

tain part of the principal. On experiment with any assumed amount, it will be found that the portions of principal paid off from year to year form a series of ten terms in geometrical progression, and increase by a ratio of 1.06. The last portion of the principal paid off + its own interest for the last year, will constitute the last instalment.

We have  $n$ , the number of terms, = 10.

$r$ , the ratio, = 1.06.

$s$ , the sum of the series, = 1000.

to find  $l$ , the last term, or last principal paid off.

$$l = \frac{(r-1)sr^{n-1}}{r^n - 1} = \frac{(1.06-1)1000 \times 1.06^{10-1}}{1.06^{10} - 1} = \frac{60 \times 1.06^9}{1.06^{10} - 1}$$

= \$128.1773 = last principal paid off. \$128.1773 + its interest for the last year = \$135.8679 = the annual instalment.

(Prove this by going through the process of adding the interest and paying off the instalments for 10 successive years, and it will be found correct, excepting the very slight error arising from dropping decimals.)

H. J. BROWNLEE, Eramosa.

NOTE.—There are several interesting questions before our readers to which we have invited their attention. We shall be pleased to receive answers as early as possible. Our object in opening this department in the JOURNAL was to elicit opinions from our numerous friends. Kindly respond.—ED. C. S. J.

## Literary Reviews.

PEASE'S SINGING BOOK, for the use of High Schools and Singing Classes. Ginn & Co., Boston, Mass.

According to the Preface "this singing book is designed for those who wish to learn to read music and really understand it." This has been the design of many a book on the same subject for years gone by and yet how very few persons can take up a piece of music and sing it at sight! There must be something wrong, it may be the notation, or perhaps it is the art of teaching it. If the former, why not change it? If the latter why not improve it? The book before us is evidently intended to simplify the method of instruction. The author has, in his aim, brought three systems to bear, namely, (a) the Tonic sol-fa (to which he gives credit,) for tiny measuring, (b) the numerical notation, and (c) the staff notation. He apparently presumes, however, that the three methods are already known to the teacher for there is very little instruction given,—the book being mainly a compilation of exercises. That it is needful to place the figures in Tonic sol-fa time measures shows weakness in the number system, and that numbers are employed to interpret the notes of the staff indicates that difficulty exists in singing from the notes. The pupil has therefore to learn the figures to explain the notes, and afterwards to learn the Tonic sol-fa to comprehend the figures. Evidently the next course will be to devise something else whereby he might readily grasp the Tonic sol-fa, and so on, *ad infinitum*. It is well Mr. Pease intends his book for pupils of *High Schools*, because the technical language used is rather abstruse for less favored individuals—the first exercise is on "The Tonic Triad"—and it may be possible that those few whom it is designed will "learn to read music and really understand it," but we fear that no one else who tries to do so, will succeed by the use of Pease's Singing Book. The exercises are well selected, sweetly harmonized and arranged, many of them, for four voices, and it is a pity that their beauties are shut out from general use by the want of some comprehensible means of interpretation.

A FIRST HISTORY OF ENGLAND, by Louise Creighton. Rivingtons, Waterloo Place, London, Eng. Third Edition.

Creighton's Epochs of English History has an honored position as a text-book in our schools. The author of one of the portions of that book is also the author of the compact little book before us. It gives in good, clear type the leading events of each reign, is written in language suited to the comprehension of children of early age, and the events are related in such a pleasing manner that it helps to fasten the recollection of them in a child's memory. It is debatable whether a text-book on history should be placed in the hands of children so young as the diction of this book evidently indicates it is intended for, but if the subject is to be taught from a book, we know of none better adapted to the purposes than this First History.

SEED THOUGHTS FOR THE GROWING LIFE. From Robert Browning and Others, by Mary E. Burt. Price 20 cents. The Colegrove Book Co., Chicago.

This little manual is composed of gems extracted from Browning and several other authors. As selections for memorizing they are excellent, and would do much in cultivating a pure, moral tone, lofty sentiment, and a love of refined literature.

