

ou d'un centimètre cube pour que l'animal supporte sa maladie même sans grande élévation de température et presque sans aucune réaction à l'endroit de l'infection." So writes Dr. Smirnow; and, indeed, the experiments which he cites with this antitoxin fully justify this favourable verdict. Still more recently it has been employed on dogs, which of all animals are perhaps the most susceptible to diphtheria poison; this being proved by the difficulty which is experienced in immunising them for the production of curative serum. Dr. Smirnow states that a dog weighing from eighteen to twenty pounds, inoculated subcutaneously with 0.5 c.c. of virulent diphtheria broth cultures, usually dies in two or two and a half days after it has been infected. The protective treatment of a purposely infected dog was commenced one day after inoculation, and from 3 to 5 c.c. of the electrolytic antitoxin sufficed to save the animal's life. This quantity Dr. Smirnow thinks might probably be lessened, and yet not interfere with its remedial action. For the technical details of the methods recommended by Dr. Smirnow for the production of this artificial antitoxin, we must refer the reader to the original memoir, to be found in vol. iv. No. 5, 1896, of the Petersburg *Archives* already mentioned. It would appear that in itself the antitoxin is quite harmless, for ordinary guinea-pigs can stand with impunity a dose ten times and more as strong as that required for remedial purposes. As regards the effective quantity for injection, it appears that in the initial stages of the disease there is no difference in the amount required of the serum and Smirnow-antitoxin respectively; but as the disease progresses, whilst yielding to reduced doses of the artificial antitoxin, it will not to similarly reduced doses of antitoxic serum. Its preparation is incomparably simpler, and with a good supply of toxic diphtheria broth in hand, the antitoxin can be produced in a day, whilst, involving far less expense, it can be supplied at a much more reasonable rate. Dr. Smirnow has at least shown that the preparation of a specific remedy against diphtheria is not the exclusive monopoly of the animal organism, but can be elaborated artificially without the assistance of living mechanism. The author is to be congratulated upon the highly successful results which he has so far achieved; and if the therapeutic value of this electrolytic antitoxin is shown to be as great for man as it has undoubtedly proved itself to be for animals, then indeed Dr. Smirnow has made a distinct and important step forward in the domain of preventive medicine.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE following are among recent appointments:—Dr. Vélain to occupy the chair of physical geography recently founded in the Paris University; Mr. H. M. Paul and Mr. G. A. Hill to be professors of mathematics in the U.S. Navy.

THE Spanish Universities and other educational institutions under State control have just been thrown open to foreigners by Royal decree. By the new ordinance foreigners are admitted to the right of matriculation, study, and examination in all educational establishments under the Spanish Government, and are entitled to take degrees in the Universities.

IT is reported (says *Science*) that the subsidy given by the state to the University of California will be doubled, being hereafter 240,000 dols. annually. Mr. Levi Strauss, of San Francisco, has endowed twenty-eight undergraduate scholarships in the University, and seven graduate scholarships, of the value of 250 dols., have been endowed by other donors. The number of students in the University has increased from 918 in 1891-2 to 2250 in the present year. It is again stated that the University will receive gifts amounting to 5,000,000 dols. for buildings, of which sum 1,200,000 dols. is promised by Mrs. Hearst, of San Francisco. Chicago University has received a gift of 225,000 dols. from Mrs. Mary Esther Reynolds, in fulfilment of a pledge made nearly five years ago.

SCIENTIFIC SERIALS.

