

THE additions to the Zoological Society's Gardens during the past week include a Large-eared Brocket (*Cervus auritus*) from South America, presented by Mr. Charles Cooper; two Common Otters (*Lutra vulgaris*), European, presented by Mr. Augustus B. Foster; a Vulpine Phalanger (*Phalangista vulpina*) from Australia, presented by Mr. Thos. Welsh; two Rufous Tinamous (*Rhynchotus rufescens*) from South America, presented by Mr. F. Searle Parker; eighteen Roach (*Leuciscus rutilus*), six Perch (*Perca fluviatilis*), six Tench (*Tinca vulgaris*), a Bream (*Abramis brama*), a Prussian Carp (*Carassius vulgaris*) from British fresh waters, presented by Mr. J. Smith; three Fire-tailed Finches (*Erythrura prasina*) from Sumatra, purchased; a Feline Dourocouli (*Nyctipithecus felinus*), a Kinkajou (*Cercoptes caudivolvulus*), three Blue-shouldered Tanagers (*Tanagra cyanoptera*), an Adorned Terrapin (*Clemmys ornata*) from South America, deposited; a Great Kangaroo (*Macropus giganteus*), a Yellow-footed Rock Kangaroo (*Petrogale xanthopus*), a Collared Fruit Bat (*Cynonycteris collaris*), a Black Swan (*Cygnus atratus*) born in the Gardens.

### SOCIETIES AND ACADEMIES

#### LONDON

Royal Society.—March 1.—“Note on the Electrolytic Conduction of some Organic Bodies,” by J. H. Gladstone, Ph.D., F.R.S., Fullerian Professor of Chemistry in the Royal Institution, and Alfred Tribe, F.C.S., Lecturer on Chemistry in Dulwich College.

Our results, preliminary as we considered them to be, show that the iodides of ethyl, isobutyl, and amyl, the bromides of ethyl and propylene, the acetate of ethyl, and chloroform are practically non-conductors to a battery-power of 100 cells Grove, and that alcohol is to some extent traversed by the current. They show also that when these liquid non-conductors are mixed with the feeble conductor, alcohol, the conductivity of the mixture is greater than that of alcohol alone, which offers at least a partial clue to the readiness with which such mixtures are decomposed by the copper-zinc couple.

The very considerable development of heat in these liquids, which conduct the electric current with great difficulty, is a circumstance worthy of notice. In these cases it is evident that it does not result from any chemical change, because the decomposition, if anything at all, is utterly insignificant in amount.

“On the Protrusion of Protoplasmic Filaments from the Glandular Hairs of the Common Teasel,” by Francis Darwin. Communicated by Charles Darwin, F.R.S.

The following is a summary of the results arrived at by Mr. Darwin:—Certain observations have been made on the protrusion of protoplasmic filaments, from leaf-glands on the teasel; and the only theory which seems at all capable of connecting these facts is the following. That the glands on the teasel were aboriginally (*i.e.*, in the ancestors of the Dipsacaceæ) mere resin excreting organs. That the protoplasm which comes forth was originally a necessary concomitant of the secreted matters, but that from coming in contact with nitrogenous fluids it became gradually adapted to retain its vitality and to take on itself an absorptive function. And that this power—originally developed in relation to the ammonia in rain and dew—was further developed in relation to the decaying fluid accumulating within the connate leaves of the plant.

March 8.—“On the Structure and Development of Vascular Dentine,” by Charles S. Tomes, M.A. Communicated by John Tomes, F.R.S.

March 15.—“On the Density of Solid Mercury,” by Prof. J. W. Mallet, University of Virginia. Communicated by Prof. Stokes, Sec. R.S.

The author gets 14.1932 as the number representing the density of solid mercury at its fusing point as referred to water at 4° C. taken as unity. This result, which differs considerably from previous figures, he thinks, may be fairly accepted with confidence.

“The Automatic Action of the Sphincter Ani,” by W. R. Gowers, M.D., Assistant Physician to University College Hospital. Communicated by J. S. Burdon Sanderson, M.D., F.R.S.

“Description of the Process of Verifying Thermometers at the Kew Observatory,” by Francis Galton, F.R.S.

Linnean Society, March 15.—Prof. Allman, president, in the chair.—The Rev. A. Gardner Smith and Mr. A. Y. Stewart were elected Fellows.—The Secretary read a paper on the poisoned spears and arrows of the Samoa Islanders, by the Rev. Thos. Powell. The information thereon had been derived from the son of a native chief. According to his account, the weapons are pointed with human thigh and parietal bones, these being ground to a fine tapering point. A milky juice, the product of several kinds of trees—among others *Callophyllum inophyllum*—is used for dipping the arrow and the spear-heads into, and there is added a substance obtained from wasps' nests, besides some of the fluid of putrid Sea-cucumbers (*Holothuria*). A kind of kiln is then prepared, where the weapons are smoked, after which they are inserted into the dried flower-stalk of a species of *Tacca*, to prevent bad effects from humidity; lastly, they are bundled together and laid by ready for use. The effects of the poison on the human system—*viz.*, convulsions and tetanus, and the reputed means of cure the author duly mentions. Mr. G. Busk, however, questions the active quality of the said poison; at least some experiments of his incline him to think that a local irritation may be set up rather than an immediate deadly influence of a virulent vegetable poison, such as is the “Woorali” of South America. On the other hand, Messrs. Nichols and Pratt corroborate Mr. Powell's statements.—Dr. A. Gunther gave a notice of two large extinct lizards formerly inhabiting the Mascarene Islands. The remains of the bones had been partly obtained by Mr. Edward Newton, already well known for his researches on the extinct Mascarene fauna, and partly by Mr. H. H. Slater, Naturalist to the Transit of Venus Expedition. Comparisons have led Dr. Gunther to regard one relatively large animal as most nearly allied to the families of Zonuridae and Scincidae. But it differs both from the Glass Snakes and Skinks, hence a new genus has been assigned it and the name *Didosaurus mauritianus* given. The remains of another form from Rodriguez shows it to be allied and indeed identical with the Geckos, close to *G. verus* but specifically distinct, and accordingly named *G. newtonii*.—The second part of contributions to the ornithology of New Guinea, by Mr. R. Bowdler Sharpe, dealt with a collection made by the late Dr. James. This young enthusiastic naturalist was murdered by the natives during an expedition to one of the islands in Hall's Sound, whither he had gone to collect Birds of Paradise. Of fifty-three species obtained only three are new to science, and from this it is inferred that the south-eastern province visited has by no means so rich an avifauna as the northern parts of New Guinea are known to possess. The new species are *Melidora collaris*, *Phonygama jamesii*, and *Tanyssipera microrhyncha*. But a still more interesting night-flying black hawk, *Machaeranthus alcinus*, has turned up in this locality, whose habitat previously was supposed only to be Malacca and Tenasserim. Only four specimens of this rare bird are known to exist.—Samples of supposititious “manna” from Persia, and a bark (*Leptospermum*?) from New Zealand, with tonic qualities, were exhibited and remarked on by Mr. Stewart, of the Apothecaries Hall.

Zoological Society, March 20.—Dr. E. Hamilton, vice-president, in the chair.—Mr. Slater called the attention of the meeting to an article in the *Oriental Sporting Magazine* for May, 1876, by which it appeared that a two-horned rhinoceros had been killed in February, 1876, at a place some twenty miles south of Comillah, in Tipperah. Mr. Slater stated that this was the third recorded occurrence of a two-horned rhinoceros north of the Bay of Bengal.—Mr. Slater also called attention to the fact that Mr. W. Jamrach had just imported a young living specimen of the rhinoceros of the Bengal Sunderbunds, which was either *Rh. sondaicus* or a very closely allied form.—Mr. Slater exhibited a small living Amphibæian (*Bianus cinereus*), which had been accidentally brought to England in the roots of a hot-house plant from Port St. Mary, Spain.—Messrs. Charles G. Danford and Edward R. Alston read a paper on the mammals of Asia Minor, based principally on collections made by the former in that country. The list included one species of Bat, two of Insectivores, twenty of Carnivores, seven of Ungulates, and fourteen of Rodents. *Spermo philus xanthopyrnus*, Benn., was redescribed, and the name *Mus mystacinus* was proposed for a new species of field-mouse.—Mr. A. G. Butler read a paper on the Myriopoda obtained by the Rev. G. Brown in Duke of York Island. The species sent home were two in number, both of them allied to but distinct from previously described species. Mr. Butler proposed to designate them as *Heterostoma browni* and *Spirobolus cinctipes*.—A com-

