

3. Since it takes half a day longer to complete the work when the boy works the first day, the man must do twice as much work each day as the boy.

∴ the boy in 1 day does $\frac{1}{3}$ of the work, and the man in 1 day does $\frac{2}{3}$ of the work.

Both in 1 day do $\frac{1}{3}$ of the work

Both do $\frac{1}{3}$ in 1 day

Both do $\frac{1}{3}$ in $\frac{1}{2}$ day

Both do $\frac{1}{3}$ in $\frac{1}{2}$ days = 4 days. Ans.

R. H. C., Bruce Mines.

4. Use the symbols, b for one day's work of boy, and m for one of man. Then the series of alterations stand thus :—

1st.— $b, m, b, m,$, etc.

2nd.— $m, b, m, b,$, etc.

Take the first b from 1st., and the two series now are similar, but 2nd. is $\frac{1}{2}$ of one of the symbols longer. (See question).

But a symbol b was taken from the 1st., ∴ this b must form the equivalent for the extra half symbol of the 2nd.

Now it is evident this extra $\frac{1}{2}$ symbol cannot be $\frac{1}{2}b$, for then b would be equal to $\frac{1}{2}b$, ∴ it must be $\frac{1}{2}m$, that is $b = \frac{1}{2}m$, or 1 day's work of boy = $\frac{1}{2}$ day's work of man. The remainder of the solution is unnecessary.

A. P. W., Simcoe.

In No. 37, Oct. 15th, 1885. "STUDENT" gave the following equation. It was not original, as we recollect having seen it some years ago. Our readers favored us with various solutions and "STUDENT" seemed satisfied, judging from his silence. We have seen another solution, which we clip from an American contemporary, *The Moderator*, and as it appears to be very neatly worked we reproduce it for the entertainment of our mathematical friends :

$$x^2 + y = 7 \quad (1)$$

$$x + y^2 = 11 \quad (2)$$

$$y = 7 - x^2 \quad (3)$$

squaring $y^2 = 49 - 14x^2 + x^4 \quad (4)$

substituting in (2) $x + 49 - 14x^2 + x^4 = 11 \quad (5)$

arranging $x^4 - 14x^2 + x + 38 = 0$

factoring $(x-2)(x^2+2x^2-10x-19) = 0$

dividing by 2nd factor $x-2 = 0$

$$x = 2$$

$$y = 3$$

J. M. BALLOU, Otsego.

The following problems, for which I have solutions, will, I think, be found useful to those preparing for teacher's examinations.

Factor :—

I. $a^2(b-c)^2 + b^2(c-a)^2 + c^2(a-b)^2$.

II. $a^2b^2(a-b) + b^2c^2(b-c) + c^2a^2(c-a)$.

III. $a^2(b-c) + b^2(c-a) + c^2(a-b)$.

IV. $ab(a-b)^2 + bc(b-c)^2 + ca(c-a)^2$.

V. $(a-b)^2(b-c) + (b-c)^2(c-a) + (c-a)^2(a-b)$.

W. W. IRELAND, Pefferlaw.

Teachers' Association.

NORFOLK.—The teachers of Norfolk met at Simcoe on Thursday and Friday, the 4th and 5th February. There was a large attendance both days. Dr. McLellan took up the subjects of "Literature," "The Art of Questioning," and "The Training of the Language Faculty," and on Thursday evening he lectured to a large audience of teachers and others on the subject "Critics Criticised." His services throughout were highly appreciated by all. In addition to the foregoing, some good work was done by the teachers of the county. Mr. W. A. Phillips took up "Simple Equations" (with a class). A. G. McKay, M.A., gave a valuable paper and drill on "Orthoepy and Phonic Spelling." Mr. J. L. Buck contributed an excellent paper on "Discipline." Mr. E. H. Carpenter, in his address on "Music in Schools," gave some good hints on the subject. Probably the impression made by this address influenced the teachers in their choice of a President for the year. D. S. Paterson, B.A., very profitably discussed some extracts from one of the educational works in the Institute library. Dr. Wadsworth, I. P. S., gave a practical and timely address on "The Teaching of Writing." The Question Drawer was in charge of Messrs. J. T. Carson and A. Bridge. The treasurer's report showed a balance of \$60 on hand. The following officers were elected:—President, Mr. E. H. Carpenter; vice-president, Mr. A. C. McKay, M.A.; secretary, J. W. Stitt; treasurer, W. H. Smith; corresponding secretary, Miss E. Wells; delegate to Provincial Association, Dr. Wadsworth.

Literary Reviews.

INTRODUCTION TO THE LANGUAGE AND VERSE OF HOMER. By Thomas D. Seymour, Professor of Greek in Yale College. (*Dos ut. Ginn & Co. any, 1884.*) p.p. 101. Cloth 60 cts. Paper, 45 cts. This book is one of the "College Series of Greek Authors." It deals principally with Homeric style and syntax, dialectic forms and metrical peculiarities. The work will be perused with deep interest by every classical reader, although every page is readable, the chapter on Homeric Style is the most valuable and attractive. We know of no treatise that deals with the subjects of this little book with equal clearness and attractiveness. No student of Homer, to say nothing of teachers of Homer, can afford to be without it.

