

first text books in the school of life? I believe so, most earnestly, and am astonished to learn that in all the public schools of this state, with a population of three millions, only forty-one scholars were last year studying Botany.

The best text-book, for children of ten or twelve years of age, with which I am acquainted, is Dr. Gray's, *How plants grow*. But a better book may be readily imagined for children of from six to twelve years, founded on the model of some papers in "Evening at Home" on Umbelliferous plants, Cruciform plants, the Pulse family, the Grasses, &c. In these papers, Dr. Arken and his sister have seized, as if by prophecy, the practical application of Agassiz' views of classification. According to our great Zoologist, families are characterized by form. And inasmuch as form is the earliest object of intellectual apprehension, children will appreciate the relationship of family, sooner than that of class, or genus. I have therefore in the oral teaching of botany imitated the authors of Evening at Home, and given the child (before he could grasp any facts of physiology, or recognize generic identity) the names of families, and the striking traits that characterize them. The rayed Compositæ, the winged Papilionacæ, the square stemmed mints, the didynamous Scrophulariacæ, the polyandrous roses, the cup bearing oaks, the cone bearing pines, the hexandrous lilies, the grasses, the leafy ferns, the mosses, the lichens, and many other families, or orders, (for it must be confessed that orders and families are in botany less easy to distinguish than in zoology) may be readily made familiar to a child of less than ten years old; provided the teacher is acquainted with them, and appreciates these realities of God's thought, these ideas in the text-book of Nature, above the mere modes in which man spells and writes his interpretation of them.

Around every school-house in America, and within easy walking distance for the scholar (making only the proviso that swine are not suffered to run at large on the road and in the woods), hundreds of different species of flowers may be found during the course of the school year. In many schools the pupils are accustomed to bring in bouquets to the teachers, and a single word from the teacher would induce them to bring in specimens of every kind of plant. Let the teacher take up each of these plants as the basis of a brief object lesson,—impressing upon them of artificial learning only these three words, the generic name, the common name, and the name of the family,—and leading them to as much observation, or giving them as much real knowledge as the time may permit.

For example a leaf of clover is brought in. The genus is *Trifolium*, the common name of the genus is clover, and it belongs to the pulse family, with peas and beans, and locust trees.

These are the three things for every pupil to remember. Then if the flower is brought in, the children may examine it, be led, by actual dissection, to find the likeness to the pea blossom, the five partially united sepals, the two united petals forming the keel, the two wing petals, and the standard. Or you may tell them of the different species of clover, the red, and the white, and the yellow, and the rabbit foot. Or you may describe the various sub-families, tribes and sub-tribes into which the family is divided, and the great extent and variety of the field thus enclosed,—or the multitude of dye-stuffs, and precious woods, and medicines, and articles of food obtained from them. But be careful not to confuse the memory and imagination by too much of this verbal description. Rather bid them be upon the watch to find new plants of the family, and to bring in, without your previous description, the peas, and beans, the locusts, and melilots, and red birds, and beggarsticks, and vetches which they may in the course of the season discover to have papilionaceous flowers.

The most common flowers are best, because you may then have each pupil in the school provided with a specimen, and all simultaneously engaged in dissecting, under your direction, the flower, or examining it without dissection. It is well for the teacher to be provided with two or three cheap magnifying glasses for the use of the scholars in looking at the minuter part. It will of course be necessary for the teacher to be provided with Dr. Gray's Manual, and it will be better for her to be provided also with other books, such as his Systematic Text Book (both the oldest and newest editions), Bigelow's Plants of Boston, Emerson's Trees of Massachusetts, Tuckerman's Lichens, &c., &c.

But if the teacher has neither taste nor time, nor means to go largely into the study, let her at least teach the pupils to use the Popular Flora in *How Plants Grow*,—and herself use the larger Manual.

But it may be objected that there is no time for this study of Botany in the primary schools; that there is no reason if Botany is introduced why Zoology should not be also; and that there is

danger of crowding out the fundamental branches of Reading, Writing and Arithmetic.

I reply that reading cannot be taught mechanically, and that the enlargement of the child's mind and heart is the surest way, in the long run, to improve his reading; that Arithmetic can be as thoroughly and perfectly mastered in two winters as it ever can be,—and that a knowledge of plants is as important for the child as any thing that can be taught him. As for Zoology, it should be taught to some extent in early life, but Botany certainly precedes it, and is easier for the child;—the plant stands still to be caught and examined.

Flowers always touch a child's heart, and never become altogether common place even to the hardened adult. A little study of Botany gives every plant the interest of a flower. As I walked one day through Arch St., Boston, I saw between the bricks of the sidewalk, in that frequent thoroughfare, a number of little plants, and counted, I forget the precise number, but nearly a dozen, different species. It was like meeting a dozen country friends. Each little plant awakened some pleasing recollection, some familiar association, that swelled the gladness in my heart. And if a knowledge of plants was thus available to the soul's life in a passenger upon the brick sidewalk of a crowded city, where is the place in which it can be useless?—*Ohio Educational Monthly*.

### Night Schools.

There are now in operation in this city forty-two public evening schools, about half of which are for males, and the remainder for females. The number of teachers employed is four hundred, chiefly selected from those engaged in the day schools, who, by enlarging the sphere of their duties, in this way receive a slight addition in salary. The "local boards of school officers" nominate the night school teachers.

The object of the evening schools, as distinguished from the ordinary ward schools, is to attract the voluntary attendance of a class of persons whose employments during the day preclude their enjoyment of the daily course of study, and it is a rule that none who attend the day schools shall be admitted at night. We must, then, believe that all those processions of little children which form so large a part of the attendance at the night schools are engaged during the day in some industrial avocation, and are necessarily unfit to be kept up late in the evening to drag wearily over unappreciated lessons. The City Superintendent's report wisely says: "In my last report I assigned some reasons for arriving at the conclusion that children under twelve years of age should not be permitted to enter our evening schools, and another year's observation and experience have only confirmed me in the correctness of the opinion then expressed."

The attendance at the night schools is to a large extent composed of foreigners and their children, who are mainly ignorant of our language, and are taught its peculiarities by teachers of their own nationalities, who have become thoroughly familiar with it. In the German classes especially, the utmost diligence is observable, and it not unfrequently occurs that elderly men, erudite in the literature of their own countries, will, immediately upon taking up their residence here, accept with avidity the advantages offered in the night schools, and study with a determination which speedily results in the most satisfactory advancement.

The opening night of a term in the evening schools is a period dreaded by the teachers and order-loving school officers. It is estimated that at least three weeks are required to "weed out" the rebellious spirits, who make the tour of the schools in order to test the quality of the teachers' endurance, with no higher aim than their own amusement. Their tests consist of various feats of agility performed during the momentary absence of the teacher, such as piling up slates and jumping upon them, a process which interferes with the future usefulness of these articles; tricks of legerdemain and various annoyances, ingeniously devised and pertinaciously adhered to. The schools soon get rid of these rebellious spirits, and the work begins in earnest.

Boys and men, of ages ranging from seven to sixty years, attend the better conducted schools; the "old boys" often proving themselves the hardest students. In one school there is a class of females, whose ages range from sixteen to thirty years, and whose mien and dress indicate their employment in the cleaner trades, such as mantilla making, shop-tending, &c. The course of instruction in this school is purely oral.

A class of boys called "tobacco strippers" attend the evening schools, and are recognizable with moderately developed olfactory