

volume is to outline broadly the main features of sanitary inspection work. While one of its aims is to instruct the layman, the householder, the owner of tenements, the principal of a school, the superintendent of a hospital, the manager of a theater, it is believed that the book will be also useful to health and sanitary inspectors, to boards of health, to fire department officials, insurance companies' inspectors, and to architects, civil engineers, and building superintendents in general.

ALTERNATING-CURRENT MACHINES. By Samuel Sheldon, A.M., Ph.D., D.Sc., Hobart Mason, B.S., E.E., and Ehrich Hausmann, B.S., E.E. Seventh Edition. New York: D. Van Nostrand & Co., 1909. 12mo.; pp. 353; 236 figures. Price, \$2.50.

This work has been so popular among students in other than electrical courses, that the authors have entirely rewritten it, so as to particularly adapt it to this class of readers. The book will be of value to engineers who are not perfectly familiar with the subject of alternating currents, but who find it necessary in their work to know something about it. Owing to practical experience with students, the authors have found that it is difficult for a young man to understand a subject without being obliged to make numerical computations. For this reason, at the end of each chapter a set of problems is given, particularly adapted to impress the subject matter upon the minds of the students.

SCIENCE AND IMMORTALITY. By Sir Oliver Lodge, F.R.S. New York: Moffat Yard & Co., 1909. 12mo.; 294 pp. Price, \$2 net.

In this able and intensely modern volume, the distinguished author sums up the status of science, faith, and theology in their bearings, separately and collectively, upon religion and immortality, and it constitutes, therefore, an extremely valuable contribution to the literature of the present important crisis in modern thought. The subject is treated under these general headings: I. Science and Faith; II. Corporate Worship and Service; III. The Immortality of the Soul; IV. Science and Christianity. This work is one of immense importance in this juncture, presenting fundamental Christian doctrine from the most modern and scientific point of view.

PHOTOGRAPHY FOR YOUNG PEOPLE. By Tudor Jenks. New York: Frederick A. Stokes Company, 1908. 12mo.; 328 pp. Price, \$1.50 net.

A book which presents, not only the methods of successful photography, but the reasons underlying the various processes. It gives to the practice of photography an additional fascination, and supplies the young reader with a foundation which enables him to read other photographic literature with profit instead of confusion, and to choose intelligently his camera, lens, or chemicals. Mr. Jenks describes the use of the camera, the working of its various parts, the process of negative development, toning or developing the print, and mounting. He then treats the various phases of photography separately in greater detail: exposure; what to take and how to take it; developers; the theory of development; tank development; printing papers, their working and their comparative value; lenses; and shutters. Two chapters are given to the history of photography, and another to the chemistry of photography.

THE ARTS AND CRAFTS OF OLDER SPAIN. By Leonard Williams. Chicago: A. C. McClurg & Co., 1908. Three volumes. 12mo.; 280 pp. each. Price, \$4.50.

In preparing these volumes, it has been the aim of the author to give a clear and fairly complete account of the arts and crafts of older Spain. There is room for a work of this design and scope, and there is really no good reason why so attractive a group of subjects should be so persistently ignored. The first volume deals with gold, silver, and jewel work, iron work, bronzes, and arms. The second volume takes up furniture, ivories, pottery, and glass, while the third volume is devoted entirely to textile fabrics. The volumes are beautifully illustrated by well-executed engravings. The author's account of Spanish pottery is most interesting and valuable. The study of this craft in Spain is far from definite, and therefore researches and discoveries may be hoped for at some future time. The history of Spanish arms has also suffered from unjust neglect. The author has spent several years in preparing these very interesting volumes, which will prove a most welcome addition to any library, whether general or special.

VECTORS AND VECTOR DIAGRAMS APPLIED TO THE ALTERNATING CURRENT CIRCUIT. New York: Longmans, Green & Co., 1909. 12mo.; pp. 254; 114 figures. Price, \$2.50.

The use of vector diagrams has become so universal, and is so convenient a method of expressing relationship in alternating-current circuits, that a book on vector algebra is almost a necessity. The present work takes the system worked up by Mr. C. P. Steinmetz, changing it slightly to avoid complexity, and goes into the algebra of the subject. The work presupposes a thorough knowledge on the part of the reader of electrical engineering to the extent reached by a student in his third college year.

