

SCIENTIFIC SERIALS

THE *Journal of Mental Science*, October 1874.—This number opens with the address of Thomas Laws Rogers, M.D., president at the annual meeting of the Medico-Psychological Association, Aug. 6, 1874. His object was to procure a fixed meaning for the terms "restraint" and "seclusion," and the clear sense and practical aim of his remarks present a sharp contrast to the rather wandering discussion which followed.—Dr. J. Batty Tuke has a paper on a case in which the clinical history and *post-mortem* examination will, he thinks, support its being designated one of syphilitic insanity.—Dr. Daniel Hack Tuke writes about the Hermit of Red-Coat's Green, and finds him insane, an opinion from which there is little room for dissent. Probably also it would have been well had he individually "been put under the protection of the Lord Chancellor and the inspection of his visitors;" it "would have been better for the neighbourhood, better for his family, and better for the Hermit of Red-Coat's Green himself." But could not those very considerations be urged, and often with greater force, in favour of a curtailment of the liberty of thousands of frivolous, reckless, immoral persons, who are a far greater pest to their family and neighbourhood than poor Lucas was after he became the hermit?—Dr. H. Hayes Newington contributes a thoughtful paper On different forms of stupor.—In an interesting article on the mental aspects of ordinary disease, Dr. J. Milner Fothergill obtrudes his materialism in a way that will be distasteful to many, while to others the thing itself will appear shallow. Thought "is the product of the combustion of what was originally food." The brain of "Robbie Burns transmuted his oatmeal porridge into Tam O'Shanter."—In reviewing Dr. Maudsley's "Responsibility in Mental Disease," Mr. J. Burchell Spring, chaplain to the Bristol Lunatic Asylum, while doing justice to the ability of the work, seems to have the advantage of the author in matters of history. He very cleverly cuts away the ground from under Dr. Maudsley's rather uncalculated-for assertion that the brutal treatment of the insane "had its origin in the dark ages of Christian superstition."

Journal de Physique, tome iii., No. 33, September.—This number commences with a description of the "phonoptometer" by M. J. Lissajous. This apparatus consists of an ordinary terrestrial telescope, of which the eye-piece is broken across, and the third lens from the eye (the one which inverts the image formed by the objective) attached to the prong of a tuning-fork. The lens is thus capable of vibrating in a vertical plane, the vibrations of the fork being maintained by an electro-magnet and contact-breaker. The telescope being directed to a distant object presenting a brilliant point, and the electro-magnet put into action, the point becomes a luminous vertical line if at rest, but if vibrating in a direction transverse to that of the motion of the lens, then the composition of the two movements gives rise to the well-known optical sound figures. The author claims for this ingenious instrument the power of determining the velocity of a luminous point on its trajectory, such as luminous projectiles, holidies, &c.—Theory of the phenomena of diffraction observed to infinity or in the focus of a lens, by M. J. Joubert.—On the mutual influence which two bodies vibrating in unison exercise upon one another, by M. A. Gripon. The author describes several experiments illustrating this remarkable action, employing for the purpose collodion membranes, which vibrate in unison with the column of air in the resonance boxes of tuning-forks, organ-pipes, &c. A small pendulum composed of a pith ball suspended by a thread of cotton is attached to such a membrane, and the system is then brought near the resonant case of a vibrating fork, with which the membrane is capable of vibrating in unison. The membrane vibrates strongly when at a distance of one metre, but when brought to within four or five centimetres of the mouth of the case, the sound of the latter undergoes a considerable weakening, and the pendulum of the membrane is scarcely moved. If the vibrations of the fork have but small amplitude, the proximity of the membrane to the resonant case extinguishes the sound altogether. None of these effects are produced if the membrane is not capable of vibrating in unison with the fork. If a membrane of a lower note is placed in front of the case and a current of warm air directed upon it, the weakening of the sound only occurs when the note of the fork is reached. Arrangements for repeating the experiments with organ-pipes are also described.—Graphic representation of the constants of voltaic elements, by M. A. Crova.—Some experiments concerning