munication was read from the Rev. O. P. Cambridge, in which he gave the descriptions of some spiders collected by the Rev. G. Brown in Duke of York Island, New Britain, and New Ireland. Two of these appeared to be undescribed, and were named *Argiope browni* and *Sarotes vulpinus*.—Prof. A. H. Garrod read a paper containing notes on the anatomy of the Musk Deer (*Moschus moschiferus*).—A communication was read from Mr. Edward Bartlett, containing remarks on the affinity of *Mesites* and the position which it should occupy in a natural classification. From an examination of structure of the feathers, Mr. Bartlett had come to the conclusion that *Mesites* was an aberrant form of the Ardeine group.—Dr. Günther, F.R.S., read a paper containing an account of the fishes collected by Capt. Feilden during the last Arctic Expedition. Amongst these were several of great interest, especially a new species of Charr, for which the name *Salmo arcturus* was proposed. This Charr was discovered in freshwater lakes of Grinnell-land, and was stated to be the most northern fresh-water fish known to exist.—Mr. Edward Newton, C.M.G., exhibited and read a paper on a collection of birds made in the island Anjuan or Johanna, one of the Comorro group, by Mr. Bewsher, of Mauritius, whereby the number of species now known to have occurred in that island was raised to thirty-five, of which fourteen were first observed there by that gentleman. Five of these, namely, *Zosterops anjuanensis*, *Tchitrea vulpina*, *Ellisia longicaudata*, *Turdus bewshei*, and *Turtur comorensis*, were described as new.

Meteorological Society, March 21.—Mr. H. S. Eaton, M.A., president, in the chair.—Capt. Fellowes, R.E., George Jinman, Angus Mackintosh, M.D., Robert W. T. Morris, Rev. Edward Vincent Pigott, David S. Skinner, L.R.C.P., and Henry St. John Wood were elected Fellows of the Society.—The following papers were read:—Results of meteorological observations made at Patras, Greece, during 1874 and 1875, by the Rev. Herbert A. Boys. This is in continuation of a former paper read before the Society in 1875. The period embraced in the two papers—January, 1873, to June, 1875—covers a whole winter compressed into about thirty days, a very long and showery spring, an excessively hot summer, a dry winter of extreme cold, a summer of most prolonged drought, a remarkably wet and snowy winter, a very late beginning of hot weather, and the coldest day and night, and the lowest barometer reading for many years.—Contributions to the meteorology of the Pacific—Fiji, by Robert H. Scott, F.R.S. This paper contains a discussion of all published information as to the climate of Fiji which the author has been able to discover.—Local diurnal range, by S. H. Miller, F.R.A.S.—This was followed by another paper on the same subject, by William Marriott, F.M.S., which discussed the questions of whether the tables of corrections for diurnal range, at present used by a large number of observers, are trustworthy, and whether they are applicable to different places in the United Kingdom. The conclusions arrived at were that the present corrections could not be considered as accurate, that no strictly comparable records exist for instituting a satisfactory inquiry, and that it is very undesirable to apply any corrections whatever to the observations to deduce means from them.—Mr. Negretti exhibited several new instruments.

