temperature. The pelagic larvæ of bottom-living species are always present in the warm surface waters of the tropics, sometimes growing to an enormous size; but they are absent from the cold polar waters and in the deep sea, where the majority of the bottom-living species have a direct development.

The Arctic fauna and flora, both at the surface and at the bottom, resemble the Antarctic fauna and flora, and a large number of identical and closely-related species are recorded from the two polar areas, though quite unknown in the intervening tropical zone.

The boundary line between the deep-sea region and the neritic province is marked out by what has been called the "mud-line," where the minute organic and inorganic particles derived from the land and surface waters find a resting place upon the bottom, or serve as food for enormous numbers of crustacea, which in their turn are the prey of fishes and the higher animals; this mud-line, in fact, appears to be the great feeding-ground in the ocean, and its average depth is about 100 fathoms along the borders of the great ocean basins.

The majority of deep-sea species are mud eaters; some are of gigantic size; some are armed with peculiar tactile, prehensile, and alluring organs; some are totally blind, whilst others have large eyes and are provided with a kind of dark lantern for the emission of phosphorescent light. The deep-sea fauna does not represent the remnants of very ancient faunas, but has rather been the result of migrations from the region of the mud-line in relatively recent geological times.

The *Challenger* investigations show that species are most abundant in the shallow waters near land, decreasing in numbers with increasing depth, and especially with increasing distance from continental land.[1] This is true as a general rule, especially of tropical waters, but in polar regions there are indications of a more abundant fauna in depths of 50 to 150 fathoms than in shallower water under 50 fathoms.[2]

The various points touched upon regarding the distribution of marine organisms, might be explained on the hypothesis that in early geological times there was a nearly uniform high temperature over the whole surface of the globe, and a nearly uniformly distributed fauna and flora; and that with the gradual cooling at the poles, species with pelagic larvæ were killed out or forced to migrate towards the tropics, while the great majority of the species which were able to survive in the polar areas were those inhabiting the mud-line. The uniform physical conditions here referred to might be explained by adopting the views of Blandet[3] as to the greater size and nebulous character of the sun in the earlier ages of the earth's history.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Dr. J. N. Langley, F.R.S., and Mr. A. C. Seward, Lecturer in Botany, have been appointed additional members of the Degree Committee of the Board for Biology.

Mr. F. F. Blackman, of St. John's College, has been appointed University Lecturer in Botany.

The special numbers of the *University Reporter* containing the Report of the Syndicate on Degrees for Women, and the speeches made in the three days' discussion thereupon in the Senate House, can be obtained (price 7*d*.) by application to the University Press, Cambridge.

DR. ALEXANDER J. C. SKENE, president of the Medical College of the Long Island College Hospital of Brooklyn, has received the degree of LL.D. from the University of Aberdeen, his native city.

MR. JOHN D. ROCKEFELLER has given 40,000 dollars to Mount Holyoke College, in Massachusetts. This is a college for women, which a few months ago met with heavy loss by the burning of its buildings.

MRS. E. A. STEVENS, widow of the founder of the Stevens Polytechnic Institute, has given to that Institute property valued at 30,000 dollars, since the quarter-century celebration held a few days ago.

[1] See "*Challenger* Reports," "A Summary of the Scientific Results," by John Murray, pp. 1430–1436, 1895.

[2] See Murray, "On the Deep and Shallow-Water Marine Fauna of the Kerguelen Region of the Great Southern Ocean," *Trans. Roy. Soc. Edin.*, vol. xxxviii. p. 343, 1896.

[3] *Bull. Soc. géol. de France*, sér. 2, t. xxv. p. 777, 1868.

IT is stated that M. Solvay, who owns large industrial establishments in the neighbourhood of Nancy, has given 100,000 francs to the university of that city, for the purpose of erecting a chemical and electrical laboratory.

THE Senate of the University of Glasgow have resolved to confer the honorary degree of LL.D. upon Mr. J. Wolfe Barry, C.B., F.R.S., President of the Institution of Civil Engineers, London; Prof. John M'Cunn, Professor of Philosophy in University College, Liverpool; and Prof. W. Ramsay, F.R.S., Professor of Chemistry in University College, London.

