production capacities of the various lines.

regard to the De Laval and Sharples separators, it might be mentioned this construction was used in the separator about 50 years ago ntolsheim patent) and is still a ite type.

spite of the fact that the writer es that there could have been more led information and drawings given els that great credit is due the author is efforts.

BARTHOLOMEW VIOLA.[14]

For and Against

THE EDITOR:

have just finished reading the com-ication[15] from Mr. Sanford A. Moss lished in the August issue, and may that I agree heartily with Mr. in saying that the editor can be d of the papers he has published on ly engineering subjects. I would to go further, however, and say that, y opinion, the editor can also be d of the papers he has published on omic and social matters.

m sure that it would be very difficult whether the so-called nontechnical s which have been published in HANICAL ENGINEERING in the last years "have had an effect on the d's progress worth the cost to the y of printing them." I do feel very gly however, that unless knowledge e social and economic needs of the ls better understood, and that by people, and unless such needs are dered in all phases of human activ-there may be grave danger of failure alize the full benefits of technical ess which engineers have made ible.

haps I may be pardoned for quoting a critique of Professor Cabot of rd University in which he was dis-ng papers presented at the Seventh national Management Congress deal-with administrative and financial rols:

may say: first, that the business ad-rator *has shown ability of a high* in dealing with what might be called his mate material." The existence of large-industry proves this. Second, he is be-g to recognize that "the society within m" and "the great society" outside of it mposed of human beings about whom he pot know enough. But he is making ss by applying scientific methods of ob-tion and research to the "society within m." Third, in his dealings with "the ociety" he still goes largely by "smell."

Brooklyn, N. Y. Member A.S.M.E.
MECHANICAL ENGINEERING, August, 1939, 622.

In act, in this field he closely resembles a blind dog in a meat shop. Fourth, he has violated the principle of balance, ... by allowing himself to become engrossed in the fascinating techniques of . . . . . administration, while he has neglected the social and human problems of his business, which are its foundation. Under these circumstances, he must now focus his attention on his social problems for the purpose of developing adequate techniques of observation and treatment. Only thus can he restore the balance which is an essential condition of the life of large-scale business.

In other words, my plea to you, Mr. Editor, is that you continue your present policy of publishing not only excellent papers on strictly engineering subjects, but likewise excellent papers on social and economic matters.

A. A. TALMAGE.[16]

[16] Budget Department Head, Ebasco Services, Inc., New York, N. Y. Mem. A.S.M.E.

TO THE EDITOR:

I certainly want to add my small voice to the protest raised by Sanford A. Moss in his letter[15] in the August issue which objects to the printing of so many articles dealing with sociology.

In these days of brain trusters, when one must spend so much time combatting ill-advised and crack-pot legislation, it is very disconcerting to slip into an easy chair with your favorite magazine and find that it, too, is wandering far from its proper field into what at best is only theory.

Please give us more articles dealing with the definite things in which we are interested so that our magazine may nearer live up to its title MECHANICAL ENGINEERING.

M. E. KLINE.[17]

[17] Sales Engineer, Union Lumber Company, San Francisco, Calif. Mem. A.S.M.E.

PLAINTIFF'S EXHIBIT

ASM-47

REVIEWS OF BOOKS

Medicolegal Phases of Occupational Diseases

MEDICOLEGAL PHASES OF OCCUPATIONAL DISEASES. By C. O. Sappington, Industrial Health Book Co., Chicago, 1939. Cloth, 5½ × 8½ in., 405 pp., illus., charts, tables, $2.75.

REVIEWED BY THEODORE F. HATCH[1]

IN 1928 only ten states made any provision for occupational-disease coverage under their workmen's compensation laws. By 1938, however, the number had doubled and several additional states had under consideration proposed laws respecting health hazards in industry. During this same ten-year period the number of states engaged in the study and control of industrial health hazards increased many fold.

In the early part of the decade under consideration, before new legislation had been adopted, there was frequent recourse to the courts for the settlement of claims with respect to occupational diseases which were not covered by existing compensation laws.

Because of these rapid changes in and extension of state laws, much interest centers around the medicolegal phases of occupational diseases. Hence, the present volume is a valuable contribution to the literature. Dr. Sappington has made no attempt to prepare a treatise on industrial hygiene but has presented in outline form in Part 1 some of the more important aspects of the problem in industry including the causes of occupational diseases, standards of permissible exposure, procedures for conducting industrial-hygiene surveys and technical methods of air analysis, and finally the control of occupational disease.

