

Brunt, on "Meteorology in History"; Jan. 21—Dr. G. C. Simpson, on "Weather Forecasting"; Jan. 28—Capt. C. J. P. Cave, on "Clouds"; and Feb. 4—Sir Henry Lyons, on "Historic Meteorological Instruments".

Blind Reading Print by Sound.

ACCORDING to a report in the *Times* of Jan. 1, two French inventors, MM. Thomas and Conland, have devised an apparatus by which ordinary print can be made legible for the blind. The apparatus is called the photoelectrograph. A ray of light is made to pass over the printed page, and as each letter is illuminated the corresponding letter is presented in relief and in magnified form in another part of the machine, where the blind reader identifies it by touch. Not only ordinary print, but also Braille can be read with the machine; in the latter case it has the advantage that the Braille characters can be printed with ink on a smooth page, and need be no larger than ordinary type, thus reducing Braille types to a convenient size and making them cheaper and easier to produce than hitherto. Any reduction in the size of the present Braille publications in embossed type must be a boon; but institutions for the blind in Great Britain will probably continue to use an instrument which involves no special printing, and—like Dr. Fournier d'Albe's 'optophone' or Prof. F. C. Browne's 'phonopticon'—directly converts ordinary type into sound signals. Moreover, experience has shown that ordinary type, even after enlargement, is unsuitable for reading by touch with any speed.

Scientific Research and the Electrical Industry.

WE learn from *A.E.G. Progress* for October that owing to the present trade depression, the German electrical industry is being compelled to exercise the most rigid economy. On the other hand, it is doing its utmost to explore the possibilities of new sources of revenue. To achieve this, it is relying on scientific research and on utilising the results obtained in industry and agriculture. It is recognised that many of the benefits conferred on the civilised world during the last two generations have been due to the close co-operation between the research worker and the engineer. The Research Institute of the A.E.G., which commenced work as a private institute several years ago, has now opened its doors to a wider public and to the Press. Prof. Ramsauer is the head of the Institute and has forty scientific workers under him, the problems investigated covering a wide field in physics, chemistry, and engineering. The field of purely scientific research is the field in which the Institute is least fettered, as the question of technical application is of secondary importance. In fact, technical considerations may be a drawback, as a pre-determined purpose cramps scientific research and may even lead it astray. Only when the investigations have been carried to a conclusion, uninfluenced by preconceived ideas, is the possible use of the technical applications of the results considered. In this way the nature of the electron was investigated in the physical laboratory and the conclusion arrived at that its behaviour is similar to that of a wave. It

is stated that the use of electron waves for surface structure analysis represents a valued and important application of the knowledge thus obtained.

Soap Plants.

ETYMOLOGY, pharmaceutical lore, and wide knowledge of ancient herbals and modern systematic botany are combined in the fascinating series of articles contributed by Mr. Hilderic Friend to the *Gardeners' Chronicle* under the general title of "Horticulture in relation to Commerce". The article in the issue for Nov. 28 points out how varied are the plants and parts of plants that have been used by native races as soap materials. As a result, the identification of a plant simply named a soap plant or soapwort is not an easy matter. One tropical family, the Sapindaceæ, represented commonly in Great Britain by the horse-chestnut, contains a number of soap plants, including the soap-tree of China, *Sapindus chinensis*; the fruit of another species is used in India under the name of soap nut, whilst Humboldt describes the natives on the river Cariaco washing their linen with the fruit of the parapara (*Sapindus Saponaria*). In California is found a large bulb, *Chlorogalum pomeridianum*, of which the mucilage provides a lather, whilst the root of *Gypsophila Struthium*, a native of Spain, lathers in water. In fact, decoctions, roots, barks, fruits, and seeds have all been utilised, whilst the modern soap industry probably had its origin in the value, very early discovered, of certain plant ashes as cleansing agents. Thus, Pliny states that soap was first prepared by boiling goat's fat with ashes from the beech tree.

Strength of Burmese Timbers.

A PAPER comparing timbers of Burma with those of Europe and America, by Mr. C. W. Scott, of the Indian Forest Service, was recently presented to the Association of Engineers in Burma (Paper No. 3, July 23, 1931, Session 1931). Timber testing is now an economic art practised in many countries either anxious to place new untried timbers on the markets or to procure cheaper ones to replace more expensive types. Most of the important timbers of Burma have now been tested for strength on standard scientific lines at the Forest Research Institute, Dehra Dun, India. The data obtained there are readily comparable with those recorded by similar apparatus and procedure in the United States, Canada, and Great Britain. Timber testing has indeed become a highly organised branch of science in the last twenty years. It is conducted under the supervision of trained engineers well acquainted with engineering practice and requirements in metal and other materials as well as in wood. In France and Germany a certain amount of special timber testing has been done in connexion with aircraft, but apparently no standard procedure for general timber testing has been evolved. The standard methods used at Dehra Dun are being followed also in Australia, New Zealand, South Africa, the Malay States, the Philippines, and Java. Mr. Scott's paper is of value, since the data of comparison have been collected from the laboratories of Dehra Dun (India), Madison (U.S.), Princes Risborough

(England), and the Forest Products Laboratories of Canada. From the point of view of Burma, it places that country in a position to answer inquiries on the subject of strengths, etc., of her more important timbers, information on the subject being obtainable from the Forest Economist, Rangoon.

