

management of a committee, the members of which include Prof. G. M. Trevelyan and Mr. J. A. Richmond, who for some years has been one of the most active of excavators on Roman sites in Britain. In this connexion may be mentioned another addition to the Roman sites held by the National Trust. Segontium, a Roman fort in Caernarvonshire, has been bequeathed to that body by Mr. John Roberts of London, a native of Caernarvon. The antiquities, pottery, coins and implements, which were found when the fort was excavated by Dr. R. E. Mortimer Wheeler in co-operation with the Office of Works, are housed in a museum which is bequeathed with the site.

#### The National Trust

THE forty-first Annual Report of the National Trust for Places of Historic Interest or Natural Beauty for the year ending June 30, 1936, again chronicles a record increase in its work. Two years ago the Council reported a record addition to the properties of the Trust, and although the properties added to the holding this year are less spectacular in acreage, they are more numerous. In the two years taken together, the acreage owned or protected by the Trust has increased by nearly fifty per cent. While it may be concluded that this expansion in the operations of the Trust is an indication of an increase in public interest in the preservation of the natural beauty and historic interest of England, it is unfortunately also a gauge of the rapidity with which the threat of modern development is advancing over the countryside. Although it is true that many properties come to the Trust as the result of private benefaction by far-sighted owners, those which are acquired as the result of public appeal almost invariably are face to face with a threat of early destruction. As the Trust is able under its constitution to acquire and hold properties which are still in occupation, a sphere from which the Office of Works is barred by statute in the exercise of its function in protecting ancient monuments, the work of the National Trust is a very necessary supplement to official action, while the Trust itself is the most important, and in some cases the only, organization through which a national appeal can be launched effectively. It is gratifying to note that the Council is able to report the initiation of a scheme for the preservation of historic country houses and their contents, which adapts to English conditions the main principles of *La Demeure Historique* for the preservation of châteaux in France and Belgium.

#### The Science Museum, South Kensington

THE Report of the Advisory Council of the Science Museum for 1935 has recently been published (London: H.M. Stationery Office. 1s. net). For the first time, the Report is signed by Sir Henry Lyons, who succeeded the late Sir Richard Glazebrook as chairman. Sir Richard served on the Council for twenty-three years and was chairman from 1931 until 1935, and the Report contains a tribute to the work he did for the Museum. There are to-day perhaps few Government institutions doing more within the scope of their activities, for education,

scientific research and industrial progress, than the Science Museum, which has become a recognized centre for special exhibitions and scientific gatherings, and a place of popular instruction. During 1935, the total number of visitors rose to 1,327,190, the highest ever reached; 25,337 persons attended the public lectures, and 8,682 the special lectures, while in the galleries were held at various times excellent exhibitions relating to rubber, welding, noise-abatement, electro-deposition and air transport. The Report contains much evidence of the thought and work devoted to the acquisition and arrangement of the exhibits and of the logical illustration of the developments of physical science in all its branches. A special feature of the Report for 1935 is a detailed review of the collections in Division V, which include objects relating to physical phenomena, the structure of matter, magnetic, electrical, thermal and acoustical instruments, and the many branches of geophysics. Once again, the Council emphasizes the need for more accommodation, and the reconstruction of the central block. The present buildings in this portion of the Museum were built so long ago as 1862, and then only formed part of the temporary buildings for the Exhibition of that year. They are quite out of date, and their replacement is a matter of urgency if the Museum is to continue to make progress as it has done in the past.

#### A New Fruit Juice Factory

FOR the past four years, intensive research work has been carried out at the University of Bristol Agricultural and Horticultural Research Station at Long Ashton into the possibility of utilizing surplus fruits from the various varieties of soft fruit grown in Great Britain by means of their conversion into liquid fruit products. The research work, which has been under the direction of Mr. V. L. S. Charley, B.Sc., has resulted in the production of a series of attractive products. H. W. Carter and Co., Ltd., of The Old Refinery, Bristol, 2, and 52 Queen Victoria Street, London, have now equipped the first factory of its kind in the country at North Street, Bedminster, Bristol, 3, to prepare these fruit syrups from English fruits, and a representative gathering met on July 15 to view the factory. The retention of the fresh flavour of English soft fruits when processed into a liquid form has been shown at Long Ashton to be largely a question of the amount of sugar which is incorporated with the juice. Fruit syrups with 65 per cent of sugar have been shown to be stable and to retain to a remarkable degree the true flavour of the fresh fruit. Such syrups, however, are not of general utility on account of their excessive sweetness, but if the sugar content is reduced to any appreciable extent, grave risks of fermentation and mould growth are incurred. However, it has been shown that pasteurization at 160° F. for half an hour, a treatment which is essential to obtain stability, does seriously affect the attractiveness of the finished product.