The remaining three parts have to do with insurance, medical, and legal problems.

For insurance carriers, the author recommends the same specific approach to the evaluation of health hazards that are followed in basic scientific studies of hazards with close cooperation between the engineering, medical, claim, and other departments of the organization. It is emphasized that physical inspections alone do not yield sufficient information to permit a final evaluation of occupational disease hazards. The importance of the application of preventive measures can never be overemphasized by the insurance carrier.

The function of the industrial physician is to discover and treat occupational diseases and to establish and conduct the necessary program of medical prevention of such diseases. An important activity in connection with the latter is, of course, the routine physical examinations of workers and their placing in occupations suited to their physical conditions. While the industrial physician is not ex-

[1] Associate Dust Control Engineer, Division of Industrial Hygiene, N. Y. State Department of Labor, New York, N. Y. Mem. A.S.M.E.

pected to become an engineer, he must be familiar with and recognize the working conditions which lead to the development of occupational disease and must also have knowledge of the basic engineering measures of prevention.

From the medicolegal point of view the physician must be capable of establishing the causal relation between health damage on the one hand and working conditions on the other. Another important medicolegal function of the physician is to evaluate the extent of disability in occupational-disease cases for the proper adjustment of compensation claims.

The section devoted to legal questions includes at the outset a discussion of four questions which must be answered before intelligent consideration can be given to the merits of a given claim. Briefly these are:

1 Do the working conditions present an actual health hazard?

2 Has the employee a real occupational disease, as he claims?

3 Was the disease contracted while working for the employer against whom the claim is made?

4 Is the employee disabled from the effects of the disease for which he asks compensation?

The author makes a plea for the rational approach to the problem based upon these simple questions and considers further the procedure for preparing evidence which will yield definite answers to them. Many valuable suggestions are given with respect to the nature of medical and other testimony required in the proper presentation of a case.

The section on legal matters is completed with a review of existing compensation laws and progress in occupational-disease legislation.

Seven appendixes are included in the volume, the contents of which are self-evident from their titles: occupational record; abstracts of state laws; scheduled diseases; abstracts of legal decisions; legislative suggestions—American Bar Association; suggested schedule law—American Public Health Association; digest of Workmen's Compensation laws by states.

Books Received in Library

ATM (Archiv für technisches Messen), Lieferungen 94-96, April–June, 1939. R. Oldenbourg, Munich and Berlin, 1939. Paper, 8 × 12 in., illus., diagrams, charts, tables, 1.50 rm each. Three numbers of a monthly publication containing classified articles upon various types of apparatus and methods for technical measurements. Certain numbers also contain descriptions of specific instruments manufactured by German companies.

DAS ABC FÜR DEN MODELLBAU. (Werkstattbücher, Heft 72.) By E. Kadlec. Julius Springer, Berlin, 1939. Paper, 6 × 9 in., 63 pp., tables, diagrams, 2 rm. This handbook gives a concise, practical description of patternmaking methods, intended for the workman. Materials and tools, molding methods, and the construction of patterns and cores are considered. Many special forms of patterns are described. The book is profusely illustrated.

ATOMS IN ACTION, the World of Creative Physics. By G. R. Harrison. William Morrow & Co., New York, 1939. Cloth, 6 × 9 in., 370 pp., illus., diagrams, $3.50. This is an unusually able and authoritative presentation of what modern physicists think and do, and of the more important applications of their work in daily life. The book is eminently readable and interesting, as well as accurate, and is endorsed by eminent physicists.

DER CHEMIE-INGENIEUR, edited by A. Eucken and M. Jakob. Bd. 3, Chemische Operationen. Part 4, Hochdruckoperationen, by D. M. Newitt, G. Schneider, G. Natta, and G. Roberti. Akademische Verlagsgesellschaft, Leipzig, 1939. Cloth and paper, 7 × 10 in., 267 pp., illus., diagrams, charts, tables; cloth, 28 rm; paper, 26 rm. This latest addition to a set of reference works for the chemical engineer covers high-pressure operations. The several chapters, each written by an authority, deal with the following topics: The calculation and construction of high-pressure apparatus; the characteristics of high-pressure reactions in liquid phase; autoclave technique; high-pressure processes for continuous operation, including the use of catalysts; and the fundamentals and industrial operation of the cracking process.

