

has an instrumental value only, and that it is instrumental to the nation.

SHEFFIELD.—The council of the University has decided to institute a lectureship in Russian. It is understood that in view of the urgency of a knowledge of Russian in the trade of Sheffield, the necessary funds have been secured locally, and that an appointment to the lectureship will shortly be announced.

AMONG the bequests of Mr. J. S. N. Boyd, who died on February 1, leaving estate of the value of 32,646*l.*, are 2,100*l.* to Epsom College, for one foundation scholar, and the ultimate residue of the estate, after the death of his mother and sister, to the University of London for a professorship of pathology in the Medical School of Charing Cross Hospital.

In the fire which, as stated last week (p. 49), destroyed the chemical laboratories of Cornell University, several members of the staff appear to have lost very valuable records and data, the work of years. We learn from *Science* that many notes of experiments and researches, manuscripts, and treasured records have been lost. In a business house such records would be placed in a fire-proof safe every day when not required, but the use of safes in laboratories is very rare. Perhaps the fire at Cornell University will lead to the introduction of fire-proof rooms or safes in all laboratories where records of original work are kept, in order to avoid the destruction of scientific material upon which no monetary value can be placed because it is unique.

It is announced in the issue of *Science* for March 3 that the University of Buffalo has received actual and provisional endowment for the new department of arts and sciences amounting to 150,000*l.*; 20,000*l.* of this sum to be given outright by Mrs. Seymour H. Knox, who, with her children, proposes to increase this eventually to a total of 100,000*l.*; 50,000*l.* is given by General E. Hayes, for the first building upon the University site, provided 200,000*l.* be raised for like purposes before June, 1919. From the same source we learn that President Goodnow, at the commencement exercises of the Johns Hopkins University, on February 22, announced that the Consolidated Gas Company of New York, the American Gas Company of Philadelphia, and the Consolidated Gas Company of Baltimore, had interested themselves in the establishment of a laboratory at the University for research work as to the possibilities of coal-tar products. The purpose is to develop the aniline dye industry and other important branches in the coal-tar field.

THE experiment of holding a "Summer Assembly in Science" at the Scripps Institution for Biological Research at La Jolla, on the sea coast near San Diego, will be tried by the University of California next summer for the first time. The purpose is to disseminate among teachers and others interested in modern science the discoveries and new points of view which are resulting from the investigations of the research department of the University. There will be lectures, conferences, and demonstrations every afternoon of the six weeks by members of the scientific staff of the institution, and Tuesday and Thursday mornings will be devoted to lectures, laboratory, museum, and field work for small groups of students on the characteristic animal and plant life of the ocean waters along the shore of southern California. A course on "Local Coastal Physical Geography" will be conducted by Mr. W. C. Crandall, who as master of the *Alexander Agassiz*, the institution's sea-going scientific collecting vessel, has wide familiarity with the California coast. Half

