

is a valid objection to the hypothesis that there is no evidence of it in the moon's motion. Reasons may exist for this: but until the mechanism of the action can be made more definite it is scarcely worth while to belabour the point.

The hypothesis presents many difficulties. Even if one is disposed to admit provisionally a correlation between the four curves—and this is open to considerable doubt—it is difficult to understand how, under the electron theory of magnetic storms, the motions of moon and planets can be sensibly affected. I am perhaps catching at straws in attempting to relate two such different phenomena with one another, but when we are in the presence of anomalies which show points of resemblance and lack the property of analysis into strict periodic sequences some latitude may be permissible.

In conclusion, what, it may well be asked, is the future of the lunar theory now that the gravitational

investigate with some confidence the other forces which seem to be at work in the solar system and at which we can now only guess. Assistance should be afforded by observations of the sun and planets, but the moon is nearest to us and is, chiefly on that account, the best instrument for their detection. Doubtless other investigations will arise in the future. But the solution of the known problems is still to be sought, and the laying of the coping stone on the edifice reared through the last two centuries cannot be a simple matter. Even our abler successors will scarcely exclaim, with Hotspur,

"By heaven, methinks, it were an easy leap  
To pluck bright honour from the pale-faced moon."

They, like us and our predecessors, must go through long and careful investigations to find out the new truths before they have solved our difficulties, and in their turn they will discover new problems to solve for those who follow them:—

"For the fortune of us, that are  
The moon's men, doth ebb and  
flow like the sea, being  
governed, as the sea is, by the  
moon."

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MR. H. L. SMITH, formerly lecturer in chemistry at King's College, London, and in applied chemistry at King's College for Women, has succeeded Prof. A. W. Crossley in the chair of chemistry at the School of Pharmacy of the Pharmaceutical Society.

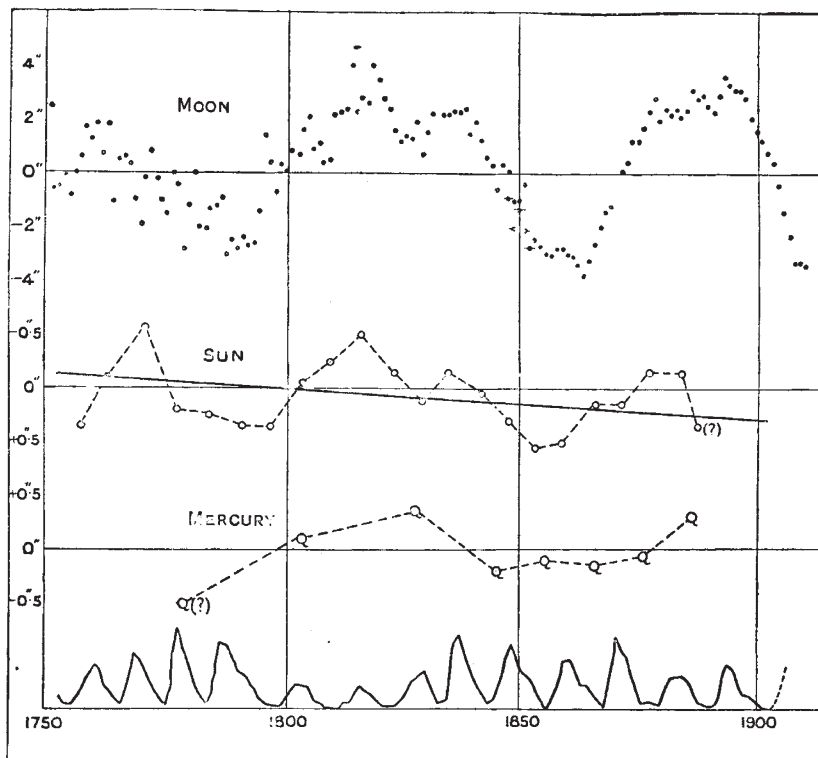
A COURSE of eight advanced lectures on the structure of crystals, will be given at the Battersea Polytechnic, London, S.W., by Dr. T. Martin Lowry, on Fridays, commencing October 23, at 7 p.m. The nominal fee for the whole course is one shilling.

A COURSE of eight public lectures will be given in the botanical department of University College (University of London), on the rôle of

plants in the protection and growth of the shore, by Prof. F. W. Oliver, on Fridays, at 5 p.m., beginning to-morrow, October 16. The course is addressed to maritime engineers, botanists, and others interested in the phenomena of the shore.

MR. ERNEST J. EDWARDS has been appointed head of the Department of Geology in the Royal Technical College, Glasgow. This position was recently created by the subdivision of the Department of Mining and Geology. Mr. Edwards is a graduate of Leeds and of Manchester, and for some years past has been assistant lecturer and demonstrator in geology at University College, Cardiff.

A REUTER message from Cape Town on October 8 states that the report of the Government Commission dealing with the University question has been issued. The report recommends the establishment of two



effects appear to have been considered in such detail that further numerical work in the theory is not likely to advance our knowledge very materially? What good purpose is to be served by continuous observation of the moon and comparison with the theory? I believe that the answer lies mainly in the investigation of the fluctuations already mentioned. I have not referred to other periodic terms which have been found because the observational evidence for their real existence rests on foundations much less secure. These need to be examined more carefully, and this examination must, I think, depend mainly on future observations rather than on the records of the past. Only by the greatest care in making the observations and in eliminating systematic and other errors from them can these matters be fully elucidated. If this can be achieved and if the new theory and tables serve, as they should, to eliminate all the known effects of gravitation, we shall be in a position to

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universities, at Cape Town and Pretoria, composed of constituent colleges. The central seat of the reconstituted Cape University will be Groote Schuur, where it is proposed to erect two university buildings, designated the Wernher Hostel and Beit Hostel, for which 350,000*l.* of the Wernher-Beit gift of half a million will be utilised. The remainder of the gift it is proposed to devote to the other centres. The Commission suggests that the Pretoria college shall embrace the Transvaal, the Free State, and Natal.

