

anatomy of *Turbinaria mesenterina* (?), of *Lophohelia prolifera*, of *Seriatopora subulata*, and of *Pocillopora*, with a note on the skeleton of *Flabellum*.—On the anatomy of *Mussa corymbosa*, and *Euphyllia glabrescens*, and on the morphology of the Madreporian skeleton, by G. C. Bourne (plates iii. and iv.)—On the intra-ovarian egg of some osseous fishes, by Dr. Robert Scharff (plate v.)—Observations on the structure and distribution of striped and unstriped muscle in the animal kingdom, and a theory of muscular contraction, by C. F. Marshall (plate vi.) The author concludes that in all muscles which have to perform rapid and frequent movements a certain portion of the muscle is differentiated to perform the function of contraction, and this portion takes on the form of a very regular and highly modified intracellular network. This network, by its regular arrangement, gives rise to certain optical effects, which cause the peculiar appearances of striped muscle; the contraction of the striped muscle-fibre is probably caused by the active contraction of the longitudinal fibrils of the intracellular network; and the transverse networks appear to be passively elastic, and by their elastic rebound cause the muscle to rapidly resume its relaxed condition when the longitudinal fibrils have ceased to contract; they are possibly also paths for the nervous impulse.—On the fate of the muscle-plate and the development of the spinal nerves and limb plexuses in birds and mammals, by Dr. A. M. Paterson (plates vii. and viii.)—On the ciliated pit of Ascidians and its relation to the nerve-ganglion and so-called hypophysial gland, and an account of the anatomy of *Cynthia rustica* (?), by Lilian Sheldon, Bathurst Student, Newnham College (plates ix. and x.) Suggests that the original function of the ciliated pit was the aëration of the brain, with which it communicates in the case of *Clavellina*; where also its posterior part acts as a reservoir to carry off the secretion of the gland.—On the tongue and gustatory organs of *Mephitis mephitis*, by Dr. Frederick Tuckerman (plate xi.) This memoir is preceded by an interesting account of the literature relating to the position and structure of the taste organs of vertebrates.—On the quadrate in the Mammalia, by Dr. G. Baur. He thinks that there is little doubt but that the quadrate of the lower vertebrates is contained in the syzygomatic process of the mammals.—On the hæmoglobin crystals of rodents' blood, and on an easy method of obtaining methæmoglobin crystals for microscopic examination, by Dr. W. D. Halliburton.

*Bulletin de l'Académie Royale de Belgique*, August.—Note on the oscillations of a pendulum produced by the displacement of the axis of suspension, by E. Ronkar. The object of these researches is to ascertain the possibility of recording the slight oscillations in the crust of the earth by means of a freely suspended pendulum. It is shown that the pendulum retains a movement imparted by a certain number of horizontal undulating impulses, whenever the duration of the oscillation of the pendulum is the same as that of the axis, but not otherwise. From this may be deduced an experimental process for determining the periodical irregularities in the movement of diurnal rotation.—On the colloidal sulphuret of cadmium, by Eug. Prost. To the colloidal solutions of arsenious, stannic, and other sulphurets already determined, the author here adds the sulphuret of cadmium, which was hitherto known only in the insoluble state. He obtains a colloidal solution of this compound by passing hydrosulphuric acid through water holding in suspension freshly precipitated cadmic sulphur, and afterwards eliminating by the action of heat the hydrosulphuric acid dissolved in the liquid. A spectroscopic study of this clear yellowish liquid shows that the cadmic sulphur is really in a state of solution, the solution presenting all the characters hitherto ascribed to all dissolved colloidal substances.—Description of some new Cucurbitaceæ, by M. Alfred Cogniaux. This paper contains an account of fourteen new species and of several varieties, forming an important addition to the author's general monograph of this family published in De Caudolle's "Monographie Phanerogamum."