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Railway tie, H. Hille 917,065

Railway tie, Payne & Cochran 917,118

Railway tie, W. S. Logan 917,628

Railway track construction, L. McIlhenny 917,600

Railway vehicle safety appliance, Schlichter & Franko 917,666

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Razor, safety, H. H. Boyce 917,532

Razor, safety, C. Grabhorn 917,589

Razor sterilizing attachment for sterilizing cabinets, J. M. Allspaw 917,397

Razor stripping device, F. Mossberg 917,102

Receptacle, A. Bopp 916,986

Record guide, music, F. C. Roberts 917,661

Refrigerator, M. A. Moody 917,638

Regulating device, W. D. Hodgson 917,067

Retort, continuous vertical, D. R. Russell 917,363

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Riveting turbine bucket covers, machine for C. C. M. Merten 917,100

Home-Made Experimental Apparatus

In addition to the following articles, the Scientific American Supplement has published innumerable papers of immense practical value, of which over 17,000 are listed in a carefully prepared catalogue, which will be sent free of charge to any address. Copies of the Scientific American Supplement cost 10 cents each.

If there is any scientific, mechanical, or engineering subject on which special information is desired, some papers will be found in this catalogue, in which it is fully discussed by competent authority.

A few of the many valuable articles on the making of experimental apparatus at home are given in the following list:

ELECTRIC LIGHTING FOR AMATEURS. The article tells how a small and simple experimental installation can be set up at home. Scientific American Supplement 1551.

AN ELECTRIC CHIME AND HOW IT MAY BE CONSTRUCTED AT HOME, is described in Scientific American Supplement 1566.

THE CONSTRUCTION OF AN ELECTRIC THERMOSTAT is explained in Scientific American Supplement 1566.

HOW TO MAKE A 100-MILE WIRELESS TELEGRAPH OUTFIT is told by A. Frederick Collins in Scientific American Supplement 1605.

A SIMPLE TRANSFORMER FOR AMATEUR'S USE is so plainly described in Scientific American Supplement 1572 that anyone can make it.

A 1/2-H.-P. ALTERNATING CURRENT DYNAMO, Scientific American Supplement 1558.

THE CONSTRUCTION OF A SIMPLE PHOTOGRAPHIC AND MICRO-PHOTOGRAPHIC APPARATUS is simply explained in Scientific American Supplement 1574.

A SIMPLE CAMERA-SHUTTER MADE OUT OF A PASTEBOARD BOX, PINS, AND A RUBBER BAND is the subject of an article in Scientific American Supplement 1578.

HOW TO MAKE AN AEROPLANE OR GLIDING MACHINE is explained in Scientific American Supplement 1582, with working drawings.

EXPERIMENTS WITH A LAMP CHIMNEY. In this article it is shown how a lamp chimney may serve to indicate the pressure in the interior of a liquid; to explain the meaning of capillary elevation and depression; to serve as a hydraulic turbine, an aspirator, and intermittent siphon; to demonstrate the ascent of liquids in exhaustive tubes; to illustrate the phenomena of the bursting bladder and of the expansive force of gases. Scientific American Supplement 1583.

HOW A TANGENT GALVANOMETER CAN BE USED FOR MAKING ELECTRICAL MEASUREMENTS is described in Scientific American Supplement 1584.

THE CONSTRUCTION OF AN INDEPENDENT INTERRUPTER. Clear diagrams giving actual dimensions are published. Scientific American Supplement 1616.

AN EASILY MADE HIGH FREQUENCY APPARATUS WHICH CAN BE USED TO OBTAIN EITHER D'ARSONVAL OR OUDIN CURRENTS is described in Scientific American Supplement 1618. A plunge battery of six cells, a two-inch spark induction coil, a pair of one-point Leyden jars, and an inductance coil, and all the apparatus required, most of which can be made at home.

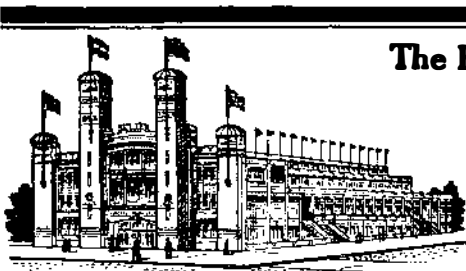
SIMPLE WIRELESS TELEGRAPH SYSTEMS are described in Scientific American Supplements 1363 and 1381.

THE LOCATION AND ERECTION OF A 100-MILE WIRELESS TELEGRAPH STATION is clearly explained, with the help of diagrams, in Scientific American Supplement 1622.

THE INSTALLATION AND ADJUSTMENT OF A 100-MILE WIRELESS TELEGRAPH OUTFIT, illustrated with diagrams, Scientific American Supplement 1623.

THE MAKING AND THE USING OF A WIRELESS TELEGRAPH TUNING

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