DIE DAMPFKESSEL UND FEUERUNGEN EINSCHLIESSLICH HILFSEINRICHTUNGEN, 2 volumes. (Sammlung Göschen, Bd. 9 and Bd. 521.) By W. Marcard. Walter de Gruyter & Co., Berlin, 1939. Cloth, 4 × 7 in., diagrams, charts, tables; part 1, 136 pp.; part 2, 138 pp., 1.62 rm each. These two small volumes provide a brief, but comprehensive account of modern steam-boiler practice. Volume one covers the theoretical principles, combustion, and heat transfer; volume two, the types of boilers, superheaters, feedwater heaters, and air heaters, as well as boiler-plant design.

DISEASES OF ELECTRICAL MACHINERY. By G. W. Stubbings. Chemical Publishing Co., New York, 1939. Cloth, 5 × 8 in., 219 pp., diagrams, $3. This small manual is intended for power-plant engineers and electricians. The defects that arise in the operation of electrical machinery are discussed, their underlying causes explained, and practical directions given for their location and rectification.

ENGINEERING PHYSICAL METALLURGY. By R. H. Heyer. D. Van Nostrand Co., New York, 1939. Cloth, 6 × 9 in., 549 pp., illus., diagrams, charts, tables, $4.50. The aim of this book is to provide treatment of the subject, intended for those making their first acquaintance with engineering metals and alloys. A wide range of materials is discussed, including pure metals and alloys; also processes of hot and cold reduction, heat-treatment, welding, machining, etc. Each chapter has a bibliography.

FRÄSEN, edited by Wanderer gesellschaft, Siegmar-Schönau 1939. Julius Springer, Berlin 12 in., 89 pp., illus., tables, diagr rm. Milling machines form this memorial publication of machine works. The first four milling theory, rules for proper and feed and speed calculation and 6 contain descriptions of of machines and supplement manufactured by the company.

GASOLINE AUTOMOBILE. (Engi cation Series.) By B. G. Elliot Consoliver. Fifth edition. Book Co., New York and Lo Cloth, 6 × 10 in., 754 pp., illu charts, tables, $4. This well-kno to present the fundamental princip upon which motor vehicles are de structed, and operated. In the attention is given to the auto Diesel engine and the low-compre ignition oil engine. The materia and automatic transmissions has and the book brought up to date

Great Britain, Department of Sc Industrial Research. METHODS TECTION OF TOXIC GASES IN INDU No. 3, Sulphur Dioxide. 1938. Leaflet No. 4, Benzene Vapour. 3d. Leaflet No. 5, Nitrous Fume pp., 3d. His Majesty's Statio London. Paper, 6 × 10 in., diagr (Obtainable from British Library tion, 50 Rockefeller Plaza, New Yo 3, $0.75; Leaflet 4, $0.10; Leaflet These leaflets contain approved m testing the freedom from various closed places which workmen a enter. The directions are full and have proved satisfactory under pra ditions.

Great Britain, Department of Sc Industrial Research. REPORT His Majesty's Stationery Office, Lon Paper, 6 × 10 in., 203 pp., charts tainable from British Library of In 50 Rockefeller Plaza, New York, $0. report reviews the work of the va mittees and associations and so affo eral survey of the scientific and research work carried out in Gre during the year. Appendixes give of the departments and associations officers, lists of the publications o expenditures, etc.

HANDBOOK OF CHEMISTRY, com edited by N. A. Lange, assisted b Forker, with an Appendix of Mathe Tables and Formulas, by R. S. B Third edition, revised and enlarge dusky, Ohio, Handbook Publishe 1939. Cloth, 5 × 8 in., 1543 pp., 249 pp., diagrams, charts, tables, useful book contains an unusually collection of chemical and physical da by chemists, engineers, and physicist data have been taken from reliable so are presented in convenient form for reference. This edition has been ext revised and materially extended.

HANDBOOK OF HYDRAULICS. By H. W. Third edition. McGraw-Hill Book Co York and London, 1939. Leather, 4 × 617 pp., diagrams, charts, tables, $4. outstanding feature of this edition is, ing to the preface, "the complete revisi extension of the two chapters on open nels, one dealing with uniform flow i other with nonuniform flow, adding