physical laboratory was established and a period of rapid development and expansion followed, in which many new and important products appeared. This development is described by Dr. Groot by considering three separate periods: 1914–23, the period of the First World War and during which the laboratory was located in the lamp factory; 1923–40, beginning with the opening of a specially equipped new physical laboratory and ending with the enemy occupation; and 1940 to the present day. In 1946 Prof. Holst retired from active management, and since then, although he has remained a continuous adviser, the work of the physical laboratory has been directed jointly by Prof. H. B. G. Casimir (physics), Dr. H. Rinia (electrical engineering), and Dr. E. J. W. Verwey (chemistry).

## Interchange between the Universities of the British Commonwealth

At the first Congress of the Universities of the British Commonwealth held at Oxford in the summer of 1948, it was agreed that official bodies should be invited to provide funds to enable members of teaching staffs on leave to travel within the Commonwealth, and to facilitate visits of distinguished scholars of one part of the Commonwealth to another. As a result, funds were provided by the British Council, and a joint sub-committee was formed at the end of 1948 to draw up regulations for the award of the new travel grants, and to recommend awards. This body, known as the Committee for Commonwealth University Interchange, was re-appointed at the end of 1950, with an enlarged membership, and now consists of representatives nominated by the following organizations: the Committee of Vice-Chancellors and Principals; the Association of Universities of the British Commonwealth; and the Universities Advisory Committee of the British Council. The chairman is Mr. C. R. Morris. A report on this Committee for the two years up to March 31, 1951, has now been published (pp. 16; London: British Council, 1951), and this records the origins of the scheme and the visits of those who have participated in it. For the journeys undertaken in the year 1949–50, the first year of the working of the scheme, the British Council provided a sum of £5,000; last year this was increased to £7,000. In view of the steady increase in the demand, a sum of £9,000 has been set aside for 1951–52, and it is envisaged that a gradual expansion to an annual expenditure of £15,000 will eventually be attained. It is to be hoped that in due course it will be possible for Commonwealth Governments to make parallel contributions to the scheme. The conditions of award originally drawn up by the Committee have remained largely unaltered, provision being made for three categories of award: *A*, university teachers or officers on recognized study leave; *B*, distinguished scholars and scientific workers invited by universities for short visits; and *C*, postgraduate research workers holding research grants. Those given awards under categories *A* and *C* receive a fixed sum equal to the average cost of a return passage in the tourist class. Under category *B* the actual cost of each journey is paid for.

## Primary and Secondary Standards at the National Physical Laboratory

The first of a new short series of pamphlets on "Units and Standards of Measurement employed at the National Physical Laboratory" has recently been issued (pp. 12; London: H.M.S.O., 1951; 9*d*. net) and deals with the fundamental units of length, mass and time, together with the derived units of volume, density and specific gravity, gravity, force and pressure. Definitions of these units are given in both the International Metric and British Imperial systems, the systems normally used by the National Physical Laboratory. The absolute value of the acceleration due to gravity, determined and used at the Laboratory, is included, and barometric pressure is dealt with in a separate section of the pamphlet. The pamphlet, though admirably concise, contains much general, as well as technical, information. The locations and form of the various material length and mass standards, such as the Imperial Standard Yard and the Imperial Standard Pound in the custody of the Board of Trade, are described, and mention is made that recent developments in the production of monochromatic light from a pure isotope of even mass-number, for example mercury-198, may soon make possible the adoption of a wave-length standard as the ultimate reference for all measurement of length. It is interesting to note that, in connexion with the wave-length standard of the cadmium red radiation in normal air, the angstrom can for all practical purposes be accepted as equal to $10^{-10}$ metre. In the section on time, some idea as to the extremely high order of accuracy attained in the measurement of standards can be obtained. It is stated that, owing to the nature of the radio signals broadcast through Rugby from Greenwich, by which errors in the precision clocks are determined, the precision of their comparison with the clocks is limited to a few tenths of a millisecond, but the intercomparison of the clocks themselves can be carried out considerably more accurately.

## The Mpongwe People of Gabon Colony

A study in French entitled "Étude Historique sur les Mpongoues et Tribus avoisinantes" (Mémoires de l'Institut d'Études Centrafricaines: No. 3. Pp. 69 and a map; Brazzaville, 1950; 300 francs) has been written by R. P. Gautier which relates to the people inhabiting the estuary of the Gabon River, who refer to themselves as Mpongwe. The author, for fifty years resident in the Colony of Gabon, is an authority on the Mpongwe language, which he has classified as north-west Bantu. In this monograph he sketches the history of the Mpongwe and of the Gabon Colony down to the period of permanent French occupation. The first four sections are an ethnological examination of Mpongwe oral traditions which suggest that the Mpongwe came from the hinterland in the neighbourhood of the Upper Ivindo, a tributary of the Ogowe River, and that they were the first people to reach the estuary. The author examines this point in some detail, since it contradicts the view put forward by M. Avelot in 1905 that there were other tribes derived from the Congo already living there when the Mpongwe arrived. The last two sections of the monograph are historical and deal first with the Mpongwe's early relations with the French and then with the establishment in 1850 of Libreville, a settlement which, as its name suggests, was intended to be a French counterpart to Freetown and Liberia.

## Scientific Method in Industrial Medicine

The Medical Research Council has published, under the title "The Application of Scientific Method to Industrial and Service Medicine" (pp. 112; London: