

ording time by electricity. 2. Description of a Remontoir Clock invented by M. Groux. 3. Observations on certain districts in North Wales with reference to the final wasting and disappearance of the glaciers. In the last of these papers the author called attention to the evidence that Wales had in the glacial epoch been occupied by a great ice sheet from which only the summits of the mountains had projected. Much of the so-called drift on them, he urged, was only moraine matter deposited and spread on slopes during the retreat of this ice-sheet, when it had shrunk up into true glaciers occupying the valleys. He described the distribution of this and the arrangement of some of the moraines; and in conclusion called attention to a very remarkable deposit consisting wholly or almost wholly of diatoms, which existed in many of the mountain lakes of North Wales. The diatoms in these were identical with species which came from Greenland.

## NORWICH

Norfolk and Norwich Naturalists' Society, Oct. 29.—A list of West Norfolk fungi was contributed by Mr. C. B. Plowright. It appears that Mr. Plowright has collected and identified no less a number than 600 species of fungi within a radius of fifteen miles round Lynn; these have all been gathered by himself, but he hopes, through the assistance of several gentlemen in other parts of the country, to extend the area included in the list, and add largely to the number of species, the total number of British fungi being about 3000 species.

## PHILADELPHIA

Academy of Natural Sciences, May 7.—Mr. Thomas G. Gentry called the attention of the Academy to what he regarded as a rare and remarkable case of hybridism, which occurred between *Macacus nemestrinus*, male, and *Macacus cynomolgus*, female. After exhibiting an alcoholic specimen of the young, and a stuffed specimen of the mother which was clearly identified as *Macacus cynomolgus*, he detailed the leading characters of the two parents. He stated that the male differed from the female in being more robust and of greater dimensions; in the almost perfect smoothness of the face, which is of a pale flesh colour, while in the female it is black and invested with a close growth of short black hairs; in the absence of a crest upon the head of the male, which is a prevailing characteristic of the species (*M. nemestrinus*), and its presence in the female, which is a prominent feature of the species to which she belongs; in colour; and, lastly, in the unequal development of the caudal appendage, which in the male is about seven inches in length, and densely clothed with long hairs, while in the female it is twice the length, and nearly naked for more than two-thirds of its extent.

May 14.—Mr. Thomas Meehan observed that on several occasions, he had offered some facts and suggestions tending to prove that what are popularly termed Pine needles are not properly leaves, but rather branchlets, which, through the real leaves becoming attached for nearly their whole length to the axis or stem, had of necessity taken on themselves the office of leaves. He now wished to offer two additional observations in favour of the axial origin of these so-called leaves. In plants in general the leaves unfolded contemporaneously with the branches or axis. He could not call to mind an instance where the axis first extended to its full length before the leaves ventured to push forth from the nodes. The axial buds usually remained dormant until this final length was approached. When this occurred, or if anything happened to destroy the apex of the growing shoot, then the axial buds pushed into growth, and never to any great extent before. In the Pine family we had the following axial experience:—The buds which bore the needle were axial buds, situated at the base of the scale—the adnated leaf as he maintained. These buds remained nearly at rest until the axis had reached its full length, and in this respect coincided with the axial buds of trees in general. A pine tree in the spring season presented the appearance of an immense chandelier, with its long axial shoots as the naked burners. In this respect it is apparent that, regarding the fascicles of pine needles as branchlets, the law of folial development coincidental with axial growth finds no exception in the pine family. The next striking consideration was one derived from the nature of the inflorescence. In vegetable morphology, the floral system of plants was made up of neither leaf nor axis separately, but conjointly of both. In the inflorescence of the pine, the male catkins each took the place of a fascicle. The axial bud at the base of the leaf scale, instead of a bunch of needles, developed as a spike of flowers. This spike or catkin is metamorphosed needles. If these needles were leaves merely,

we could hardly expect inflorescence to be formed from them. It would be an exception to regular rule. But regarding the needles of the pine as rather axis than leaf, their development to flowers accords with general law; and he held that it was more philosophical to accept conclusions based on general law than to hunt for new laws to account for apparent exceptions to general rule.

## BOOKS RECEIVED.

ENGLISH.—Biblical Psychology: J. L. Forster (Longmans).—A Manual of Elementary Chemistry: G. Fownes; 11th edition, revised and corrected by H. Watts (Churchill).—Principles of Psychology, 2 vols.: H. Spencer; 2nd edition (Williams and Norgate).—The Electro-thermology of Chemistry: T. W. Hall (Edmonson and Douglas).—Figures Made Easy: L. Hensley (Macmillan).—Easy Lessons in Arithmetic, Part I: Rev. B. Smith (Macmillan).—Records of the Rocks: Rev. W. S. Symonds (Murray).—Anecdotal and Descriptive Natural History: A. Römer (Groombridge).—Fairy Mary's Dream: A. F. L. (Groombridge).—Ivy, its History and Characteristics: S. Hibberd (Groombridge).—Buds and Blossoms (Groombridge).—On Building and Ornamental Stones: E. Hull (Macmillan).

