cannot speak with certainty as to its first appearance in the world's vegetation. Leaves constructed on a similar plan have been found in Permian, Carboniferous, and Upper Devonian rocks in England, Germany, France, the Arctic regions, South Africa, Kashmir, the Ural Mountains, and elsewhere, but we still lack decisive evidence as to the systematic position of these plants.

It is, however, an undisputed fact that the maiden-hair tree is connected by a long line of ancestors with the earliest phase of the Mesozoic epoch. From many parts of the world large collections of fossil plants have been obtained from strata referred to the Rhætic period or to the upper divisions of the Triassic system. The vegetation in those far-off days, extending from Australia, Cape Colony, and South America to Tonkin, the south of Sweden and North America, was much more uniform in character than is the case with widely separated floras at the present day. One of the most widely spread plants in this vegetation is one known as Baiera, which possessed leaves differing only in the greater number and smaller breadth of their segments from those of the maiden-hair tree. In the later Jurassic rocks of Yorkshire true Ginkgo leaves, as well as those of Baiera, are fairly common, and a few fragments of flowers have also been found. Both genera are recorded from Jurassic rocks of Germany, France, Russia, Bornholm, and elsewhere in Europe; they occur abundantly in Siberia, and are represented in the Jurassic floras of Franz Josef Land, the east coast of Greenland, and Spitsbergen.

The abundance of fossil Ginkgo leaves and seeds in Jurassic strata in East Siberia has led to the suggestion that this region may have been a centre where the Gingkoales reached their maximum development in the Mesozoic period. The occurrence of fossil species in the Jurassic rocks of King Charles Land (78° N.) and in the New Siberian Islands (75° N.), in central China, Japan, Turkestan, California, South Africa, Australia, and Graham's Land, demonstrates the cosmopolitan nature of the group. During the Tertiary period Ginkgo flourished in North America, in Alaska, and in the Mackenzie River district, Greenland, Saghalien Island, and in several European regions. In the Island of Mull beautifully preserved leaves of Ginkgo, indistinguishable from those of the living tree, have been found in sediments deposited on the floor of a lake during a pause in the volcanic activity which in the early days of the Tertiary era produced the thick series of basaltic rocks to which is due the characteristic contour of the Inner Hebrides.

The recent cultivation in Britain of the maiden-hair tree is thus a reintroduction of a plant which formerly flourished in this part of Europe. Where and when this genus first appeared, and why a type once so vigorous has narrowly escaped extinction, are questions which we cannot answer with confidence; we are, however, certain that the maiden-hair tree links the present with a past inconceivably remote; it is a tree "sacred with many a mystery," antedating by millions of years the advent of man and far surpassing the flowering plants in antiquity.

As we search through the fragmentary records scattered through the sediments of former ages, we discover evidence of a shifting of the balance of power among different classes of plants. Plants now insignificant or few in number are found to be descendants of a long line of ancestors stretching back to remote antiquity. Others which flourished in a former period no longer survive. We can only speculate vaguely as to the cause of success or failure. As Darwin said, "We need not marvel at extinction; if we must marvel, let it be at our own presumption in imagining for a moment that we understand the many complex contingencies on which the existence of each species depends."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

GLASGOW.—Dr. J. D. Falconer, late principal officer of the Mineral Survey of Northern Nigeria, and formerly assistant to Prof. James Geikie, has been appointed to the lectureship in geography, vacated by Captain Lyons, F.R.S.

Mr. J. S. Dunkerley has been appointed a university lecturer in zoology, with special reference to protozoology. Dr. Carl H. Browning, hitherto lecturer in bacteriology, has been appointed lecturer in clinical pathology and director of the new clinical laboratory at the Western Infirmary. Dr. A. Maitland Ramsay has been appointed university lecturer in ophthalmology. Principal Sir Donald MacAlister, K.C.B., has been appointed a member of the executive committee of the Carnegie Trust for the Universities of Scotland in succession to Prof. William Stewart, resigned.

His Majesty in Council has approved a new Ordinance, whereby geography is added to the subjects which may be offered in the final examination for the B.Sc. degree.

LONDON.—An appeal has been issued, with the authority of the Senate, for funds to build the Francis Galton Laboratory at an estimated cost of 15,000*l*. As stated in an article in NATURE of March 16, Sir Francis Galton in his will expressed a hope that his bequest for the promotion of eugenics, amounting to about 45,000*l*., would not be used for the provision of buildings, fittings, or library. The income is accordingly being used for the salaries of the professor (Karl Pearson, F.R.S.) and his staff. A site for the proposed laboratory has been allocated by the University at University College, and sketch plans, prepared by Prof. Simpson, are printed with the appeal showing adequate accommodation for lecture-room, museum, research laboratories for eugenics and biometry, together with a room for Galtoniana. The appeal directs attention to the importance of the work to be carried on in the laboratory in relation to future legislation dealing with social problems. "It is essential that the statistical facts on which such legislation may be based shall be analysed in a purely scientific manner by workers who can give time and energy to investigation, quite independently of any ulterior end or party bias." Already the laboratory, in spite of the difficulties due to inadequate accommodation, is carrying out on a considerable scale the founder's wish to "provide information, under appropriate restrictions, to private individuals and to public authorities." Contributions and promises of support will be gratefully received by Sir Edward Busk, chairman of the Galton Laboratory Committee, at the University.

