SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 23.—M. Ed. Perrier in the chair.—G. **Humbert**: The reduction of the forms of Hermite in an imaginary quadratic body.—MM. **Costantin** and **Bois**: Three types of commercial vanilla of Tahiti. Since three-fifths of the world's production of vanilla comes from the French colonies, the question of its culture is worthy of investigation. The fruit from Mexico and Reunion is superior to that of the Tahiti type. In the present note a comparison is made between the types of vanilla known under the names of Mexico, Tahiti, and Tiarei, and some practical suggestions are made for cultivation.—Paul **Vuillemin**: The staminal origin of the perigon of the Liliaceæ; proofs furnished by the flowers of Hemerocallis.—E. F. **Perreau**: An electro-vibrator worked with interrupted currents. Previous types of this instrument, used in surgical work, have been worked with an alternating current, but an interrupted continuous current may be also used with advantage. Details of the arrangement are given, which, for the detection of non-magnetic bodies, is superior to the original instrument.—Daniel **Berthelot**: The co-volume of the gases disengaged by explosive materials. The co-volume b, in the equation $p(v-b)=RT$, is usually taken as 0·001 in calculations relating to explosives. It is now shown that this only holds for gases the critical temperature of which is sensibly equal to four times the critical pressure.—M. **Guilbaud**: An apparatus for the photolysis of powders.—J. **Repelin**: The Cretaceous age (Begudian) of the detritic layers of Logis de Nans (Var).—Henry **Hubert**: Subterranean waters in western Africa. A chart of Senegal is given showing the depths of the underground water.—Jules **Amar**: Arthrodynamometric measurements. — H. **Vincent**: Typhoid toxin and the production of a specific serum against typhoid fever. A study of the conditions for obtaining cultures of high toxic power.

WASHINGTON, D.C.

National Academy of Sciences, August 15 (Proceedings No. 8, vol. i.).—J. **Loeb**: Weber's law and antagonistic salt action. The author had shown that the ratio of the concentrations of antagonistic ions must remain within certain limits for the normal functioning of an organism. It is here shown that these limits remain approximately constant as the concentration of one of the ions is changed.—E. L. **Nichols** and H. L. **Howes**: The polarised fluorescence of ammonium uranyl chloride. The remarkable fluorescence spectrum of this salt is described in considerable detail, observations being made at +20° C. and −185° C.—T. **Michelson**: The linguistic classification of Potawatomi. By study of the so-called verbal pronouns, which afford most satisfactory classificatory criteria, it is shown that Potawatomi belongs to the Ojibwa group of Central Algonquian dialects.—H. **Shapley** and Martha Betz **Shapley**: The light curve of XX. Cygni as a contribuo the study of Cepheid variation. The form of the maximum of brightness in XX. Cygni is variable from period to period, and thus suggests the hypothesis that the periodic light and spectrum variations in this and other Cepheid variables should be ascribed to internal vibrations producing irregularities in luminosity instead of to double-star phenomena.—C. B. **Davenport**: The feebly inhibited. III.—Inheritance of temperament, with special reference to twins and suicides. A statistical study on eighty-nine family histories, affording 147 matings, leads to the conclusion that temperament is inherited as though there were in the germ plasm a factor E, which induces the more or less periodic occurrence of an excited condition and its absence, *e*, which results in a calmness; also a factor C which makes for normal cheerfulness and its absence, which permits a more or less periodic depression, the factors behaving as though in different chromosomes, so that they are inherited independently. —H. **Shapley**: Second-type stars of low mean density. Because of its bearing on the question of the order of stellar evolution, the density of stars of the second spectral type is discussed from the point of view of the dependability of the observational and theoretical work that is the basis of the derivation of occasional extremely low values.—W. H. **Brown** and Louise **Pearce**: The pathological action of arsenicals upon the adrenals. That arsenicals of diverse chemical constitution exert pronounced pathological action upon the adrenals has not been generally recognised. It appears from these observations that the adrenotropic action of arsenicals is one of the most constant and important features of arsenical intoxication, and it is suggested that therapeutic doses of some arsenicals may be found to produce definite stimulation of the adrenal glands.—Louise **Pearce** and W. H. **Brown**: Variations in the character and distribution of the renal lesions produced by compounds. Not all compounds of arsenic produce vascular lesions; some are capable of producing tubular nephritis; the difference in the pathogenic action being explainable only upon the basis of the chemical constitution of the different compounds of arsenic.—H. S. **White**: Seven points on a twisted cubic curve. If seven points on a twisted cubic be joined, two and two, by twenty-one lines, then any seven planes that contain these twenty-one lines will osculate a second cubic curve.

CAPE TOWN.