a mile of ocean frontage, with cliffs, sand beaches, and tide pools inhabited by a wide variety of sea-life, is the ideal locality which the Scripps Institution for Biological Research occupies. Any persons interested in science who wish to attend the assembly at the Scripps Institution from June 25 to August 5 next are requested to write as soon as possible to Prof. William E. Ritter, scientific director of the institution, at La Jolla, so that proper provision may be made.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 16.—Sir J. J. Thomson, president, in the chair.—**C. Reid** and **J. Groves**: Preliminary report on the Purbeck Characeæ. The investigations, in aid of which a Government grant was made, relate to the remains of Characeæ found in the cherts and limestones of the Middle Purbeck beds of Dorset. A large amount of new material has been collected, and by treating the limestones to a long-continued drip of slightly acidulated water it has been possible to obtain specimens throwing much additional light on the structure of these plants. The principal results obtained up to the present are:—(1) The discrimination of a new genus, *Clavator*, characterised by (a) the production of remarkable thickened club-like nodes; (b) the presence of a utricle enclosing the oogonium; (c) the production of numerous rosette-like groups of clavate processes on the stem and branchlets. (2) The discovery of a number of different types of fruit and vegetative parts showing that the Chara-flora of the period was rich and varied. The remains found belong to both divisions of the family Characeæ and Nitelleæ.—**Prof. H. G. Plimmer**: Notes on the genus *Toxoplasma*, with a description of three new species. Organisms bearing the above name have been found in the rabbit, gundi, dog, mole, and pigeon during the seven years that have elapsed since their discovery by Splendore in Brazil. Their systematic position is uncertain, but they are widely distributed geographically and as regards hosts. They are found as parasites in the mononuclear leucocytes, in which they occur in large numbers. Those described in the paper were found in a Fossa from Madagascar, in a fruit pigeon from the Aru Islands, and in a Say's snake from Mexico, this latter being the first found in a reptile. The results of the study of these parasites in the above-named animals point rather to their relationship with the *Hæmogregarines* than with the *Leishmania* or the *Yeasts*, as has been suggested.—**F. Sano**. The convolutional pattern of the brains of identical twins, a study on hereditary resemblance in the furrows of the cerebral hemispheres. This monograph is a contribution to the study of the comparative morphology of relative brains inaugurated by Spitzka, Karplus, and Schuster. Its interest lies in the fact that it describes the brains of identical twins. It also includes a study of nerve plexuses and other morphological points of interest, thus serving as a morphological contribution to the observations of the late Sir Francis Galton on the history of twins.

Royal Meteorological Society, March 15.—Major H. G. Lyons, president, in the chair.—Sir Napier Shaw: The meteorology of the globe in 1911. The year 1911 is still remembered for its fine, warm summer. As the sequel of a long series of discussions at meetings of the International Meteorological Committee and its commissions, the International Solar Commission, the International Commission for Maritime Meteorology and Storm Warnings, the International Commission for Réseau Mondial, as well as the Solar Physics

Committee of the Board of Education, which, through the Solar Physics Observatory at South Kensington, was concerned with the relation of solar and terrestrial phenomena, especially rainfall, the committee of the Meteorological Office authorised the preparation of an annual statement of the meteorology of the globe beginning with 1911. The volume for that year is now nearly ready for issue. It gives particulars of pressure, temperature, and rainfall for available stations in all parts of the globe at the rate of two stations for each 10° square of latitude and longitude. It also gives the differences from the normal in those cases in which normals existed or could be compiled. The values are given in absolute units for pressure and temperature. Positive and negative signs are therefore only used to indicate differences from normal, except in two cases of negative sign in the column for height which indicate that the stations are below sea-level. A brief discussion of the meteorology of the year is based upon the differences from normal.

MANCHESTER.

Literary and Philosophical Society, March 7.—Prof. S. J. Hickson, president, in the chair.—D. Thoday : Optical properties of chlorophyll. The author referred to the importance of chlorophyll, which enables green plants to utilise radiant energy from the sun in the synthesis of organic food substances from the carbon dioxide of the atmosphere. On this process the whole organic world, with few exceptions, directly or indirectly depends. A few classes of bacteria, e.g. the iron and the sulphur bacteria, are independent of organic substances, making use of carbon dioxide in *chemosynthesis* by means of chemical energy, liberated in the oxidation of ferrous carbonate and sulphuretted hydrogen respectively. In the green plant the direct utilisation of sunlight in *photosynthesis* depends on chlorophyll, and this fact makes the optical properties of chlorophyll of especial interest. Mr. Thoday demonstrated the red fluorescence of a chlorophyll solution, remarking that the sensitising action of this and other fluorescent pigments on photographic plates, and their toxicity to protozoa in extremely dilute solution only in the light, suggest that such pigments when exposed to light are especially active chemically.—Dr. H. G. A. Hickling : Variation in the colour of coal streaks. The colour of coals varies in proportion to the different amounts of carbon in the coals. The author exhibited a number of samples of the fluorescent solutions obtained by washing finely-ground coal-powder with benzene. He pointed out that the constituent of the coal dissolved by the benzene appears to be more especially characteristic of the bituminous or humic types of coal, little or no colour being obtained when the Cannel coals or anthracites are similarly treated.

EDINBURGH.