## PARIS

Academy of Sciences, March 26.—M. Peligot in the chair.—The following papers were read:—Remarks on the presence of benzene in coal gas, by M. Berthelot. The illuminating portion of the Parisian gas consists mostly of vapour of benzene, forming about 3 per cent. of the whole volume. Fuming nitric acid was employed in the analysis, producing nitrobenzene.—On a recent communication of Mr. Weddell regarding the advantage to be realised in replacing quinine by cinchonidine, by M. Pasteur. Mr. Weddell having stated that cinchonidine was discovered by M. Pasteur, the latter says this is attributing too much to him, and defines his researches on the subject in 1853.—On the digestion of albumen, by M. van Tieghem. The relation of the albumen to the embryo in seeds was studied by two methods—observing isolated albumen subjected to germination and observing the dissolution of albumen during germination, of the entire seed. There are two modes of digestion; the oleaginous and aleuric albumen has an activity of its own, it digests itself, and the embryo only absorbs the products of this interior digestion; it is a "nurse" to it. The amylaceous and cellulosic albumens, on the contrary, are passive; they are digested by the embryo, each in its fashion, and the products of this external digestion are then absorbed by it; they are to it only a nutri-

ment.—On preventive and early trepanation in vitreous fractures complicated by splinters, by M. Sedillot.—Observations of the satellites of Saturn, at the Observatory of Toulouse in 1876, with the large Foucault telescope, by M. Tisserand. These relate to the first five satellites only. From observations of three of them the apparent diameter of Saturn's ring is inferred to be 40".51.—On a theorem relative to the expansion of vapours without external work, by M. Hirn.—On the theory of plane elastic plates, by M. Levy.—The president of the Vine-growing Society of the Pyrenées Orientales sent a document affirming that it is the American plants that have brought phylloxera into France; all plantation of them is the signal of a fresh invasion.—On the theory of frigorific machines, by M. Terquem.—On the reflection of polarised light, by M. Croullebois. He studies one of the fringes discovered by Airy, and named by M. Billet the *courbe de semelle*; showing what may be inferred from it, as to the physical constitution of a mirror (*i.e.*, its positive, neutral, or negative nature); the value of the angle of maximum polarisation (first constant), and the azimuth of renewed polarisation (second constant).—On the transformation of crystallisable sugar into inactive glucose in raw cane sugars, by M. Gayon. Heat and moisture favour the transformation; there is a real fermentation, with carbonic acid given off. By the mere decrease of crystallisable and increase of uncrystallisable sugar, the yield in refining was diminished by 25 per cent. in one sugar, and 33 per cent. in another.—On the composition of gun-cotton, by M. M. Champion and Pellet. The specimen analysed contained (ashes deducted 100 gr. per cent.) free cellulose, 100; dinitro-cellulose, 600; principal nitrated product (by difference), 9300. Supposing this product pentanitrocellulose, and calculating the constituents on this hypothesis, we have, carbon, 26.54; hydrogen, 2.79; nitrogen, 12.51; oxygen, 58.16; which analysis confirms.—Studies on the series of the quinolines; transformation of leucoline into aniline, by Mr. James Dewar.—On nitrotoquinone and chloranilic acid, by M. Etard.—On the sewage waters of Paris, by M. Lauth. The facts cited prove that the sulphidic putrefaction of such water may be avoided by addition of lime, or (a much more important result) by simple aëration. Putrefaction only occurs when the sewage water is kept out of contact with air. As such conditions probably occur at the bottom of the Seine, the facts related may be utilised for its sanitation.—On the fecundation of the egg in the sea-urchin, by M. Perez. He questions M. Fol's statement that the spermatozooids penetrate into the interior.—Hailstorm at the Cape of Antibes on March 21, by M. Ferrière. The storm came from the depths of the marine horizon; its movement was from west to east, and the hailstones, judging from the orientation of the deposits, must have had a gyratory motion. These facts seem to bear on M. Faye's theory.—Chronic anæmia from stubborn nervous and digestive disorders continuing for five years; transfusion of blood and cure, by M. Oré. Only forty grammes of blood were used. Puncture was made without denudation of the vein. The transfused blood acts by stimulating the organs rendered atonic, and by causing a proliferation of new globules.—On the antiseptic properties of bichromate of potash, by M. Lajorrois. The addition of  $\frac{1}{100}$  to ordinary water will render this conservative of all organic products without decomposition, even in free air.

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ERRATUM.—P. 466, col. 2, line 26, for "Carroll" read "Varrell."