SOCIETIES AND ACADEMIES

LONDON

Anthropological Institute, November 11.—Prof. Flower, F.R.S., President, in the chair.—The election of Horatio Hale, D. H. Talbot, Dr. F. A. Colby, and Mrs. E. A. Smith was announced.—Mr. Francis Galton described the object, method, and appliances of the late Anthropometric Laboratory at the International Health Exhibition, reserving the statistical results, which were not yet fully worked out, for another occasion. He established it to show with how little expense an elaborate course of measurements might be made, and how popular such a system of measurements would be. The result was that 9344 persons passed through the laboratory, each of them being measured in seventeen distinct particulars for the sum of 3*d.*, in a compartment only 6 feet wide and 36 feet long. The popularity of the laboratory was so great that its door was besieged by far more applicants than could be admitted, and many persons made repeated attempts and waited long for their turn, but at last gave up their attempts as hopeless. So many applications have been made abroad and at home for duplicates of the instrumental outfit that it was advisable that any suggested improvements in them should be considered before they became established in use. The present paper was to invite discussion. An identical set of instruments to those used at the Exhibition have been set up by Mr. Gammage, optical instrument maker, at 172, Brompton Road, assisted by Mr. Williams, who, between them, conducted all the measurements at the Healtheries; they make a moderate charge for measuring and keeping a register of the results.—Mr. H. O. Forbes read a paper on the people of the island of Buru.

EDINBURGH

Royal Physical Society, November 19.—Ramsay H. Traquair, M.D., F.R.SS.L. and E., President, in the chair.—The President delivered the opening address, in which, after referring to the loss which the Society had sustained in the death of Dr. J. A. Smith, for many years its secretary, and subsequently one of its presidents, he called attention to the proceedings of last session as showing that the prosperity of the Society appeared not only in the increase of membership and ingathering of fees, but in scientific work accomplished.—Dr. Traquair then proceeded to discuss the subject of "Biological Nomenclature." Having shown the necessity for a nomenclature intelligible to all scientific men as distinguished from the common names of plants and animals, which varied in different countries, he referred to the introduction by Linnæus of the binomial system, under which each form received a generic and a specific name, and to the action taken by the British Association in 1842, and again in 1865, with the view of securing uniformity. Their rules and recommendations had, he said, worked well for the benefit of science, but they had not been in every particular followed by naturalists abroad, while even in this country there were often heard ominous notes of dissent as to their sufficiency for the wants of the science of the present day. They must, however, form the basis for all subsequent attempts to rectify the subject. Proceeding to discuss those rules, he urged the necessity of strict adherence to priority, and said he agreed with the rule that publication should mean the insertion of the description in a printed book, with the addition that such book might be had on sale. He also expressed concurrence in the recommendation which deprecated the propounding of harsh names, but he could hardly agree with the denunciation of what were called nonsense names, that was, names coined at random without any derivation whatever. The difficulty of devising generic names, not preoccupied, was immense: and if a person with a musical ear invented a nicely sounding word of classical form, surely it was as good as some cacophonous "jaw-breaker," whatever its derivation. Touching next on the comparative value of binomirl, trinomial, and quadrinomial systhms, he hardly thought the time had come for any radical interference with the binomial, which, notwithstanding all its defects, had worked so well from the time of Linnæus to our own. While condemning the practice adopted by some writers of coining new English names, he was in favour of appending the common names, where such really existed, to the scientific ones for behoof of the unscientific.—On the motion of Prof. Duns, a vote of thanks was accorded to the retiring President for his address and for his services in the chair.

MANCHESTER

Literary and Philosophical Society, October 7.—A paper was communicated by Alfred Brothers, F.R.A.S., on the pink sun-glow which he had noticed at midday as early as January this year, and again on July 5 and at the end of August. On the evening of October 3 he observed the same phenomenon by clear moonlight, and attributed it, therefore, to our atmosphere, and not to its being a real appendage of the sun, as had been given out.

