

to a well-known species. Mr. Stainton, F.R.S., Mr. Jenner-Weir, and Colonel Swinhoe made some remarks on the specimens, and commented on the additions to the list of butterflies captured in the United Kingdom which had been made of late years.—Mr. W. F. H. Blandford exhibited, and made remarks on, five specimens of *Athous rhombeus*, Ol., recently collected by himself in the New Forest.—The Rev. Dr. Walker exhibited a large collection of Coleoptera which he had recently made in Iceland. The following genera, amongst others, were represented, viz. *Patrobis*, *Nebria*, *Byrrhus*, *Aphodius*, *Philonthus*, *Barynotus*, *Chrysomela*, *Agabus*, *Creophilus*, and *Carabus*. Mr. Champion, Dr. Sharp, F.R.S., and the Chairman made some remarks on the collection.—Captain Elwes exhibited three species of the genus *Atossa*, Moore, three of the genus *Elcysma*, Butl., and three of the genus *Campylotes*, West.,—all from the Himalayas and North-Eastern Asia. The object of the exhibition was to illustrate the remarkable differences of venation in these closely-allied forms of the same family. Colonel Swinhoe, Mr. Warren, and Mr. Moore took part in the discussion which ensued.—Mr. P. Crowley read a paper entitled "Descriptions of Two New Species of Butterflies from the West Coast of Africa," and exhibited the specimens, which he proposed to name respectively *Charaxes gabonica* and *Cymothoe marginata*. He also exhibited several other new species from Sierra Leone, which had been recently described in the *Annals and Mag. of Nat. Hist.*

PARIS.

Academy of Sciences, August 4.—On the exhaustion of land by culture without manure; study of drainage waters, by M. P. P. Dehérain.—Observations of Coggia's comet (July 18, 1890) made with the Brunner equatorial of Toulouse Observatory, by M. E. Cosserat. Observations of position were made on July 21 and 22.—Elements and ephemeris of Denning's comet (July 23, 1890), by M. Charlois. The elements have been calculated from observations made at Nice on July 24, 28, and 30.—*Résumé* of solar observations made at the Royal Observatory of the College of Rome during the second quarter of 1890, by M. P. Tacchini. (See Our Astronomical Column.)—On the density of nitrogen and oxygen according to Regnault, and the composition of air according to Dumas and Boussingault, by M. A. Leduc. The author draws attention to a difference between the results obtained by Regnault and by Dumas and by Boussingault. If x = the proportion of oxygen in 100 volumes of air, d and d' the densities of oxygen and nitrogen, then

$$dx + d(100 - x) = 100, \text{ and } x = \frac{100(1 - d)}{d - d'}$$

Replacing d and d' by Regnault's values ($d = 1.10563$ and $d' = 0.97137$), we get

$$x = 21.324,$$

and for the percentage composition of air by weight,

$$\text{Oxygen} = 23.58, \text{ and Nitrogen} = 76.42.$$

Dumas's mean value was 23.0 ± 0.1 , and the author throws out several suggestions as to the probable cause of the discordance. He has also made some determinations of the density of nitrogen, and obtained values comprised between 0.972 and 0.973.—Electrical resistances of gases in a magnetic field, by M. A. Witz. The author has previously communicated his researches on the action of magnetic fields on Geissler tubes (May 12, 1890), and has studied the effects produced by variations in the intensity of the magnetic field and the position of the tube with respect to the lines of force; he has now determined the influence exercised by changes in the pressure of the gas in the tube. The experiments have led to the conclusion that the action of magnets upon Geissler tubes is due to a variation in the capacity of the tubes, so that they constitute true condensers, and their illumination is the result of an oscillatory discharge of the same order as that of a Leyden jar, of which the period T is a function of the capacity C of the jar, and of the coefficient L of self-induction of the conductor of small resistance, and $T = \pi \sqrt{CL}$. A variation of the capacity C would thus modify the vibratory state of the gas, and would be the cause of the differences observed in the luminous phenomena in intense magnetic fields.—Reactions of alkaloid salts, by M. Albert Colson. Some investigations on heats of formation are given.—On the division of sulphuretted hydrogen between the metals of two dissolved salts,

by M. G. Chesneau.—On some derivatives from acetylacetone, by M. A. Combes.—Experimental researches on thermic sensibility, by M. Charles Henry.—Experimental researches on the affected nerves of chronic lead poisoning, and on the causes determining their appearance, by MM. Combemale and François.—On the combinations of hæmoglobin with carbonic acid, and with a mixture of carbonic acid and oxygen, by M. Christian Bohr.—On the colouring of the silkworm by feeding, by M. Louis Blanc. From the investigations it would appear that very soluble and diffusible substances, such as fuchsin, are absorbed by the epithelium intestinal of the silkworm, and colour the cells of the secretory organs, but not the product of secretion.—On the cellular division of *Spirogyra orthospira*, and on the rearrangement of the colouring matters driven to the ends of the spindle, by M. Degagny.—The treatment of black rot, by M. A. de l'Ecluse.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

La Photographie Judiciaire: A. Bertillon (Paris, Gauthier-Villars).—British Cage Birds, Part 4: R. L. Wallace (U. Gill).—The Canary Book, Part 4: R. L. Wallace (U. Gill).—The Elements of Solid Geometry: R. B. Hayward (Macmillan).—Les Facultés Mentales des Animaux: Dr. F. de Courmelles (Paris, J. B. Baillière).—English-Eskimo and Eskimo-English Vocabularies: R. Wells and J. W. Kelly (Washington).—Photogravure: W. T. Wilkinson (Iiffe).—Bulletin from the Laboratories of Natural History of the State University of Iowa, Vol. 1., Nos. 3 and 4 (Iowa).—Journal of Physiology, Vol. xi., Nos. 4 and 5 (Cambridge).

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