News and Views.

ALTHOUGH it has been exhibited there before, the walrus is sufficiently rare in captivity to make the recent acquisition of two young specimens by the Zoological Gardens at Regent's Park, London, a noteworthy event. Walruses are delicate animals in captivity, perhaps because those that come to land are young, tuskless individuals. It is said that the walrus-cub is suckled by its dam until the tusks appear, so that it may be that the change from the maternal milk diet is at the root of the trouble. At the same time, there is no doubt that some species exhibit innately poor viability in captivity, and that these are sometimes the most robust-looking, and not highly specialised in diet: thus, the gorilla is delicate as well as the walrus, and the capercailzie is the most difficult subject of all the game-birds. The walrus is not only interesting scientifically, but also is a good popular exhibit, for its face exhibits a curiously close caricature of humanity. It would seem, therefore, that Tacitus was playing the arm-chair critic when he cynically suggested ("Annals", ii. 24) that the "marine monsters, forms half-human, half-bestial", told of by returned legionaries of Germanicus after a storm in the North Sea which drove some of them as far as the coasts of Britain, might have been "conjured up by their fears"; for the walrus, which even at the present day occasionally visits our northern coasts, would no doubt have been well in evidence farther south at that date—the early years of the first century of our era. These men also reported "unknown birds", which were also probably not imaginary, as the Great Auk would be equally likely with the walrus to be present and attract attention there and then.

"LIVE and let Live", a plea for the preservation of wild life, is a pamphlet supporting the activities of the newly founded "Association for the Preservation of Game in the United Provinces" of India. Already the Forest Service of the Government has taken a firm stand for the preservation of the wild life within its jurisdiction, but more is required. This new Association is setting out to educate public opinion in the need for the protection of wild life, to encourage the study of natural history in schools and the protection of 'game' in private territories, to check unnecessary slaughter by the public, to co-operate with the Government along similar lines, and, lastly, to create and keep up a national wild game reservation in the United Provinces, where representative Indian animals shall be preserved for all time, and shall be available for the enjoyment and inspection of the people of India. The objects of the Association are worthy of the support of all interested in the preservation of wild life, and the pamphlet, which is signed by Hasan Abid Jafry of Agra and Major J. Corbett of Naini Tal and is counter-signed by several Indian and English men of standing, appeals for members and for subscriptions towards the accomplishment of its aims. Contributions should be sent to the Honorary Secretary, Hasan Manzil, Shahgani, Agra, U.P., India.

IN an article in the *Auk* (vol. 48, 1931, p. 22), Dr. Joseph Grinnell, who has done much for the interpretative study of birds in western America, sets out to discuss some problems of the migrations of birds from what he calls a rational point of view. He would shun all notions of mystery and unfathomableness and would attack each problem as if it were a simple thing capable of being "understood eventually in all its details upon the basis of facts discriminately gathered and rationally interpreted". The first batch of results from this inquiry are such as these: that "birds are primordially equipped easily and quickly to cover territory by flight through air" and that "they react in all sorts of ways with exceeding speed and accuracy", fairly obvious conclusions, though the latter in this very general form still requires proof. Dr. Grinnell further deduces that the migration habit in birds is due to a development of ordinary feeding journeys, that it is as easily acquired or discarded as any other habit, and that the factors that induce, maintain, and modify habits of migration are in all likelihood precisely the same as those which control general geographic distribution in all the higher vertebrates.

THIS is travelling pretty far along the line of assumption, reasonable though the assumptions seem to be. Nor does it seem very helpful simply to state that the senses used by birds in finding their way during long seasonal migratory flights are the same as those used in the course of their daily movements. The fact is that Dr. Grinnell, having accepted (curiously enough without proof) the assumption that wonder is inconsistent with rationality, puts the gloss of simplicity over the problems of bird migration. In all probability it is no more accurate to think that when a man wonders he stands with his mouth open and brain paralysed, than it is to assume that simplicity in Nature is necessarily more truthful than complexity and mystery. The fact remains that there is much in the migration of birds that is problematical or mysterious—the best two general books on the subject, English and German, use the word 'problem' in their titles, as Dr. Grinnell does in his—and the scientific approach by way of the analysis of the wonder-arousing phenomenon seems to us to be perfectly legitimate.

