

ditions. The most favourable conditions for exuberant growth of flowers are a moist soil and dry air, especially the latter.—Researches on the mode of production of perfume in flowers, by M. E. Mesnard. By the action of pure hydrochloric acid on sections immersed in strongly-sweetened glycerine, the essential oils are easily separated. It is found that the oil is generally located in the epidermic cellules of the upper surfaces of the petals or sepals. In every case the oils appear to have been derived from chlorophyll. The perfume is not given off until the oil is sufficiently freed from the intermediate products, and it exhibits some inverse relation to the amount of tannin and pigment produced in the flower.—On the existence of a conidial apparatus in the *Uredinei*, by M. Paul Vuillemin.—On the presence of *Actinocamax* in the Pyrenean chalk, by MM. Roussel and de Grossouvre.—Stratigraphic consequences of the preceding communication, by M. A. de Grossouvre.—On the formation of the Arve valley, by M. Emile Haug.—On an experiment which appears to produce an artificial imitation of the doubling of the canals of Mars, by M. Stanislas Meunier.

DIARY OF SOCIETIES.

LONDON.

THURSDAY, DECEMBER 1.

LINNEAN SOCIETY, at 8.—Notes on (Ecodoma) cephalotes and the Fungi it Cultivates; J. H. Hart.—On a Small Collection of Crinoids from the Sahul Bank, North Australia; Prof. F. Jeffrey Bell.—Descriptions of Twenty-six New Species of Land Shells from Borneo; E. A. Smith.
 CHEMICAL SOCIETY, at 8.—On the Formation of Orcinol and other Condensation Products from Dehydroacetic Acid; J. Norman Collie.—Isolation of Two Predicted Hydrates of Nitric Acid; S. U. Pickering.—Anhydrous Oxalic Acid; W. W. Fisher.—Observations on the Origin of Colour and of Fluorescence; W. N. Hartley.—The Origin of Colour—Azobenzene; H. E. Armstrong.—The Reduction Products of *aa'* dimethyl *aa'* diacetylpentane; Dr. Kipping.—The Products of the Action of Sulphuric Acid on Camphor; Drs. Armstrong and Kipping.—Methods for Showing the Spectra of easily Volatile Metals and their Salts, and of Separating their Spectra from those of the Alkaline Earths; W. N. Hartley.
 INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Experimental Researches on Alternate Current Transformers; Prof. J. A. Fleming, F.R.S. (Discussion).
 LONDON INSTITUTION, at 6.—Photographs of Flying Bullets, &c. (Illustrated); Prof. C. V. Boys, F.R.S.

SUNDAY, DECEMBER 4.

SUNDAY LECTURE SOCIETY, at 4.—Bacteria and Infectious Diseases (with Oxy-hydrogen Lantern Illustrations); Dr. E. E. Klein, F.R.S.

MONDAY, DECEMBER 5.

SOCIETY OF ARTS, at 8.—The Generation of Light from Coal Gas; Prof. Vivian B. Lewes.
 VICTORIA INSTITUTE, at 8.—Principles of Rank among Animals; Prof. Parker.
 SOCIETY OF CHEMICAL INDUSTRY, at 8.—A New Form of Filter Press for Laboratory Use; C. C. Hutchinson.—The Production of Acetic Acid from the Carb-hydrates; Messrs. Cross and Bevan.—Electrolytic Soda and Chlorine; the Present Aspects of the Question; Messrs. Cross and Bevan.
 LONDON INSTITUTION, at 5.—Reading as a Recreation; Edmund Gosse.
 ROYAL INSTITUTION, at 5.—General Monthly Meeting.
 ARISTOTELIAN SOCIETY, at 8.—Symposium—Does Law in Nature exclude the Possibility of Miracle? R. J. Ryle, Rev. C. J. Shebbeare, A. F. Shand.

TUESDAY, DECEMBER 6.

