Section C.

Mr. W. Watts invited the co-operation of the Corresponding Societies in the work of the Geological Photographs Committee and the Erratic Blocks Committee.

Mr. De Rance remarked that though the labours of the Underground Waters Committee had come to an end, he hoped the local societies would record carefully in their districts everything bearing upon that subject.

Section H.

Mr. Sidney Hartland asked for the co-operation of the Corresponding Societies in the work of the Ethnographical Survey Committee. Considerable progress had been made in the past year. There were no departments in which it was so important to have speedy information as those of dialect and folk-lore, as education, facilities for railway travelling, and industrial migrations were rapidly destroying local customs, dialects and traditions. Still, in some parts there had been little change, and if physical measurements were made and physical characteristics noted, in stationary districts, of persons belonging to the old families of the locality, much light might be thrown on the various races of the British Isles. He would be glad to furnish any delegates interested in the subject with copies of the Ethnographical Committee's schedules, or with any other help in his power.

Mr. John Gray (Buchan Field Club) described the work done in his district in noting the physical characteristics both of adults and of school children.

The Chairman remarked that Mr. Gray's society was doing very good work, and giving an illustration of what was required. As the information asked for by the Ethnographic Committee was of so many different kinds, he thought the local societies would be wise to form sub-committees, one dealing with physical measurements and characteristics, another with folk-lore, and so on. Then photographers were needed to illustrate both people and ancient monuments. Investigations of this kind would at once enrich the *Transactions* of a local society, and help the work of the British Association.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The Walsingham Gold Medal for an essay or monograph on a botanical, geological, or zoological subject will be awarded next year. Competitors must be under the standing of M.A., and must send their essays to Prof. Newton, F.R.S., not later than October 9, 1897.

The General Board proposes to fix the stipend of the vacant Professorship of Surgery at £300, but hopes that after 1898 the state of the University finances may make it possible to raise this sum to £500 a year, tenable with a fellowship.

About 135 of the freshmen admitted this term propose to study natural science and medicine with a view to the B.A. and M.B. degrees.

Dr. Allbutt, F.R.S., is appointed an Elector to the chair of Pathology, and Dr. Hill to the chair of Anatomy, in the room of the late Sir G. M. Humphry.

The Examiners for the Natural Sciences Tripos 1897 are—W. N. Shaw, F.R.S., R. Meldola, F.R.S., Dr. A. Scott, A. Hutchinson, H. Woods, J. J. H. Teale, F.R.S., Dr. H. M. Ward, F.R.S., H. Wager, S. F. Harmer, F. Jeffrey Bell, F.R.S., A. C. Seward, J. J. Lister, Prof. A. M. Paterson, Dr. A. Hill, Dr. L. E. Shore, and Prof. W. D. Halliburton.

AT the celebration of the 150th anniversary of Princeton University, on October 22, the degree of LL.D. was conferred upon Lord Kelvin and Prof. J. J. Thomson.

IT is announced in *Science* that a laboratory built for the Massachusetts General Hospital, Boston, at a cost of over £4000, will soon be ready for use. The building includes well-fitted laboratories of chemistry, bacteriology and histology. It is hoped that an additional sum of £20,000 will be collected for an endowment.

DR. THOS. EWAN, Chief Assistant in the Chemical Department of the Northern Polytechnic Institute, has been appointed Research Chemist to the British Aluminium Company in their works at Oldbury. He is succeeded at the Northern Polytechnic by Mr. H. Charles L. Bloxam, at present Chief Assistant in the Chemical Department of the Goldsmiths' Institute, New Cross.

THE following Scholarships have been awarded in connection with the present session (1896-7) of the Central Technical College:—Clothworkers' Scholarship, £60 a year with free education for two years, L. P. Wilson; Mitchell Scholarship, £40 a year with free education for two years, R. S. Potter; Clothworkers' Technical Scholarship, £30 a year with free education for two years, E. W. Cook; David Salomons Scholarship, £50, E. W. Marchant; John Samuel Scholarship, £30, H. W. Hanbury; Institute's Scholarships, free education for three years, F. S. Miller, J. I. Hunter, F. W. Fawdry.

A GENERAL meeting of the members of the Convocation of the University of London was held on Tuesday. After a long discussion it was resolved:—"That this House earnestly desires the early establishment, in accordance with the expressed intentions of the founders of this University, of University professorships and lectureships in science and literature, together with such institutions as may tend to the encouragement of original study and research on the part of members of the University." It was further decided, on the motion of Mr. W. T. Lynn—"That it is desirable to make application to the Government for the provision of funds to establish a students' observatory in the neighbourhood of London for the instruction, primarily, of members of the University in practical astronomy, with the ultimate view of taking part in the progress of astronomical investigation."

