

of the timber, must be cheap and easily applied. Preliminary work on this aspect of the investigation is in hand.

An allied 'project' is concerned with the losses caused by Anobiid beetles on timber in buildings and in furniture. Two insects are being specially investigated—*Anobium punctatum* (Common Furniture beetle) and *Xestobium rufo-villosum* (Death Watch beetle). Detailed studies of the biology of both insects are in progress, and the mode of egg-laying and the rate of development of the larvæ are being determined. Later it is proposed to study the effect of varying temperatures and humidities on the length of the life-cycle of both species, and to ascertain whether preferences are exhibited by the insects for different species of timbers. It may be, also, that there exists some relationship between fungal infection of timber and progress of Anobiid attack.

Standard tests are being developed of antiseptics for use in wood preservation generally and in particular for preservation against insect and fungal attack. Timbers treated with various antiseptics at different concentrations are being exposed, and records of results will be kept over long periods.

Microscopic examination is being made systematically of wood structure. Much work is being carried out on the structure and identification of British hardwoods. The variation in structure of home-grown timbers is being studied as a necessary preliminary in forest products research problems. Work has been begun on elm, ash, and oak.

Another main line of experimental investigation concerns the factors influencing and controlling the movement of moisture and heat in timber, with special reference to their bearing on timber seasoning. Several methods of determining heat movement have been tested, and attention is at present being directed to thermal diffusivity as distinct from conductivity. As a result of the experiments carried out to date, considerable information has been obtained as to the rôles that temperature, vapour pressure, and rate of air circulation play in influencing the moisture movement in wood and in its drying. Two 'Technical Papers' on the subject have been published. The original intention was to proceed to estimate the effect of such factors as structure and density, in order to assess the seasoning qualities of different species of wood and to obtain data for optimum seasoning conditions. Recent experience is showing, however, that the problems of case-hardening, shrinkage, and collapse with related warping are of greater importance than was at first realised. Experiments are also in progress to determine the degree of hygroscopicity of different timber, with the view of ascertaining means of reducing the troubles arising therefrom.

An incidental problem is the determination of the most suitable moisture content for timber to be used in the manufacture of various kinds of furniture

and in decorative work. Seasonal variations of moisture content in timber are under close observation.

The testing of the mechanical and physical properties of timbers naturally occupies an important part of the working programme of the Laboratory. Mention may specially be made of tests of small clear specimens designed to give a measure of the inherent fibre strength of the species and to provide a basis for comparing one species with another, for determining the influence of defects in larger samples, and for computing the effect of rate of growth, density, and moisture content. Fourteen consignments of home-grown timber have been collected, nine of which have been tested in the green condition, and four, air dry. More than 18,000 tests have been made.

Tests have been made of the seasoning and mechanical properties of timber used, or proposed for use, as pit props; it has been shown generally that home-grown species bear favourable comparison for the purpose to imported timbers. Mechanical tests have also been made of plywoods. In connexion with tests on structural timbers, preliminary data are being obtained for beams and joists; it is hoped in due course to evolve tables for structural grading, etc., which will be of great utility in specifications for building work.

Investigations are being made into the kiln seasoning properties of the commoner commercial timbers. Those into Corsican pine are completed; those into oak, beech, and common elm are proceeding. Parallel mechanical tests are also being made on kiln-seasoned material as compared with control samples.

Data relating to heat quantities and air circulation figures are being collected whenever possible, and observations are being made on the behaviour of the existing kilns, with a view to the construction of a special kiln for the study of factors influencing kiln design. A model experimental chamber is in operation. A report has already been issued regarding the essential principles of kiln seasoning of timber.

An interesting investigation has been carried out on the briquetting of charcoal manufactured in portable and semi-portable kilns, with the object of enabling the more profitable utilisation of waste timber in factories, etc. Following the production of satisfactory charcoal in the portable kilns operated at the Laboratory, arrangements have been made for briquetting trials on a commercial scale.

The above notes will serve to indicate the scope of the general programme of work of the Forest Products Research Laboratory. It should, however, be emphasised again that the scientific and technical work of the Laboratory is being linked as closely as possible with practice, and that continuous efforts are made not only to spread information as it becomes available, but also to arouse and maintain the active interest of the industry in new ideas and new operative methods for the economical utilisation of timber.

### The Scott Polar Research Institute.<sup>1</sup>

By Dr. H. R. MILL.

IN welcoming visitors from all the countries represented at the Congress to the temporary premises of the Polar Institute at Lensfield House, the committee of management trusts that the extreme youth of the Institute will be held to excuse the greater prominence given to hopes for the future rather than to memories of the past.

The Scott Polar Research Institute is neither a

<sup>1</sup> Substance of address at a reception given by the Scott Polar Research Institute of the University of Cambridge to members of the International Geographical Congress on July 21.

teaching body nor a society seeking a numerous membership. Its aims are to encourage polar research by supplying information and advice to intending explorers, affording opportunities for study and assisting in the organisation of expeditions, and for this purpose to concentrate in one place all existing knowledge of the polar regions and subject it to expert criticism and cataloguing; above all, to maintain communication with all polar explorers, investigators, and students without any restriction or qualification.

