

(one carrying bare soil, another a plant in the same soil exposed to air, and the third a similar plant, but with its stem passing up through a covering obturator), and with a dry and a wet registering thermometer, M. Grandeau hopes to be able to settle some important questions relating to quantity of water required by a given species, transpiration, quantity of evaporation from ground under various conditions, &c.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Miss Gover; a Bonnet Monkey (*Macacus radiatus*) from India, presented by Mr. G. B. Southern; a Soemmerring's Antelope (*Gazella sammerringi*) from Abyssinia an Arabian Gazelle (*Gazella arabica*) from Arabia, presented by Capt. F. Cotton; an Emu (*Dromicus nova-hollandiæ*) from New South Wales, presented by Mr. F. Green; a Slender-billed Cockatoo (*Cacatua tenuirostris*) from South Australia, presented by Major M. Pasley, R.A.; Crested Ground Parrakeet (*Calopsitta nova-hollandiæ*) from Australia, presented by Mr. Salisbury Baxendale; a Purple-faced Monkey (*Sennopithecus leucopymnus*) from Ceylon, deposited.

SCIENTIFIC SERIALS

Bulletin de l'Académie Royale des Sciences de Belgique, No. 3. On the pension-fund of widows of officers of the Belgian army, by M. Liagre.—Some curious examples of discontinuity in analysis (continued), by M. Plateau.—Reply to M. Terby's criticism on the map of Mars, published in the *Terres du Ciel*, by M. Flammarion.—Theorem on the Arquesians, by M. Saitel.—Applications of the method of analytical correspondence and of the law of decompositions to certain left curves, by the same.—Observations at Rome on the magnetic needle and the solar spots during 1875, by Abbé Spée.—Microscopic researches on the anatomy of the cochlea of mammalia, by M. Nuel.

No. 4.—On the theory of continuous periodic fractions, by M. Le Paige.—Studies on the planet Mars (10th notice) by M. Terbe.—Continuation of theorems on regular polygons, by M. Reynaud.—Fragment of tourmaliniferous rock from pudding-stone of Bonsalle, by MM. Poussin and Renard.

No. 5.—Application of the rhe-electrometer to the lighting-conductors of telegraphs, by M. Melsens.—Some remarks on the winter of 1876-77; periodicity of mild winters and hot summers, by M. Lancaster.—On subnormal polars and radii of curvature of plane lines, by M. Ghyssens.—Morphology of the dental system of human races, by M. Lambert.—Stratigraphic arrangement of fossil seals collected in the strata of Antwerp, by M. Mourlon.

SOCIETIES AND ACADEMIES

LONDON

Entomological Society, August 1.—Mr. J. W. Dunning, F.L.S., vice-president, in the chair.—Mr. Stevens exhibited specimens of *Teretrius pictipes*, Fab., one of the *Histerida* taken on a fence at Norwood. He also remarked on the appearance of a second brood of *Colias Edusa*, of which he had observed several males.—Mr. F. Smith exhibited (on behalf of Dr. Bennett of Sydney, who was present at the meeting), a fine pair of the beautiful and rare *Eupholus Bennetti*, Gestro., from Yule Island, New Guinea. It had been described under that name in the *Annali di Mus. Civ. di Genova*, viii. 1876.—The secretary exhibited a specimen of an insect forwarded to him by Mr. Bewicke Blackburn, who stated that a large field of mangolds belonging to the Knight of Kerry, in the island of Valentia, had been totally destroyed by it. It was believed to be the larva of some Coleopterous insect, but in consequence of the imperfect condition of the specimen, it could not be determined.—Mr. R. A. Ogilvie forwarded (through Mr. Douglas), specimens of an insect found in great quantities in a jar of pickles (piccalilly), devouring the pieces of cauliflower in the jar. Prof. Westwood had pronounced them to be the dipterous *Drosophila cellaris*, an insect commonly found in cellars and cupboards, delighting in stale beer, wine, &c. In answer to a question asked by Mr. Ogilvie, he said that the eggs were laid in the pickle-jar,