FOREIGN.—Lehrbuch der Physik: Dr. Paul Reis (Leipzig: Quandt and Händel).—Internationales Wörterbuch der Pflanzennamen: Dr. W. Ulrich (Trübner).—Through Williams and Norgate:—Optisch-akustische Vorlesung: G. Mach.—Die Robbe und die Otter: J. C. G. Lucae.—Die Anwendung der Spectral-apparates: K. Vierordt.

## DIARY

THURSDAY, NOVEMBER 28.

SOCIETY OF ANTIQUARIES, at 8.30.—The Milites Stationarii considered in Relation to the Hundred and Tithing of England: H. C. Coot, F.S.A.

MONDAY, DECEMBER 2.

ENTOMOLOGICAL SOCIETY, at 7.

VICTORIA INSTITUTE, at 8.—Force and Energy: C. Brooke, F.R.S.

TUESDAY, DECEMBER 3.

ZOOLOGICAL SOCIETY, at 8.30.—On the Osteology of the Marsupialia IV. Phascolumys. Bones of the trunk and limbs: Prof. Owen, F.R.S.—Contributions to Ornithology of Madagascar, III.: R. B. Sharpe.

SOCIETY OF BIBLICAL ARCHAEOLOGY, at 8.30.—On a Cuneiform Inscription containing the Chaldean Account of the Deluge: G. Smith.—Address by Sir Henry Rawlinson.

LONDON INSTITUTION, at 8.—On Elementary Physiology: Prof. Rutherford.

ANTHROPOLOGICAL INSTITUTE, at 8.—Report on Anthropology at the Meeting of the British Association at Brighton: Col. A. Lane Fox.—On Some Implements bearing Marks Referable to Ownership Tallies and Gambling from the Caves of Dordogne: Prof. Rupert Jones, F.R.S.—Discovery of a Flint Implement Station in Wisbmore Bottom, near Sandhurst: Lieut. Cooper King, R.N.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Discussion on the Aba Sugar Factory.

WEDNESDAY, DECEMBER 4.

GEOLOGICAL SOCIETY at 8.—On the Tremadoc Rocks in the Neighbourhood of St. David's, South Wales, and their Fossil Contents: H. Hicks, F.G.S.—On the Phosphatic Nodules of the Cretaceous Rock of Cambridgeshire: Rev. O. Fisher, F.G.S.—On the Vertebratulae of the Cambridge Upper Greensand: W. Johnson Soltas.—Observations on the more remarkable Boulders of the North-west of England and the Welsh Borders: D. Mackintosh, F.G.S.

SOCIETY OF ARTS, at 8.—On the Manufacture of Horse-nails by Machinery: J. A. Huggett.

MICROSCOPICAL SOCIETY, at 8.

LONDON INSTITUTION, at 7.—The Paraffin Industry: F. Field, F.R.S.

THURSDAY, DECEMBER 5.

LINNEAN SOCIETY, at 8.—On the Skeleton of the *Apteryx*: Thomas Allis.—On New and Rare British Spiders: Rev. O. P. Cambridge, M.A.

CHEMICAL SOCIETY, at 8.—On the Reducing Power of Phosphorous and Hypophosphorous Acids and their Salts: Prof. C. Rammelsberg.—On Hypophosphites: Prof. C. Rammelsberg.—On New Analyses of some Mineral Arseniates and Phosphates: Prof. A. H. Church.

## CONTENTS

|   | PAGE |
|---|------|
| FERMENTATION AND PUTREFACTION. By Prof. WVVILLE THOMSON, F.R.S.           | 61   |
| EXPLORATION OF THE SOUTH POLAR REGIONS, II.                               | 62   |
| TYNDALL'S RESEARCHES ON RADIANT HEAT. By W. F. BARRETT, F.C.S.            | 66   |
| LETTERS TO THE EDITOR:—   |      |
| On the supposed new Marine Animal from Barraud's Inlet.—Prof. JAMES BLAKE | 67   |
| Misleading Cyclopedias.—A. R. WALLACE, F.Z.S.                             | 68   |
| Rainbows on Blue Sky.—Dr. G. F. BURDER                                    | 68   |
| The Greenwich Date.—Rev. J. PEAR ON                                       | 68   |
| Ocean Meteorological Observations.—G. J. SYMONS                           | 68   |
| Earthquake.—E. J. LOWE, F.R.S.  | 68   |
| The Birth of Chemistry  | 68   |
| PHYSOSTIGMA AND ATROPIA. By Dr. FRASER. (With Diagram.)                   | 69   |
| NOTES   | 70   |
| THE ORGANISATION OF ACADEMICAL STUDY IN ENGLAND                           | 72   |
| SOCIETIES AND ACADEMIES   | 75   |
| DIARY   | 76   |
| BOOKS RECEIVED  | 76   |

ERRATA.—No. 159, p. 30: The foot-line of Fig. 1 is erroneously given "Metamorphosis of Tortoise-shell Butterfly," instead of "Metamorphosis of *Sphinx Ligustri*."—No. 160, p. 55, 1st. col., line 36: For "Prof. Geikie" read "Mr. James Geikie."