## SOCIETIES AND ACADEMIES.

### LONDON.

**Entomological Society**, October 5.—Dr. Sharp, President, in the chair.—Mr. Jacoby exhibited a specimen of *Aphthonoides beccarii*, Jac., a species of *Haltica* having a long spine attached to

the posterior femora; also a specimen of *Rhagiosoma madagascariensis*.—Mr. Stevens exhibited a very dark specimen of *Crambus perlatus* from the Hebrides, which its captor supposed to be a new species. Mr. Porritt remarked that this brown form of *Crambus perlatus* occurred at Hartlepool with the ordinary typical form of the species, and was there regarded as only a variety of it.—Mr. Slater exhibited a specimen of *Gonepteryx cleopatra*, which was stated to have been taken in the North of Scotland. Mr. Jenner Weir remarked that although the genus *Rhamnus*—to which the food-plant of the species belonged—was not a native of Scotland, some species had been introduced, and were cultivated in gardens.—Mr. South exhibited about 150 specimens of *Boarmia repandata*, bred from larvæ collected on bilberry in the neighbourhood of Lynmouth, North Devon, including strongly marked examples of the typical form, extreme forms of the var. *conversaria*, Hüb., a form intermediate between the type and the variety last named, and examples of the var. *destrigaria*, Haw. Mr. South said that an examination of the entire series would show that the extreme forms were connected with the type by intermediate forms and their aberrations.—Mr. Poulton exhibited young larvæ of *Apatura iris*, from the New Forest; also eight young larvæ of *Sphinx convolvuli* reared from ova laid on the 29th of August last. He said the life-history of the species was of extreme interest, throwing much light upon that of *Sphinx ligustri*, as well as upon difficult points in the ontogeny of the species of the allied genera *Acherontia* and *Smerinthus*. Mr. Stainton said he was not aware that the larvæ of *Sphinx convolvuli* had ever before been seen in this country in their early stages. Mr. McLachlan remarked that females of this species captured on former occasions, when the insect had been unusually abundant, had been found upon dissection to have the ovaries aborted.—Mr. R. W. Lloyd exhibited specimens of *Elater pomona*, and of *Mesosa nubila*, recently taken in the New Forest.—Mr. Porritt exhibited a series of melanic varieties of *Diurva fagella*, from Huddersfield, and stated that the typical pale form of the species had almost disappeared from that neighbourhood.—Mr. Goss exhibited, for Mr. J. Brown, a number of puparia of *Cecidomyia destructor* (Hessian Fly), received by the latter from various places in Cambridgeshire, Norfolk, Suffolk, and Wiltshire. He also exhibited a living larva of *Cephus pygmaeus*, Lat. (the Corn Sawfly), which had been sent to Mr. Brown from Swaffham Prior, Cambridgeshire, where, as well as in Burwell Fen, the species was stated to have been doing considerable damage to wheat crops. Mr. Verrall, in reply to a question by Mr. Enock, said he believed that the Hessian Fly was not a recent introduction in Great Britain, but had been here probably for hundreds of years. He admitted that he was unable to refer to any but recent records of its capture. Prof. Riley said he was unable to agree with Mr. Verrall, and believed that the Hessian Fly had been recently introduced into this country. Its presence here had not been recorded by Sir Joseph Banks, by Curtis, by Prof. Westwood, by the late Mr. Kirby, or by any other entomologist in this country who had given especial attention to economic entomology. It seemed highly improbable, if this insect had been here so many years, that its presence should have so long remained undetected both by entomologists and agriculturists. Prof. Riley said it had been stated that the insect was introduced into America by the Hessian troops in 1777, but this was impossible, as its existence at that date was unknown in Hesse. Mr. McLachlan, Capt. Elwes, Mr. Verrall, Mr. Jacoby, and Dr. Sharp continued the discussion.—Mr. J. Edwards communicated the second and concluding part of his "Synopsis of British Homoptera-Cicadina."—Prof. Westwood contributed "Notes on the life-history of various species of the Neuropterous genus *Ascalaphus*."—Capt. Elwes read a paper "On the Butterflies of the Pyrenees," and exhibited a large number of species which he had recently collected there. Mr. McLachlan said he spent some weeks in the Pyrenees in 1886, and was able to confirm Capt. Elwes' statements as to the abundance of butterflies in that part of the world. The discussion was continued by Mr. Distant, Mr. White, Dr. Sharp, and others.

