ment under the general superintendence of Captain Flower, the Director of the Gizeh Zoological Gardens, to deal with questions relating to the wild animals and birds of the Soudan. Licences to export live specimens will be issued by this Department at fees to be determined later, and the Department will undertake the supply of specimens to Zoological Gardens, Museums and others.

Zoological Gardens.—Specia attention has been paid to the fauna of the Nile Valley. There were in the Gardens in October last 670 animals, representing 169 species, as compared with 473 animals, of 132 species, at the corresponding date in 1898. The most important acquisitions have been a giraffe, presented by Lord Kitchener, and a white oryx, from Kordofan, presented by Sir Reginald Wingate.

The staff of the Gardens was mainly employed during the year in rebuilding and repairing cages. An elephant-house has been built, and plans are being prepared for a new lion-house.

Nile Fish Survey.—The collecting of fish was, during the early part of the year, extended as far as Abu Hamed, and at present Mr. Loat, the specialist selected by the authorities of the British Museum, is working on the White Nile. A considerable number of plates, which will eventually be published, have been printed, and material from which others may be drawn has been obtained. A severe loss was sustained last year in the death of Dr. John Anderson, F.R.S., whose knowledge and experience made his advice of the greatest value in carrying out a work which was taken in hand owing to his initiative.

Egyptology.—Under the very capable direction of M. Maspero, a great improvement has recently taken place in the working of all branches of the Archæological Department. Notably, the appointment of two English inspectors-in-chief has done much to preserve the monuments, both in Lower and Upper Egypt, from further depredation and mutilation.

Work has been proceeding at Karnak. It will be remembered that eleven columns in the Great Hall fell to the ground during the flood of 1899. Five further columns appeared to be in some danger of falling. Under the direction of MM. Legrain and Ehrlich, these columns have now been dismantled; others have been strengthened and repaired. The *débris* of the stones which had fallen has been removed, labelled and arranged in such a manner as to render it possible, should it ever be decided to rebuild these columns, to replace each separate stone in the precise position which it formerly occupied.

Lord Cromer says he has been informed, on high technical authority, that, in spite of every precaution, the remaining portions of this splendid monument of antiquity will of necessity be exposed to considerable risk every year at the period when the subsoil water is falling. A very heavy expenditure of money would, without doubt, minimise this risk, but it is doubtful whether, under any conditions, it will be possible to obviate it completely.

The bases of the columns are of insufficient strength; the soil is unstable; each column supports an immense weight in the shape of roofing-blocks; and the whole structure has been erected without mortar and without bond of any sort.

The principal tombs at Thebes have been closed by gates. The tomb of Amenophis II. has been so arranged that the Royal mummy remains *in situ*, and can be seen by visitors. M. Maspero is studying a project for lighting these tombs by electricity, so as to obviate the destruction to the wall paintings caused by the candles used by visitors.

Technical Education.—The only important technical school in Egypt is that situated in the Boulac quarter of Cairo. The School of Agriculture is a very popular institution, and is rendering good service to the country, but more institutions of this kind seem to be needed.

Lord Cromer refers particularly to the educational needs of Egypt, and suggests that attention should be given to technical education in all its branches. He has discussed this subject with various authorities in Egypt, and finds a general disposition to do something towards the improvement and extension of technical instruction. Mr. J. Currie, director of education in the Soudan and Principal of the Gordon College, has reported upon the subject, and extracts from his report are given by Lord Cromer. It is proposed to establish a large industrial school at Khartoum, to be worked in connection with the Government dockyards and workshops. It is also proposed to find house-room for, and supervise, the following institutions at Gordon College, so far as that can be possible: (*a*) A general Soudan reference library; (*b*) an economic museum, to assist in the commercial development of the country; (*c*) a meteorological station and a small observatory; (*d*) a small analytical laboratory.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MISS E. S. BARCLAY has bequeathed to Bedford College the sum of 1000*l.* without conditions.

WE learn from *Science* that Pittsburg will probably soon have a great technical institution, especially adapted to its needs and as complete in the industrial field of education as the Carnegie Institute of that city has become in art and æsthetics. An advisory committee appointed to determine the best plan and most suitable scope of the new institution has just presented its report to Mr. Carnegie. These expert advisers were Dr. R. H. Thurston, Director of Sibley College, Cornell University, Prof. J. B. Johnson, Dean of the College of Engineering, University of Wisconsin, Prof. Thomas Gray, of the Rose Polytechnic School, and Prof. V. C. Alderson, of the Armour Institute. The scheme proposed includes three different and distinct forms of school which may be combined as parts of one complete technical university. If the whole scheme is accepted by Mr. Carnegie, there will be, in the first place, a first-class technical college. "This college," says the committee, "should be made attractive to the greatest scholars in the fields of physical and chemical science. To obtain and hold such men they must be given ample opportunities for research. This college must be supplied, therefore, not only with great experimental shops and laboratories for students' use, but in all departments there should be splendidly equipped laboratories of investigation and research, under the direction of the head of such department, and with a full corps of assistants for the carrying on of all lines of investigation which are now partly or wholly unprovided for in America." There will also be a Technical High School to carry on work above that of the public grammar school, and day and evening classes for the benefit of those who are unable to take advantage of the more complete courses in this school. Mr. Carnegie has now to decide whether he will found a school for artisans, a technical high school or a technical college, or, if his ambition mounts so high, a true technical university including them all.

AN article by Mr. J. B. C. Kershaw in the July number of the *Monthly Review* contains a few facts which should be of interest to all who are concerned with educational and national progress. He points out that technical education as at present carried on in this country is chiefly instrumental in giving to great numbers of young people elementary instruction in every subject except the dead languages. In the opinion of practical men, this smattering of science and other subjects is of no value from an industrial point of view, and as a system for bringing the few who possess undoubted ability or genius to the front it is costly and unnecessary. In England the aim has been to educate the rank and file of the workers, but the German aim is to educate thoroughly all who are to occupy posts of authority in manufactures and industries. Herein there is a great difference, and many people are beginning to see that the German method is the best when industrial progress is taken as the criterion. The reason lies in the ability to appreciate new developments, or, as Mr. Kershaw puts it, "a thorough scientific training enables the manufacturer to decide quickly upon the merits of the new processes or inventions, and he is not daunted by the fact that in this newly-chosen path of industrial progress there is no 'practical experience' to guide his steps. The German manufacturer has, therefore, been assisted by his own thorough technical training, and by that of his manager, engineer or chemist, in adapting himself more quickly than his English rival to new conditions of trade, or to the exigencies of new processes and new developments of industry." There is little hope of substantial improvement while our manufacturers and commercial men, as a rule, have so little sympathy with scientific work. Their general attitude is reflected in advertisements of this kind—"Wanted, young man as Chemist at Tar and Vitriol Works in North of England; willing to fill up time at Bookkeeping." While trained chemists are considered to be on about the same level as a clerk and inferior to a skilled operative, how can we expect to make advances similar to those which Germany and the United States are making?