

The form of an Egyptian mastaba tomb was to a very great extent the expression of the Egyptian belief that the soul, or souls, of the deceased visited the body in the tomb chamber, coming in and out by the shaft of the pit, and indeed the XVIII. dynasty papyrus of the priest Nebqed represents the human-headed *ba-soul* descending the shaft to visit the mummy. These beliefs also led to the burial of super-numerary stone heads to which the soul might attach itself should the body perish. Recently eight life-size portrait heads of a princess and the courtiers of the court of Chephren have been found in the mastabas at Gizeh constituting the royal cemetery of the fourth dynasty. The cartonnage busts, presumably of the deceased, represented as carried in funeral processions of the Middle Empire, are probably a development of the same idea. Similar expressions of belief—perhaps most obvious in tomb construction—occur in Negro Africa, the examples being too numerous and the resemblances too exact for this to be due to any other cause than actual borrowing.

To sum up: concerning the early prehistory of the Anglo-Egyptian Sudan we have no more than indications. In the Neolithic stage, which appears to have persisted until a comparatively recent date, Negro influence, if not predominant over the whole area, was at least powerfully felt even in the north, as is shown by the distribution of polished axe-heads. But against this northward pressure must be set the continual extension of Egyptian culture, the evidence for which may best be found in the eschatological ideas and burial customs ("mummification" and anthropoid coffins) of the peoples of Equatoria. This influence, which seems to have persisted until medieval times, may have reached tropical Negroland as early as the Middle or even the Old Kingdom. Nor was the Nile route the only one by which Egyptian influence was spread. Another and later drift extended westwards, as shown by the coinage of the north African States, which enables us to fix its date within fairly precise limits. We do not know how far south this drift travelled, but it seems certain that it reached at least as far as the Senegal River and the great bend of the Niger.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

LONDON.—Prof. J. A. Fleming will give a public introductory lecture at University College, on "Science in the War and after the War," on Wednesday, October 6, at 5 p.m. This lecture will be open to the public without fee or ticket. Other free public lectures are as follows:—On October 6, at 2 p.m., Photographic Surveying, by Mr. M. T. M. Ormsby; on October 7, at 2 p.m., The History of Tools, by Prof. W. M. Flinders Petrie, and at 5 p.m., Final Causes in Animal Psychology, by Mr. Carveth Read; on October 8, at 5 p.m., The Physiological Action of Light, by Prof. W. M. Bayliss, and at 5.30 p.m., Steam Turbines, by Mr. W. J. Goudie; on October 11, at 3 p.m., Racial Frontiers in Central and South-eastern Europe, by Prof. L. W. Lyde; on October 12, at 5 p.m., An Investigation of the Heating of the House of Commons, by Mr. A. H. Barker; and on October 29, at 5 p.m., The Applications of Electric Heating, by Prof. J. A. Fleming.

The University Officers Training Corps, under the command of Lt.-Col. D. S. Capper, will begin its eighth year of training under exceptional conditions, as the colleges of the University are largely depleted of students. In the infantry unit, the largest in the contingent, the training since the outbreak of the war has been mainly of a continuous character, cadets

being accommodated in premises near London. As a rule, a few months of training under these conditions have been sufficient to qualify cadets for commissions. The artillery and engineer units of the contingent are also in active training. Their work is especially important at the present time, as there are so few facilities for the training of technical officers. The artillery unit has been permitted to keep its guns and equipment for training purposes. In the medical schools of the University, a considerable number of students are completing their medical training with a view to taking commissions as soon as qualified. The strength and training of the medical unit of the University O.T.C. have therefore not been much affected by the war, and the cadets attended camp as usual. Since the outbreak of war, the number of commissions obtained by cadets and ex-cadets of the contingent up to the end of August, 1915, amounts to 1521, and 189 commissions were obtained before the war, giving a total of 1710. In addition, 245 commissions have been obtained, up to the same date, upon the recommendation of the University, by graduates and students who were not cadets or ex-cadets of the University O.T.C. Before the end of September, the University will have supplied well above 2000 officers to the Army through the O.T.C. or by direct recommendation, and many other graduates and students have obtained commissions through other channels. Distinctions obtained by ex-cadets of the University O.T.C. include:—Military Cross, 6; *Medaille Militaire*, 1; Mentioned in Dispatches, 14. Under War Office Regulations, membership of the University of London O.T.C. is not restricted to members of the University, and other men of suitable education desirous of qualifying for commissions are accepted. Candidates for enrolment should apply personally to the Adjutant at the Headquarters, 46 Russell Square, W.C.

