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Editorial comment

THE SHORTER OXFORD DICTIONARY defines a symposium as " A drinking-party; a convivial meeting for drinking, conversation, and intellectual entertainment." It is therefore with some trepidation that we announce the impending publication of the Proceedings of a symposium held in July 1952. When, however, it is realized that the conversation consisted of a discussion by architects and engineers on shell roof construction, and the intellectual entertainment consisted of papers dealing with the architectural, design and constructional problems involved in such structures, reference to the proceedings in these pages seems quite appropriate.

The bound volume of the Proceedings contains all the papers presented at the symposium, together with a full report of the discussion which took place on them. As mentioned above, all aspects of shell roof construction were dealt with, and this book should be of considerable value to all those interested in this form of construction.

We were interested to note that last November a symposium entitled " Reinforced Concrete in India To-day " was held at the Central Building Research Institute, Roorkee, U.P., India. The symposium was held under the auspices of the Council of Scientific and Industrial Research of India, and opened by Dr. S. S. Bhatnagar, F.R.S., Secretary to the Government of India. It was presided over by Dr. K. Billig, M.I.C.E., Director of the Central Building Research Institute. The 120 delegates who attended the symposium were drawn from all over India, and included representatives from Ceylon and Burma. Among prominent engineers and scientists who contributed papers were Dr. K. Fujita, Director of the Building Research Institute, Tokio, Dr. Shizuo Ban, Professor of Concrete Engineering, Kioto University, Japan, Dr. Fritz Leonhardt of Germany and Professor P. M. Ferguson of Texas University, U.S.A.

The symposium covered many aspects of concrete technology, from the materials used to the design of shell roofs. Although each country has its own particular problems—those of India, for example, include the use of bamboo reinforcement—nevertheless many problems are common to all users of concrete, and in these days of rapid progress many will be interested in developments overseas.

In our issue of last August we mentioned another symposium, to be held in London in May, and lest our opening definition give a false impression, let us hasten to add that this too will be of a serious nature. The subject of the symposium will be the design of concrete mixes and the control of the quality of concrete—a subject of direct concern to contractors, manufacturers and designers. The contributions will include papers on the design of mixes for various special purposes, so that one section of the Proceedings which will later be published should be a " concretor's Mrs. Beeton ".

The recipe itself, however, is not enough. There must be control over the production. The engineer who designs the mix does not always make the concrete, so there must be some way of ensuring that his wishes are

carried out. The degree of control exercised will, of course, depend on the nature of the job; concrete for a prestressed beam must be of high strength, and considerable care must be taken to ensure that all the concrete in the beam is of sufficient strength, whereas it would not be economic to exercise the same degree of control in concrete destined for the backfilling of a trench. The symposium will include papers on this aspect of the work, indicating the type of control required for different jobs.

No doubt the authors will stress the fact that controlling the quality of concrete does *not* necessarily mean increasing the cost. The use of weigh-batchers instead of gauge boxes, for instance, although more expensive initially, will—assuming sufficient work for them—soon pay off their capital cost by a reduction in labour costs. The same is true of any mechanical handling plant. Careful attention to the batching of the concrete, leading to a more uniform concrete in the structure, will result in appreciable economies in material. The designer of a structure must base his working stresses on the lowest strength the concrete is likely to attain, and if this is much below the average—i.e. if the concrete is not very uniform—then obviously most of the concrete is not working economically. If, therefore, more uniform concrete is produced, the working stress will be much nearer the average strength of the concrete, and less of the material will be needed to support a given load.

The usual method of checking the quality of the concrete being produced is by making test cubes from it, which are used to determine the compressive strength. These tests provide excellent material for statistical analysis, by which much valuable information can be deduced—valuable not only for the particular job, but for other jobs too—and the paper to be presented to the symposium on the application of statistics to quality control should be particularly useful to those responsible for keeping an eagle eye on the concrete.

One disadvantage of the use of test cubes for checking the quality of the product is that the tests are made on concrete *not* in the structure, and not on the concrete actually being put to use. One obvious way of avoiding this difficulty is to cut specimens out of the structure, but apart from the expense, this method suffers from the drawback that the hole has to be filled in afterwards. Advances have been made in non-destructive testing, however, and this too is a subject which will be dealt with in May.

As will be seen from the brief outline given above, the papers are essentially practical in outlook. Their authors are all scientists familiar with their subjects, with considerable experience in their respective fields. The papers will not be read at the sessions, as they will be printed and circulated beforehand to all who have registered as members. Virtually the whole of the sessions will thus be devoted to free discussion, leading to the fullest possible expression of opinions.

It is intended to publish the Proceedings of the symposium—including the papers themselves and the discussion on them—in bound form, and it is hoped that this book will provide a valuable work of reference to all those concerned with concrete.