A BLUE-BOOK just published shows that the total amount expended by local authorities on technical education during the year 1894–5 was 737,809*l*. 5*s*. 4*d*.; and that the estimated total expenditure on technical education during the year 1895–6 was 793,507*l*. 17*s*. 7*d*. These amounts are exclusive of the sums allocated to intermediate and technical education under the Welsh Intermediate Education Act, and amounting to 42,861*l*.

THE following are among recent announcements:—Dr. Hans Lemke to be assistant at the meteorological and magnetic observatory at Potsdam; Prof. Simmara to be professor of physiological psychology in the Government School of Science at Madrid; Dr. E. Vischer, associate professor of botany at Bern, to be professor and director of the Botanic Gardens there; Dr. Ross to be curator of the Botanical Museum at Munich; Dr. J. Y. Mackay, professor of anatomy, to be principal of the University College, Dundee; Prof. P. Baccarini to be professor of botany in the University of Catania; Dr. O. Kruch to be professor at the agricultural experiment station in Perugia; Dr. W. Felix to be associate professor of anatomy in the University of Zürich.

A COMPARISON of the number of hours devoted to different departments in four Universities in the United States is made in *Science*. The following table shows the relative attention given to different branches of knowledge.

	Harvard.	Cornell.	Yale.	Princeton.
Classics	8·7	8·0	24·2	22·6
European languages	22·8	18·8	14·5	12·4
English	16·8	16·3	10·9	11·3
Political science	9·9	6·5	11·2	9·6
History	14·3	8·2	10·4	
Mathematics	4·4	6·6	9·6	19·4
Philosophy	6·1	7·7	8·9	8·6
Natural science	10·2	23·5	8·1	8·8

It is pointed out by *Science* that Yale and Princeton agree somewhat closely in the distribution of studies, except for the excess in mathematics at Princeton. Harvard and Cornell also agree to a considerable extent, but Cornell devotes one-fourth of the entire time (the figures refer to the academic department) to science. It is noteworthy that in the Senior year at Princeton, when the studies become elective, only 3·8 per cent. of the time is given to the classical languages, and 15·1 per cent. to natural and physical sciences. The classical languages evidently only hold their position at Yale and Princeton through compulsion. European languages tend to take their place in large measure with some gains by English and the sciences.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 4.—"The Palæolithic Deposits at Hitchin and their Relation to the Glacial Epoch." By Clement Reid, F.L.S., F.G.S., of the Geological Survey of the United Kingdom. Received February 15.

In continuation of the researches at Hoxne, communicated last autumn to the British Association, excavations and borings have been made at Hitchin, with the object of ascertaining whether the conclusions arrived at are supported by the study of a fresh locality. The results obtained at Hitchin are thoroughly in accord with those obtained at Hoxne. At each place brick-earth with Palæolithic implements can be proved to overlie the latest boulder clay of the district. At Hoxne the Palæolithic deposits were shown to be separated from the boulder clay by two distinct alluvial deposits, the newer of which yields an arctic flora, the older a temperate one. The arctic plants have not yet been discovered at Hitchin, but abundance of temperate species occur in the older alluvium.

At each locality the same story is told. Some time after the passing away of the ice the land stood higher than now, so that

the streams had a greater fall and valleys were cut to a somewhat greater depth. Then the land sank and the valleys became silted up with layer after layer of alluvium, to a depth of at least 30 feet, the climate remaining temperate. The next stage, when an arctic flora reappeared, is only represented at Hoxne. The third stage in the infilling of the valleys is shown in the curious unstratified decalcified brick-earth with scattered stones and Palæolithic implements, identical in character at Hitchin, Hoxne, Fisherton, and other localities, which irresistibly suggests a mingling of wind-transported material and rain-wash.

It may be pointed out that if this hypothesis of the origin of the Palæolithic brick-earth during the reign of "steppe" conditions be accepted, it will account for the non-correspondence of the ancient channels with the present valleys, a thing very difficult to explain if the infilling were caused by ordinary fluviatile action. If the Palæolithic brick-earth is equivalent to the Palæolithic loess of the ancient deserts in central Europe, we can understand how during this period of cold drought the smaller streams ceased to flow and their valleys became so filled with rain-wash and dust that when a moister climate recurred the streams had to seek new channels.