SIX lectures on "The Causes and Economic Effects of Changes in the General Level of Prices" (illustrated from the history of the nineteenth century) are being delivered by Mr. W. T. Layton at University College (University of London) on Tuesdays at 5.30 p.m., the first having been given on October 10. The lectures are open to the public without fee or ticket.

A SPECIAL course of twelve lectures, dealing with illumination, will be delivered at Battersea Polytechnic during the coming session, the first six being delivered on Tuesday evenings, beginning on October 17, and the last six on Fridays, commencing January 12, 1912. The course will be open to students and all interested in the subject. The course will deal with all illuminants, including electric, gas, oil, and acetylene lighting, the effect of light on the eye and the hygienic aspects of illumination, the measurement of light and illumination, &c. Practical problems, such as the lighting of schools, streets, factories, &c., will also be treated. The lecturers will be Prof. J. T. Morris, Mr. J. G. Clark, Mr. E. Scott-Snell, Dr. W. J. Ettles, and Mr J. S. Dow.

ADDITIONAL buildings of the Royal Albert Memorial University College, Exeter, will be formally opened by the Lord-Lieutenant of Devon, the Earl Fortescue, on Friday, October 20. The buildings are the first instalment of an enlargement scheme which was approved by the governors in 1904. The steady development of the college work has necessitated periodical enlargement of the building accommodation. The last extension, in 1899, was formally opened by his Royal Highness the Duke of York (now King George V.), and the previous extension, in 1895, by the late Duke of Devonshire. The present addition has been erected on a site purchased at the rear of the main building of the Royal Albert Memorial at a cost of 8675*l*. for land and about 16,400*l*. for the building. This occupies only about

half of the site acquired. The new buildings consist of two blocks, one for the University College and the other for the Day Training College.

THE opening lecture of the course of instruction on "Colloids" was given by Mr. E. Hatschek at the Sir John Cass Technical Institute on Friday, October 6, when the chair was taken by Dr. Rudolf Messel, president of the Society of Chemical Industry. Mr. Hatschek commenced his lecture by referring to the early work of Thomas Graham on colloids, and then dealt with the subsequent development of the subject as a borderland study between physics and chemistry. The characteristics of colloids were then examined, and an account given of laboratory products that have been prepared and of the large number of natural organic products which can be dissolved direct to form colloidal solutions such as starch, gelatine, agar, and the albumins. The importance of the subject in relation to industrial problems was next specified, reference being made to the tanning and dyeing industries, the photographic plate and paper industry, the fermentation industries, and the treatment of effluents and sewage. At the close of the lecture an experimental demonstration of the properties and methods of preparation of some colloidal solutions was given.

AMONG the scientific lectures arranged this term for advanced students, in connection with the University of London, we notice the following. A course of eight lectures on "Principles of Systematic Botany (Flowering Plants)" will be given by Dr. C. E. Moss, curator of the herbarium, University of Cambridge, in the botanical department, University College, on Thursdays, at 5 p.m., beginning on October 19. Informal meetings for the discussion of important contributions to current meteorological literature will be held at the Meteorological Office on alternate Mondays, at 5 p.m., beginning on October 23 and ending on March 25, 1912. Students who wish to attend are requested to communicate with the Reader at the Meteorological Office. A course of eight lectures on "The Manipulation and Theory of the Microscope" is being given by Mr. J. E. Barnard at King's College, on Wednesdays, at 5 p.m. A course of four lectures on "The History of Plague" will be given by Dr. C. Creighton at the University, South Kensington, on Fridays, October 20 and 27, and November 3 and 10, at 4 p.m. In all cases the lectures are addressed to advanced students of the University and to others interested in the subjects, and the admission is free, without ticket.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 2.—M. Armand Gautier in the chair.—The president announced the loss, by death, of Auguste Michel-Lévy and Joseph Louis Troost.—Emile **Picard**: Continuous solutions of integral equations of the third species.—Paul **Appell**: Functions of the fourth degree.—MM. **Esclangon** and **Courty**: Observations of the Quénisset comet and of the Brooks comet made with the large equatorial (38 cm.) of Bordeaux Observatory. Dates are given for September 26, 27, and 28. The Quénisset comet appeared as a circular nebulosity of 4′ to 5′ diameter, with a clear nucleus. The tail of the Brooks comet has been visible to the naked eye since September 17.—M. **Borrelly**: Observations of the Quénisset comet (1911*f*) made at the Marseilles Observatory with the comet finder. Positions of the comet are given for September 27 and 28. It appeared to be nearly circular, about 2′ diameter, with glimpses of a small nucleus of about the twelfth magnitude.—F. **Baldet** and F. **Quénisset**: Observation of the *gegenschein*. Attention is directed to the remarkable intensity now exhibited by the *gegenschein*, or zodiacal counterglow; it is pointed out that there is no satisfactory explanation for this phenomenon.—M. **Giacobini**: Observations of the Quénisset (1911*f*) and Beljawsky (1911*g*) comets made at the Observatory of Paris with the eastern tower equatorial of 40 cm. aperture. Positions are given for September 25, 27, and 30 for the Quénisset comet, which appears as a nebulosity of sensibly elliptical shape 45″ to 50″ in extent. The nucleus is well defined, and is of the eighth magnitude. The positions of the Beljawsky comet are given for September 30 and October 1. This comet is exceptionally bright, and has a nucleus of the third magnitude. The tail is about 15° long.—D. **Pompéiu**: The functions of complex variables.—Et. **Delassus**: Non-linear linkages.—G. **Reboul** and E. Grégoire **de Bollemont**: The transport of metallic particles under the action of heat. Sheets of copper or silver, near which is placed a sheet of porcelain or another metal, give deposits on the latter when heated. The amount of metal deposited is shown to depend to some extent upon the nature of the gas between the two plates.—Auguste **Marie** and L. **MacAuliffe**: The asymmetry of the Neanderthal, Cro-Magnon, and Spy No. 1 skulls. The application of the method proposed by M. Chervin to casts from these three skulls shows that all are asymmetrical. Three diagrams are given showing the deviations observed.—Paul **Marchal** and J. **Feytaud**: A parasite of the eggs of Cochylis and Eudemis.—E. **Roubaud**: New contribution to the biological study of Glossina. Some data on the biology of *G. morsitans* and *G. tachinoides* from the Nigerian Sudan.—L. **Boutan**: Some peculiarities relating to the mode of fixing of the crustacean *Gnathia halidaii*.