IN view of the stories current in the tropics of both hemispheres of dangerous snakes resorting to a spot where a member of their species has been killed, a note in the *Field* of Aug. 8 (p. 218) deserves attention, although appearing over initials (E. P.) only. A milkman of Godalming, it relates, killed a grass snake, measuring 38 inches, and full of eggs, in the road; and, on revisiting the spot next day, found no less than 16 other snakes by the dead one, of which he killed all but two, and was apparently photographed

along with them, since a photograph of a young man festooned with snakes of various sizes illustrates the note. He did not, it seems, know what the unfortunate reptiles were or that they were harmless. It is certainly a great pity that, with so limited a wild-life list as ours, such ignorant slaughter should still take place; but the congregation of all these snakes about a dead female, and that a pregnant one, certainly calls for inquiry into its cause.

THE presidential address of Sir Henry Miers to the Museums Association at Plymouth, like his former addresses to that body, marks a stage in the progress of museums in Great Britain. It is no exaggeration to say that to Sir Henry himself that progress is almost entirely due. There were strivings in many museums, and many curators were working towards new ideals, but the president of the Museums Association has been instrumental in crystallising rather amorphous efforts and in fixing the stages by which the ideal may be gradually attained. He enumerated some of the gains of the year that has passed. A summer school for the training of curators and assistants was held in London, and this year Edinburgh is to take a share in the instruction. An exhibition was organised in the County Hall, London, to illustrate the manner in which museum specimens and works of art are being distributed by the museums to schools; and a beginning has been made with the allocation of grants-in-aid to various deserving museums from the funds of the Carnegie Trustees. We are at one with him in his praise of the increasing efficiency of the *Museums Journal* under the editorship of Dr. F. A. Bather, and welcome the announcement that the Carnegie Corporation of New York has undertaken to place a sufficient sum at the disposal of the Association for the purposes of an Empire survey of museums. Co-operative sympathy between the museums of the Empire would be for the overwhelming good of all concerned.

THE completion of the Saluda Hydro-Electric Station near Columbia in South Carolina shows how the demand for electric power can alter the appearance of a country. When work was first begun on the project in the early part of 1927, the site of the development was an area of gracefully rolling hills, dotted with small farms and homesteads. The population was about four thousand, and there were three churches, six schools, and 193 graveyards in the area which is now inundated to make the largest reservoir in the world. The Saluda dam spans the river and valley for a length of nearly a mile and a half, and is almost a quarter of a mile wide at its base. Along the top of this huge wall of earth a concrete highway forming part of the State roads has been built. Motorists driving along this road have an excellent view of the reservoir, or rather, lake, as it is 41 miles long, 14 miles wide, and has a shore-line of 520 miles. It required more than a year's flow of the river to fill it. In comparison with the dam, the power station, which will have a capacity of 200,000 kilowatts, looks quite small. The Saluda development is a part of the power system of the Associated Gas and Electric Company. The power generated by water turbines is converted into electric power, transmitted at 114 kilovolts, and sold to power companies in South Carolina and neighbouring States. This should ensure the south-eastern part of the United States with an abundant supply of electric power. Photographs of the power station, the transmission lines, and the completed dam are shown in the *Westinghouse International* for August.

