

the Right Reverend the Lord Bishop of Worcester, and an account of his astronomical work by his successor, Prof. H. H. Turner. With a portrait.

Mr. Heinemann's announcements include:—"Genius and Degeneration: a Study in Psychology," by Dr. William Hirsch, translated from the second edition of the German work, "The New Africa: a Journey up the Chobé and down the Okovango Rivers," by Dr. Aurel Schulz and Augustus Hammar; "Timbuctoo the Mysterious," by Felix Dubois, illustrated.

Mr. W. F. Clay, Edinburgh, announces:—"Select Methods in Quantitative Analysis," by the late Prof. W. B. Cheever, third and enlarged edition, by F. C. Smith; "Researches on Molecular Dissymmetry of Natural Organic Products," by Louis Pasteur, 1860; "Early Papers on Chlorine," by Scheele, Berthollet, Gay-Lussac, Thénard, &c. (Alembic Club Reprints); "Handbook of the Diseases of the Eye," by Douglas Watson.

Messrs. Lawrence and Bullen, Ltd., give notice of:—"The Kafirs of the Hindu-Kush," by Sir George Robertson, K.C.S.I., illustrated; "Turkish Fairy Tales and Folk-Tales," collected by Dr. Ignacz Kunos, translated from the Hungarian version by R. Nisbet Bain, illustrated; "The Encyclopædia of Sport," edited by the Earl of Suffolk and Berkshire, Hedley Peek, and F. G. Aflalo, illustrated, in twenty parts.

The following works will be issued by Messrs. Smith, Elder, and Co.:—"Prehistoric Man and Beast," by Rev. H. N. Hutchinson, illustrated; "A Course of Practical Histology," by Prof. E. A. Schäfer, F.R.S., new edition, illustrated; "A Practical Treatise on Traumatic Separation of the Epiphyses," by J. Poland.

Messrs. Gurney and Jackson have in the press: "Parasitic Diseases of Poultry," by Mr. F. V. Theobald, which, besides giving descriptions and illustrations of the various external and internal parasites affecting fowls, &c., will contain suggestions as to the best means for their destruction and for the cure of the diseases caused by them.

Messrs. Grevel and Co. announce:—"The Elements of Electro Chemistry treated experimentally," by Dr. R. Lipke, translated by M. M. Pattison Muir, illustrated; "The Religion of the Ancient Egyptians," by Dr. A. Wiedemann, illustrated; "The Care of Children in Sickness and Health," by Father Kneipp.

Mr. Charles Carrington, Paris, announces "Untrodden Fields of Anthropology," observations on the esoteric manners and customs of semi-civilised peoples, being a record by a French army surgeon of thirty years' experience in Asia, Africa, and America, in two vols.

In the list of Messrs. Kegan Paul and Co., Ltd., we notice:—"The Polar Aurora," by Alfred Angot, translated (International Scientific Series); "In the Land of the Bora; or, Camp Life and Sport in Dalmatia and the Herzegovina," by "Snaffle," illustrated.

Messrs. W. Blackwood and Sons announce:—"From Batum to Baghdad, *vis à* Tiflis, Tabriz, and Persian Kurdistan," by Walter B. Harris, with illustrations and two maps; "The Story of Mr. H——, the Herbalist," by Hugh Miller.

Messrs. Hodder and Stoughton promise:—"Beginnings of Life in the Dawn of Geological Time," by Sir J. W. Dawson, F.R.S.; "The Land of the Monuments: Notes of Egyptian Travel," by J. Pollard.

In the list of Messrs. Cassell and Co., Ltd., we find:—"Charles Darwin and the Theory of Natural Selection," by Prof. E. B. Poulton, F.R.S.; "Social England," edited by Dr. H. D. Traill (sixth and concluding volume).

Messrs. F. Warne and Co. will issue:—"The Royal Natural History," edited by R. Lydekker, F.R.S., vol. vi., illustrated; "Favourite Flowers of Garden and Greenhouse," edited by E. Step, vol. i., illustrated.

Messrs. Ward, Lock, and Co., Limited, will publish:—"Coil and Current, and the Triumphs of Electricity," by Henry Frith and Stepney Rawson.

Messrs. Gay and Bird's books include:—"Building Construction and Superintendence," by Dr. A. E. Kidder, part i., Masons' Work, illustrated.

Messrs. Archibald Constable and Co. give notice of "The Popular Religion and Folk-Lore of Northern India," by Wm. Crooke, 2 vols., illustrated.

Messrs. W. H. Allen and Co., Ltd., will add to their "Naturalists' Library":—"Game Birds," vol. ii.; "Butterflies," vol. iii.; "British Birds," vol. iv.

Mr. L. Upcott Gill announces a work on "Fruit Culture," a

section of which will deal with the life-histories of the insect and other pests which affect fruit-growers.

