

## SCIENTIFIC SERIALS

*Der Naturforscher*, May.—This serial, containing little that is original, furnishes a weekly supply of well-selected and adapted matter from various sources. In the present number attention may be called to an academical address delivered by Herr Streng at Giessen, on the "circle-course" of substances in nature, treating chiefly of geological phenomena; to an account of Herr Janéttaz's recent careful researches on the conduction of heat in crystals (some 44 mineral species having been examined); to a theoretical investigation by Herr Handl (Vienna Academy) of the conditions of saturated and supersaturated solutions, and to several papers of meteorological experiment: on moisture in forests and in the open, on the temperature of rain, and on the velocity of winds as measured on various heights on Antwerp Cathedral.—Some observations of M. Du Breuil on the partial decortication of horse-chestnuts, are worthy of notice. He found about twenty of these trees in the park at Compiègne, the bark of which had been eaten off twenty-four years previously, by rabbits, to a height of 30 or 40 centimetres. From several experiments he concluded that the chestnuts could live thus long without communication with the soil, and that the elements necessary to their growth were obtained partly from the atmosphere, partly through endosmose from the woody tissue formed before decortication.—Among several French Academy papers are those by M. Jamin on the laws of the normal magnet, and M. Faye on circulation of hydrogen in the sun.—English and American science is also represented.—A curious fact is stated in the "Kleinere Mittheilungen": Herr Eimer has recently found, on a precipitous rock near the island of Capri, a new species of lizard. It is blue all over, with dark spots on the back; while the lizards in Capri are of a bright green, with only a little blue at the extremities. Now the rock (which is frequented by birds of prey) has little or no vegetation, and its natural colour is a bluish grey, or dark blue in the shaded parts. The lizard, when at rest, can hardly be detected by sight, its colour is so like that of the rock. Herr Eimer finds indications that the rock was once connected with the land, and supposes green lizards to have gone over and been gradually transformed to blue, through natural selection.

THE *American Journal of Science and Arts* for June commences with a biographical notice of Dr. John Torrey, the botanist, who died in March last, in the 77th year of his age.—Mr. G. J. Brush contributes a paper on the analysis of an Angle-site from Arizona, worked out in the Sheffield Laboratory of Yale College.—Prof. Dana discusses some results of the earth's contraction from cooling, including the origin of mountains and the nature of the earth's interior.—Prof. J. H. Eaton has a paper on the relations of the sandstone, conglomerates, and limestone of Sauk County, Wisconsin, to each other and to the Azoic.—Prof. Le Conte replies to Mr. T. S. Hunt's criticisms on his paper on the formation of the great features of the earth's surface.—Mr. Verrill remarks on Mr. Jeffrey's article on "The Mollusca of Europe compared with those of Eastern North America," in which, while differing from that author, who thinks that most of the New World forms are derived from the old, he considers the reverse is the case.—Prof. Young proposes the use of diffraction "gratings" as a substitute for the trains of prisms in a solar spectroscope; and he considers that they might well supersede prisms on account of their lightness and ease in management. Prof. Marsh gives further notices of Tertiary mammals, describing two new genera, *Tillotherium* and *Brontotherium*, allied respectively to *Anchippodus* and *Titanotherium*.

*Bulletin Mensuel de la Société d'Acclimatation de Paris*.—The April number of this serial has only just come to hand. It gives details of all the prizes in the gift of the Society for papers or works on matters in which it is specially interested, or for success in carrying out its objects in the acclimatisation or improvement of various animals or plants. No less than 88 prizes, of the money value of more than 75,000 fr. (3,000*l.*), remain to be competed for, besides 31 medals. By this means the Society does much to popularise the work it has in hand, and to make known the experience gained by those who have interested themselves in it. The system of lending specimens, on condition of receiving, for further distribution; a certain part of the produce, is explained in a paper by M. Passy, the vice-president. It appears that Algeria and Madeira, Guadeloupe and Martinique, besides Switzerland, Russia, Italy, Austria, and some other European countries, are brought within the field of the Society by means