IN the *G.E.C. Journal* for August there is an interesting paper on discharge tubes and their technical applications, by N. L. Harris and H. G. Jenkins, which shows how rapidly this application of science to industry is developing. Tubes of many types, negative glow, positive column, hot cathode, etc., are now being manufactured. Reservoirs of various gases, including neon, argon, helium, and nitrogen, are connected to the pump system, so that the tube can be filled with any gas required at the required pressure, and direct current and alternating current voltages up to 1000 are available for 'glowing' the tubes. These tubes are used for sound-film recording, picture telegraphy, television, pyrometry, etc. Discharge tubes are also used for protective devices. For example, the Osram earthing lamp can pass 50 amperes for 1/40 sec. without damage. They can also be employed economically for dimming lamps by reducing the applied pressures in lighting circuits. Tubes for rectifying alternating currents are supplied which will give 50 milliamperes at 150 volts. The largest commercial application is the use of neon signs for advertising and decorative lighting. For night flying they are of great use as beacons, landing lines, boundary lights, and obstruction and wind direction indicators. In 1904, Moore introduced long high-voltage tubes filled with carbon dioxide gas at a pressure of about a millimetre of mercury for lighting. These tubes will probably again become popular, as the light they emit is pleasing, and improved technique in manufacture has remedied defects. In 1910, Claude introduced neon tubes for decorative lighting which give a rich-red light and the luminous efficiency of which is about double that of the Moore lamps. They are particularly useful for danger signals.

STATISTICS prove that the use of telephony in large cities is continually increasing. In the statistics, taking into account data up to Jan. 1, 1930, published in *Electrical Communication* for July, we notice that the number of telephones in use per 100 of the population is 4·7 in Liverpool but 8·7 in London, the population in the latter city being seven times greater. In Paris the corresponding number is 12·5, in Berlin 11·9, and in Rome 4·3. In Copenhagen it is 17·3, in Oslo 18·1, and in Stockholm 30·5 or nearly one telephone for every three inhabitants. In New York it is 26·3, in Chicago and Los Angeles about 30, in Seattle and Denver 31·3, in Washington 32·7, and in San Francisco no less than 40·8 telephones for every 100 inhabitants. In the British Dominions, Toronto heads the list with 28·4 telephones for every 100 of the population.

THE standard frequency of alternating current supply in Great Britain is fifty cycles per second and

electrical engineers are agreed that this frequency should be accurately controlled. Capt. Donaldson, the president-elect of the Institution of Electrical Engineers, has strongly insisted on the importance of having a time-regulated frequency, and this has been done in the case of the extensive system of the North Metropolitan Company, of which he is the chief engineer, for the last three or four years. It has been found possible to operate clocks from the ordinary electric mains of consumers connected to this company's networks. Such clocks can be purchased at prices ranging from three pounds upwards. It is quite possible that these synchronous clocks will gradually supersede hand-wound or hand-regulated clocks.

IN the *Journal of the National Institute of Industrial Psychology* (vol. 5, No. 7) there is a report of a lecture by Mr. Seebohm Rowntree on "Some Industrial Problems of To-day". He pointed out that, when the era of big-scale industry began, Great Britain started with immense advantages, owing to the fact that it had the cheapest coal and iron in the world, the best workmen, machines, mercantile marine, and banking system, with the result that it built up a huge export trade and maintained a higher standard of living than any other country in Europe. Gradually it has been losing ground. Mr. Rowntree attributes this partly to the debasing of currency by our creditors, to our very high real wages, to the money spent on the social services, to the conservativeness and inflexibility of employers and workmen. In the circumstances, he thinks we must either lower our standards or raise our efficiency, or maintain an ever-growing army of unemployed. Of these alternatives he discusses ways in which efficiency might be increased. He thinks that we have made more progress in dealing scientifically with the *material* side of industry than with the *human* side. We have lost in strikes and lock-outs during the last twelve years on the average more than 31 million working days. The nation that first solves the problem of how to induce a man to work as hard in the factory as if he were working for himself is secure in the industrial leadership of the world. As a step in this direction, Mr. Rowntree urges that a right selection of personnel by scientific tests should be made, so that people are assigned to the work for which they are best fitted. A good selection reduces labour turn-over, as well as the cost of training, alleviates monotony, and discloses ability that might otherwise be hidden. Next, the conditions under which the employees work must be good, and this necessitates a study of incentive systems, environmental conditions, etc. The article is suggestive and very interesting, and based on direct experience.

