calculated is likely to be as near to the true one as any prediction we are able to make.

| Greenwich mean time, May 16. | Longitude E. | Latitude N. | Duration of totality. |
|---|---|---|---|
| h. m. s. | ° ′ | ° ′ | m. s. |
| 18 22 30 ... | 30 18·2 ... | 25 50·9 ... | 1 9·2 |
| 18 23 45 ... | 30 58·0 ... | 26 11·6 ... | 1 10·6 |
| 18 25 0 ... | 31 37·0 ... | 26 31·9 ... | 1 12·0 |
| 18 26 15 ... | 32 15·3 ... | 26 51·8 ... | 1 13·3 |
| 18 27 30 ... | 32 52·9 ... | 27 11·2 ... | 1 14·6 |
| 18 28 45 ... | 33 29·9 ... | 27 30·2 ... | 1 15·9 |
| 18 30 0 ... | 34 6·1 ... | 27 48·9 ... | 1 17·1 |
| 18 31 15 ... | 34 41·9 ... | 28 7·2 ... | 1 18·3 |
| 18 32 30 ... | 35 17·2 ... | 28 25·2 ... | 1 19·5 |

Thus in longitude 31° 37′ E., latitude 26° 32′ N., a point close upon the Nile, the duration of the total phase is 1m. 12s., and the middle at 20h. 31m. 28s. local mean time. The central line crosses the Nile about a degree north of Luxor, one of the stations occupied for the observation of the last Transit of Venus.

A NEW ASTRONOMICAL MAGAZINE.—M. Flammarion has commenced the publication of a monthly periodical intended to give an account of the progress of astronomy and allied subjects in popular language. His first number contains an article on the history of the Observatory of Paris, with illustrations showing the establishment as it existed in 1672, from the frontispiece to Lemonnier's "Histoire Céleste" (a work which has now become somewhat rare), and in its actual state, with the additional grounds to the south of the main building, extending to the Boulevard Arago. The number also includes M. Flammarion's observations upon the brightness of the great comet of 1881, as compared with stars, from June 23 to September 4, commenced at Paris and concluded in the Alps at an altitude of 2000 metres. Referring to Prof. Winnecke having observed this comet as late as January 8, 1882, M. Flammarion remarks: "On n'a probablement jamais suivi une comète à une pareille distance." This, however, is a mistake. The distance of the comet of 1881 from the earth at the time of Prof. Winnecke's observation was 3·08 (the earth's mean distance from the sun being taken as unity): but the following comets were observed at greater distances:—Donati's comet, 1858, to 3·14, Colla's of 1847 to 3·18, the great comet of 1811 to 3·50, Mauvais' Comet, 1848, to 4·40, the great comet of 1861 to 4·70, and the extraordinary comet of 1729 to 5·23, notwithstanding the inferior telescopes of that day. The magazine is well printed and illustrated, and will doubtless be popular, especially with amateurs in France, who appear to be a much more numerous class than formerly.

## *UNIVERSITY AND EDUCATIONAL INTELLIGENCE*

OXFORD.—There will be an election in next June at Magdalen College to at least one Scholarship in Natural Science, the conditions of election being subject to any new Statutes which may be made by the University Commissioners. The examination in Natural Science will be held in common with Jesus College, at which an election will be made to one Natural Science Scholarship, and possibly one Exhibition. Questions will be set relating to General Physics, to Chemistry, and to Biology; but candidates are recommended not to offer more than two of these subjects.

The value of the Scholarship is 80*l.* a year, and of an Exhibition 40*l.* Neither Scholarships nor Exhibitions will be awarded unless properly qualified candidates offer themselves.

Candidates for the Scholarship and Exhibition at Jesus must be natives of Wales or Monmouthshire, or persons who shall have been educated for the four years last preceding their election (or last preceding their matriculation if already members of the University) at a school or schools in Wales or Monmouthshire . . . if any such persons be found of sufficient merit and fit to be scholars of the College in the judgment of the electors.

