

1795°. It is stated that accurate measurements of the melting point can be made with the micro-pyrometer on samples as minute as 0.001 milligram. The micro-pyrometer has also been employed to measure the monochromatic emissivity of microscopic samples. This constant has been determined for some twenty elements. It is expected to determine the melting points and emissivities of all the available refractory elements and of numerous oxides.

One of the most important recommendations of the director is to establish a radio-laboratory at the bureau. The importance of wireless telegraphy to the United States Government is pointed out, and a grant of 10,000*l.* for the construction of such a laboratory is asked for. For maintenance an additional 2000*l.* is required.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

ABERYSTWYTH.—Prof. Alexander Findlay has been appointed Thomson lecturer in chemistry for the session 1915-16 in the United Free Church College, Aberdeen.

CAMBRIDGE.—The Linacre lecture will be delivered by Prof. E. H. Starling, in the anatomy lecture-room, at 8 p.m., Thursday, May 6, on the governor mechanism of the heart. The Rede lecture will be delivered by Dr. Norman Moore, at 5 p.m. of the same day, in the Senate House, on St. Bartholomew's Hospital in peace and war.

In view of the difficulties of the present financial situation, the Special Board for Biology and Geology has decided to allocate only such sums of money from the Gordon Wigan Fund as are necessary to prevent the extinction of research work already in progress. The grants made are: 10*l.* to Prof. Hughes, for research among the Pliocene deposits of the Cambridge district; 40*l.* to Prof. Punnett, to ensure that the Botanic Garden Syndicate will continue to offer special facilities for plant-breeding experiments; and 21*l.* to Mr. H. Scott, curator in entomology, for the care and development of the collections of insects.

SHEFFIELD.—Sir Joseph Jonas has given the University 5000*l.* to found, endow, and equip a laboratory, in connection with the applied science department, for testing metals, minerals, and similar substances, especially those involved in the production and manufacture of steel.

LADY HUGGINS, who died on March 24, leaving unsettled estate valued at 12,586*l.* gross, with net personality 12,109*l.*, made the following bequests, among others:—A sum not exceeding 1000*l.* to the Bedford College for Women (University of London); 500*l.*, and, if her estate is sufficient, a further sum of 500*l.* for the erection of a memorial in St. Paul's Cathedral to the memory of her husband; 1000*l.*, and, if her estate is sufficient, a further sum of 1000*l.* to the City of London School, Victoria Embankment, for the endowment of a scholarship for the study of astronomy, tenable at Cambridge, to be called the "Sir William Huggins" Scholarship; and a sum of not more than 300*l.* for finishing, editing, and illustrating the book on which she was engaged, being the life of her husband. The residue of the estate, if any, is also left to the City of London School.

We learn from *Science* that Princeton University has received from Mrs. W. C. Osborn 25,000*l.* to establish the Dodge professorship of medieval history, and 20,000*l.* from an anonymous donor to endow a professorship of economics. Our contemporary also states that the Schools of Mines, Engineering, and

Chemistry of Columbia University have received an anonymous gift of 6000*l.*, to be applied to the reconstruction and new equipment of the laboratories of quantitative, organic, and engineering chemistry in Havemeyer Hall; that a gift of 4000*l.* is announced from Mrs. S. W. Bridgham, daughter of a trustee of Columbia University from 1860 to 1903; and that Mr. G. W. Brackenridge has given to the University of Texas his yacht *Navidad*, valued at 20,000*l.*, to be assigned to the biological department of the institution. A preliminary survey of the Texas coast is to be made in the *Navidad*, starting from Port Lavaca.

THE ninth annual report, that for 1914, of the Apprenticeship and Skilled Employment Association, shows that in common with other bodies dependent for their support on voluntary contributions from the public, the association has suffered already financially as a result of the war, and would welcome an addition to its income. The work of the association has continued on its now familiar lines. Interesting tables are provided in the report classifying according to trades the numbers of boys and girls placed in employment by the various London committees. During the year 1914 the total number of boys placed was 532, and of these 60 went into office and clerical work, 47 took up mechanical engineering, 41 scientific instrument making, 40 electrical engineering (including wiring), and 34 motor work. Of the 333 girls who were found employment, 93 took up dressmaking, 34 office and clerical work, and 29 machining. The remaining girls were distributed among thirty-four different trades. Full particulars of the work of the association can be obtained from the offices, 53 Denison House, Vauxhall Bridge Road, S.W.