and not in the cauliflowers before they were pickled.—Mr. Douglas also forwarded a letter from Mr. A. H. Swinton, of Guildford, inclosing a specimen of *Myrmica ruginodis*, which, on being placed under a wine glass, stationed itself near the rim, head downwards, and rapidly vibrating the abdomen, continued "an intense noise," resembling the spiracular piping of the dipterous, *Syrilla pipiens*.—Mr. Enock remarked that a specimen of a spider taken by himself at Hampstead, and exhibited at a previous meeting by Sir Sydney Saunders as *Atypus sulzeri* had been since submitted to the Rev. O. Pickard, Cambridge, who stated that it was certainly not *A. sulzeri*, but probably *A. beckii*, Cambridge, which he believed to be the same as *A. piceus*, Thorell, though he was not certain as the only specimen he had examined of *A. beckii* was a female, and until he could obtain the other sex, he could not give a decided opinion. He added that he would be glad if collectors in the Hampstead locality would search for the males during the next autumn and winter, as it would help him to clear up the difficulty as to the species. A discussion then took place with reference to the exhibition by Mr. Jenner Weir, at the last meeting, of a specimen of *Cicada montana*, which was reported to have been distinctly heard to stridulate, notwithstanding that the insect was a female, and also that the species was one of which even the males were not known to stridulate. Mr. Weir stated that he had, since the last meeting, again visited the New Forest, and had seen in the possession of Mr. James Gulliver two specimens of *C. montana*, and he was assured by Mr. Gulliver that the fact of it stridulating was well known to him, and that he was guided by the sound so made, in effecting the capture. Mr. Champion said that he himself had captured the insect, and had distinctly heard a loud buzzing noise, but whether that sound was caused by the males or females he could not say. Mr. Dunning considered that farther evidence was wanting to prove stridulation in the females.—The following papers were communicated, viz.: Notes on the new and rare species of *Sphingida* in the Museum of the Royal Dublin Society, with remarks on Mr. Butler's recent revision of the family, by W. F. Kirby.—Descriptions of new genera and species of *Cryptocephalida*, by J. S. Baly.—Descriptions of new species of *Clerida*, by the Rev. H. S. Gorham.

GENEVA

Society of Physics and Natural History, May 3.—Prof. Plantamour gave the results of the determination of the difference of longitude between the observatory of Zurich and the geodetic stations of the Gâbris (Canton Appenzell), and of the Pfänder (Austrian Vorarlberg), at which he has worked with MM. R. Wolf and Oppolzer. The two last observers have had to guard against the influence of the electric register on the rate of their pendulum, which was sometimes affected to the extent of one-tenth of a second.—Prof. Plantamour also referred to a particular fact which has been manifested by the corresponding observations made by him at Geneva, and by Col. Orff at Munich, and where the instants marked are influenced by the inclination to right or left of the head of the observer, according to the position he must take to apply his eye to the telescope. There is here a physiological or psychological phenomenon which deserves attention.

VIENNA

Imperial Academy of Sciences, June 14.—Action of bromine on phloroglucin, by M. Benedikt.—On the means of acid formation in the animal system, and on some phenomena of blood-serum, by M. Maly.—A new proof of Pohlke's fundamental proposition, by M. Pelz.—On a proposition relating to the theory of the higher equations, and on development of the root expression of a quadratic equation, by M. Zimels.—Testing of a method for determination of the water in silicates, by M. Sipöcz.—On formation of pimelin acid in action of a mixture of hydroxide and cyanide of potassium on bromide of amylene, by M. Bauer. The Coelenterata, Echinodermata, and Worms of the Austro-Hungarian North Polar Expedition, by M. Marenzeller.—On the spots in the xylema of leafy and resinous trees, by M. Kreuz.

June 21.—Orthoptera of Senegal, by M. Krauss.—On the probable connection of the wind with the period of sun-spots, by M. Hornstein.—On the determination of the value of a circle by an immediate method, by M. Georgievicz.—Observations on the nerves of the cornea and their vessels, by M. Königstein.—On the influence of the earth's rotation on the movements of any kind parallel to the earth's spheroidal surface, especially the currents of rivers and winds, by M. Finger.

July 12.—On the fresh-water fishes of South-Eastern Brazil (4th part), by M. Steindachner.—On the recurrence of two different kinds of bundles of vessels in the kidneys, by M. Drasch.—On the compounds of the camphor group, by M. Kachler.—On the substances besides anthracene occurring in crude anthracene, on carbazol, and on the behaviour of camphor to hydrate of chloral, by M. Zeidler.—Theory of the functions $C_v(x)$, by M. Gegenbauer.—On intermediate cells in the large antheridium cell of the pollen grain of some Coniferae, by M. Tomaschek.—On the properties of dialysed egg albumen, by M. Laptschinsky.—The volcano of Monteferru, in Sardinia, by M. Doelter.—On a relation corresponding to the linear differential equations of the second order, by M. Winckler.—On the light line in the prism-cells of some seed envelopes, by M. Junowicz.—The Salse of Sassuolo, the origin of aptychous lime, and the Mediterranean flora in its relation to the bottom deposits, by M. Fuchs.—The stand-aneroid barometer, by M. Schell.

