

THE report of the Board of Education for 1902-3 shows that during the session 1901-2 the total number of students receiving science and art instruction under the Board was 291,758. The total number of schools in which the teaching was given was 2061. The grants paid during the year amounted to 314,212*l.*, of which 143,671*l.* was paid upon attendances. From the same report we learn that great progress has been made with the new buildings for the Royal College of Science. It is hoped the work will be complete in two years' time.

THE University College at Reading continues its useful work in the adjoining counties in connection with field trials and lectures at rural centres, and the work of the agricultural department is of a kind to secure the confidence of practical men. Instruction in dairy farming and dairying is given in cooperation with the British Dairy Institute; the College Poultry Farm at Theale is available for students who desire to obtain a practical acquaintance with poultry-keeping; and there is a college garden for horticultural practice and instruction.

At the forthcoming opening of the medical schools, the following will deliver addresses:—At the St. George's Hospital medical school on October 1, Dr. W. R. Dakin; at King's College, London, on October 1, Sir John Alexander Cockburn, K.C.M.G., on "Imperial Federation and its Physiological Parallels"; at Guy's Hospital Physical Society, on October 10, Dr. J. F. Goodhart; at the Middlesex Hospital on October 1, Mr. William Hern; at the Medical Faculty of University College, London, on October 5, Prof. E. H. Starling, F.R.S.; at the University of Liverpool on October 1, Sir Dyce Duckworth; and at the University College, Sheffield, on October 15, Sir Michael Foster, K.C.B., F.R.S.

THE report on the work of the Sir John Cass Technical Institute for the session ending last July, and the recently published syllabus of the classes to be held during next winter together show that this young polytechnic is doing excellent work. Many of the students are engaged in technical pursuits during the day. For example, quite half of the students of chemistry are employed in some form of chemical technology, and an examination of the entries of last winter in the metallurgical department shows that one was the head of a firm of bullion refiners, three were managers in metal refining works, five were chemists engaged in metallurgical industries, three were foremen in metallurgical works, and others clerks or samplers in works or trades associated with metals. Among others of a thoroughly practical nature arranged for next session may be noticed a course of practical instruction in glass blowing suited to the requirements of chemists, physicists, teachers, and those engaged in the making of glass apparatus and instruments.

IN his report for the year 1903 on secondary education in Scotland, Sir Henry Craik, K.C.B., says there has again been a gratifying increase in the number of schools presenting candidates in science at the leaving certificate examination, and also in the total number of candidates presented. The examiners report that there is need to repeat once more the warning to teachers against taking up practical work of which the theory is beyond the comprehension of their pupils, or has not been made clear to them. The methods of examination differ in some important points from those regulating the system in regard to other subjects. The examination is chiefly oral and practical, and it is shaped in the case of each school by the curriculum of that school. It is interesting to find that the most satisfactory work appears to be done in the schools the profession of which is comparatively modest. In practical science, as in all educational subjects, the special discipline given is better got from a thorough study of one branch than through a too ambitious attempt to cover a very wide field. The chief examiner is inclined to recommend that, unless the time available during the third year's course is more than four hours a week, the whole of it should be devoted to one subject instead of being divided between two. Another point to which he directs attention is the very limited extent to which "home-made" apparatus is employed in the laboratories.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 31.—M. Bouquet de la Grye in the chair.—A fixing liquid isotonic with sea water, for objects in which it is desired to preserve lime formations, by M. M. C. **Dekhuizen**. In a previous note a formula has been given for a liquid, isotonic with sea water, for fixing delicate marine organisms. This contains acid, and in fixing the larvæ of sea urchins, which contain extremely delicate chalk formations, it is necessary to employ a liquid free from acidity. The formula of a liquid possessing the required properties is given in the present paper, and in the hands of M. Delage has given perfect results in fixing very delicate larvæ.

GÖTTINGEN.

Royal Society of Sciences.—The *Nachrichten* (physico-mathematical section), part iii. for 1903, contains the following memoirs communicated to the society:—

February 21.—W. **Voigt**: Questions of crystalline physics, i. On the rotatory constants of heat-conduction in apatite and dolomite.

March 7.—W. **Kaufmann**: On the "electromagnetic mass" of the electrons. V. **Cuomo**: Measurements of the electric dispersion in the open air at Capri (October, 1902-February, 1903).

May 16.—W. **Voigt**: On the theory of total reflexion. K. **Schwarzschild**: Contributions to electrodynamics—(1) two forms of the principle of least action in the theory of electrons; (2) the elementary electrodynamic force.

June 13.—F. **Merkel**: Remarks on the fasciæ and veins of the human pelvis.

The "Business Communications," part i. for 1903, contain a report on the Samoa Observatory, and a highly appreciative obituary notice of the late Sir G. G. Stokes, by Prof. W. Voigt.

CONTENTS.

PAGE

Recent Mineralogy	433
School Mathematics	434
The Neuron Theory	435
Our Book Shelf:—	
Barber: "The Cloud World, its Features and Significance"	436
Baker: "Graphical Statics Problems, with Diagrams"	436
Letter to the Editor:—	
A Mite whose Eggs survive the Boiling Point.—J. Adams	437
The Berlin Conference on Wireless Telegraphy. By Maurice Solomon	437
The Southport Meeting of the British Association	438
Inaugural Address by Sir Norman Lockyer, K.C.B., LL.D., F.R.S., Correspondant de l'Institut de France, President of the Association	439
Section A.—Mathematics and Physics.—Opening Address by Charles Vernon Boys, F.R.S., President of the Section	447
Section D.—Zoology.—Opening Address by Prof. Sydney J. Hickson, M.A., D.Sc., F.R.S., President of the Section	452
Notes	458
Our Astronomical Column:—	
Search-ephemeris for Faye's Comet	461
The Canals on Mars	461
Radiation Pressure and Cometary Theory	461
A Catalogue of 1520 Bright Stars	462
Iron and Steel Institute	462
University and Educational Intelligence	463
Societies and Academies.	464