March 11.—"The Origin and Destination of certain Afferent and Efferent Tracts in the Medulla Oblongata." By J. S. Risien Russell, M.D., M.R.C.P.

In attempting to ascertain the origin and destination of some of the tracts of nerve fibres which exist in the medulla oblongata by the degeneration method, many of these tracts were divided, and among them the posterior connections of the cerebellum, and, similarly, certain nerve centres situated in the medulla were severed from their connections with the rest of the organ.

Among other results obtained by these experiments the author finds, in support of his previous contentions based on results obtained by ablation of the cerebellum, that while paths derived from the spinal cord can be traced directly to the cerebellum, no direct path can be traced from the cerebellum to the spinal cord. He, however, finds that an indirect path of this kind exists, and that the first portion of it is what was formerly regarded as a sensory tract passing from the medulla oblongata to the cerebellum, but which is in reality a path from the cerebellum to a special group of nerve cells in the medulla known as Deiters' nucleus, from which another tract of fibres originates which can be traced throughout the whole length of the spinal cord, and which becomes connected with the anterior horn of the same side, and to a lesser degree with that of the opposite side.

The author further finds that there are other important connections of these nerve cells known as Deiters' nucleus, with the corpora quadrigemina, superior olivary bodies and the cervical region of the spinal cord by way of the posterior longitudinal bundles. The cerebellum is thus brought into relationship with these various nerve centres in a way that suggests that these connections may have important bearings in regard to the movements of the head and eyes.

Chemical Society, March 4.—Mr. A. G. Vernon Harcourt, President, in the chair.—The following papers were read:—Some hydrocarbons from American petroleum. (1) Normal and iso-pentane, by S. Young and G. L. Thomas. By fractional distillation of "pentane" from American petroleum, the authors have obtained pure normal and iso-pentane; the boiling points under normal pressure are 36·3° and 27·95° respectively.—The vapour pressures, specific volumes and critical constants of normal pentane, with a note on the critical point, by S. Young. The critical data of normal pentane are 197·2°, 25100 mm., and 4·303 c.c.; the thermal and other data obtained lead to the conclusion that in the liquid state and at the critical temperature the molecules of pentane are simple ones, as in the gaseous state.—On the freezing-point curves of alloys containing zinc, by C. T. Heycock and F. H. Neville. The melting-point curves of binary alloys of zinc with cadmium, aluminium, tin and bismuth have been examined and the compositions of the eutectic mixtures determined; dilute zinc solutions containing lead, thallium, antimony and magnesium were also examined. The freezing point of zinc is depressed by admixture with the metals named above, but is raised by addition of copper, gold, or silver.—The oxides of cobalt and the cobaltites, by A. H. McConnell and E. S. Hanes. The authors describe the preparation of alkali cobaltites, and show that cobalt forms an oxide CoO_2, an acid H_2CoO_3, and a series of alkali salts of the type of potassium cobaltite K_2CoO_3.—A new synthesis in the sugar group, by H. J. H. Fenton. Glycollic aldehyde condenses when heated in a vacuum, giving a sweet-tasting gum of the composition $C_6H_{12}O_6$; this "sugar" yields a hexosazone $C_{18}H_{22}N_4O_4$, and is not fermented by yeast. When heated it loses water, apparently yielding compounds of the compositions $C_{12}H_{22}O_{11}$ and $C_6H_{10}O_5$.—The dinitrosamines of ethylene aniline, the ethylene toluidines and their derivatives, by F. E. Francis.—Contribution to the knowledge of the β-ketonic acids, Part v., by S. Ruhemann and A. S. Hemmy.—Enantiomorphic forms of ethylpropylpiperidonium iodide, by Miss C. de B. Evans. Ethylpropylpiperidonium iodide, $C_5H_{10}EtPrNI$, crystallises in right- and left-handed enantiomorphous crystals just as sodium chlorate does.—Further note on ketopinic acid—pinophanic acid, by W. S. Gilles and F. F. Renwick. Ketopinic acid yields a hydroxime and a monobrom-derivative, and when fused with soda is converted into a dibasic acid $C_{10}H_{16}O_4$, which is termed pinophanic acid.—A synthesis of citric acid, by W. T. Laurence. Ethylic citrate is synthetically obtained by the condensation of ethylic bromacetate with ethylic oxalylacetate in presence of zinc as indicated by the following equations: (1) $COOEt.CH_2Br + COOEt.CH_2.CO.COOEt + Zn = COOEt.CH_2.C(OZnBr)(CH_2.COOEt).COOEt$. (2) $COOEt.CH_2.C(OZnBr)(CH_2.COOEt)COOEt + H_2O = COOEt.CH_2.C(OH)(CH_2.COOEt).COOEt + ZnO + HBr$.

