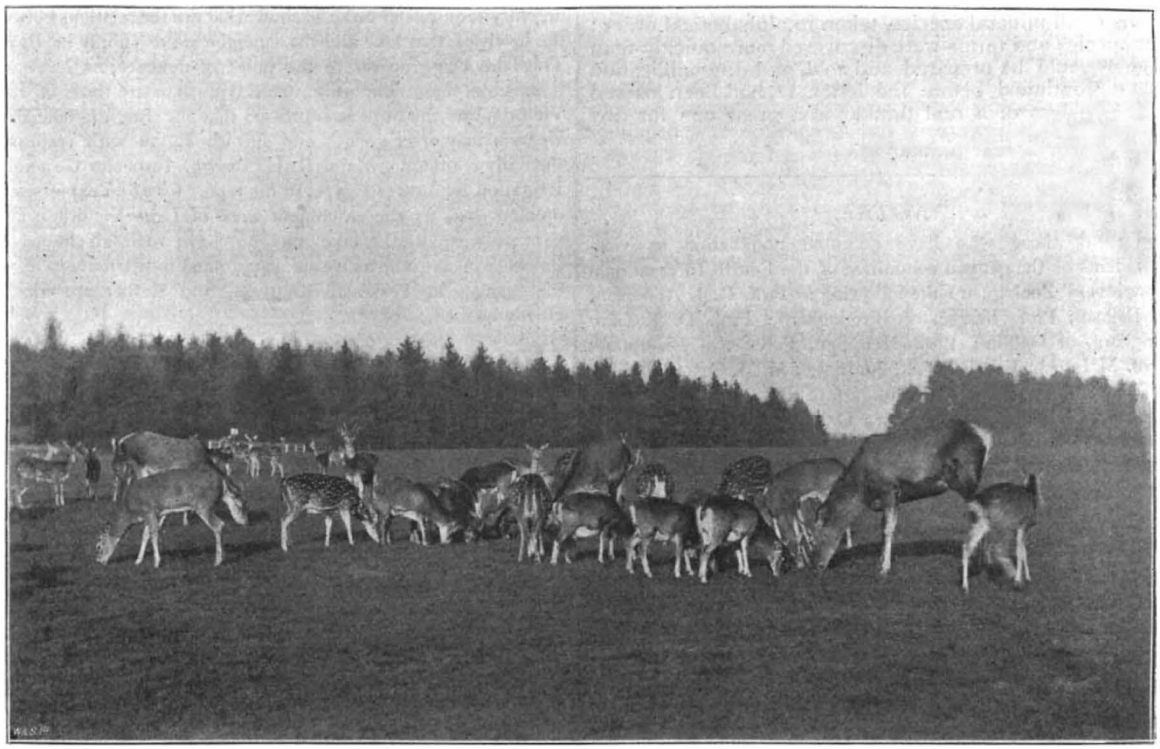
those running at large in the park, and there is good prospect of the herd of this aberrant and interesting species increasing in number. A solitary male of the previously imperfectly known Bedford's deer (*Cervus xanthopygus*) has unfortunately succumbed to a lingering decline, although happily not till it exhibited the remarkable variation between the summer and winter pélage. Roe deer, of course, flourish ; and recently there was the opportunity of seeing the European, Siberian, and Manchurian species, or races, living side by side. The rare Chinese water-deer (*Hydropotes*) is represented by a single doe, which exhibits to perfection the skulking habits peculiar to the species ; but a specimen of Michie's tufted deer, which formerly was one of the attractions of the collection, now adorns the museum at the Abbey. Musk-deer do not belie their hardy nature, and it is one of the most interesting sights in the park to watch these little deer bounding across their enclosure in the manner so well-known to all Himalayan sportsmen.

