

of more and more importance, and especially with that branch of it which relates to the application of water-power to useful purposes. This increasing importance of the subject, together with the increasing interest taken in hydraulic work of all kinds, is naturally leading to a more extensive study of the principles upon which all such work is based. For this purpose teachers and students have long felt the want of a really good text-book, such as the one before us, which deals with the subject in a thorough and comprehensive manner. In preparing the work the author consulted many standard works and publications on the subject, and has succeeded in bringing together much valuable information; this, combined with his own experience, makes the book an important one. In his work, the author, while dealing with the principles of the subject in a strictly theoretical manner, has not failed to recognize their more important practical applications; and though detailed descriptions of the construction and working of hydraulic machinery has been entirely avoided, the work contains much valuable information of a practical nature.

The work is divided into seven chapters, and deals with the flow of water through pipes, channels, orifices, and over weirs; the impact of water, water measurement, and with the principles underlying the action of water-wheels, turbines, pumps and water pressure machinery. Many valuable tables are to be found in the book, and of these the two on page 24 embody the results of a series of experiments carried out by the author on the coefficients of discharge of water through orifices of various slopes. These two tables will prove of great value, as the coefficients contained therein are probably more accurate than those previously obtained by other experimenters. The author has also carried out a series of experiments on the "Inversion of the Jet," and of which he gives a brief account in article 13. In this article, he says:—"When a jet issues from an orifice in a vertical surface, the sections of the jet at points along the path assume singular forms dependent upon the nature of the orifice." From this statement it would appear that the phenomenon was to be observed only in the case of a jet issuing from an orifice in a vertical surface. But is that so? Again, in explaining the cause of the phenomenon, the author agrees with Prof. Unwin and others in regarding it as being due to the "heads" being different for different parts of the orifice. Is this explanation, however, the true one? The work, however, is certainly an admirable one, and by far the best text-book published, and will considerably enrich the literature of a subject which is somewhat poor. An important feature of the book, and one which will prove of inestimable value to teachers and students, is the large collection of

well selected examples, with answers, to be found at the end of each chapter.

Although this treatise will certainly not prove attractive to readers who are totally unfamiliar with mathematical methods and conceptions, yet it succeeds in giving simple and elegant proofs (many of them new) of all the necessary theorems without introducing any very advanced mathematics. The work is well written, is illustrated by many excellent diagrams and figures, and is so arranged that the student possessing the requisite mathematical knowledge should have but little difficulty in mastering it. The volume stands as a striking and permanent record of the manner in which the Science has for many years been treated by the author in lectures delivered to his students in McGill College, and will be welcomed by the scientific public as an authoritative treatise on a science of which the growing importance is continually becoming more fully recognized.

Professor Bovey is to be congratulated on the very able manner in which he has treated an abstruse subject, and the excellent manner in which the book is gotten up does credit to the publishers. (New York: John Wiley & Sons; London: Clapman & Hall).

H. B.

NEW SOCIETIES OF MCGILL GRADUATES.

At the annual meeting of the Graduates Society of McGill University held at Montreal, 29th April, 1895, it was unanimously resolved that the incoming Executive Committee be instructed to endeavor to establish Graduates Societies at Toronto, Halifax, New York and other places.

Mr. A. O. U. Colquhoun, B.A., a member of the Society, residing in Toronto, was present, and addressed the meeting. He readily undertook the task of organizing a society of McGill graduates at Toronto.

Mr. R. A. Gunn, B.A.Sc., also a member of the Montreal society, but residing in New York, promised to use every effort to establish a similar society at the latter city.

Some delay was caused through the non-appearance of the revised list of graduates. During the summer Mr. Gunn received a proposal to organize, on a somewhat narrower basis, the Society to be composed of graduates in Applied Science; this, however, he declined to entertain, and held to his original purposes.

In the meantime, the revised list of graduates appeared, and copies of this, with a large number of copies of the by-laws and constitution of the Montreal society, were forwarded to New York and