line the line between the closed clytra, the seed being often besides symmetrically striped or spotted. The main object of the fleshy carunculus has been generally assumed to be the supplying of food to the young embryo; but this, Mr. Moore believes, is not confirmed by actual experiment. It also no doubt serves to attract seminivorous birds, through whose body the seed passes to be prepared for germination.—In the November number Mr. S. H. Vines has an article on alternation of generations in Thallophytes, the main object of which, however, is to show that it does not exist, except in a very few cases. This is indeed in accordance with the general view of botanists. Mr. Vines still holds to his view that alternation of generations occurs in Characeæ; though why he now returns to the very doubtful position which he had previously abandoned, that the Characeæ are Thallophytes, is not explained.

Nuovo Giornale Botanico Italiano, October.—Sig. Borzì continues his series of papers on the morphology and biology of the Phycochromaceæ, the present portion being devoted to the structure and classification of the Scytonemaceæ, which he makes to consist of seven genera, viz., Coleodesmium, Bzl.; Tolypothrix, Ktz.; Hilsea, Kirchn.; Scytonema, Ktz.; Stigonema, Ag.; Capsosira, Ktz.; and Hapalosiphon, Näg. The various modes of increase he defines to be (1) by pseudo-ramuli, or portions of filaments which deviate from the ordinary direction, heterocysts being sometimes interposed between these and the filament from which they spring; (2) by spontaneous fraction of the filaments, the different portions remaining united in a bundle within a common gelatinous envelope, where they increase independently; (3) by hormogonia, or fragments which become detached from the filament, and which move slowly in the water in a rectilinear direction, light exercising no influence on the movement; (4) by spores, or isolated cells capable of resisting cold and excessive drought. In the same number A. Bertolini describes a new disease of the cherry-laurel, caused by a parasitic fungus, to which he gives the name *Oidium passerinii*, and which attacks the fruit. It makes its appearance in the form of irregular white spots, composed of filaments which invest the epicarp of the fruit, and from which rises a delicate down. The former is the mycelium of the fungus, the latter consists of the ovoid conidia arranged in moniliform filaments.

THE *Revue Internationale des Sciences* (September) contains the following among other papers:—The plant and man in their reciprocal relations, by Dr. Ernest Hallier.—On the geology of the Japanese Archipelago, by M. G. Maget.

SOCIETIES AND ACADEMIES

LONDON

Royal Society, November 20.—"On Definite Integrals involving Elliptic Functions." By J. W. L. Glaisher, F.R.S.

"Values of the Theta and Zeta Functions for certain Values of the Argument." By J. W. L. Glaisher, F.R.S.

"On Certain Definite Integrals." No. 5. By W. H. L. Russell, F.R.S.

"On the Action of Nuclei in Producing the Sudden Solidification of Supersaturated Solutions of Glauber's Salt." By Charles Tomlinson, F.R.S.

"The Geometric Mean, in Vital and Social Statistics." By Francis Galton, F.R.S., and Donald McAlister, B.A., B.Sc., Fellow of St. John's College, Cambridge.

"On the Normal Paraffins. Part III." By C. Schorlemmer. F.R.S., Professor of Organic Chemistry in Owens College, Manchester.

Zoological Society, November 18.—Prof. Flower, F.R.S., president, in the chair.—An extract was read from a letter addressed to the Secretary by Mr. H. O. Forbes, on the subject of the distribution of the badger-headed Mydaus in Java.—The Secretary read an extract from a letter received from Dr. A. B. Meyer, in which the habitat of *Cervus alfredi* was stated to be Samao and Leyte Islands, of the Philippine group.—Mr. Edward R. Alston exhibited some mammals collected by Mr. Wardlaw Ramsay, 67th Regiment, including examples of some species new to the faunas of Burma and Afghanistan.—Mr. Alston also exhibited one of the typical skulls of *Tapirus dowi* (Gill), which had been entrusted to him by the authorities of the U.S. National Museum. He remarked that the young tapir from Corinto, Nicaragua, which was formerly alive in the Society's Gardens, was really an example of *T. dowi*, and not, as had been hitherto supposed, of *T. bairdi*.—Prof. Flower exhibited and made remarks upon the skull of a White Whale (*Delphinopterus leucas*), recently obtained in Sutherlandshire.—The Secretary exhibited on behalf of Mr. Rowland Ward, the head of a chamois, with two pairs of horns.—Communications were read from Mr. L. Taczanowski, C.M.Z.S., containing descriptions of a new *Synallaxis*, from Peru, which he proposed to name *Synallaxis fruticola*; and of a new *Myiarchus*, from the same country, proposed to be called *M. cephalotes*.—A third communication received from Mr. Taczanowski contained a notice of some birds of interest recently received from Turkestan.—A communication was read from Captain Shelley, containing an account of a collection of birds made in the Comoro Islands, received from Dr. Kirk, H.B.M. Consul-General at Zanzibar. The collection contained 186 specimens. A *Zosterops* which appeared to be new was named *Z. kirkii*, in acknowledgment of the assistance rendered to ornithology by Dr. Kirk.—A second paper by Captain Shelley, gave the description of two new species of African birds.—Lieut.-Col. H. H. Godwin-Austen, F.Z.S., read a description of the female of *Lophophorus sclateri*, Jerdon, from Eastern Assam.—A communication was read from Dr. Goodacre, F.Z.S., on the question of the identity of the common and Chinese geese.—A communication was read from the Rev. O. P. Cambridge, C.M.Z.S., on some new and rare spiders from New Zealand; with characters of four new genera.—A communication was read on some African species of Lepidoptera, belonging to the sub-family, Nymphalinæ, by Mr. W. L. Distant. In this paper several instances of great variation were given, and some corrections made in the nomenclature. A new genus, five new species, and the male of *Halma lucasi*, Down, were also described.—Mr. R. G. Wardlaw Ramsay read the description of a new oriole, from N. E. Borneo, which he proposed to call *Oriolus consobrinus*.

