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BY

CHARLES BUXTON GOING, M.Sc.

MANAGING EDITOR OF THE ENGINEERING MAGAZINE,
AUTHOR OF "METHODS OF THE SANTA FE," ETC., ETC.

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PREFACE

The subject matter of this book is substantially the text of a series of lectures prepared under the auspices of the Department of Mechanical Engineering of Columbia University, for delivery to senior students. As here presented, it takes the form evolved from three years' experience in the class-room at Columbia, somewhat modified from the manner of the lecture platform, and adapted to meet the needs of a more general study as discovered by contact with non-technical audiences at Harvard and the New York University, and by many inquiries addressed to the Editorial Department of *The Engineering Magazine*.

The original purpose when the work was undertaken at Columbia in 1908–09 was to lay the foundations for a composite course in Works Management, in which several eminent practitioners should follow with successive portions of the main structure. Experiment showed, however, that the better plan was to give these preparatory essays rather the character of a primary triangulation, covering the whole province, though it might be only in very broad outline. Further detail might then be filled in sectionally, as expedient, by specialists, each in his own subject. Thus, the discussion now reduced to printed chapters, was to be co-ordinated with certain lectures by Charles U. Carpenter, on factory and commercial organization; by Harrington Emerson, on the philosophy of efficiency; by H. L. Gantt, on scientific management; by R. T. Lingley, on factory accounting. It has not seemed feasible to co-ordinate these other lectures here so that the volume might present the entire argument. Several of the collaborators have published

independently even fuller expositions of their thought on the special topics, and reference to these will be found throughout the book.

This volume is therefore put forth to serve in a wider sphere the same function it served in the Columbia course — that of affording a carefully chosen standpoint from which to view the principal factors in the industrial problem, their relations and influence, and the properties and efficacies of the more important solutions so far proposed.

The scale, as already said, is broad. The study is directed almost wholly to the discovery and definition of ideals and principles, or in some cases of institutions; very little attempt is made at the description of methods and devices. The book advances no claim of exhaustiveness, but only of an earnest effort to maintain a just scale of proportion, and to trace an outline of the province it undertakes to delimit, by which the student of industrial engineering may safely orient himself in his further and closer examination of the subject.

C. B. G.

May, 1911.

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