October 21.—Joseph Baxendell, F.R.S., communicated a note on the visibility of the moon during total lunar eclipses, in which it was sought to show that the visibility in question might in no inconsiderable measure be due to the outer corona, which extended to a much greater distance on each side of the sun than the semi-diameter of the earth as seen from the moon.—Prof. H. E. Roscoe, F.R.S., contributed a paper on the diamond-bearing rocks of South Africa. Two shafts sunk in the Kimberley Mine—one in the "pipe," the other in the shale near it—passed through the following strata:—

(1) "*Pipe*"		(2) "*Outside the Pipe*"	
Red Sand	3 feet	Red Sand	3 feet
Tufaceous Limestone	15 ,,	Tufaceous Limestone...	5 ,,
Soft yellow earthy diamond rock	30 ,,	Yellow Shale	20 ,,
Soft blue diamond rock proved to	282 ,,	Black carbonaceous do.	10 ,,
		Two thin bands of black dust in Shale... ...	1 foot
		Black Shale	236 feet
		Dolerite	2 ,,
Total excavated ...	330 feet	Total excavated ...	277 feet

The diamonds were found in the yellow and blue "Stuff" along with garnets, mica, bronzite, ilmenite, pyrite, &c., and were separated by washing the broken-up earth in sluices similar to those used in gold-mining. The annual value of the diamonds from Kimberley was said to be 3,750,000*l.*, and the total amount raised since 1870, to reach the enormous sum of 40,000,000*l.* Five different specimens of the strata were then produced and their analyses given.—Notes on envelopes and singular solutions (continued), by Sir James Cockle, F.R.S.

PARIS

Academy of Sciences, November 17.—M. Rolland, President, in the chair.—On the breathing-bags of the *Calao rhinoceros*, by M. Alph. Milne-Edwards. The specimen of the species of hornbill forming the subject of the paper was brought to Paris last summer by M. P. Fauque, head of the scientific mission recently sent to Sumatra by the Minister of Public Instruction. Owing to the peculiar disposition of its breathing apparatus the *Calao rhinoceros* is a remarkably light bird, its weight scarcely exceeding 1500 grms., although it is about the size of a turkey.—On the anæsthetic action of the chlorhydrate of cocaïne, by M. Vulpian. So powerful is this anæsthetic, which is at present the subject of numerous experiments by M. Koller and other physiologists, that an aqueous solution of one part salt of cocaïne and ninety-nine parts of water inserted under the eyelids produces complete insensibility of the conjunctiva and cornea in the human eye. But the effect, obtained in three or four minutes, lasts only a few minutes. Experiments made on the dog, frog, and other animals, have been attended with like results.—Contribution to the study of the deposits of phosphates (lime, iron, &c.), in the Departments of the Drôme, Isère, and other parts of South-East France, by M. P. de Gasparin.—Experimental demonstration of the inversion of the electromotor force produced by the contact of iron and copper at a high temperature, by M. F. F. Le Roux. From the results of several series of experiments, conducted under varying conditions, the author concludes that at about the temperature of 1000° an electric current passing from the copper to the iron heats the point of contact, while cooling it at the ordinary temperature. A knowledge of this fact, now for the first time demonstrated, may affect not only the theory of thermo-electricity, but also that of certain chemical phenomena.—Experiments made as a contribution to the study of the phenomena produced in man by the ingestion of the diarrhœic liquid of cholera into the stomach, by M. Bochefontaine. From these experiments, made on himself, as well as on the dog, guinea-pig, and other animals, the author feels justified in concluding that the reception in the stomach of the diarrhœic liquid containing the comma-bacillus of cholera does not neces

sarily produce true cholera in man.—On the presence of the biliary salts in the blood of cholera patients, and on the existence of a toxic alkaloid in their dejecta, by M. G. Pouchet. The author, who is conducting a series of important experiments in the Hospital of Saint-Louis, Paris, concludes, so far, that the blood of cholera victims is certainly charged with a proportion, occasionally very considerable, of biliary salts, while their dejecta nearly always possess a strong alkaline reaction.—Letter on the application of the decimal system to the measurement of angles and of time, by the Minister of Public Instruction and the Fine Arts.—On a generalisation of the theory of mechanical quadratures, by M. Stieltjes.—On the reduction of the Abelian integrals, by M. H. Poincaré. It is shown that any system of Abelian integrals always differs infinitely little from a reducible system.—Note on the involution of superior dimensions, by MM. J. S. and M. N. Vanecek.—Note on an equation analogous to Kummer's equation, by M. E. Goursat.—A fresh demonstration of a theory of Jacobi respecting the decomposition of a number into four squares, by M. M. Weill.—On the laws of friction in mechanical appliances in connection with the experiments on the electric transmission of force about to be made between Paris and Creil, by M. Marcel Deprez.—On the construction of prototype standards of the legal ohm, by M. J. René Benoit. The International Conference of 1884 having defined the value of the legal ohm, the author describes some quicksilver standards representing the new unity constructed by him at the request of the Minister of Posts and Telegraphs.—Note on the indices of refraction of crystallised alums, by M. Ch. Soret.—On the chemical constituents of the rain-water that falls in the city of Algiers, by M. Chairy.—Remarks on the combustible carburetted compounds present in the terrestrial atmosphere, by MM. A. Muntz and E. Aubin.—Note on the trifluoride of arsenic, by M. H. Moissan.—On the reaction of ferric oxide at a high temperature on certain sulphates, by M. Scheurer-Kestner.—On ammoniacal ferment, by M. A. Ladureau. The author gives the results of experiments commenced three years ago for the purpose of determining the *rôle* and presence of this substance in Nature.—On the presence of amylase in the leaves of plants, by M. L. Brasse. The author has determined the presence of amylase in all leaves hitherto examined by him, including the potato, dahlia, maize, beetroot, tobacco, poppy, sunflower, &c.—On the employment of the cultivated yeast of wine for stimulating fermentation and shortening its duration, by M. A. Rommier.—Addition to a note on a crystallised pegmatite of chlorophyllite from the banks of the Vizézy, near Montbrison, by M. F. Gonnard.

