

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

pamphlet form 'The Presidential Campaign of 1896 — a Scrap-Book of Chronicle,' by the author of 'The Battle of Bietigheim.' The occasion is the presidential campaign of 1896, when the combined forces of socialism, anarchy, and atheism meet their Waterloo at the hands of an aroused, living, active American patriotism. — D. Appleton & Co. publish 'A History of the United States and its People,' by Edward Eggleston. They have also just ready in the International Scientific Series 'The Origin of Floral Structures through Insect and Other Agencies,' by the Rev. George Henslow, professor of botany, Queen's College; and 'Seven Conventions,' by A. W. Classon, which refers to the Federal convention, five of the ratifying conventions, and the Charleston convention of 1860, and is designed as an aid to the study of the Constitution. — William Henry Hurlbert has just published in Edinburgh a book entitled 'Ireland under Coercion — the Diary of an American.' Mr. Hurlbert concludes that landlords are good and alone deserving of sympathy, and that the nationalist peasants are vicious, dishonest, and, as a rule, much too leniently treated. — Sir Morell Mackenzie is at work on his reply to the recently published attack upon him by the German physicians. His answer will be shortly published in book form simultaneously in England and Germany. Messrs. Sampson Low, Marston, & Co. will be the English publishers. — L. J. Veen, Amsterdam (Holland), has just published the first part of a 'Dictionary of National Biography,' by J. G. Frederiks and F. Jos. van den Branden, assisted by a number of prominent men of letters in the Netherlands. The work will be completed in fifteen parts. — W. Drysdale & Co., Montreal, Canada, have just ready a new Canadian work, entitled 'The Young Seigneur, or, Nation-Making,' by Wilfrid Chateaucclair. The chief aim of this book, the author says, is to map out a future for the Canadian nation, which has been hitherto drifting without a plan. A lesser purpose of it is to make some of the atmosphere of French Canada understood by those who speak English. — Ticknor & Co. announce among their September books, 'Western China,' a journey to the great Buddhist centre of Mount Omei, by the Rev. Virgil C. Hart, B.D.; and 'A Short History of the Secession War,' by Rossiter Johnson, author of 'The History of the War of 1812-15.'

— Mr. Norman J. Fake, assistant to Professor Wiley, chemist of the Agricultural Department, was accidentally drowned while bathing in the Potomac on Saturday, Aug. 11. He was a young man of great promise, already an analyst of much skill, enthusiastic in his work.

— Professor Wiley of the Agricultural Department will complete his long investigation of the adulteration of lards in about six weeks. He will then take up the subject of the adulteration of sugars, molasses, and honey.

— *The Edinburgh Scotsman* of Aug. 16 states that on the day before, Mr. C. Piazza Smyth, in consequence of advancing years, retired from the offices of astronomer royal for Scotland, and professor of practical astronomy in the University of Edinburgh, which he has filled for the long period of forty-three years. These important positions are in the gift of the Crown, and, although correspondence with the secretary for Scotland on the subject of his retirement has not yet been finally completed, Professor Smyth has, as already indicated, ceased from active duty, having handed over the keys of the Royal Observatory, in terms of an arrangement with Lord Lothian, to the first assistant astronomer, Mr. Thomas Heath, B.A. A week hence Professor Smyth, who is in his seventieth year and is still hale and hearty, will leave the official residence, 15 Royal Terrace, Edinburgh, and take up his abode ultimately in England. The late astronomer royal was born of English parents in the city of Naples, the roof under which he first saw the light being so close to Vesuvius that every now and then both house and garden were covered with showers of black sand. Prior to coming to Edinburgh he was for ten years at the Cape of Good Hope, in the capacity of first assistant astronomer in the Royal Observatory there, under Sir Thomas Maclear. During that time Professor Smyth went through a large amount of rough work in measuring an arc of the meridian along the mountains of the west coast of Africa. Altogether, therefore, he has spent fifty-three years of his life in observatory work. Professor Smyth, in a recent conversation, went into some detail as to his labors at the Royal Observa-

tory, and his reasons for resigning. His reason for proposing retirement to Lord Lothian, he remarked, was not only advancing years, but despair of ever being able to do any thing good, or compete with other observatories, when the government continued to refuse to do what their own commission recommended.

— Prof. E. J. Loomis of the Nautical Almanac Office is about to visit the Rocky Mountains on a vacation trip. While there he will assist his son-in-law, D. P. Todd, director of the Amherst College Observatory, in making scientific observations, astronomical, spectroscopic, and photographic. The expedition starts from Boston, and goes by the way of Montreal and the Canadian Pacific Railroad to the most elevated point in the Rocky Mountains reached by that railway. There the party will stop, and select the highest point near at hand, and conveniently accessible for the erection of a temporary observatory. Professor Todd goes out under the auspices of the Harvard College Observatory.

— C. N. Caspar of Milwaukee publishes the first instalment of Part I. of his 'Mail Book Auction.' Two copies of this list, which contains only the titles of books actually in stock, are sent to librarians and private book-collectors. One of these lists may be used to affix, after the respective titles of the works desired, the price the bidder is willing to pay per volume for each work. The second copy of the list, marked with the same bids, should be kept for reference. The advantages of this strictly new arrangement are conspicuous, and, above all, labor-saving. Old books in most cases have no market-value, and are, as a rule, worth different prices to different persons. Librarians and others may, through this opportunity, obtain books at their own prices. The books will be shipped to the first bidder, if the offer proves acceptable; otherwise the bids will be filed, and the books kept for four weeks for competition of offers which may arrive during this period, after which time they will be sent out without reserve to the highest bidder. All books on this list are warranted to be perfect, complete, and in good condition, and they are in their original cloth binding, if not otherwise specified. They will be forwarded at the expense of the purchaser. No charge is made for packing, cases, or cartage.

— The New York Agricultural Experiment Station (Peter Collier, director), Geneva, N.Y., proposes to carry out this next year experiments on the influence of fertilizers on the chemical composition of plants, with analyses of the feeding-stuffs, and feeding and digestion experiments.

— Mr. Ellery C. Huntington, A.B., of Amherst College, Massachusetts, will form classes in physical culture at the beginning of session, 1888-89, at the University of Virginia. The work under personal supervision of the instructor will consist of (1) class exercise with light (wooden) dumb-bells, (2) class drill with chest weights, (3) class exercise with Indian clubs. In addition, each student is to be examined physically and measured at least once a year. On the basis of this examination, a handbook of developing exercise will be made out and given to him, with exercises marked that are adapted to his individual need.

— A despatch from London, Aug. 27, announces the death of Philip Henry Gosse, F.R.S., the English naturalist, aged seventy-eight years. Mr. Gosse was born at Poole, Eng., in 1810, went to Newfoundland when a boy of seventeen, eight years later removed to lower Canada, and then travelled in this country, studying zoölogy and entomology, and making a long stop in Alabama. He was made an F.R.S. in 1856. He was the father of Edmund W. Gosse, the critic and poet.

— The Agricultural Department is organizing five new experimental stations for the study of sorghum and its manipulation, — three in Kansas, one in New Jersey, and one in Louisiana. The appropriation for this work this year is one hundred thousand dollars, larger than it has ever been before.

— Ohio and Michigan are better provided with public-school libraries than any other States. The former has 191 and the latter 154 volumes for every 100 pupils in average attendance. In the Southern States no public-school libraries of any consequence are reported.