

proved statements of the same principles by later writers are traced in a very interesting manner. The progress made in the production of a science of dynamics is similarly exhibited, and the methods of exposition and proof adopted by Galileo, Newton, Huygens and the latter mathematicians are compared in a most instructive discussion. The construction of the science of mechanics, as now defined by the mathematician, is traced historically and logically, and this discussion is closed by a very suggestive chapter on the economy effected by the precision of thought and expression which the science of mechanics illustrates and promotes. The closing chapter on the relation of this science to other departments of learning is peculiarly interesting, and is the only approach to metaphysical treatment in the book of any branch of the subject. A table of titles of the works of the great writers to whose treatises reference has been made is a valuable feature. The book will interest every mathematician.

**The Locomotive Catechism.** By ROBERT GRIMSHAW. Spoken & Chamberlain, New York. 362 p. 12mo. \$2.00.

THIS is one of those useful little books which are frequently supplied the artisan with the intention of giving him "practical" information in the most thoroughly pep-tonized form. The catechetic form is given the work in order that every idea may be distinctly grasped and question and answer impressed upon the mind permanently. It is a kind of book which is often much derided; but there is no question in the minds of those most familiar with their field, that they are well adapted to the use of the class of slow readers and inexperienced students to whom they are addressed. Their extensive sale and the

fact that an author and his publishers venture to bring into the market a new work in a field already so long and so well occupied by the older and more familiar "Forney's Catechism of the Locomotive" are sufficient proof of a call for them. This little book is full of valuable information for the locomotive driver and his fireman, and for all who are interested in the steam-engine and its construction, even though not professionally. It is freely illustrated and will probably find extensive sale.

**Outlines of Surveying and Navigation, for Public Schools and Private Study.** By JAMES PITCHER, A.M. Syracuse, N. Y. C. W. Bardeen, 1893. 34 p. 12mo. 50 cents.

THIS little book is intended to be used as a primer "to give the learner a brief outline of one of the most useful and delightful of occupations." It gives the elementary mathematical theory of the subject, and by the aid of the most elementary mathematics. The book is prepared "for the fireside as well as the school," and will probably find many interested readers and students among the boys on the farm, as well as among scholars in the high schools. The text is well expressed, the examples well chosen, and the illustrations satisfactory. The author concludes: "The foregoing pages have been prepared in the hope of contributing something to the increased intelligence of the boys and girls of our State and nation. Intelligent patriotism and piety will insure the success and the stability of our government"; and he appends Washington's "Farewell Address" as the best lesson in patriotism. Were all books written by authors of the same spirit and of equal patriotism, our boys would profit by the fact greatly, and our country gain commensurately.

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