

# Concrete Research

---

## EDITORIAL ADVISORY BOARD

Professor A. L. L. Baker, B.Sc.(Tech), M.I.C.E., M.I.Struct.E.

Professor W. Fisher Cassie, Ph.D., M.Sc., F.R.S.E., M.I.C.E.,  
M.I.Struct.E.

Professor R. H. Evans, D.Sc., Ph.D., M.I.C.E., M.I.Struct.E.  
M.I.Mech.E.

T. W. Parker, Ph.D., F.R.I.C.,  
*Deputy Director of Building Research, D.S.I.R.*

Professor A. D. Ross, B.Sc., Ph.D., F.R.S.E., M.I.C.E.

Published three times a year by the  
Cement and Concrete Association  
52 Grosvenor Gardens  
London, S.W.1. Sloane 5255

---

## Editorial comment

NO PERIODICAL DEALING with research on concrete could ever claim to be complete without a paper by Monsieur Freyssinet. His name is known best, of course, in connexion with prestressed concrete, of which he can justly be called the father; but the very existence of prestressed concrete is dependent upon the production of high-grade concrete, and we owe much to Monsieur Freyssinet for his work in this field. It is, therefore, with particular pleasure that we welcome Monsieur Freyssinet to our pages.

The paper was presented at Ghent last September at the Congress on Prestressed Concrete so ably and successfully organized by that other pioneer of prestressed concrete, Professor Magnel. As M. Freyssinet says in the opening paragraphs, the paper was written in the hope that it would inspire research on the more fundamental aspects of concrete. The whole paper reflects strongly the originality of its author who, when-

ever any experimental result contradicts the predictions of theory, is always ready to challenge accepted concepts, however firmly established they may be.

Fundamental research is often looked upon by "practical" men as a pleasant hobby for the occupants of academic institutions. This is due mainly to the popular view that fundamental research never has any practical value. The difficulty is that the research and the development are not usually co-ordinated, and so there is very often a long delay before the results of any fundamental work serve any useful purpose. The whole outlook of the two fields is quite different; the practical man is only driven on by a desire to improve his product—or to make more money out of it. The driving force behind the researcher into fundamental fields is an insatiable curiosity—a mind which asks "Why?" at every turn. Monsieur Freyssinet has managed to combine the two outlooks; the present paper is indicative of his curiosity; the structures in prestressed concrete now going up all over the world are a monument to his practical genius. It is the integration of the fundamental and the practical outlooks which has enabled Monsieur Freyssinet to produce what is virtually a new material, opening up vast new fields for the architect and the engineer.

Very little is still known, however, of what really goes on in concrete after it has been mixed. The setting, hardening, shrinkage and creep are as yet complete mysteries, and it is by research on the lines suggested by Monsieur Freyssinet that we shall understand such phenomena. Until we do understand them, we shall never know how to make the best concrete for any particular purpose without doing a large number of *ad hoc* tests—to the true scientist, an admission of failure.

Fundamental research cannot be carried out simply by locking oneself in a laboratory and starting work. Obviously the person engaged on such work must *want*

to do it; and the atmosphere in which it is to be done must be one which will stimulate the mind. A University atmosphere is the obvious one, and this task of fundamental research is one which the Universities should—and do willingly—undertake. The problem as far as they are concerned is not that of finding staff to undertake the work, but of finding the money with which to carry it out. Many industries do of course contribute a considerable amount of money for this purpose, but the civil engineering industry is not composed of several very large organizations, but of dozens of consulting engineers, hundreds of suppliers of materials and thousands of contractors. Individually, of course, they can do very little. Collectively, they could do much. When the civil engineering industry puts as much money into research as the chemical or mechanical engineering

industries, then we can expect as great strides to be made in civil engineering as have been seen in the other industries in the last fifty years.

#### *CORRIGENDUM*

It was stated in error on page 35 of Magazine of Concrete Research No. 7 that the British Cast Concrete Federation (B.C.C.F.) was commencing a study of the compaction of concrete with various types of vibrators. Attention is drawn to the fact that the B.C.C.F. is not alone responsible for this research, which is being undertaken by a Joint Research Committee which in addition to those from the B.C.C.F. includes representatives of the Cast Stone and Concrete Federation (C.S. & C.F.) and the Scottish Precast Concrete Manufacturers' Association (S.P.C.M.A.).