the effects of magnetism on the electric discharge through a rarefied gas when the discharge occurs in the prolongation of the axis of the magnet, by MM. Auguste De la Rive and Edouard Sarasin. The authors employed in this research a columnar electro-magnet. The tube through which the discharge is transmitted rests on the upper extremity of the magnet, the line of electrodes being a prolongation of the axis of the magnet. Various gases sealed up in Geissler tubes have been experimented with, the discharge from a Ruhmkorff coil being allowed to traverse the gas. Changes occur in the appearance of the luminous discharge where the magnet is excited, these changes being accompanied by a change in the resistance offered to the current by the gas. Thus a tube containing hydrogen permitted the passage of an induced current marking 25° on the galvanometer when the magnet was not excited, but when excited the galvanometer reading was 40°. It seems to be a law that the augmentation in the intensity of the current is greater with a gas which is a good conductor than with one which is an inferior conductor of electricity. The authors confine themselves in this paper to a description of the facts without entering into theoretical considerations.—The number concludes with three papers reprinted from *Poggendorff's Annalen*: On the stroboscopic determination of the intensity of sounds, by E. Mach; Researches on magnetisation, by Holz; O. E. Meyer and P. Springmühl, On the external friction of gases.

Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie, Oct. 15.—In an article on the state of development or forwardness of vegetation in Italy compared with that of Giessen, in Germany, Prof. H. Hoffmann expresses his regret that for the greater part of Italy we possess no observations of the kind to which he wishes to direct attention. A knowledge of the relative state of vegetation at many different places would help invalids to the choice of a residence congenial to them, and dispel the false estimates of Italian climate now so common. In the course of a rapid visit to Italy in March and April, 1874, he took a number of observations, and compared them on his return to Giessen with like observations simultaneously taken at that place. The weather was fortunately fine and fairly uniform over Central and Southern Europe during the period of his travels. The average state of vegetation in open situations can be roughly calculated under normal conditions by reckoning for every degree southwards an advance of 3½ days. Direct observation shows this rule generally to hold good. Rome is 8° south of Giessen, Naples 9°; this gives, at the rate above mentioned, an advance for Rome of 30, for Naples of 34 days. On looking at the map which accompanies Prof. Hoffmann's paper, we find the real difference to have been for Naples 35, for Rome 23; and so with many other places in Italy. If we have the number of days' advance in the spring, by doubling it we obtain the relative length of summer, or the period of vegetation. The Riviera di Porrenote is quite abnormal, having a warm and early spring. Prof. Hoffmann's method consisted in taking the mean of the number of days' advance before Giessen, of the bursting into leaf or flower of several common kinds of trees in a certain place, and making this number the criterion of climate. In conclusion, he affirms that the extended observation of a single species of tree in the above manner, with regard also to the time of first fruits, would give us a new insight into comparative climatology, and that after various species had been so dealt with, maps might be made, exhibiting for each month a fair example in the development of one of these species. A list of the plants observed is appended. Among the *Kleinere Mittheilungen*, in a communication from Dr. Hildebrandtson, director of the Meteorological Department of Upsala Observatory, we find that he arrives at results similar to those of Mr. Ley respecting the movements of cirrus, this cloud appearing to move away from the centre of a cyclone and towards the centre of an anticyclone.

SOCIETIES AND ACADEMIES

MANCHESTER

Literary and Philosophical Society, Oct. 20.—Edward Schunck, F.R.S., president, in the chair.—E. W. Binney, F.R.S., stated that he had been so fortunate as to find a specimen of *Sibir-maria* which he exhibited to the Society, from the bullion coal at Clough Head, near Burnley, having the medulla perfectly preserved.—Mr. R. D. Darbishire, F.G.S., exhibited and described the Pakeolithic (French and English drift) implements collected

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. Ditté: 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 Pretoplasmic 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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