ing about reform, not as parties to either side of a dispute on questions of scientific fact about alcohol, nor from the standpoint of pedagogic theory and practice, but because the subject is one which profoundly affects social conditions and is closely related to a more intelligent individual and social American life."

F. W. B.

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NATURE STUDY IN THE GRADES.*
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The child in our city school leads a life essentially artificial. Too often is his home an apartment house or flat; he has no yard; his only playground is a gymnasium, and he seeks to relieve the nervous strain under which he lives by turning to the theater or social functions for his recreation. This child is often anaemic, is selfish and irritable, and his interest in school work is largely perfunctory.

The country child coming in to the district school, while of sturdier frame than his city cousin, is too often not one whit better off. So many times patterning after his elders, he measures everything in life by the standard of dollars and cents and has only indifference or contempt for anything which does not possess a clearly defined utilitarian value.

Alas! How sad it is to think that so many of both classes reach years of maturity and yet are, as Whittier so truly says,

"Blind to the beauty everywhere revealed,
Treading the May flowers with regardless feet;
For them the song sparrow and the bobolink
Sang not, nor winds made music in the leaves;
For them in vain October's holocaust
Burned, gold and crimson over all the hills;
The sacramental mystery of the woods."

*Read before the U. P. Michigan Educational Association, October 30.
How much of mensuration or history or grammatical construction do we expect our present pupils to remember fifteen years, say, from this time? Not very much, surely, and if we do, we are as certainly doomed to disappointment; but the nature study we gave them will, if it has been well presented, remain, and will have proved the foundation for a series of delightful observations and investigations that will continue through life. Oh, forever blessed is that teacher who gives to the child the golden key that unlocks the great sealed volume of Nature's mysteries and teaches him to read, if only in part, her never-ending story!

I have shown a sequence of topics for nature study in the grades which I have used for several years, either in whole or in part.

Taking up the other phase of the topic—some principles to be observed, and ends to be achieved—under the head of principles to be observed, I would say,

First—Be very slow to tell the pupil anything he can find out for himself. While our knowledge of things in general is necessarily largely second-hand, yet "helplessness is too often the direct product of too much help," and the child that digs the thing out by himself, makes his own observations and then draws his own conclusions aright, has become a real discoverer and is thrilled and uplifted with the joy of his achievement. Don't, e.g., tell a child that the ox or cow in grazing grazes out from itself, while the horse in feeding grazes in toward itself; or that the cow, after lying down, gets up with the hind quarters first, while the horse gets up just the reverse of this—train him to use his eyes and to see these things for himself.

Second—Be candid and straightforward with your pupils and be ready to say "I don't know." Do this, if only in your own interest. They will surely find you out, and a candid admission of your lack of knowledge enables you to retain their respect. They will not forget and will be slow to forgive an attempt at deception. And remember that your "I don't know" of today may easily be "I know" tomorrow. Be an earnest student along this line, and impress your children with the fact that you are growing, and therefore can consistently expect growth of them.
Third—Do not confound nature study with science. The terms are not synonymous, and the teaching of the one is radically different from that of the other. Science is classified knowledge involving laboratory work, the microscope, higher mathematics, characteristic technical terms or a special nomenclature, etc. Nature study requires none of these. In your nature-teaching seek rather first to be full of your subject, and then to make your simple but really scientific treatment of it attractive to the child's unscientific mind. It is not essential that he know that the feeler of a crayfish is an antenna or the gill plate of a brook trout is the operculum. It is not especially essential that he be able to indicate the plumule or the cotyledons of a bean plant, but what is of most vital importance is that in some way you inspire him with a love for investigation, that you awaken him to a keen appreciation for and interest in the wonders and mysteries about him on every hand.

With this very brief discussion of three principles to be observed, I will call your attention to a few ends to be achieved.

First—Increased mental power. No nature study worthy of the name can be long pursued without growth in observation, judgment, and the power to think clearly and continuously along one line for a considerable time. The value of this latter accomplishment to the child can hardly be overestimated.

Second—Promotion of health. While this work is carried on to a certain extent in the school, the work in the schoolroom is merely suggestive of the broader and better line of work which can and should be carried on in woods and fields. This means often tired muscles, keen appetite, and the joy and exhilaration that come to one where skies are blue and pastures green and the birds sing in the branches.

Third—The awakening of the aesthetic nature. Who among us will attempt to fathom all the avenues of pleasure that open to the child when he has been led to a genuine appreciation of the beautiful! And what a wealth of beauty all about him! Teach him to study sunrise and sunset; he probably never has seen the one nor closely watched the other.

Who will attempt to say all it may mean to the child if you
can inspire him to go forth while the stars are yet shining and when, as Edward Everett says: "Hands of unseen angels shift the scenery of the heavens, and slowly the mysteries of the night resolve themselves into the glories of the dawn."

Encourage him to study the ceaseless panorama of the clouds, moonlight effects, dew, frost and snow.

Fourth—The development of the ethical nature. What a complex problem does your school present to you! This child is impatient, that one selfish, another conceited, some lack determination and the indomitable will that conquers difficulties. Yet the woods and fields teach their helpful lesson to each of these if you will only take them out and have them "list to Nature's teaching."

The bonds of sympathy and good-fellowship established will help both pupil and teacher.

In the soul's best moments he will turn to you as confidant and friend and in no other way that I know can the problems of discipline be solved so satisfactorily.

These hours of reflection will surely lead the child to broader views of life, clearer convictions of duty, nobler conceptions of God.

But I am loath to close without a word as to what nature study will do for you, my fellow teachers. Much as it means to your children it means infinitely more to their instructor. The opening lines of Thanatopsis are ever true.

Remembering that "God made the country and man made the town," steal a frequent hour far from the haunts of men and there, with only your "kindred of the wild" as fellows, think out life's problems and fight your battles with self.

Forget your cares, recount your blessings, nobly resolve, and so walk on and on and on, until you can turn back tired but happy, wearing "the soul's calm sunshine and a smile at heart."