

He thinks that the Head Masters and Boards of Trustees are unanimous in favour of professional training for Assistant High School Masters. He lauds the present mode of distributing the high school grant, and concludes, *mirabile dictu*, with the statement that in the department of mathematics our schools are superior to any he has seen, and that in general standing they are inferior to none.

Mr. Inspector Hodgson, in a very brief Report, ascribes the "failures" at the Entrance to the bad writing of the candidates. He also asserts that the teaching of reading in the High Schools is very much neglected, and that the art receives scant attention in the Public Schools. He finds few schools equipped with books of reference, and favours the preparation of a catalogue for the use of Masters and Boards.

He is in favour of a uniform fee of \$10 per annum for all High Schools and Collegiate Institutes. He, too, thinks that the High Schools and Collegiate Institutes are, in the main, in a healthy condition.

RECEPTION DAY NO. III. A Collection of Fresh and Pleasing Dialogues, Recitations, Declamations, and Short Pieces, for Practical Use in Public and Private Schools. Issued quarterly. E. T. Kellogg & Co., Educational Publishers, 21 Park Place, New York.

THE object of this collection is indicated by the title. It is a miscellaneous collection of dialogues, recitations, etc., some of which are suitable for use in schools, and some, on the other hand, highly fit to be thrown into the school stove. We find, side by side with Montgomery's "Our Country and Our Home," and similar extracts of real merit, such pieces as "Discussion of the Question, 'Do Animals Think?'" by the Club of the Ancient Order of Screaming Bald Eagles," the title of which hints at the contents, found on examination to be noisy, vulgar trash, varied with slang. Books which are to be committed to memory should be faultless in moral tone as well as correct in literary style. We have no doubt that the intention of the compiler was good; at the same time we cannot unreservedly commend his taste. If he

would revise the book and omit the slang, etc., we should be in a position to recommend it heartily.

PRINCIPLES OF THE SOLUTION OF EQUATIONS OF THE HIGHER DEGREES, ETC., ETC., by Professor G. P. Young, LL.D.

IN the current volume of the *American Journal of Mathematics* there appear two memoirs by Professor G. P. Young of University College, Toronto. The first and more important of these is entitled "Principles of the Solution of Equations of the Higher Degrees, with Applications." In it is given a complete analysis of the conditions of the algebraic solvability of equations of degrees higher than the fourth. The results obtained are, 1st: That the general equation of any degree higher than the fourth cannot be solved algebraically; 2nd: that the root of a "solvable" equation must be of a certain assigned form; 3rd: that there are two classes of solvable equations. The peculiarly technical nature of the subject forbids our entering into details, but we may say at once that Professor Young's discussion of this famous problem is extremely clear and even simple, when we take into account the generality and difficulty of the question. In the course of the investigation, there is revealed the exact nature of the flaw in Abel's "proof" that the higher equations are not in general solvable by radicals, a proof the validity of which has been upheld by many able algebraists and questioned by as many others every whit as able. Professor Young finds that equations range themselves in two distinct classes; Abel's investigation applies to only one of these.

The second memoir bears the title "Resolution of Solvable Equations of the Fifth Degree." It contains, 1st: A statement of the criterion of solvability of any given quintic or equation of the fifth degree in one unknown; 2nd: the resolution of certain quintics which include as particular cases all those hitherto known as solvable; 3rd: a proof that if any algebraic relation be assumed to exist among certain "auxiliary" expressions the corresponding quintic can be solved algebraically. In the research for the criterion of solvability,