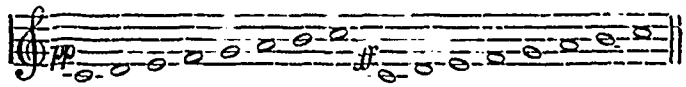
## TONE TALKS WITH THE TODDLERS.

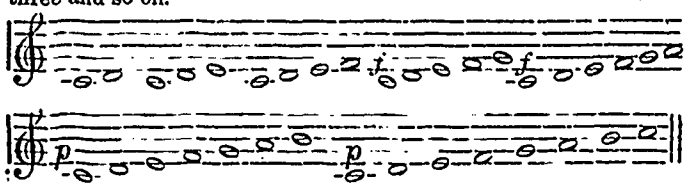
NO. II.

BY MISS GEORGINA RICHES.

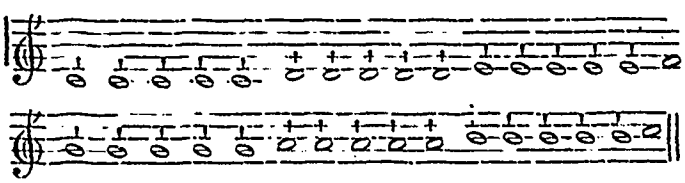
Whom were we talking about, yesterday, Jenny? "Miss Fa, the discontented girl, and Sol, the bright-eyed boy who cut his initials S. C. on the ladder; La, the poor beggar-girl who cried bitterly; Si, the little girl who tried to cheer her and pointed up to the blue sky, and Master Do, who was so inquisitive that he left his little short step and jumped half-way up the ladder, so that he might see and hear all that was going on." Thank you, Jenny. Suppose we have a party to-day, and invite all these little boys and girls to it; it will be a musical party, you know, and will have the blackboard for the drawing room. Now, Willie, will you make the seats for them to sit on? Johnnie, take the chalk and put on Sol's initials, and Mary, show the little girls their places; Fred bring in the boys and get them seated, and then our party will begin. While Mary and Fred are attending to our visitors, the class may make the party on their slates. Now, as Mary and Fred have finished, we will take a peep at our guests. You see they are well behaved, each one keeps his or her own place. They are ready to commence their little songs, so now, as I point to them, you sing *pp.* what they say. Very good, now change to *ff.*



Thanks. Now, we will play at jumping, This is the way: Go up one step and jump down; then two steps and jump down; then up three and so on.



Isn't that a nice game to play at? Did you ever drop a marble on the stairs, Johnnie? "Yes, ma'am." What did the marble do? "It rolled down the stairs." Tell me what the marble said as it touched each step? "Tick, tick, tick." Now, we'll make that tick. Here it is. When you see that mark under or over our little friends, sing in the short, quick way that the marble ticks:



Now, as we are tired of jumping, we'll have a song. Let us sing "Old Mother Hubbard" to these tones. Well, Willie, what question do you wish to ask? "I thought their names were do, and re, and mi." What is your name? "Willie Robertson." You have two names; so have our friends; sometimes we'll call them tones, as that is their family name.

## HOW TO TEACH GEOMETRY.

BY WILLIAM A. DUKE, CHATHAM, N. B.

The following is the substance of a paper read by Mr. William A. Duke before the Educational Institute, Northumberland Co., N. B.

To a young and vigorous mind, filled with a love of new ideas, Geometry should be one of the most attractive and suitable subjects. The constant occurrence of new and important truths which it presents, and their beautiful and systematic development must, if properly taught, be of great interest to students. Every one who has applied himself earnestly to the study of geometrical truths will testify to the great satisfaction to be derived from it.

Why is it then that we so often find even our most forward and persevering pupils possessed of a decided dislike toward this branch of study? We have all experienced the difficulty of arousing any emulation or interest among children in a matter which has the nature of geometry. They have rather to be dragged along than induced to proceed from any feelings of interest.

The cause of this dislike lies in the method of teaching. In the hands of some, this branch, in itself so apposite to the minds of the young, loses all its charm. Like a fair field, under the management of ignorant cultivators, it presents an unattractive and even forbidding appearance. There are elements essential to a true method of teaching geometry which are overlooked where pupils have an aversion to the study. The lack of these elements counteracts the natural advantages of the branch.

One of the most important principles in the teaching of geometry often violated by teachers is that, *the Learner must not clearly apprehend the truth he is about to prove, but he should have a knowledge of it as a fact before he attempts to reason upon it.* This is the order of nature. Long before theorems could be proved true, their practical significence could be well understood. The fact that the circumference of a circle is a little more than three times its diameter; that any two sides of a triangle are together greater than the third side, and many others, were known and applied before they became a part of geometrical science. As it has been with the science in its development so, teaching it, the pupil should be first made acquainted with the truth by experiment. Wormell, in his excellent text-book on geometry, keeps this principle constantly before him. No reasoning is begun until a sufficient fund of observations has first been accumulated. It is this part of Wormell's text which is best understood and most frequently ignored. Very many teachers entirely overlook it, considering it paltry and time-wasting. To give their class a conception of the truth about to be proved, they confine themselves to a formal enunciation which is often couched in language too general and formal to awaken in the pupil s mind any corresponding idea. He learns the words but they are as chaff to him, from which no mental nutriment can be obtained. The definitions are learned by rote simply, and as soon as they are thus memorized the class is plunged at once into demonstration. The truth stated in mere formal proposition is not sufficiently clear and will not serve the purpose designed, but is fitted to produce mechanical work only and barren minds. How often have we been required again and again to supplement these formal statements of truth by verbal and extempore explanations? Even with such illustrations, which must often be of a common-place and unsatisfactory character, the pupil hardly knows what he is about while proving, frequently gets himself confused, and finally ends by learning the whole thing by rote. Carefully prepared paraphrases to the definitions and enunciations, illustrations, explanations, everything by which the truth may be conveyed to the child intelligibly and grasped by him should be sought for and employed.

As an example of the correct treatment of definitions I will insert a method of teaching the idea conveyed by the word *triangle*, copied from Wormell's Geometry.

Mark upon a sheet of paper the position of a point *A*, then at that point form an angle by drawing from *A* two straight lines *AB*, *AC* in different directions. Take a point *B* in *AB*, and a point *C* in *AC* and draw the line *BC*. *BC* and *AC* will form angle at *C*. and *BC* and *AB* will form an angle at *B*. The three straight lines form a closed figure having three angles and is, therefore, termed a *triangle*.