

of use to many authorities who to-day are faced with the problem of improving water supplies. The extension of the electricity grid will naturally lead to the installation of electrical pumping plant in preference to steam and oil-driven plant on account of the possibility of automatic control. Many facts and figures as to cost and maintenance of plants and examples of installations are given, ranging from those suitable for a single house to those for large rural areas. In one district with a population of 17,000 spread over an area of 23,000 acres, a scheme was carried out for supplying $12\frac{1}{2}$ gall. per head, the charge for which was approximately two shillings in the pound on the net annual value of the premises. The amount of water used will, of course, depend largely on the sewage system, but it is generally accepted that 25 gall. per head is a safe figure in planning a rural scheme.

Guide Books and Museums

Two guides to the palaeontological collections of the British Museum (Natural History) have recently been issued. One of them, the "Guide to the Fossil Birds, Reptiles and Amphibians", claims to be "rather the first edition of a new Guide than a new edition of the old", while the other, the "Guide to the Fossil Mammals", is a reprint "altered and corrected where necessary" (London: British Museum (Natural History), 1s. each). Both guides call for criticism. In the first place it is a little difficult to know to what class of reader they are addressed. If for the serious student of palaeontology, they are not sufficiently full and contain some rather serious errors, while to the visitor who only wishes to take an intelligent interest and have a little of the veil lifted, they are likely to be wellnigh unintelligible. This difficulty might perhaps be overcome by the use of material already to hand. In 1923 there was published a guide to the exhibition galleries of geology and palaeontology, which, rewritten if necessary and with a few well-chosen illustrations, would serve the general public admirably and might be of use to the more elementary of the students. It may also be suggested that a series of separate guides, or guide leaflets, such as are to be found issued by the American Museum of Natural History, would serve a useful purpose. In fact, this plan is already partially in operation in the Natural History Museum. There is a "Guide to the Fossil Remains of Man", published in 1915 at a price of fourpence and a guide to the "Elephants (Recent and Fossil)" published as a second edition in 1922 for a shilling, both very satisfactory. Detailed criticism of the two guides under notice is out of place here, but it may be remarked that neither gives a clear idea of the evolution or classification of groups, while the purpose of some of the illustrations is obscure. It is to be hoped that the authorities will consider not a republication from time to time of matter which has served its purpose and has in course of time become obsolete, but an entire replanning and rewriting of guides to the national collections to meet the two distinct calls made on them, by the student and by the general public.

Average Temperatures in the British Isles

THE number of persons requiring information about the temperature normally experienced in different parts of the British Isles, for one purpose or another, has for many years been large enough to make it an important part of the work of the Meteorological Office to secure so far as possible that standard methods of obtaining air temperature shall be followed both at official and private meteorological stations, and that summaries of these records in comparable form shall be available for inquirers. In a recent handbook ("Averages of Temperatures for the British Isles." H.M. Stationery Office. 9d., postage extra) monthly and annual averages of the daily maximum and minimum temperature are given, so far as possible, for the years 1901-1930. As there are, however, many stations for which the averages can refer to only a portion of that period, the inquirer has to be warned against indiscriminate comparisons; for example, differences between a pair of stations for which the period of years referred to is not the same may be due more to peculiarities of the two periods than to real climatic differences; there is the further pitfall of possible differences in times of setting of the maximum and minimum thermometers at the two places. These matters are dealt with in the introduction and the necessary information is shown against each set of figures. It may be observed that the precise meaning of the 'normal' or 'average' maximum or minimum temperature for a given season and a given place is not easily defined. In Table I of the "Book of Normals", which the tables under review supersede, the mean temperature at Kew in January (or rather the mid-point between the mean daily maximum and mean daily minimum) is given as 38.9° F., whereas in the new tables it appears as 40.4° F. The relatively low figure in the "Book of Normals" is due partly to the fact that in the period covered therein (1881-1915) there was a notable run of cold winters, those of the early 'nineties, while the winters of 1901-30 have mostly been mild; there is no means of knowing whether the next 30 years will give an average or 'normal' near to 38.9° F. or one nearer to 40.4° .

British Empire Broadcasting

SOME of the difficulties overcome by the British Broadcasting Corporation in establishing a broadcast service between Great Britain and distant regions of the Empire are well described in a paper in *Electrical Communication* of April by C. M. Benham and P. H. Spagnoletti. Except in special cases, long distance radio communication is practical only when short wave-lengths are used. It was necessary therefore to use radio equipment of the short wave type. Fortunately, the colonies and dominions are so distributed longitudinally that they can be conveniently divided into time zones, that is, areas which have approximately the same local time. There are four main zones: Australia, which has a time displacement relative to London of 'eight hours early'; India, 'four hours early'; Africa, the same time; and Canada, 'six hours late'. In the case