ZOOLOGICAL SOCIETY, at 8.30.—A Revision of the Genera of the Alcyonaria Stolonifera, with Descriptions of One New Genus and several New Species; Sydney J. Hickson.—Upon the Convulsions of the Cerebral Hemispheres in Certain Rodents; F. E. Beddard, F.R.S.—On a New Monkey from South-East Sumatra; Prof. Collett.
 INSTITUTION OF CIVIL ENGINEERS, at 8.—Monthly Ballot for Members.—The Manufacture of Small Arms; John Rigby. (Discussion).

WEDNESDAY, DECEMBER 7.

GEOLOGICAL SOCIETY, at 8.—Note on the Nufenen-stock (Lepontine Alps); Prof. T. G. Bonney, F.R.S.—On some S-histose "Greenstones" and Allied Hornblende Schists from the Pennine Alps, as Illustrative of the Effects of Pressure-Metamorphism; Prof. T. G. Bonney, F.R.S.—On a Secondary Development of Biotite and of Hornblende in Crystalline Schists from the Binnenthal; Prof. T. G. Bonney, F.R.S.—Geological Notes on the Bridgewater District in Eastern Ontario; J. H. Collins.
 SOCIETY OF ARTS, at 8.—The Chicago Exhibition, 1893; James Dredge.
 ENTOMOLOGICAL SOCIETY, at 7.—Further Observations upon Lepidoptera (Illustrated by the Oxy-hydrogen Lantern); Edward B. Poulton, F.R.S.—The Effects of Temperature on the Colouring of *Pieris napi*, *Vanessa atalanta*, *Chrysophanus plebeus*, and *Teprosia punctulata*; Frederic Merrifield.—Notes on Hydroptilidæ belonging to the European Fauna, with Descriptions of New Species; Kenneth J. Morton. (Communicated by Robert McLachlan, F.R.S.)—On some Neglected Points in the Structure of the Pupa of Heterocerous Lepidoptera, and their Probable Value in Classification; with some Associated Observations on Larval Prolegs; Dr. Thomas Algernon Chapman.—Description of a New Species of Butterfly, of the Genus *Calinaga*, from Siam; James Cosmo Melville.

THURSDAY, DECEMBER 8.

ROYAL SOCIETY, at 4.30.—On the Photographic Spectra of some of the Brighter Stars; Prof. J. Norman Lockyer, F.R.S.—Experiments in Examination of the Peripheral Distribution of the Fibres of the Posterior

Roots of some Spinal Nerves; Dr. Sherrington.—Preliminary Account of the Nephridia and Body Cavity of the Larva of *Palæmonetes varians*; Edgar J. Allen.
 MATHEMATICAL SOCIETY, at 8.—Note on Cauchy's Condensation Test for the Convergence of Series; Prof. M. J. M. Hill.—Additional Note on Secondary Tucker Circles; J. Griffiths.—Notes on Determinants; J. E. Campbell.—A Geometrical Note; R. Tucker.
 LONDON INSTITUTION, at 7.—A Plea for Catholicity of Taste in Music (Illustrated); Sir Joseph Barnby.

SATURDAY, DECEMBER 10.

INSTITUTION OF CIVIL ENGINEERS, 2 to 4.—Students' Visit to the Machinery and Inventions Division, South Kensington Museum.

