

SCIENTIFIC SERIALS

THE current number of the *Ibis* commences with two papers on the ornithology of the Fiji Islands, by Mr. E. L. Layard, in which the following species are described:—*Platycercus taviunensis*, *Myiolestes macrorhynchus*, *M. compressirostris*, *Pachycephala torquata*. Additional notes on other birds are given, including *Lamprolaima victoria*.—Mr. H. Durnford has ornithological notes from the neighbourhood of Buenos Ayres, in which the habits of the birds of the district are briefly described.—Mr. R. Ridgway writes on the genus *Helminthophaga*, precisely defining the distribution of the ten species and their specific characters.—Mr. H. E. Dresser continues his notes on Severtzoff's "Fauna of Turkestan," the species of birds most lengthily noticed being *Leptopoeile sophie*, *Anthus pratensis*, and *Lanius isabellinus*, together with *Caprimulgus pallens* and *C. arenicolor*.—Mr. F. Barratt gives ornithological notes made during trips between Bloemfontein and the Lydenburg gold-fields, figuring *Bradypterus barrati*.—Messrs. H. Seebohm and J. A. Harvie Brown continue their notes on the birds of the Lower Petchora, figuring the eggs of *Squatarola helvetica*.—Mr. J. H. Gurney continues his notes on Mr. Sharpe's "Catalogue of the Accipitres in the British Museum," devoting himself on this occasion to the American Buzzards.—Mr. P. L. Sclater gives an interesting account of the recent ornithological researches of Beccari, D'Albertis, and von Rosenberg in New Guinea, and Count Salvadori writes on two New Guinea species, *Sericulus xanthogaster* and *Xanthomelus aureus*.—Canon Tristram describes a collection of birds from New Hebrides, among which is a new species of *Porphyrio*, *P. aneitumensis*.

Poggendorff's Annalen der Physik und Chemie.—Ergänzung, Band vii., Stück 4.—We have here a valuable second memoir by M. Chwolson on the mechanism of magnetic induction, which process he seeks to explain by the supposed existence of molecular magnets that are turned by the external force in one direction. In his former paper he dealt with the case of temporary induction in soft iron; he here treats of magnetic induction in steel. The paper is in five chapters: in the first are summarised the results obtained by previous observers, those of Jamin being given with special fullness. In the second the author describes his experiments, which require a modification of Jamin's theory. Of Jamin's two laws relating to the action of positive and negative currents on permanently magnetised bars, M. Chwolson finds the first absolutely correct; the second incorrect. Jamin's mistake he considers to be in the supposition that the negative current only acts on the surface layers, leaving those below untouched; it is shown, on the contrary, that the least negative current acts on all the layers and diminishes their intensity. Then he gives a mathematical theory of induction in steel; supposed the first attempt of the kind (if Maxwell's but partly successful one be excepted). In the fourth chapter he explains, on the basis of theory, the various experimental results got by different observers; and in the fifth, shows how certain results that might *à priori* be foreseen, from the theory, have been verified.—M. Holz has a paper on some changes of form of the Leyden battery (with a view to extending the length of spark), and its use with influence-machines; and he describes some good phenomena of discharge. The remaining papers are extracts.

Der Naturforscher, February.—In this number we may note an account of observations by M. Mallard on the velocity of inflammation in a mixture of fire-damp and air. The various mixtures were set in motion with different velocities, and that velocity at which the zone of combustion remained stationary measured the velocity sought. The highest velocity of inflammation was 0.560 metres in a second, and it occurred in a mixture of 0.108 vol. of fire-damp in one volume of the mixture. On increasing or diminishing the proportion of fire-damp, the velocity in question diminished very rapidly, becoming *nil* with a proportion of 0.077 vol. on the one hand, and 0.145 vol. on the other, below which the mixtures are neither explosive nor inflammable. It is notable that a variation of even 0.01 in the proportion of fire-damp is sufficient to convert an absolutely indifferent mixture into a highly dangerous one.—In geology there is an adverse criticism of Mr. Mallet's theory of volcanic action, by M. Roder, and an experimental inquiry by M. Hoppe-Seyler into the formation of dolomite. The latter points out that wherever, on a sea-bottom covered with chalk or limestone, eruptions of lava occur, dolomite is a necessary product, the lava supplying the temperature (which must be high), the lime-

stone the calcium and carbonic acid, and the sea-water the magnesium.—From twenty years' observations in St. Petersburg, M. Rikatcheff draws some conclusions as to the influence of cloudiness on the daily variations of temperature.—We further note an abstract of a recent brochure by Prof. Lommel, on the interference of reflected light (the author develops variously a well-known experiment of Newton), and a summary of an interesting lecture by M. Löwe to the Physiological Society of Berlin, on the theory of descent.

