

for the *soirée* at the Owens College.—Prof. Boyd Dawkins, F.R.S., brought before the notice of the Society the conditions under which the palaeolithic implements are found in the river-strata and in the caves, in association with the extinct mammalia, such as the mammoth and woolly rhinoceros. Although the number of flint implements from the river-strata in various collections was very great, yet it is small when viewed in connection with the enormous quantity of gravel removed in their discovery. They are not evenly distributed, but cluster round certain spots. Their discovery in India along with the extinct mammalia proves that man was living, both in Europe and in Southern Asia from the Ganges to Ceylon, in the same rude uncivilised state, at the same time in the life-history of the earth. He also called attention to the art of the hunters of the reindeer and mammoth in the south of France, Belgium, and Switzerland, an art eminently realistic, and by no means despicable; and he inferred from their art and implements and the associated animals that they may be represented at the present day by the Eskimos.—On a colorimetric method of determining iron in waters, by Mr. Thomas Carnelly, B.Sc.; communicated by Prof. H. E. Roscoe, F.R.S.

PHILADELPHIA

Academy of Natural Sciences, June 23.—Dr. Ruschenberger, president, in the chair.—Mr. B. Waterhouse Hawkins gave his views on the construction of the pelvis of Hadrosaurus.—Prof. Cope described a species of Dipnoan fish of the genus *Ctenodus*, from the coal measures of Ohio.

June 30.—Dr. Ruschenberger, president, in the chair.—Anatomical notes by Dr. Chapman were read, On the disposition of the *Latissimus Dorsi*, &c., in *Ateles geoffroyi* and *Macacus rhesus*, and On the Flexor Brevis Digitorum in *Ateles geoffroyi*.

On report of the committee to which it was referred, the following paper was ordered to be published:—"On habits of some American species of birds," by Thomas G. Gentry.

July 7.—Dr. Ruschenberger, president, in the chair.—Prof. Persifor Frazer, jun., continued the account of his attempts to reconcile the results of the analyses of minerals by the best chemists with formulas which were constructed on the doctrine of quantivalence, *i.e.*, the known atom-saturating power of the elements.—On change of habit in *Smilacina bifolia*. Mr. Thomas Meehan stated that he had recently seen a case where the stolons had advanced from the ground, and up the trunk of a large chestnut tree, to the height of about 2 ft.; the original stolons for several years back having died away, and the plant taken in a purely epiphytal character. The roots and stolons mostly had penetrated the coarse rough bark of the chestnut tree, the leaves only being chiefly visible.

July 14.—Dr. Ruschenberger, president, in the chair.—Prof. Cope stated that the snakes of the genus *Storeria*, B. and G., are viviparous like *Eutania* and other tropidonotina genera to which they are allied.—Prof. Cope gave a synopsis of the result of his work in connection with Hayden's United States Geological Survey of the Territories during the season of 1873. He stated that the investigation covered principally the paleontology of the Cretaceous, Eocene, Miocene, and Pliocene periods in Colorado. The whole number of species of vertebrata obtained was 150, of which 95 were at the time new to science. The Cretaceous species were both terrestrial and marine, and the Miocene were most numerous. These numbered 75 species, of which 57 were new.

PARIS

Academy of Sciences, Oct. 19.—M. Bertrand in the chair.—The following papers were read:—On series of similar triangles, by M. Chasles.—Observation of the solar eclipse of Oct. 10, 1874, with the spectroscope; tables of the observations of solar prominences from Dec. 26, 1873, to Aug. 2, 1874, by P. Secchi.—On the dissociation of hydrated salts, by M. H. Debray. This is a reclamation of results published by M. G. Wiedemann in a memoir "On the dissociation of the hydrated sulphates of the magnesian group."—On magnetic condensation in soft iron, by M. A. Lallemand. The author describes a series of experiments illustrating this property of soft iron. The condensation appears to depend on the intensity of the magnetism developed in the iron.—Hypothesis of the imponderable ether, and on the origin of matter, by M. Martha-Beker.—On the distribution of the sugar and mineral principles in beet, by M. Ch. Violette. The author has arrived at the following conclusions:—1. The proportions of sugar contained in the sacchariferous and cellular tissues of beet differ but little. 2. The sugar increases in arithmetical progression along the axis of the root, from the upper extremity to the tip. 3. The mineral con-

