PREFACE.

pupil reduces all decimals occurring in his work to the fractional form and operates with or upon these, thus losing the enormous advantages of decimal calculation. By the method here followed all danger of this is avoided, while there is the additional advantage that the teacher who prefers—and some of our best mathematical masters do so—to introduce decimals before fractions finds that his text-book leaves him at liberty to arrange the order as he chooses. All mention of repeating and circulating decimals is omitted. The whole advantage of decimal calculation is lost by the use of circulating decimals, for they are merely vulgar fractions in disguise. They are merer used by professional calculators.

Many practical problems of kinds not found in the ordinary elementary arithmetics are scattered throughout the book. Examples of these will be found under Measurements and Bank Discount; for the latter the author is indebted to Mr. S. G. Beatty, of Toronto.

Every master of the teacher's art would rather have his students come to him wholly ignorant of a subject than badly taught in it. In the former case the student has only to learn; in the latter he must, before he can receive the truth, get rid of his wrong ideas, his false opinions, his prejudices—with most persons a difficult, with some an impossible, operation. In constructing his definitions the anthor has kept this steadily in view, and has endeavored so to word them that the student, no matter what his subsequent progress, will never have to unlearn them. He will find at each new extension of meaning of a term that all was contained in the original definition, and he will thus be encouraged to attempt still further extensions and generalizations. The history of the progress of modern mathematies is a history of such generalizations and delimitations.

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