IN the "Summary of Progress of the Geological Survey of Uganda for 1919–1929" (Entebbe, 1931; price 4*s*.), Mr. E. J. Wayland, the director, presents an extremely useful and interesting statement of the knowledge gained during the ten years that have elapsed since his flourishing department was founded. Only a vague idea of Uganda geology was possible in 1919; now there is much to be said about the ten divisions of the geological column that are represented, about the long list of igneous rocks that have been investigated, from the Pre-Cambrian granites to the Tertiary and recent alkali-lavas of Mt. Elgon and the volcanic field of Bufumbiro, and about the tectonics and geological history. Useful minerals and water supply have naturally been given considerable prominence, since the Survey is primarily an economic one, but to geologists the chief interest of Uganda lies in such topics as its past climates, its earth-movements, rift valleys and reversed rivers, and not least in its volcanic activity. Mr. Wayland and his staff have undoubtedly one of the most fascinating countries in the world to investigate, and this admirable report, with the clearly printed provisional geological map which accompanies it, shows how enthusiastically and competently they have attacked the great problems that Uganda offers. Several excellent photographs by Mr. A. D. Combe have been effectively used as illustrations. The officers of the Survey are to be congratulated on a record of achievement of which they may be justly proud.

THE May number of the *Hong Kong Naturalist*, which is issued quarterly and edited by Dr. G. A. C. Herklots and Major H. P. W. Hutson, contains some valuable natural history articles. This is the second part of Volume 2, and in it Major Hutson continues his description of the birds of Hong Kong (Part 6), which is, as before, illustrated by beautiful coloured plates drawn by A. M. Hughes. The present part includes the kingfishers, and there are many species recorded. Not all the kingfishers are fish eaters, and those which live on insects, crabs, frogs, and small reptiles do not show any marked preference for the vicinity of water. Notes on colour, habits, nesting, and field identification make this series a peculiarly happy one. A new series entitled "The Crabs of Hong Kong" (Part 1), by Mr. Chia-Jui Shen, begins in this issue. The introduction gives instructions for collecting, preserving, and shipping, for great care must be taken when handling these often fragile creatures. The Dromiidæ, Raninidæ, Calappidæ, Leucosiidæ, and Parthenopidæ are described, and the work is well illustrated by photographic plates and line drawings. Mr. W. Fowler continues his synopsis of the fishes of China (Part 2), the herrings and related fishes, and an article on fresh-water sponges by Mr. Gist Gee with other smaller papers make up a good number of this interesting magazine.

THE *Proceedings of the California Academy of Sciences*, Fourth Series, vol. 19, No. 13, May 1931, contains the report of the president and that of the director of the Museum and of the Aquarium for the year 1930. One of the latest and most important acquisitions by the Department of Palæontology of the Museum is the large Baldwin collection of molluscs. David Dwight Baldwin was a famous shell collector, the shells being chiefly from the Hawaiian Islands, where he lived and collected for many years. Hawaiian land shells are noted for their beauty, wonderful colouring, and variability, especially the tree and ground snails, and this collection, representing years of individual labour, is unique. Besides collecting,

Mr. Baldwin contributed several conchological papers to various scientific journals, including the well-known "Catalogue of the Land and Fresh Water Shells of the Hawaiian Islands". It is well that the Museum should have made this historic and valuable addition to its store, which has now been installed in the Academy's research series.

A REFERENCE to an article of interest to many English naturalists appears in *Svenska Linné-Sällskapets Årsskrift* (Årg. 14, 1931, p. 169). It is a short review of a paper by Dr. Knut Hagberg discussing the influence of Linnæus upon the great author of the "Natural History of Selborne", Gilbert White. The paper itself appeared in *Samf. Nios årsbok Vår tid*, vol. 11, 1930, and it traces the effects of White's correspondence with such disciples of Linnæus as Solander and Sir Joseph Banks. Indeed, in Dr. Hagberg's opinion, the Linnean nature study, through many enthusiastic followers, took a firmer grip in England than in Sweden, and through White's "Selborne" it influenced the poetry of such as Keats, Coleridge, and Wordsworth.