THE Benares Hindu University Bill was introduced in the Viceroy's Legislative Council at Delhi on March 22 by Sir Harcourt Butler, the vice-president, and the introduction of the Bill was carried *nem. con.* During the course of his speech, which is reported in the *Pioneer Mail* of March 26, Sir Harcourt Butler said:—"The main features of this University will be, first, that it will be a teaching and residential university; secondly, that while it will be open to all castes and creeds it will insist upon religious instruction for Hindus; and, thirdly, that it will be conducted and managed by the Hindu community and almost entirely by non-officials." The University is to be an All-India University. It is incorporated for the teaching of all knowledge, but will commence with five faculties of arts, science, law, Oriental studies, and theology. Many of the promoters desired to add a faculty of technology, and this desire has the full sympathy of Sir Harcourt Butler. The Governor-General will be Lord Rector, and the Lieutenant-Governor of the United Provinces of Agra and Oudh will be Visitor, of the University. The governing body will be a numerous and very representative Court, with an executive body in a council of not more than thirty members, of whom five will be members of the Senate. The academic body will be the Senate, consisting of not fewer than fifty members, with an executive body in the Syndicate. The Senate will have entire charge of the organisation of instruction in the University, and the constituent colleges' curriculum and examination and discipline of students and the conferment of ordinary and honorary degrees. The following large subscriptions have already been received:—Maharana of Udaipur, 1½ lakhs; the Maharaja Holkar, 5 lakhs; the Maharaja of Jodhpur, 2 lakhs, with a grant in perpetuity of 2000 rupees per month; the Maharaja of Bikanir, one lakh, with a grant in perpetuity of 1000 rupees per month; the Maharaja of Kashmir, a grant in perpetuity of 1000 rupees a month; the Maha-

raja Bahadur of Darbhanga, 3 out of 5 lakhs; and one lakh from each of the following—the Maharao of Kotah, Dr. Rash Behari Ghose, Dr. Sundar Lal, the Maharaja of Casimbazar, Babu Bijendra K. R. Chaudhri of Ghorepur, and Babu Moti Chand. The Maharaja Scindia of Gwalior has promised five lakhs of rupees and others have promised liberal donations, of which, in many cases, part payment has been made.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 29.—Sir William Crookes, president, in the chair.—H. Hartridge and A. V. Hill: The transmission of infra-red rays by the media of the eye, the transmission of radiant energy by Crookes's and other glasses, and the radiation from various light sources. The different eye structures were found by the authors to absorb infra-red rays of different length to approximately the same extent as would a layer of water of the right equivalent thickness. From the values of the percentage absorption of water at different wave-length they have, therefore, calculated the amount of heat absorbed by cornea, iris, and lens. The heat absorbed by the lens was found to be too slight for cataracterous changes to be due to direct action. The condition might still be caused, as Parsons suggested, by impairment in the nutrition of the lens brought about by the action of heat rays on the ciliary body and iris. Samples of Crookes's glasses were tested and were found to absorb the heat waves strongly, and also to some extent the ultra-violet.—E. Beard and W. Cramer: Surface tension and ferment action. The action of a ferment on a substrate is retarded or inhibited by extending the surface of the system in which the reaction proceeds. This effect has been studied in some detail in the system cane-sugar—invertase.—W. Cramer: Surface tension as a factor controlling cell metabolism. The considerations developed in this paper are based on the fact demonstrated experimentally that the action of ferments is conditioned by surface tension. The great surface development in the cell and the living organism must therefore produce conditions which markedly affect the action of ferments *in vivo* when compared with their action *in vitro*. It is shown how the cell may, through the factor of surface tension, control and regulate its metabolism. It is thus possible to form a conception of the chemical organisation of the cell without having to assume the existence of hypothetical membranes in the cytoplasm which are supposed to surround the different chemical systems and separate them from each other. Lastly, it is pointed out that if the conceptions formulated in this paper are correct, substances which are strongly surface active, but which do not affect protoplasm chemically, should exercise a profound effect on the metabolism of the cell. This expectation is realised in the action of narcotic and cytolytic substances.

