

tissues when first placed in culture, and of the morphology and development of established strains. There is also an excellent treatment of the differentiation of tissues and organs in various cultures, an aspect of plant tissue culture which has probably yielded the most interesting results to date.

Other sections deal with the utilization of tissue cultures in various special studies. Thus, the use made of tissue cultures in the study of polarity and induction is described. This is followed by an extensive consideration of the nutrient requirements of plant tissues. It is pointed out that although the tissues of many plants can be grown on purely synthetic media, other tissues can only grow, or grow better, following the supply of various plant extracts such as coconut milk. This section includes a full account of the attempts at isolation of the active factor or factors, accompanied by a careful analysis of the difficulties encountered in such work. In this connexion, Prof. Gautheret emphasizes the necessity of working with a suitable tissue strain, of known behaviour, as assay material. In this type of work, as in various metabolic studies of tissue cultures, it is important to note that freshly excised tissues show marked metabolic disturbances and may differ considerably in behaviour from established stocks.

Other topics dealt with are the culture of isolated cells, which is a very recent development, and the role of tissue cultures in plant pathology. With reference to the latter section, mention may be made of the use of tissue cultures in the culture of obligate parasites, and of a particularly interesting account of plant tumours.

In sum, this book is a fine comprehensive account of all aspects of plant tissue cultures. For a work of its size it is remarkably up to date, a supplementary bibliography including most of the important literature issued during 1958. It is well illustrated, the 438 figures including photographs, diagrams and line drawings. Although bulky, the book is easy to use, a clear subdivision of the contents facilitating the location of any particular topic. There is also a useful table of the principal established strains of plant-tissue cultures, which includes a summary of any special nutrient requirements of the various tissues.

A. ALLSOPP

COMBATING THE DECAY OF TIMBER

Decay of Timber and its Prevention

By K. St. G. Cartwright and W. P. K. Findlay. Second edition. Pp. xv + 332 + 57 plates. (London: H.M. Stationery Office, 1958. Published for D.S.I.R.) 27s. 6d. net.

DECAY of timber must have been a perpetual problem since man first began to use wood, and a serious one as soon as wooden structures became elaborate. We know of the trouble and expense which faced the Navy as a result of the ravages of dry rot in the days of wooden ships, while in buildings decay of timber began to receive serious attention at the beginning of the nineteenth century, coincidentally, no doubt, with the decline in the use of the traditional oak in favour of less-durable coniferous woods.

Nevertheless, with the exception of Marshall Ward's "Timber and some of its Diseases", which was

based largely on German work, "Decay of Timber and its Prevention", by K. St. G. Cartwright and W. P. K. Findlay, of which the first edition appeared in 1946, seems to be the first comprehensive account of the subject to be published in Britain. It embodies much material based on the authors' investigations at the Forest Products Laboratory at Princes Risborough.

Following introductory chapters on decay in wood, and on the causal organisms, there are detailed accounts of the principal rots of standing trees, accompanied by useful tables concerned with macroscopic and microscopic features of the rots and the characteristic features, in culture, of the causal fungi. Felled timber and wood in outdoor use receive similar treatment, as does constructional timber in buildings and elsewhere. Preventive measures are described, particularly in reference to felled and converted timber and to timber in use. Decay in plywood, wood pulp and building boards receives consideration, and there is a valuable summary of present knowledge of stains and discoloration of timber. There are numerous illustrations, and those of the characteristic appearance of certain rots make a specially valuable supplement to the text and should greatly facilitate identification.

Although a comprehensive treatise, there are times when the information sought is scant and vague. This is no reflexion on the diligence and care of the authors, but rather on the large gaps in knowledge of these interesting and troublesome organisms and their activities. It is indicative of the enormous field of research which awaits the investigator, more particularly with reference to the rots and staining fungi of tropical areas. For any such research the book in question is certain to be a standard work of reference.

F. W. JANE

ANIMAL EXPERIMENTS IN RESEARCH

Achievement

Some Contributions of Animal Experiment to the Conquest of Disease. By Dr. Geoffrey Lapage. Pp. viii + 255. (Cambridge: W. Heffer and Sons, Ltd., 1960.) 18s. net.

THIS is an unexpected, original and wholly admirable book. It could have been attempted by a journalist with a smattering of science, but it was, in fact, written by a scientist who has a considerable ability for writing. In view of the seriousness of the subject this is a piece of good fortune for the reader, while implying no derogation of the art of journalism.

Animal experimentation is not often discussed in respectable company; not often enough, and still less often without generating emotion. Dr. Lapage's book is in the direct line of descent from earlier books on the same subject by Stephen Paget and Leonard Rogers; but the treatment is entirely different. Nowhere is the word 'vivisection' mentioned, and nowhere does the author indulge in polemics or argue the moral case. He is content, and so may the reader be, to tell how animal experimentation has led, as no other method had previously led or could have led, directly to advances in human and animal medicine and their related fields of research. Among