MR. W. CALDWELL, of Trinity College, Dublin, has been elected professor of chemistry and professor of physics in the Schools of Surgery of the Royal College of Surgeons in Ireland.

IN July last the Federation of University Women offered a prize fellowship of 80*l.* to 100*l.* for original work published by women. We learn that the fellowship has been awarded to Miss M. Wheldale, Newnham College, Cambridge.

THE new session of the School of Pharmacy of the Pharmaceutical Society will open on Wednesday, October 6, when the inaugural address will be delivered by Sir Rickman J. Godlee, and the Hanbury gold medal presented by the president.

THE will of the late Mr. George May, mining engineer and colliery proprietor, of Darlington, bequeaths 500*l.* to the North of England Institute of Mining Engineers, the income to be applied in providing "George May" prizes for students, and 500*l.* to Armstrong College, Newcastle, to found a "George May" scholarship in mining.

THE London County Council has arranged for the undermentioned free public lectures to be given at the Horniman Museum, Forest Hill, S.E., at 3.30 p.m. on Saturday afternoons, commencing on October 2: The folk-lore of Russia, Mr. Edward Lovett; the Belgian Congo, its peoples and its animal life, Rev. J. H. Weeks; Rumanian history and folk-lore, Mr. A. R. Wright; (1) our Western Allies, (2) our Eastern Allies, Dr. A. C. Haddon; the folk-lore of France, Mr. E. Lovett; Japanese history and folk-lore, Mr. A. R. Wright; (1) flies as enemies of man, (2) the dangerous parasites of man, Mr. H. N. Milligan; S. Sophia,

Constantinople, and the mosques of Constantinople and Brusa, Prof. F. M. Simpson.

THE calendar of Birkbeck College, London, for the present session has been issued. The arrangements made for the session, which is the ninety-third, are as complete as in previous years. The general character of the educational work provided by the college is summarised in the Final Report of the Royal Commission on University Education in London (1913); the Commissioners write:—"We think that the original purpose of the founder of Birkbeck College and the excellent work that institution has done for the education of evening students who desire a university training, mark it out as the natural seat of the constituent college in the Faculties of Arts and Science for evening and other part-time students." In addition to the university courses arranged in science, arts, laws, and economics, classes will be held in commercial and other subjects.

THE British Fire Prevention Committee's "Fire Warnings" have been before the public from time to time in connection with the war emergency, but the different forms of "Fire Warnings" available and the extent to which they can be obtained gratuitously does not appear to be generally known. Among the "Fire Warnings" obtainable in poster form, printed in red, 8 ins. wide, are the following—the reference number must be given in all communications regarding them:—For elementary and secondary schools: *re* air raids (No. 20); for public schools and boarding schools: *re* air raids (No. 20a); *re* fires due to air raids (No. 17); for householders, etc.; *re* fires due to air raids (No. 17a); as to dealing with incendiary bombs, etc. Local authorities and school committees—as also headmasters or headmistresses—requiring "Warnings" No. 20 and 20a (for schools) will receive a suitable number of copies free upon written application to the registrar, giving the full name and postal address of the institution for which they are required, the number of pupils, subject to their enclosing a large-sized, addressed, and properly stamped envelope for despatching the necessary posters. All communications should be in writing addressed to the Registrar, the British Fire Prevention Committee, 8 Waterloo Place, London, S.W. More than a quarter of a million posters has already been issued by the committee gratuitously.

