

bers of the American Chemical Society see the "*Berichte*" regularly, and probably less than five per cent. read any other German journal. The relatively small number of Americans who belong to the German Chemical Society speaks for itself.

Science is world-wide but "charity beginneth at home." It would appear to be only fair that the country which provides the expenses of an investigation should have the first opportunity of enjoying its results, whether these be in the realm of pure or of applied chemistry. Is it too much to ask those American chemists who are so happy as to combine unusual natural ability with the most favorable opportunities for its cultivation, if they will not make the results of their work more directly and easily available to those of us who are less highly favored? Publication in American journals, even when it involves delay, will in no way diminish the authors' fame and will undoubtedly prove to be a great help and inspiration to their younger and less well-known colleagues.

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SCIENTIFIC JOURNALS AND ARTICLES

SOME months ago it was announced that the publication of *The Journal of Morphology* would be resumed under the auspices of the Wistar Institute. The first number of Vol. XIX. has just been issued.

The reorganization of this journal suggested the possible advantages which might accrue from a centralization in one publication office of a number of anatomical and biological periodicals. There seemed to be no doubt that more material could be published with the same funds and that there might be other advantages in publishing a number of journals from one office. The economies are too evident to need enumeration. The most vital point, however, and the one which seems to

offer reasonable doubt is the question of representative editorship. It is essential that our best anatomical and biological periodicals continue as national organs edited by representative anatomists and biologists. The danger of a central office of publication is that the journals, thus centralized, may perhaps become local organs of the institution producing them. This danger must be carefully guarded against.

The Wistar Institute, by means of its advisory board, is making every effort to do national work and for this reason the danger referred to seemed so remote that four other journals, namely, *The Journal of Comparative Neurology and Psychology*, *The American Journal of Anatomy*, *The Anatomical Record* and *The Journal of Experimental Zoology*, have been assigned to the Wistar Institute. The institute has accepted these journals on condition that the same editorial boards shall continue responsible for the scientific material published, and that these boards be made up of representative men. The institute accepts the responsibility as an opportunity to aid by cooperation in the increase and improvement of the various means for publishing contributions in the field of anatomy and biology, and to relieve the various editors of some of the more arduous duties connected with an editorial office.

Any financial support which the institute may be called on to give will be at the expense of its own research work, and it must be understood that other institutions are not released from their responsibilities by the fact that the Wistar Institute has assumed the burden of publishing these journals in the interests of economy and improvement.

Fortunately, the financial burden is borne, for the present, by private contributions, but it is hoped that institutions and individuals will, nevertheless, take active interest in placing all these journals upon a self-supporting basis.

Acting through its advisory board and through the various editorial boards of the above mentioned journals, the Wistar Institute will make every effort to establish high standards in the various departments of its publi-

cation work and cooperate in every possible way to secure for the biological workers of the country the form of publication and distribution which their researches deserve.

SOCIETIES AND ACADEMIES

THE WASHINGTON ACADEMY OF SCIENCES

Mr. C. G. ABBOT, the director of the Astrophysical Observatory of the Smithsonian Institution, delivered before the academy, March 24, an address on "Recent Studies of the Sun."

Mr. Abbot gave a summary of the researches included in Volume II. of the *Annals of the Astrophysical Observatory of the Smithsonian Institution*, now about to be issued. Besides this he gave a brief account of the Smithsonian expedition to observe the total solar eclipse of January 3, 1908.

The mean value of the solar constant of radiation in calories per square centimeter per minute from 44 observations at Washington, D. C., 1902-6, is 2.061; from 59 observations on Mt. Wilson, California, in 1905, it was 2.024, and from 62 observations at Mt. Wilson in 1906 it was 2.020. Langley thought it necessary to add about one third to his solar constant value from Mt. Whitney observations of 1881 because of a supposed failure of Bouguer's transmission formula. This correction does not appear to be justified, and Langley's values should be as follows: For Lone Pine 2.06, for Mountain Camp 2.22, and their difference is reasonably attributed to experimental error, not difference of altitude. The fact that so good agreement between the Washington, Lone Pine, Mt. Wilson and Mt. Whitney values is found makes it most probable that the true solar constant value differs very little from 2.1 calories. It was shown from the temperature of the earth's radiating surface that the solar constant can not exceed 2.33 calories unless the reflecting power of the earth as a planet exceeds 37 per cent. The latter value was derived by measuring the reflecting power of clouds and other terrestrial surfaces.

Variations of the solar constant values were noted both in Washington and on Mt. Wilson, and these are so large and so well established

by observation as to warrant the continuation of solar constant work at two observatories in cloudless regions of the earth well separated from one another. A study of the surface temperatures of the earth at 48 inland stations widely distributed over the globe indicates that general variations of temperature have occurred which may have been caused by solar variations of short period. The sun-spot cycle is clearly associated with a temperature variation; for higher temperatures occur at sun-spot minimum.

The variation of brightness of the sun's disk from center to limb has been observed for various wave-lengths of light, and on numerous days of observation. Changes of the rate of this variation have been noted from time to time, and these changes may prove to be associated with variations of the solar constant of radiation. Probably the cause of the decreased brightness near the sun's limb is the lower temperature of the sources of light near the limb, due to the fact that the scattering of light by the molecules of the gases of the sun prevents us from seeing as deep near the limb as at the center of the disk. The scattering of rays is so great in the atmosphere of the earth that, reasoning by analogy, scattering probably prevents us from seeing at the center of the sun's disk as much as 1 per cent. of the solar radius below the outer photospheric layers, and far less even than this at the sun's limb, owing to the greater length of path of the rays to a layer of given depth. This explains the apparently sharp boundary of the sun's disk, notwithstanding the necessity of admitting the gaseous nature of the sun on account of its extremely high temperature.

The Smithsonian Institution sent Messrs. Abbot and Moore to Flint Island by invitation of Director Campbell, of the Lick Observatory. They observed there, on January 3, 1908, the intensity of the rays of the solar corona at five points, and found them at brightest only 1/1,000,000 as bright as sun rays. They employed a bolometer in focus of a twenty-inch equatorial reflecting telescope. Glass was in front of the bolometer to prevent exchanges of long wave-length rays. By means of an