The list of Mr. David Douglas, Edinburgh, includes:—"Among British Birds in their Nesting Haunts," by Oswin A. J. Lee, illustrated, part i.

Messrs. Methuen announce:—Vol. ii. of Prof. Petrie's "History of Egypt, from the Earliest Times to the Present Day."

Messrs. Blackie and Son, Ltd., will publish:—"Fuel and Refractory Materials," by Prof. A. Humboldt Sexton.

Messrs. G. Philip and Son promise:—"Geographical Manual of Africa," and "Certificate Atlas of Africa."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—Mr. Ernest Henry Stapleton, of the Grammar School, Bradford, has been elected to the Bristol Scholarship (thrown open *pro hac vice*) in chemistry and physics at St. John's College.

CAMBRIDGE.—Dr. W. H. Gaskell, F.R.S., has been appointed a member of the General Board of Studies. Mr. J. E. Gray, Scholar of King's, has been nominated to occupy the University's table at the Naples Zoological Station. Mr. James Henry Widdicombe, First Class Parts I. and II. Natural Sciences Tripos, 1891-92, has been elected to a Fellowship at Downing College.

Memorials signed by 2237 members of the Senate deprecating the admission of women to the membership or degrees of the University have been presented to the Vice-Chancellor. Of these 1369 would, however, approve the granting of some non-gremial title to women who pass a Tripos examination.

At the congregation on October 15, Mr. A. C. Dixon, of Trinity College, was admitted to the degree of Doctor in Science.

At the Massachusetts Institute of Technology, four associate professors have been promoted to full professorships: Mr. Dwight Porter, in hydraulic engineering; Mr. Alfred E. Burton, in topographical engineering; Mr. C. F. Allen, in railroad engineering; and Mr. Peter Schwamb, in mechanism. New assistant professors are: Mr. George H. Barton, in geology; Mr. George G. Robbins, in civil engineering; and Mr. Joseph J. Skinner, in mathematics.

At the recent opening of the collegiate year at Columbia University, 2100 students were enrolled, being the largest in the history of the College. Several gifts were announced, the most important being that of Mr. Charles C. Worthington, who, as a memorial to his father, the late Henry R. Worthington, will equip, with all necessary apparatus, a laboratory for the experimental study of the sciences of hydraulics and engineering as applied to hydraulics.

The following appointments have recently been announced: Dr. E. Wernicke to be professor of hygiene at Berlin; Dr. H. Stuhr has been appointed assistant in the Anatomical Institute at Breslau, in succession to Dr. Endres; Dr. Andreas Obrzut, of Prague, to the chair of Anatomy at Lemberg; Dr. Chermak to be professor of comparative anatomy and embryology at Dorpat; Dr. Winkler, Professor of Chemistry, to be director of the School of Mines at Freiberg i. S.; Dr. Godschmidt to be assistant professor of chemistry in the University of Heidelberg.

APPLICATIONS are invited for the Fellowship founded in 1894 by the Worshipful Company of Salters for the purpose of encouraging chemical research in the elucidation of pharmacological problems. The Fellowship is of the annual value of £100, and may be held for three consecutive years in the Pharmaceutical Society's laboratories. The regulations relating to the award may be obtained from the Clerk to the Company at Salters' Hall, but applications for the Fellowship must be sent to the Registrar of the Pharmaceutical Society before Saturday next, October 24.

AMONG the many evidences of the activity of the various Committees entrusted with the technical education of the country, one of the most pronounced is that afforded by the periodical reports which are issued by the different county authorities. In Essex the form assumed is that of *The Journal of the Essex Technical Laboratories*. In the twenty-second number, which

lies before us, we have, in addition to a brief recital of the most interesting local educational events, accounts of certain manual trials which have been made in that county, and of experiments conducted at the Brightlingsea Marine Biological Station. The larger portion of the booklet, taken up with reviews, and notes on lessons in elementary chemistry, might be curtailed with advantage.

IN opening a Technical and University Extension College, and a School of Science and Art, at Colchester on Tuesday, Lord Rosebery dwelt upon the urgent need of increased facilities for technical and commercial education in England. He remarked that Germany had long been twenty, thirty, or forty years ahead of us in technical education, and Switzerland was just as far advanced. Referring to the Germans, he said:—"They are an industrious nation; they are, above all, a systematic nation; they are a scientific nation, and whatever they take up, whether it be the arts of peace or the arts of war, they push them forward to the utmost possible perfection with that industry, that system, that science which is part of their character. Are we gaining upon the Germans? I believe, on the contrary, we are losing ground. The other day one of the greatest authorities on this subject went to Germany, being stirred up by what he had seen of alarm in the newspapers on the subject. He came back and told a friend of mine that he was absolutely appalled by the progress made in the last twenty years by the Germans in technical and commercial education as compared with what was going on in England. When I last spoke on this subject I made a modest proposal. It was, 'Cannot the Government order an inquiry to be made into the facts of this matter?' It would not cost as much as an ironclad. It would cost a very small sum indeed. I do not suppose it would cost a year's pay of the chief engineer of an ironclad. I believe it would be infinitely more useful. If necessary, three men like Lord Farrer, Sir Philip Magnus, and Sir Courtenay Boyle could without the slightest difficulty produce all the facts bearing on this subject without any expense whatever in the space of six months."