Royal Society, February 7.—Dr. J. Horne, president, in the chair.—J. M. Thompson : The anatomy and affinity of *Platyzoma microphyllum*. The paper dealt with the anatomy of a single specimen of the plant. There were simply-pinnate unbranched leaves springing from the upper surface of the condensed and horizontal rhizome, and small filiform leaves devoid of pinnæ inserted on the sides and lower surface of the rhizome. Between these two leaf types transitions were found. The heterophyly is considered a consequence of the adoption of the rhizomatous habit. A dichotomised pinnate leaf was described. The stele was of a unique type, and the sporangia, of which there were two types, large and small, were characterised by irregularities in form and variability in position of the annulus. The systematic position of the

Platyzoma cannot yet be determined, and until fuller information regarding the nature of the spores is obtained it is proposed to leave *Platyzoma* in the Gleicheniaceæ.—Dr. R. C. Davie : The leaf trace in some pinnate leaves. This was a continuation of the former paper on the pinna trace in the ferns. Species of *Polypodium* from the forests and open sea coast in Brazil showed no variation in the method of giving off of the leaf trace, but modified the abaxial side of the leaf trace, increasing the number of strands where the leaves were long and heavily pinnate, decreasing them in short leaves. In species of *Aspidium*, *Dryopteris*, *Polystichum*, and other genera collected in Brazil it was found that the abaxial strands of the leaf trace were used directly in the supply of the pinna where these were large. With few exceptions the type of pinna trace is constant throughout a genus. The abaxial side of the leaf trace is dependent on local and individual peculiarities. Comparisons were made with the leaf trace of Cycads and of Monocotyledons and Dicotyledons.

PARIS.

Academy of Sciences, March 6.—M. Camille Jordan in the chair.—Pierre Duhem : The electrodynamics of conducting media.—M. Liapounoff was elected a correspondent for the section of geometry in the place of the late Paul Gordan.—Ernest Lebon : A new table of divisors of numbers.—Charles Rabut : New inverse invariants.—MM. Girardeau and Bethenod : The regulation of the charging circuit in installations of wireless telegraphy, using continuous high-tension current with rotating contact-breaker. Commenting on two recent notes of M. Bouthillon, it is pointed out that the proposed regulation is not new. References made to publications on this subject, dating from 1910.—A. Bach : A new reaction of urine. Nitrates are reduced in animal tissues by the joint action of a ferment and a co-ferment, neither of which separately possesses a reducing action. Both are present in fresh milk, and it is now shown that normal urine contains appreciable quantities of the co-ferment.—Jules Welsch : The geological constitution of the Poitou marshes.—Stanislas Meunier : Observations on the absence of the pelagic facies in the sedimentary series.—F. Garrigou : The age and mode of formation of water at the surface of the earth.—Fernand Goud : A new method of employing formol for disinfection at the front. Use is made of the vapours given off when formol (40 per cent. solution) is poured into a saturated solution of potassium permanganate. Direct experiment has proved that sterilisation of clothes by this method is more rapid than when dry heat is used. Details of the process are given.—C. Galaine and C. Houlbert : A sulphur dioxide diffuser for disinfection and rat killing in the trenches, in hulls of ships, and in houses. The apparatus proposed consists of a vessel of liquid sulphur dioxide, a heating coil and a fan. The apparatus is claimed to be compact, easily manipulated, and efficient in action.—Auguste Lumière : The action of the hypochlorites on pus. It has been shown by M. Delbet that when pus is added to double its volume of Dakin's solution (0.6 per cent. sodium hypochlorite) sterilisation is not usually effected, and, indeed, for some organisms, increased vitality results. Experiments with pus containing various micro-organisms (tetanus, streptococcus, staphylococcus, etc.) show that when a quantity of sodium hypochlorite is added to pus insufficient for sterilisation, the organisms are rendered less virulent and their toxins are destroyed by oxidation. This destruction of toxins regenerates the culture medium (pus), hence the increased growth in M. Delbet's experiments. But the destruction of the toxins *in vivo* is favourable to the body resistance since it permits the intervention of the phagocytes.