Royal Microscopical Society, November 12.—Dr. Beale, F.R.S., in the chair.—Ten new Fellows were elected and eleven proposed for election at the next meeting. Prof. Weismann and others were elected Hon. Fellows.—A paper by Mr. H. E. Forrest, on the anatomy of *Leptodora hyalina*, was read; also papers by Mr. J. Fullagar, on a supposed new species of fresh-water *Freia*; by Col. Woodward, on amplifiers and the use of chloride of cadmium and glycerine as a fluid for homogeneous immersion, and by Mr. J. Mayall, jun., on his immersion stage illuminator, which was exhibited to the meeting. Among the objects exhibited were anomalous forms of *Acinetæ*, by Mr. Badcock, an improved micratome, by Mr. Ward; various algæ and infusoriæ, by Mr. Bolton, a new compressorium, by Mr. Graham, and Zeiss's travelling-microscope, by Mr. Crisp.

Anthropological Institute, November 11.—E. B. Tylor, F.R.S., president, in the chair.—The following new Members were announced:—A. Tylor, F.G.S., Baron von Hugel, Capt. R. C. Temple, and G. W. Bloxam, F.L.S.—Mr. E. W. Brabrook, secretary to the Anthropometric Committee, exhibited two albums of photographs collected by that body.—A report on the Bheel tribes of the Vindhyon Range was read by Col. Kincaird, fully describing the manners, customs, and superstitions of these little-known people, from experience derived during many years' residence amongst them. The Bheels are very dirty in their habits: their principal diseases are enlarged spleen and small-pox.—A paper was read by Mr. A. H. Keane on the relations of the Indo-Chinese and inter-oceanic races and languages, to show that Further India is occupied by two types, the fair and the yellow (Caucasian and Mongolian), the former speaking polysyllabic-untoned, the latter monosyllabic toned, languages; that both of these types, intermingled with the Papuan or dark races, constitute the whole of the population of Malaysia; that the Caucasian alone appears in the Eastern Pacific as the "*Sawaiori*," or "large brown Polynesian race." The absence of the monosyllabic languages from the oceanic area was accounted for, the expression "Malayo-Polynesian" shown to be misguiding, and the Malay type itself was considered to be, not fundamental, but essentially mixed—the result of fusion in the Eastern Archipelago of the fair and yellow elements.—Mr. S. E. Peal exhibited a fine collection of ethnological drawings made in Assam.

VIENNA

Imperial Academy of Sciences, October 9.—The vice-president made reference to the deaths of Dr. Fenzl, of Vienna, and Dr. v. Brandt, of St. Petersburg.—The following among

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other papers were read:—Earthquakes in Canea on the night of August 9-10, by Herr Miksche.—On the decline of water in springs, rivers, and streams with simultaneous rise of high-water in cultivated lands, by Herr v. Wex.—Reply to Prof. Heer (with regard to the task of phyto-palæontology), by Prof. von Ettingshausen.—Further investigation of spark-waves, by Prof. Mach and Herr Simonides.—On rational plane curves of the third and fourth order, by Herr Ameseder.—On the development of back-vessels and specially of the muscular system in Chironomus and some other insects, by Herr Jaworowski.—Determination of altitude of the pole at the Observatory of the Technical High School in Vienna, by Dr. Tinter.—Studies on a plane conic section of rotation, whose parameters are of the same size, by Herr Rotter.—Discovery of two comets by Herr Palisa and Herr Hertwig.—On combinations from animal tar. II. Non-basic constituents, by Dr. Weidel and Herr Ciamician.—On the phenomena in Geissler tubes under external action (first part), by Prof. Reitlinger and Urbanitzky.—On a species of configurations in the plane and in space, by Herr Kantor.