Royal Society of South Africa, July 21.—Dr. L. Péringuey, president, in the chair.—S. H. **Haughton**: Exhibition and description of a new type of fossil reptile from the Karroo. A somewhat incomplete skull, with associated limb-bones and vertebræ, from the upper Tapinocephalus zone of the Beaufort West District were exhibited. The form seems to show affinities both with the Dinocephalia and the Gorgonopsia. In the general form of the skull and of the palate it recalls the Dinocephalia, although it is much smaller, and its maxillary and premaxillary teeth are herbivorous, like those of Tapinocephalus and other forms; but in the possession of a few small palate teeth, in the vertical occipital plate, the shallowness of the basicranium and some other features it recalls the Gorgonopsia. The form occurs in beds which contain members of both groups, although the larger Dinocephalia of lower horizons seem to have given place to smaller forms. Watson has contended that these two groups have arisen from a not very far distant common ancestor; and although this form cannot be looked upon as ancestral, it throws some further light on the relationships between the two groups.—K. H. **Barnard**: Conus shells illustrating variation in markings. A series of shells was exhibited, showing gradation in the pigment from a condition in which the coloration is strongly marked to that in which the shells are practically colourless. The question of the origin of the pigment in its relation to the environment and heredity of the mollusc was discussed.—S. J. v. d. **Lingen**: (1) Simple apparatus for finding "G"; (2) simple apparatus for standardising a given vibrator. Apparatus was described the use of which does not involve assumptions of dynamical quantities that the student cannot determine for himself, and which is adapted to give him some definite idea about the acceleration of a freely falling body. A piece of apparatus was also described by which velocities and accelerations of trolleys, etc., can be determined without the need of assuming the

time of vibration of some vibrator.—J. K. E. **Halm**: Astronomical photometry. An account was given of a method which claims to derive from the measured diameters of the star discs on a photographic plate the brightness or "magnitude" of any star on a self-consistent basis. The work is founded on the examination of the properties of the photographic plate in the light of experiments made by Abney and Kron. The results obtained for the stars of the Cape astrographic zones demonstrate a perfect agreement of the Cape system with the Harvard photographic system. Comparisons between the photographic and visual magnitudes lead to the conclusion, also in agreement with the Harvard results, that the "colour" of the stars is a function of their brightness, faint stars being slightly redder than bright stars. This fact is tentatively attributed to the existence of absorbing matter in space. The phenomenon is emphasised in the regions of the galaxy. It is also found that, on the average, stars are actinically brighter in the Milky Way than in other regions. —W. A. **Jolly**: The electromotive changes accompanying activity in the mammalian ureter.—I. B. Pole **Evans**: A new aloe from Swaziland. A new species of aloe, found in Swaziland by Mr. R. A. Davis in June, 1914, was described and named *Aloe suprafoliata*. It may be recognised by its distichous leaves, which are rigid, somewhat fleshy, and patent or gracefully recurved. The flower spike is slender, unbranched, and bears rather loosely-attached rose doree flowers. The plants are usually found on the tops of quartzite kopjes, and have been found at Stegi, Lebombo Range, and Forbes Reef.

CALCUTTA.

Asiatic Society of Bengal, August 4.—S. C. **Mitra**: North Indian charms for securing immunity from the virus of scorpion-sting. Charms which are popularly supposed to render the user thereof either invulnerable to the stings of scorpions or immune from their virus, *e.g.* :—(1) By the repetition of certain passages of the Koran; (2) by performing the fire-walking ceremony known as *Dam madar;* and (3) by carrying about one's person the medicinal plant known as the *Chirchira* (*Achyranthes aspera*). The author also described the preparation and discussed the origin of a curious cognate charm whereby a practitioner acquires the power to cure scorpion stings, after rubbing with his hands, while he is in a blindfolded state, the blossoms of a mango tree.—I. H. **Burkill**: The Terai Forests between the Gandak and the Tista.—Dr. N. **Annandale**: The origin and distribution of the fauna of the Lake Tiberias. The aquatic fauna of the Jordan river-system, and in particular that of the Lake of Tiberias, consists mainly of species belonging to Palæarctic genera, and closely allied to, if not identical with, forms from eastern Europe or from the Euphrates Valley. There are, however, a certain number of animals that are Ethiopian either in genus or species. It is a remarkable fact that the distinctly Ethiopian forms are all fish. There are a considerable number of endemic species in the Lake of Tiberias, but none of them are very highly specialised. The only endemic genus is the sponge Cortispongilla. The presence of African fish can only be explained by a former connection through the south of the system with the "Erythræan River" of Gregory, which received a tributary from Central Africa. The fish of African origin all belong to families and genera that are particularly suited to survive unfavourable conditions. The view is put forward that they have been able to survive great changes of salinity in the water of different parts of the Jordan system, while any African invertebrates that may have made their way into it have perished, with the possible exception of a few very widely distributed mollusca (such as *Melania tuberculata*) and other forms that exist in tropical Asia as well as in Africa.—S. C. **Banerji**: A botanical curio. A huge epiphytic *Ficus bengalensis*, L., on a tall *Borassus flabellifer*, L., is to be found in the village Bara on the way to Pāthrole from Madhupur (Sonthal Parganas). The two together appear to be a composite tree. One-half of the height of the palm from the ground, excepting a small portion at the base, is completely encased by the root of the fig. The persistence of the epiphytism is interesting.

BOOKS RECEIVED.

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Identification of Common Carbon Compounds. By J. N. Rakshit. Pp. iii+222. (Calcutta: *Collegian* Office.)

Applied Immunology. By Drs. B. A. Thomas and R. H. Ivy. Pp. xv+359. (Philadelphia and London: J. B. Lippincott Co.) 16s. net.

British Rainfall, 1914. By Dr. H. R. Mill and C. Salter. Pp. 448. (London: E. Stanford, Ltd.) 10s.

War Plants or Products of Intensive Kultur. By C. H. L. Woodhouse. Pp. 24. (London: G. Routledge and Sons, Ltd.) 6*d*. net.

The Hundred Best Animals. By L. Gask. Pp. 304. (London: G G. Harrap and Co.) 7s. 6*d*. net.

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