

gations among the native troops of the Egyptian Army, to which was added some observations on nasal and cephalic indices in Egypt by Dr. C. S. Myers; that of the committee to conduct anthropometric observations in the British Isles, which issued in its report a series of photographs and diagrams of the living figure with the points, between which dimensions are to be measured, marked; and that of the committee to collect anthropological photographs, which issued a first list of photographs registered.

M. LIPPMANN'S METHOD OF PHOTOGRAPHY IN COLOUR.

THE original method of photography in colour proposed by M. G. Lippmann was based on the production of interference fringes in the photographic plate, and had the disadvantages of requiring very delicate adjustments and a long exposure. In the *Comptes rendus* for July 30 M. Lippmann gives an account of a method in which long exposures are not required. Consider a photographic spectroscope consisting of a slit, a prism, a lens, and a sensitised plate. The light falling on the slit is analysed by the prism, and the rays produce a corresponding number of dark lines on the negative, each of which is a conjugate image of the slit. If a positive is taken from this negative, and the former placed in the exact position originally occupied by the latter, the system is reversible. If the plate is now illuminated by white light, the light passing through the transparent portion of the plate formed by any particular line will produce at the slit only that ray which originally imprinted the negative. On the whole spectrum, the net result will be to reconstitute at the slit the original colour. In order to apply this principle to photography in colours, the following apparatus has been arranged. The single slit of the spectroscope is replaced by a series of slits very close together, consisting of fine transparent lines ruled five to the millimetre. This grating is fixed at one end of a solidly built box, the other end carrying the photographic plate, and between these is a converging lens, in front of which is a prism of very small angle. The object to be reproduced is projected on the grating, illuminated with white light. The light passing through the prism and lens falls on the sensitive plate producing a negative in black and white, which under the lens appears lined, each line being divided into small zones, which are parts of an elementary spectrum. If the negative be now replaced in its original position and illuminated by white light, the eye being placed at the distance of distinct vision from the grating, the image of the object photographed is seen in colours, these colours being complementary to those of the object; the latter appears in its own proper colours when the negative is replaced by a positive. The spectrum of the electric light has been produced with this apparatus by the aid of a positive in its natural colours. It is necessary that the angle of the prism used should be so small that the length of each spectrum produced by it should be less than the length between each line, otherwise the spectra interfere with each other. Ordinary sensitive orthochromatic plates can be used, and the exposure required is very much less than with the interference method. The chief drawback at present is the necessity of using the identical apparatus in which the exposure is made to view the colours, but M. Lippmann suggests a method by which this difficulty may possibly be overcome.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Frank Smart studentship in botany has been awarded to Mr. D. Thoday, of Trinity College. The studentship is held at Gonville and Caius College.

ENGINEER F. R. EICHHOFF has been appointed professor of iron metallurgy in the Berlin Mining School.

A MOVEMENT is on foot for the foundation in the Glasgow Agricultural College of a bursary, to be known as "the Biggar Bursary," in memory of the late Mr. James Biggar.

NO. 1922, VOL. 74]

THE metallurgical laboratory of the Technical High School, Charlottenburg, is to be divided into two sections, the one, especially for iron and steel, to be under Prof. Mathesius, and the other, for the metallurgy of other metals, under Prof. Doeltz. Near the technical chemistry institute of the same high school a chemical museum has been provided and placed in the charge of Prof. O. N. Witt.

PROF. EDUARD SUSS, president of the Vienna Academy of Sciences, celebrated his seventy-fifth birthday on August 20, and also the fiftieth anniversary of his appointment as extraordinary professor of palæontology in the University of Vienna. Prof. E. Ludwig, the holder of the chair of medical chemistry in the same university, has been elected an ordinary member, and Prof. J. Herzig, professor of chemistry, a corresponding member, of the Vienna Academy of Sciences.

THE issue of *Science* for August 17 gives particulars as to the degrees of Doctor of Philosophy and Doctor of Science conferred during the past year by American universities. The number of students receiving one or other of the degrees in 1906 was the same as in 1905, viz. 325, while the total number of doctorates (in philosophy or science) conferred in nine years was 2387. The names of those on whom the degrees were conferred, the subjects of their theses, and the names of the institutions conferring the degrees are given in the number.

IN connection with the meeting in Canada of the British Medical Association, the honorary degree of LL.D. has been conferred by the University of Toronto upon the following medical men:—Prof. T. Clifford Allbutt, F.R.S., Dr. A. H. Freeland Barbour, Sir Thomas Barlow, Bart., Sir James Barr, Sir William Broadbent, Bart., F.R.S., Prof. G. Cooper Franklin, Prof. W. D. Halliburton, F.R.S., Sir Victor Horsley, F.R.S., Dr. Donald MacAlister, Dr. W. Julius Mickle, Dr. Louis Lapicque, Paris, Dr. Ludwig Aachoff, Marburg, and Dr. W. J. Mayo, president of the American Medical Association. The degree was also conferred *in absentia* upon Dr. H. W. Langley Browne, chairman of the British Medical Council. The same degree is also to be conferred *in absentia* on Sir Thomas Barlow, Bart., Sir William Broadbent, Bart., F.R.S., Prof. T. Clifford Allbutt, F.R.S., and Sir Victor Horsley, F.R.S., by the McGill University, Montreal.

IN the last of six lectures on British institutions, delivered to students attending the University Extension summer meeting at Cambridge, Prof. Masterman dealt with education. He said we are just at the beginning of a systematisation of our secondary education as an attempt to complete the ladder for brilliant pupils from the elementary school to the university. There is a danger, he said, that the majority of children unable to climb such a ladder may be neglected. Prof. Masterman thinks that the next two towns to obtain a university charter will be Bristol and Newcastle. The new universities are largely dependent on the subsidies of municipal authorities. In this the lecturer sees the danger, and he does not speak without knowledge, that the universities will be hampered from the higher education point of view by the entirely inadmissible conditions of the municipal authorities. The men who provide the money may claim to control the expenditure of it and disregard the opinions of experts. That can only be averted by a large subsidy paid from the central authority. He urged that universities ought to receive greater assistance from the State.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, May 10.—"The Action of Anæsthetics on Living Tissues. Part II.—The Frog's Skin." By N. H. Alcock.

This paper is a continuation of researches made on isolated nerve (Proc. Roy. Soc., B, vol. lxxvii., p. 267), and the phenomena here described are to be considered in connection with them.

The experiments may be summarised as follows:—

(1) CHCl_3 vapour locally applied to the outer surface of the frog's skin abolishes the normal ingoing resting current.