)

4. Medicine

7. Hormones of the ovarian cycle and the nervous system. Moskva. Izd-vo "Sovetskia nauka," 1951

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

~~BA~~

113

Determination of female sex hormone in the blood. I. A. Baker and M. E. Chelam. *Doklady Akad. Nauk S.S.S.R.* 77 561–4 (1951). The following procedure is recommended for human cases: Take 10 ml. sample from the elbow vein, add 5 vols. 96% EtOH and shake 1 hr. Repeat EtOH treatment on the extn. residue of the 1st ext., combine both EtOH solns., evap., and hydrolyze the residue 40 min. with 1% HCl. Ext. with Et_2O, take up the ext. in 50% aq. glycerol and use the soln. for injection (intravaginal) into rats castrated 3–4 weeks before the test, using vaginal smears for the final test material after 24–48-hr. interval after last injection. Numerous results are given in tabular form on detns. in human subjects and rabbits. G. M. K.

1951

BA

Reproduction

Specificity of the ovarian hyperæmia reaction to gonadotrophic hormone. L. A. Fakin and A. L. Freidovich (*C. R. Acad. Sci. URSS*, 1951, 77, 540—544).—Ovarian hyperæmia following injection of 2·5—40 mouse units of Prolan *B* into immature female rats is observed when the animal is killed with ether, $CHCl_3$, or coal gas, but not with Hexonal or by a blow on the head. The reaction is therefore not specific for Prolan *B*, and is useless for assay or diagnostic purposes. R. Truscon

ESKIN, I.A.; MIKHAYLOVA, N.V.; SVYATUKHINA, O.V.; CHEBAN, M.E.

Estrogen in the blood in women with breast cancer. Biul. eksp. biol. i med. 38 no.11:58-62 N '54. (MLRA 8:1)

1. Iz otdela eksperimental'noy biologii (zav. prof. I.A.Eskin) Vsesoyuznogo instituta eksperimental'noy endokrinologii (dir. prof. Ye.A.Vasyukova) i Gosudarstvennogo onkologicheskogo instituta imeni P.A.Gertsena (dir. V.V.Gorodilova)

(BREAST, neoplasms,
blood estrogens in)
(BLOOD,
estrogens in cancer of breast)
(ESTROGENS, in blood,
in cancer of breast)