July 19.—On the chemical reaction of the visual nerves and the retina, by M. Chodin.—The fossil flora of Parschlug in Steiermark, by M. v. Ettingshausen.—On the orbit of the Loreley (165), by M. Gruss.—The development of the embryo of *Asplenium Shepherdii*, Spr., by M. Vouk.—On idryl, by M. Goldschmidt.—On the behaviour of some resins and resinous acids in distillation over zinc powder, by M. Ciamician.—On derivatives of isatin, by M. v. Somaruga.—On cinchonin, by M. Skrap.—Action of water on haloid compounds of alcohol radicals, by M. Niederist.—Action of nitric acid on trimethyl carbinol, by M. Haitinger.—Action of weak affinities on aldehyde, by M. Lieben.—Researches on fluorescence, by M. Mach.—Tenacity and elasticity of vegetable textures and organs, by M. Wiesner.—Analysis of the sulphur springs at Baden, near Vienna, by M. Kretschy.—On the spectra of the chemical elements and their compounds, by M. Ciamician.—Contributions from chemical laboratory in Brunn.—Influence of temperature on galvanic conductivity of liquids, by MM. Exner and Goldschmidt.—Behaviour of taurine in the system of birds, by M. Cech.—On peculiar products of mykotic keratitis with the reaction of amyloid, by M. Frisch.—On heat conductivity of cotton, wool, and silk, by M. Schuhmeister.—Anatomy of the optic thalami and neighbourhood, by M. Schnopfagen.—On the laws of nerve-excitation, by M. Fleischl.

PARIS

Academy of Sciences, August 20.—M. Peligot in the chair.—The following papers were read:—Meridian observations of small planets at the Greenwich and Paris observatories, during the second three months of 1877, communicated by M. Leverrier.—Observations on a recent work of M. Hebert, relative to the exceptional winter of 1876-7, by M. Faye. The phenomena are attributed by M. Hebert to a succession of strokes of sirocco with descending whirling motion, which have communicated the heat and drought characteristic of them. Forty-one distinct gyrations were observed in December alone. The sirocco stroke, which caused the very mild dry weather in the beginning of the year, belonged to three great cyclones which came, like all the others, from the Atlantic.—Examination of documents relative to a scientific expedition to Peru in 1735 to 1743, by M. De la Gournerie. The documents contain what is perhaps the first reference to platina, also references to M. Bouguer's celebrated memoirs, on attraction of mountains, not known till ten years afterwards (1749).—On an example of reduction of Abelian integrals with elliptic functions, by Prof. Cayley.—Properties common to supply pipes, canals, and rivers, with uniform régime (continued), by M. Boileau. The influence of resistance of the walls on the decrease of velocity of the liquid sheets (starting with the principal liquid thread) is proportional to the square root of the intensity of this resistance.—The plague in 1877; third reappearance in Bagdad; two centres of origin in Persia; by Dr. Tholozan.—Results obtained by application of sulphide of carbon to vines attacked by phylloxera, by M. Allies.—Discovery of a new planet by Mr. Watson (telegram from Mr. Joseph Henry).—Discovery of two satellites of Mars by Mr. Hall, at Washington, by Mr. Henry.—On a stellar system in rapid proper motion, by M. Flammarion. The stars in question (which are considerably apart) are 7510 B.A.C. and 2810 Σ (the second is double). They move in the same direction and with nearly the same velocity, which exceeds much the ordinary average of proper motions. The direction of motion is nearly opposite to that of the sun's translation in space.—On the characters of flames

Charged with saline powder, by M. Gouy. The observations seem to show that there is at the base of the flame a very thin layer, where the temperature is much higher than in the flame itself.—Researches on the chromates, by M. Etard.—Cerebral anæmia and congestion produced mechanically in animals, by attitude or by a gyratory movement, by M. Salathé. Rabbits kept in a vertical position, with head up, showed, after some time, symptoms of syncope, also convulsions. Respiration and heart-beats finally ceased. Reversal of position quickly restored the animal. Centrifugal force (the animal being rotated on a board) gave much more rapid cerebral anæmia or congestion, according as the head or feet were towards the centre of the board's motion. While it took about ten minutes to produce death by cerebral anæmia thus, it generally took at least double to produce it by congestion.—On the coloration of the optic elements in the *Locusta viridissima*, by M. Chatin. There is a considerable similarity to the same parts in crustacea.—Phenomena which accompany metamorphosis in the *Libellula depressa*, by M. Jousset de Belleme. It is by swallowing air and storing it in its alimentary canal that the Libellula obtains the force necessary to accomplish most of its transformations (displacement of the wing, &c.). The mechanism is probably general in this class of animals.—Observations on falling stars of the month of August, by M. Chapelas. The number observed is the smallest since 1837.—On the heat which may be liberated by movement of meteorites through the atmosphere, by M. Govi.—The upper Devonian limestones of the north of France, by M. Gosselet.—On the physiological balance and its applications, by M. Grandea. This instrument is to represent by curves the gains or losses of weight of any matter (soil, plant, animal, &c.), placed in one of the scales. M. Gosselin submitted for inspection a new densimeter, consisting of a small wooden rule suspended by a wire connected to a non-central point in it. A certain weight is placed at the end of the longer arm, and a piece of the body to be examined is hung from the shorter arm so as to give horizontal equilibrium. Then this piece is immersed in water and the weight on the longer arm is displaced till equilibrium is restored. The weight then indicates the density by its position on the scale.

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