

Mais les faits présentés suffisent à montrer le grand intérêt des études sur l'atmosphère solaire supérieure et la nécessité de les continuer.

L'atmosphère solaire est la seule que nous puissions observer dans son ensemble et dans ses couches successives. Nos appareils enregistreurs donnent en quelques minutes son aspect général et ses mouvements principaux; à ce point de vue, elle nous est mieux connue que l'atmosphère terrestre que nous observons seulement dans ses parties basses et sur une étendue restreinte, même avec l'aide du télescope.

MR. FRANK HOWSON has resigned the lectureship in physiology in the College of Medicine of the University of Durham to accept a similar appointment at Sydney, New South Wales.

DR. T. J. MACNAMARA, M.P., Parliamentary Secretary to the Admiralty, will distribute the awards of prizes and certificates at the Battersea Polytechnic, and deliver an address, on Tuesday evening, February 28.

MR. JAMES LEES, assistant lecturer in the faculty of engineering at the University of Bristol, has been appointed to the post of lecturer in engineering in the South African College, Cape Town.

THE annual distribution of prizes to students of the City and Guilds of London Institute will be held on February 17 at the Mansion House, the Lord Mayor presiding. Dr. R. T. Glazebrook, F.R.S., of the National Physical Laboratory, will deliver an address.

It is announced in *Science* that the fund of 150,000*l.* for the Johns Hopkins University is now complete. This insures the payment to the fund of a further 50,000*l.* offered conditionally in February of last year by the General Education Board, as was explained in our note last week on the report of the president of the Johns Hopkins University for the year ended August 31, 1910.

DR. HERMON C. BUMPUS has resigned the post of director of the American Museum of Natural History, New York, which he has held since 1902, and has accepted an appointment as "business manager" of the University of Wisconsin. The post is a new one, the University having recently decided to divide the administrative work between the president and an officer of this name. The office will be entirely separate from academic or teaching functions.

THE Drapers' Company has made a grant of 15,000*l.* for the erection of a new wing for the department of applied science of the University of Sheffield. The new buildings will be used to house the mining section and the research department for the silver and allied trades. The council of the University on January 27 passed a resolution thanking the Drapers' Company, and expressed a desire to associate the name of the Drapers' Company with the extensions as a record of the company's generosity.

THE Birmingham Education Committee has decided to recommend the City Council to increase the grant to the University of Birmingham from one halfpenny in the pound to an amount equal to one penny in the pound on the assessable value of the city, which it is expected will amount to about 12,000*l.* The Education Committee has agreed also to suggest to the University authorities the need for increasing the number of scholarships available for persons who would not otherwise be able to take advantage of the University teaching.

THE following gifts and bequests for higher education in the United States have been announced recently in *Science*. An old student, who does not wish his name disclosed, has given 20,000*l.* to the University of Pennsylvania for the endowment of a chair of physiological chemistry. It will be known as the "Benjamin Rush chair of physiological chemistry." Dr. Alonzo E. Taylor, formerly of the University of California, will be the first occupant of the chair. The University of Vermont has received 13,593*l.* from the Rockefeller Foundation, repre-