PLATO'S APOLOGY OF SOCRATES; AND CRITO. Edited by Louis Dyer, assistant Professor in Harvard University. Boston: Ginn & Co. 1885. 204 p.p. Cloth \$1.25, Paper, 95cts. This is another book of the already famous "College Series." It is a scholarly Introduction of 54 pages which gives a brief sketch of Greek philosophy, an account of Socrates' life and character, a well written life of Plato, analysis of the "Apology" and the "Crito," and a valuable addendum on the Athenian Courts of Law. The foot-notes are neither too many nor too few. The text, as in all the books of this series, it is a delight to behold. No myopist can follow the study of these "College" books.

EUCLID'S BACCHANALS. Edited by J. T. Beckwith, Professor in Trinity College. Text Edition Boston: Ginn & Co., 1885. p.p. 54, Paper 20 cts. This little work also belongs to the "College Series." It contains only the text of the play and is intended for use in the classroom and at examinations. An edition with notes is also published similar to the "Plato." Ginn & Co. are giving a new and rich lease of life to classical study in America by the neat and scholarly publications which they are pouring out.

OUTLINES OF MEDIEVAL AND MODERN HISTORY 749 p.p. by P. V. N. Myers M.A. Ginn & Co. Boston. \$1.60; Introduction. Teachers who daily read this excellent book will catch the rare charm of its simple, graphic, yet thoroughly judicial style. They will soon get hold of the typical method of treating history so as to make it a living power in their classes, and will insensibly acquire from it the art of weaving the essentials of an outline into well connected and descriptive narrative. After careful examination we pronounce this the best school history of the kind that has been brought to our notice. It has indeed great excellencies. The maps and the typography are superb, but the general style of the matter rivals Freeman's best writing and is a model of excellence. The story is brought down to 1885 and the closing pages on "The New Age" are of special interest.

BARNES HISTORICAL SERIES, A BRIEF HISTORY OF THE UNITED STATES. A. S. Barnes & Co., New York & Chicago; Williamson & Co., Toronto. 12mo. Illustrated. 362 p.p. 1885. Price \$1.25.

Unlike the great majority of brief "histories" this book can be read. It is an astonishing fact that though designed for a School History there is in its substance, its style, its method, its pictures and its maps that which chains the attention of him who opens it, be he old or young. It is a difficult thing to condense history without robbing it of all human interest. The dead past is dead. Talk of its heroes, its conquerors, its thinkers, its knaves or its fools as we may, earth and ashes is all that is left of them. "The dull cold ear of death" heeds not our censure or our praise. When we sympathize with historical characters, we are the victims of an illusion. Our hearts warm, our admiration is kindled, but it is all for a shadow and the transient emotion vanishes as our self-consciousness asserts itself. So too even the great struggles of history are now dead issues. The momentous result fought for by our forefathers is no longer in the dim and cloudy future. The event has issued forth from the womb of time and the problem has become a fact.

To write history therefore a scenic artist is needed, one who can people our imagination with the shapes of things that once were, that can clothe the bleaching bones of Ezekiel's Valley, and rouse oblivion from her long, long sleep. Parkman, Macaulay, Prescott, Carlyle, have done this. But to accomplish it in a brief short history is possible only in a minor degree. The canvas is too small for the picture.

Another element in history is perspective; to obtain a just view of a wide landscape we must look at it from a distance. Montreal must be viewed from the mountain. Hence it is that writers such as those named do not give just historical news. The reader of the "Jesuits in North America" or "The War with Pontiac" has very shadowy notions of the comparative importance of the scenes so vividly depicted. It is in this respect that the "Brief History" before us is especially valuable. The whole history of the United States is divided into six great epochs: 1. Early Settlement, 2. Progress of the Colonies, 3. The Revolutionary War, 4. Development, 5. The Civil War, 6. Reconstruction. The events of each epoch are grouped so as to present to the student a clear view of their relative importance.

Nor is Geography, the handmaid of history, neglected. A large number of very beautiful maps and diagrams of battle-fields are supplied rendering it easy for the reader to keep the sense of locality constantly present with him as he reads. There are also numerous illustrations most of which are of artistic value. There is also a blackboard analysis of each epoch, which would be very useful to teachers. The notes scattered copiously through the work are very interesting and the appendix contains the "Constitution of the United States." The book is beautifully bound in cloth and gilt and is certainly a very complete and attractive volume.

The defects are such as only a foreigner would notice. The American Eagle is not a modest bird, nor a truthful one. We have always regarded Lundy's Lane and Queenston Heights as Canadian victories. This History however throws new light on the matter and claims the victory for the Americans. So with other battles, the Eagle carries all before him. The American Nation is big enough and strong enough to render this tonic of lies superfluous. The moral health of young America hardly needs this false puff longer.