FOR YOUNG PEOPLE. The oldest and every way the best young people's paper in the country is the YOUTH'S COMPANION, of Boston,—a weekly paper, published in quarto form, and finely illustrated. It grows fresher as its years increase, and has been familiar to us for a generation. It has perpetuated itself and swelled its subscription list to 350,000 by the generosity of its publishers and the ability with which it has been conducted. We know a pair of bright eyes that snap every week at sight of it. The publishers will send your sample copies, or will send you the paper every week to January, 1897, if you send the subscription price, \$1.75 now.

DOMESTIC HYGIENE by George Wilson M.A., M.D., edited with notes by J. G. Richardson M.D., P. Blakiston, Son, and Co. Philadelphia. Williamson & Co. Toronto.

This is an English work, slightly Americanized. It is full of sound sense, clearly expressed in language which people in general can easily understand, for, though written by one doctor, and edited by another, it is free from all professional technicalities.

Notwithstanding this, the book is strictly scientific in tone, and presents the most advanced thought in hygienic matters, except perhaps in one respect; and this exception is the liquor question. On this subject it takes the comfortable old English view held by Prof. Goldwin Smith, and others in this country, that temperance does not imply total abstinence, setting forth how much beer, wine, or spirits a man may drink every day without injury. However, the general conclusion of the author is that abstinence is preferable, and, if residing in Canada, Dr. Wilson might perhaps, vote for the Scott Act.

In regard to bathing, the author, like most old country people, is an advocate of a cold bath on rising in the morning. This will not suit the average Canadian. He is not the full-blooded, over-fed, feverish sort of creature that the Englishman is, and does not need refrigeration at sunrise all the year round. The book does not sufficiently advocate the hot bath which is far superior in every respect to the cold bath. Nor does it sufficiently condemn the tepid or luke-warm bath which is now regarded as peculiarly relaxing.

Still no one can read this volume without benefit. It has much of the plain practical sense of a book that was once very popular and very useful in English households, Dr. Buchan's Domestic Medicine. Dr. Wilson deals however with the prevention of disease rather than with its cure.

The Hygienist is not a man to be loved. He is usually wondrously skilled in death rates, drains, cess pool traps and similar revolting subjects, and he is apt to be a monomaniac in regard to dirt. Dr. Wilson's book deals with these and all kindred matters with rare taste and judgment. His advice to people about to build or buy homes for themselves is especially valuable. There are also important chapters on the prevention of zymotic diseases, food and diet, exercise, recreation and training, cleanliness and clothing, hereditary influence in insanity, cancer, and scrofula. In fact the whole book is characterized by practical wisdom—the outcome of profound study of the physical needs of humanity, by a man of broad views and deep and tender sympathy. The American edition is beautifully got up on good paper, with clear type, &c., and is well worth the price (\$1.00).

DR. WATTS' IMPROVEMENT OF THE MIND. Edited by S. N. Fellows D.D., of the State University of Iowa.

This is a new edition of the above work, published by A. S. Barnes & Co., New York. Price 75 cents. All of the original book that was of a theological character, or that applied more especially to the age and country of the author, has been eliminated. A very full table of the contents has been added, and throughout the work leading ideas have been emphasized by the use of larger type. Every student, especially if he be a teacher as well, should read this work. We are very prone in our eagerness for the new, to overlook what is really valuable in the old. It is worthy of remark that, although the first edition of this work appeared more than one hundred and fifty years ago, yet we find a modern educationist writing as follows regarding it: "Watts' little volume cost him twenty years of capital thinking, and it is still the most comprehensive, most suggestive, and best of its kind. It is not only unequalled, but incomparable, so far below it in my estimation, are all its competitors." Perhaps some will think this writer too enthusiastic in his praises. Be that as it may, we believe no one who reads this little book will differ from us, when we say that the publishers have rendered valuable service in putting forth this attractive edition of an almost forgotten book.

A music seller announces in his window a sentimental song, "Thou hast loved and left me," for three cents.