Mr. J. R. Wynne-Edwards, of Giggleswick School, has been elected to a Junior Studentship for Natural Science at Christ Church, Oxford. At the same examination a second studentship was awarded to Mr. W. H. Pendlebury, of Manchester School, and an Exhibition was awarded to Mr. R. W. Lancaster, Commoner of Christ Church. There were thirty-five candidates.

CAMBRIDGE.—From the University accounts for 1880-81 just published, it appears that the disposable income of the year amounted to about 30,500*l.*, of which only about 3300*l.* was from property, while 27,200*l.* was derived from matriculation, examination, and degree fees, and quarterly payments from members of the University. Of this sum over 11,300*l.* was expended for strictly scientific purposes, to which also further receipts from special endowments, amounting to 2950*l.*, were devoted. It cannot be said that the University as such spends sparingly for scientific purposes in proportion to its income.

Mr. Donald McAlister has been approved as a teacher of medicine, and Mr. A. Sedgwick as a teacher of comparative anatomy, for the purpose of giving certificates to medical students.

## *SOCIETIES AND ACADEMIES*

### LONDON

**Geological Society**, February 8.—R. Etheridge, F.R.S., president, in the chair.—Ridley Henderson, William John, and James Robert Millar Robertson, M.D., were elected Fellows, and Prof. S. Lovén, of Stockholm, a Foreign Member of the Society.—The following communications were read:—Description of some Iguanodon remains discovered at Brook, Isle of Wight, indicating a new species, *Iguanodon Seelyi*, by J. W. Hulke, F.R.S.—On a peculiar bed of angular drift on the high Lower Chalk Plain between Didcot and Chilton, by Prof. J. Prestwich, F.R.S. In making a railway from the main line to Chilton, this bed of drift was cut through for a depth of about 1¼ mile. It lies on a flat plain extending from the foot of the escarpment of upper chalk to the top of that of lower chalk. In places it is full 28 feet thick. At first a fine chalk rubble, it becomes after a while coarse, and s divided by clay beds into an upper and a lower deposit. Here small boulders and bones occur, the latter much shattered; but *Elephas primigenius*, *Rhinoceros tichorhinus* (?), *Bison priscus*, *Cervus tarandus*, *Equus*, &c., have been identified. The boulders are Sarsen-stone, and there are small fragments of flint. Shells of *Pupa marginata*, *Helix hispida*, and *H. pulchella* have been found. The drift (which is widely spread) is from 150 to 260 feet above the Thames, at highest 407 feet above the sea. The author compares it with the rubble-beds overlying the raised beaches of Sangatte and Brighton. It is unconnected with any river-course, is not of marine origin, and its materials, where not local, are derived from the southward.

**Anthropological Institute**, February 7.—F. G. Hilton Price, F.S.A., treasurer, in the chair.—It was announced that the following new Members had been elected since the last meeting:—Dr. Brabazon Casement, F. T. Hall, Miss Marshall, R. M. Connolly, Mrs. R. M. Connolly, T. Dixon, Mrs. T. Dixon, W. K. Foster, T. Ridgway.—Mr. Edward C. Hore read a paper on the twelve tribes of Tanganyika. The author described the distribution of the tribes in East Central Africa: A narrow margin of a doubtful civilisation on the east coast—one to two hundred miles of small native tribes fast losing their distinctive nationalities and tribal customs and arts, and mixed with semi-civilised half-castes—then a narrow interval, more or less desert, seems to be as well the refuge of robbers and renegades, as a natural boundary between the first-mentioned tribes, and the next tract of from two to four hundred miles occupied by tribes of uneasy and apparently warlike aspect, and retaining to more considerable extent the original arts and customs; another narrow border of debateable country again separates these from the more prosperous, peaceful, and civilised tribes of the equatorial lake regions, a few of which the author described. The more northern tribes on the lake are an active and handsomely formed people, with obvious traces of the Abyssinian race, but many distinct differences are noted amongst the twelve tribes. The writer laid stress upon the fact of having lived and travelled among these tribes for four years, and never having failed in making some friendly negotiations with those visited. Three stations have already been occupied by the London Missionary Society, who will shortly send out a steel vessel to navigate the lake and maintain more stations on its shores.—Mr. George W. Bloxam read a note on a Patagonian skull brought from Carmen, at the mouth of the Rio Negro [lat. 44°], by Capt. Hairby.—A paper on the Napo Indians, by Mr. Alfred Simson, was read.

