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The second theory was that of Bogomolets, who said that priority in vital processes belongs to the system of connective tissue. Both these dogmatic theories, which were partially supported by experimental findings, found patrons in the Kremlin.

2. Apparently after World War II, Bogomolets was defeated in the war of theories and, of course, he died in 1946 or 1947. Nevertheless, Speranski's theory underwent some radical changes. It was eventually replaced by a new dogma called "Pavlov's Neurism". A very important meeting of the Soviet Academy of Science was held in Moscow in 1950 and the new dogma was officially proclaimed and since that time everyone has had to follow its postulates. In this connection it is very peculiar how the Soviet rulers adapted, and to some extent faked, the world-renowned results of the valuable scientific activities of Pavlov. One example of this is that they have ascribed to Pavlov's statements about the control of somatic functions in the body by psychic processes, namely by conditioned reflexes, and that these reflexes can be artificially established to conform to the conditions of the Communist society with resulting transformations in the personality, adaptability and health of the people.
3. Another theory that was officially recognized was Lyssenko's which is an exaggeration of Darwin's postulate concerned with the variability of animal species. Lyssenko claimed that hereditary factors could be easily changed and adapted to the demands of the socialist state.
4. Both the above theories are obligatory for any scientific researcher and every scientific book must have quotations from these theories in its explanations of observed fact.
5. Another interesting peculiarity of post-World War II Soviet medicine is increased emphasis on the activities of native researchers. These are divided into two categories: (a) scientists from pre-revolutionary times who are now called "otchestvennyy" scientists [redacted] translated "fatherland's" scientists, and (b) scientists developed under the Soviet system. It should be remembered that pre-revolutionary Russian medicine began to develop in the middle of last century, in other words, later than Western European medicine but approximately the same time as US medicine. It made slow progress but nevertheless it had some achievements, usually not very well known outside the Russian empire. The reasons for this were the language barrier and the fact that Russian medical magazines were not popular and were scarce in number. In other words it had no publicity. As a result, western medicine, which was more advanced and had more traditions, used to look down on any Russian scientific activity. In addition, the old Russian scientists were very modest and as a result their backwardness may have been overestimated. After World War I there could be observed some unsound chauvinistic tendencies especially in France and Germany as far as medicine is concerned. German scientists, for example, did not study the work of French scientists and vice versa. British medicine was rather suspicious of any work done on the continent and remained rather aloof. All, however, refused to take any notice of Soviet medicine at all.
6. In the 1920's the Soviet rulers preferred to import scientists, technicians, ideas and machines from capitalist countries and criticized former Russian institutions as much as possible. This policy changed in the 1930's in order to prepare the common people for war and the leaders started to cultivate patriotic things. As part of this policy they began to point out that the achievements of the scientists of old Russia, in every field including medicine, were considerable and many pamphlets and newspaper articles were published concerning medical scientists of the past.

PART II - Vydaushchiesya Issledovaniya Otechestvennykh Uchenykh O Vozbuditelnykh  
Malyarii

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7. [redacted] the above background information, much of which is, of course, well known, [redacted] has much to do with the form of the two Soviet medical books under discussion. This is particularly true of the first:

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Vydayushchiyessa Issledovaniya Otechestvennykh Uchenykh O Vozbuditelyakh Malyarii  
(Distinguished Investigations of the Fatherland's Scientists on Malaria Germs)

This book can be divided into three parts. The last part is composed of excerpts from original works dealing with the subject which were written and published in pre-revolutionary time. Another section (Chapters 3, 4, 5, and 6) is a historical survey of investigations performed both in old Russia and in foreign countries in this field. This section was, [redacted] written by a competent woman author named S G Vasina. The first section of the book (the preface, Chapters 1 and 2) as well as Chapter 9 were written by another author named D N Zasukhin [redacted]