stituents do not undergo any regular variation along the axis, but chlorides are more abundant towards the upper extremity than at the tip. 4. Mineral constituents are more abundant in the cellular than in the sacchariferous tissues. 5. Chlorides are considerably more abundant in the cellular than in the sacchariferous tissues. 6. The chlorides are more liable to variation in the two kinds of tissues than the other mineral principles.—Experiments on the circular compass made on board the despatch-ship *Faon* and the armour-plated frigate *Savoie*, by M. E. Duchemin.—Remarks concerning recent notes by MM. Signoret and Lichtenstein on the different known species of the genus *Phylloxera*, by M. Balbiani. The author points out that *P. Lichtensteinii* recently described by him is specifically distinct from *P. Rileyi*, and again restates his belief that the species seen by M. Lichtenstein on *Quercus coccofera* was not *P. vastatrix*.—Observations relating to a recent note by M. Rommier "On experiments made at Montpellier on phylloxerised vines with M. Petit's coal-tar," by M. Balbiani.—Influence of temperature on the development of *Phylloxera*; extract from a letter from M. Maurice Girard to M. Dumas. Other communications relating to *Phylloxera* were received from various authors.—Generalisation of Euler's theorem on the curvature of surfaces, by M. C. Jordan.—Observations relating to a recent note by M. Lecoq de Boisbaudran on supersaturation, by M. D. Gernez.—Researches on the decomposition of certain salts by water, by M. A. Ditte: When water is added to a solution of mercuric sulphate, a basic sulphate is precipitated. This basic salt forms the subject of the present research.—The colouring matter of the blood (*hæmatosine*) contains no iron, by MM. C. Paguelin and L. Jolly. The authors describe the preparation and purification of *hæmatosine*. By repeated macerations with alcoholic ammonia and subsequent filtration, *hæmatosine* is at length obtained completely free from iron.—On the movement excited in the stamens of *Synantheræ*, by M. E. Heckel.—M. F. Garrigou communicated an analysis of the stalaclitic deposits found in the chimneys of iron forges.—During the meeting M. Le Verrier presented the meteorological atlas of the Observatory of Paris, containing observations for the years 1869, 1870, and 1871.

BOOKS RECEIVED

ENGLISH.—Elementary Treatise on Practical Chemistry; Frank Clowes, B.Sc. (Churchill).—Animal Mechanism (International Series); E. J. Marey (H. S. King and Co.).—A Treatise on Magnetism; H. Lloyd, D.D. (Longmans).—Brinkley's Astronomy; Stubbs and Brünnon (Longmans).—A Peep at Mexico; J. L. Geiger, F.R.G.S. (Trübner).—Pharmacographia; Flückiger and Hanbury (Macmillan).—Cave Hunting; W. B. Dawkins (Macmillan).—Telegraph and Travel; Col. Sir F. J. Goldsmid, C.B., K.C.S.I. (Macmillan).—Sun and Earth great Forces in Chemistry; T. W. Hall, M.D., L.R.C.S.E. (Trübner).—Magnetism; H. Lloyd, M.D., D.C.L. (Longmans).—The Preplastic Theory of Life; L. Peale (Baillière and Co.).—Leeds Philosophical and Literary Society, Annual Report, 1873-74.—Fiske's Cosmic Philosophy (Macmillan and Co.).

AMERICAN.—Butterflies of North America, Parts I. and II.; W. H. Edwards (Hurd and Houghton, New York).

FOREIGN.—Atti della Reale Accademia Dei Lincei, vol. xxvi.—Mémoire sur la maladie de la Vigne, et sur son traitement; Louis Faucon (Paris).—Études sur la nouvelle maladie de la Vigne; Maxime Cornu (Paris).—Études sur la nouvelle maladie de la Vigne dans le Sud-Est de la France; M. Duclaux (Paris).—Les Arachnides de France; Eugène Simon (Paris).—Anthropogénie; Ernst Hæckel (W. Engelmann, Leipzig).

COLONIAL.—Elementary Dynamics; W. G. Willson, M.A., &c. (Thacker and Co., Calcutta).—Report of the Meteorological Reporter to the Government of Bengal; H. F. Blandford (Calcutta).—Patents and Patentees; W. H. Archer (Melbourne).

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