CLASSIFICATION

CENTRAL INTELLIGENCE AGENCY

REPORT NO.

50X1-HUM

INFORMATION FROM FOREIGN DOCUMENTS OR RADIO BROADCASTS

CD NO.

COUNTRY

USSR

DATE OF

INFORMATION 1950

**SUBJECT** 

Ideology

HOW

**PUBLISHED** Weekly newspaper DATE DIST.

May 1950

WHERE

**PUBLISHED** Moscow NO. OF PAGES

DATE

**PUBLISHED** 16 Feb 1950

SUPPLEMENT TO

LANGUAGE

Russian

REPORT NO.

ONTAINS INFORMATION
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Meditsinskiy Rabotnik No 7, 1950.

### THE CONTEMPORARY STATE OF MEDICAL SCIENCE

Academician A. Speranskiy

The Soviet attempt to "purify" science is constantly meeting new obstacles. Recently, it was discovered that the science of general pathology -the very foundation of medical science -- embraces two conflicting ideologies. One group supports Virkhov's theories with respect to cytopathology and accepts all the metaphysical and antievolutionary ideas, while the other group has adopted the theories of pure evolution. This latter group is in direct concurrence with the views expressed by the Soviet state, and has participated in discovering a new field of study on the importance of the nervous system as the central agency in the formation and development of the most diverse of pathologic processes.

It is hardly necessary to point out that the ideological-methodological fundamentals of Virkhov's theories are so completely metaphysical that they are absolutely contradictory to the true biological and medical sciences, to the materialistic concept of the origin of the animal world which is today accepted in the USSR, and to the relationship between the organism and its environment. The metaphysical nature of Virkhov's pathology is expressed by its separate treatment of the animal and its environment, of a denial of the true evolution of the animal world, and finally a denial of the fact that disease develops as an actual independent process.

Virkhov's theory on cellular pathology embraces studies of infection, immunity, and chemotherapy. In addition, it has been adopted in the so-called "classic" teachings of Pasteur, Koch, and Ehrlich. The reliance of Pasteur and Koch on the accuracy of the fundamentals of Virkhov's pathology, with respect to the mechanisms of the development of a disease, was so great that they failed to study these problems objectively, and blindly accepted Virkhov's concepts.

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Pasteur and Koch considered the study of infection and immunity a very limited field. They proceeded on the theory that it was merely necessary to identify the characteristics of a pathogenic agent, to establish the "port of entry" into the animal organism, to determine its course of circulation and the cause and effect of nidus formation. They also attempted to larify the phenomenon in those cellular areas of the animal which, so to speak, come into direct contact with the pathogenic agent.

Ehrlich's studies on immunity and chemotherapy were founded on the principles of Virkhov's cellular pathology. It is indicative that Ehrlich once wrote, "After Virkhov had postulated his ingenious theories, all efforts were directed toward studying the phenomenon of localization and causation of diseases, and there is no doubt that these factors have had great significance in the field of therapy."

Actually, according to Ehrlich's teachings—the action of any substance on an organ or on a microbe depends upon direct contact. It was on these obvious Virkhov principles that Ehrlich based his studies on immunity and chemotherapy, thus giving rise to the mechanical theories of the development of pathologic processes, immunity, and therapeutic principles. These theories were gradually accepted and remained unchallenged for a number of years.

Some of these theories are:

- 1. A pathogenic agent (microbe, toxin, virus, etc.) is the sole responsible agent for the development of a disease at any of its stages -- from the onset of the disease until complete cure or even death. Thus, it can be said that neutralization or isolation of the pathogenic agent will inhibit pathogenic processes.
- 2. An analysis and evaluation of the mechanisms in the development of any infectious or infectious-toxic process is primarily based on the determination of the port of entry of the pathogenic agent into the animal body, the channels through which it spreads in the body, and an isolation of that site or cellular area which is being directly and selectively infected by a specific pathogenic agent. It is also necessary to establish the character of those changes in the cells and organs which happen to come into direct contact with the pathogenic agent.
- 3. The general "paths enic process" is a sum of all local processes. Local processes become general processes, not as a result of progress in the development of the process, but due to the spread of the pathogenic agent and its direct contact with, and the resultant infection of, other cell areas.
- 4. The nonsusceptibility of the animal is due to either the natural or induced resistance of the Individual cells to infection.
- 5. A successful diagnosis and treatment of a disease is based on the identification of its specific cause or its "reflected image," in other words its "antibody" or antibiotic.
- 6. It is the task of the rapeutic medicine to isolate or neutralize the pathogenic agent by surgery, chemotherapy, antibiotics, or specific sera.

Today, the proponents of the principles of cytopathology will not openly admit the above-listed theories. Nevertheless, they will not change their positions. Attempts to discredit the old dogmas have progressed slowly, with the result that many supporters of the old views are still practicing them.

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Today's enlightened Soviet sciences of biology, physiology, and clinical medicine have shown themselves to be diametrically opposed to the views expressed by the theorists of cytopathology. The principles of the latter faction find no foothold in contemporary biology as expressed by Timiryazev, Michurin, and Lysenko; in physiology as taught by Sechenov, Pavlov, Vvedenskiy, and Ukhtomskiy; and in the schools of modern clinical medicine founded by Botkin and Ostroumov.

Today, the students of Virkhov's cytopathology are neither concerned nor perplexed about this apparent rift in medical theory. They calmly maintain their position and continue to support the principles of idealistic "biology" as expressed by Weismann-Mendel-Morgan; idealistic physiology as preached by Mueller, Fervorn, Gel'mgol'tts, Dubois-Reymond, Fulton; and the proponents of organo-localization trends in clinical medicine.

A good question at this point might be, Is there any instance where Virkhov's cytopathology or Ehrlich's chemotherapy has served any practical purpose in clinical medicine? There is only one definite answer: There is no known record of any practical achievement for which the medical profession can thank the studies of Virkhov or Ehrlich or, for that matter, any of their followers. On the contrary, the doctrine of cytopathology during the several decades of its existence has never contributed much medical knowledge.

This theory of cytopathology, similar to Ehrlich's chemotherapeutical fantasies, has always emphasized the "chance" approach to medicine. Much ado is made about the value of seroprophylaxis, serotherapy, and the wonderful results obtained with chemotherapeutic and antibiotic preparations, but a factual study will reveal that none of these practical achievements owes anything to the principles initiated by Virkhov or Ehrlich.

An objective review will show that the majority of modern pathologists who adhere to the cytopathologic principles not only fail to explain the mode of action of a given class of preparations, but also prevent any advance. They retard the progress of those students who claim that pathologic processes initially act on the nervous system of the animal organism.

Mention must be made of the fact that the scientific research work in the field of clinical medicine and in the training of new medical personnel still places much emphasis on the erroneous cytopathologic theories. In this respect Soviet medical education might be likened to a construction project which uses old or overhauled parts. It is therefore easy to see that the development of the medical field at present seems to emphasize the empirical outlook toward therapeutic preparations, which, similar to the "magic bullet" which one hears about so often in fairy tales, must themselves locate their target -- that is to say, the malignant microbe, the toxin, the cell, etc. Ridiculous as it might sound this is the theory on which today's chemotherapists operate.

This general theme has invaded many oviet texts and manuals. Writings which deal with various aspects of pathology invariably remind one of a catalogue listing various hypotheses, interpretations, and derivative theories. Consequently, the training of medical personnel involves absorbing useless metaphysical and antievolutionary concepts of cytopathology, whose apostles still maintain a solid front in the fields of teaching and research.

In foreign countries, the medical science of cytopathology with all its modifications, together with Ehrlich's studies, is not only the fundamental, but actually the only trend in medical science. The reason for this is obvious: the methodological fundamentals of this trend are in complete concurrence with, and are indivisibly connected to, bourge is ideology. Bourgeois science, which has the support of capitalism, has had to divorce itself from all true sciences,

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among them true pathology and medicine, and the Marxist-Leninist theories of evolution. It is understandable, therefore, that there is continued support of antievolutionary principles and Virkhov's conceptions of cytopathology.

What then are the principles which have permitted this reactionary and antiscientific school to flourish for so many years? The answer is simple. A hundred years ago all problems in pathology were solved by establishing the material substrata of the disease. This was based on an accumulation of factual material which permitted the differentiation of individual forms of pathologic processes. The study of pathology was to gain knowledge by means of experiments, to systematize and classify pathologic processes, and to localize, or as stated by Virkhov, to determine the pathologic site in the animal. The best example of this was the suppression of the unproductive natural philosophical conclusions regarding the "essence" of a disease. The final solution of this problem required the division of an animal into separate parts and these parts were studied individually. Thus, pathologic processes came to be studied as independent processes.