of branches, or affiliated societies of a similar nature.—A paper entitled "Le Jardin de mon Grandpère," by Edmond About, the George Augustus Sala of French literature, gives some idea of the benefits conferred by careful cultivation. "To increase the resources given by Nature to man is a task at once too noble and too useful not to induce the sympathy and earnest assistance of people in all parts of the world." Such is the aim of the Society. The last year has had good results. Foreign countries have all been made to give their quota towards increasing the material wealth of France and the knowledge of those interested in the Society. "China, hitherto so unknown, will soon have no secrets from us. A work on the ichthyology of the Celestial Land has given details as to the modes of pisciculture in that country." The financial position of the Society is satisfactory, the balance-sheet for 1872 showing receipts 54,944 fr. (2,200*l.*), and expenditure 45,704 fr. (1,828*l.*).

## SOCIETIES AND ACADEMIES

## LONDON

Royal Society, May 15.—On a Periodicity of Rainfall in connection with the Sun-spot Periodicity, by C. Meldrum, Director of the Meteorological Observatory, Mauritius. Communicated by Sir Edward Sabine.

Assuming that there is a sun-spot periodicity, in the course of which the sun undergoes a variation with respect to heat, or some other form of energy, we should expect to find a corresponding variation in the state of our atmosphere.

With this idea, it was some time ago determined to discuss the cyclones that had occurred during the last twenty-five years in the Southern Indian Ocean, and it was found, what had been often surmised, that they were more frequent and more violent in the maxima than in the minima sun-spot years.

It is well known that the cyclones of the Indian Ocean are attended with much rain, which is not confined to the body of the storm, but extends over wide areas. Years remarkable for cyclones, therefore, should be also years remarkable for rain; but to test this inference, with regard to the Indian Ocean, we had no rainfall statistics, except eighteen years' observations at Mauritius; and these were in every respect favourable, the rainiest years having been those in which cyclones were most abundant. In the absence of other data, the Brisbane and Adelaide rainfalls were consulted, and it was found that, like Mauritius rainfall, they indicated a periodicity. It was then surmised that there might be a rainfall periodicity generally; and that, if such was the case, both it and the cyclone-periodicity were concomitant effects of one and the same cause. This supposition having been strengthened by the results of an examination of the rainfall of England, it was resolved to examine all the rainfall tables (containing one or more sun-spot periods) that could be obtained. By comparison of an extensive series of weather statistics kept at a large number of places all over the world, the decided conclusion is that, with scarcely an exception, all the years of maxima and minima rainfall are within a fraction of the corresponding maximum and minimum sun-spot year.

Chemical Society, June 19.—Dr. Odling, F.R.S., president, in the chair.—Nine communications were read, of which the following are the titles:—1. "Researches on the Action of the Copper Zinc Couple on Organic Bodies: III. on Normal and iso-propyl iodide," by J. H. Gladstone, F.R.S., and A. Tribe, being a continuation, in the propyl series, of the author's previous researches. 2. "On the Influence of Pressure on Fermentation, Part 4. The influence of reduced atmospheric pressure on the alcoholic fermentation," by Horace T. Brown, in which he finds that, under diminished pressure, the progress of the alcoholic fermentation is retarded in a remarkable way. 3. "On Cymene from different Sources, optically considered," by J. H. Gladstone, F.R.S. 4. "Note on the Action of Bromine on Alizarine," by W. H. Perkin, F.R.S. This reaction gives rise to *Bromalzarine*, an orange-coloured crystalline substance, possessing feebler dyeing properties than pure alizarine, the colouring principle of madder. 5. "On some Oxidation and Decomposition Products of Morphine Derivatives," by G. L. Mayer and C. R. A. Wright, D.Sc. 6. "On the Decomposition of Tricalcic Phosphate by Water," by R. Warrington. 7. "Communications from the Laboratory of the London Institution, No. XII.": "On the Nature and on some Derivatives of Coal-tar Cresol," by Dr. H. E. Armstrong and C. L. Field.