

tem is being given by Dr. C. U. Ariens Kappers, director of the Central Brain Institute, Amsterdam.

FRANCIS JEFFREY BELL, formerly professor of comparative anatomy in King's College, London, and assistant in the British Museum, died on April 1, in his seventieth year.

COUNT HILAIRE DE CHARDONNET, who first devised processes for making artificial silk, died in Paris on March 12, in his eighty-fourth year.

THE ninth Italian Geographical Congress will take place this year at Genoa from April 22 to 30. *The Geographical Journal* writes: Such meetings of Italian geographers were inaugurated in 1892 by an assembly in the same city of Genoa, summoned in order to commemorate the fourth centenary of the discovery of America. The present congress is organized by the National Italian Geographical Committee, lately formed in affiliation with the International Geographical Union. Besides the general meetings, there will be meetings of six sections which are to deal with the several branches of the subject, and eight exhibitions are being organized, several of which will be specially concerned with Liguria under various aspects, physical and historical.

STATE engineers from a number of the commonwealths interested in superpower plans conferred with Secretary of Commerce Hoover on April 14, and it was agreed that they will lay before the public service commissions of their respective states the facts which have been developed. On the basis of these facts it is hoped that the public service commissions may be induced to suggest legislation which would facilitate and encourage the interstate flow of electrically produced power.

WE learn from the *Journal* of the American Medical Association that the Ella Sachs Plotz Foundation for the Advancement of Science has been established in memory of Ella S. Plotz, of New York. The available annual income is \$10,000. For the present, research will be favored that is directed toward the solution of medical problems. Grants may be used to purchase apparatus and supplies for special investigations, and for unusual expenses incident to such investigations, including technical assistance. The trustees of the fund desire to receive applications for grants for work on problems of practical medicine and surgery, preventive medicine and the medical science. Plans for a concerted attack by a group of investigators, working either at one center or in different places, on some problem of serious import in medicine, will be especially welcomed. Applications for support from this foundation should be accompanied by a full statement of the need for the investigation, the conditions under which it is to be

done, and the way in which the grant would be expended. Applications should be forwarded to the secretary of the executive committee, Dr. Francis W. Peabody, Boston City Hospital, Boston. Other members of the executive committee are Drs. Walter B. Cannon, Bernard Sachs and Paul J. Sachs.

WE learn from *Nature* that the Royal Society has received from a donor, who desires to remain anonymous, a gift of £10,000, for the prosecution of original research in medicine for the prevention of disease and relief of suffering, with special attention to tropical diseases in British possessions and to cancer and tuberculosis. They have also received from Messrs. Brunner, Mond and Co., a gift of 500 guineas to be used for the publication of the results of scientific research in chemistry, physics and similar sciences.

THE British Ministry of Agriculture announces that Oxford University has accepted its proposal to set up a separate research institute in agricultural engineering. The university has chosen as director of the new institute Captain B. J. Owen, who for some time past has taken an important part in connection with the ministry's machinery research. The ministry proposes that tests of agricultural machinery shall be carried out and certificates issued on its authority, but that the actual work of testing shall be conducted by the new Oxford Institute, the National Physical Laboratory and other institutions.

THE Werner-Siemens Institute for Röntgen Research is to be opened on March 22. The city of Berlin, in collaboration with the firm of Siemens & Halske, has established here a large teaching and research institute with modern equipment. The city will pay the current expenses, and Siemens & Halske will furnish, at their expense, the apparatus and instruments. A joint board of control appointed by the founders will administer the institute. It will serve, primarily, for practical, clinical research work, and, secondarily, the whole field of röntgenology. Dr. Frik, formerly assistant at the first university medical clinic in Berlin, has been chosen director.

UNIVERSITY AND EDUCATIONAL NOTES

A BEQUEST of \$100,000 to Williams College is made in the will of William A. Swift, of the class of 1863. A condition of the bequest is that \$1,200 of the income be used each year for four scholarships of \$300 each.

YALE University announces the gift of \$2,000 for the establishment of the Charles Lathrop Pack Foundation, the income to be given annually as a prize for the best original article or story of popular interest on some forestry subject by a student.

