or with specificities similar to that of pepsin are called "pepsinases." Similarly, enzymes which resemble papain in their activation and inhibition behavior are called "papainases."

In a recent review[1] it was urged that the designations for proteinases be as descriptive as possible of the *properties* of the enzymes. For instance, the terms "acidoproteinase," "neutroproteinase" and "basoproteinase" were suggested to indicate the pH region of optimum activity.

The proteinases of the higher plants appear to fall into two classes. One group includes such enzymes as papain, ficin and bromelin. These enzymes can be reversibly inactivated by mild oxidation and then reactivated by certain reducing agents. The name *anastrophic* (αναστροφη = reversal) is suggested for this group as being descriptive of this characteristic behavior. A second group is represented by solanain, hurain and arachain. Inasmuch as these enzymes are unaffected by either oxidizing or reducing agents, it is proposed that they be termed *stasidynic* proteinases (στασιμος = stationary, δυναμις = activity).

THEODORE WINNICK
DAVID M. GREENBERG

OCTOBER 16, 1945

SOVIET BIOLOGY

IN his recent report on Soviet Biology[1] Dr. Zhebrak assures us that "the careers of *many*[2] Soviet geneticists have not been adversely affected by the above-mentioned [Vavilov-Lysenko] controversy." If, as Zhebrak claims, Lysenko's "influence has been exerted in open debate between proponents of different scientific views and principles and not by political pressure" why should the career of any Soviet geneticist be so "adversely affected"? Of the three geneticists specifically mentioned in my original article Dr. Zhebrak accounts for only one. What has happened to Karpechenko, the geneticist who laid the foundation for work on allopolyploid hybrids which Zhebrak has developed so successfully? Where is Vavilov, one of Russia's greatest scientists and one of the world's greatest geneticists? Vavilov was elected president of the International Genetics Congress which met in Edinburgh in 1939, but Vavilov did not attend, and we have not heard from him since. We now have information from our National Academy of Sciences that Vavilov is dead. How did he die and why?

The American geneticists have long recognized the valuable work done in the Soviet Union and have enjoyed the most cordial personal relationships in the past, but even before the war it was difficult to maintain personal contacts. No Soviet scientists attended the International Botanical Congress in Amsterdam in 1935 or the International Genetics Congress in Edinburgh in 1939. Perhaps lack of funds kept them at home, but China and India were represented. Isolationism in science, or in any other field, has no place in a modern world. We hope that we may soon resume communication and personal association with our Russian friends and colleagues.

KARL SAX

HARVARD UNIVERSITY

[1] D. M. Greenberg and T. Winnick, *Ann. Rev. Biochem.*, 14: 31, 1945.

[1] A. R. Zhebrak, SCIENCE, 102: 357–358, October 5, 1945.

[2] Italics mine.

SCIENCE LEGISLATION

IN the November 30 issue of SCIENCE an article appeared on "Pending Legislation for Federal Aid to Science." It contains a letter to the President with 43 signatures of scientists and is followed by an endorsement of the principles embodied in the letter signed by R. Chambers and J. S. Nicholas on behalf of the executive committee of the Union of American Biological Societies and the American Biological Society.

Since this publication, attention has been called to an impression given by the letter to the President of an uncompromising attitude in regard to the administrative set-up that was recommended for the National Science Foundation. The letter specifically endorses the proposal of the Magnuson Bill, *viz.*, that the foundation be administered by a board of scientists appointed by the President. This form has the approval of a large number of scientists throughout the country and the consensus of opinion seems to be that, for fundamental scientific research, this is the best method of administration. The impression that the letter is uncompromising is unfortunate and should not be considered as such.

There are, at present, two proposals—one advocated by Senator Kilgore, the other by Senator Magnuson. The one differing from what has been presented above advocates a full-time administrator appointed by the President. Thus, we may consider two divergent viewpoints—one, a board appointing its own administrative officer, and the other, a director with an advisory board. If a mutually acceptable decision is not reached, the chances of a realization of a Federal Research Foundation are likely to be seriously jeopardized.

