

mend it. It appeals to 'true amateurs,'—boys who have a scientific turn of mind, and men who have some leisure from their work, but who have not the facilities that a laboratory offers.

The tools required are of the simplest kind, no turning-lathe or expensive apparatus being needed. Most of them are to be found in the ordinary equipment of a householder: the rest may be purchased for a few dollars. The materials, too, are inexpensive and easy to get.

The directions in this book are full and clear, and where it is necessary dimensional drawings are given. When the amateur has built every thing that is described, he will find himself in possession of quite a complete set of apparatus for electrical experiments,—galvanometers, electroscope, condenser, voltmeter, Wimhurst machine, induction-coil, etc.; and, if he compares the cost of them with the catalogue prices, he will have cause to congratulate himself. But the most important thing he has acquired is a skill in manipulation, and a knowledge of the instruments that will enable him to experiment usefully with them.

There are some verbal errors in the book,—we do not usually speak of "8 hours' resistance," for example,—but they do not take away its usefulness. In that part of the appendix, however, that treats of accumulators, there is the serious mistake of confusing discharge-rate with storage-capacity. Page 174 had better be omitted.

*Popular Chemistry.* By J. DORMAN STEELE. New York, Barnes. 16°.

THIS is the familiar 'Fourteen Weeks in Chemistry,' revised and brought down to date, with some additions in appendices describing methods of manipulation and simple analyses. The object of this successful book was, by bringing out prominently such elementary facts in chemistry as would be likely to interest the average boy or girl, to give the most of them such a smattering of knowledge as would give a key to many of the chemical changes they would be likely to observe in every-day life, and to leave such a pleasant impression with the few as might lead them to further study. The book has served its purpose well in the past, and, in its new form, is likely to have a continued usefulness for some time to come. The revision has been done by competent hands. A useful glossary, giving the pronunciation of chemical terms, is one of the additions. The chapters on organic chemistry have been completely re-arranged and to a great extent re-written.

*An Index to Engineering Periodicals, 1883 to 1887 inclusive.* By FRANCIS E. GALLOUPE, M.E. Boston, 30 Kilby Street; New York, Eng. News Publ. Co. 294 p. 12°.

THE progress in developing material resources, in recent years, has created a vast amount of engineering literature, which is scattered through the various engineering journals. To render a large amount of this available, has been Mr. Galloupe's task, who has sought, in a handy little volume containing about ten thousand references, to cover the contents of the leading journals during the past five years. The matter seems to be arranged admirably under topics. The book will certainly serve a purpose with all interested.

#### NOTES AND NEWS.

MR. G. W. LITTLEHALES, assistant in the Hydrographic Office, has completed a monograph on 'Recent Developments in Great Circle Sailing.' Lieutenant Dyer, in charge of the office, who has devoted much time and labor to the study of this subject, will write the preface. — Henry Holt & Co. announce as in preparation, 'Briefer Course in Physics,' by George F. Barker; 'Dissection of the Dog,' as a basis for the study of physiology, by W. H. Howell; 'Brief History of the United States,' by Alexander Johnston, professor in Princeton College (this book is intended to meet the needs of teachers who desire a briefer and more elementary text-book than the author's well-known 'History of the United States'; it is, however, very far from being a condensation of that work); 'Greek Literature,' by Thomas Sergeant Perry; 'Chemistry (Advanced Course),' by Ira Remsen; 'Das Wesentliche der Deutschen Grammatik,' by A. W. Spanhoofd; and 'First Lessons in Political Economy,' by Francis A. Walker. — D. Van Nostrand, New York, announces 'The Elements of Electric Lighting,' by Philip Atkinson, for speedy issue; also 'Modern Reproductive Processes,' being a manual of

