currency to pay for imports. While there I heard complaints from engineers and scientists that they find it difficult to get scientific books and apparatus from abroad. If the government is eager to develop science and to educate engineers, why do they make it difficult to import scientific material? For the same reason that they are placing the people on starvation diet by exporting everything they can put their hands on, while bending all their energies toward the ultimate improvement of the economic condition of the people—namely, in order to make the revolution safe. They are afraid of foreign aggression and are hectically working to industrialize the country before the countries of western Europe are in a position to attack them. In order to secure themselves, through industrialization, against aggression, they sacrifice the present welfare of the people and the progress of science by exporting everything for any price obtainable and importing only the machinery and raw materials which are necessary for their industrial and agricultural program.

The Russian leaders consider the completion of this program to be an absolute necessity. Everything else, however desirable, they place in the category of luxury which they must do without for the present. That is why they are anxious to divert man power and material from pure science, which would be of value to them in the future, to applied science which they need badly now.

It seems to me that in view of the great value of pure science and the slowness with which it can be developed, the policy of expediency adopted by the Bolsheviks is a mistake. But I feel confident that as soon as the present critical situation in Russia becomes easier, science, pure as well as applied, will find in the Soviet government one of its most generous supporters.

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HORMONES IN CANCER

THE conception that the extension of neoplasms is due to the lack or imbalance in growth-regulating hormones is old. In the past two years we have been engaged in testing the effects of practically all the established hormones and many glandular products, such as the Sokoloff, Watermann and de Kromme, and Coffey-Humber extracts, upon transplantable rat sarcomas and carcinomas. None of these extracts appreciably affected the rate of tumor growth or final mortality as judged by statistical analyses. A possible exception to these findings was a crude extract of the anterior lobe of the hypophysis, which contained a standardized amount of growth hormone, a slight increase in the rate of tumor growth of dosed rats being noted.

We have resorted to irradiating the head of the animal with roentgen rays and implanting radon seeds into the pituitary region in an attempt to stop the activity or destroy this body. Since such a treatment might affect the parathyroids and thyroids by back-scattering, experiments with parathyroid-thyroidectomized animals were also made.

In attempting to destroy the hypophyses the maximum dose of roentgen rays was applied to the rat's head, the body being protected by lead to minimize back-scattering effects. Six series of experiments using twenty to thirty rats per series were performed. With sub-lethal doses of the rays and in a radon series the rate of tumor growth was significantly retarded during the period when the body weight curve remained stationary. Doses insufficient to stop or retard body growth had little effect upon the rate of tumor growth. It has been said that any state which decreases the nutrition of the body as a whole or the tissue in which a tumor is located decreases the rate of growth of the tumor. This objection has been controlled in our experiments by starvation and poisoning by synthalin and heavy metals, both of which retarded body growth without affecting the rate of tumor growth. The experiments with the roentgen ray indicate that the growth factor associated with the pituitary contributes to the regulation of both the rate of body growth and the rate of tumor growth. The experiments with parathyroid-thyroidectomized animals showed that these glands have no demonstrable effect upon tumor growth.

In the experiments with the roentgen ray, radon and the pituitary growth hormone, no effect upon the incidence of tumor takes was noted.

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HEMOPHILIA[1]

HEMOPHILIA or bleeders disease is a rare disease of the blood, which has a strong hereditary tendency. Only males have the disease, while it is transmitted through the unaffected female. The outstanding symptom of hemophilia is a tendency to excessive hemorrhage. The bleeding may be spontaneous from any part of the body or it may follow a slight injury which would pass unnoticed by a normal individual. It is well known that a strong hemophiliac tendency exists in several of the royal families of Europe. The ill-fated Czarovitch of Russia was a high-grade hemophiliac. The present Crown Prince of Spain also suffers from this disease. In this disease the clotting time of the blood is greatly prolonged.

[1] Presented before the Chicago Society of Internal Medicine, February 23, 1931.