American Museum of Natural History.

THE standing and the progress of the American Museum of Natural History illustrate what can be attained by effort over a relatively limited field so long as public interest approves and lends its support. On the common ground of the great public educational purposes served by the museum, the City and State of New York have combined in granting appropriations for building alone of 16,000,000 dollars; and the increasing extent of the services rendered may be judged from the jump which is foreshadowed in annual expenditure, from the "inadequate sum" of 15,000,000 dollars in January 1931 to an amount of 22,500,000 dollars in 1933, when the building programme will be completed, and the exhibition halls, laboratories, and lecture halls will be in full operation (Sixty-second Annual Report of the Trustees for the Year 1930). A new feature of the museum's educational programme is the development of the training of teachers, for whom three special courses have been instituted. But the school services also increase by leaps and bounds, so that the 23,000,000 contacts with school children in 1930 almost double those of the year before. The lantern slides loaned to public schools well exceeded a million, and it is interesting to find that the growth of the film service shows that for class purposes the narrow width film (16 mm.) is more appreciated as an aid in teaching than the standard (35 mm.) film, the real place of which is the assembly hall.

National Museum of Canada.

THE National Museum of Canada, the Annual Report of which for 1929 has just been published, attains a happy balance in its combination of field and indoor work. During the summer months the members of the staff are engaged in field work broadly distributed throughout Canada, a tradition doubtless derived from the Museum's close connexion with the Geological Survey. The result is of value scientifically and educationally. Ethnological expeditions in many areas, the investigation of the mammals of British Columbia and of the plants of Wood Buffalo Park, add material to the collections and valuable experience to the collectors, who take the opportunity of delivering popular lectures in the districts they visit. In the Museum itself great stress is laid upon the need for making a reasonable contribution to the interests of the community, and the variety of the titles in the list of the two popular lecture courses, delivered during the winter in the auditorium, indicate one way in which that contribution is successfully made. Nearly 9000 children attended the Saturday morning lectures and 3323 adults those on Wednesday evenings.

Literature of Nutrition.

THE scientific investigation of nutritional problems has attracted so many workers to this field that it is

difficult for anyone to keep in touch with advances made in directions other than those in which he is immediately engaged. We therefore welcome the appearance of the first two parts of vol. 1 of *Nutrition Abstracts and Reviews*. This new journal is issued under the auspices of the Imperial Agricultural Bureaux Council, the Medical Research Council, and the Reid Library of the Rowett Institute, Aberdeen. The editors are Dr. J. B. Orr, Prof. J. J. R. Macleod, and Dr. Harriette Chick. The first number, a double one, contains 351 pages and 1334 abstracts. Reviews are contributed by Sir F. Gowland Hopkins on nutrition and human welfare, Prof. E. P. Cathcart on some of the difficulties in the quantitative assessment of human diets, and Dr. J. B. Orr on the qualitative aspects of nutrition, with special reference to farm animals. The journal will appear quarterly. Abstracts will be made from some 450 periodicals, and the reviews will be of two types, those of a general nature, stating a point of view, as in the present number, and others dealing exhaustively with the present state of knowledge of different aspects of the subject, giving a bibliography of the literature. A hearty welcome may be extended to the new journal, which will be invaluable to workers in this science and of great use as a work of reference.

British Salmon Fisheries in 1930.

THE Ministry of Agriculture and Fisheries Report on the Salmon and Freshwater Fisheries for the year 1930 brings to our notice that that year was characterised throughout Great Britain by the marked shortage of salmon from our rivers. Furthermore, this had followed on from a shortage that was already apparent in 1929. In both years it was the four-year-old fish which failed to come up to number, which indicates that for some reason the smolt crop of two successive seasons, in 1927 and 1928, has not returned from the sea. All available evidence goes to show no reason that would cause the smolt run from the rivers to the sea in those years to have been a failure, and one is left to conjecture that "unfavourable factors in the sea caused the destruction of the main body of smolts which descended". With most of our food fish from the sea, the abundance of future stocks is probably determined at a very early stage of the fish's life—during the first year at any rate, as shown by the successive predominance of one-year's stock from year to year in the catches. It is easy to imagine factors which may bring about heavy mortality when the fish are at a young and delicate stage, or that may even curtail spawning efforts; but the salmon are already sturdy grown fish by the time they enter the sea, and, barring excessive depredation by enemies, it is difficult to suggest a reason for their non-return.

Cattle Diseases in Australia.

AFTER considerable delay, arrangements have now been completed by the Australian Council for Scientific and Industrial Research for the carrying out of research work into cattle diseases in northern Australia. The Empire Marketing Board is generously meeting half the cost, up to a maximum of £5000 per annum; the Queensland Government is providing £1000 annually