

F-1

USSR/Microbiology. General Microbiology. Systematics, Morphology, Cytology.

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 62199

Author : Spirin A.S., Belozerskiy A.N., Shugayeva N.V.,
Vanyushin B.F.

Inst : -

Title : Studies of the Specificity of the Species of Nucleic Acids in Bacteria.

Orig Pub : Biokhimiya, 1957, 22, No 4, 744-754

Abstract : The RNA and DNA nucleotide composition was studied in 19 different species of bacteria and actinomycetes. The nucleotide composition of DNA uncovers a distinct specificity of species, being very similar in closely related species, and differing sharply in distant species. In this, *Proteus vulgaris* and *Aerobacter aerogenes* differ considerably, according to the DNA composition, from other species. Enterobacteriaceae force

Card : 1/3

AUTHOR: SPIRIN, A.S., BELOZERSKIY, A.M. PA - 3169
TITLE: Comparative Studies on the Ribonucleic Acid Composition in the
Different Species of Bacteria. (Sравnitel'noye izucheniye sostava
ribonukleinovykh kislot u razlichnykh vidov bakteriy, Russian)
PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 113, Nr 3, pp 650-651
(U.S.S.R.)
ABSTRACT: The present paper investigates the RNA (Ribonucleic acid) in different
types of bacteria in order to find out to what extent the composition
of RNA changes in dependence of the inherent nature of the organism,
and to what extent it is in correlation with the composition of DNA
(deoxyribonucleic acid). The same methods of hydrolysis for chroma-
tography were employed as in the preceding work ("Biochemistry, 1956,
21, 768). In order, however, to increase accuracy all four mono-
nucleotides were distributed over the one-dimensional descending chroma-
togram. This was done by the application of two solvents which were
allowed to pass in one and the same direction. Results showed that in
the case of the bacteria investigated (staphylococcus pyogenes aureus,
pasteurella tularensis, brucella abortus, proteus morgani,
Escherichia coli, salmonella typhosa, shigella dysenteriae, coryne-
bacterium diphtheriae, pseudomonas aeruginosa, sarcina lutea, myco-
bacterium tuberculosis BCG, Actinomyces globisporus streptom) the

Card 1/2

PA - 3469

Comparative Studies on the Ribonucleic Acid Composition in the
Different Species of Bacteria.

composition of DNA differed widely. On the other hand, the nucleotide composition of RNA is very similar even in the case of widely differing types. Thus it may be concluded that with respect to DNA, even in the case of an investigation of summary composition, there are numerous stages, which, however, cannot be said with respect to RNA. (1 Table, 1 Slavic Reference).

ASSOCIATION: Institute for Biochemistry "A.N.BAKH" and Faculty of Soil Biology
of Moscow State University "M.V.LOMONOSOV".
PRESENTED BY: OPARIN, A.I., Member of the Academy, on 15.1.1957
SUBMITTED: 11.1.1957
AVAILABLE: Library of Congress

Card 2/2

SPIRIN, A. S. (Dr.)

"The RNA Composition of Certain Bacteria and Its Correlation with DNA
Composite Chemistry."

report presented at the 4th International Congress of Biochemistry, Sep 1958, Vienna.

SPIRIN, A. S.

A.S. Spirin and L. P. Gavrilova

"The results of investigations of ribonucleic acid of the tobacco mosaic virus."

report presented at the 10th All-Union Conf. on Highly Molecular Compounds,
Biologically Active Polymer Compounds, Moscow, 11-13 June 1958. (Vest. Ak
Nauk SSSR, 1958, No. 9, pp. 111-113)

EXCERPTA MEDICA Sec 4 Vol 12/2 Med. Micro. Feb 59

405. CHANGES IN THE NUCLEIC ACID COMPOSITION AS A RESULT OF EXPERIMENTAL HEREDITARY TRANSFORMATIONS OF INTESTINAL BACTERIA (Russian text) - Spirin A. S., Belozersky A. N., Kudlay D. G., Skavronskaya A. G. and Mitereva V. G. Inst. of Biochem., Acad. of Scis of the USSR, Moscow - BIOKHIMIYA 1958, 23 1 (154-163) Tables 4 Illus. 1

Some intestinal bacteria and their unusual forms were studied. These forms result from hereditary changes caused by unfavourable influences, such as distilled water, cultivation without transfer, antibiotics. These forms can be divided into 2 groups, distinguished by their properties and by the composition of their nucleic acids. Changes of the DNA composition correlate with transformation of antigenic structure, biochemical properties and susceptibility to antibiotics. The RNA composition, in contrast to DNA, is not changed.

SPIRIN, A.S.

Spectrophotometric determination of the total amount of nucleic acids [with summary in English]. Biokhimiia 23 no.5:656-662
S-O '58 (MIRA 11:11)

1. Institut biokhimii imeni A.N. Bakha Akademii nauk SSSR, Moskva.
(NUCLEIC ACIDS, determ.
spectrophotometric determ. of total acids (Rus))

SPIRIN, A.S., SKAVRONSKAYA, A.G., PRETEL'-MARTINES, A.

Nucleic acid content of *Escherichia coli* during the aging of the culture [with summary in English]. *Mikrobiologiya* 27 no.3:273-275 (MIRA 11:9)
My-Je '58

1. Institut biokhimii im. A.N. Bakha AN SSSR i Institut mikrobiologii i epidemiologii im. N.P. Gamaleya AMN SSSR.

(NUCLEIC ACIDS, metab.)

E. Coli, eff. of aging of culture (Rus))

(*ESCHERICHIC COLI*, metab.)

nucleic acids, eff. of aging of culture (Rus))

AUTHORS: Bel'zerskiy, A. N., Shugayeva, N. V., Spirin, A. S. 20-119-0-00/80

TITLE: The Desoxyribonucleic Acid Composition of Different Species of Actinomycetes (Sostav dezoksiribonukleinovoy kisloty u razlichnykh vidov aktinomitsetov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 2, pp. 330-332 (USSR)

ABSTRACT: The study of the nucleotide composition of these acids (DNA) in other organism, especially in bacteria, led to the solution of several problems of the peculiarity of species of these compounds (refs 1-4). However, the limits of this specificity are not yet determined. It is not yet clear in how far the composition of DNA differs in biologically and systematically related types (refs 3,4). In the present work the composition of desoxyribonucleic acid is studied within a rather limited group of micro-organisms, as mentioned in the title. Besides the problem of the peculiarity of species of DNA, its similarity or differences in the systematics of the mentioned organisms might be of help. The methods of investigation were

Card 1/1

The Desoxyribonucleic Acid Composition of Different
Species of Actinomycetes

20-119-2-59/60

described earlier (refs 4,5). On table 1 data on the composition of DNA are given for 6 types of Actinomycetes as well as for *Mycobacterium tuberculosis* (stock BCG) and for *M. diphtheriae*. These data are the means of 5-6 single determinations. The value of the variation coefficient in single types is discussed. The only primary index of the specificity of DNA which sums up all possible deviations in the relation of nitrogen bases is the value

$$\frac{G + Ts}{A + T}$$

In the case of all Actinomycetes it was > 2.5 . These data confirm that the Actinomycetes have higher purinic bases GTs type in DNA (ref 4). In this connection they occupy the most extreme position among the various types of bacteria. The strong difference between the DNA composition of the Actinomycetes and the *Mycobacterium tuberculosis* indicates that the first and the acid group bacteria

