

MacPherson, M. A., was also read, on the aboriginal names of rivers in Australia philologically examined.

PARIS

Academy of Sciences, October 27.—M. Jurien de la Gravière, President, in the chair.—On Dr. Spörer's views regarding the solar spots and protuberances, by M. Faye. In a paper recently contributed to the *Proceedings* of the German Astronomical Society, M. Spörer adopts the view that the faculæ and spots are due to the currents of hydrogen which forms the solar chromosphere. But to the ascending currents, the cause of which is unexplained, is attributed a descending current which, by penetrating amid the faculæ to the body of the sun, gives rise to a spot. The hydrogen thus drawn in reascends round about the funnel of the spot, and, by mingling with the ascending currents, effects a complete circulation. The author points out that these ideas are completely analogous to his own, and would be identical, had M. Spörer studied the mechanical cause of this remarkable circulation, which is here attributed to the irregular velocities of the horizontal currents producing on the solar surface gyrotory movements with a vertical descending axis like those of the terrestrial streams and atmosphere.—A comparative study of the actions of walking and running, together with the mechanism of the transition between these two movements, by MM. Marey and Demyen. In this paper, which complements the author's previous communications on animal kinematics, numerous differences are shown to exist between slow and rapid pace, the latter being characterised by moments of complete detachment from the ground and by other equally important features scarcely visible to the naked eye, but which are now clearly revealed by the chronophotographic and dynamographic processes. The paper is furnished with six diagrams illustrating the contrasts between both motions and the transitions from one to the other.—Considerations on the nervous system of the gastropods, by M. H. de Lacaze-Duthiers. In supplement to previous papers on several aberrant types of gasteropods, the author here continues his analysis of the facts connected with the central nervous system of these organisms. Special care is taken to distinguish between the groups of ganglia of primary importance from others which, notwithstanding their size and numbers, really play only a secondary part in the nervous system of the gastropods.—Wheat culture at Wardreques, Pas-de-Calais, and at Blasinghem, Department du Nord, in 1886, by MM. Porion and Delérain. In continuation of previous reports of the results of experiments carried on for many years in the north-west of France, the authors here announced that the most profitable varieties of wheat are those which, besides yielding the largest returns, are best able to support strong manures without lodging. Preference above all is given to the square-eared variety (*blé à épi carré*), which they hope may be brought into general use in order to meet the growing competition of foreign growers.—Observations of Finlay's comet made at the Lyons Observatory (Brunner equatorial 0°16m.), by M. Gonnissiat.—Observations of the same comet made at the Observatory of Nice (Gautier equatorial), by M. Perrotin.—Note on the errors of division in Gambey's mural circle, by M. Périgaud. These errors being once clearly determined, the author considers that the Gambey circle with the new mercury bath allowing a continuous observation of the Nadir, may be advantageously used in astronomic researches where great precision is required.—On a question concerning the single points of plane algebraic curves, by M. E. B. Guccia.—On the glycerinate of soda, by M. de Forcrand. In this paper the author completes the study of the glycerinate of soda, begun by E. Letts in 1872, and subsequently prosecuted by M. Berthelot.—On the preparation of the sulphur of calcium with violet phosphorescences, by M. A. Verneuil. By the application of the principles laid down by M. E. Becquerel in his researches on phosphorescence, the author has succeeded in effecting the synthesis of this substance, which has been long known in commerce, but the preparation of which had hitherto remained a secret.—On the comparative volatility of the methylic compounds in the various families of the negative elements, by M. Louis Henry. In this paper the author restricts his inquiries to the monocarbonic derivatives, and more especially to the methylic derivatives. He finds that, at equal atomic weight, the diminution of volatility determined in methane by the substitution of a negative element for hydrogen, is all the greater the more this element is removed from hydrogen.—Law determining the position of the embryo in insects, by M.

Paul Hallez. From his studies of *Hydrophilus piceus* and *Locusta viridissima*, the author arrives at a general law applicable to insects and probably also to other classes, which he thus formulates:—The cellule ovum is disposed in the same direction as the maternal organism, with a cephalic and a caudal pole, a right and a left side, a dorsal and ventral face coinciding with the corresponding faces of the embryo.—Contributions to the natural history of the Orthonectidæ, by M. R. Koehler. During his researches on *Amphiura squamata* at the Zoological Laboratory at Cette, the author has found on these animals both male and female of the curious parasite, Rhopalaria, already studied by Giard and Julin.—On the exhalations of carbonic acid in infectious diseases determined by aërial and non-aërial microbes, by M. S. Arloing.—Geological constitution of the district of Croix-Rousse (Lyons), by M. Fontannes. The tunnel 2400 metres long now in progress under the terrace between the Rhone and the Saone at Lyons has afforded an opportunity of studying the geological features of the district, which appears to consist mainly of Pliocene sands overlying gneiss with remains of *Mastodon arvenensis*, above which follow Pliocene alluvia with *Elephas meridionalis*, Quaternary alluvia, and Glacial deposits (moraines, loam, &c.).

BOOKS AND PAMPHLETS RECEIVED

"Food-Grains of India," by A. H. Church (Chapman and Hall).—"Electricity in the Service of Man," by Wormell and Perry (Cassells).—"Handbook of Acoustics," by T. F. Harris (Curwen).—"Beobachtungen der Russischen Polarstation an der Lenamündung," ii. Theil. Meteorologische Beobachtungen, by A. Eigner.—"Geometrical Drawing for Army Cadets," by H. T. Lilley (Cassells).—"The Gas Engine," by D. Clerk (Longmans).—"General Biology," by W. T. Sedgwick and E. B. Wilson (Holt and Co., New York).—"The Encyclopaedic Dictionary," vol. v. part ii. (Cassells).—"Loisette's Art of Never Forgetting Compared with Mnemonics," by F. Appleby.—"Modern Petrography," by G. H. Williams (Heath and Co., New York).

CONTENTS

	PAGE
Scientific Worthies, XXIV.—John Couch Adams. (With Steel-Plate Engraving)	565
The British Museum Birds	566
The Vital Statistics of Glasgow	568
The Fresh-Water Fishes of Europe	569
Our Book Shelf:— Ellis's "Papers in Inorganic Chemistry"	569
Letters to the Editor:— Our Guns.—W. Mattieu Williams	569
Photographs of Stellar Spectra.—Prof. Edward C. Pickering	570
The Late American Earthquake and its Limits.— Prof. J. P. O'Reilly	570
Algebraic Notation of Kinship.—Charles Davison	571
Physiological Selection.—Edmund Catchpool	571
American Vines.—E. W. Claypole	571
<i>Scopelus mülleri</i> .—Francis Day	571
The Sense of Smell.—Rev. George Henslow	572
Humming in the Air caused by Insects.—Rev. Leonard Blomefield	572
The Hong Kong Observatory	572
The Rainfall of the Cape Colony. By Thomas Stewart	573
Ferdinand Stoliczka	574
The Iron and Steel Institute	575
Notes	576
Our Astronomical Column:— M. Thollon's Map of the Solar Spectrum	579
Comet Finlay	579
New Minor Planet	579
New Comet	579
The Pulkowa Observatory	579
Astronomical Phenomena for the Week 1886 October 17-23	579
The New Element, Germanium	580
Australasia	580
On the Occurrence of Cellulose in Tuberculosis	581
Disinfection by Heat	581
On the Fractionation of Yttria. By William Crookes, F.R.S. (Illustrated)	584
Scientific Serials	587
Societies and Academies	587
Books and Pamphlets Received	588