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8. [redacted] the part played by the old Russian scientists in the discovery of the malaria parasite was very important and is underestimated in western countries. The original work of these scientists as presented in this book is very spectacular in this respect. Dr Zasukhin attempts in his section to speculate on this underestimation. He states that French, German and British scientists of the 19th Century quoted Russian scientists very often and that as far as the UK and US are concerned, this interest in Russian work persisted until shortly before World War I when such classical books on the subject as those of Craig (US) and Ross (UK) appeared. At this time, Russian literature was discussed rather thoroughly although not without some omissions. In the analogous books of Warshaw and Boyd, however, which appeared in the US in 1949, no mention is made of Soviet work. Zasukhin concludes that it will surprise no one that "now, when the capitalists of the US and UK and some other countries are making preparations for the new gangster war against the Soviet Union and the people's democracies, ideological methods are used by them as one of the forms of the preparation." He also states that "capitalistic scientists do everything possible to borrow and utilize all the valuable and important contributions from the works of the old Russian scientists and at the same time show that the contemporary science of medicine in the USSR is based merely on the achievements of the capitalistic scientists," and further "they try to emphasize the inferiority of the Soviet people and its scientists. Of course, the reactionary Tsarist rulers contributed a great deal to the lack of knowledge abroad of the works of the Russian scientists in the field of malaria." He further states "even now international conceptions are popular among Soviet scientists; they must be overcome," and finally "based on the tremendous and ever increasing power of our country, the achievements of scientists, taking into account the considerable experience of the past, and armed with the most advanced theories of Marx, Engels, Lenin and Stalin, Soviet scientists and workers can be sure of the future. In contrast to this, no progress in the fight against malaria can be possible in capitalistic countries as their rulers have no interest in the condition of life of the worker." These quotations reveal the true purpose of the book which might be described as a form of psychological warfare having as its goal the abandonment by contemporary Soviet scientists of the admiration for the scientists of the West. This attack takes several forms. It attempts to prove that to a large extent Western science is based on Russian achievements. It attempts to show that Western scientists have nothing but contempt for Soviet scientists.

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PART III - Ocherki Ratsional'noy Khimioterapii

9. Although the author of Ocherki Ratsional'noy Khimioterapii is not a party man, and he seems competent in his field, the general remarks made above are also, to a certain extent, applicable to his book. It is very interesting for example to note that in the preface he says: "the conference of the Academy of Science in 1950 which was devoted to the physiological doctrine of Pavlov helped the author in the understanding and discussion of some questions of the theory and practice of chemotherapy. However, the writer believes that his theoretic points of view are far from the complete truth and that the criticism of some of his explanations would be very helpful." He starts his book with more or less a history of chemotherapy. He states that scientific chemo-therapy is associated with advances in organic chemistry. For this reason

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he mentions the names of a number of distinguished chemists of pre-revolutionary Russia, even though their activity probably was not closely connected with chemotherapy. Later on in the book he emphasizes the significance of some of the works of Romanovski and states that in 1936 Postovski synthesized sulfapyridine four months before Evans' discovery. He further states that the history of antibiotics should begin with the observations of the famous Russian clinicians Mannassein and Polotebnov. In 1868 - 1871 they examined the antibacterial action of the mold penicillium and treated skin ulcers with mold with good results. In 1904, he states, Tartakovski observed good results with the use of penicillium glaucum on fowl typhus. These observations did not attract any attention and were forgotten. The writer gives a very objective discussion of Fleming's work and the development of penicillin. He does not claim that Fleming's work is based on work by the Russians named above.