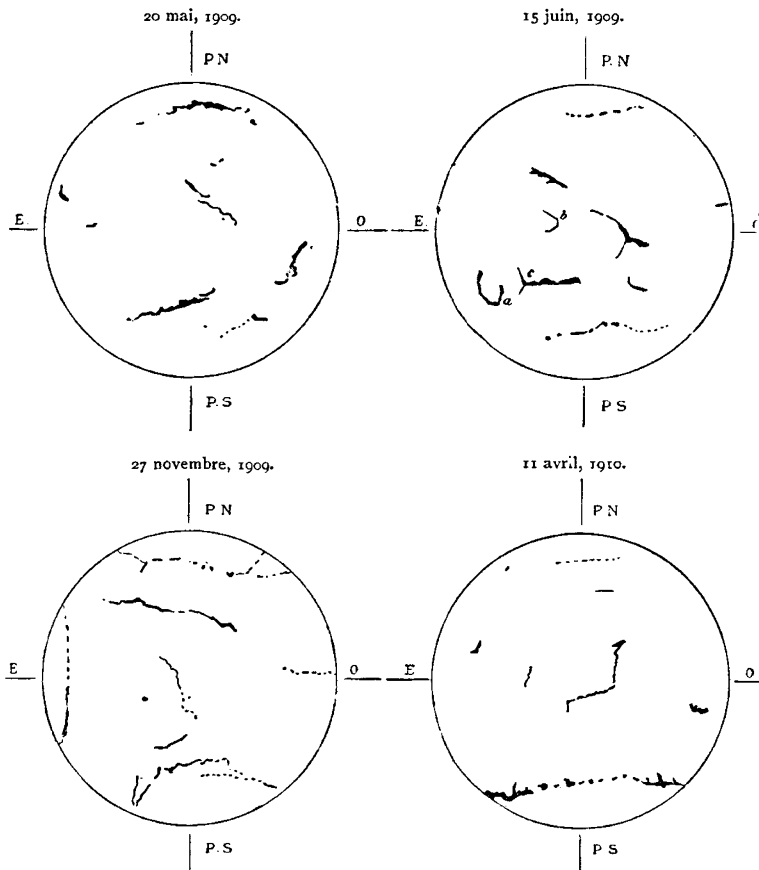


Fig. 4.—Images de la couche supérieure de l'atmosphère solaire qui montrent les filaments noirs caractéristiques et en particulier les filaments polaires. Ces images, obtenues avec l'aide de d'Azambuja, ont été relevées sur les épreuves monochromatiques du soleil obtenues avec la partie centrale des raies H_{α} de l'hydrogène ou K du calcium. Elles montrent seulement les filaments noirs sans les alignements. Les plages brillantes des épreuves au-dessus des faucelles n'ont pas été représentées.

Le réseau de courants de convection et les filaments curieux reconnus dans les couches hautes du soleil, peuvent se retrouver aussi sur la terre, et c'est ainsi que l'étude du soleil peut nous apprendre à mieux connaître notre propre atmosphère.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Adams prize for 1911 is awarded to Prof. A. E. H. Love, F.R.S., formerly fellow of St. John's College, for his essay entitled "Some Problems of Geodynamicals."

The adjudicators of the Hopkins prize awarded by the Philosophical Society for the period 1900-3 have awarded the prize to Prof. J. H. Poynting, F.R.S., for his researches on the transmission of energy in the electric field and on the pressure exerted by radiation.

senting the first instalment of a gift of 20,000*l.* made to the University on condition that an additional 80,000*l.* was raised. The 80,000*l.* has now been subscribed, and the amount 54,200*l.* has been collected. The total amount is to be added to the endowment fund for the general uses of the University. Mr. William Blodgett has given to Columbia University two farms near Fishkill, N.Y., to be used in connection with the work in agriculture. By the will of Mrs. Martin Kellogg, Yale University receives a bequest of 10,000*l.* from the estate of the late Mr. Martin Kellogg, who was formerly president of the University of California.

LORD CURZON OF KEDLESTON was on January 25 installed as Lord Rector of Glasgow University. The subject of his address was "East and West: a Retrospect and a Forecast." After a brilliant review of the ethnographic and historic *differentiæ* of Asia and Europe, he proceeded to estimate the probabilities as to their future relations. Some had argued that we in Europe "have given to Asia little that she values, or, if left to herself, would not cast away. Our education, it is said, she has only borrowed to turn against us; our religion she rejects; our civilisation she despises; she is indifferent to our science; she will manufacture our implements for her own protection; she will dispute our hegemony, defy our authority, dispense with our agents, undersell our produce, and end by annexing our trade." Lord Curzon gave in detail his reasons for disbelieving this prediction. Among others, he recalled the fact that "the inventions of science, which we are told that the East is to retain for its own selfish use, are not confined to producing the comforts, or conveniences, or even the destructive implements that are employed by man. They have, on the whole, a unifying and softening influence. The electric telegraph, the railway, the steamship, the Press, the post, travel to and fro—all these are agencies which tend to bring men together rather than keep them apart. Medical science has shown itself to be so valuable an instrument of social influence and fusion, that it has been permanently grafted on to missionary enterprise. The common share in this heritage of science would render it very difficult for the East to shut itself successfully off again from the West, or to pursue a policy of selfish exclusion. Even were the dependent portions of the East to recover complete political autonomy, the Western world would be always "within its gates." "Some of those whom I have the honour of addressing here may be called on to play a part in the future evolution of the great drama which I have endeavoured to describe. If so, I would ask them to bear in mind three things—never to look down on the East or the Eastern; to remember that the progressive elevation of the East is still the noblest work with which the West is charged; and to realise that each individual European in Asia is not merely a soldier, but a standard-bearer of his race. In a Chinese temple at Canton there stands a venerated gilt statue of a man with a benevolent expression on his features and a black hat on his head. He is supposed to be the Venetian Marco Polo, and to be thus honoured by the Chinese because he taught the West to understand and to respect the East. Be it yours, if you have the opportunity, to earn a similar reputation."