NEW SOUTH WALES.

Linnean Society, July 20. — Mr. W. W. Froggatt president, in the chair.—P. **Cameron**: Parasitic Hymenoptera from the Solomon Islands, collected by Mr. W. W. Froggatt. The parasitic Hymenoptera of the Solomon Islands are practically unknown. Mr. Froggatt's collection comprised representatives of seventeen undescribed species—Chalcididæ, 2; Braconidæ, 6; Evaniidæ, 1; and Ichneumonidæ, 8.—R. J. **Tillyard**: Further notes on some rare Australian Corduliinæ, with descriptions of new species. Seven new or rare Australian Corduliinæ are dealt with. Two new genera, Lathrocordulia and Hesperocordulia, are proposed, and four new species described. One of these is the beautiful yellow and black *Hemicordulia superba* from Pallal, New South Wales. From the same locality the female of *H. intermedia*, hitherto unknown, is also described. Two fine new species sent by Mr. G. F. Berthoud, of Waroona, West Australia, viz. *Lathrocordulia metallica* and *Hespercordulia berthoudi*, form the types of two new and interesting genera, which further bridge the gap between the two main groups of the subfamily. The latter species has a bright red and black coloration, unique amongst Corduliinæ. Lastly, a female of a magnificent new Macromia, *M. viridescens*, taken at Cape York, completes the list of new species.—R. J. **Tillyard**: The genus Cordulephya. This peculiar aberrant genus, originally monotypic and far removed from all existing forms, is enlarged by the addition of a new species, *C. montana*, from the Blue Mountains. The two species, *C. pygmaea*, Selys, and *C. montana*, are described and compared, and their full life-histories given. An interesting "theory of the two broods" is offered as a solution of the differentiation between the two, which occur at different seasons of the year.

August 30.—Mr. W. W. Froggatt, president, in the chair.—Dr. T. H. **Johnston** and Dr. J. Burton **Cleland**: The Hæmatozoa of Australian reptiles, No. 2.—A. M. **Lea**: Descriptions of new species of Australian Coleoptera, part ix. The paper contains notes on some of the types of King's and Macleay's Pselaphidæ; notes on *Xylopsocus bispinosus*, Macl., a species of Bostrychidæ, of which the male protects the female during her egg-laying period, and probably for some time afterwards; and descriptions of new species of Staphylinidæ (1), Pselaphidæ (23, including a new genus), Silphidæ (9), Byrrhidæ (1), Scarabæidæ (2), Lymexylonidæ (2), Ptinidæ (7), Tenebrionidæ (2, including a new genus, with one species of blind insects, the first blind beetle to be recorded from Queensland), and Erotyllidæ (1).—Dr. R. **Greig-Smith**: Contributions to a knowledge of soil fertility. No. 2. The determination of Rhizobia in the soil. From a perusal of the literature upon the fixation of nitrogen by the bacteria in the soil, one is led to believe that Azotobacter is the most active. It is not known how many of these organisms may be contained in 1 gram of soil; and, from Löhms's work, we imagine that the members of nitrogen-fixing bacteria are small. By making use of