Page 2/4

The Desoxyribonucleic Acid Composition of Different
Species of Actinomycetes

20-119-2-39/60

represent two different rather isolated groups of the species of the Actinomycetes (class Actinomycetales according to Vaksman). However, the relatively high value of the relation $(C + Ts) : (A + T)$ as compared to other bacteria agrees with the fact that these micro bacteria belong to the same systematic category as the actinomycetes (refs 6,7). On the other hand, the comparison of the DNA of the Actinomycetes and the *M. tuberculosis* with the DNA of *M. diphtheriae* leads to the conclusion that the latter type does not belong to the class of the Actinomycetes and even less to the species of the *Mycobacterium*. It must be placed to an independent family of the order Eubacteriales (ref 7). In the individual types of Actinomycetes the DNA composition is closely related so that they form a group which is perhaps systematically close. Statistically the 4 types of Actinomycetes can absolutely not be distinguished. Thus, no characteristic types exist in the case of types of one and the same species as to the DNA composition. The authors gave the explanation earlier (ref 4): The mentioned differences concern only single

Card 3/4

The Desoxyribonucleic Acid Composition of Different
Species of Actinomycetes

20-119-2-39,60

molecules or even their sections while the main mass remains identical. The differences are too slight to be detected by the applied methods. As far as the two other species of Actinomycetes (Proactinomyces and Micromonospora) are concerned, a difference from the Actinomycetes can be observed inspite of the close relation as to the DNA composition. However, it is too small to draw final conclusions from it.

There are 1 table and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)
(Institut biokhimii im. A. N. Bakha Akademii, nauk SSSR
(Institute for Biochemistry imeni A. N. Bakha) AS USSR)

PRESENTED: November 25, 1957, by A. I. Oparin, Member, Academy of
Sciences, AS USSR

Card 4/4

SPIRIN, A. S., and BELOZERSKIY, A. N.

"A Correlation between the Compositions of Deoxyribonucleic and Ribonucleic Acids." Nature, Vol. 183, no. 4628, p. 111, 1958.

Inst. of Biochemistry im A. N. Bakh Acad. Sci. USSR, Moscow.

GAVRILOVA, L.P.; SPIRIN, A.S.

Infective ribonucleic acid of the tobacco mosaic virus and its behavior during the loss of infectivity. *Biokhimiia* 24 no.3: 503-513 My-Je '59. (MIRA 12:9)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R., and the Faculty of Biology and Soil Science, the State University, Moscow.

(VIRUSES, metab.

tobacco mosaic virus, ribonucleic acid, role in virulence (Rus))

(RIBONUCLEIC ACID, metab.

tobacco mosaic virus, role in virulence (Rus))

SPIRIN, A.S.; GAVRILOVA, L.P.; BELOZERSKIY, A.N.

Nature and methods of quantitative estimation of the "hyper-
chromic effect" of nucleic acids. Biokhimiia 24 no.4:600-611
Jl-Ag '59. (MIRA 12:11)

1. Institut biokhimii im. A.N.Bakha Akademii nayk SSSR i
biologo-pochvennyy fakul'tet Gosudarstvennogo universiteta
im. M.V.Lomonosova, Moskva.
(NUCLEIC ACIDS chem.)

SPIRIN, A.S.; GAVRILOVA, L.P.; BRESLER, S.Ye.; MOSEVITSKIY, M.I.

Studying the macromolecular structure on infectious ribonucleic acid
from tobacco mosaic virus. Biokhimiia 24 no.5:938-947 S-0 '59.

(MIRA 13:2)

1. Institut biokhimiim im. A.N. Bakha Akademii nauk SSSR, Moskva, 1
Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR, Lenin-
grad.

(VIRUSES chem.)

(RIBONUCLEIC ACID metab.)

17(3)

SOV/20-124-4-59/67

AUTHORS:

Gavrilova, L. P., Spirin, A. S., Belozerskiy, A. N., Corresponding Member AS USSR

TITLE:

Spectrophotometric Study of the Effects of pH and Ion Strength on the Stability of High Polymer Ribonucleic Acid in Solution
(Spektrofotometricheskoye izucheniye vliyaniya pH i ionnoy sily na stabil'nost' vysokopolimernoy ribonukleinovoy kisloty v rastvore)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 933-936 (USSR)

ABSTRACT:

Ribonucleic Acid (RNA) in vitro is extremely unstable. Even its simple preparative production from cell organisms results in a higher or lesser degree of degradation (Ref 1). Nor do any of the subsequently suggested production methods (Refs 2-7) furnish any evidence for the fact that the spontaneous losses in infective power occurring in this process (in this particular case the infective power of RNA from the tobacco mosaic virus - TMV) or a direct degradation of the polynucleotide are conditioned by the chemical instability of the polymer concerned, subject to certain conditions. On the one hand ribonuclease traces may occur in RNA preparations and cause the fermentative degradation of RNA in the course of incubation. On the other hand it is not known whether the spontaneous loss in infective power of virus RNA is caused by the one or the

Card 1/4

SOV/20-124-4-59/67

Spectrophotometric Study of the Effects of pH and Ion Strength on the Stability of Higher Polymer Ribonucleic Acid in Solution

other type of degradation or whether it is governed by entirely different mechanisms. In order to find out whether a progressive spontaneous degradation of polynucleotides takes place in the solutions of high molecular RNA, the authors employed spectrophotometric criteria. After all, the decomposition of the nucleic acids is accompanied by an intensification of their ultraviolet absorption (the "hyperchromic effect", Ref 8). In the case of the instability of the inter-nucleotide bonds of the polynucleotide, the ultraviolet absorption must increase progressively. High molecular RNA and TMV were used as materials. They were obtained by means of several re-precipitations of the leaf juice of mosaic-diseased tomato plants with ammonium sulfate, and by means of threefold preparative ultra-centrifuging. This procedure ensured the high purity of the TMV preparations, including, it seems, also that of ribonuclease admixtures. The RNA obtained therefrom possessed biological activity and infective power (about 1% of a virus quantity of equal weight), immediately after production. It did not contain any virus particles. It thus constituted a native RNA preparation. For experiments with long incubation periods, buffer solutions with ion strengths (μ) of 0.01 to about 1 and different

Card 2/4

SOV/20-124-4-59/67

Spectrophotometric Study of the Effects of pH and Ion Strength on the Stability of Higher Polymer Ribonucleic Acid in Solution

pH were used. The RNA content of the solution was about 20-25 μ g/ml. Incubation takes place in a thermostat at 37° (with chloroform as an antiseptic). Table 1 shows the results: (1) The higher the ion strength of the buffer, the lower is the absorption of the RNA solution. This phenomenon was fully reversible and was by no means linked to the decomposition or denaturation of RNA. Infective power and high molecular weight remained unchanged. (2) Between pH 5.4 and 7.4 no absorption changes take place after 20 days of incubation, this phenomenon being independent of the ion strength of the solvent. Thus the ribopolynucleotide is stable over this pH range. The loss in infective power is not accompanied by any noticeable changes in ultraviolet absorption. (3) On an incubation between pH 5.0 and 8.5 a certain tendency towards an absorption increase emerges. This RNA instability is marked only in solutions of high ion strength ($\mu \sim 1$). With pH 9.0, and even more so with pH 9.5, RNA is progressively decomposed at any ion strength. It can be concluded from the experiments that the spontaneous loss in infective power, on the 2nd-4th days of incubation, does not in any way affect the absorption value of RNA. Probably this process is not a consequence of the instability of the inter-nucleotide bonds. -There are 1 table and 11 references.

Card 3/4

SOV/20-124-4-59/67

Spectrophotometric Study of the Effects of pH and Ion Strength on the Stability of Higher Polymer Ribonucleic Acid in Solution

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii nauk SSSR
(Institute of Biochemistry imeni A. N. Bakh of the Academy of Sciences, USSR) Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosov (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: October 25, 1958

Card 4/4

17(3)

AUTHORS:

Spirin, A. S., Gavrilova, L. P., SOV/20-125-3-55/63
Belozerskiy, A. N., Corresponding Member, AS USSR

TITLE:

On the Problem of the Macromolecular Structure of Native High-polymeric Ribonucleic Acid in Solution (K voprosu o makromolekulyarnoy strukture nativnoy vysokopolimernoy ribonukleinovoy kisloty v rastvore)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 3, pp 658-661 (USSR)

ABSTRACT:

There are but very few data in publications concerning the problem mentioned in the title, despite considerable achievements in the study of desoxy ribonucleic acid (DNA). This is explained by the exceptional difficulty confronting the production of the acid mentioned in the title (RNA). At an earlier time, the authors reproduced (Ref 3) the experiments made by other scientists (Refs 1, 2) and in the present paper they describe the further progress made in the field under discussion (Refs 4-11). Figure 1 illustrates data on the comparative spectrophotometric titration of the native (infectious) RNA and of a denaturated DNA of the tobacco

Card 1/3

On the Problem of the Macromolecular Structure of
Native High-polymeric Ribonucleic Acid in Solution

SOV/20-125-3-55/63

mosaic virus. The intensification value of the absorption of ultraviolet rays by nucleic acids serves as a direct measure of the number of burst hydrogen bonds (Refs 7, 9, 10). It may be seen from figure 1 that in the case of the native DNA no important variations of the said values occur in the entire pH range from 7 to 3. Only at $\text{pH} < 3$ an unusually rapid jump of the absorption value of the native DNA takes place. This is explained by the fact that the macromolecule of the native DNA is built according to the type of the 2 rigidly and orderly coupled chains. These chains are kept together by means of specific hydrogen bonds, in which all NH_2 groups of adenine and cytosine residues in position 6 of the ring (Ref 12) participate. Only the guanine- NH_2 -group in position 2 can remain more or less free. It has the least pK_a value (= 2.75) (Refs 9, 10). From the results obtained it follows that the spectrophotometric behavior of the native RNA does not show any similarity with that of the native DNA. On the contrary, the behavior of the former is in every way similar to that of denaturated DNA. This is indicative of the fact that there is no orderly and specific secondary structure (structure of

Card 2/3

On the Problem of the Macromolecular Structure of
Native High-polymeric Ribonucleic Acid in Solution

SOV/20-125-3-55/63

hydrogen bonds) in the native RNA. Spectrophotometric data lead to the conclusion that the macromolecule of native RNA is not built according to the type of a rigid 2-chain structure of native DNA, but is most likely to be a simple polynucleotide chain, which conglomerates to an irregular ball in the solution. Such a ball is subject to all rules of the flexible polyelectrolyte and is changed under the action of various circumstances without losing its infection power. There are 2 figures, 1 table, and 15 references, 2 of which are Soviet.

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii nauk SSSR (Institute of Biochemistry imeni A. N. Bakh of the Academy of Sciences, USSR) Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 9, 1959

Card 3/3

17(3)

SOV/20-126-5-59/69

AUTHORS:

Gavrilova, L. P., Spirin, A. S., Belozerskiy, A. N., Corresponding Member, AS USSR

TITLE:

The Effect of Temperature on the State of Macromolecules of Viral Ribonucleic Acid in Solution (Deystviye temperatury na sostoyaniye makromolekul virusnoy ribonukleinovoy kisloty v rastvore)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1121-1124 (USSR)

ABSTRACT:

The authors have not succeeded in a former paper (Ref 1) to prove any clear correlation of the process of the spontaneous loss of the infectious power with the alteration of the physicochemical indices: the ultraviolet absorption, the viscosity and the sedimentation. But further studies could show new characteristics in the behavior of the macromolecules of the infectious ribonucleic acid (RNA). In this article data about the viscosity and sedimentation are given. The production of the infectious (RNA) and the control of its infectious power was carried out as in reference 1. In figure 1 the character of the temperature dependence of this RNA in phos-

Card 1/4

SOV/20-126-5-59/69

The Effect of Temperature on the State of Macromolecules of Viral Ribonucleic Acid in Solution

phate buffer can be seen. As curve 1 shows, no essential alteration of the viscosity takes place at a temperature increasing between 20 and 50°. At further heating a rapid increase of viscosity results, the maximum being at 60-70°. Therefore in this fixed and rather narrow temperature range a transformation of the RNA-molecules ensues from one state into another. Thereat the molecules are not inactivated at once (that is they don't lose their infectious power). This transformation is reversible. Out of curve 2 it can be seen that RNA preparations which have lost their infectious power show none of the above mentioned temperature effects. It has proved that the amount of the viscosity increasing on heating is proportional to the infectious activity of the RNA-preparations. Out of figure 2 it can be seen that the temperature effect is even greater in 6 m urea buffered with phosphate and that it takes place at a deeper temperature (40-50°). At 50° the viscosity is quadrupled and remains now as before reversible. It remains also a function of the infectious activity (Fig 2: 2-4). At a complete loss of the infectiousity also the tem-

Card 2/4

SOV/20-126-5-59/69

The Effect of Temperature on the State of Macromolecules of Viral Ribonucleic Acid in Solution

perature effect is missing (Fig 2: 5). To find out the reasons of this phenomenon sedimentation experiments at different temperatures were made. Out of table 1 follows that the tripling of the specific viscosity is accompanied by a decrease of the sedimentation constant to $1/3$. This makes it credible that the temperature effect is combined with a rapid increasing of the particle asymmetry of the RNA. Apparently the RNA-polynucleotide-chain is levelled existing at deep temperatures as skein of this or that shape (Refs 3-5). The decrease in the temperature of the said effect by urea lets suppose a considerable importance of the separation process of the hydrogen bonds on reaching the above effect. On comparing the infectious and noninfectious RNA-part a much smaller viscosity can be noticed at the latter than at the first but the sedimentation constants are near together in both cases. It is also imaginable that the infectious RNA-molecules exist at 50° in urea as more or less levelled unbroken 1-chains whilst the no more infectious RNA are represented by much shorter chains. But since (Ref 1) no clear difference can be noticed between the particle size

Card 3/4

SOV/20-126-5-54/69

The Effect of Temperature on the State of Macromolecules of Viral Ribonucleic Acid in Solution

of both RNA-forms the authors suppose that the unbroken 1-chain structure of the native RNA is changed into a broken one in the course of the loss of the infectious power (incubation at room temperature or at 37^o). Out of all this it may be seen, that the amount of the temperature effect is a clear physicochemical criterion of the infectious power of the viral-RNA-preparations. There are 3 figures, 1 table, and 8 references, 7 of which are Soviet.

ASSOCIATION: Institut biokhimii im. A. N. Bakha Akademii nauk SSSR (Institute of Biochemistry imeni A. N. Bakh of the Academy of Sciences, USSR) Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 3, 1959

Card 4/4

SPIRIN, A.S.

Artificial synthesis of nucleic acids by the use of enzymes.
Biokhimiia 25 no.1:187-189 Ja-F '60. (MIRA 13:6)
(NUCLEIC ACIDS) (CHEMISTRY, ORGANIC--SYNTHESIS)

KUDLAY, D.G.; SKAVRONSKAYA, A.G.; SPIRIN, A.S.