Linnean Society, March 4.—Dr. A. Günther, F.R.S., President, in the chair.—Mr. W. Carruthers, F.R.S., exhibited, with the aid of lantern-slides, a series of portraits of Linnæus, and gave some account of the history of each. In the course of a tour which he had made in Sweden and Holland, he had been fortunate enough not only to see the original paintings, but also to obtain photographs of them, so that he was now able to exhibit exact copies. Putting aside "supposed portraits," and such as might be termed "fancy portraits" having no claim to authenticity, he had satisfied himself of the existence of eight that were certainly painted or drawn from life, and had been copied more or less frequently by different engravers. The earliest of these was painted by Hoffman in 1737, while Linnæus was working for his patron Cliffort at Hartecamp, and represents him at the age of thirty in the picturesque dress in which he travelled through Lapland. Of the next portrait, an engraving by Ehrensverd in 1740, no original is known to exist. In 1747, at the age of forty, two pencil sketches of Linnæus, one being a full length, were made by Rehn; and five years later a beautiful pastel was executed by Lundberg. Scheffel in 1755 painted him at the age of forty-eight; and this portrait is preserved at Hammarby in the house of Linnæus, now public property under the care of Prof. Fries of Upsala. Then came the medallion by Inlander, executed in 1773, of which a copy (one of three) is in possession of this Society. The following year, when Linnæus was sixty-seven years of age, his portrait was painted by Krafft, and was placed originally in the Medical College of Stockholm, of which Linnæus was one of the founders. It was supposed to be lost, but had been removed to the Royal Academy of Sciences in Stockholm, where Mr. Carruthers discovered it. The latest portrait was that by Roslin, painted in 1775, when Linnæus was in his sixty-eighth year. A fine copy of this by Pasch, presented to Sir Joseph Banks, and given by him to Robert Brown, now hangs in the Society's library.—Dr. W. B. Benham read a paper on some new species of earthworms belonging to the genus *Perichæta* from New Britain and elsewhere, with remarks on certain diagnostic characters of the genus.—On behalf of Mr. W. G. P. Ellis, Demonstrator in Botany at the University Botanical Laboratory, Cambridge, the Secretary gave the substance of a paper "On a *Trichoderma* Parasitic on *Pellia epiphylla*."

Geological Society, March 10.—Dr. Henry Hicks, F.R.S., President, in the chair.—Volcanic activity in Central America in relation to British earthquakes, by A. Gosling, H.M. Minister and Consul-General in Central America. The author of the communication points out that the volcano of Izalco, in the Republic of Salvador, which has been in active eruption for over one hundred years, suddenly ceased to be so within a fortnight of the period at which the communication was sent (December 20, 1896), and he notes the occurrence of seven shocks of earthquake in England on December 17, 1896. He quotes remarks concerning the volcano, which were contributed by him to the *North American Review* in January 1896.—The red rocks near Bonmahon on the coast of Co. Waterford, by F. R. C. Reed. The rocks considered in this paper have been regarded by some authorities as deposits interstratified with the Lower Palæozoic rocks of the district, while others have maintained that they are of Old Red Sandstone age. It was the object of the author

