noticed the extraordinary fact that in the males of the North-American species of the genus Nisoniades, these organs were asymmetrical. The asymmetry is confined to the lower lateral plates, which are unusually developed in this genus, and shows itself in the diverse length of the lower process and in the size, and the entireness or the excision of the lateral and in the size, and the childreness of the excession of the factural flap. The only species in the genus, as generally accepted, which does not come under this rule, is *N. Catullus*, but the structural features of all the appendages of the body of this species show that it is wrongly placed in this relation. Mr. Scudder also stated that the butterfly described by Dr. Harris in his State Report as *Eudamus Bathyllus*,—a name invariably accepted by subsequent writers—was not the species originally described and figured by Abbot and Smith under the specific name; between the same specific name; he therefore proposed to call Harris's specific *Eudamus Pylades*. Mr. Sprague referred to an instance related by a friend not versed in entomology, where "files" were seen, by a hole in the ice in midwinter, to ascend in large num-bers from the bottom of a stream to the surface and take flight. Mr. B. P. Mann stated that he had taken a specimen of *Carabus Chamissonis* Fisch., in Labrador. Mr. F. G. Samborn remarked that he had taken ten or twelve specimens of the same species in August, on the sides of Mount Washington, N.H., at a height of from four to five thousand feet above the sea. He also reported the capture in Andover, Mass., on Christmas Day, 1869, of Capnia and Tæniopteryx, moving actively upon the ice; of several Staphylinidæ of the genera Lathobium, Stenus, Philonthus and Lithocharis, together with Photinus corruscus and larvæ of Telephorus, and some undetermined Coleopterous and Geometrideous larvæ, also a species of *Salda* (Hemipterous), and of *Diptera, Hydrophorus pirata* Loew, and *Sepsis sp.*, which were struggling in water of about one-eighth inch in depth, covering the surface of the ice in meadows. A great number of Arachnida, mostly of small size, were noticed under the same circumstances, and appeared to represent many species. He was in pursuit of the aberrant forms, *Boreus* and *Chionea*, but several hours of careful search failed to reveal any specimens of either.

PARIS

Academy of Sciences, March 21.-The following papers relating to various departments of physics were read : A note on the variations of the calorific capacity of water towards the maximum of density, by M. Hirn; on the angle of adjustment of a liquid with a solid wall, by M. Moutier; a description of a vertical galvanometer with a balance, suitable for use before large audiences, by M. Bourbouze.—The chemical papers were rather numerous, and included a note on the analysis and uses of the rock known in the Ardenies under the name of gaize, or pierre-morte, by MM. H. Sainte-Claire Deville and J. Desnoyers, upon which M. Elie de Beaumont made some remarks.-A note by M. Descloiseaux upon some crystallised derivatives of the coal hydrocarbons; a memoir on the action of sulphuret of carbon and carburetted gases upon wood charcoal, by M. Sidot; a note on cobalt and manganese and their alloys with copper, by M. A. Valenciennes; a note on a new method of preparing hydrobromic acid, by MM. Champion and Pellet; a note on the properties of iodic acid, by M. A. Ditte; one on the hydrogenated derivatives of sulphuret of carbon, by M. A. Girard; hydrogenated derivatives of sulphuret of carbon, by M. A. Girard; a note on the vitality of beer-yeast, by M. Melsens; an important note by M. J. Raulin on the chemical con-ditions of the life of the lower organisms; a paper on tribromhydrin, by M. L. Henry; and a note on the isomeric xylenes and cumenes in the coal-oils, by M. Rommier. --M. Rosenstiehl also presented a paper on the nature of the motor force which produces the phenomena of endosmose; and M. E. Martin an electro-chemical investigation of ozone.---M. Blanqui forwarded a letter describing an instrument for solving spherical triangles without the aid of tables of logarithms; and M. Bowen a continuation of his communication relating to the distance of the sun, of which the titles only are given.—M. Chastes made known a theorem relating to the theory of surfaces which had been communicated to him by Mr. Spottiswoode.— M. Coumbary's notice of the fall of an aerolite in Barbary (given in our last number) was communicated by M. Le Verrier, who also presented some observations on storms in Norway during the year 1869, by M. Mohn of Christiania.—With the exception of a few medical miscellaneous notes, three botanical papers complete the list of communications at this meeting: these were the continuations of M. Trecul's and M. Chatin's valuable researches upon the tracheæ of ferns, and the causes of the

dehiscence of anthers (the latter completed), and a notice of a remarkable case of subdivision of the top of a palm-tree, by M. Ramon de la Sagra.

DIARY

THURSDAY, MARCH 31.

ROYAL SOCIETY, at 8.30.—On the relation between the Sun's Altitude and the chemical intensity of total daylight in a cloudless sky: Prof. Roscoe and Dr. Thorpe.—On the acids contained in Crab-oil: Mr. W. J. Wonfor.

Wonfor. Society of Antiquaries, at 8.30.—On the Crypt of the Chapter-house at Westminster: H. Harrod, F.S.A. ROYAL INSTITUTION, at 3.—Chemistry of Vegetable Products: Prof. Odling. LONDON INSTITUTION, at 7.30.—Geology: Dr. Cobbold.