March.—The formation of cheese has lately engaged the attention of Prof. Ferd. Cohn in connection with his researches on the lowest forms of plant life; and he has made personal observations on the manufacture, as carried on in Switzerland. The phenomena accompanying the process are thus described: The rennet contains a liquid ferment which causes coagulation of the milk; also ferment-organisms (*Bacillus*), which probably bring on butyric-acid fermentation, and cause the slow maturing of the cheese. It is their resting-spores that, enclosed by the dry cheese substance, resist boiling heat for a long time, and, in a suitable nutritive liquid, may afterwards develop to *Bacillus* rods. (One of Dr. Bastian's results is thus explained.)—In a paper by M. Rosenthal, the action of the automatic nerve-centres is explained as dependent, not on some immanent property of the nerve apparatus, but on the nature of the blood. To account for the rhythm of the movements in breathing, he supposes a constant resistance opposed to the constant excitation, and illustrates the case by supposing a vertical tube closed below by a plate which is pressed against it by a spring, while a constant stream of water flows in from above. When the liquid reaches a certain height the spring yields, and some water escapes; then the spring forces back the plate, and the process is repeated, thus giving a rhythm. From experiments made by M. Bartoli, in Italy, it is inferred that all solid and liquid substances, whatever their nature, have, in air, a damping influence on the oscillations of a magnetic needle suspended over them, and that this action depends on the air that is between the two surfaces. Among other subjects handled in this number may be mentioned those of irregularities of the sea-level (Hann), the molecules of isomeric and allotropic bodies (Smit), the physical properties of litter in woods (Ebermayer), and decomposition of albuminous matter in animal bodies (Drechsel).

SOCIETIES AND ACADEMIES

LONDON

Royal Society, May 4.—Supplementary note "On the Theory of Ventilation" (see *NATURE*, vol. xi. p. 296). By Francis S. B. François de Chanmont, M.D., Surgeon-Major, Army Medical Department, and Conjoint Professor of Hygiene, Army Medical School. Communicated by Prof. Stokes, Sec. R.S.

In his previous paper the author endeavoured to establish a basis for calculating the amount of fresh air necessary to keep an air-space sufficiently pure for health, taking the carbonic acid as the measure. The results showed that the mean amount of carbonic acid as respiratory impurity in air undistinguishable by the sense of smell from fresh external air was under 0.2000 per 1000 volumes. His object in the present note is to call attention to the relative effects of temperature and humidity upon the condition of air, as calculated from the same observations.

Linnean Society, June 1.—Prof. Allman, president, in the chair.—An interesting series of photographs illustrating coffee cultivation in Ceylon, an enormous banyan tree and other tropical vegetation, were shown by Mr. J. R. Jackson, of the Kew Museum; Mr. W. Bull's exhibition of several fine healthy, growing plants, and the seeds of his lately introduced *Coffea liberica* and of *C. arabica* for comparison came in most *à propos* to the above.—The Rev. G. Henslow read a paper on floral aestivations, in which, after giving the eight kinds, viz., distichous, tristichous, pentastichous, half-imbriate, imbricate proper, convolute, valvate, and open, he explained their origin, and specially dwelt upon the new term *half-imbriate*, which he applied to a very large number of cases ranging from perfect regularity to extremely irregular and zymorphic flowers of the pea and snap-dragon. The author then showed how that, as well as the fifth and sixth kinds were successively deducible from the third or pentastichous (quincuncial) by merely shifting one edge of the second part under the adjacent edge of the fourth part. The author added a note on a new theory of the cruci-