

likely to produce acceptable values, which may, however, be multiples or submultiples of the true values.

The intensity of the Meudon spectrograms about the region  $\lambda$  393 is not sufficient to confirm, or refute, the observation of Prof. Hartmann that the "K" (calcium) line does not appear to share in the periodic displacements of the other lines in the spectrum.

THE SOLAR SURFACE DURING 1903.—The annual report of the observations of solar phenomena made at the Lyons Observatory during 1903 appears in the August number of the *Bulletin de la Société astronomique de France*, wherein M. J. Guillaume gives comparative tables showing the numbers, areas, and distribution of spots and faculae for the years 1900–1903 inclusive.

Of the 260 observing days in 1903 there were only thirty-eight on which "no spots" was recorded. Both the numbers and areas of spots show a marked increase on the previous year, the figures being 1902, 33 and 1785 millionths, and 1903, 115 and 8440 millionths. The mean latitude, for both hemispheres, during 1903 was  $10^{\circ}.3$ , in place of  $15^{\circ}.9$  and  $21^{\circ}.2$  for 1901 and 1902 respectively.

The groups of faculae were fewer in number during 1903 than in 1902 (324 and 363 respectively), but their total area was a little more than twice as great (204.1 and 97.6 thousandths respectively), whilst their mean latitude was  $27^{\circ}.8$ , as compared with  $38^{\circ}.8$  in 1902, and  $35^{\circ}.8$  in 1901.

The preponderance of spots in the northern hemisphere remarked in 1901 and 1902 changed over to the southern hemisphere in 1903, the total areas during last year being S. 5071 millionths, N. 3369 millionths.

From the tables showing their distribution in latitude and longitude, one sees that the greatest augmentations of both spots and faculae, in each hemisphere, took place in the same zones.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—Dr. Wm. Osler, F.R.S., has, with the King's approval, been appointed regius professor of medicine in succession to Sir John Burdon Sanderson, Bart., F.R.S. Prof. Osler has, since 1889, filled the chair of the principles and practice of medicine at Johns Hopkins University, Baltimore.

CAMBRIDGE.—In connection with the visit of the British Association, the degree of Doctor of Science, *honoris causa*, will on August 22 be conferred on the following:—J. O. Backlund, director of the Pulkova Observatory; Prof. H. Becquerel, Paris; Prof. J. W. Brühl, Heidelberg; Prof. A. Engler, Berlin; Prof. P. H. von Groth, Munich; P. Kabbadias, Athens; Prof. A. Kossel, Heidelberg; Prof. H. F. Osborn, New York; N. G. Pierson, Amsterdam; Prof. V. Volterra, Rome; Sir David Gill, K.C.B., F.R.S.; A. W. Howitt, the Australian anthropologist; Sir Norman Lockyer, K.C.B., F.R.S.; Major P. A. MacMahon, F.R.S.; Sir W. Ramsay, K.C.B., F.R.S.; Prof. A. Schuster, F.R.S.; Sir W. T. Thiselton-Dyer, K.C.M.G., F.R.S.

The first list of successful candidates for the university diploma in tropical medicine and hygiene has just been issued by the examiners (Sir P. Manson, Major Ross, and Dr. Nuttall). It includes the following:—A. R. Cleveland, A. R. J. Douglas, G. Elliott, P. N. Gerrard, C. M. Heanley, J. C. B. Statham, C. A. Suvoong, and J. C. Thompson.

Mr. S. A. McDowall, Trinity, has been appointed assistant to the superintendent of the Museum of Zoology (Dr. S. F. Harmer).

DR. ALBERT S. GRUNBAUM, lecturer in experimental medicine at the University of Liverpool, and director of cancer research at Liverpool, has been appointed professor of pathology and bacteriology in the University of Leeds in the place of Prof. Trevelyan, who is retiring. Dr. George Wilson has been appointed to the newly created lectureship in civil engineering in the same university.

