

establishment of better relations between all nations and constitute a real progress of our civilization.

RICHARD WASICKY

FACULDADE DE FARMACIA E ODONTOLOGIA,
UNIVERSITY OF SÃO PAULO, BRAZIL

THE NATURAL SCIENCE SOCIETY OF CHINA¹

THE following letter, dated January 24, has been addressed to the American Association for the Advancement of Science:

We learned with great admiration and pride the splendid part the members of your Academy have played in the present war against fascism and barbarism. Our country and especially the cultural institutions have suffered deliberate and wanton destructions from the hands of the Japanese fascists during the present invasion. In spite of this, we are endeavoring to do our best to serve our country and the noble cause of our allies with the meager equipments and literature that were left to us. We sincerely believe that science and democracy are indispensable in our modern world, but science without democracy means fascism and Hitlerism and democracy could not function efficiently and smoothly without scientific knowledge and the scientific means of production to satisfy the cultural and material needs of the masses. We further believe that the cooperation and collaboration of the scientific workers of the world will help us to gain a quick victory and will also facilitate the laying down of the foundation of permanent peace immediately after the war. In order to do our modest part towards the goal of international scientific cooperation we have compiled a paper called "Acta Brevia Sinensia" in which the research activities and the recent news of the various institutions of our country are reported at definite intervals, and at the same time we are preparing to issue another paper, the main purpose of which is to print scientific news and abstracts of scientific papers of our allies. In order to make it a success we, therefore, beg your kind cooperation, and hoping you would kindly supply us the scientific news and abstracts of papers of your country.

Enclosed herewith is a copy of a short account of our society and our activities. As we are late comers in the realm of science and technology we should be very thankful if you would kindly favor us with your words of wisdom.

May this letter serve as a messenger boy to bring to you our hearty greetings and warmest congratulations for the patriotic works so wonderfully performed in the present struggle against the enemy of science and humanity.

With New Year's greetings,
CHANG-WANG TU,
(Secretary for Foreign Relations)

An account is enclosed giving a list of the activities of the society, which reads:

¹ Transmitted by the China Section of the Science, Education and Art Division of The Department of State, March 1, 1944. Translated from the official letter in Chinese.

1. History and Aims:

The society was established in 1927 with a view to achieve the following: (a) to spread scientific knowledge to the masses; (b) to apply scientific and technological knowledge to national reconstruction; (c) to promote scientific research; (d) to facilitate scientific cooperation.

2. Organization:

There are thirteen branch societies established in various districts of free China and three additional ones in Europe and America. The members of the society total 1,800. Under the head office at Chungking there are four committees: (a) Committee for General Affairs; (b) Committee for Research and Culture; (c) Committee for Organization; (d) Committee for Social Service.

3. Activities:

The following works of importance have been carried out by the society since its establishment:

(a) The publication of the *Scientific World*. Twelve volumes have been issued since 1932. This magazine is a very popular scientific journal in China.

(b) The organization of scientific expeditions. Since 1937 two scientific expeditions have been sent out by the society to explore the natural resources, to study the physical and bio-geography of provinces such as Sikang, Kansu and Ninghsia. The results of these expeditions are contained in the reports published afterwards.

(c) The publishing of scientific books concerning the problems of national defense. The following books are already in press: i. "On the Principles of Flight"; ii. "Principles of Aeroplane Construction"; iii. "Explosives"; iv. "Precaution Against Poisonous Gases"; v. "Ballistics." In addition, there are some twenty volumes under preparation.

(d) Public lectures and radio talks on science. Public lectures and radio talks on scientific subjects have been given periodically to the public in various cities of China.

(e) The publication of "Acta Brevia Sinensia." This paper intends to convey the scientific works done in China to the scientific workers of the democratic world. The society is planning to publish a bulletin to print the scientific news and achievements of our allies with the cooperation of the leading scientific societies of the democratic world.

(f) Future projects. The members of the society feel that they should devote more time to the society and the masses, so plans have been drawn accordingly. The more important ones will be carried out as soon as we have the money, and they are: (i) to establish a "Science Museum" and a "Science Library"; (ii) to organize an institute for scientific service; (iii) to publish a journal for original research work, etc.