A PROCESS has therefore been evolved in which the fresh fruit juice is incorporated with sugar until



50–55° Brix is registered, and this unstable syrup is then preserved with 200–300 parts per million of sulphur dioxide in the form of potassium metabisulphite. The present syrups are intended for use primarily with milk, and it is necessary to avoid an excessively sweet product as this detracts not only from the milk flavour, but also tends to mask the fresh flavour of the fruit. The question of curdling is not serious until any addition of acid is carried out. Even with the highly acid juices of the loganberry and blackcurrant there is very little fear of curdling when the normal concentrations, which are generally accepted in the milk bars, are used. A further process of interest is the adaptation of the carefully controlled fermentation in the fruit. This fermentation is effective first in completely disintegrating the cells which thus yield a richer, sweeter juice and, secondly, in decomposing a certain amount of pectin which would otherwise be deposited in the filtered product. Remarkable results have recently been obtained by the use of pectin-decomposing enzymes in which an addition of 0·2 per cent of enzyme has reduced the calcium pectate content of the juice from 0·134 per cent to a mere trace.

#### The Kauri

A SMALL pamphlet, Leaflet No. 26, on "The Properties and Uses of Kauri", *Agathis australis*, by A. R. Entrican, has been issued (Government Printer, Wellington, N.Z., 1935). This timber is one of the most useful of the coniferous softwoods, and has been known in international trade for more than a century. The kauri is the monarch of the New Zealand forests, dwarfing all other species. The bole in mature trees has singularly little taper; thus, although it does not attain the height of the North American redwoods (*Sequoia*) and the Australian eucalypts, it ranks among the largest timber-producing species in the world. It is said that in yielding flawless timber of exceptionally large size, the tree is unsurpassed by any other known species. The extensive virgin forests of the early European occupation have been severely depleted, but it is of good hope for the future to hear that the remaining stands are being placed under a system of forest regulations whereby a sustained yield of this valuable softwood will be assured. Owing to its evenness of texture and ease of working, to its small shrinkage powers, medium density and excellent strength properties and high durability, the timber is able to meet the most exacting requirements. It is made use of in all classes of building and general construction, in shipbuilding, car and wagon construction, tank and vat manufacture, military bridging, and the production of dairy and agricultural machinery and so forth. It is not surprising, as has been the case with fine species in other countries, that the brunt of the fellings for ordinary utilization by the increasing population of the country fell upon this beautiful tree.

#### The National Institute of Agricultural Botany

At the annual general meeting of fellows of the National Institute of Agricultural Botany at Cambridge on July 16, the chairman of the Council, Sir

Daniel Hall, in the course of his address, stated that one of the primary objects of the Institute is to serve as a medium for introducing new varieties of farm crops to the public. For this purpose its trials are organized so as to provide an accurate measure of the relative merits or de-merits of each variety tested. These trials extend over three years or more, in order to level out weather differences, and are carried out at six different centres in order to eliminate differences due to soil variations. The improvements already effected in the yield of cereals make it unlikely that any new variety will show a 20 per cent improvement upon the existing varieties. Improvements in the nature of 5–10 per cent are more probable, but even a 5 per cent improvement would make a considerable financial difference to farmers. Farming is never at a standstill, and the Institute meets the changing agricultural situation by extending the scope of its trials. Trials of picking peas and chicory are now being carried out, and it is hoped that useful information will be derived from them. The potato trials at Ormskirk have done much to check the spread of wart disease by the encouragement given to the introduction of new immune varieties. Sir Daniel went on to say that close co-operation with the seed trade would be beneficial to both bodies. In serving the farmers, the Institute also serves the best interests of the seed trade, which has the highest degree of confidence in the Official Seed Testing Station. This is testified by the fact that the number of samples tested by the Official Seed Testing Station is steadily increasing year by year, and nearly 30,000 samples have been tested in the current year. In conclusion Sir Daniel expressed concern at the shrinkage in the number of fellows of the Institute: he hopes the Institute will never become a purely bureaucratic body, responsible only to the Government.

#### Prevention of Tuberculosis

SIR KINGSLEY WOOD, the Minister of Health, inaugurated the twenty-second annual conference of the National Association for the Prevention of Tuberculosis at the County Hall, London, on July 16. He stated that great progress has been made in the fight against tuberculosis. For the first time on record, the total number of deaths in England and Wales from all forms of tuberculosis fell in 1935 below 30,000. The standardized death-rate from tuberculosis has fallen from 1,915 to 687 per million in less than forty years. This striking record of progress is due in the first place to remarkable improvements in methods of treatment. Much also is due to the example given by the establishment, as a result of greater knowledge and active propaganda, of voluntary sanatoria and dispensaries. It is significant that no sanatorium in the modern sense existed in Great Britain before 1898. Improved standards of living and hygiene, better housing, better nutrition, purer milk supply and general public health measures have played and will continue to play a considerable part in the attack upon this disease. But there are many opportunities for further advance. There is a great need for encouraging those who were suffering or