SO much money is being frittered away by Technical Education Committees as grants for instruction in such subjects as basket-making and hedging, that no apology is needed for again calling attention to the courses of science lectures which the Councils of University and King's Colleges, London, have arranged in conjunction with the Technical Education Board, to be held in the evenings and on Saturday mornings. These lectures are of a university type, being of the same standard as those which are given in the day-time. They are intended for those students who, being occupied in the day, are unable to obtain university instruction except in the evening; and they are given at considerably reduced fees. Among these courses may be mentioned: (1) An evening course on Advanced Chemistry, at University College, by Mr. C. F. Cross. The course will consist of fifteen lectures, given on Friday evenings, commencing on Friday, November 6; and the subject of the course is "Cellulose, the chemistry of vegetable fibres, and of their industrial preparations and uses." The fee for the whole course is £1 1s., which, in the case of those who earn weekly wages, may be paid in two instalments. (2) A Saturday morning course for teachers, at University College, by Prof. Karl Pearson, on "Graphic Methods." The course deals mainly with the use of the drawing-board in elementary, geometrical, and mechanical teaching. The admission to this course is free for teachers. The following lectures have also been arranged by the Professors at the two colleges. In the evenings, Prof. Hudson Beare and Prof. Fleming are giving courses at University College on Mechanical Engineering and Electrical Engineering respectively; while at King's College, Prof. Robinson is holding a course on Civil Engineering, Prof. Banister Fletcher on Architecture, Prof. Adamson Experimental and Practical Physics, and Prof. Hudson on Pure Mathematics. The fee for each of these courses is £1 1s. On Saturday mornings Prof. Capper is holding a course, at King's College, on the Strength of Materials, to be followed in January by a course on the Theory of Machines. In January Prof. Fleming will also commence a course, at University College, on Electricity and Magnetism. The Saturday morning courses are free for teachers. We are glad to make these courses known, because we feel that their success would induce provincial Technical Education Committees to pay more attention to the higher branches of scientific instruction than most of them do at present.

SCIENTIFIC SERIALS.

American Journal of Science, October.—On the rate of condensation in the steam-jet, by A. de Forest Palmer. Photographs of a vertical steam-jet were obtained with the aid of sunlight. The invisible portion has the general shape of the inner mantle of a Bunsen flame, and its outline depends upon the pressure of the jet and the velocity with which the condensation travels towards the nozzle. The author finds that the separation surface of the invisible portion is sharply marked, and that it oscillates up and down. The demarcation is

probably due to the fact that the instantaneous heat of condensation is able to superheat the supersaturated steam as it arrives at the surface. The velocity of condensation increases markedly with the pressure; and since the initial velocity of the jet and the rate of decrease of its velocity in ascending also increase with the pressure, the amplitude of the oscillations decreases with it.—Abnormal hickory nuts, by F. H. Herrick. The author describes two hickory nuts of ordinary external appearance, but containing an endocarp strongly resembling an acorn, and supposed to be cases of hybridism between the oak and the hickory. The minute anatomy of their structure gives no direct evidence of hybridism, but the variation undoubtedly arose at the time of fertilisation, and is at present unexplained.—Separation and identification of potassium and sodium, by D. A. Kreider and J. E. Breckenridge. These metals may be effectively and delicately separated by converting their salts into perchlorates and precipitating the potassium with 97 per cent. alcohol. The sodium is then precipitated by blowing gaseous hydrochloric acid into the alcoholic filtrate.—A new method for reading deflections of galvanometers, by C. B. Rice. The method is based upon Gauss's mirror and scale method, but the telescope is replaced by a lens at a short distance from the mirror. The latter is perforated in the centre, and through the hole is seen a black arrow on a white ground placed at an equal distance beyond the mirror, which, being in the same plane as the reflected scale, serves as a pointer, and obviates the necessity of a telescope.—The action of ferric chloride on metallic gold, by P. C. McIlhiney. Ferric chloride by itself, or hydrochloric acid in presence of air, have no action on gold. But a mixed solution of hydrochloric acid and ferric chloride dissolves gold when oxygen is present, the ferric chloride acting as a carrier.

American Journal of Mathematics, vol. xviii. No. 4, October.—Mr. E. H. Moore concludes his tactical memoranda i.-iii. with several more "whist-tournament arrangements," and gives a short list of the published literature of the subject.—In the Étude de Géométrie Cinématique réglée, M. René de Saussure proposes to establish a purely synthetical correspondence entre les points de la surface imaginaire et les droites de l'espace, de manière à obtenir une géométrie de l'espace réglé basée sur la géométrie supposée connue, de la surface. He discusses first the principles of the synthetic geometry of such a space, and then the kinematic geometry of the same space. He next gives applications of his theory. In this theory la ligne droite est prise comme élément d'espace, non-seulement au point de vue géométrique, mais aussi au point de vue mécanique; cette manière devoir conduit à la conception d'une *cinématique réglée*. La raison d'être de cette branche de la cinématique provient du fait que le déplacement le plus général d'un corps solide est une torsion et l'effort le plus général exercé sur un solide est ce que Plücker appelle un dyname et Ball un torseur (wrench); car l'effort que développe un dyname ou un torseur s'exerce sur une droite de même qu'une force s'exerce sur un point, puisque le vectangle est à la droite ce que le vecteur est au point.—The volume closes with a paper by Goursat, entitled "Sur les équations linéaires et la méthode de Laplace." In it the author develops, at some length, a recent note which he presented to the Academy of Sciences (*Comptes rendus*, t. cxxii., January 27, 1896).

