

hydrogen alone disappeared at 28c°, owing to its reacting with the acid. In the case where phosphorus pentoxide was present, the rate of combination was of the same order of magnitude as when the mixture was heated alone. The conclusion is drawn that there is no equilibrium corresponding to the vapour pressure of the water produced, but that the reaction, although very slow, is unlimited.—On an explanation applicable to the phenomena of Faraday and of Zeeman, by M. Henri Becquerel. Starting from the hypothesis that in a magnetic field the ether possesses a vortex-movement of given period, θ , the conclusion is drawn that in the Zeeman phenomenon the variation of the wave-length ought to be proportional to the square of the wave-length. The value of the reciprocal of θ is calculated both from the Zeeman and Faraday effects, the numbers for air showing a good agreement in the two cases.—Study of the oysters of Cette, from the point of view of pathogenic micro-organisms, by MM. Ad. Sabatier, A. Ducamp, and J. M. Petit. No pathogenic organisms could be found in oysters after exposure for some time to water containing sewage. Even when cultures of the typhoid and *Coli communis* bacilli were injected into living oysters, no trace of either could be detected after four days in sea water. The authors conclude from these experiments that there is no ground for considering oysters as one of the causes of typhoid fever.—The Perpetual Secretary announced to the Academy the loss sustained by science by the death of M. Scheering.—Observations on the Perrine comet (October 1897) made at the Observatory of Algiers, by MM. Rambaud and Sy.—On the general theory of functions of real variables, by M. R. Baire.—On the potential of the double layer, by M. A. Liapounoff.—On the mechanism of rotatory magnetic polarisation, by M. André Broca.—On the variation of energy in isothermal transformations; electric energy, by M. H. Pellat.—The dissemination of the X-rays, by M. Abel Buguet. By the use of protecting lead screens, in cases where a long exposure is required, a much clearer photograph is obtained.—On the molecular volumes and densities of gases in general at all temperatures and mean pressures, by M. A. Leduc.—Table of the elements, arranged with the atomic weights in multiple proportions, by M. H. Wilde.—On some new lines in the spectra of oxygen and of thallium, by M. H. Wilde.—On the action of nitric acid upon tin, by M. R. Engel.—Estimation of phenylhydrazine, by M. H. Causse. The method proposed is based upon the reduction by the phenylhydrazine of arsenic to arsenious acid, and the iodometric estimation of the latter.—New combinations of phenylhydrazine with mineral salts, by M. J. Moitessier. The salts described are compounds of phenylhydrazine with the chlorides and sulphates of nickel and cobalt, and cobalt bromide. They contain more phenylhydrazine than the series previously described.—Biological preparation of levulose from mannite, by MM. Camille Vincent and Delachanal. The ferment of sorbose, developing in a solution containing mannite, oxidises the latter to levulose.—On some halogen derivatives of methyl-phenyl ketone, by M. A. Collet. The preparation and properties of $C_6H_4Cl.CO.CH_2Cl$ [1:4], $C_6H_4Br.CO.CH_2Cl$ [1:4], $C_6H_4Cl.CO.CH_2Br$ [1:4], and $C_6H_4Br.CO.CH_2Br$ [1:4] are described.—On carubinose and *d*-mannose, by M. Alberda van Ekenstein. The sugar described as new by M. J. Efront (August 2, 1897), obtained from the grains of *Ceratonia siliqua*, is identical with *d*-mannose.—Vegetation with and without argon, by M. Th. Schloesing, jun. No difference could be observed in the growth of the plants in the two cases, and no measurable amount of argon was absorbed.—On Strongylosis observed at the Agricultural School at Grignon, by M. Ch. Julien.—On the production of gum in the Sterculiaceæ, by M. Louis Mangin.—On the periods of development of the black rot in the south-east of France, by M. Joseph Perraud.—On the diseases of the bulbs of *Crocus sativus*, L., by M. E. Roze.—Researches on the formation of oil reserves in seeds and fruits, by M. C. Gerber.—On the absorption of carbon monoxide by the blood of a living mammal, by M. N. Gréhan. The experiments showed that for air containing 1/6000th of its volume of carbon monoxide or less, the volume absorbed by 100 c.c. of blood was proportional to the time. For stronger mixtures ('001) a limit appeared to be reached after about three hours.—On the histological modifications of nerve cells in a state of fatigue, by M. Ch. A. Pugnât. Fatigue in the nerve cells is accompanied by a diminution in volume of the cellular body and the nucleus, and by the disappearance of the chromatic substance of the protoplasm.—Intermediate forms in cartilaginous tissue, by M. Joannes Chatin.

NO. 1464, VOL. 57]

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 18.