instruction in the art of reproducing drawings, engravings, manuscripts, etc., by the action of light, by Mr. Ernst Lietze; a translation of the Russian work of Woeikof on 'The Climates of the Earth,' by Prof. Cleveland Abbe of the Signal Office; a large and important work by Col. George E. Waring, jun., being a general treatise on city, town, and village sewerage and drainage, and land drainage; and 'Plate Girder Construction,' by Isami Hiroi, the latest issue in the Van Nostrand's Science Series. — G. S. Fellows & Co., New York, announce 'Memory Systems, New and Old,' by A. E. Middleton. This is the first American edition from the second English edition, revised and enlarged, with bibliography of mnemonics, 1325–1888, by G. S. Fellows, M.A., of the Washington High School. They also announce 'Protection Echoes from the Capitol,' by Thomas H. McKee, containing twelve hundred aphorisms and leading principles of the protective policy. — Cupples & Hurd have in press a volume on 'Typical New England Elms and Other Trees.' — Harper & Brothers have just ready Walter Besant's 'Fifty Years Ago.' This is an illustrated account of English life, customs, and manners half a century ago, when Queen Victoria ascended her throne. — G. P. Putnam's Sons publish 'The Story of Media, Babylon, and Persia,' including a study of the Zendavesta or religion of Zoroaster from the fall of Nineveh to the Persian war (continued from 'The Story of Assyria'), by Zénaïde A. Ragozin, in their Story of the Nations Series, illustrated with maps and woodcuts; and 'A Sketch of the Germanic Constitution,' from early times to the dissolution of the empire, by Samuel Epes Turner. — Roberts Brothers publish 'Harvard Vespers,' a volume of addresses to Harvard students, by Francis G. Peabody, Phillips Brooks, Edward Everett Hale, Alexander McKenzie, George A. Gordon, and Andrew P. Peabody, delivered during 1886, 1887, and 1888. — James J. Chapman, Washington, D.C., will issue early in September McPherson's 'Hand-book of Politics for 1888.' It will cover the proceedings of the second session of the last Congress (49th), and the first session of the present Congress (50th), and will give the final facts as to every pending public measure. — *Das Centralblatt für Bibliothekswesen* for July contains a remarkable article by J. Gildemeister of Bonn, on the 'Oriental Literature of the Discovery of America,' containing some curious particulars, taken from a Mohammedan work, of the voyage of an Indian ship, which, after driving about in the ocean for eight months, was cast on to the shore of the New World. — For the first time in its history *The Century* will devote a single issue — the forthcoming September number — largely to educational themes. The contributions will include 'The University and the Bible,' by T. T. Munger, a plea for the study of Christian as well as Heathen classics; 'Women Who go to College,' by Arthur Gilman; and 'The Industrial Idea in Education,' by Charles M. Carter. One illustrated paper is on 'College Fraternities,' with pictures of twenty-eight chapter-houses and society-halls at Yale, Harvard, Princeton, and other colleges; and another is on 'Uppingham, an Ancient School worked on Modern Ideas,' with a number of illustrations by Joseph Pennell, and a portrait of the late head master, Edward Thring, who is said to be, since Arnold of Rugby, the most highly esteemed educator of England. There will also be several important short editorial articles and 'open letters' on different branches of the same subject. Other distinctive features of the magazine, the Lincoln history, Siberian papers, fiction, etc., will, however, be retained. — The Washburn and Moen Manufacturing Company of Worcester, Mass., has just published the sixth edition of their 'Pocket Handbook of Copper and Iron Wire in Electric Transmission.' The book contains a summary of information in regard to the telegraph and telephone in addition to that about wires. — Van Antwerp, Bragg, & Co. have just ready 'Eclectic Physical Geography,' containing 30 charts and 151 cuts and diagrams. — G. P. Putnam's Sons will publish immediately an *édition de luxe* of 'The President's Message,' printed in large type, small quarto, with sixteen full-page moral and graphic illustrations from original designs by Thomas Nast; also the Questions of the Day edition of the same, with annotations by R. R. Bowker, which has been delayed for some important additional material. — Cupples, Upham, & Co. will publish shortly a new book by W. H. H. (Adirondack) Murray. It will be descriptive of the north-western side of the American continent. — Funk & Wagnalls have just issued in