It appeared to many of us that the period of polar martyrdom should have been closed long ago, and that a stand should be made against the absurd appraisal of the greatness of explorers by the magnitude of the sufferings they endured. It seemed to us that experience already sufficed to indicate ways of carrying on research in the polar regions with comparatively little risk and practically no suffering if only it were possible to collect such experience and subject it to critical analysis and to show how it could be applied practically. Many of us had deplored the haphazard management of successive polar expeditions and the absence of continuity between them, each expedition being created with infinite labour, carried out at great expense, and allowed to melt away.

The opportunity of remedying this unfortunate state of things arose out of the tragedy of Scott's last Antarctic expedition. The scientific staff which sailed on the *Terra Nova* had a cohesion lacking in previous expeditions. Coming when it did, the appeal of Scott's struggle to reach the pole, and his heroic persistence to the end in his fight against the unexampled difficulties of the way back, were irresistible, and a great wave of hero-worship raised a very large fund to provide for a worthy memorial of those who fell and for the needs of their dependents. The chief memorial was the working up and publication of the scientific results of the expedition, and when this was complete the Committee, composed of the president of the Royal Society, the president of the Royal Geographical Society, and the Lord Mayor of London, found themselves in possession of a balance of £12,000. Mr. Priestley and Mr. Debenham, of the *Terra Nova*, and Mr. Wordie, of the *Endurance*, all settled in Cambridge, persuaded the memorial committee to devote this sum to the establishment of the Scott Polar Research Institute, which came into existence in 1926, the University of Cambridge undertaking to administer the funds, of which £6000 was earmarked as a building fund and £6000 as a general fund, the interest of which is at present the sole income of the Institute. Mr. Debenham has been appointed director of the Institute, with Miss Drake as part-time assistant. To them we owe the admirable arrangement of the rooms which contain the collections now on view.

These consist of an Arctic room and an Antarctic room, each containing the nucleus of a library, with maps and relics of expeditions, other rooms with a good representation of the equipment for polar travellers and a fine series of photographs. These have been contributed by many friends, including the widows of Admiral Sir Albert Markham and of Capt. Scott. A special feature is made of MS. records and diaries of explorers, and anyone desirous of finding a permanent abiding-place for papers of this kind, or any other mementoes of polar expeditions, is assured of the grateful acceptance and careful custody of such treasures. In some cases the promise of handsome bequests has been made, and the steady growth of the library and photograph collection is assured.

An important aid in this direction is the possession of the whole stock of the reports of the *Terra Nova* expedition dealing with the geographical, geological, meteorological, and geophysical work. These volumes may be sold or given in exchange for the reports of other expeditions. A feature is made of the complete cataloguing of the collections.

The only condition imposed by the Scott Memorial Committee is that a suitable memorial building shall be erected before 1936, and in view of the present cost of building it is to be hoped that wealthy friends of geographical discovery will supplement the sum

available, so as to make it possible to house the collections in a manner worthy alike of the memory of the great leader whose name it bears and of all he stands for as the best type of the naval explorer, worthy also of the University and of the spirit of research which makes scientific truth its only care.

The Institute, as yet, is in its days of small things, but its promoters dream great dreams of rapid growth and continual adaptation to the changing conditions of modern research. In particular, we cherish the ambition of attaining completeness in the library by securing all published works on the polar regions or transcripts of the relevant portions of such works as have become bibliographical curiosities of fictitious value in their original editions. As many works of exploration have been published without indexes, an effort must be made to supply an index for every published polar book, and a great general index which will embrace all polar literature. Similar completeness cannot be sought for the collection of gear and apparatus, in which models of ships and aircraft must necessarily take the place of the real things. The museum also would only aim at being an index collection with the leading types and full reference to the great museums in which a complete representation of species and specimens are to be found.

### University and Educational Intelligence.

CAMBRIDGE.—Mr. R. B. Braithwaite, King's College, has been appointed University lecturer in moral science. Mr. T. R. B. Sanders, Corpus Christi College, has been appointed University demonstrator in engineering. D. R. P. Murray, Pembroke College, has been elected to the Benn W. Levy studentship in biochemistry. Miss W. L. P. Sargent, Newnham College, and G. R. Gedge, Trinity Hall, have been awarded senior studentships of the Goldsmiths' Company.

The readerships in the morphology of vertebrates and in estate management, vacant through the death of Dr. Gadow and the retirement of Mr. F. B. Smith, respectively, are not being renewed. The following teaching officers retire on Sept. 30 next: A. Berry, King's College, and H. W. Richmond, King's College, University lecturers in mathematics; T. K. W. Fair, Jesus College, University demonstrator in chemical physiology; and A. Hopkinson, Emmanuel College, University demonstrator in anatomy.

VOLUME 13 of the *Journal of the College of Technology, Manchester*, has 240 pages and 9 plates, 183 pages and the plates being devoted to original articles by the members of the staff, and the remainder to abstracts of papers which have been contributed by the staff to scientific and technological periodicals, mainly during the years 1925-1927, but a few in earlier years. Of the 13 original articles, 3 deal with mechanical, 1 with electrical, and 1 with civil engineering, 2 with textiles, 2 with mathematics, 3 with applied physics, and 1 with industrial administration. The abstracts number 64, and deal with subjects of the same type. With one exception the papers were set up and the whole journal was printed in the College, and reflects great credit on the printing department. The original articles and the abstracts show that the staff is making valuable contributions to the solution of the scientific and technological problems which arise in industry, and that the Manchester College of Technology retains its position in this respect as one of the best in Great Britain.