**Mineralogical Society**, October 25.—Anniversary Meeting.—Mr. L. Fletcher, President, in the chair.—After the reading of the Report, the following were elected Officers and Council for the ensuing session:—President: L. Fletcher. Vice-Presidents: Rev. S. Haughton, F.R.S., W. H. Hudleston, F.R.S. Council (in place of Messrs. Burghardt, Danby, Dobbie, and Lewis, the retiring Members): Prof. A. H. Church, Townshend

M. Hall, Colonel C. A. M'Mahon, J. Stuart Thomson. Treasurer: Rev. Prof. T. G. Bonney, F.R.S. General Secretary: R. H. Scott, F.R.S. Foreign Secretary: T. Davies. Auditors: B. Kitto, F. W. Rudler.—The following papers were read:—On a meteoric iron, containing crystallized chromite, found in Greenbrier Co., West Virginia, about the year 1880, by L. Fletcher, President.—On the nature and origin of clays, by J. H. Collins.—Note on the occurrence of what may prove to be a new mineral resin, by J. Stuart Thomson.—On a variety of glaucophane from the Val Chivone (Cottian Alps), by Rev. Prof. T. G. Bonney, F.R.S.—On the discovery of leucite in Australia, by Prof. J. W. Judd, F.R.S.—On proustite containing antimony, by H. A. Miers and G. T. Prior.—Description of a new student's goniometer, by H. A. Miers.—On rutile needles in clays, by J. J. H. Teall.

## PARIS.

**Academy of Sciences, October 24.**—M. Janssen in the chair.—On naphthol as an antiseptic, by M. Ch. Bouchard. From the experiments here described it is shown that naphthol, hitherto limited to the local treatment of certain cutaneous diseases, may with perfect safety be applied inwardly. Its antiseptic and toxic properties have been accurately determined, with the result that, owing to its slight solubility, it is to be preferred in certain cases to all known antiseptic medicines.—Remarks on the physical principle on which is based M. Clausius's new theory of steam-motors, by M. G. A. Hirn. The view here contested is that the cylinder may be regarded as impermeable to heat, and consequently that the exchange of heat between its walls and the steam at each stroke of the piston is a factor which may be neglected by the practical mechanician. M. Hirn claims that most English and American engineers have adopted his views in the "Hirn-Zeuner controversy."—On the congelation of ciders, by M. G. Lechartier. The author's experiments make it evident that the fermentation of ciders is not destroyed but only diminished even after being kept for nine days at a temperature of 18° C. below freezing-point.—Remarks accompanying the presentation of the "Statistique de la Superficie et de la Population des Contrées de la Terre," by M. E. Levasseur. This work, which appeared originally in the *Bulletin de l'Institut international de Statistique* for 1886-87, comprises 103 tables, in three parts—the first devoted to Europe, the second to the other divisions of the globe, the third to general conclusions and comparative details for the whole earth. In this part the area and population of the various divisions of the world are thus tabulated for the year 1886:—

	Area in millions of square kilometres.	Population.		
		In millions.	Density per square kilometre.	Ratio to the whole population of the world.
Europe ... ..	10'0 ...	347 ...	34 ...	23'4
Africa ... ..	31'4 ...	197 ...	6 ...	13'3
Asia ... ..	42'0 ...	789 ...	19 ...	53'2
Oceania ... ..	11 ...	38 ...	3'5 ...	2'6
North America	23'4 ...	80 ...	3'4 ...	5'4
South America	18'3 ...	32 ...	1'7 ...	2'1
	136'1	1483	10'9	100'0