PARIS

Academy of Sciences, November 17.—M. Daubrée in the chair.—The following papers were read:—Meridian observations of small planets at the Greenwich and Paris Observatories during the third quarter of 1879; communicated by M. Mouchez.—On the temperature of decomposition of vapours, by M. Sainte-Claire Deville. He supports M. Berthelot's views in opposition to M. Wurtz. The quantity of heat liberated by formation of a compound substance has no known relation with its temperature of decomposition.—Observations on M. Cochin's note on alcoholic fermentation, by M. Berthelot.—Observation of the ultra-violet limit of the solar spectrum at different altitudes, by M. Cornu. Fifty-two *clichés* were obtained at three stations: Riffelberg (2,570 m. alt.), Rigi (1,650 m.), and Viège (660 m.) The extreme ultra-violet limits were, severally, λ 293·2, 294·8, and 295·4; the difference between Riffel and Viège (1,910 m.) being thus only 2·2 units (or millionths of a millimetre), or about 1 unit for 900 metres' altitude, a small amount of variation.—Explosion of carbonic acid in a coal-mine, by M. Delesse. This occurred in a coal-pit at Rochebelle (Gard), where there is much carbonic acid (no fire-damp). Two men at 345 m. depth heard two successive detonations (without flame), had their lamps blown out, became faint, and were just able to throw themselves into the cage, when they were pulled up. Three others, at 246 m. depth, perished. It is the first time the CO_2 has been so compressed and condensed in the coal as to cause explosion. Some seventy-six tons of coal were disengaged; and the CO_2 liberated is estimated at a maximum of 4,596 cubic metres. It is thought that a near stratified mass of iron pyrites being very strongly oxidised and decomposed, the resulting sulphuric acid dissolving in subterranean water reaches the triassic limestone, and so produces CO_2, which diffuses through the fissures of the coal. M. Dumas supported this view.—Second note on the effects and mode of action of antiseptics; effects on pus, by MM. Gosselin and Bergeron. Rightly used camphorised brandy, carbolic acid ($\frac{1}{50}$) and alcohol at 86° are, in the same degree, moderators of inflammation and preventives of septicæmia.—Climatological conditions of the years 1869-1879 in Normandy, and their influence on ripening of the crops (continued), by M. Mangon. In the north-west of La Manche, the low temperature of the end of 1878, of the first six months, and especially of July, 1879, and the abnormal rains of February and June, retarded the harvest about twenty-two days for corn, twenty for barley and beans, and ten to twelve for buckwheat. By noting the sum of degrees of temperature in each year since sowing, we may, with aid of the tables here given, calculate very exactly a month or six weeks in advance the time of harvest for the crops named.—On the true number of fundamental co-variants of a system of two cubics, by Prof. Sylvester.—Critical reflections on the experiments concerning human heat, by M. Hirn.—M. de Lesseps presented communications relating to a railway from Algeria to Senegal and Soudan, Belgian expeditions in Central Africa, and the public laws applicable to international rivers.—Atmospheric polarisation and the influence of terrestrial magnetism on the atmosphere, by M. Becquerel. He proves that a variable divergence exists between the plane of the sun (meaning thereby a plane passing through the observer's eye, the point looked at, and the centre of the sun) and the plane of polarisation of the atmosphere at any point, and thinks the influence of the earth's magnetism appears in rotating the plane of polarisation.—On a class of functions analogous to the Eulerian functions studied by M. Heine, by M. Appell.—New principle of meteorology furnished by an examination of earthquakes, by M. Delauney. Earthquakes seem to pass through a maximum when Jupiter and Saturn are about the mean longitudes of 265° and 135°. A recrudescence of earthquakes in winter the author attributes to streams of cosmic meteors, and the influence of Jupiter and Saturn in the positions stated to their passage through such streams.—Remarks on M. Boiteau's paper about winter eggs of phylloxera in surface-layers of the ground, by M. Balbiani.—On the causes of reinvasion of phylloxerised vineyards, by M. de Lafitte.—A telegram from General Ibanez announced completion of the geodetic connection of Spain with Algeria (November 16).—Observations of a satellite of Mars (Deimos) at Paris Observatory, by M. Bigourdan.—On doubly-periodic functions with singular essential points, by M. Picard.—Spots and protuberances observed with a spectroscope of great dispersion, by M. Thollon. The displacements and alterations of lines in observations of spots are specially striking. They are always in the same direction, and seem to indicate a motion from periphery to centre. A brilliant protuberance observed with narrow slit, illuminated vividly portions of the line C, which presented numerous solutions of continuity. The prodigious velocity of 25 km. per second indicated by the line, and lasting some time, suggests doubt as to the reality of the supposed cause.—The problem of the Euripus, by M. Forel. He traces the action of seiches as well as of soli-lunar tides in the currents of these straits.—On chlorophyll, by M. Gautier. He describes how he obtained chlorophyll pure and crystallised in 1877. He regards it as closely related to bilirubin, in aptitudes, reactions, and elementary constitution, and consequently to hematine.—Viviparity of *Helix studeriana* (Ferussac), by M. Viguier.—On the relative distribution of mean temperatures and pressures in January and July, by M. Teisserenc de Bort.—M. Le Bon gave some results of measurement of crania of eminent men in the Museum of Natural History. The high average figure of 1,732 cc. (capacity) was got from twenty-six skulls.—M. De Coiney described a meteor observed by day at Jevah (Dordogne).

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