to show the correctness of the latter supposition, and he brought forward evidence to prove that the red rocks rest unconformably upon the Lower Palæozoic rocks, or are faulted against them, and that the breccias of the red rocks contain fragments of the Lower Palæozoic rocks, and also of intrusive rocks which break through the latter. The red rocks also resemble deposits which are known to be of Old Red Sandstone age.—On the depth of the source of lava, by J. Logan Lobley. The author contended that lava could not have been brought to the surface from a depth of thirty miles, as fissures which would serve as conduits could not exist at that depth, and, moreover, the lava would be consolidated before it reached the surface, owing to contact with cool rock for a considerable period. He argued that the pressure of the overlying rocks would cause the rocks even at a depth of ten miles to be practically plastic, as shown by M. Tresca's experiments, and that no continuous fissure could occur in such rocks. Estimates of the volumes of ascending lava-columns were given, with a diagram comparing them with a 30-mile thickness of rocks.

Mathematical Society, Thursday, March 11.—Prof. Elliott, F.R.S., President, in the chair.—The President referred to a letter received from the President of the Royal Society with reference to the Victoria Research Fund, which it is proposed to institute in commemoration of Her Majesty's long reign, and commended the fund to the generous consideration of the members. He next spoke briefly on the loss the mathematical world had sustained by the recent death of Prof. Weierstrass.—Mr. Jenkins, Vice-President, having taken the chair, the President communicated a paper, by Mr. J. E. Campbell, on a law of combination of operators bearing on the theory of continuous transformation groups.—On resuming the chair, the President read some notes on symmetric functions, by Mr. W. H. Metzler.—The Senior Secretary briefly communicated a note on some circles connected with a triangle, by Prof. Steggall.—Lieut.-Colonel Cunningham, R.E., mentioned three high primes recently determined by him—85,280,581 ; 234,750,601 ; 2,413,941,289 ; and gave a sketch of the methods used.

Zoological Society, March 16.—Dr. W. T. Blanford, F.R.S., Vice-President, in the chair.—Mr. Sclater called attention to the two specimens of otters, now living in the Society's Gardens, which had been received from Co. Down, Ireland, last year, and pointed out that they differed in several respects from the common otter.—Mr. A. Smith Woodward gave an account of his recent palæontological tour in Brazil and Argentina, and made remarks on the fossil remains of vertebrated animals that had come under his observation in those countries.—Dr. R. H. Traquair, F.R.S., exhibited and made remarks upon a new specimen of the supposed fossil lamprey (*Palæospondylus gunni*) from the Old Red Sandstone of Caithness, and read a note on its affinities.—A communication was read from Dr. Robert Collett, on a collection of mammals made by Mr. Knut Dahl in North and North-west Australia in 1894-96. The collection contained specimens of thirty four species, two of which—viz. *Pseudochirus dahlii* and *Smithopsis nitela*—proved to be new to science. The former species had been described in the *Zoologischer Anzeiger* for 1895 ; the latter was characterised in the present paper.—Mr. P. L. Sclater, F.R.S., read a paper "On the Distribution of Marine Mammals." The marine area of the globe was divided into six sea-regions, viz. Arctatlantis, Mesatlantis, Indopelagia, Arctirenia, Mesirenia, and Notopelagia, which corresponded to a certain extent with the six land-regions proposed by Mr. Sclater in 1874. The characteristic mammals of each sea-region were pointed out.—Mr. F. E. Beddard, F.R.S., read a paper on a collection of earthworms from South Africa, belonging to the genus *Acanthodrilus*, which had been made in the Cape Colony by Mr. Purcell, of the South African Museum, and forwarded to him by Mr. W. L. Sclater. Examples of nine new species were contained in the collection, which fact was of great interest, as previously only one representative of the genus *Acanthodrilus* had been known to exist in South Africa. Mr. Beddard also described a new genus of earthworms, belonging to the family *Eudrilidæ*, from Lagos, West Africa, under the name of *Iridodrilus*.—Dr. Forsyth Major exhibited a series of skulls and photographs of species of the African bush-pigs (*Potamochœrus*), and pointed out the characters of a new species from Nyasaland, which he proposed to call *P. johnstoni*, remarkable for its large size and slender snout. He also showed that the *Nyctichœrus hassana* of Heuglin, from Abyssinia, formed a distinct species of *Potamochœrus*.

