

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.

NO 1408, VOL. 54]

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.

CONTENTS.

	PAGE
The British Museum Catalogue of Corals	593
Our Book Shelf:—	
Westermaier: "A Compendium of General Botany"	594
Galloway: "The Testimony of Science to the Deluge."—T. G. B.	594
Letters to the Editor:—	
The Utility of Specific Characters.—Prof. R. Meldola, F.R.S.	594
A Note on the Tesla Spark and X-Ray Photography.—Rev. Frederick J. Smith, F.R.S.	594
Siemens's Domestic Gas Fire.—Dr. W. Pole, F.R.S.	595
The Variable Star Z Herculis.—Cuthbert Peek	595
"Éozoon Canadense."—James Thomson	595
The Departure of the Swallows.—E. P.	595
Wasps and Flies.—E. H.	595
Baron Sir Ferdinand von Mueller. By W. Botting Hemsley, F.R.S.	596
Notes	596
Our Astronomical Column:—	
Telegrams about Comets	599
Comets Perrine (1895 IV.) and Perrine-Lamp (1896)	600
The Canals of Mars	600
The Huxley Lecture—Recent Advances in Science, and their bearing on Medicine and Surgery. II. By Prof. Michael Foster, Sec.R.S.	600
Zoology at the British Association	605
Mechanics at the British Association	607
Anthropology at the British Association	609
Forthcoming Books of Science	611
University and Educational Intelligence	615
Societies and Academies	616
Diary of Societies	616