LONDON.—At King's College, Prof. W. Grylls Adams, F.R.S., will continue the course of lectures on Light, and the Scientific Principles involved in Electric Lighting, during the remainder of the session. A course of practical work in Electrical Testing and Measurement with especial reference to Electrical Engineering will also be carried on under his direction in the Wheatstone Laboratory. The lectures will be given once a week—on Mondays, at 2 p.m.—and the Laboratory will be open on Wednesday and Friday from 1 to 4.

## SCIENTIFIC SERIALS

THE monthly parts of the *Journal of Botany* for 1883 contain many useful and interesting papers. Among the more important must be regarded Mr. J. G. Baker's synopsis of the genus *Selaginella*. This is not yet completed, but already extends to nearly 100 species, many of them now described for the first time. This is understood to be an instalment of a complete monograph by Mr. Baker of the Vascular Cryptogams, excluding ferns, a work eagerly demanded by botanists.—The additions to the phanerogamic flora of Great Britain are not yet completed; and the palm of recent discoveries must be awarded to Mr. Arthur Bennett. In this year's record he describes and figures two, one of them, *Potamogeton Griffithii*, new to science, from a lake in Carnarvonshire. The other, *Naias marina*, is a native of the "Broads" of Norfolk. This is rendered more interesting by the discovery, by other botanists, of another species of *Naias*, *N. alagnensis*, also during the present year, in Lancashire. It is not many years since the genus was first found in Britain; and the only species hitherto known, *N. flexilis*, has been gathered only in Scotland and Ireland.—The structure and distribution of the Characeæ are still engaging attention from Messrs. H. and J. Groves and others; and of this cryptogamic order, another species, *Chara Braunii*, has also been added to the flora of Great Britain.—Mr. H. Boswell also describes two new British mosses, *Bryum gemmiparum*, from Breconshire, and *Sphagnum torreyanum*, from Shropshire.—Messrs. R. M. Christy and H. Corder contribute an interesting paper on the cross-fertilisation of *Arum maculatum*.—Numerous other articles and short notices of more local and special interest fill up the number.

THE second part of vol. xiv. of *Pringsheim's Jahrbücher für wissenschaftliche Botanik* contains two important articles on cryptogamic botany:—Dr. A. Fischer, on the occurrence of crystals of gypsum in the Desmidieæ shows that they are of very wide distribution in the family, as well as in other freshwater algæ such as *Spirogyra*, though by no means universally present. He believes it to be simply a product of excretion in the process of metastasis, whether present in the form of crystals or dissolved in the cell-sap. Dr. O. Müller, on the law of cell division in *Melosira arenaria*, offers an important contribution to the life-history of the diatoms. By a most careful series of observations he establishes the law that "the larger daughter-cell of the $n$th generation divides in the following or $(n + 1)$st generation, while the smaller daughter-cell always divides only in the $(n + 2)$nd generation," by an argument which is too long to go into here. He deduces from this law the reason of the comparatively rare occurrence of the auxospores, by which the original size of the species is restored after the continued degradation which it necessarily undergoes in the process of division.—B. Fritsch contributes also a paper on coloured granular constituents of the cell-contents.

THE second part of vol. iv. of *Engler's Botanische Jahrbücher* for 1883 contains a continuation of its very valuable review of the more important works on systematic and geographical botany which appeared in 1882.—The other papers are:—By T. Wenzig, on the genus *Fraxinus*.—By F. Moewes, on hybrids of *Mentha arvensis* and *M. aquatica*.—By E. Warming, on the order Podostemaceæ.

*Archives of the Physical and Natural Sciences, Geneva*, December 15, 1883.—Meteorological *résumé* of the year 1882 for Geneva and the Great Saint-Bernard, by M. A. Kammermann, Assistant-Astronomer.—On the ancient lake of the Soleure district (coloured map), by M. Alph. Favre. The existence of this lacustrine basin confirms the conclusion arrived at by other geological studies, that during the early post-Glacial epoch a far greater portion of Switzerland was under water than at present.—Descriptive notice of the meteorological observatory installed on September 1, 1882, at Sentlis, canton of Appenzell, 2467 metres above sea-level.—On the periodical oscillations of the ground, determined by the spirit-level (fifth year, 1882-83), by M. P. L. Plantamour.—On the theory of dynamo-electric machines, by M. R. Clausius. These machines having in their practical development outstripped the theory of their construction, an attempt is made in this elaborate paper to expound a theory more in harmony with the results already obtained than are any of the mathematical formulas hitherto employed to represent them.