British Birds for August contains two very interesting records from northern Scotland. The first is that of the breeding of the whimbrel (*Numenius phœophus*) in Inverness-shire, and the most gratifying part of A. H. Daukes's description is that the young were allowed to hatch. In all the previous records of the nesting of this rare wader upon the mainland, the clutches of eggs were taken by the self-interested discoverers. The second record is that of the first occurrence in Britain of the red-headed bunting (*Emberiza icterica*) of Asia. The bird was seen in North Ronaldshay, in the Orkney Islands, by Col. G. Eardley Todd, and was shot so that the observation might have "real scientific value"!

IN view of the increased and continued prevalence of cerebro-spinal fever in England and Wales, the Ministry of Health has issued "A Review of Certain Aspects of the Control of Cerebro-Spinal Fever" (*Reps. on Pub. Health and Med. Subjects*, No. 65. London: H.M. Stationery Office. 6d. net.). A survey is given of the present incidence of the disease, the salient clinical, pathological, and bacteriological features, and its infectivity and mode of spread by healthy carriers. Control and treatment are discussed, and in regard to the last-named it is suggested that trial should be given of anti-meningococcus serum, supplies of which are available; and records of such treatment, if employed, are desired by the Ministry.

A LARGE earthquake was recorded at Kew Observatory on Aug. 18. The first impulses at Kew occurred at 14 h. 30 m. 40 s. G.M.T. The records indicate that the disturbance originated about 3800 miles north-east by east of Kew. The epicentre was, therefore, in Northern Mongolia near the great Altai Mountains, and it appears to have been some 400 miles north of that of the very large earthquake which occurred on August 10.

THE Council of the Zoological Society of London has agreed to confer the Society's Silver Medal on Mr. A. St. Alban Smith, in consideration of the very numerous donations he has made to the collection of the Society in 1927, 1928, 1929, and 1930, and of other valuable assistance he has given in Singapore. The actual number of specimens which arrived in London alive from him was 8 in 1927, 33 in 1928, over 200 in 1929, and more than 400 in 1930. They have included binturongs, leopards, a magnificent tiger, a gibbon, tree kangaroos, a number of valuable birds, and a very large number of reptiles, including the largest hamadryad ever seen in captivity, some rare gharials new to the collection, and a number of smaller snakes and lizards.

FOLLOWING the recent exhibition of chemical apparatus in London on July 13–18 in connexion with jubilee celebrations of the Society of Chemical Industry and the Achema exhibitions organised by the Dechema, the German Society for Chemical Apparatus, a similar exhibition in Paris in 1932 is under consideration. The Achema has now received from France, from the Société de Chimie Industrielle, a proposal that these exhibitions should be held alternatively in each of the three countries concerned, an arrangement which would have the advantage not only of avoiding the simultaneous occurrence in different countries of such exhibitions but also of affording opportunities for the mutual study and comparison of the methods of production in the different countries. It is expected that an international exhibition of chemical apparatus and plant will be held in Paris in 1932, followed by a German exhibition (Achema VII.) in Cologne in 1933, and a similar British exhibition in London in 1934.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A head of the building trades department of the Burnley Municipal College—The Director of Education, Education Office, Burnley (Aug. 31). A lecturer in physics and a lecturer in chemistry at the Denbighshire Technical Institute, Wrexham—The Director of Education, Education Offices, Ruthin (Aug. 31). A junior assistant in the pathological department of the Royal East Sussex Hospital, Hastings—The Secretary, Royal East Sussex Hospital, Hastings (Aug. 31). A full-time lecturer in engineering at the Sunderland Technical College—The Chief Education Officer, 15 John Street, Sunderland (Sept. 7). A demonstrator of biology at St. Bartholomew's Hospital Medical College—The Dean, St. Bartholomew's Hospital Medical College, E.C.1 (Sept. 10). A Clement Stephenson entrance scholar at the Royal Veterinary College—The Secretary, Royal Veterinary College, Camden Town, N.W.1. A teacher of mechanical science at the Croydon Central Polytechnic—The Principal, Central Polytechnic, Scarbrook Road, Croydon. An instrument maker and laboratory attendant in the electrical department of the Dundee Technical College and School of Art—The Secretary, Technical College and School of Art, Bell Street, Dundee.