Symons's Monthly Meteorological Magazine, April.—The first daily weather map. In September 1895, Mr. Symons issued a photographic reproduction of the first daily weather map ever published, and promised to give its history, after making further inquiries. In 1849 the proprietors of the *Daily News* decided

upon publishing reports of wind and weather. The organisation was entrusted to Mr. Glaisher, who travelled over the country, and, with the co-operation of the railway and electric telegraph companies, erected instruments and instructed the clerks in their use. The issue of the above journal for June 14, 1849, contained the earliest known telegraphic weather report. During the Exhibition of 1851, the Secretary of the Society of Arts decided upon issuing the information collected by the Electric Telegraph Company in the form of a daily weather map, the first of which appeared on August 8, 1851.—Scientific kite work in the Arctic regions. In a foot-note to Dr. Harvey's article on meteorology, in the *Encyclopedia Metropolitana*, there is a description of an experiment made by the Rev. G. Fisher and Captain Sir E. Parry, at the island of Igloodik, in lat. 69° 21' N. and long. 81° 42' W. during the winter 1822-23. The height observed was 379 feet, and the temperature recorded was -24°, there being no variation in the temperature between that altitude and the surface of the earth, although the thermometer was capable of indicating the smallest change.

SOCIETIES AND ACADEMIES.

LONDON.

Linnean Society, April 1.—Dr. A. Günther, F.R.S., President, in the chair.—Mr. Miller Christy exhibited three royal state cloaks formerly worn by the kings of the Hawaiian Islands, and made of the feathers of four species of birds, of which the exhibitor gave an account, referring to the coloured figures of them given in Mr. Scott Wilson's "Birds of Hawaii," namely, *Vestiaria coccinea* (red), *Psittacirostra psittacea* (green), *Acroloccercus nobilis*, and *Drepanis pacifica* (black and yellow). The last-named, of which no specimen is to be found in the National Collection, was believed to be now extinct.—Mr. W. T. Thiselton-Dyer exhibited: (1) A series of drawings (on the screen) to illustrate the "Cultural Evolution of *Cyclamen latifolium*, Sibth." The species is a native of Greece and the Levant, and is believed to have been first introduced into European cultivation in 1731. In 1768 Miller described a form modified by cultivation, under the name of *Cyclamen persicum*. This was erroneous, as, according to Boissier, neither the wild nor the garden form occur in Persia. The latter persisted in cultivation for about 150 years, and about 1860 became the starting-point of the modern races which were illustrated. *Cyclamen latifolium* has never been hybridised, and it was shown that the striking forms now in cultivation were the result of the patient accumulation of gradual variations. Drawings of the remarkable forms, "Papilio," obtained by de Langhe-Vervaeke, and of the "Bush-Hill Pioneer," by Messrs. Hugh Low and Co., were shown. It was pointed out that the tendency of the species under cultivation was to lose its distinctive generic characters, and to approximate to a more generalised type. The reflexion of the corolla-segments was often lost, as in *Lysimachia*; the segments were sometimes multiplied, as in *Trientalis*; and the margins were fringed, as in *Soldanella* and cultivated forms of *Primula sinensis*. The "Bush-Hill Pioneer" possessed, in the creasing of the petals, a remarkable character, without parallel in any primulaceous plant occurring in a wild state. (2) A series of plants was exhibited to illustrate the origin of the garden "Cineraria." It was generally agreed that this had sprung from one or more species native of the Canaries. An extreme cultivated form was shown, and compared with *Senecio cruentus*, which all internal evidence indicated as the sole original stock. *S. Heritieri*, another reputed parent, was exhibited. But it was pointed out that this has a shrubby habit and stems markedly zigzag between the internodes, while the leaves are clothed beneath with a dense white tomentum. These characters it transmits, more or less, to its hybrid offspring. In illustration of this point, Mr. Poe's hybrid (*S. super-Heritieri* × *cruentus*) was exhibited (a similar one has occurred at Edinburgh); also the Cambridge hybrid (*S. super-cruentus* × *Heritieri*). *S. cruentus* crosses very freely with the garden Cineraria, and as the latter never exhibits any trace of the characters of *S. Heritieri*, it was concluded that that species had no part in its origin, and that, as in the case of the Cyclamen, the striking development of *S. cruentus* in cultivation was due to the continued accumulation of gradual variations.—Mr. A. W. Bennett exhibited a series of drawings, by Mr. E. B. Green, of root-hairs of plants with various parasitic growths, and showed