THE calendar for the year 1914 of the National University of Ireland is now available. In it are printed the Irish Universities Act, 1908, the charter of the University and the various statutes. It will be remembered that the constituent colleges of the University are University College, Dublin; University College, Cork; and University College, Galway. In addition, St. Patrick's College, Maynooth, is a recognised college of the University. There are eight faculties in the University, namely, arts, philosophy and sociology, Celtic studies, science, law, medicine, engineering and architecture, and commerce. Full particulars are given as to the conditions under which degrees in these faculties are conferred, and also detailed information of the regulations and courses of the constituent colleges.

INTERESTING details as to the provision of facilities for higher instruction in agriculture for the counties in the north of Scotland are given in the 1914-15 calendar of the North of Scotland College of Agriculture. The classes of the college are held in the University of Aberdeen, except those in agricultural and field engineering, which are held in Robert Gordon's Technical College. Classes are arranged for the benefit of every section of the agricultural community, and there are courses of varying lengths at different seasons of the year, so that all grades of agricultural workers may utilise their leisure periods to the best advantage. The governors have acquired a college farm where experiments and demonstrations are carried out. Experimental plots, an experimental and demonstration garden, and a horticultural department are in course of construction. It is also intended to carry on feeding and other experiments upon stock. The farm is conveniently situated about five miles from Aberdeen. Students are expected to familiarise themselves with the experimental and other work upon the farm, on which demonstrations are carried out. There is a large area of timber, including both coniferous and hard wood trees. This is to be made use of for the purposes of the forestry department.

THE Department of Agriculture and Technical Instruction for Ireland has issued, for the present session, its programme of experimental science, drawing, manual instruction, and domestic economy for day secondary schools in Ireland, and it contains an explanatory circular and regulations. It is interesting to note in the circular to managers and principals of schools that they are informed that the efficiency of instruction will be tested by inspection, as a rule, without notice. It is, however, proposed that special inspections of a more thorough character shall be held, of which due notice will be given to the school managers. It is intended that such inspections shall not, as a rule, be held more frequently than once in three years for any one school. During the latter part of the school session notice will be given of a visit mainly for the purpose of holding the qualifying practical tests for candidates for honours. At any visit it will be within the discretion of the inspector to test any or all of the classes by practical exercises in the laboratory; by the examination of notebooks, etc.; by *viva voce* examination of classes or of individuals; by written examinations, or by a combination of these

methods. The courses of instruction in these schools includes a preliminary obligatory two years' course, which may vary according to the character of the school, but must include experimental science and drawing. In subsequent years as many as three of a large number of special courses in pure and applied science may be taken, and, in the circumstances detailed, grants may be earned on the instruction.

A COPY has reached us of the forty-first annual report of the Canterbury College, of the University of New Zealand, together with a statement by the chairman of the governors and the accounts for the year 1913. Attached to the balance-sheet is a return showing the value of the various buildings and sites to be 129,794*l.* The total receipts from current revenue for the year amounted to 40,694*l.*, while the expenditure totalled 36,204*l.*, the surplus of income amounting to 4490*l.*, of which sum 3098*l.* was utilised in reducing overdraft. Grants and subsidies from the Government totalled 11,372*l.*, of which 3365*l.* was contributed towards the cost of new buildings. The total amount expended on salaries was 23,199*l.* Last year negotiations were being entered into with the governors of the Royal Holloway College with the view of a scholarship being established there in connection with Canterbury College to enable women students from the latter to continue their university studies at the London University as a post-graduate course. Such arrangements are now completed, the governors of the Holloway College have set aside a scholarship of 50*l.* per annum for the purpose. This has been subsidised by the governors of Canterbury College with 100*l.* per annum for two years, renewable for a third year if the home authorities recommend the extension of their scholarship. The chairman directed attention to the fact that the museum in connection with the college suffers financially from the fact that it is impossible to allocate a sufficiently large sum from its special source of revenue to meet even necessary requirements, and when extra expenditure becomes an absolute necessity, the amount set aside for maintenance will have to be curtailed. If no change takes place, it will become increasingly difficult to keep it in the position of being one of the leading museums south of the line, while the question of an additional wing seems for the present to be entirely beyond available resources.

## SOCIETIES AND ACADEMIES.

### PARIS.

**Academy of Sciences**, September 28.—M. P. Appell in the chair.—Remarks by M. Edmond Perrier on the life work of the late M. Jean Pérez.—P. Puiseux: The photographs of the Delavan comet 1913*f*, obtained at the Paris Observatory with the Henry-Gautier equatorial. From these photographs, taken September 5-6, the necessary elements can be obtained for determining very exactly two positions of the comet.—J. Boussinesq: The approximate evaluation of the constant of filtration  $\mu$ , for a filtering medium composed of spherical grains of a given diameter.—M. Coggia: Observations of the Delavan comet made at the Observatory of Marseilles with the comet-finder. Positions are given for September 14-15 (two observations), 17-18, with positions of the comparison stars. The comet is visible to the naked eye with a tail of about 1°.—MM. Luizet and Guillaume: Observation of the solar eclipse of August 21, 1914, made at the Observatory of Lyons.—D. Pompeiu: A problem relating to abstract ensembles.—Ch. Tanret: The plurality of the amyloses. Determinations of the absolute and relative percentage of amyloses dissolved by water at different temperatures in sixteen different kinds of starches.