Challenger Society, April 28.—Capt. Alfred Carpenter in the chair.—Dr. G. H. Fowler: Investigations on drift currents in British waters.—Dr. S. F. Harmer: Records of Cetacea stranded on the British coasts during 1913 and 1914. The paper was based on an arrangement which had been made by the Board of Trade, which had issued an instruction to coastguard officers to report the stranding of Cetacea by telegram to the British Museum (Natural History). In this way, and aided by written reports, sketches, and photographs supplied by persons on the spot, much valuable information has been obtained, and a certain number of interesting specimens have been secured. By procuring a blade of baleen, in the case of the whalebone whales, or the lower jaw, in the case of

the smaller toothed whales, it has been possible to determine the species in a considerable proportion of the records. Seventy-six records were obtained during 1913, and fifty-seven during 1914. The outbreak of war was clearly responsible for the smaller number during 1914. The common porpoise proved to be far the commonest species, as might have been expected. Several records of the occurrence of the common dolphin were obtained, principally on the more exposed parts of the coast-line. Other species which were represented by several records were the bottle-nosed whale, the pilot-whale, the white-beaked dolphin, the bottle-nosed dolphin, Risso's dolphin, the lesser rorqual, the common rorqual, and Rudolphi's rorqual. The most interesting record was a Sowerby's whale, stranded at Rosslare in September, 1914. Contrary to expectation, the district where strandings were most numerous was the coast-line of Lincolnshire and Norfolk, though a number of specimens were found on the shore of the southern counties (see NATURE, April 15, p. 182).

PARIS.

Academy of Sciences, April 26.—M. Ed. Perrier in the chair.—Gaston Darboux: The representation on a plane of the surface of the fourth order which admits a conic as a double curve.—G. Bigourdan: Scintillation. Comparison with the undulations of instrumental images of celestial bodies. There seems to be no identity between scintillation and undulations, as might at first sight appear probable. More quantitative data are required for the undulations.—A. Haller and Edouard Bauer: The action of sodium amide on the allyldialkylacetophenones. The preparation of 3:5-dimethyl-3-ethyl and 3:3-diethyl-5-methylpyrrolidones.—A. Laveran: The artificial acentrosomic varieties of the Trypanosomes. For *Tr. Evansi* and *Tr. Brucei* the disappearance of the centrosome produced by the action of oxazine is permanent after three or four hundred passages through animals. Morphologically, this might be regarded as a new species, but its biological characters are unchanged. Animals immunised against trypanosomes with centrosomes have acquired immunity for the acentrosomic trypanosomes and inversely.—J. Guillaume: Observations of the sun made at the Observatory of Lyons during the fourth quarter of 1914. Observations were possible on fifty-eight days, the results of which are given in three tables showing the number of spots, their distribution in latitude, and the distribution of the faculae in latitude.—A. Perot: Variation of the wave-length of the telluric lines with the height of the sun. Particulars of measurements made with an interference spectroscopy installed at the Observatory of Meudon. A line of the B group of oxygen was chosen; the wave-length increased from morning to noon and then decreased.—E. Bompiani: Laplace equations with equal invariants.—L. Bouchet: Electric pressures acting at the surface of a liquid insulating sheet. The displacements are very rapid for conducting liquids such as water and mercury, but with turpentine, vaseline oil, benzene, and petroleum ether there is a slow displacement. The instantaneous depression was deduced graphically and a relation established between this figure and the strength of the field.—Ph. Flajolet: Perturbations of the magnetic declination at Lyons (Saint Genis Laval) during the fourth quarter of 1914.—C. Sauvageau: A new species of Fucus, *F. dichotomus*. This is distinguished from *F. platycarpus* by its ramification and by the cylindrical form of its receptacles.—Jules Amar: Principles of professional re-education. A discussion of the problem of the work possible for wounded soldiers discharged as cured; from the physiological point of view.—MM. Viallet and Dauvillier: A new