

It was first discovered in 1869 by Rayet, and has since been named "f" by Lorenzoni, who, ignorant of the previous work of several other observers, has claimed its discovery.

272 and 273. These lines were both reversed (by a narrow bright stripe running down the centre of the broad hazy band) as constantly, whenever the seeing was good, as λ or C itself. The observation was difficult, however, and required the most scrupulous exclusion of foreign light, and a careful adjustment of the slit in the plane of the solar image formed by these particular rays.

They were also found to be regularly reversed upon the body of the sun itself, in the *penumbra* and *immediate neighbourhood* of every important spot.

SOCIETIES AND ACADEMIES

CAMBRIDGE

Philosophical Society, Oct. 18.—The following were elected officers of the Society:—President: Prof. Humphry. Vice-Presidents: Prof. Cayley, Prof. Adams, Prof. Liveing. Treasurer: Dr. Campion. Secretaries, Messrs. Bonney, J. W. Clark, and Trotter. New Members of Council: Prof. Babington, Prof. Stokes, Mr. Hort, Dr. M. Foster. The following communications were made to the Society:—"On the form suggested by M. Tresca, and adopted by the Commission Internationale du système métrique, for the Mètres Internationaux," by Prof. Miller, F.R.S. "A Method for Drawing in Perspective;" and "A Method for Levelling" (communicated), by Mr. J. C. W. Ellis. The nature of these papers does not admit of a brief abstract.

PARIS

Academy of Sciences, October 21.—M. Faye, president. In opening the meeting the President announced the death on that morning of M. Babinet, Member of the Academy, Physical Section.—M. Yvon Villarceau then read a note relative to a letter from M. Magnac on the use of chronometers at sea which he presented to the Academy. The note and letter related to the compensation and rating of chronometers, and in conclusion drew attention to the great and continuous care which ought to be devoted to this subject by the Transit of Venus Expedition of 1874.—M. Pasteur then read an answer to M. Fremy's two notes read at the meeting of the 7th October. M. Pasteur's observations were in support of his theory of the wine ferment coming from the husk of the grape. He concluded his observation as follows:—"I declare both the theory of the transformation of albuminous matters into ferment cells by contact with atmospheric oxygen, and that of hemeorganism, or the generation of ferment cells from fruit cells, to be erroneous."—Next came a vigorous reply from M. Chevreul to certain "allegations contained in a report, by M. A. Gruyer, on the International Exhibition of London, 1871." At the conclusion of the reply MM. E. Bequerel and Milne-Edwards made some remarks on the subject, when the matter dropped.—A note from M. R. Clausius, on the mechanical equation from which the 'virial' theorem results was then read, and was followed by a note from M. A. de Caligny on the theory of the several systems of navigation locks, a long paper relating to various kinds of locks, sluices, floodgates, &c.—This was followed by the continuation of M. P. A. Favre and C. A. Valson's paper on crystalline dissociation. The authors find that potassium and ammonium alum are partially dissociated when rendered anhydrous, and that chromium-potassium alum, when rendered anhydrous and then washed, loses potassic sulphate. They also attribute the change from violet to green of solutions of chrome alum, when heated, to this cause, and state that there is nothing to prove that this is not the case with all alums.—M. C. Sédillot then presented a note on the phenomena of fermentation and their connection with pathological physiology. The note related to certain recent studies on zymology by M. F. Monoyer.—M. Tresca then asked the Academy to open a sealed packet deposited by him with it on September 9, 1870, and which contained the particulars of the secret place where he and General Morin had deposited the standard metre and kilogramme during the events of that time. He wished the Academy to open the depositary, and to place the standards in the hands of the Government.—M. Ed. Bureau then read a note on the value of characteristics deduced from the structure of the stem for the classification of the *Bigoniaceæ*.—The concluding portion of M. Max Marie's paper on the extension of the method of Cauchy to the study of double integrals, &c., followed.—A note from Ed. Jannettaz on the coloured

rings produced in gypsum by pressure, and their connection with the ellipsoid of thermal conduction and with cleavage, was referred to the physical section, and M. C. Dareste's studies on the osteological types of osseous fishes was sent to the section of zoology. The commission for the Montyon prize for medicine and surgery received a memoir on the three "psoric acariens" of the Horse by M. P. J. Mégnin.—A communication from MM. Chevallier on the manufacture of amorphous phosphorus matches was sent to the commission on the unhealthy arts.—A suggestion for the use of the tension of liquid ammonia as a source of motive power in aerial navigation by M. Pollard was submitted to the commission on aërostation: and the *Phylloxera* commission received a note relative to a remedy for that pest from M. Chatelain.—M. Yvon Villarceau then communicated a letter on the elements and co-ordinates of the planet No. 123 from M. Stephan, and also an extract from a letter from M. de Magnac on the determination of longitude by chronometers.—M. Chasles presented a note from M. H. G. Zeuthen on quartic equations, of which one part is reduced to a direct double.—A letter from M. P. Volpicelli on the probable nature of the Saturnian rings, and on a meteor observed at Rome on the 31st of August, was then read.—M. Th. du Moncel read a note on the accidental currents which arise in telegraphic wires, one end of which remains isolated in the air, after which M. Pasteur presented a note, by M. Feltz, on the action of crystallisable sugar on Barreswil's cupro-tartaric reagent. The author's experiments tend to show that cane sugar acts on the reagent in the presence of an excess of alkali; hence he distrusts all determinations made where both sugars are present. This paper was followed by a note from MM. Béchamp and Estor on the role of the microzymes during embryonic development.—M. Tarry then read a note on the aurora and magnetic storm of the 14th and 15th October.—M. E. Fournié demanded the opening of a sealed packet relating to cerebral physiology deposited by him on the 22nd of July, 1872, and after a note from M. G. Bandiera on a means of separating essence of citron from turpentine had been submitted to M. Dumas, the session adjourned.

BOOKS RECEIVED.

ENGLISH.—The Expressions of the Emotions in Man and Animals: C. Darwin (Murray).—The Causation of Sleep: James Capper, M.D. (Thos. Edinboro).—Underground Treasures; how and where to find them: James Orton (Worthington and Co.).

FOREIGN.—Through Williams and Norgate.—Ueber die Auflösung der Arten durch natürliche Zuchtwahl.—Ueber die Bedeutung der Entwicklung in der Naturgeschichte: Dr. A. Braun.—Sachs-register zu dem Repertorium: J. Schotte.

DIARY

TUESDAY, NOVEMBER 7.

LINNEAN SOCIETY, at 8.—On the "Piopio" of New Zealand (*Keropia crassirostris* Gmel): T. H. Potts.—On the buds developed on leaves of *Malaxis*: George Dickie, M.D.

SUNDAY, NOVEMBER 10.

SUNDAY LECTURE SOCIETY, at 4.—On A Bar of Iron: John Hopkinson, D.Sc.

TUESDAY, NOVEMBER 12.

LONDON INSTITUTION, at 4.—On Nutrition: Prof. Rutherford. (Educational course.)

THURSDAY, NOVEMBER 14.

LONDON MATHEMATICAL SOCIETY, at 8.—Remarks on some Recent Generalisations of Algebra: the President.—Sur les Fonctions Circulaires: M. Hermite.—Investigation of the Disturbance produced by a Spherical Obstacle on the Waves of Sound: Hon. J. W. Strutt.—On the Mechanical Description of a Cubic Curve: Prof. Cayley.—A Series of Models of Cubic Surfaces to Illustrate their Different Forms: Prof. Henrici.

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