

THE infallibility of photographic reproductions, says the *Photographic Journal*, cannot be prized too highly. In the copying of elaborate tabular forms, containing numerous figures and intricate calculations, the aid of the camera is sometimes of the greatest importance. To obtain an exact and reliable copy of a complex document of this description by clerical means involves much time and labour, beyond the chance and risk of error; but with the camera a reproduction may be secured in a couple of hours, in which all the figures are exact, the totals correct, the calculations checked, the words spelt right, and to which the observation "certified a true copy" may be appended without hesitation.

THE Vicar of Cushendun, county Antrim, communicates the following to *Science Gossip*:—"The following incident was told me the other day by a resident, who vouches for the truth of it, and which happened close to his residence in Cushendun, county Antrim. A rat, nearly white with age, and blind, was frequently seen led to the water by a young rat, by means of a straw, of which the old rat held one end and the young rat the other. This incident corroborates a similar statement given by Jesse in his 'Gleanings of Natural History.'"

#### SCIENTIFIC SERIALS

THE new number of the *Zeitschrift für Biologie* (VI. i.) contains an interesting paper by Subbotin "On the Physiology of Fats." Towards an answer to the question—Is there in the animal organism any direct passage of fat from the alimentary canal to the cells of adipose tissue? a lean dog was fed for a month on meat, spermaceti, and common fat. Of the 1,000 grms. of spermaceti swallowed, 800, at least, were absorbed; but the merest trace only of spermaceti could be found in the fatty tissue of the body at the close of the experiment. Spermaceti, therefore, though absorbed and consumed in the economy, is not stored up unchanged. Hence there is a presumption that the same is the case with other fats (though it is obvious that many possible events might negative the presumption). Towards solving the further question—Are fats formed in the body out of proteids? a dog reduced to the utmost leanness was fed on leanest meat and palm oil (palmitin and olein) for twenty-five days, during which he gained three kilos in weight. The fat of the body was, at the close, found to contain 13.9 per cent. of stearin, though none had been taken. A very considerable quantity of stearin had therefore been formed in the body. A very lean dog was fed for six weeks on leanest meat, and a soda soap made with palmitic and stearic acids only. At the end of the experiment, the dog having gained over three kilos in weight, the fat of the body was found to consist of 53.6 per cent. palmitin, 13.4 per cent. stearin, and 33 per cent. olein. A large quantity of olein had therefore been formed in this case. But if olein was thus formed, possibly the palmitin and stearin were likewise formed from proteids, and not by synthesis of the fatty acids with the glycerin of the economy. Subbotin further points out that olein is more abundant in the sub-cutaneous than in the deep-seated fat, possibly on account of a less energetic transformation of proteids in the cooler surface regions. So also in cold-blooded animals the fat is proportionally richer in olein.—The same number contains a long paper by Vierordt, in which that distinguished physiologist continues his researches on the connection between the delicacy of touch and mobility of any part of the body. In this memoir he confines his attention to the arm from the shoulder downwards, working upon data provided by his pupils Kottenkamp and Ullrich, who have made a study of the sense of touch in all parts of the arm, to a much greater extent and with much fuller detail than did Weber, and whose elaborate results are given in a paper immediately preceding Vierordt's. In the arm Vierordt finds striking illustrations of his hypothesis that the delicacy of touch in any point in a region of the body which is moved as a whole, is proportional to the distance of the point from the centre of movement of the region. There are also hygienic papers by Pettenkofer and others on the cholera epidemic of 1865 at Gibraltar, and typhus and drinking water at the barracks at Neustift.