EDINBURGH.

Royal Society, March 1.—Lord Kelvin in the chair.—The Chairman exhibited models illustrating the dynamical theory of hemihedral crystals.—Mr. R. C. Mossman read a second paper on the meteorology of Edinburgh during the past 138 years. There had been no appreciable change in the climatic conditions during that period. The graphs showed nothing approaching to weather cycles. Great snowstorms prevailed during the first quarter of the present century, and during the past twenty-five years there had been an unusually large number of thunderstorms.—Prof. Tait read a paper on the linear and vector function.

Mathematical Society, March 12.—Mr. J. B. Clark, Vice-President, in the chair.—The following papers were read :—Note on combinations, Mr. J. B. Clark.—Note on maxima and minima, Mr. J. Alison.—An application of Sturm's functions, Mr. J. D. Höppner.—A geometrical proof of certain trigonometrical formulæ, Mr. J. W. Butters.

PARIS.

Academy of Sciences, March 15.—M. A. Chatin in the chair.—The election of M. G. Bonnier in the Section of Botany, in the place of the late M. Trécul, was approved by the President of the Republic.—A new apparatus for the application of spectrum analysis to the recognition of gases, by M. Berthelot. The gas is contained at ordinary atmospheric pressure over mercury in a short glass tube carrying one of the platinum wires, the other terminal being fused into a smaller glass tube, capable of vertical adjustment. The regulation of the striking distance of the spark is of considerable importance in this apparatus, the results obtained in which, although not so delicate as in tubes containing rarefied gas, are still sufficiently good for practical analysis.—On the electric absorption of nitrogen by carbon compounds, by M. Berthelot. A preliminary study showed that much more rapid absorption took place when the induction coil was fitted with a Marcel Deprez high-speed interrupter than when a low-speed vibrator of the Foucault pattern was used. *The maximum amount of nitrogen absorbed* by a given weight of benzene was 12 per cent. by weight, by carbon bisulphide 11·7 per cent., and by thiophene 8·6 per cent., corresponding to the ratios $3C_6H_6 : N_2$; $3CS_2 : N_2$; and $4C_4H_4S : N_2$. The absorption was most rapid when carbon bisulphide was used, and in presence of an excess of either this or of benzene, the last trace of nitrogen could be completely absorbed.—On the theory of algebraic surfaces from the point of view of geometry of position, and on the integrals of total differentials, by M. Émile Picard.—On a property of asynchronous motors, by M. A. Potier.—Studies on the energy changes in living muscle, by M. A. Chauveau. An inquiry into the relations between the law of conservation of energy and the work done by living muscles. In a comparison of the elastic properties of muscle and india-rubber, it is of the highest importance that the muscle should be living, the elastic properties of muscular tissue separated from the body being quite different from those of the same muscle in the living state. This precaution being observed, there is complete analogy between the elasticity of india-rubber and muscular tissue.—On the relations expressing that the various coefficients considered in thermodynamics should satisfy the law of corresponding states, by M. E. H. Amagat.—On the systems of orthogonal and isothermal surfaces, by M. A. Pellet.—On the method of successive approximations of M. Picard, by M. S. Zaremba.—On the spark discharges and the use of the Hertz oscillator, by M. Swyngedauw. The spark resistance, considered as the resistance of a bad conductor, is regarded by the author as depending upon its length, section, temperature, and the nature of the luminous conductor which constitutes the spark. The consequences of this point of view are different to those deduced by Thomson, who regarded the resistance as constant, and lead to the result that the discharge of a condenser, oscillating for large capacities, becomes continuous for capacities sufficiently small. The Hertz exciter is a condenser of small capacity, and the preceding considerations are applied to it.—On the action of the silent electric discharge upon gases, by M. Émile Villari. Gases which have acquired the property of discharging electrified bodies either by having been sparked, or by having been traversed by the X-rays, lose this power when submitted to the silent discharge of an ozone apparatus. This neutralising power of the ozoniser persists for a certain time after disconnecting it from the coil, the effect being produced by the accumulated charges on the glass.—

