Again, will the method be simpler to use than that involving the use of ultra-violet rays, and will the conversion be more quantitative as the method is improved? It will also be of interest to observe whether the methods used by Bourdillon and his collaborators in England and by Windaus at Göttingen in the separation of the vitamin from its accompanying impurities in irradiated ergosterol are applicable to 'chemically treated' ergosterol. Further details of Bills and McDonald's process will be awaited with interest.

Power Stations and Air Pollution.

DURING the past two years, public attention in Great Britain has been focused on the question of air pollution due to the operation of super-power electric stations. In his recent presidential address to the Junior Institution of Engineers, Dr. S. L. Pearce, engineer-in-chief of the London Power Company, discusses this problem and others of great importance at the present time owing to the practice of concentrating more and more power in single generating stations. Efficient measures are available for preventing the pollution of the atmosphere by the smoke and ash from chimney-stacks when stoker-fired boilers are used, but when pulverised fuel is adopted the problem becomes more difficult, owing to the fineness of the dust content of the ash. The recent controversy about the new Battersea power station had reference to the much more difficult problem of arresting the possible damage to buildings and vegetation, and the alleged danger to life, due to the sulphur oxides contained in the products of combustion issuing from the chimneys.

MOST of those who discussed this problem attributed the pollution of the atmosphere mainly to the power stations. That some of it is due to this cause every one admits, but the great bulk is due to the many industrial power plants and the hundreds of thousands of domestic chimneys. Effective measures are now available for eliminating smoke and the ash and dust content of flue gases. Cyclone plants, spray and film washers, and electrofilters all find a place in modern power stations. In conjunction with these, however, it is necessary to erect chimneys at least 300 ft. in height. During the last three years, by the collaboration of engineers and chemists, much research work has been carried out by the London Power Company, experimental plants have been erected, and the results obtained have proved conclusively that the emission of sulphur fumes can be reduced to a negligible quantity.

Akhenaton's Mummy.

THE consternation aroused a few weeks ago by the reported discovery that the mummy of Akhenaton exhibited in the Cairo Museum was not that of the famous monarch, and the suggestion that a substitution had taken place, has now been allayed in some degree by the announcement that it is the identity of the mummy that is in question. Dr. D. E. Derry and Mr. Rex Engelbach, curator of the Egyptian Museum, in a joint lecture at Cairo, as reported in the *Times* of Jan. 2, have now put forward the view that the mummy hitherto regarded as that of Akhenaton is really that of Smenkara, a son-in-law of Akhenaton, who used the royal name in his cartouche; hence the confusion. This mummy has presented some elements of doubt from the time of its discovery. It was found in 1907 in the Valley of the Kings, in a tomb supposed to be that of Queen Tiyi. When it was examined by Prof. Elliot Smith, the condition of the bones was such as to suggest that they belonged to a young man who, at the time of his death, was not more than twenty-five years of age. As this seemed difficult to reconcile with the known facts that Akhenaton had reigned for seventeen years and had six daughters, Prof. Elliot Smith suggested that the king might have suffered from a rare affection which would have delayed the consolidation of the bones perhaps for as much as ten years beyond the normal ("The Royal Mummies", pp. 52-53). Dr. Derry, as a result of experience in the examination of the modern Egyptian youth, now thinks that the mummy may be that of an individual of even less than twenty-five years of age, in view of the early age at which maturity is attained in Egypt. Further, the bulbous head, well known in the representations of Akhenaton and taken by Prof. Elliot Smith in the actual skull to be due to a slight degree of hydrocephalus, is regarded by Dr. Derry as a characteristic of Egyptian royalties.

Exhibition by the Royal Meteorological Society.

AN exhibition is being arranged by the Royal Meteorological Society, to be held in the Geophysical Gallery of the Science Museum, South Kensington, by permission of the director, Sir Henry Lyons. The exhibits will include modern types of observing instruments approved by the Meteorological Office, such as the latest type of thermometer screen with steel stand, equipped with sheath thermometers; the sunshine recorder Mark II, with adjustments for level and azimuth; a new form of mountain rain-gauge which has been named the 'octapent' mountain rain-gauge; and a stream-lined wind-vane which embodies a number of new features—these are being lent by the director. Several stands of instruments of special interest will be shown by some of the leading British makers, among which will be a model anemometer, a new form of automatic pollution gauge, and examples of 'distant-reading' thermometers. A number of historic instruments will be shown, and another exhibit will illustrate the development of lightning conductors.

OTHER features of the exhibition will be a magnificent collection of cloud photographs, including a series arranged by Sir Gilbert Walker, showing recent work on the artificial production of cloud forms. There will be a small exhibit illustrating the teaching of weather study in schools. The exhibition will be opened at 5 P.M., on Jan. 11, when a short inaugural address will be given by Sir Napier Shaw in the lecture theatre. The exhibition will remain open for one month, during which public lectures will be given on Thursdays at 4.30 P.M. The programme as provisionally arranged is as follows: Jan. 14—Mr. D.

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 predetermined 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