It has been stated that the relationship of Virkhov's studies to bourget s ideology and bourgeois science is quite evident, although noxious, to us. However, if the ideological-methodological fundamentals of cytopathology have shown themselves to be in such flagrant opposition to our socialistic ideology, to the principles of Michurinian biology, to the Soviet trend in physiology and pathology, and finally, to facts as revealed in experimental and clinical pathology, then why is it that Soviet medical men still support and preach this senile science?

Several reasons might be suggested for this continued support. In the first place, there are many medical men who are still influenced by capitalistic ideals. As a result, these "scientists" still adhere to views which are clearly anticvolutionary, antimaterialistic, and idealistic, and are merely continuing the work started by Virkhov, Ehrlich, Pasteur, Koch, and others.

In the second place, there appears to have been no sufficiently thorough indoctrination of medical personnel in the fundamentals of Marxist-Leninist ideology, particularly with respect to the Marxist-Leninist studies of physical development.

In the third place the deep-rooted ideas of past "masters" have created the general feeling that the new ideas are reactionary and not to be trusted.

Finally, it can be attributed to the formal training which all medical personnel have received in the principles of Virkhov's cytopathology.

Here, then, are the reasons why many of the modern pathologists support the old theories and reject the new.

The new Soviet trenc in pathology and medicine is based primarily on the "unity" of the complex animal organism and its environment. This is in complete agreement with the materialistic concepts of the evolution of the animal kingdom and does not reject the possibility of later forms of integration. The latter trend in pathology and medicine adopts the Marxist-Leminist ideas of the dialectic development of any process in nature. It has a common characteristic with the ideological methodological fundamentals of Michurinian biology and with I. P. Pavlov's teachings.

The Soviet trends are antagonistic to the ideological-methodological fundamentals of Virkhov's cytopathology, Fervorn's cytophysiology, and all the other metaphysical and idealistic theories initiated by foreign physiologists from Ehrlich to Weismann-Mendel and Morgan. Fundamentally, the principles of Virkhov,

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Weismann-Mendel, and Morgan are related and present a single front. This therefore, is the reason why we must speak of the united front which will have to be presented by the new Soviet concepts in physiology, pathology, and biology.

At this point it might be well to raise the question of whether or not any of the new correspts have been adopted by clinical practice in pathology. Fortunately, the new ideology has penetrated somewhat the line presented by the "old guard." During the Soviet period the new trend in pathology has been supported by clinical practice at all stages of its development and has confirmed its scientific principles many times.

It was not a matter of chance "discoveries," not empirical explorations, but actually the results of new fundamental concepts which were submitted to us as a means for establishing ne. methods of therapeutic intervention. These were not fully supported in clinical practice, but also explained the very essence of the pathologic process. Thus, it has been suggested that successful treatment can be brought about in chemotherapy-resistant cases of malaria, salicylic-resistant cases of rheumatism, the treatment of somatic disturbances with prolonged sleep, treatment of extrapulmonary tuberculosis by basic irritations of the neuro-receptive apparatus of the lungs, treatment of croupous pneumonia by subcutaneous novocainization of isolated regions, treatment of ulcerous diseases by novocaine infiltration of the cutaneous zones of hyperalgesia, treatment of some forms of pulmonary tuberculosis by alcoholization of the peripheral region of the diaphragmnal nerve, and treatment of brucellosis, hypertonia, and many others.

On the basis of these theoretical representations, Prof A. V. Vishnevskiy developed and put into clinical practice novocaine blockade and its modifications. With the new trend of science, it was also possible to re-evaluate the mechanisms of action of many old forms of intervention.

This new theory will be the first in the history of Soviet science to establish a single theory in medicine. It will permit a comparative evaluation of the mechanisms of infection, healing, and treatment even in the most diverse of pathologic processes.

The most important tasks of Soviet medical science today are to coordinate all efforts of physiology, biology, and pathology along a single front toward successful adoption of the new trends in Soviet pathology. It is absolutely necessary that the reactionary principles supported by Virkhov and Ehrlich and their followers be completely eliminated. This elimination must be carried out within the ranks of medical scientists as well as in the ranks of medical students. It is suggested that a series of discussions be instituted to make these problems known to as large an audience of Soviet medical workers as possible.

Prof S. A. Sarkisov (Meditsinskiy Rabotnik, 9 February 1950) made an attempt to form such discussion groups. The movement was not too successful in view of the fact that the subject matter was limited to information that had appeared in magazines and the press. The next series of discussions should consider a greater source of material. We must all strive for a pure Soviet science.

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