The *Journal of Botany*, New Series, No. 1 (double number for January and February, 1870), contains the following articles:

—"Suggestions on the 'Species' question as regards *Rubus*," by the Hon. J. B. Leicester Warren; "Notes on *Quercus Wallichiana* Lindl.," by Dr. Hance; "Descriptions of four new Chinese *Crassulaceae*," by Dr. Hance; an interesting and important "Review of the contributions to Fossil Botany, published in Britain in 1869," by Mr. Carruthers, containing references to all papers on vegetable palaeontology published in Britain during that period, with observations and a synopsis of the genera and species described in them. "Cinchona cultivation in Bengal," being an official report from Mr. C. B. Clarke, officiating superintendent of the Botanic Garden at Calcutta, and in charge of the Cinchona cultivation in Bengal, for the year ending March 31, 1869. It appears from this report that during the year the number of plants of Cinchona at the Darjeeling Government plantations was increased by 673,654, making a total (including those in private plantations) of upwards of three million plants, covering 965 acres. By far the larger number of plants are of the species *C. officinalis* and *succirubra*, with a few of *C. Calisaya* and *micrantha*, *C. Pahudiana* being considered worthless. The tallest plant of *C. succirubra* is 19 feet high, and of *C. officinalis* 11½ feet. There is besides a small plantation of *C. succirubra* at Nunklow, in the Khasia Hills. "Review of the genus *Narcissus*," by Mr. J. G. Baker. An abridgment and translation by Mr. A. W. Bennett of Van Horen's paper in the *Bulletin de la Soc. Roy. de Bot. de Belgique*, "On the hibernation of Lemnaceae," showing the production in several species of duck-weed of submerged leaves adapted to live through the winter. "The genus *Ascobolus*," by M. Boudier, from the *Annales des Sciences Naturelles*. Reviews of books, proceedings of societies, and shorter articles.

The *Geological Magazine* for the present month (No. 69) opens with an article by the editor on the Liassic Pterodactyle (*Dimorphodon*) as described by Professor Owen in the volume of memoirs just published by the Palaeontographical Society. The most important paper in the number is one by Mr. Poulett Scrope, "On the character and composition of lavas," and next to this, in general interest, two articles on "Faults in Strata," by Mr. W. T. Blandford and Mr. G. H. Kinahan.—Two of the remaining papers are by lady geologists, namely, a description of the Pleistocene deposits of North Shropshire, by Miss Charlotte Eyton, and a notice of vegetable fossils in the Water Blain iron mines in South Cumberland.—A paper on "The Water-bearing Strata in the neighbourhood of Norwich," by Messrs. Taylor and Morant, contains some remarks upon sand-pipes in the chalk; and the final article is the conclusion of Mr. Davies' paper "On the Millstone Grit of the North Wales Border."—The usual notices of memoirs, reports of proceedings, letters, and miscellaneous intelligence make up the rest of the contents.

*Revue des Cours Scientifiques*, March 8.—This number contains a report of the congress of German naturalists and medical men at Innsbruck; a paper on "Alsace during the Tertiary period," read by M. Delbos at the Mulhouse Conferences; a review of M. Gréhan's researches on the excretion of urea and on the respiration of fish, also a fifth list of subscribers to the *Sars fund*.

The *Revue des Cours Scientifiques* for the 12th inst., contains an admirable lecture by M. Wolf, of the Paris Observatory, on the Figure of the Earth, and a translation of Dr. Tyndall's lecture on Dust and Disease.

*Moniteur Scientifique*, February 15.—This number contains several abstracts of papers on dyeing materials, by Messrs. Hofmann, Martius, and Weidel.—A paper descriptive of the peat at Avigliana, near Turin, by MM. Kopp and Fino, shows that, in the air-dried state, its efficacy as fuel is little more than one-fourth that of coke.—In a paper by M. Fremy on nitrous acid, he points out the production of nitrous oxide by the reaction of nitrous acid with sulphurous acid, regarding this as one of the causes of loss in the manufacture of sulphuric acid, when there is an excess of sulphurous acid in the chambers. In the reaction of nitric acid with nascent hydrogen, he has ascertained the production of another substance besides nitrous acid and ammonia. By means of sodium amalgam he obtained it in large quantity but not sufficient for complete examination. Arsenious acid and arsenites give, with sodium amalgam, a similar product. Both the nitrogen and arsenic compounds are characterised by a remarkable reducing power. M. Fremy is continuing his examination of the subject.