Comparative study of the antigen structure of protein fractions
of bacteria of the intestinal group. Zhur.mikrobiol.epid.i immun.
31 no.1:50-55 Ja '60. (MIRA 13:5)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN
SSSR.

(SALMONELLA immunol.)
(SHIGELLA immunol.)

SPIRIN, A.S. (Moskva)

Chemical nature of viral infectivity. Usp. sovr. biol. 50 no.3:
N-D '60. (MIRA 14:3)

(VIRUSES)

SPIRIN, A.S.; MIL'MAN, I.S.

Effect of temperature on the state of macromolecules of highly polymerized ribonucleic acid from animal tissues. Dokl. AN SSSR 134 no.3: 717-720 S '60: (MIRA 13:9)

1. Institut biokhimii im. A.N. Bakha Akademii nauk SSSR i Institut morfologii zhiwotnykh im. A.N. Severtsova Akademii nauk SSSR. Predstavleno akad. A.I. Oparinym.

(NUCLEIC ACIDS) (TEMPERATURE--PHYSIOLOGICAL EFFECT)

DVORKIN, G.A.; SPIRIN, A.S.

Molecular configuration of infective viral ribonucleic acid in solutions according to the data of electric dichroism measurements.
Dokl. AN SSSR 135 no.4:987-990 '60. (MIRA 13:11)

1. Institut biokhimii i. A.N.Bakha Akademii nauk SSSR.
Predstavleno akademikom A.I.Oparinym.
(Nucleic acids) (Molecules) (Dichroism)

SPIRIN, A. S. (USSR)

"The Temperature Effect and the Macromolecular Structure
of Highly Polymerized Ribonucleic Acids of Various Origins."

Report presented to the 5th International Biochemical Congress,
Moscow, 10-16 August 1961

SPIRIN, A.S.; GAVRILOVA, L.P.

Macromolecular structure of native ribonucleic acid solution.
Izv. AN SSSR. Ser. biol. no.4:504-518 J1-Ag '61. (MIRA 14:9)

1. Institut biokhimii im. A.N.Bekha AN SSSR.
(NUCLEIC ACIDS)

SPIRIN, A.S., kand.biologicheskikh nauk

Chemistry of the nucleic acids DNA and RNA. Zhur.VKHO 6 no.3:260-
267 '61. (MIRA 14:6)

(Nucleic acids)

SPIRIN, A.S.

"Temperature effect" and macromolecular structure of high-polymeric
ribonucleic acids of different origin. Biokhimiia 26 no.3:511-522
My-Je '61. (MIRA 14:6)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R.,
Moscow.

(NUCLEIC ACIDS)

(HEAT--PHYSIOLOGICAL EFFECT)

KISELEV, N.A.; GAVRILOVA, L.P.; SPIRIN, A.S.

Macromolecular configurations of high-polymeric ribonucleic acid
according to the data of electron microscopy. Dokl. AN SSSR 138
no.3:692-694 My '61. (MIRA 14:5)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR.
Predstavleno akademikom A.I. Oparinym.
(NUCLEIC ACIDS) (MACROMOLECULAR COMPOUNDS)

S/058/62/000/012/034/048
A160/A101

AUTHOR: Spirin, A. S.

TITLE: The present concepts of the molecular nature and the structure of nucleic acids and nucleoproteins

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1962, 40, abstract 12D282
(In collection: "Uspekhi biol. khimii." T. 4. M., AN SSSR, 1962, 93 - 133)

TEXT: Review. Information is presented on the chemical structure, the chemical specificity (as a nucleotide composition) and on the macromolecular configuration of ДНК(DNK) and of various fractions of РНК (RNK) (ribosomic, soluble, informational). Discussed is the problem of the composition, shape, size and molecular organization of individual desoxyribonucleoprotein particles being the smallest subunits of chromosomes and containing one DNK molecule and albumen. The problem of the organization of these particles in the chromosome is also discussed. Considered is the problem of ribonucleoprotein particles: cellular (ribosomes) and virus ones, their size, morphology, composition, structure and molecular organization.

[Abstracter's note: Complete translation]
Card 1/1

A. Yel'yashevich

SPIRIN, A.S.; SMIRNOV, V.N.

Informational RNA. Biofizika 7 no.4:501-511 '62. (MIRA 15:11)

1. Institut biokhimii imeni A.N.Bakha AN SSSR, Moskva.
(NUCLEIC ACIDS)

SPIRIN, A.S. (Moskva)

Role of nucleic acids in virus infections. Vest. AMN S.S.S.R.
17 no.12:35-38 '62. (MIRA 16:4)
(NUCLEIC ACIDS) (VIRUS DISEASES)

39229

S/218/62/027/003/001/005

1018/1218

2-1100

AUTHOR: Bogdanova, Ye. S., Gavrilova, L. P., Dvorkin, G. A., Kiselev, N. A. and Spirin, A. S.

TITLE: Macromolecular structure of high-polymer (ribosomal) ribonucleic acid

PERIODICAL: Biokhimiya, v. 27, no. 3. 1962, 387-402

TEXT: RNA of E. coli was studied by means of sedimentation, viscosity, UV absorption, optical rotation, UV electric dichroism measurements and electron microscopy. In its physical and physico-chemical properties it resembles closely the native TMV RNA studied earlier. The macrostructural organization of high-polymer TMV RNA resembles that of E. coli ribosomal RNA. Each macromolecule constitutes one continuous polynucleotide chain. The configuration in solution is governed by the free equilibrium resulting from the reversible interaction of intramolecular forces (hydrogen bonds, electrostatic repulsion and probably coordinate links involving metals). At room temperature and at a sufficient ionic strength, short mainly adjacent sections of the single-stranded polynucleotide chain interact with each other in pairs by means of hydrogen bonds forming short double-stranded DNA-like helical regions stabilized by hydrogen bonds (secondary structure). As a whole, RNA macromolecules can be found in different configurations, depending on ionic strength, temperature and: a) an unfolded strand without any secondary structure; b) a compact rod formed by linear piling of numerous short helical regions orderly oriented and alternating with

Card 1/2

X

SPIRIN, A.S.; SMIRNOV, V.N.

Informational RNA and regulating mechanisms of protein synthesis
in bacteria; (a review). Izv.AN SSSR.Ser.biol. 27 no.4:477-501
Jl-Ag '62. (MIRA 15:9)

1. Institut biokhimii imeni A.N.Bakha AN SSSR.
(BACTERIA) (PROTEINS METABOLISM) (NUCLEIC ACIDS)

SHAKULOV, R.S.; AYT KHOZHIN, M.A.; SPIRIN, A.S.

Latent degradation of ribosomes. Biokhimiia 27 no.4:744-751
Jl-Ag '62. (MIRA 15:11)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R.,
Moscow.

(NUCLEOPROTEINS)

SPIRIDIN, Aleksandr Sergeevich; OPARIN, A.I., akademik, otv. red.;
CORBACHEVA, L.B., red.izd-va; YECOROVA, N.F., tekhn. red.

[Some problems of the macromolecular structure of ribonucleic acids] Nekotorye problemy makromolekuliarnoi struktury ribonukleinovykh kislot. Moskva, Izd-vo AN SSR, 1963. 77 p.
(MIRA 16:12)

(Nucleic acids)

SPIRIN, A.S.; DVORKIN, G.A.; KISELEV, L.L.; SMIRNOV, V.N.

Problems of protein biosynthesis. Usp.biol.khim. 5:3-60 '63.
(MIRA 17:3)

GOLUB, Ye.I.; GAUZE, G.G.; DVORKIN, G.A.; SPIRIN, A.S.

