

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