A CONFERENCE of about forty delegates of the provincial joint committees of European schools in India was held early in January at Calcutta, under the presidency of Sir Robert Laidlaw. In addition to delegates from every province in India, including Burma, we learn from the *Pioneer Mail* that several prominent education officials were present and took part in the discussions. Several speakers pointed out the inadequacy of the educational facilities offered for the children of Europeans in India, and eventually some fifteen resolutions were adopted. One resolution urged that in view of the great and increasing difficulty of finding suitable occupations for the children of the domiciled community, as well as for other and higher reasons, this conference regards it as urgently necessary that European schools should be enabled to provide a more efficient and complete training, physical and intellectual, than they have hitherto given, and that to such improved general education should be added instruction especially devised to prepare scholars for their chosen professions in life. Another recorded that the

conference regards a more efficient staff, especially in the lower classes of schools, as an indispensable condition of improvement in education. Whilst considering it necessary that for the present qualified teachers should, as hitherto, be brought from abroad, the conference regards it as equally necessary that such efficient training should be provided in India as should make it possible for locally recruited candidates to equip themselves fully for the teaching profession, and, further, the conference considers "that every qualified teacher should enjoy a reasonable salary increasing with long service, some provision for retiring allowance, and fair security of tenure." A third resolution pointed out that the conference regards the adequate and complete education of the domiciled community as one of the primary responsibilities of the Government of India, and considers that in view of the necessary larger cost of that education the imperial revenue must bear a larger share than heretofore. At the same time, it acknowledges the duty both of the Christian churches and the domiciled community to assist the Government financially and otherwise to a much greater extent than in the past. Regarding the curricula of Indian universities as unsuited to European students, the conference strongly urged the establishment of a Central European College affiliated to the University of London, and staffed, for the present, by fully equipped teachers from abroad. To this college, it was decided, may suitably be added classes for the training of secondary teachers.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 26.—Sir Archibald Geikie, K.C.B., president, in the chair.—Major P. A. MacMahon: Memoir on the theory of the partitions of numbers. Part v.: Partitions in two-dimensional space.—Arthur Schuster: The origin of magnetic storms. The paper contains a critical examination of the theory that magnetic storms are caused by streams of electrified corpuscles ejected from the sun. If the electro-kinetic energy of such storms be calculated, it is found that, when the magnetic field produced is comparable with that observed in magnetic storms, the energy is enormously great compared with that obtained by mere addition of the energies of the separate corpuscles. Even if during violent storms, when the magnetic force may be of the order 0.004 C.G.S., the corpuscles had an initial velocity nearly equal to that of light, the energy required to establish the magnetic field would be sufficient to reduce the speed to less than 4 kilometres a second before the swarm reaches the earth, the passage between the sun and the earth taking about a year. In this calculation the cross-section of the swarm is assumed to be determined by the effective duration of the magnetic disturbances which it is supposed to produce. If the swarm be reduced in cross-section the energy belonging to it would be diminished, but for a given magnetic force the density of the corpuscles in the swarm must then be correspondingly greater. This leads to the consideration of the effects of electrostatic repulsion between the particles. It appears that if H be the magnetic effect, the electrostatic acceleration at the edge of a swarm of electrons must be greater than $5 \times 10^{17} H$. This acceleration would be sufficient to drive a corpuscle in the first second through a distance equal to more than the diameter of the earth. It follows that, even taking account of electromagnetic attractions between the corpuscles, a swarm of corpuscles, when sent out from the sun in a definite direction, would soon be dissipated to such an extent that no sensible magnetic disturbance could be produced. Finally, the electrostatic effects, which would be observed on the surface of the earth in each magnetic storm, are discussed, and here the calculation also leads to the conclusion that the theory criticised is untenable. If magnetic disturbances are produced by rays emanating from the sun, it can therefore only be in an indirect manner. We may imagine that the injection of corpuscles ionises the upper portions of the earth's atmosphere, and consequently renders the already existing electromotive forces more effective, or we may imagine that the approach towards the earth's magnetic field of highly conducting