THE educational and social announcements for the present session at the Northampton Polytechnic Institute, Clerkenwell, London, have been issued in the form of an attractive calendar. The only new evening class which has been arranged is a "Glass-workers'" evening course, which is being jointly undertaken by the technical optics and the technical chemistry departments. The class is required urgently at the present time, owing to the disturbance in this particular trade caused by the war. Notwithstanding the war, the equipment of the various departments was extended during the session 1914-15. In the mechanical engineering department, the testing equipment was increased by the addition of a Heenan and Froude dynamometer, and the prime mover equipment by a semi-Diesel engine. In the electrical engineering department, various transformers and motors of special types were added, and a Tirrell regulator and a mercury arc rectifier were installed. The instrument equipment was also extended. In the technical optics and other departments, a fair amount has also been spent on extensions. The courses in the Engineering Day College are to be continued, but the second- and third-year courses, which extend ordinarily from September to Easter, are in 1915-16 to commence in

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January and to be continued until July. This arrangement will enable the students to work up to Christmas in the munitions workshop, which has been employed in making gauges and parts of armaments during the whole of the summer vacation. The special classes for Post Office workmen and boy messengers, started two years ago, are being continued, as are also those in submarine cable work for the employees of the cable companies who have their headquarters in London.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 30.—M. Ed. Perrier in the chair.—The president announced the death of Emile Guyou, member of the Academy.—G. Humbert: The reduction of Hermite forms in an imaginary quadratic body.—D. Pompeiu: A double solution of Riccati's equation.—B. Mayor: A correspondence between articulated systems of space and those in a plane.—M. Gibon: New methods in stereo-radioscopy. Radioscopic methods are more rapid than radiographic methods, and three processes of stereo-radioscopy are described. The first process makes use of two Crookes's tubes, with a metallic diaphragm placed between the bulbs and the patient, a stereoscopic image being formed on a platinocyanide screen.—P. W. Stuart Menteth: Some fossils of the Pyrenees.—J. Pescher: Respiratory gymnastics and its therapeutic effects. Drawings of the instrument are given, and its use and mode of application are described. Cases are cited in which its systematic employment has given beneficial therapeutical effects.—Edmond Bordage: The differences in the appearance of adipose tissue produced by hystolysis in certain Orthoptera.

September 13.—M. Camille Jordan in the chair.—G. Bigourdan: Astronomical observations made in France before the foundation of the Academy of Sciences and the Observatory of Paris. An account of the work of early French astronomers up to the sixteenth century.—A. Chauveau: Diffuse inflammation of the forearm resulting from a previous general infection.—Paul Vuillemin: Essential differences between the nasturtium and the Geraniaceæ. Tropæolum differs fundamentally from the Geraniaceæ in the position of its nectaries and in the typical number of stamens. The author considers it necessary to re-establish the family of Tropælaceæ.—MM. Tuffier and Amar: Walking-sticks and crutches. Scientific model of a supporting cane. This is designed to prevent forms of paralysis frequently resulting from the use of ordinary crutches.—B. Galitzine: The direct measurement of accelerations. A continuation of an earlier paper on the same subject.—A. Portevin: The decomposition of potassium cyanate by heat. The reaction $\text{KCN} + \text{O} = \text{KCNO}$ is reversible, potassium cyanide being formed by heating potassium cyanate, in proportions ranging from 20.9 per cent. at 700° C. to 48.9 per cent. at 900° C.—E. Kohn Abrest: An arrangement for rapidly testing substances used against poisonous gases. The results obtained with various absorbents for chlorine are tabulated. The solutions containing sodium bicarbonate were not so effective as those with sodium carbonate. Sodium thiosulphate alone gave off SO_2 , but in admixture with excess of sodium carbonate the absorptive power was good. Solutions of potassium iodide gave very complete absorption.—Léon Gizolme: The influence of the algæ of sand filters on the chemical composition of water. The amount of dissolved oxygen was found to increase and the alkalinity to diminish with increase of sunlight.