

Thus far we have mentioned only Dini's larger treatises. Space would hardly permit of a detailed consideration of his shorter memoirs, and fortunately this is not necessary, since the list, which comprises in all about sixty papers, has recently been prepared by his colleague, Professor Luigi Bianchi, and published along with a more extended account of his entire scientific achievements in the proceedings of the Accademia dei Lincei of last February. Suffice it to say that these memoirs pertain largely to infinitesimal geometry, to the theory of functions of a complex variable and to the study of differential equations, total and partial.

We might close our brief account at this point were it not for the fact that an adequate conception of Dini's activities can scarcely be gained from an examination of his scientific career alone. Dating from about the year 1880, he was chosen time and again to occupy positions of honor and trust in the affairs of his city, province and nation. In particular, he was at the time of his death vice-president of the national council of public instruction, a senator of the kingdom and the director of the normal college (Scuola Normale Superiore) of Pisa, in addition to his position as professor at the university. His death, therefore, was deeply mourned by a wide circle of people and institutions all of which have since united in an effort to erect a permanent monument within the city of Pisa that shall symbolize not only his genius in science but the love and esteem in which he was universally held by his countrymen.

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SHORTER NOTICES.

Commercial Algebra. By WENTWORTH, SMITH and SCHLAUCH.
Boston, Ginn and Company, 1917-1918.

THIS work appears in two volumes, Book I designed for the first year course of a commercial high school, and Book II a text for advanced classes in the same lines.

statement (4) at the bottom of the page. The excluded cases of importance have usually been considered (though not by Dini) only through special methods adapted to the case in hand. Thus, see Hobson, *Proc. London Math. Soc.*, vol. 7 (1908), pp. 359-388; also C. N. Moore in various articles in the *Trans. American Math. Soc.* dating from 1907.

As compared with the usual first book in algebra, there are a few departures in Book I. The authors call attention in the preface to the omission of "a large amount of non-essential work in factoring, fractions, and complicated equations." The problems, too, are chosen with a view to familiarizing the student with commercial phraseology and presenting appropriate applications to such topics as shop formulas, daily balances, cost-rate factors, commission formulas, etc. One of the newer features is the application of simple equations to problems in standard dietaries and ratio of solvency. Graphic work is introduced in elementary form in Chapter III, and considerable practice is given in pictograms and cartograms, with special reference to advertising and statistics. In Chapter XIII a more extended treatment of graphic methods is given, including the topics of wage graphs, interpolation, net profit, and interest.

In Book II the first four chapters present the topics of algebra necessary as a preparation for the applied work, namely, powers and roots, logarithms, slide rule, and series. The remainder of the book treats both theoretically and practically the subjects of compound interest, equation of payments, annuities, amortization, depreciation, bonds, life insurance, and alignment charts. This volume contains tables of compound interest, present value, annuities, and logarithms.

While these volumes follow rather closely the lines of texts already on the market, both in content and method of presentation, a particular point has been made of so simplifying the work as to adapt it to the needs of the high school. This adaptation appears in the omission of the more advanced work in series, the choice of problems, and the occasional replacing of abstract notation by significant letters, as in the formulas connecting nominal and effective rates of interest.

The two books are a useful contribution to the organization of high-school courses, in that they meet present-day demands for practical topics, without sacrificing an intelligent understanding of the tools used—an end which can be gained only by a careful development of the theoretical side.

The publication of such texts as this may be taken as a hopeful sign—not that the curriculum is becoming over-commercialized, but that the commercial world is finding it

increasingly necessary that its people shall be trained in logical mathematical thought.

F. E. ALLEN.

The Training of Teachers of Mathematics for the Secondary Schools of Countries represented in the International Commission on the Teaching of Mathematics, by RAYMOND CLARE ARCHIBALD. With the Editorial Cooperation of D. E. SMITH, W. F. OSGOOD, J. W. A. YOUNG, members of the Commission from the United States. Washington, Government Printing Office, 1918.

THIS well-executed piece of work includes an able discussion of the training of teachers in Australia, Austria, Belgium, Denmark, England, Finland, France, Germany, Hungary, Italy, Japan, the Netherlands, Roumania, Russia, Spain, Sweden, Switzerland, and the United States, as well as appendices with typical examinations as given in England, France, Germany, and Japan. The Summary is also a valuable feature.

No one can deny the assertion that most of the countries discussed have far higher standards for their teachers of mathematics in secondary schools than we have in the United States. In this connection the interesting fact is brought out that there were in the United States, in 1913-1914, 13,714 "accredited secondary schools." Similar statistics for other countries, unfortunately not given, would have been of great significance.

Our need for well-trained teachers is not less than that of any other country. However, our problem to obtain and train these teachers has been fundamentally different from the European problem of obtaining teachers. We have been trying to educate all the children of all the people, whereas no great European country has made any similar attempt. England, France, Germany, Italy and Russia are all on the same footing, in training only a select few and differentiating upon entrance into the most elementary school the elect, those who may go on, from those who will not go on into secondary schools. With this system, the relatively few teachers needed can be given a higher and more intensive training.

The effect of the war upon the educational systems of European countries will be great. Undoubtedly the present industrial unrest will culminate in the democratization of the