**Royal Horticultural Society**, February 14.—Sir J. D. Hooker in the chair.—*Proliferous Acorn-cups:* Sir J. D. Hooker

exhibited malformed cups of *Quercus Ilex*, the evergreen Oak, received from Mr. F. Moore, of the British Museum. The tree grows on the cliff's edge, in the Isle of Wight. Minute acorns appeared to have been produced in the axils of the bracts which formed the cups.—*Carnation Disease:* Mr. W. G. Smith exhibited specimens of carnations received from Dr. Hogg, attacked by the nematoid worm, *Anguilula.*—*Root Malformation:* Dr. M. T. Masters showed a specimen of elm-root much distorted in places, in consequence of meeting with obstructions in growing in Lias limestone rock. It was lately figured and described in the *Gardener's Chronicle* (p. 147), and was received from Mr. Ingram, of Belvoir Castle.—*Variation in Pear-Leaf:* Mr. R. D. Blackmore exhibited a three-lobed leaf which had been produced after root-pruning, such being in this case a reversion to the primitive character of the plant. Mr. Henslow remarked that in some cases the change from a simple to a lobed and compound state is the result of further development, as may be easily traced in blackberries and raspberries.—*Apparent Superfœtation in the Pea:* Mr. J. Laxton, of Bedford, forwarded a communication, describing some experiments in fertilising a flower with the pollen of six other varieties. The conclusions he drew from the appearance of the peas and flowers subsequently produced by the seedlings, were that (1) pollen of more than one variety of pea used to cross-fertilise the same flower, may influence more than one ovule in the same ovary; (2) that there is some evidence of the pollen from more than one variety affecting the same ovule.—*Report on Winter Losses, &c., in Plants:* The secretary, the Rev. G. Henslow, gave an account of the progress he had made in compiling statistics for a report on the meteorological phenomena of, and consequent injury to plants in severe winters. He had obtained particulars of severe winters from A.D. 220 to 1881; but those during which destruction of, and injuries to plants had been specially recorded, were the following eight:—1851-52, 1852-53, 1859-60, 1860-61, 1864-65, 1878-79, 1879-80, 1880-81. He had collected all the information he had at present been able to find with reference to these winters, and had drawn up, first, a short account of the principal meteorological phenomena of the year *preceding* each winter, as well as of the winter itself—as the behaviour of a plant under frost so much depends upon its previous conditions; in each case such was followed by details of injuries to and losses of plants over as many places in the British Isles as possible. The importance of registering meteorological phenomena and the losses in several winters lay in the fact that the conditions of the winters respectively differed in many ways from one another. The consequence was that *the immediate cause* of plants succumbing to frost was not always the same. There would be an Introduction dealing with several interesting matters bearing on meteorology and plant-injuries, and he proposed completing it with copious indices, so that no difficulty would be met in finding the exact behaviour of every plant in any country and in any winter. A discussion followed, in which the great importance of elaborating the report as fully as possible, and of speedily publishing it, were insisted on.

**Victoria (Philosophical) Institute**, March 6.—A meeting of this Society took place at its house, 7, Adelphi Terrace, when a paper was read by Mr. J. E. Howard, F.R.S.