In marked contrast to the adaptability of the Oriental deer to their new surroundings is the ill-luck attending the introduction of most of the American deer, exclusive of the wapiti. The only exception to this is the Virginian deer, which flourishes and breeds, some mingling with the chital herd, others roaming at will in the open park, and a few taking up their abode in the immediate vicinity of the Abbey itself. These latter exhibit tameness and fearlessness to an extraordinary degree—only, indeed, exceeded by the members of a little herd of roe from the Caucasus, one of which permits itself to be fondled like a pet lamb. Black-tailed and, we believe, mule-deer have been tried without success ; while the same ill-fate has attended several examples of the South American marsh deer and pampas deer. Young examples of each of these two latter are, however, at the present time in the collection, and as they are very carefully tended, and the experience derived from their predecessors is available, it may be hoped they will survive. A tiny little deer, apparently referable to *Mazama gymnotis*, is also among the newest arrivals, and its career will naturally be watched with deep anxiety. Brockets have been tried with hopeless ill-success, and the attempt to acclimatise them has reluctantly been abandoned.

During the very short period the collection has been in existence it has included, counting red and fallow deer, close on forty distinct species and races—no mean record when it is remembered that the total number of valid forms which have been exhibited in the London Zoological Gardens since its foundation does not exceed forty-eight. As every effort is being made to increase the Woburn collection, it bids fair to beat the record in the number of species, as it already does in individuals.

R. L.



Virginian. Chital. Mouflon. Chital. Black-Buck. Mouflon. Caspian Red Deer.

FIG. 2.—The Chital Paddock at Woburn Abbey, with Chital, Virginian Deer, Caspian Red Deer, Mouflon, and Black-Buck. (From a photograph by the Duchess of Bedford.)

THE LATE PROFESSOR A. SCHRAUF.

THE comparatively small number of mineralogical workers and teachers has been once more diminished, and to the recent deaths of Mallard, Daubrée, DesCloizeaux, Sohncke, Retgers, Kenngott, Haughton and Heddle, must now be added that of Albrecht Schrauf, Professor of Physical Mineralogy in the University of Vienna, who has passed away, after long illness, near the end of the sixtieth year of his age. A. Schrauf was born on December 14, 1837 ; he became assistant in the Mineral Department of the Imperial Museum of Vienna in 1861, and Keeper in 1867 ; after

1862 he added to his Museum duties the work of a "Docent" in the University; but eventually (1877) retired altogether from the Imperial Museum to take upon himself the duties of the University Professorship, involving the care of the University Mineral Collection: in this office he remained till the end of his life.

Much of Schrauf's published work consists in the technical examination and description of mineral species, but he also gave much thought to the general and recondite problems connected with atoms and molecules and their relation to the physical characters of crystals: his earlier speculations are incorporated in his "Treatise on Physical Mineralogy" published in 1866-68, but the later are only to be found in isolated memoirs. He was also the author of a useful handbook on "Precious Stones" (1869). Interested deeply in the philosophy of his subject, he sought the necessary mental and physical relaxation in the mechanics of crystal drawing, and undertook to prepare for publication an Atlas of the crystalline forms of all mineral species, taken in alphabetical order: but species and forms were discovered more quickly than figures could be prepared and sold, and the publication was discontinued before the letter D had been arrived at. The loss of a real thinker is a great one for any science.

NOTES.

AMONG those who have accepted nomination as vice-presidents of the general committee of the Fourth International Congress of Zoology are the following:—Prof. R. J. Anderson, of Belfast; Prof. Bridge, of Birmingham; Prof. D. J. Cunningham, of Dublin; Prof. Herdman, F.R.S., of Liverpool; Prof. M'Intosh, F.R.S., of St. Andrews; Mr. J. Cosmo Melvill, of Manchester; Prof. Lloyd Morgan, of Bristol; Prof. Alleyne Nicholson, F.R.S., of Aberdeen; Dr. Scharff, of Dublin; Dr. Traquair, F.R.S., of Edinburgh; Canon Tristram, F.R.S., of Durham; Lieutenant-Colonel R. G. Wardlaw Ramsay; and Prof. Percival Wright, of Dublin.

