

a colloid membrane and water on the other, and Dr. Guthrie thought it might be well to determine what action, if any, takes place when a salt is added to a solution of a colloid such as size. Two or three lumps of rock salt were added to a jelly of size, and the whole hermetically sealed in a glass tube. The colloid parted with its water readily, a saturated solution of the salt was obtained, and the size became perfectly white and opaque, having undergone a structural change. Experiments were also made employing a more hygrometric salt, such as chloride of calcium.—Mr. W. C. Roberts pointed out that a jelly containing 5 per cent. of silicic acid readily parts with water to sulphuric acid, and dries into a hard glass like hydrate of silica. He asked whether this might be considered as analogous to the action of salt on size, or whether the strong affinity between the acid and water removed it to another class of action. Dr. Guthrie thought it might be possible to establish the existence of a point at which the jelly did not give up its water to the hygrometric substance. He also pointed out the analogy between a jelly and a mass of small bags filled with liquid.

Entomological Society, November 1.—Prof. Westwood, president, in the chair.—Mr. F. Smith exhibited some remarkable specimens of thorns from Natal and Brazil, which had been taken possession of by certain species of *Cryptoceridae* for the construction of their nests. Some of the thorns were as much as 3 inches in length.—Prof. Westwood mentioned an instance of the hairs of a larva of *Lasiocampa rubi* having caused considerable irritation of the skin, and that the irritation was complained of by his correspondent for a week afterwards.—The Professor exhibited a singular Coleopterous larva from Zanzibar, of a flattened, ovate form and a steel-blue colour, with two points at the extremity of the body, and with long, clavate antennæ. The head bore some resemblance to that of the dipterous genus *Diopsis*. He also exhibited a specimen of the butterfly, *Hesperia sylvanus*, received from the Rev. Mr. Higgins, of Liverpool, having the pollinaria, apparently of an Orchid, attached to the base of the tongue. Also an Orchid bulb purchased by Mr. Hewitson with a collection of roots from Ecuador, which was found to contain nine living specimens of cockroaches, comprising six different species, viz., *Blatta orientalis*, *Americana*, *civerea*, *Madera*, and two others unknown to him, some being of considerable size.—Mr. Dunning read a "Note on *Acentropus*," in which he remarked on Heer Ritsema's Second Supplement to his Historical Review of the genus, published in the *Transactions* of the Entomological Society of the Netherlands, in which that author tried to prove that two distinct species existed, of which one (*A. niveus*, Oliv. = *A. Garmonii*, Curt.) has a female with rudimentary wings, and the other (*A. latipennis*, Möschl. = *Zancle Hansonii*, Ste.), has a female with normally developed wings; whereas, Mr. Dunning argued that the facts, as stated by Heer Ritsema, did not in any way prove the duality, but were quite consistent with the unity of the species.

Institution of Civil Engineers, November 14.—Mr. George Robert Stephenson, president, in the chair.—The paper read was on the Japan lights, by Mr. R. H. Brunton.

PARIS

Academy of Sciences, November 13.—Vice-Admiral Paris in the chair.—The following papers were read:—Theorems relative to systems of three segments making a constant length, by M. Chasles.—Note on the recent progress of phylloxera in the departments of the two Charentes, by M. Bouilland.—Continuation of observations of eclipses of Jupiter's satellites at the Observatory of Toulouse, by M. Tisserand. For eclipses of the first satellite little seemed to be gained by using larger instruments; for those of the second and third the difference was greater.—M. Milne-Edwards presented the first part of tome xii. of his work on comparative physiology and anatomy of men and animals. It treats of audition and sight.—Report on a memoir of M. Fouqué, "Mineralogical and geological researches on the lavas and dykes of Thera" (island of Santorin group). These lavas contain two, and often three triclinic feldspars (some say volcanic rocks never contain more than one); albite predominates among the small crystals; labradorite or anorthite among the large. These anorthite lavas (hitherto thought exceptional) form forty-one of the dykes of Thera. M. Fouqué shows, from experiments, that a lava fused and suddenly cooled is quite as crystalline as when it has solidified slowly; crystals are formed before ejection from the ground. Contrary to M. Tschermak, who would eliminate from the catalogue of mineralogical species all triclinic feldspars except albite and anorthite, M. Fouqué shows reason for retain-