Electrooptical methods for studying the ribosomes from *Escherichia coli*. Dokl. AN SSSR 149 no.2:446-449 Mr '63. (MIRA 16:3)

1. Institut biofiziki AN SSSR i Institut biokhimii im. A.N.Bakha AN SSSR. Predstavleno akademikom A.I. Oparinym.
(ESCHERICHIA COLI) (ELECTRON OPTICS) (PROTEIN METABOLISM)

BELTSINA, N.V.; GAVRILOVA, L.P.; AYT KHOZHIN, M.A.; NEYFAKH, A.A.;
SPIRIN, A.S.

Informational ribonucleic acid at early stages of the development
of the embryos of the loach (*Misgurnus fossilis*). Dokl. AN SSSR 153
no. 2:464-467 N '63. (MIRA 16:12)

1. Institut biokhimii im. A.N. Bakha AN SSSR i Institut morfologii
zhivotnykh im. A.N. Seveftsova AN SSSR. Predstavleno akademikom
A.N. Belozerskim.

SPIRIN, A. S.; KISELEV, N. A.

"On Structure and Functioning of Ribosomes."

report submitted for 6th Intl Biochemistry Cong, New York City, 26 Jul-1 Aug 1964.

KISELEV, N. A.; SPIRIN, A. S.

"Structure of ribosomes as revealed by electron microscopy."

paper presented at the 3rd European Regional Conf on Electron Microscopy, Prague,
26 Aug-3 Sep 64.

SPIRIN, A.S., doktor biolog.nauk

Symposium on the subject "Structure and Functions of Genetic
Materials." Vest. AN SSSR 34 no. 2:106-107 F '64.
(MIRA 17:5)

SMIRNOV, V.N.; SPIRIN, A.S.; KULLIYEV, P.; ZBARSKIY, I.B.

RNA synthesis in the silk gland of the mulberry silkworm. Dokl.
AN SSSR 155 no. 4:957-960 Ap '64. (MIRA 17:5)

1. Institut biokhimii im. A.N.Bakha AN SSSR i Institut
morfologii zhivotnykh im. A.N.Severtsova AN SSSR. Predstavleno
akademikom A.N.Belozerskim.

SMIRNOV, V.N.; KULLIYEV, P.; VARSHAVSKIY, Ya.M.; SPININ, A.S.

Participation of ribosomes in the biosynthesis of silk fibroin.
Dokl. AN SSSR 156 no. 5:1221-1224 Je '64. (MIRA 17:6)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR
i Institut biokhimii im. A.N.Bakha AN SSSR. Predstavleno akademikom
A.N.Belozerskim.

AYFKHCEHIN, M.A.; BELITSINA, N.V.; SPININ, A.S.

Nucleic acids in the early stages of development of fish embryos; based on the example of the loach *Misgurnus fossilis*.
Biokhimiia 29 no. 1:169-175 Ja-F '64. (MIRA 18:12)

1. Institut biokhimii imeni Bakha AN SSSR, Moskva. Submitted August 12, 1963.

SHIRAN, A.F., BILITSKIN, N.V. (Dniev).

Messenger ribonucleic acids in early embryogenesis. *Usp.*
sovr. biol. 59 no.2:187-204. Mar-Apr '65. (MIF: 18-4)

ODINTSOVA, M.S.; ENGEL'GARDT, V.A., akademik, glav. red.;
DEBORIN, G.A., zam. glav. red.; SPIRIN, A.S., doktor
biol. nauk, red.

[Biosynthesis of protein and nucleic acids] Biosintez belka
i mukleinovykh kislot. Moskva, Nauka, 1965. 346 p.
(MIRA 18:4)

SPIRIN, A.S., doktor biologicheskikh nauk

Biosynthesis of proteins. Vest. AN SSSR 35 no.4:51-64, Ap '65.
(MIRA 18:6)

L 27067-66 EWT(1)/T JK

ACC NR: AP6017416

SOURCE CODE: UR/0221/65/059/002/0187/0204

AUTHOR: Spirin, A. S. (Moscow); Belitsina, N. V. (Moscow)

ORG: none

TITLE: Information ribonucleic acids⁶ in early embryogenesis

SOURCE: Uspekhi sovremennoy biologii, v. 59, no. 2, 1965, 187-204

TOPIC TAGS: RNA, protein, biologic reproduction, biosynthesis

ABSTRACT: Recent work on the role of information ribonucleic acids (mRNA) in the synthesis of proteins and cell differentiation in early embryogenesis is reviewed. It is pointed out that although Jacob and Monod's hypothesis in regard to the mechanism of the action of mRNA has proved productive, no experimental data indicating its applicability to processes of cell differentiation exist. The importance of informosomes (mRNA nucleoproteins) in processes involved in cell differentiation is emphasized with references to work on the subject done by the authors and by M. Nemer. According to the hypothesis advanced by the authors, mRNA accumulates in cells in an inactive form, i.e., that of free informosomes. The process of intensive regulated (programmed) protein synthesis after fertilization is released by combination with ribosomes of informosomes that are freed of inactivating protein. Experimental facts indicate that regulation of this synthesis may proceed in the cytoplasm and does not depend on the presence of the nucleus. A considerable role in the process of protein synthesis is played by maternal mRNA that has formed in the process of development of the oocyte. Although intensive synthesis of mRNA by nuclei of the embryo begins immediately after fertilization, the newly formed mRNA participates to only a minor extent in protein synthesis in the early states of embryogenesis. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 007 / OTH REF: 046

Card 1/1

30
B

2

ACC NR: AP6028724

SOURCE CODE: UR/0385/66/002/004/0285/0292

AUTHOR: Spirin, A. S.

im. A. N. Bakh

ORG: Institute of Biochemistry, AN SSSR, Moscow (Institut
biokhimii AN SSSR)

TITLE: Masked mRNA

SOURCE: Zhurnal evolyutsionnoy biokhimii i fiziologii, v. 2, no. 4,
1966, 285-292

TOPIC TAGS: RNA, masked mRNA, inactive RNA, RNP particle, *amino acid,*
enzyme

ABSTRACT:

It is known that mRNA exists in a stored, temporarily in-
active, protected form in unfertilized eggs and is "un-
masked" after fertilization. The studies described below
indicate that the same phenomenon exists in other animal
cells and that during the process of differentiation the
stored mRNA is released to initiate a new stage of develop-
ment. Possibly the mRNA in its "masked" state exists as
intracellular RNP particles organized like simple RNP con-
taining viruses, since such particles have recently been
found in cells of early embryos. The presence of "masked"

Card 1/3

UDC: 547.963.3+575.1:547.963.3+591.813:547.963.3

ACC NR: AP6028724

mRNA in sea-urchin eggs has been deduced from the existence of a number of factors. Anucleate sea-urchin eggs develop parthenogenetically after physical stimulation and form blastulas. In such systems development is obviously stimulated by preformed mRNA in the cytoplasm. Labeled amino acids were used to illustrate that protein synthesis proceeded with nearly the same intensity in nucleate and anucleate cells. Evidently this preformed "masked" mRNA initiated and maintained cleavage until the blastula stage. This was not affected by the presence of Actinomycin D or other antibiotics. RNA preparations separated from unfertilized sea-urchin eggs could stimulate labeled amino-acid incorporation *in vitro*, which was another indication of the presence of mRNA in the crude preparation. The study of RNA synthesis from labeled precursors in frog and sea-urchin eggs revealed that the labeled product was neither ribosomal nor "soluble" as in mature fertilized eggs, and it is believed that this mRNA is accumulated and stored in the "masked" form. It has been shown that the inactivated protein synthetic apparatus in the mature eggs cell results not from the absence or inactivation of enzymes but from a lack or an insufficiency of "soluble" RNA, since the cell is rich in the other components. Therefore, one can reject the hypothesis