THE British Minister of Agriculture on April 7 laid the foundation stone of a new building for the department of agriculture of Leeds University, which is to be built at the cost of £60,000.

At a public meeting at Kingston organized by university men it was agreed that all sections of the people should be asked to support an appeal to the Secretary of State in favor of founding a West Indian University at Jamaica. It was proposed, further, to solicit imperial assistance for the scheme, which provides for the setting up of an examining body in the West Indies at Codrington College, Barbados, and at the Agricultural College of Trinidad, which would be branches of the university.

PROFESSOR CHRISTIAN A. RUCKMICK, associate professor of psychology in Wellesley College, has been elected professor of psychology in the State University of Iowa.

PROFESSOR A. E. JOLLIFFE has been appointed to the university chair of mathematics tenable at King's College, London. Since 1920 he has been university professor of mathematics at Royal Holloway College.

DISCUSSION AND CORRESPONDENCE

CONCERNING THE VARIATIONS OF ATMOSPHERIC ELECTRICITY AND VERTICAL CURRENTS

I AM sure that Dr. Sanford will concede that my criticism¹ of his theory² of the annual variation of the potential gradient of atmospheric electricity was a courteous one. Instead of entering into a discussion of the ideas advanced by him, I confined my remarks to calling attention to data, apparently not accessible to him, which did not support his theory. In the last sentence of the first paragraph of his recent article,³ he gives an incomplete interpretation of a statement of mine by failing to give it in its entirety. Dr. Sanford's theory had implied that generally over the earth the annual variation at a given place should primarily vary according to the sine of the sun's zenith distance at apparent noon, and I attempted to show that this theory did not fit the facts as we now know them, for widely-separated regions. No blame was attached to him for not being in possession of the latest literature; however, as he knows, from my correspondence with him, the Department of Terrestrial Magnetism is at all times ready to keep him informed of latest developments, if he desires such assistance. Were it necessary other facts, not in accord

with Dr. Sanford's theory, could be cited. Moreover, it is found that wherever there are available simultaneous observations of the potential gradient and of the electric conductivity, the product of the two quantities, or the vertical current density, follows about the same course during the year as does the potential gradient itself.

Dr. Sanford has also some rather fixed ideas regarding the cause of the diurnal variation of atmospheric electricity, and it would seem as though he has taken an unreceptive attitude towards modern developments that are not in accord with his theories. He cites² in support of his ideas, theories and conclusions reached by eminent investigators, 50 years and more ago, when the science of atmospheric electricity was in its infant state, and many of the noted advances of the past two decades were unknown. In the September, 1923, issue of *Terrestrial Magnetism and Atmospheric Electricity* will be found a general summary by my colleague, Dr. S. J. Mauchly, of the principal facts regarding the diurnal variation of the potential gradient of atmospheric electricity, as derived from the available observations on the oceans and at land stations.

Respecting the question as to the existence of vertical electric currents as disclosed by line integrals of the magnetic force, or by analyses of the earth's permanent and transient magnetic fields, Dr. Sanford goes back to results of investigations made 20 years and more ago, before the extensive data accumulated on our ocean cruises, by our land expeditions and by cooperating institutions, were available. The manner of carrying out our computations of line integrals and the interpretation of the signs of the resulting values are in accord with those adopted by eminent physicists.

Any one looking carefully over my various statements, especially those in recent papers, will see that I have not failed to recognize the physical difficulties and that I have diligently pointed out the quantitative discrepancy between the current densities as obtained from the magnetic line integrals and the observations in atmospheric electricity. Furthermore, the endeavor has been made to find some other physical interpretation of the results than that of vertical electric currents, and it may be that when the exhaustive analysis of the earth's magnetic field, in progress at the Department of Terrestrial Magnetism, has been completed, some other physical explanation, as, for example, a relativity effect, will be found sufficient to account for the outstanding "non-potential system." When the analysis has been completed, we shall then be able also to map out this non-potential system, or the geographical distribution of equivalent vertical-current effects, which will supersede the 1920 results quoted by Dr. Sanford, for which the avail-

¹ SCIENCE, July 27, 1923, pp. 67-68.

² SCIENCE, May 25, 1923, pp. 616-618.

³ SCIENCE, February 22, 1924, pp. 194-196.