10. He also mentions as being very important the investigations conducted by Vinogradski concerned with soil bacteria and protista and their antagonism. Similar investigations were the basis for the discovery of tyrothrycine by Dubois in the US in 1938. He states that Krasilnikov established the anti-bacterial action of Actinomyces and shortly thereafter Waksman (US) discovered streptomycin.
11. The style of this book is completely different from Zasukhin, being that of a regular scientific work. Following the historical section, the author furnishes a chapter dealing with general chemotherapy which is a very good, up-to-date description of all known facts. The only peculiarity of this chapter is that the author furnishes in it many inappropriate quotations from Pavlov. The next chapter discusses contemporary treatment of malaria. It is worth noting that Soviet medicine does not use quinine, probably because it has to be imported and is expensive. The author recommends a combination of bigumal (the Soviet equivalent of paludrine), acrichin (Soviet atabrin), and plasmocyd (Soviet plasmochin). He also recommends the following treatments:

<u>Disease</u>	<u>Recommended Treatment</u>
Leishmaniasis	Preparations of antimony, namely <u>stibosan</u> or <u>suramin</u> .
Recurrent fever	Either <u>novarsenol</u> ( <u>neosalvarsan</u> ) or <u>penicillin</u> .
Visceral Lues	The chapter concerned with this disease is written, rather superficially. It should be mentioned, however, that the Soviets have not only the old fashioned <u>neosalvarsan</u> but also <u>mapharsen</u> which they call <u>sovarsen</u> . Apparently <u>penicillin</u> is used infrequently and the writer mentions many disadvantages of its use in the treatment of lues.
Amebiasis	The use of the old fashioned <u>emetin</u> and Soviet modifications of the German <u>yatren</u> .
Pneumonia	The principal treatment of this disease described by the author is the use of the sulfa drugs, namely <u>sulfathiazole</u> and <u>sulfadiazine</u> . His discussion of this question, is, very competent. Apparently <u>penicillin</u> is used much less frequently in the USSR for the treatment of pneumonia than in the US. The writer mentions, however, that the production of <u>penicillin</u> in the USSR increased 500 times in comparison with 1947. <u>Penicillin</u> dosage reported by the author is the same as in the US. He also states that the Soviets have durable preparations of <u>penicillin</u> , namely <u>novocain/oil</u> solutions.

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12. Penicillin was treated in a special and rather extensive chapter. Somewhat doubtful effects were reported in the use of penicillin for the treatment of chronic pulmonary abscess. Good results were reported in the treatment of cholecystitis. Soviet clinicians are more cautious in regard to the results of penicillin in the treatment of sepsis and sub-acute bacterial endocarditis than their opposite numbers in the US. It may be, however, that the dosages used in the USSR for the treatment of these diseases are less than the dosages used in the US. The writer reports very favorable results in the treatment in meningitis with a combination of sulfa and penicillin.
13. Streptomycin is apparently not produced in the USSR or at least was not at the time the book was written. The writer does, however, give some examples of its effective use in the treatment of tuberculosis. Presumably the streptomycin used in this treatment was imported. The writer makes some very brief remarks on chloromycetin. He mentions a Soviet antibiotic called syntomycin which is effective only in the treatment of dysentery. The discovery of aureomycin is mentioned but apparently the writer has had very little experience with it.
14. In conclusion it should be mentioned that in this book all appropriate and political reliable Soviet literature is quoted thoroughly. Many foreign sources were also quoted but only up to 1945-1947.

CONCLUSION

15. It is very interesting  that both books emphasized the experiments conducted by old Russian scientists and material published in pre-revolutionary days. It is on first examination illogical that such important discoveries could be made at that remote time and not result in tremendous scientific discoveries at a later date. It is, however, actually not surprising that observations in Russia of the antibacterial effects of mold did not result in the discovery of penicillin. As a matter of fact, conditions of work of the old Russian scientists were not favorable. They had no appropriate equipment and no encouragement. After the revolution the Communists organized many first-class scientific institutes which were comparable to institutes in the US and were probably better than most of the Western European. Nevertheless, many prominent scientists in the USSR did not contribute as much as might be expected from their competence and working conditions. This strange discrepancy may be explained only by the negative effect of Soviet dogma which prevents free creative activity and the enforced following of the scientific "party line" described above [Part I]. Any new discoveries in the USSR are always connected with a certain amount of risk and Soviet scientists prefer to avoid any work which might be considered controversial in order not to be accused of sabotage.

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