The present is the psychological time for securing a National Science Foundation. The telling experience of the war is fresh and has made the country very aware of science. Congress is reflecting this attitude in the consideration of various proposals for science legislation. The Bush Report, the President's message of September 6, and the four volumes of

testimony of the joint hearings have all supported the vital need of a National Science Foundation. Moreover, a poll of the American Association for the Advancement of Science in September showed that 90 per cent. of the scientists of the country want legislation for a Federal Science Foundation.

A revision of the Kilgore and the Magnuson Bills is expected, advantage being taken of the hearings held in Washington. A joint bill is to be hoped for which will embody the best and most workable features of both.

We stand ready to cooperate fully and freely in the drafting of a bill which will effectively serve the objectives which the foundation is intended to achieve.

On behalf of the Joint Executive Committees of the Union of American Biological Societies and the American Biological Society,

ROBERT CHAMBERS, *President, Union of American Biological Societies*
J. S. NICHOLAS, *President, American Biological Society*

SCIENTIFIC BOOKS

ASTRONOMY

Astronomy; A Revision of Young's Manual of Astronomy. Vol. 1, *The Solar System.* By HENRY NORRIS RUSSELL, RAYMOND SMITH DUGAN and JOHN QUINCY STEWART, Editors. Illustrated. xi + 470 + xxi pp. Ginn and Company. 1945. $3.00.

THIS volume constitutes a revised edition of Part 1, "The Solar System," being the first of two volumes on "Astronomy" initially published in 1926. The rapid advance of astronomy in the last twenty years has called for a revision of this outstanding text. A superficial comparison of the present book with the earlier edition reveals essentially the same text and subject-matter page for page. A careful comparison of the new with the old edition, however, shows many changes and additions made necessary by current progress.

This book, as the 1926 issue, is based on C. A. Young's "Manual of Astronomy," published in 1902. The present volume comprises 470 pages devoted to the fundamentals of astronomy, astronomical instruments, the earth, the sun, the moon, planets, comets and meteors.

Among newer and additional topics not covered in the earlier edition may be mentioned the Schmidt camera, the small effect of the variation of latitude on longitude, extension of the use of gravity measurements to belts of deficiency and excess as in the island arcs of the East and West Indies, a revision and extension of the treatment of the age of the earth and its early history, the new determination of the moon's mass derived by H. Spencer Jones from observations of Eros, the new value of the solar parallax, the mention of the connection of sunspots with radio transmission, more recent data from eclipse observations on the Einstein effect, the contribution of Adams and Dunham and others to a better knowledge of the atmosphere of the planets, the discovery of Pluto, new material on comets and meteors, and a summary of newer theories on the origin of the Solar System.

It is remarkable that so much of the book could have been changed without more interference with the original pagination. This has been accomplished in many instances by the deletion of some material, the omission of a few illustrations and by taking advantage of the unused space at the end of several chapters in the earlier edition. The reader finds certain omissions of topics which could have been logically hoped for in so comprehensive and standard an authority on astronomy.

In the chapter on astronomical instruments, no attention is given to the photozenith tube (PZT), the latest development in the precise determination of latitude at the U. S. Naval Observatory. In the discussion of longitude by radio or wireless signals, the velocity of transmission time based on the 1913–14 longitude campaign between Paris and Washington is given as 175,000 miles per second, "which agrees within the (large) experimental error with that of light." No mention is made of investigations showing observed differences in the velocity of radio waves with (geomagnetic) latitude, yielding results varying from sensibly the velocity of light at the equator to only two thirds the velocity of light at the region where radio transmission paths approach the north magnetic pole. In the treatment of the calendar, one looks in vain for a mention of proposed calendar reform with an evaluation of the major schemes now under international consideration.

In the chapter on the sun, it is unfortunate that the authors did not revise the curve of sunspot numbers and geomagnetic activity to include more recent data than that of the 1920's. The importance of solar activity in establishing wave-lengths or frequencies for all long-distance radio communication deserves a more extended treatment than the half-sentence devoted to it, "magnetic storms are accompanied by serious disturbances of long-range radio transmission." The close dependence of usable frequencies