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 19.—M. A. Chatin in the chair.—The President announced the death of M. Trécul, Member of the Botanical Section, on October 15.—New researches relating to the decomposition of sugars, under the influence of acids, and especially with the production of carbonic acid, by MM. Berthelot and G. André. The experiments were partly conducted in sealed tubes at 100°, partly in open flasks, at the boiling point. Estimations were made of carbonic acid, carbon monoxide, formic acid, levulic acid, humic acid, and unattacked glucose. Besides glucose, experiments were carried out with levulose, galactose, and maltose. The principal reaction appears to be the formation of humic acid; carbonic acid is also formed in not inconsiderable quantity.—Determination of the magnetic elements at sea. Applications of the observations made by M. Schwerer on the *Dubourdieu*, by M. E. Guyon. Since the formulæ developed by Archibald Smith and by Börgen for correcting the readings made at sea, were worked out for ships into the construction of which comparatively little iron entered, it became necessary to make a fresh study of the corrections to be applied to readings taken upon warships as built at present. In the method here indicated all the constants necessary for the corrections for each kind of observation (declination, inclination, and total force) are deduced exclusively from observations of the same nature.—On the work carried out at the Observatory of Mount Blanc in 1896, by M. J. Janssen. The work has been considerably impeded by the bad weather prevailing, the actinometric observations being especially interfered with. The large telescope (33 cm. diameter) has been successfully mounted, and the observations on the values of the acceleration due to gravity at different points on the mountain have been continued.—Study of the digestibility of cocoa-butter and ordinary butter, by MM. Bourot and F. Jean. Comparative experiments carried out with the same person showed that 95·8 per cent. of ordinary butter is digested, and 98 per cent. of cocoa-butter. An abnormally large quantity of fat in the food causes less disturbance if the fat is cocoa-butter than if it is present as ordinary butter.—Some colour reactions of brucine: detection of nitrous acid in presence of sulphites, by M. P. Pichard. The red colouration produced in an acid solution of brucine by a nitrite is capable of showing one part of nitrous acid in 640,000 parts of water, and is more sensitive in the presence of sulphites and hyposulphites than the tests proposed by Griess, Tromsdorff, and Piccini.—General principles relating to the physics of space, by M. J. Poulin.—Tempests and cyclones, by M. A. de Langrée.—Note on aërial navigation, by M. Caravanier.—On some peculiarities of solubility curves, by M. H. Le Chatelier. Some experiments on the melting points of some double salts and alloys, showed that in the neighbourhood of the composition corresponding to a definite combination ($SnCu_3$, $SbCu_2$, Al_2Cu, &c.), the curve showed a maximum temperature in the form of an angular point, which did not necessarily correspond exactly to the point of definite composition. The theoretical discussion elucidates the reason for this peculiarity.—Influence of pressure in the changes of state of a body, by M. A. Ponsot.—On the property of discharging electrified conductors, produced in gases by the X-rays and by electric sparks, by M. E. Villari. It is shown that a gas confined in a tube, and exposed to the X-rays, acquires rapidly the power of discharging an electrified disc, and keeps this property for some time. The passage of a series of sparks from a coil strengthened by a condenser, confers the same property upon a gas.—On the action of the silent discharge upon the property of gases of discharging electrified conductors, by M. E. Villari. Gases subjected to the action of a series of sparks acquire an increased conductivity for heat. The silent discharge is not able to put the gas into the condition in which it can discharge an electrified body, but if a gas which has been subjected to X-rays, and which therefore is in this condition, is subjected to the silent discharge, it is no longer able to affect a charged gold-leaf electroscope.—Succession of the atomic weights of the elements, by M. Delauney. An attempt to classify the elements according as their atomic weights are expressed by: $4n$, $4n + 3$, $4n + 2$, or $4n + 1$.—Phosphopalladic ethers. Ammoniacal derivatives of phosphopalladous and phosphopalladic ethers, by M. Finck.—Law of the establishment and persistence of the luminous sensation, deduced from new experiments upon rotating discs, by M. Charles Henry.—On the jaws in insects, by M. Joannes Chatin.—On the habits of *Evania Desjardinsii*, by M. E. Bordage.—New observations on the bacteria of the potato, by M. E. Roze.—Some remarks on the kerosine shale of New South Wales, by M. C. E. Bertrand.—On the micro-granulites of the Ferret valley, by MM. L. Duparc and F. Pearce.—On the mode of formation of the Pyrenees, by M. P. W. Stuart-Menteath.—Contribution to the theory of the movements of storms, by M. J. Vinot.

AMSTERDAM.

Royal Academy of Sciences, September 26.—Prof. Stokvis in the chair.—Prof. Korteweg, who, as delegate of the Dutch Government, attended the Royal Society conference on the desirability of preparing a catalogue of scientific works, spoke of this conference, and entered into some details concerning its purpose, the nature of the resolutions passed, the task of the national bureaux, and the arrangement of the subject-index. Prof. Haga exhibited two negatives which prove the existence of different kinds of X-rays, a conclusion also arrived at by