MR. GEORGE SHARMAN retires at the end of this year from the post of Palæontologist to the Geological Survey of Great Britain. Entering the service just before the death of De la Beche in 1855, he served for a while under the first Director-General, and subsequently under Murchison, Ramsay, and Sir Archibald Geikie, with Mr. J. W. Salter and Mr. R. Etheridge as his senior colleagues. On the retirement of Mr. Etheridge in 1881, he was promoted, together with Mr. E. T. Newton, to take charge of the palæontological collections in the Museum of Practical Geology. Although he has published but little outside the "Memoirs of the Geological Survey," Mr. Sharman has sedulously devoted himself to the study of British fossils, and more especially the Invertebrata, his acquaintance with which is unequalled. The important aid which he has continuously given for over forty years to the field-geologists of the Survey is shown to some extent in the lists of fossils published in the official "Memoirs"; but no inconsiderable portion of his time has been given to those inquirers who so frequently come to a public museum with bags and pockets full of fossils to be identified by the officers. His skill and patience, and his readiness to give information have combined to characterise his long career as one of marked and unselfish devotion to the public service.

THE death is announced of Prof. Wilhelm Joest, known by his travels in North Africa, America and Asia.

MR. HENRY CECIL, writing from Bournemouth, under date December 24, says:—"I was fortunate enough to see, at 1.13 this morning, in the middle of the latter half of its passage, the most remarkable meteor I ever saw. At that hour the sky was perfectly clear; and looking at the brilliant stars through the western of two windows looking south, I became suddenly aware of an intense white illumination overhead, which, from the steepness of the arc, could not, I think, have had its origin far to the westward of the zenith."

IN the course of an article upon Sir W. E. Garstin's report on the work of the Irrigation Department of Egypt in 1896, the *Times* mentions as a new indication of scientific progress in Africa, that, since January 1, 1896, the water levels of the Victoria Nyanza have been daily recorded by means of gauges erected at three places, viz. Port Alice, Port Victoria, and Lubwas Usoga. The readings, as also a monthly statement showing the rise and fall of the lake, are received at Cairo; but the records of a series of years are necessary before any attempt can be made certainly to prognosticate the extent of influence that a rise or fall of the lake waters may produce on the Nile. The report states that gauges upon the Albert Nyanza are very urgently required in order to show what are the relations between the levels of that lake and the summer water supply in Egypt. This lake being nearer to the point of delivery, its levels are, if possible, more important to Egypt than are those of Lake Victoria, and the hope is expressed that the English officials at Uganda may erect gauges and furnish Egypt with records of the daily readings. Major R. H. Brown, Inspector-General of Irrigation for Lower Egypt, in his report for 1896 expresses the opinion that, as the catchment area of Lake Victoria is comparatively small, the lake may not have such an important influence on the Nile as we are accustomed to attribute to it, and that gauges at Fashoda, Khartum, and Berber are what is chiefly wanted.

WE are glad to see that a Lincolnshire Science Society has been established. For many years there has been, in Lincolnshire, an absence of combination among scientific workers. Of individual investigators there is no lack, and much valuable work has been carried on by them; but from a want of knowledge of what has been, and what is being done by others in the special subjects in which each is interested, there has been a waste of time and energy. A central, organising, directive force has been wanting; and it is to supply this want, and to give to individuals and to the local county societies an opportunity for combining forces for the purpose of centralising and directing their efforts so that their various plans of action may be harmonised, that the Lincolnshire Science Society has been called into existence. The Society consists of a number of sections, the members of each of which devote themselves to the working out of one or more lines of research in the sciences that the sections represent. The presidents of the sections form the Council of the Society, and it is a part of their duty to suggest to the members and to the affiliated societies such lines of research and such methods as will be likely to yield the best results. The Society is at present actively helping on a scheme having for its object the foundation and the endowment of a county museum. The object is a worthy one, and we trust that both it and the Society will meet with the fullest encouragement and success. Particulars referring to the Society may be obtained from the president, Dr. G. M. Lowe, the hon. sec., Mr. G. Grierson, or the vice-president, Mr. J. H. Cooke, Thorndale, Lincoln.

A FRESH contribution to our knowledge of the physiological effects of high altitudes is given by Prof. Piero Giacosa (*Rendiconti del R. Istituto Lombardo*, xvii.), who has studied more especially their influence on the exchange of material, and particularly on the elimination of nitrogen. Prof. Giacosa considers that as the altitude of 6000 metres is approached, there is an increasing risk of reaching the limit beyond which the physiological functions cannot be completed; but below 6000