BERLIN

Physical Society, October 24.—In former experiments with Helmholtz's leucoscope Dr. König had found that, while persons having normal trichromatic eyes saw the two images appearing in the field of vision differently coloured whatever the position in which the Nicol prism was placed, persons with so-called colour-blind or bichromatic eyes, on the Nicol prism being placed in a certain position, saw similar images. In the case of all so-called red-blind individuals the position of the Nicol prism was always the same, and differed from that in which green-blind persons saw like images. The leucoscope was, therefore, an instrument by means of which colour-blindness could be conclusively determined. For the practical requirements of eye-doctors, Dr. König had now so far simplified the leucoscope that it contained only a double prism, a lens, a quartz plate (of 5, 10, or 15 mm. thick), a Nicol prism, and a telescope. With the help of this simple instrument not only did it become easy to ascertain colour-blindness in practice, but it could likewise be determined whether any transitions occurred between red and green blindness. Among fifty colour-blind persons examined by Dr. König, he had not found a single case of such transitional form.—Prof. Neesen reported on the resumption of his earlier experiments regarding the influence of magnetisation on the electrical conductivity of fluids. The fluid conductor consisted of two tubes, a longer and a shorter, to which the current was transmitted by means of electrodes exactly alike. The tubes were combined into a bridge, and counterbalanced by the intercalation of metallic resistances. One tube was brought between the armatures of an electro-magnet, and the resistance measured alternately with and without the excited electro-magnet. When the tube was placed equatorially between the magnetic poles, the difference in the balance of the galvanometer was not greater than that produced on the galvanometer by the magnetising current alone (0·3 parts of the scale). With the tube placed in the axial position, on the other hand, the difference in the balance under an excited electro-magnet amounted to about 1 part of the scale, an effect which seemed to demonstrate a positive influence exercised on the conductivity by the magnetism, considering that the electro-magnet employed was not very powerful. It still remains necessary, of course, to determine by special experiments whether this change of resistance does not proceed from the influence exercised by the magnetism on the polarisation of the electrodes.—Dr. Kayser produced the lightning-photograph he had lately shown to the Meteorological Society (*vide* NATURE, vol. xxx. p. 652), and thereby gave rise to a somewhat lengthy discussion on lightning-discharges.—Prof. Eilhard Wiedemann of Leipzig communicated some results of an examination he had made into colloids, the relation of which to water, following up an earlier work on crystals and crystalloids, he determined with respect to their thermal behaviour. Lime on being brought into contact with water swelled, as was known, and that with evolution of heat. On dissolving slacked lime, on the other hand, in a larger quantity of water, heat became latent. Similar relations applied to other organic colloids, such as gelatine, starch, albumen, &c. The expansion of gelatine under heat Prof. Wiedemann found to be quite regular. At the melting-point of the colloids the curve of expansion showed only a very slight curvature convex to the abscissæ of temperature. When Prof. Wiedemann put some gelatine in a test-glass, and put on the top of it some small shot, and further placed a layer of gelatine over that, he saw, after heating, the shot slowly sink through the viscid mass to the bottom. If he now again spread some small shot on the top of the fluid gelatine, he again saw it sink slowly downwards. As soon, however, as it reached the place occupied by the previous shot before it sank to the bottom, its descent became much more rapid, as though the first shot had opened up a channel of lighter consistence in the gelatine which had been originally of the same consistence as the superincumbent gelatine.

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