Card 2/3

ACC NR: AP6028724

of specific inhibitors of protein synthesis in the unfertilized egg cell, and suggest that ribosomal particles contain the "masked" mRNA which is activated upon stimulation. RNA fractions possessing such stimulating properties have been isolated. The "masked" mRNA is protected from degradation by intracellular enzymes, indicating that it is protected by a macromolecular sheath. Therefore, a goal for future research is the isolation of a proteolytic enzyme which is activated by stimulation and which causes the breakdown of the macromolecule. Possibly the nature of this "masking" is the same or similar to that protecting the RNA in RNA-containing viruses in which the RNA is in an RNA-protein complex during its inactive period. Therefore, a structure similar to that of a small virus tentatively called an "informasome" is discussed. RNP particles possessing the correct properties have been demonstrated in early fish and sea-urchin embryos. Many articles from the literature are cited which report results confirming the theory that some mRNA is unmasked at various stages of embryogenesis to carry out protein synthesis. [WA-50; CBE No.11]

SUB CODE: 06/ SUBM DATE: 15Mar66/ ORIG REF: 003/ OTH REF: 040/

Card 3/3

SPIRIN, B.A.

Comparative rating of the effect of certain technics of heat application on the resorption of hematomas. Vop.kur.fizioter. i lech. fiz.kul't. no.2:86 Ap-Je '55. (MLRA 8:8)

1. Dissertatsiya na soiskaniye uchenoy stepeni kandidata meditsinskikh nauk. Vypolnena na kafedre obshchey fizioterapii i kurortologii Voenno-morskoy meditsinskoy akademii (rukovoditel'-prof. A.P. Parfenov). Zashchishchena v dekabre 1954 g. v toy-zhe akademii.

(HEMATOMA, experimental,
eff. of heat, reabsorption)

(HEAT, effects,
on exper. hematoma, reabsorption)

NIKITYUK, B.A.; SPIRIN, B.A.

Luminescent method for studying the growth of bone tissue. Arkh.
anat. gist. i embr. 40 no.2:84-86 F '61.. (MIRA 14:5)

1. Kafedra normal'noy anatomii (zav. - chlen-korrespondent AMN SSSR
prof. D.A.Zhdanov) I Moskovskogo ordena Lenina meditsinskogo instituta
imeni I.M.Sechenova. Adres avtora: Moskva, Mokhovaya ul, 11, I
Moskovskiy Ordean Lenina meditsinskiy institut, kafedra normal'noy
anatomii.

(BONE)

(FLUORESCENCE)

SPIRIN, B. A.

"Work Experience of the Military-Scientific Society of Naval Doctors of the Leningrad Naval Station" - p. 62

Voyenno Meditsinskiy Zhurnal, No. 10, 1962

NIKITYUK, B.A.; SPIRIN, B.A.

Work of the Section of Anatomic Anthropology at the 7th
International Congress of Anthropological and Ethnographical
Sciences. Arkh. anat., gist. i embr. 49 no.9:107-114 S '65.

(MIRA 18:12)

1. Kafedra anatomii (zav. - chlen-korrespondent AMN SSSR prof.
D.A.Zhdanov) 1-go Moskovskogo ordena Lenina meditsinskogo
instituta imeni I.M.Sechenova. Submitted February 13, 1965.

SPIRIN, B. G.

MAYORCHIK, V. Ye.; SPIRIN, B. G.

Electrophysiologic analysis of cortical processes in temporary contacts in man. Vopr. neurokhir 15 no. 3:3-11 May-June 1951. (GLML 21:3)

1. Of the Laboratory of Higher Nervous Activity (Head -- Prof. L. N. Fedorov, Active Member of the Academy of Medical Sciences USSR) and of the Electrophysiology Laboratory (Head -- Prof. V. S. Rusinov, Corresponding Member of the Academy of Medical Sciences USSR), Institute of Neurosurgery imeni N. N. Burdenko (Director -- Prof. B. G. Yegorov, Corresponding Member of the Academy of Medical Sciences USSR) of the Academy of Medical Sciences USSR.

SPIRIN, B.G.; FANTALOVA, V.L.

Apparatus using ink for registration of motor reactions. *Zh. vysshei nerv. deiat.* 3 no.2:301-303 Mar-Apr 1953. (CIML 24:4)

1. Laboratory of the Physiology of Higher Nervous Activity of the Institute of Neurosurgery imeni Academician N. N. Burdenko.

SPIRIN, B.G.; FANTALOVA, V.L.

Investigation of conditioned motor responses with speech reinforcement following hemispherectomy. Vop.neirokhir. 17 no.5:18-26 S-0 '53. (MIRA 6:11)

1. Institut neyrokhirurgii im. akad. N.N.Burdenko Akademii meditsinskikh nauk SSSR. (Conditioned response) (Brain--Surgery)

SPIRIN, B.G.

KANDEL', Ye.I.; SPIRIN, B.G.; FANTALOVA, V.L.; FILIPPICHEVA, N.A.

Result of an investigation of conditioned reflex functions in patients at a neurosurgical clinic. Vop. neurokhir. 18 no:3:21-31 My-Je '54.

(MLRA 7:8)

1, Iz Instituta neyrokhirurgii imeni akademika N.N.Burdenko Akademii meditsinskikh nauk SSSR.

(REFLEX, CONDITIONED, in various diseases,

*brain dis.

(BRAIN, diseases,

*manifest., conditioned reflex)

SPIRIN, B.G.; FANTALOVA, V.L.

Significance of the mechanism of induction for the restoration of conditioned motor reactions in man. Zhur. vys. nerv. deiat. 4 no.3: 366-380 My-Je '54. (MLRA 8:2)

1. Laboratoriya vysshey nervnoy deyatel'nosti Instituta neyrokhirurgii im. N.N.Burdenko AMN SSSR.

(REFLEX, CONDITIONED,

mechanism of induction in restoration of conditioned reactions in man)

SPIRIN, B.G.

Characteristics of speech perseverations in cases of simultaneous lesions of motor and acoustic analyzers. Zhur. nevr. i psikh 54 no. 12:1014-1018 D '54. (MLRA 8:2)

1. Laboratoriya fiziologii vysshey nervnoy deyatel'nosti cheloveka Instituta neyrokhirurgii imeni N.N.Burdenko AMN SSSR.

(BRAIN, neoplasms,

surg., postop. speech perseveration with hearing & motor disord.)

(SPEECH DISORDERS, etiology and pathogenesis,

brain tumor, po top. speech perseveration with hearing & motor disord)

(HEARING DISORDERS, etiology and pathogenesis,

brain tumor, with postop. speech perseveration & motor disord.)

(MOVEMENT DISORDERS, etiology and pathogenesis,

brain tumor, with postop. speech perseveration & hearing disord.)

SPIRIN, B.

Eighth annual conference of young scientists dedicated to the 80th
Academician Nikolai Nilovich Burdenko's birthday. Vop.neirokhir.
20 no.5:63 S-0 '56. (MLRA 9:11)
(BRAIN—TUMORS)

S.P. An

USSR/Human and Animal Physiology - Nervous System.

R-12

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71137

Author : Babat, R.L., Clavutskiy, Spirin
Title : The Disturbance of Fundamental Cortical Processes in
Light Closed Trauma of the Skull.