FRIDAY, APRIL 1.

ROYAL INSTITUTION, at 8. —Artificial Alizarine : Prof. Roscoe. Archmological. Institution, at 4.

SATURDAY, APRIL 2.

ROYAL INSTITUTION, at 3.-The Sun : J. Norman Lockyer, F.R.S.

MONDAY, APRIL 4.

- LONDON INSTITUTION, at 4.—Chemistry: Prof. Bloxam. ROYAL INSTITUTION, at 2.—Chemistry: Prof. Bloxam. ENTOMOLOGICAL SOCIETY, at 7. MEDICAL SOCIETY, at 8. ROYAL ASIATIC SOCIETY, at 4. VICTORIA INSTITUTE, at 8.—On Comparative Psychology: E. J. Morshead. TUESDAY, APRIL 5.
- ANTHROPOLOGICAL SOCIETY, at 8.—Phallic Worship: H. M. Westropp: —The Influence of the Phallic Idea in the Religion of Antiquity: C. Staniland Wake.

ROVAL INSTITUTION, at 3.—Nervous System: Prof. Rolleston, M. D., F. R.S. INSTITUTION OF CIVIL ENGINEERS, at 8.—Discussion on St. Paneras Station.—On the Dressing of Lead Ore: Thomas Sopwith, jun., Memb. Inst. C.E.

WEDNESDAY, April 6. Society of Arts, at 8.

THURSDAY, April 7.

ROVAL INSTITUTION, at 3.--Chemistry: Prof. Odling. CHEMICAL SOCIETY, at 3.--Chemistry: Prof. Odling. CHEMICAL SOCIETY, at 8.-On the Analysis of Deep-sea Water: Dr. John Hunter.--On the refraction equivalents of the aromatic Hydro-carbons and their derivatives: Dr. J. H. Gladstone.-On an acid Feed-water from the Coal-fields of Shellarton, N.S., and the results of its use ' Prof How

is use : Prof. How. LINNEAN SOCIETY, at 8.—On new species of Annelids, &c. : Dr. Baird.— On Algæ from the North-Atlantic Ocean : Dr. Dickie.

BOOKS RECEIVED

BOOKS RECEIVED ENGLISH.—A Poor Man's Photography at the Great Pyramid : Prof. Piazzi Smyth (H. Greenwood).—The Week of Creation : G. Warington (Macmillanš).—The Philosophy of the Bath : D. Dunlop (Dublin, Moffat). —The Fuel of the Sun : W. Mattieu Williams (Simpkin, Marshall, and Co). Foreiton.—Grundzige der Modernen Chemie : Dr. Eugen Zell, Organische Chemie (Berlin, Herschwald).—Grundriss der Physik und Meteorologie : Dr. J. Müller (Brunswick, Vieweg).—L'Année Géographique ; révue annuelle : M. Vivien de Saint-Martin (Paris, Hachette).—Reden und Abhandlungen über Gegenstände der Himmelskunde : Dr. J. H. von Mädler (Berlin, Oppen-heim).—Jahresbericht über die Fortschritte der Chemie : Adolph Strecker, für 1868, 1^{tes} Heft (Giessen, Ricker).—Charles Darwin und Alfred Russel Wallace : Dr. A. B. Meyer (Erlangen, Befold).—Die Stellung des Menschen in der Natur ; 2^{te} Lieferung Wer sind wir : Dr. L. Büchner (Leipzig, Thomas).—Zeitschrift der Gesellschaft für Erdkunde zu Berlin, 4^{ter}. Band : Prof. W. Koner (Berlin, Reimer).—Studie über die Wanderbicke und die Diluvialgebilde Russlands : C. von Helmersen, to Tafeln (St. Petersburgh, Eggers). Through Williams and Norgate.——Cryptogamie Illustrée, ou His-toire des Familles naturelles des Plantes Acotyledonées d'Europe : Casimir Bourneguère (Paris, Baillère).—Gedachttissrede von Alexander von Hum-boldt : C. G. Ehrenberg (Berlin, Oppenheim).

CONTENTS

PAGE

THE SIZE OF ATOMS By Prof. Sir W. THOMSON, F.R.S.	55Ì
FRESENIUS'S ANALYSIS	553
OUR BOOK SHELF	555
LETTERS TO THE EDITOR	
Formation of Ground IceW. G. THOMPSON .	555
Fishatic Ice (With Illustration) - Sandstone Boulder in Granite.	
- C. SPENCE BATE	HrK.
Apparent bize of the Woon Ir (M INCLERY	- ÷6
Concomitant Sounds and ColoursW. S. OKELY.	220
Analogy of Colour and Music W. F. BARRETT.	55/
THE METROPOLITAN MAIN DRAINAGE. (With Illustrations.).	550
Notes	550
Notes	361
ON THE TEMPERATURE AND ANIMAL LIFE OF THE DEEP SEA. III.	
By Dr. W. B. CARPENTER, F.R.S.	563
	r66
SOCIETIES AND ACADEMIES	567
DIARY	570