ing oligoclase and labradorite. Tridymite, a variety of crystallised silicon, is found in the lavas in form of thin hexagonal imbricated plates; M. Fouqué regards it as a posterior formation to the other elements, and as having arisen at a high temperature under the influence of imprisoned droplets of water, when the surrounding rock was liquid or viscous. The report speaks highly of the value of this memoir.—Researches on the brachistochrome of a heavy body, with regard to passive resistances, by M. Haton de la Goupillière.—On the characteristics of systems of conics and surfaces of the second order, by M. Halphen.—M. François recommended, against phylloxera, the vitriolic water from the mines of pyrites of Sainbel.—Observations relative to the general theory of trombes, by M. Virlet d'Aoust. He describes some dust whirlwinds observed on the Mexican plateaux.—Determination, by the method of analytic correspondence, of the envelope-surface of a surface whose equation contains n parametres connected together only by $n-2$ relations, by M. Saliel.—Influence of temperature on magnetisation, by M. Gauguier. The value of the temporary variation varies considerably from one bar to another. To determine the influence of temperature this should be kept invariable throughout an experiment; the author describes how he accomplished this. With a bar susceptible of considerable temporary variation, the magnetism developed at 300° is weaker than at ordinary temperature, but in the opposite case it is stronger.—On the hydrates of sulphate of copper, by M. Magnier de la Source.—On margaric chloride and its derivatives, by M. Villiers.—Researches on quercite, by M. Prunier. He considers quercite to form a transition between the fatty series and the aromatic series.—On angelic acid, by M. Demarcay. He verifies his former experimental results against some contradiction of them by M. Fittig in the Berlin Chemical Society.—Physiological experiments on the functions of the nervous system of Echinida, by M. Fredericq. The cords described as the nervous system are the means by which harmony of movements is established. Facts seem also to favour the existence of a nervous plexus situated in the thickness of the external tegument.—On the mobile state of *Podophrya fixa*, by M. Maupas. This, he says, hardly merits its name; it is more mobile and vagabond than known Acinetinians, and is an intermediate type between suctorial infusoria and ciliated infusoria, properly so called. He describes in detail the changes which take place in it during its mobile period.—On the existence of asparagine in sweet almonds, by M. Portes.—On the influence of leaves and floral branches on the nature and quantity of sugar contained in the scape of agave, by M. Balland. Both leaves and flowers have an incontestable rôle in the formation of sugar.—On a meteoric iron very rich in nickel, found in the province of Santa Catharina (Brazil), by MM. Guignat and Ozorio de Almeida; iron 64 per cent., nickel 36. It appears to belong to the terrestrial rocks. M. Daubrée remarked that a careful examination of all that region was very desirable.—Chemical composition of the water of the Bay of Rio de Janeiro, by MM. Guignat and Teller. It contains considerable quantities of silica and alumina (9.5 and 7.5 gr. respectively, per cubic metre). This is from decomposition of the gneiss and granite rocks under friction of the water.

CONTENTS

	PAGE
FERRIER ON THE BRAIN, I. By GEORGE HENRY LEWES	73
GREEK AND LATIN PHILOLOGY. By REV. A. H. SAYCE	74
OUR BOOK SHELF:—	
Packard's "Monograph of the Geometrid Moths or Phalœniæ of the United States"	75
LETTERS TO THE EDITOR:—	
Prof. Balfour Stewart on Meteorological Research.—THOMAS STEVENSON, C.E.	76
Ocean Currents.—CAPT. DIGBY MURRAY	76
Definiteness and Accuracy.—Prof. P. G. TAIT	77
On the Internal Fluidity of the Earth.—Prof. HENRY HENNESSY, F.R.S.	78
The Age of the Rocks of Charnwood Forest.—Prof. EDWARD HULL, F.R.S.	78
Mind and Matter.—WM. S. DUNCAN	78
Meteor.—CECIL H. SP. PERCIVAL	79
THE PRESENT STATE OF MATHEMATICAL SCIENCE. By Prof. H. SMITH, F.R.S.	79
THE AUSTRIAN ARCTIC EXPEDITION (With Illustrations).	81
OUR INSECT FORS	84
CARL JELINEK	85
OUR ASTRONOMICAL COLUMN:—	
The Distances of the Stars	86
The Total Solar Eclipses of 1239, June 3, and 1241, October 6	86
NOTES	87
SCIENTIFIC SERIALS	90
SOCIETIES AND ACADEMIES	90
ERRATUM.—P. 57, col. i. line 12 from bottom, for "Tides" read "Fish."	