Orig Pub : Vopr. neyrokhirurgii, 1957, No 1, 19-22

Abstract : In a light trauma (often without loss of consciousness) with light clinical symptoms, slight disturbances of the "VND" were observed (verbal-motor methods and measurement of latent period of the simple motor reaction were applied). The disturbance on the electroencephalogram (EEG) either was entirely absent or manifested itself mainly in the unevenness of alpha-rhythm. Evidently a certain degree of intensity of the trauma is necessary to produce noticeable changes in EEG. The disturbances in EEG arising in more serious traumas appear to be more stable as compared to the clinical symptoms.

Card 1/1

- 94 -

Spirin B.G.

USSR/Human and Animal Physiology - Nervous System.

R-12

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71138

Author : Grindel', O.M., Spirin, B.G.

Title : Some Peculiarities of the Dynamics of Cortical Disturbances After a Light Closed Skull Trauma.

Orig Pub : Vopr. neyrokhirurgii, 1957, No 1, 22-25

Abstract : In the majority of patients we observed a weakness of differentiation inhibition and a lowering of basic cortical processes (verbal-motor method). EEG a rest was either normal or its changes were limited to a certain irregularity of the alpha-rhythm and by the presence of separate diffused delta-waves and epileptoid impulses. The depression of alpha-rhythm towards light was weakened or was entirely absent. In some patients during the first days after trauma, light stimuli produced a paradoxical increase in alpha-rhythm (particularly in parietal regions) or its appearance, after previous absence. Alpha-

Card 1/2

- 95 -

YEGOROV, B.G., prof., zasluzhennyy deyatel' nauki, otv.red.; VOLKOVA-PAVLOVA, red.; SAVITSKAYA, Ye.N., red.; SPIRIN, B.G., red.; UGRYUMOV, V.M., red.; FILIPPICHEVA, N.A., red.; YABLONOVSKAYA, L.Ya., red.; KORNYANSKIY, G.P., red.; GRAZHDANINOV, N.A., tekhn.red.

[Research of the N.N.Burdenko Institute of Neurosurgery of the Academy of Medical Sciences of the U.S.S.R. from 1954 to 1958] Nauchnye raboty, vyshedshie iz instituta neirokhirurgii imeni akad. N.N. Burdenko AMN SSSR za 5 let, 1954-1958 gg. Pod red. B.G.Egorova. (MIRA 13:3)
Moskva, 1959. 157 p.

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut neyrokhirurgii.

(NERVOUS SYSTEM--SURGERY)

SPIRIN, B.G., kand.med.nauk; SUDZHAL'SKAYA, L.P.

Disorders of unconditioned vascular reactions in tumors of the
diencephalic region. Probl.sovr.neirokhir. 3:301-310 '59.
(MIRA 16:6)

(DIENCEPHALON—TUMORS) (REFLEXES)
(BLOOD—CIRCULATION, DISORDERS OF)

SPIRIN, B.G., kand.med.nauk

Asymmetries in unconditioned vascular reactions in tumors of the
cerebrum. Probl.sovr.neirokhir. 3:311-322 '59.

(MIRA 16:6)

(BRAIN—TUMORS) (REFLEXES)
(BLOOD—CIRCULATION, DISORDERS OF)

GRINDEL', O.M.; SPIRIN, B.G.

Reflection in the electroencephalogram of the inhibitory effect
of the second signal system on the final motor effect. Zhur. vys.
nerv. deiat. 10 no.2:180-188 Mr-Apr '60. (MIRA 14:5)

1. Burdenko Institute of Neurosurgery, U.S.S.R. Academy of Medical
Sciences, Moscow. (ELECTROENCEPHALOGRAPHY)
(CONDITIONED RESPONSE)

VOLKOV, A.A.; SPIRIN, B.G.

Disorders of unconditioned vascular reactions in tumors of the posterior
cranial fossa. Zhur. nerv. psikh. 60 no. 4:385-392 '60. (MIRA 14:4)

1. Nauchno-issledovatel'skiy ordean Trudovogo Krasnogo Znameni
institut neyrokhirurgii imeni N.N. Brudenko, AMN SSSR, Moskva.
(CARDIOVASCULAR SYSTEM) (BRAIN—TUMORS)

UGRYUMOV, V. M., prof.; KONOVALOV, Yu. V., prof.; SPIRIN, B. G., kand.
med. nauk; IVANOV-DYATLOV, F. G., kand. med. nauk.; MESHCHERYAKOVA,
A. V.; MIKHEYEVA, Ye. V., kand. med. nauk; FEDOROV, S. N.;
SHVORNEVA, V. Z.; D'YAKONOVA, V. Ye. (Moskva)

Disorders of respiration and their treatment in tumors of the brain.
Vop. neurokhir. no.6:46-50 '61. (MIRA 14:12)

(BRAIN--TUMORS) (RESPIRATION)

KOREYSHA, L.A., prof.; ZHAGRIN, A.G.; LYASS, F.M.; SPIRIN, B.G.; GABELOVA,
N.A., (Moskva)

Study of hemodynamics in patients with focal diseases of the
central nervous system with the aid of labelled sodium. Vop.
neirokhir. 27 no.1 Ja-F '63. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut neyrokhirurgii imeni
N.N.Burdenko AMN SSSR.
(NERVOUS SYSTEM—DISEASES) (SODIUM ISOTOPES)
(BLOOD—CIRCULATION)

SPIRIN, D.S., staryy neftyanik, Geroy Sotsialisticheskogo Truda.

Past and future of the Baku petroleum industry. Bezop.truda v
prom. 1 no.11:34-36 N '57. (MIRA 10:10)
(Baku--Petroleum industry)

SPIRIN, E.K.; STROMBERG, A.G.

Effect of various factors on the anodic peak of uranium in
the method of amalgam polarography with storage. Zhur. anal.
khim. 20 no.7:807-810 '65. (MIRA 18:9)

1. Tomsk Polytechnical Institute.

SPIRIDIN, E.K.

Use of ultrasound for increasing the sensitivity of the
method of amalgam polarography with storage. Zhur. anal.
khim. 20 no.8:781-784 '65. (MIRA 18:10)

1. Tomskiy politekhnicheskij institut.

ALIKAYEV, V.A.; DUL'NEV, V.I.; VASIL'KOV, G.V.; TROKHIN, V.K.;
IVASHCHENKO, S.A.; PLATONOV, V.A., veterinarno-sanitarnyy
ekspert; ROMANYUKHA, A.I.; BRYUSHKOV, P.; PERGAT, F.F.;
SPIRIN, F.; ARKADSKIY, V.P.; MEDVEDEV, I.

Brief news. Veterinariia 41 no.10:118-126 0 '62.

(MIRA 18:11)

1. Nachal'nik veterinarno-sanitarnogo uchastka stantsii
Melitopol' Pridneprovskoy zheleznicy dorogi (for Romanyukha).

GRINDEL', O.M., SPIRIN, G.B.

Change in the lability of basic cortical processes following mild closed cerebrocranial trauma [with summary in English]. Zhur.vys. nerv.deiat. 8 no.4:482-490 J1-Ag '58 (MIRA 11:9)

1. Nauchno-issledovatel'skiy institut neyrokhirurgii im. N.N. Burdenko AMN SSSR.

(BRAIN, wds & inj.)

eff. of closed non-severe inj. on cortical lability (Rus))

SPIRIN, G. M.