It is pointed out in the introduction that nearly two-thirds of mankind are concentrated in a relatively small space, about 11 millions of square kilometres, or one-twelfth of all the dry land, divided into three great groups: West, Central, and South Europe (245 millions of inhabitants, and 3'5 millions of kilometres); the Anglo-Indian Empire (254 and 3'6); and China, with Manchuria and Japan (430 and 4).—On the third scientific voyage of the *Hirondelle*, by Prince Albert of Monaco. Besides many hundreds of floats sent adrift between the Azores and Newfoundland, several captures were made from great depths with the sounding-gear, which worked easily down to 3000 metres from the surface. Amongst the prizes were several undescribed fishes, Gorgons, siliceous Sponges of the Hexactinellid family, a soft Urchin (*Phormosoma*), numerous Amphipod and Isopod Crustaceans, Solasters, Ophiures, and Hyas of great size, besides a moon-fish weighing nearly 300 kilogrammes, and furnished with a true caudal appendage.—On Newton's chromatic circle, by M. G. Govi. It is shown that this law, of which Newton himself offered no demonstration, is often at fault,

because it expresses no certain theoretic principle, nor any rigorously observed theoretic fact. Nevertheless it may still yield approximately correct useful results when it is required to express the complex sensations experienced by the organ of sight.—Positions of Brooks's Comet (January 22, 1887) measured with the 8-inch equatorial of the Observatory of Besançon, by M. Gruy. The positions are calculated for the period ranging from February 24 to April 29.—On magnetizing by influence, by M. P. Duhem. The author communicates the chief results of some studies based on the principles of thermodynamics, and undertaken for the purpose of removing some of the difficulties presented by Poisson's theory.—Action of sulphureted hydrogen on the salts of cobalt, by M. H. Baubigny. Some years ago the author showed that all the salts of nickel are transformed to sulphides when their solutions are treated with hydrosulphuric acid at the ordinary temperature. He now shows that a like treatment of the salts of cobalt yields very similar results.—On the quantitative analysis of titanic acid, by M. Lucien Lévy. A new method of analysis is described, which is more rapid and yields more accurate results than that hitherto in use.—On certain processes capable of increasing the resistance of the organism to the action of microbes, by M. Charrin. It is shown, by experiments carried out on rabbits, that under specified conditions the resisting power of the animal may be greatly increased and rendered more or less complete and lasting by inoculating or injecting the soluble products of the cultivated virus of certain microbes.

## BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Philip's Handy Volume Atlas of the British Empire (Philip).—Practical Chemistry: Muir and Carnegie (Clay).—Elementary Chemistry: Muir and Slater (Clay).—Essays relating to Indo-China, 2nd series, 2 vols. (Trübner).—On a Surf-bound Coast: A. P. Crouch (Low).—The Mammoth and the Flood: H. H. Howorth (Low).—The Natural History of Commerce, 3rd ed.; The Technical History of Commerce, 3rd edition; The Growth and Vicissitudes of Commerce, 3rd edition; Recent and Existing Commerce, 3rd edition; Dr. J. Yeats (Philip).—Proceedings of the American Academy of Arts and Sciences, December 1886 to May 1887 (Boston).—Bulletin de la Société Impériale des Naturalistes de Moscou, 1887, No. 3 (Moscow).—Zeitschrift für Wissenschaftliche Zoologie, xlv. Band, 4 Heft (Williams and Norgate).—Morphologisches Jahrbuch, Eine Zeitschrift für Anatomie und Entwicklungsgeschichte, xiii. Band, 1 Heft (Engelmann, Leipzig).—Encyclopædie der Naturwissenschaften. zweite Abth. 44 und 45 Lief. Handwörterbuch der Chemie; Erste Abth. 52 und 53 Lief. Handwörterbuch der Zoologie, Anthropologie, und Ethnologie (Williams and Norgate).—Journal of the Scottish Meteorological Society, 3rd series, No. iv. (Blackwood).—Animals from the Life, edited by A. B. Buckley (Stanford).

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