ROYAL SOCIETY, at 4.30.—Account of a Comparison of Magnetic Instruments at Kew Observatory: C. Chree, F.R.S.—Note on the Influence of very Low Temperatures on the Germinative Power of Seeds: H. T. Brown, F.R.S., and F. Escombe.—On the Structure and Affinities of Fossil Plants from the Palæozoic Rocks. II. On *Spencerites*, a New Genus of Lycopodiaceous Cones from the Coal Measures, founded on the *Leptodendron Spenceri* of Williamson: D. H. Scott, F.R.S.—The Histology of the Cell-wall, with special reference to the Mode of Connection of Cells: W. Gardiner, F.R.S.—Mathematical Contributions to the Theory of Evolution. IV. On the Probable Errors of Frequency Constants, and on the Influence of Random Selection on Variation and Correlation: Prof. K. Pearson, F.R.S., and L. N. G. Filon.—On the Geometrical Treatment of the "Normal Curve" of Statistics, with especial reference to Correlation, and to the Theory of Error: W. F. Sheppard.

LINNEAN SOCIETY, at 8.—On *Pontobolbos manauensis*: Prof. A. Dendy.—On Haddonina, a New Genus of Foraminifera: F. Chapman.

CHEMICAL SOCIETY, at 8.—On the Decomposition of Camphoric Acid by Fusion with Potash or Soda: Dr. A. W. Crossley and W. H. Perkin, jun., F.R.S.—Experiments on the Synthesis of Camphoric Acid: W. H. Bentley and W. H. Perkin, jun., F.R.S.—The Action of Magnesium on Cupric Sulphate Solution: Dr. Frank Clowes and R. M. Caven.—Properties and Relationships of Di-hydroxytartaric Acid: H. J. Horstman Fenton.

CAMERA CLUB, at 8.15.—Seismograms and Telegrams: Prof. Milne, F.R.S.

MONDAY, NOVEMBER 22.

CAMERA CLUB, at 8.15.—Electric Waves, illustrated by Telegraphy without Wires: A. Campbell.

TUESDAY, NOVEMBER 23.

INSTITUTION OF CIVIL ENGINEERS, at 8.—Central Station Electric Coal Mining Plant in Pennsylvania: W. S. Gresley.

ROYAL PHOTOGRAPHIC SOCIETY, at 8.—Photographs of the Optical Projections in Space produced by the Aerial Graphoscope; Probable Projection of Lightning Flashes, illustrated by Experiments and Photographs: Eric Stuart Bruce.

ANTHROPOLOGICAL INSTITUTE, at 8.30.

LEIGH BROWNE TRUST AND THE HUMANITARIAN LEAGUE (St. Martin's Town Hall, W.C.), at 8.—The Germ Theory and its Fallacies: Dr. Campbell Black.

WEDNESDAY, NOVEMBER 24.

SOCIETY OF ARTS, at 8.—Progress of Metallurgy and Metal Mining in America during the last Half-Century: Prof. James Douglas.

THURSDAY, NOVEMBER 25.

ROYAL SOCIETY, at 4.30.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Accumulator Traction on Rails and Ordinary Roads: L. Epstein. (Continuation of Discussion.)
CAMERA CLUB, at 8.15.—Photographic Action Writ Large: a Kurvey-linear Conversation on Corn: Prof. Armstrong, F.R.S.

CONTENTS.

PAGE

The Mathematics used in Connection with Physics.	
By W. E. A.	49
The Electrical Phenomena of Nerve.	By J. B. S. 50
Notes of a Naturalist and Antiquary	51
Our Book Shelf:—	
Leumann: "Notes on Micro-organisms Pathogenic to Man"	52
Canney: "The Winter Meteorology of Egypt and its Influence on Disease"	52
Minet: "Les Fours Électriques et leurs Applications"	53
"Bibliography of X-Ray Literature and Research (1896-1897)"	53
Wülfing: "Die Meteoriten in Sammlungen und ihre Literatur, nebst einem Versuch den Tauschwert der Meteoriten zu bestimmen"	53
Letters to the Editor:—	
Rediscovery of the Tile-fish (<i>Lopholatilus</i>).—Dr. A. Günther, F.R.S.	53
The Exploration of the Air by Means of Kites.—A. Lawrence Rotch	53
Lord Rayleigh's Proof of Van't Hoff's Osmotic Theorem. (<i>With Diagram</i>).—F. G. Donnan	53
The Law of Divisibility.—Dr. C. Börgen; Henry T. Burgess	54
Hon. Ralph Abercromby. By R. H. Scott, F.R.S.	55
Rev. Samuel Houghton, M.D. By C.	55
Notes	56
Our Astronomical Column:—	
The November Meteors (Leonids)	61
Jupiter's Third and Fourth Satellites	61
Comet Perrine (October 16)	61
The Variable Star β Lyra	61
Geologists in Canada. (<i>Illustrated</i>).	62
Professor Virchow's Jubilee	66
The Temperatures of Reptiles, Monotremes, and Marsupials. (<i>With Diagrams</i>). By A. Sutherland	67
University and Educational Intelligence	69
Scientific Serials	70
Societies and Academies	70
Diary of Societies	72