BOOKS, PAMPHLETS, and SERIALS RECEIVED

BOOKS.—Berzelius und Liebig, Briefwechsel 1831-1845 (München, Lehmann).—A Short Manual of Orthopædy, Part I.; H. Bigg (Churchill).—Congrès International de Zoologie, Deux Session à Moscou: Première Partie (Moscou).—Congrès International d'Archéologie, 11^{ème} Session à Moscou, vol. 1 (Moscou).—A Catalogue of British Jurassic Gasteropoda; W. H. Hudleston and E. Wilson (Dulau).—Annuaire de l'Observatoire Municipal de Montsouris, 1892-93 (Paris, Gauthier-Villars).—Les Textiles Végétaux; H. Lecomte (Paris, Gauthier-Villars).—Essais d'Or et d'Argent; H. Gautier (Paris, Gauthier-Villars).—Past and Future; C. M. Jessop (K. Paul).—Toothed Gearing; A Foreman Pattern Maker (C. Lockwood).—Modern Views of Electricity, 2nd edition; Prof. O. J. Lodge (Macmillan).—The Universal Atlas, Part 21 (Cassel).—Grasses of the Pacific Slope, Part 1; Dr. G. Vasey (Washington).—Das Keimplasma, Eine Theorie des Vererbung; Prof. A. Weismann (Jena, Fischer).—Die Zelle und die Gewebe; Prof. O. Hertwig (Jena, Fischer).—Extinct Monsters; Rev. H. N. Hutchinson (Chapman and Hall).—The Algebra of Coplanar Vectors and Trigonometry; R. B. Hayward (Macmillan).—Science in Arcady; Grant Allen (Lawrence and Bullen).—The Chemical Basis of the Animal Body; Dr. A. Sheridan Lea (Macmillan).
 PAMPHLETS.—Quelle est la Race la plus Ancienne de la Russie Centrale; A. Bogdanow (Moscou).—Descriptive Notes on certain Implements, Weapons, &c., from Graham Island, Queen Charlotte Islands, &c.; A. Mackenzie.—Notes on the Shuswap People of British Columbia; G. M. Dawson.—Some Laws of Heredity and their Application to Man; S. S. Buckman (Gloucester).—Sur la Constitution des Dépôts Quaternaires en Russie et leur relations au Trouilles Résultant de l'Activité de l'Homme Préhistorique; S. Nikitin (Moscou).—Ueber die Entwicklung von Milz und Pankreas; Dr. C. von Kupffer (München).—Verg.-Anatomische Studien über die Nerven des Armes und der Hand; Dr. W. Höfer (München).—Die Lendennerven der Affen und des Menschen; Dr. A. Utschneider (München).—Ueber das Vorkommen Offener Schlundspalten; Dr. E. Tettenhamer (München).
 SERIALS.—Mitt. der Deutschen Gesellschaft für Natur und Völkerkunde Ostasiens in Tokio, 50 Helt (Tokio).—Traité Encyc. de Photographie, Premier Supplément; *A cinquième fascicule*, C. Fabre (Paris, Gauthier-Villars).—Natural Science, Decr. (Macmillan).—A Monograph of Oriental Cicadidæ, Part 7; W. L. Distant (London).

CONTENTS.

PAGE

Chemical Lecture Experiments. By Sir Henry E. Roscoe, F.R.S.	97
A Manual of Photography. By W. J. L.	98
Matriculation Chemistry	99
Our Book Shelf:—	
Cooke: "Vegetable Wasps and Plant Worms; a Popular History of Entomogenous Fungi, or Fungi Parasitic upon Insects"	99
Nayudu: "Notes on Qualitative Chemical Analysis"	100
"Science Instruments"	100
Letters to the Editor:—	
Universities and Research.—Prof. George Francis Fitzgerald, F.R.S.	100
The Stars and the Nile.—Captain H. G. Lyons, R.E.	101
A Palæozoic Ice Age.—W. T. Blanford, F.R.S.; Henry F. Blanford, F.R.S.	101
Geology of Scotland.—Prof. Grenville A. J. Cole	101
British Earthworms.—William Blaxland Benham	102
Egyptian Figs.—Rev. George Henslow	102
Iridescent Colours.—Baron C. R. Osten Sacken	102
The Afterglow.—Soreno E. Bishop	102
Osmotic Pressure. By J. W. Rodger	103
A Sanitarian's Travels. (Illustrated.)	105
Gauss and Weber	106
The Anniversary of the Royal Society	106
Notes	111
Our Astronomical Column:—	
Comet Holmes (November 6, 1892)	114
A Bright Comet	114
Astronomical Instruments up to Date	114
Motion of β Persei	115
Proper Motions	115
Geographical Notes	115
Mr. Joseph Thomson's Journey to Lake Bangweolo	115
University and Educational Intelligence	116
Societies and Academies	116
Diary of Societies	120
Books, Pamphlets, and Serials Received	120