diagram is symmetrical about a line approximately in the direction of the Magnetic North Pole.

(*e*) The extreme diurnal range of the Ebro earth currents reaches its highest values near the equinoctial months, and lowest near the solstitial months. Earth currents, atmospheric electricity, the Aurora Borealis, and the earth's magnetic disturbances, all show similar annual variations in the ranges of their fluctuations.

(*f*) The potential gradients of earth currents and of atmospheric electricity apparently vary during the sun-spot cycle, the former decreasing in the direction of normal flow of current, and the latter increasing with increased sun-spot activity. The diurnal ranges of the potential gradients of earth currents, as well as of atmospheric electricity, just as is the case for the diurnal variation of terrestrial magnetism, increase with increased sun-spot activity.

(*g*) There is evidence of a similar six-hour wave in atmospheric electricity, earth currents and terrestrial magnetism.

The analyses referred to in (*c*) are chiefly those by Schuster, Fritsche, Chapman, Walker, and Miss van Vleuten, the method of investigation employed by them being that first suggested by Gauss, which is based on the well-known Amperian rules of deflection of a magnetic needle by an electric current. The general result reached by these investigators, as stated in (*c*), has been accepted by every modern magnetician; it post-dates the investigations by Airy and Weinstein quoted by Dr. Sanford in his recent article[2]. In this connection it may be pointed out that the conclusions drawn by Dr. Sanford do not depend upon simultaneous earth-current and magnetic data at the *same* station, as was the case in my investigations.

As stated above, my present conclusions apply only to possible relations between the *diurnal variation* phenomena of earth currents and of the earth's magnetism. It does not appear that definitive conclusions can be safely reached until we have at the *same* station unquestioned coincident magnetic and electric data, and until we can furthermore consider in our comparisons only that portion of the magnetic diurnal variation caused by systems of forces below the earth's surface.

A fresh examination is also being made regarding the relations between earth currents and severe disturbances of the earth's magnetism, such as occur during the so-called magnetic storms. There are some indications which may support the views recently advanced by Satyendra Ray[3], though I am not prepared just now to make a definite statement.

With the view of giving renewed stimulus to systematic earth-current investigations, a special committee, "to consider and report on best methods and instruments," was formed at the Rome meeting of the International Section of Terrestrial Magnetism and Electricity last May. The chairman of the committee is Sir Arthur Schuster, and the secretary, Dr. S. J. Mauchly, of the Department of Terrestrial Magnetism.

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[2] Earth currents and magnetic variations, SCIENCE, October 27, 1922, p. 466.

[3] Ray, S., "Ueber parallele Störungen von parallelen erdmagnetischen und erdelektrischen Elementen," Zs. Physik, Berlin, v. 7, 1921 (201-205).

COLLABORATORS IN THE STANDARDIZATION OF BIOLOGICAL STAINS

FROM time to time reports from the Committee on Standardization of Biological Stains have appeared, dealing with the investigations in progress. Many congratulations have been received by the chairman of the committee on the results accomplished; but as these accomplishments would have been impossible but for the very hearty collaboration of a long list of investigators, credit for the work should be given where it belongs by publishing the following list of committee members and collaborators:

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The work so far accomplished by these collaborators includes: an extensive study of American methylen blues, fuchsins, gentian violets, and eosins for bacteriological purposes; a study of eosin, methylene blue, hæmatoxylin, orange G and safranin for various histological purposes; while work is in progress at present on a number of other stains, including methylen green, Bordeaux red, brilliant green, brilliant cresyl blue, cresylecht violet, pyronin, and acid fuchsin. The results accomplished are so promising that there is reason to believe that the most commonly used stains can be regarded as standardized before the following winter is over. It will then be possible to work out some method of certification of stains which come up to the standards.

None of this work would have been possible but for the cooperation of such a large number of investigators, who have responded to every call for assistance in a most gratifying way. It was not anticipated at the start that such a large number would be found to take part willingly in an investigation of this sort. The work, of course, has been entirely voluntary. The committee would like, whenever reporting on any stain, to give due credit to all of these collaborators but as such a course is impractical the best plan seems to take the present occasion to make their names public and express appreciation for their assistance.

H. J. CONN,
Chairman
COMMITTEE ON STANDARDIZATION OF STAINS,
NATIONAL RESEARCH COUNCIL

SCIENTIFIC EVENTS

THE RAMSAY MEMORIAL

THE unveiling of the tablet in Westminster Abbey in memory of Sir William Ramsay, to which reference has been made in SCIENCE, was the last act in connection with the memorial, a history of which is summarized in the London *Times*. In 1917 an appeal was issued for £100,000 by a committee, under the presidency of Mr. Asquith, and under the chairmanship of the late Lord Reay. At a subsequent date, the Prince of Wales became patron of the fund. The sum collected in cash is £57,645.

In addition, the fund has been augmented