IN acknowledging the vote of thanks for his address, Lord Rosebery gave further instances of the extraordinary vigour with which Germany is pursuing the work of technical education. The *Times* reports him to have said:—"At this moment the German Government are about to present a Bill to Parliament for the federalising, if I may so describe it, of all the skilled workmen of the country. Each craft of skilled craftsmen is to be formed into a guild, and each group of guilds is to be formed into a central committee. These central committees are, again, to elect chambers of handicrafts, on the model of chambers of commerce, to reside at the principal centres of industry. Side by side with this organisation is to be an organisation of apprentices, who will have their direct representatives on the central chamber. These organisations are to be formed under the direct supervision of the Government. They are to carry out measures designed to promote the moral and material welfare of workmen, to arrest strikes, to establish and assist the development of trade by inspection and supervision of the methods of training skilled labour. Technical schools are to be established and supported, and the whole system of technical instruction, already so perfect in our opinion, thoroughly overhauled. The Government Bill insists on the constant interposition of officials, mainly with the object of preventing the guilds from narrowing the recruiting ground, which they are now rather inclined to do. The main principle underlying the Bill is to create responsible bodies who should advise the Government what measures should be adopted to promote the interest of the skilled producer, and should carry out under Government supervision such measures as the Government on their advice should recommend. Now, I do not think that we like so much Government supervision as that in England. But I only call attention to the fact as showing how Germany, in spite of her start of us, and in spite of the apparent perfection of her methods, is still straining every nerve and every muscle to organise her skilled labour in such a way as to defy the competition of the world." We need only remark now that long ago we urged the formation of a responsible council to advise on matters affecting the progress of science and industry. Had such a council been instituted, our industries would have developed along with the increase of scientific knowledge. The nation will soon, perhaps, begin to realise what it has lost by neglecting scientific experience and advice.

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SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 12.—M. A. Chatin in the chair.—Elliptic elements of the Giacobini comet, by M. Perrotin.—On the extension of complete functions to an important problem in polynomials, by M. Émile Borel.—Cryoscopy of precision: reply to M. Raoult, by M. A. Ponsot. In the previous paper of M. Raoult, to which this is a reply, some remarks of M. Ponsot are severely criticised, and yet the substance of some of these remarks is adopted. In the present note the conclusion is drawn that there is now complete agreement as to the conditions theoretically necessary for obtaining the true freezing point of a solution; but there are still some differences of opinion as to the best means of practically realising these conditions. The propositions put forward by M. Raoult in his last paper are criticised in detail.—Thermal studies on cyanamide, by M. Paul Lemoult. The cyanamide was prepared from thio-urea, and carefully purified from dicyandiamide. The molecular heat of combustion is 172 cal., and heat of formation 8.4 cal.; the transformation into urea sets free 20.2 cal. The neutralisation with soda gave out 3.55 cal., but excess of soda gave rise to no further heat development.—Study of the sub-intestinal nervous system of the Orthoptera of the tribe *Mecopodinae* (*Platyphyllum giganteum*), by M. L. Bordas. The great number of nervous centres, and the numerous branches of the sub-intestinal nervous system of *Platyphyllum giganteum* and allied species, show that this system must play an important part in the carrying on of the digestive processes. In this species there is a frontal ganglion, an oesophageal or hypocerebral ganglion, a pair of lateral oesophageal ganglia, and two intestinal ganglia, making six in all. The position of these, with their connecting nerves, is given in detail.

DIARY OF SOCIETIES.

THURSDAY, OCTOBER 22.

SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY, at 8.—Discussion on *Tephrosia biundularia* and *T. crepuscularia*: C. G. Barrett.—Paper on the same subject: J. W. Tutt.

TUESDAY, OCTOBER 27.

ROYAL PHOTOGRAPHIC SOCIETY, at 8.—Demonstration of Acetylene Apparatus for Portraiture and the Optical Lantern: C. Hoddle.

FRIDAY, OCTOBER 30.

PHYSICAL SOCIETY, at 5.—Special Meeting, after which, at an Ordinary Meeting—A Satisfactory Method of measuring Electrolytic Conductivity by means of Continuous Currents: Prof. W. Stroud and J. B. Henderson.—A Telemetrical Spherometer and Focimeter: Prof. W. Stroud.—An Experimental Exhibition: R. Appleyard.

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