NATIONAL CENTRAL UNIVERSITY,
SA-PING-PA, CHUNGKING, CHINA

SOVIET BIOLOGY

THE eulogy of Soviet biology published in a recent issue of *SCIENCE*¹ did not present a realistic survey of the present situation. The author did not discuss the most significant trend of biological research in the

¹ L. C. Dunn, *SCIENCE*, January 28, 1944.

U.S.S.R.—the subservience of science to social and political philosophy. It is important that this aspect of Soviet science should be generally known and understood because it is not confined to Russia. It could happen here.

The work of Russian geneticists, plant breeders and cytologists, during the early years of the Soviet régime, deserves the highest praise, as does the Soviet government for providing such generous support for scientific work. About ten years ago the influence of Soviet political philosophy began to appear in biological science, culminating in a public controversy regarding the relative roles of environment and heredity in 1939. Much of this controversy has been published in this country,² and a more damning indictment of the new Russian biology would be difficult to imagine. Vavilov, while recognizing the effect of environment on development, emphasized the progress of genetics and the role of heredity in plant breeding. Lysenko, on the other hand, upheld the Lamarckian (in his words "Darwinian") concept of variation, and rejected Mendelian heredity and genetics as a science. He also claimed that "any hereditary properties can be transmitted from one breed to another without the immediate transmission of the chromosomes." His discussion of "vegetative hybrids" resulting from grafting might well have been written in 1800; his views are neither original nor heterodox, but merely archaic.

Lysenko's attitude towards genetics presumably was influenced by his earlier work on vernalization. A winter wheat, which differs from a spring wheat by a single genetic factor, can be grown as a spring wheat if the seed is moistened and chilled for several weeks before planting. This discovery was made in the United States before the Civil War. Vernalization is also said to hasten the maturity of other crops. This technique has been tried in many other countries without sufficient success to warrant commercial utilization, but it has been used extensively in Russia.

Lysenko and his associates seem to have convinced the political authorities that only environmental effects are of value in plant improvement. Since 1939 the Soviet plant-breeding journals have been filled with articles by Lysenko's disciples, but we hear nothing from Vavilov, Karpechenko, Navaschin and the many other able scientists who are responsible for building the foundations for Russia's plant-breeding program.

A few examples of the recent plant-breeding methods are typical of the new order. In one case scions of a yellow-fruited tomato variety when grafted on a red-fruited stock are said to produce progeny segregating for fruit color. Dolgusin claims that halves of the same plant, when grown under different environmental conditions and then crossed, produce progeny of increased vigor and fertility. The ovules are supposed to select the pollen grains most favorably affected by the environment. This selective power of the gametes is referred to by Lysenko as "marriage for love."

There are several reasons for the suppression of genetics in the U.S.S.R. A nationalistic attitude is reflected in Polyakov's² reference to genetics as a "foreign science." Another factor may have been a reaction to the distortion of genetic principles by the Nazis in their myth of racial superiority. The primary factor, however, appears to have been based upon political philosophy. It is particularly significant that the Lysenko-Vavilov controversy was reviewed by Mitin, head of the Philosophical Institute of the Academy of Science, and that he "more than other commentators" expressed "the attitude of the Soviet government."²

Our admiration for the Russian people and the military might of the Soviet Republic should not blind us to the fact that science has not been free in the totalitarian states where science must conform to political philosophy.

KARL SAX

HARVARD UNIVERSITY

NEWTON ON HEAT AS A MODE OF MOTION

IN reading lately Query 28 in Newton's "Opticks," I noticed a remark that gives his views on the nature of heat. It was new to me, and perhaps it will be interesting to other physicists. The passage in part is as follows: "A dense fluid can be of no use in explaining the phenomena of Nature, the motion of planets and comets being better explained without it. It serves only to disturb and retard the motions of those great bodies, and make the frame of nature languish: and in the pores of bodies, it serves only to stop the vibrating motions of their parts, wherein their heat and activity consists."

FRANK ALLEN

UNIVERSITY OF MANITOBA

SCIENTIFIC BOOKS

THE PLASMIDIOPHORAE

The Plasmodiophorales. By JOHN S. KARLING. ix + 144 pp. 17 plates, 11 text figures. Published by the author. New York. 1942.

THIS book is based upon a "series of lectures pre-

sented to graduate and research students of mycology at Columbia University." Accordingly, the author attempts to present all sides of controversial questions

² *Science and Society.* A Marxian Quarterly. Summer, 1940.