A Text-Book on Roofs and Bridges. Part I. Stresses in Simple Trusses. By MANSFIELD MERRIMAN. New York, Wiley. 8°. $2.50.

THIS work of Professor Merriman exhibits in a remarkable degree the clear, logical arrangement and concise style which characterize his writings on engineering and mathematical subjects.

The preparation of suitable text-books of applied science, and especially text-books on engineering subjects, for students of technical schools, at the present day, is an art that demands something more than a critical knowledge of the subjects discussed. It involves also, in the highest degree, a true conception of the art of teaching; and it may almost be laid down as a rule that the most successful teacher is best fitted to prepare a text-book on the subject which he teaches.

Admirable works there may be on particular branches of engineering: for example, works in which abundance of detail and illustration, the presentation and solution of intricate and unusual problems, and the introduction of whatever may elucidate the subject, furnish to the investigator or professional engineer most valuable and instructive information, but which may be quite unsuitable for the daily use and instruction of the undergraduate student.

During the period of the life of a student when his habits of thought and investigation are forming, it is of the utmost importance that he should become thoroughly imbued with the rational principles and processes of thought which will make him an independent thinker and investigator.

In this work the plan adopted for the computation of stresses in the members or parts of roofs and bridges, is, to use Professor Merriman's own words, "The principles and methods are first established, and then numerous examples are fully worked out to illustrate them and their application to different forms of trusses, while a number of problems are stated for the exercises of students."

This plan is faithfully carried out, the mathematical treatment of the principles and methods being clear and concise, and free from complications.

Professor Merriman's work on the 'Mechanics of Materials,' in the same style, and with similar arrangements, was unsatisfactory only in this, that it seemed to end in the middle of the subject, trussed or braced structures being left out; but the addition of the present work supplies the deficiency, and the two together will now constitute a complete work, admirably adapted to use in the higher technical schools.

Report of the Commissioner of Education for 1885–86. Washington, Government. 8°.

THIS report is the first issued by the new commissioner, Mr. Dawson, and is nearly, if not quite, as far behindhand in its appearance as its predecessors. We believe that the blame for this is to be laid at the door of the Government Printing-Office, at present the most inefficient department of the public service. In arrangement it is far superior to the bulky and confused reports issued by Mr. Eaton. The classification of the statistics, and their mode of treatment, mark a decided advance on what we have been accustomed to. The summary of State school laws is a valuable feature, as are the particularly useful statistics in Appendix X., dealing with education in foreign countries. This report, though good and useful, shows by its failures how essential some revision of the method of classifying educational statistics is. It is the task of a lifetime to extract from them, as at present presented, any answers to a score of pressing and important questions. The commissioner of education should have the power to inaugurate and carry through this much-needed reform.

Elizabeth Gilbert and her Work for the Blind. By FRANCES MARTIN. New York, Macmillan. 12°.

THE subject of this biography was the daughter of the principal of Brasenose College, Oxford, afterwards Bishop of Chichester. She was born in 1826, and was made blind at the age of three by an attack of scarlet-fever; but she was a girl of more than usual intelligence and energy, and, under careful instruction, became a well-educated woman, knowing French, German, and Italian, as well as vocal and instrumental music. She learned also to write a very legible hand; but written arithmetic was difficult for her, though she reckoned easily and accurately in her head.

During her childhood and youth she was always treated, both in her studies and in her plays, as nearly as possible like her sisters; but when she became a woman, and her sisters one by one married and left home, she began to feel her loneliness, and especially to feel that there was no field of usefulness open to her. But having received a legacy from a lady friend, which made her pecuniarily independent, she soon discovered work to do. She saw and keenly felt the difficulties that blind persons have in getting employment, even if they have learned a trade; and she undertook to furnish such employment, so far as her resources would permit. She first opened a store for the sale of goods made by the blind, employing a blind man as manager, she herself assuming the pecuniary responsibility, and meeting all deficiencies at first out of her private purse. To the store a factory was soon added, and the whole placed in charge of an association, which ultimately developed into The British Association for promoting the General Welfare of the Blind. Miss Gilbert was also active in serving the cause of the blind in other ways, so far as she had opportunity to do so; but we must refer our readers to the biography itself for the details of her work. She died in 1885. This story of her life is well and simply told, and we commend it to those who are interested in philanthropic work.

The Orbis Pictus of John Ames Comenius. Syracuse, Bardeen. 8°.

IT gives us a startling conception of the antiquity of Harvard College to recall that this educational classic, which so many persons associate with the middle ages, was written by a man who was solicited to accept the presidency of that institution. Mr. Bardeen deserves the hearty thanks of all educators for reproducing the famous work, and issuing it at a reasonable price. The paper, the binding, the type, are all appropriate. The cuts are unusually clear, and are taken from the copperplates of the edition of 1658; the Latin text is taken from the same edition. The text for the English translation is taken from the English edition of 1727, in which for the first time the English words were so arranged as to stand opposite their Latin equivalents. The cuts are here reproduced by the photographic process, and are not retouched or altered in any particular. We trust the *Vestibulum* and the *Janua* may be similarly reproduced at an early day.

Modern Theories of Chemistry. By LOTHAR MEYER. Tr. by P. Phillips Bedson and W. Carleton Williams. London, Longmans, Green, & Co. 8°.

WHILE editions of 'Die Modernen Theorien der Chemie' have succeeded one another in the original to the number of five, the English-speaking public has waited more than a score of years the opportunity to read in the vernacular a work which, perhaps more than any other of the period, has been influential in broadening and harmonizing the ideas of chemists as to the meaning and connection of the throng of facts which busy workers have amassed. The first edition of this work was projected and issued a quarter of a century ago with the purpose of bringing about just valuations of the theories and hypotheses then in vogue but variously estimated, and of showing the suggestive importance of working hypotheses to investigators. The reception of the edition was such (though the author was so modestly diffident of success, previous to publication, as to abandon a personal dedication which had been determined upon) that two more were published in the same form; and a fourth, revised and rewritten to meet the requirements of the time, was issued, only to be succeeded immediately by the fifth edition, upon which the translation now before us was based. In its present form, the book has assumed more of the character of a handbook or book of reference, and on that account the absence of an index is the more to be regretted. Of works merely elementary, and devoted to the representation of accepted theories without very much balancing of the evidence which has led to their establishment, we have in English several very good examples; but with a single exception (Muir's 'Principles of Chemistry'), and that of comparatively recent production, there has been no work on theoretical chemistry, accessible to the student whose only language is English, of any thing like the breadth of this. Its plan embraces