Action of high temperatures upon antimony peroxide, by M. H. Baubigny. At a temperature just above the melting-point of gold, antimony peroxide is almost completely decomposed into oxygen and the volatile antimony trioxide.—Action of tannin and some other aromatic derivatives upon some alkaloids and compound ureas, by M. Œchsner de Coninck.—On some derivatives of anethol, by M. Georges Darzens. The unsaturated nature of anethol was shown by the formation of a chlorine derivative by addition. The chlorine was used in carbon tetrachloride solution, a very convenient form of using chlorine in known amounts. This derivative cannot be distilled, as it readily splits off hydrogen chloride, leaving a monochloranethol from which, by addition of chlorine and bromine in carbon tetrachloride solution, the corresponding saturated halogen compounds were prepared.—On the combination of iodine with rice and wheat starch, by M. G. Rouvier.—On the solubility of the red colouring matter of the raisin, and on the sterilisation of the expressed juice of fruit, by M. A. Rosenstiehl.—On the Japanese and Chinese vines acclimatised at Damigny (Orne), and on the composition of the wines which they produce, by M. L. Lindet.—On the composition of the ancient Indian pottery of Venezuela, by M. F. Geay.—Refractory period in the nervous centres, nervous wave, and consequences which result, from the point of view of cerebral dynamics, by MM. André Broca and Charles Richet.—On a new anatomical apparatus observed in the peritoneum, by M. J. J. Andeer.—On some anatomical peculiarities observed in the larva of *Thriaxion Halidayanum*, by M. J. Pantel.—On the relations of *Antennophorus Uhlmanni* (Haller) with *Lasius mixtus* (Nyl), by M. Charles Janet. The *Antennophorus* are parasites living on the *Lasius*, and are nourished by a nutritive fluid exuded by the ants. The parasites always place themselves symmetrically about the body of their host, so that his movements are impeded as little as possible.—On some points in the geology of the environs of Bourganeuf (Creuse), by M. Ph. Glangeaud.—On the use of formaline in the preparation of microscopic specimens, after hardening with osmic acid, by M. Ch. Rousselet.—Synthesis of the elementary forces, by M. Bridou.

DIARY OF SOCIETIES.

THURSDAY, MARCH 25.

ROYAL SOCIETY, at 4.30.—Meeting for Discussion. *Subject:* The Chemical Constitution of the Stars, introduced by J. Norman Lockyer, C.B., F.R.S., with a Communication "On the Chemistry of the Hottest Stars."

ROYAL INSTITUTION, at 3.—The Relation of Geology to History: Prof. W. Boyd Dawkins, F.R.S.

SOCIETY OF ARTS (Imperial Institute), at 8.—The Cultivation and Manufacture of Rhea Fibre: Thomas Barraclough.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—On some Repairs to the South American Company's Cable off Cape Verde, 1893 and 1895: H. Benest. (Continuation of Discussion.)

CHEMICAL SOCIETY, at 8.—The Pasteur Memorial Lecture: Prof. P. F. Frankland, F.R.S.

CAMERA CLUB, at 8.15.—From Mont Blanc to the Matterhorn: Lamond Howie.

FRIDAY, MARCH 26.

ROYAL INSTITUTION, at 9.—Early Man in Scotland: Sir William Turner, F.R.S.

PHYSICAL SOCIETY (Finsbury Technical College), at 5.—Various Exhibitions of Experiments, &c., will be shown by Prof. Thompson and others.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Re-signalling of the Liverpool Street Terminus of the Great Eastern Railway: W. J. Griffiths.

SATURDAY, MARCH 27.

ROYAL INSTITUTION, at 3.—Electricity and Electrical Vibrations: Lord Rayleigh, F.R.S.

ROYAL BOTANIC SOCIETY, at 4.

ESSEX FIELD CLUB (at Loughton), at 6.30.—Seventeenth Annual Meeting.—Presidential Address: Field Work as Science Training: David Howard.

MONDAY, MARCH 29.

SOCIETY OF ARTS, at 4.30.—Alloys: Prof. W. Chandler Roberts-Austen, C.B., F.R.S.