## PARIS

**Academy of Sciences**, February 27.—M. Blanchard in the chair.—The following papers were read:—On double salts of mercury, by M. Berthelot. This relates to chlorobromides, iodo-bromides, and chlorocyanides of mercury, iodocyanide and bromocyanide of mercury and potassium, &c.—On the action of strong doses of strychnine on the motivity of nerves in mammalia, by M. Vulpian. They abolish the motivity in mammalia as well as in frogs. The quantity of strychnine necessary is greater than that of curare for the same result. (Nicotine, too, in sufficient dose, abolishes the motivity of motor nerves).—Induced currents of polar interversions, by M. Du Moncel. The currents from displacement of a coil on an iron bar, through a fixed magnetic field, are not of the same nature as those from displacement (in a fixed magnetic field) of this bar, reacting directly on the coil. In the former case those generated by each half of the magnetised bar are in contrary directions, whereas in the other case they are always in the same direction, and their intensity increases with the amount of displacement, but it becomes almost nil in a complete movement of the coil in the former case.—Colouring-matter formed in flour-paste, by M. Lecoq de Boisbaudran. Violet is sometimes formed by a small organism in the surface cells of paste kept long in moist air. Different atmospheres were tried with the (fertilised) paste, and acetic acid vapour seemed the most favourable to production of the colour. The colouring matter is insoluble in water, but soluble in alcohol and ether; in the dry state it has a metallic lustre, like aniline colours. The author describes its spectral and other properties.—Geological and zoological relations of Campbell Island with neighbouring southern portions of land, by M. Filhol. The two principal geological elements of Campbell Island are a band of limestone, and lavas (the former anterior as a formation). The island seems to have appeared in the end of the Pliocene epoch. The New Zealand Eocene, Miocene, and early Pliocene lavas are quite different from those of Campbell, which contain mineral anorthite (a known characteristic of post-pliocene lavas). The geological age of the island is determined by the epoch of the volcanic eruptions. M. Filhol finds his conclusion confirmed by zoology.—On the physiological character of tendinous contraction, by M. Guérin. This contraction has been supposed of *reflex* order, a return action of the spinal cord, provoked by direct excitation of the nerves in the tendon. M. Guérin here contends that it is absolutely of the same order as muscular contractility, tendons showing both voluntary and involuntary contraction, like muscles.—On the employment of bitumen of Judæa against vine diseases, by M. de Lafitte. He recalls earlier observations on the subject than those noticed by M. Abric, by Count de Bertou.—M. Maumené, in a provisional note, said he was able to offer incontestable proof of the individual existence of $H_2N$, and its decided alkalinity with regard to active colours and acids. He hopes to do the same for HN.—Observations of the comet $g=$ VIII. 1881, and of planets (221) and (222) at the Paris Observatory, by M. Bigourdan.—Observations of the planet Palisa (221) at Marseilles Observatory, by M. Borrelly.—On the successive differentials of functions of several variables, and on a property of algebraic functions, by M. Darboux.—On the integration of differential equations by series, by M. Poincaré.—On certain uniform functions of two independent variables and on a group of linear substitutions, by M. Picard.—Gastric microzymas and their digestive power, by M. Bechamp. He isolated some from the juice obtained with artificial fistulas. Their action on fecula, cane-sugar, fibrine, caseine, and primov-albumen is described. They do not act on albuminoid matters in neutral matter. By their power of action in an acid medium they are distinguished from pancreatic microzymas; the latter, too, give crystallisable compounds of decomposition, as leucin and tyrosin, while the former do not.—New observations of apparent death in new-born infants treated successfully with a bath at 50°, by M. Campardon.—Analysis of a volcanic ash ejected by Etna on January 23, 1882, by M. Ricciardi. This contained silica 37·82, sulphuric acid 20·57, alumina 9·97, protoxide of iron 14·05, lime 11·98, with a little magnesia, chlorine, soda, and potash. The recent appearances of Etna seem to indicate a fresh paroxysm of the volcano.

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