

work. An historical collection of no little interest is shown by Mr. M. W. Dunscombe, of Bristol.

In class ix., small telescopes and binoculars, are exhibited various patterns of prism binoculars by Messrs. Aitchison, Dallmeyer, Ross, Ltd., &c. Messrs. Aitchison show also a field glass of novel type with a body machined from a solid casting, focusing being effected by moving each object glass in its own tube.

In class x., microscopes and accessories, the catalogue furnishes a very complete account of the English microscope as produced by the best makers, including binocular microscopes and various forms of instrument for special purposes. Photomicrographic cameras are shown by Messrs. Beck, and Ross, Ltd. Information of interest with regard to different types of photographic lenses is given in class xi., though too much space is perhaps devoted in the catalogue to illustrations of camera bodies.

In the careful classification and selection of instruments to illustrate the various types, class xiii., optical projection apparatus, appears to us to be the most successful in the catalogue. The class includes an exhibit by Messrs. Chance Bros. of a complete lighthouse optical apparatus of the fourth order. Other exhibits of interest are Mr. R. W. Paul's projector lamps, the triple rotating lantern of Messrs. Newton, and animatographs by Messrs. Paul, the Prestwich Manufacturing Co., and J. Wrench and Son.

In class xiii., apparatus for optical measurement, some new optical benches are shown by Messrs. Aitchison and Beck, and there are interesting exhibits from the Cambridge Scientific Instrument Co. and Messrs. Hilger. A half-shadow polarimeter is shown by Prof. Poynting, the half-shadow field being produced by the tilting of two glass plates forming a V between the polariser and analyser.

Under photometric apparatus the Ediswan Co. show specimens of Prof. Fleming's large bulb standard lamps, and various forms of photometer are exhibited by Messrs. Alex. Wright. Class xv. is devoted to ophthalmic apparatus, and includes a novel form of ophthalmoscope of British design and construction. The Cambridge Scientific Instrument Co. and Messrs. Griffin show laboratory apparatus under class xvi. Under class xvii., mathematical and drawing instruments, some new forms of slide rule are shown, including one with additional slides by Messrs. Davis, of Derby, and an optical slide rule with reciprocal division for determination of conjugate foci, &c., by Mr. A. Salomon, of Huddersfield. An arithmometer of English make is exhibited by Mr. S. Tate, and an adding machine by the Burroughs Adding Machine Co.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Among the twelve distinguished men who will receive honorary degrees on June 14 only two are connected with scientific work. These are Commander R. F. Scott, R.N., of the *Discovery*, and Colonel Sir Francis E. Younghusband, K.C.I.E. The latter has been appointed Rede lecturer, and has chosen as his subject "Our True Relationship with India." The lecture will be delivered in the Senate at 11.30 a.m. on Saturday, June 10.

Mr. L. A. Borradaile, of Selwyn College, who is well known for his researches on the crustacea, has been appointed assistant secretary for lectures to the local examinations and lecture syndicate.

A university lectureship in mathematics will shortly be vacant owing to the resignation of Mr. G. B. Mathews, F.R.S., of St. John's College.

The special board for biology and geology has nominated Mr. J. J. Lister, Fellow of St. John's College, to occupy the university table at the laboratory of the Marine Biological Association at Plymouth for one month during the present year.

In spite of the efforts of the master of Pembroke, Prof. Ridgway and others to bring the work of the studies and examination syndicate to an end, the Senate decided by 112 votes to 99 that its deliberations should be continued. It seems evident that a majority of residents is in favour of some change.

The syndicate entrusted with the building of the new medical schools has exceeded the sum granted by Grace of the Senate by 257*l.* 15*s.* 6*d.* It is now asking for authority to pay this amount, and for 920*l.* for the completion and fitting of the Humphry Museum, and 380*l.* for extra fittings and furniture in the departments of surgery, midwifery, medicine, pharmacology, and pathology.

THE *Pioneer Mail* states that a grant of 10,000 rupees has been made to the Victoria Diamond Jubilee Technical Institute of Lahore for buildings and appliances. A permanent grant of 100 rupees a month has also been made, and the assistance thus given will enable the governors to complete the equipment for the teaching of practical and applied chemistry.

At a meeting of the School Nature-Study Union held at the College of Preceptors on Friday, a paper was read on the training of teachers for nature-study by Miss R. Lulham. In it the necessity for a proper ground work was brought out, and during the discussion which followed a resolution was passed urging upon the London County Council the need of providing classes for those who have to teach nature-study, and suggesting that a wild garden for their benefit should be established in at least one of the London parks, in which the botanic gardens arranged for the students of systematic botany have already proved so useful.

WE have received the first number of the *University Review*, which is published by Messrs. Sherratt and Hughes at 6*d.* net. Dr. Bryce contributes an introductory note on the university movement, and among other articles dealing with many aspects of higher education may be mentioned one by Prof. Arthur Schuster, F.R.S., on "Universities and Examinations," and another by Sir Oliver Lodge, F.R.S., on "Questions for Discussion." Prof. Schuster formulates briefly what the aims of an ideal university should be, and proceeds to divide its work into two parts. These are the acquisition of knowledge and the power of applying it. The second part of the work of the university is the higher, and is what is required for success in life. Prof. Schuster says that it can be taught, and therefore should be taught, in the university, but that this power of applying knowledge cannot be tested satisfactorily by examination. He then considers exhaustively the function of examinations, and shows what they are capable of doing and the qualities they are incompetent to gauge. He concludes by remarking that when a student "has shown that he deserves a degree, it is right and proper that an opportunity shall be given him to develop his special powers and to distinguish himself." Prof. Schuster makes a proposal to secure this by giving a year which is absolutely at the student's disposal to be used under the guidance of his teachers as he thinks fit. Sir Oliver Lodge discusses the possibility of introducing a change in the "time of year when examinations should be held:—whether candidates should be examined directly lectures cease, and before Session ends; or whether they should be given time for revision and digestion, and perhaps oblivion, and be examined just before a new Session commences." The review also supplies full information of current events in British and foreign universities.

### SOCIETIES AND ACADEMIES.

#### LONDON.

**Royal Society**, March 30.—"The Determination of the Specific Heat of Superheated Steam by Throttling and other Experiments." By A. H. **Peake**. Communicated by Prof. Ewing, F.R.S.

This paper is an account of original investigations undertaken to determine the specific heat of superheated steam. Two methods have been followed:—(1) the throttling or wire-drawing of steam to obtain the law connecting the variation of temperature with pressure, for constant total heat; (2) the direct heating of a current of steam by electrical means.

An account of an investigation on the same lines as method (1), by Mr. J. H. Grindley, was published in the *Philosophical Transactions of the Royal Society*, A, vol.