Spirin, G. M. -- "Investigation of the Stressed Condition of Concrete Spillway Dams on a Rock Base." Cand Tech Sci, Inst of Construction Mechanics, Acad Sci Ukrainian SSR, 2 Feb 54. (Pravda Ukrainy, 24 Jan 54)

SO: SUM 168, 22 July 1954

SUBJECT USSR/MATHEMATICS/Theory of approximation CARD 1/1 PG - 49
AUTHOR SPIRIN G.M.
TITLE Improvement of the iteration method for the solution of the
biharmonic equation in finite differences.
PERIODICAL Dopovidi Akad. Nauk ukrain RSR 4, 292-295 (1954)
reviewed 5/1956

An improved method is proposed of the iteration method for the solution of the biharmonic equation in finite differences for the general case of a net with an irregular step. The improvement of the solution is obtained by applying difference expressions for the second derivatives with respect to five points and by improving the extrapolation formulas for operations on the boundary of the domain. An example is presented which shows the efficiency of the proposed calculation method.

Instit. Hydrology and Hydraulics AS Ukr SSR

SPIRIN, G.M., mladshiy nauchnyy sotrudnik.

A study of the effect of increase of net density in solving a plane problem in the theory of elasticity by the finite differences method.
Izv. Inst. gidrol. i gidr. AN URSR 11:92-105 '54. (MLRA 8:4)
(Elasticity) (Difference equations)

SOV/112-57-9-18486

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 9, p 57 (USSR)

AUTHOR: Dyatlovitskiy, L. I., Spirin, G. M.

TITLE: The Problem of Volumetric Forces of the Proper Weight Can Be Reduced to the Problem of the Contour Load for Regions Having Different Elastic Constants (Privedeniye zadachi s ob'yemnymi silami sobstvennogo vesa k zadache s konturnoy nagruzkoy dlya oblastey s razlichnymi uprugimi postoyannymi)

PERIODICAL: Izv. In-ta gidrol. i gidrotekhn. AN UkrSSR, 1956, Vol 14 (21), pp 93-95

ABSTRACT: To determine a stressed condition (a planar problem) in a hydraulic structure whose component parts are monolithically joined but differ in their elastic constants and volumetric weights, a method is suggested that reduces volumetric forces to a contour load. A particular solution is found for the simplest region P where the distribution of volumetric forces and elastic constants is the same as in a specified body S. The problem is reduced to finding the

Card 1/2

SOV/112-57-9-18487

Translation from: Referativnyy zhurnal, Elektrotehnika, 1957, Nr 9, p 57 (USSR)

AUTHOR: Spirin, G. M.

TITLE: Stress Determination by the Method of Nets in Bodies Having Different Elastic Constants (a planar problem) (Opredeleniye napryazheniya metodom setok v telakh s razlichnymi uprugimi postoyannymi /ploskaya zadacha/)

PERIODICAL: Izv. In-ta gidrol. i gidrotekhn. AN UkrSSR, 1956, Vol 14 (21), pp 96-105

ABSTRACT: A stressed condition of a monolithic region consisting of two zones with different elastic properties is considered. The region is subjected to planar deformation. The problem is reduced to finding a stress function within each of the zones on the basis of known boundary-value conditions along the external contour of the region, and to observe certain contact conditions. The solution is supplied in finite differences in the form of a set of linear equations. An example of calculation is given, and the results are compared with those of other methods.

A. L. R.

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FYSHKIN, B.A., red.; ARISTOVSKIY, V.V. [Aristovs'kyi, V.V.], doktor tekhn. nauk, red.; DYATLOVITSKIY, L.I. [Diatlovyts'kyi, L.I.], kand. tekhn. nauk, red.; SPIRIN, G.M. [Spirin, H.M.], red.; SPIRINA, N.I., red.; PECHKOVSKAYA, O.M. [Pechkovs'ka, O.M.], red. izd-va; RAKHLINA, N.P., tekhn. red.

[Investigating the stressed state of hydraulic structures] Doslidzhennia napruzhennoho stanu hidrotekhnichnykh sporud; sbirnyk naukovykh prats'. Kyiv, 1961. 149 p. (MIRA 14:10)

1. Akademiya nauk URSS, Kiev. Rada po vyvchenniu produktyvnykh syl URSS. 2. Chlen-korrespondent AN URSS (for Pyshkin). (Hydraulic structures)

Spirin, G.S.

AUTHORS: Gofman, I.I., Smirnov, B.G., Spirin, G.S., Shuppe, G.N. 57-11-29/33

TITLE: On Electrostatic Electron Emission of Semiconductors. (K voprosu ob elektrostatocheskoy elektronnoy emissii poluprovodnikov.)

PERIODICAL: Zhurnal Tekhn.Fiz., 1957, Vol. 27, Nr 11, pp. 2662-2663 (USSR)

ABSTRACT: Here the results of the investigation of electrostatic electron-emission on the occasion of a static process with a non-purely metallic point of tungsten, but covered by carbide, are given. All volt-ampere characteristics of the electro-static electron-emission were of the same character. It is demonstrated that the characteristic of the emission-current in dependence on the potential is in accordance with the theory. It can be maintained that the theory of R.Stratton (Proc.Phys.Soc., B, 68, 746, 1955) is qualitatively confirmed: the flections of the emission-curve characteristic for this theory have appeared in all curves of the experiments here described. There are 5 figures and 1 Slavic reference.

ASSOCIATION: Department of Electrophysics of the Central Asia State University V.I.Lenin (Kafedra elektrofiziki Sredneaziatskogo gosudarstvennogo universiteta im.V.I.Lenina)

SUBMITTED: February 8, 1957

AVAILABLE: Library of Congress.

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Pokoreniye Severnogo Polyusa (Conquest of the North Pole) Moskva,
Geografiz, 1950.
313 P. Illus., Ports, Tables.

AVS

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Ha Severnyy Polys (At the North Pole) Moskva, Detgiz, 1952.
222 P. Illus., 14 pps.

AVS

SPIRIN, I.S., inzhener.

Reclamation of transformer oil by silica gel with an admixture of alkali.
Elek. sta. 24 no.8:45-47 Ag '53. (MLRA 6:8)
(Electric transformers) (Oil reclamation)

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SPIRIN, I.S. inzh.

Determining the heat of contacts with the aid of thermo-film indicators. Energetik 5 no.10:23-24 0 '57. (MIRA 10:12)
(Electric contactors) (Thermometry)

SOV/91-58-2-17/31

AUTHOR: Spirin, I.S., Engineer

TITLE: The Insulation of the Handles of the Electrician's Instrument (Izolirovaniye ruchekek elektromonterskogo instrumenta)

PERIODICAL: Energetik, 1958, Nr 2, p 25 (USSR)

ABSTRACT: The author recommends a new, simpler and less dangerous method to insulate the handles of the electrician's tools. The new method was developed by Gorenergo and consists in immersing the handles in polyvinyl chloride enamel PKhV-10 (TU MKhP 1383-46) at a temperature of 15 to 20°C. The operation is repeated until a layer of about 1 mm is obtained. Such insulation stands a voltage of

Card 1/2

SOV/91-58-2-17/31

The Insulation of the Handles of the Electrician's Instrument
10 kV. There is 1 Soviet reference.

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SPIRIN, Ivan Timofeyevich [deceased]; KURGANOVA, V.M., red.; MAT-
VEYEV, A.P., tekhn. red.

[In the blue sky] V golubom nebe. Moskva, izd-vo "Sovet-
skaya Rossiya," 1960. 201 p. (MIRA 14:5)
(Aeronautics)

SPIRIN, K.F.

Migration of the ovicell in swine. Zh. obsh. biol., Moskva 13 no.
3:246-248 May-June 1952. (GLML 22:4)

1. Poltava Scientific-Research Institute of Swine Raising.