*Rendiconto of the Sessions of the Accademia delle Scienze di Bologna* for the year 1882-83. Nov. 19, 1882.—Memoir on the "null envelopes" of the second class in a given system of points affected by given coefficients, showing how, from the general formula, others may be deduced, rendering more evident the property of the envelopes, and solving some questions connected with the momenta of the second order of said system, by Prof. Ferdinando P. Ruffiani.—On three sicephalous monsters, and more particularly on the seven-month Janus recently born in Bologna, by Prof. Luigi Calori.—Note on the extremities of the motor nerve fibres in the striated muscles of the torpedo (*Torpedo marmorata*) treated with bichloride of gold and cadmium, by Prof. G. V. Ciaccio.—Microscopic researches on the traces of electric sparks incised on glass, by Prof. Elmilio Villari.—On the electric figures of condensers, by the same author.

November 26.—A systematic classification of the genus Puccinia, by Prof. Cocconi and Dr. F. Morini.—On a case of hypertrophic hepatitis, by Prof. C. Taruffi.—Symptomatic and anthropometric studies on the cretinism prevalent in the Valle d'Aosta, Piedmont, by the same author.—Some new researches on the artificial reproduction of the spleen, by Prof. Guido Tizzoni.—On the results of the measures hitherto adopted to improve the soil and climate of malarious districts in Italy, by Dr. Paolo Predieri.—A new contribution to the study of Addison's disease, by Prof. Ferdinando Verardini.

January 14, 1883.—On a fossil cetacean (*Orca cetoniensis*) recently discovered at Cetona in Tuscany, by Prof. G. Capellini.—A study of some reactions of phosphuretted hydrogen gas, by Dr. Alfredo Cavazzi.

January 28.—On a rapid method for determining the lunar motions, by Prof. A. Saporetti.—New researches on the anatomy and pathology of the placenta in mammals, by Prof. G. Escolani.

February 11.—Notes on the history of geodesy in Italy from the earliest times down to the second half of the present century, by Prof. P. Riccardi.—Experimental researches on the hypertrophy and partial regeneration of the liver, by Dr. V. Colucci.—On the relative length of the neck in both sexes, and on the best method of making these anthropometric measurements, by Dr. G. Peli.—On the preventive inoculation of contagious pleuro-pneumonia for cattle by means of intravenous injection of the virus, by Prof. A. Gotti.—Anatomical researches on five bovine monstrosities, by Prof. G. P. Piana.

## SOCIETIES AND ACADEMIES

### LONDON

Royal Society, January 10.—"Experimental Researches on the Electric Discharge with the Chloride of Silver Battery." By Warren De La Rue, M.A., D.C.L., Ph.D., F.R.S., and Hugo Müller, Ph.D., F.R.S.

*Plasticity and Viscosity of Strata.*—During our experiments we have often been struck by the evident plasticity of strata whose form at times becomes modified when they meet with an obstacle or are influenced by other causes, as, for example, the crossing of other strata produced by a separate discharge.

One of our tubes, No. 9, with a residual hydrogen vacuum, has a diaphragm in the centre $\frac{1}{4}$ of an inch, 0·63 cm., thick, through the centre of which there is a hole $\frac{1}{4}$ of an inch, 0·63 cm., in diameter. To the end of the tube is attached a potash absorption chamber, the heating and cooling of which causes a change in the number of strata; when the number of strata increases they approach closer and closer to the diaphragm, and occasionally one threads itself through it, as if squeezed through, and its form is gradually changed thereby.

A tube, No. 368, Fig. 1, with a hydrogen residue gives evidence of the viscosity of a stratum.