SANITARY INSTITUTE, at 8.—Ventilation, Warming, and Lighting: Dr. Joseph Priestley.

INSTITUTE OF ACTUARIES, at 7.—Mortality Experience of Assured Lives and Annuitants in France: G. F. Hardy.

CAMERA CLUB, at 8.15.—Snowdon in Winter; Climbing in Dauphiné: Henry Speyer.

TUESDAY, MARCH 30.

ROYAL INSTITUTION, at 3.—Animal Electricity: Prof. A. D. Waller F.R.S.

SOCIETY OF ARTS, at 8.—Lead-work: W. R. Lethaby.

ANTHROPOLOGICAL INSTITUTE, at 8.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Electric Lifts and Cranes: Henry W. Ravenshaw.

ROYAL VICTORIA HALL, at 8.30.—Quicksilver: Dr. H. Forster Morley.

WEDNESDAY, MARCH 31.

SOCIETY OF ARTS, at 8.—Cycling—Historical and Practical: George Lacy Hillier.

CHEMICAL SOCIETY, at 3.—Annua eneral Meeting.—Ballot for Election of Officers and Council.

THURSDAY, APRIL 1.

ROYAL SOCIETY, at 4.30.—The Croonian Lecture—"The Mammalian Spinal Cord as an Organ of Reflex Action"—will be delivered by Prof. C. S. Sherrington, F.R.S.

ROYAL INSTITUTION, at 3.—The Relation of Geology to History: Prof. W. Boyd Dawkins, F.R.S.

SOCIETY OF ARTS, at 4.30.—A Visit to Russian Central Asia: Michael Francis O'Dwyer.

LINNEAN SOCIETY, at 8.—On the Evolution of Oxygen from Coloured Bacteria: Dr. A. J. Ewart.—On the Germination of Spores of Agaricineæ: Miss Helen Beatrix Potter.

CHEMICAL SOCIETY, at 8.—On the Oxidation of αγ-Dimethyl-α'-Chloropyridine: E. Aston and Prof. J. Norman Collie, F.R.S.—The Composition of Cooked Fish: K. J. Williams.

CAMERA CLUB, at 8.15.—Mountain and West Coast Scenery at Home and Abroad: T. C. Porter.

FRIDAY, APRIL 2.

ROYAL INSTITUTION, at 9.—Metallic Alloys and the Theory of Solution: Charles T. Heycock, F.R.S.

GEOLOGISTS' ASSOCIATION, at 8.—The Physical History of Romney Marsh: George Dowker.—A Collection of Flint Implements from Cookham: Llewellyn Treacher.

SATURDAY, APRIL 3.

ROYAL INSTITUTION, at 3.—Electricity and Electrical Vibrations: Lord Rayleigh, F.R.S.

GEOLOGISTS' ASSOCIATION (Baker Street Station), at 1.37.—Excursion to Chesham and Cowcroft. Director: Upfield Green.

BOOKS AND SERIALS RECEIVED.

BOOKS.—Macmillan's Geography Readers, Book iii. (Macmillan).—The Dahlia: various Writers (Macmillan).—The Popular Religion and Folk-Lore of Northern India: W. Crooke, 2 Vols., new edition (A. Constable).—Dr. Nansen: the Man and his Work: F. Dolman (S.P.C.K.).—The Elements of Electro-Chemistry: Dr. R. Lüpke, translated by M. M. P. Muir (Grevel).—A Manual of Chemistry: Prof. W. A. Tilden (Churchill).—Glaciers of North America: Prof. I. C. Russell (Boston, Mass., Ginn).—The Phase Rule: W. D. Bancroft (Ithaca, New York, *Journal of Physical Chemistry*).—Elementary Text-Book of Physics: Profs. Anthony and Brackett, 8th edition (New York, Wiley; London, Chapman).—Picture Lessons in Natural History (Bacon).—Les Gaz de l'Atmosphère: H. Henriet (Paris, Gauthier Villars).—The Calculus for Engineers and Physicists: Prof. R. H. Smith (Griffin).

SERIALS.—L'Anthropologie, Tome viii. No. 1 (Paris).—American Naturalist, March (Philadelphia).

CONTENTS.