THE syllabus for 1904–5 of the Redruth School of Mines shows that a successful local effort is being made to provide practical scientific training in mining to those engaged in this important Cornish industry. The main object of the School of Mines is to provide theoretical and practical in-

struction in mining and the allied subjects essential to the training of competent mining engineers. The training in practical mining is given at the Basset Mines and at other mines in the locality, under the general supervision of an instructor. The practical underground work includes the timbering of shafts and levels. Students are taught, in addition, the methods of prospecting for minerals in all positions, and are trained to detect favourable indications on the surface. They are shown by examples in the neighbourhood how to *costean* for lodes, and how to detect the effect of cross-courses and slides on the lodes. The differences between fissure veins, gash veins, and contact lodes are pointed out by examples; the manner in which the lodes are affected by passing through the different strata, and the effect the bearing of the lode has on its productiveness in certain districts. Studies are made of the maps of the neighbourhood, and opportunities afforded for examination of other mines now working, and for investigating, as far as possible, those that have been abandoned.

#### SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, July 25.—M. Mascart in the chair.—On a functional equation: Émile Picard.—Chemical and geological study of some springs in the north of Madagascar: Georges Lemoine and Paul Lemoine.—On some facts relating to the observation of variations in the lustre of phosphorescent sulphides under the action of *n*-rays or analogous phenomena: E. Bichat.—The academy was invited to send delegates to the second International Botanical Congress at Vienna, to be held from June 12 to 18, 1905.—On a relation between the minima and maxima of sun-spots: Alfred Angot.—On the singularities of the equation

$$y^4 = A_0 + A_1y + A_2y^2 + A_3y^3 :$$

Pierre Bouteux.—On the absorption of gases by wood charcoal at low temperatures: Sir James Dewar. The liquid air calorimeter is used to determine the heat liberated by the absorption of certain gases in charcoal, the volume absorbed being measured. With all gases except helium, the volume absorbed is greatly increased by low temperature. Absorption of gases with charcoal at low temperatures forms a good method of producing a vacuum.—On the nature of *n* and *n*<sub>1</sub> radiations, and on the radio-activity of the bodies which emit these radiations: J. Becquerel.—On the refraction of *n*- and *n*<sub>1</sub>-rays: J. Becquerel.—On the contemplation in a dark room of surfaces feebly illuminated by certain special lights. The case of objects of linear form: F. P. Le Roux.—The phenomena of magnetic viscosity in soft industrial steels, and their influence on the methods of measurement: Raymond Jouaust.—Magnetic exploration of the Gulf of Padirac: E. Mathias.—On the earthquake of July 13, 1904, in the central Pyrenees: E. Marchand.—On the discharge of electricity in the air at the summit of the Eiffel Tower during the storm of July 24: A. B. Chauveau.—On the form taken by thallos iodide on being deposited from solution: D. Gernez.—On radio-active lead, radio-tellurium, and polonium: A. Debiere.—Action of zinc on the tungstates of sodium: L. A. Hallopeau.—On the acid pyrophosphate of silver: J. Cavalier.—On the composition of the homologues of Schweinfurt green: Georges Viard.—The heat of formation of the trisulphides of antimony: MM. Guinchant and Chrétien.—On polishing and connected scientific phenomena: F. Osmond and G. Cartaud.—On vinyl dimethylacetic acid: E. E. Blaise and A. Courtot.— $\beta$ -Oxyalkyl and  $\beta$ -oxyphenyl ethylene ketones. The action of hydroxylamine and phenylhydrazine: Ch. Moreux and M. Brachin.—The action of oxalacetic ether on aromatic aldehydes in the presence of  $\beta$ -naphthylamine: L. J. Simon and A. Conduché.—The action of acid chlorides on tertiary bases with an aromatic nucleus: V. Auger.—On the general arrangement of the nervous system in *Rissoa elata*, var. *oblonga* (Desmaret): G. Quintaret.—On the intracellular contents of the parenchyma of certain fruits: Wladimir Tichomirov.—On the anatomy of the tubers of *Euphorbia Intisy*: Marcel Dubard and René Viguière.—Contribution to the study of blight in tobacco leaves: MM. Bouygués and Perreau.—Researches on the