

students was limited to those who could be comfortably seated in the lecture-room of the Boston Society of Natural History, and properly supplied with materials.

The instruments used in these courses were of the simplest character: in mineralogy, for instance a small paper tray containing the scale of hardness, another to hold the half-dozen specimens illustrating that lesson, a pen-knife, a hammer, a file, and a small horse-shoe magnet. The materials were laid in numbered compartments before the lesson began, and each person was requested to follow the instructor as he described any special part or characteristic or made any particular experiment. Frequent questions were also asked of the audience, and permitted in return.

Statistics of the second year's work showed an increase in the average attendance to eighty-four; that the specimens distributed had been in as many as fifty instances kept together, and were being actively used in the instruction of pupils. It was ascertained during the present year, through written questions addressed to the teachers, that fully seventy-five per cent. of those who applied for tickets to the lithological course had also been through the mineralogical course, and fully thirty per cent. had attended the preliminary courses of the first year.

Mr. Burbank has undertaken some excursions, in which rocks were examined in the field, and observations made as to their mode of occurrence and characteristics in mass which could not be shown in the lecture-room.

*Value of the Study of Natural History.*—The reasons for the unexpected success of these experiments are many, but a few of the most prominent will be sufficient for the limits of this brief review. Personal contact with the things described creates an eager desire to know something about them on the part of the audience, and the consciousness of this stimulates the lecturer to put forth his utmost strength. This attention is held throughout with unflinching interest by the necessity of continually searching for the characteristics treated of by the lecturer, and of occasionally answering the questions asked by him.

The acquirement of a collection which could be immediately used in the school-room was, however, found to be of the greatest importance. Teachers were prepared to admit the necessity of the study of natural history, but neither proper text-books nor materials were obtainable, and they could not therefore see clearly the way in which another study could be introduced into their schools without seriously overloading the minds of their pupils.

Although we cannot claim to have solved the practical side of this question, we have endeavoured, as far as the time would permit, to show that the difficulties were not unconquerable, and that natural history not only could be made useful in disciplining the powers of observation and minds of the pupils, but that it was really the proper ground-work for the intelligent comprehension of a large proportion of other subjects.—*Atlantic Monthly*.

## 2. VILLAGE MUSEUMS.

It is always refreshing to take up White's *Selborne*, to enjoy through his eyes the "innocent brightness of a new-born day," to let him discourse to us about the pansy at our feet, and teach us to sympathize with each common sight. Three generations have now delighted in his pleasant gossip, yet the book is as fresh as ever. One edition after another replaces the well-thumbed copies in country libraries; only this year, in fact, a really beautiful illustrated one has been brought out. It can never become obsolete any more than Pepys's *Diary*. Gilbert White in his country retirement, and Samuel Pepys immersed in all the bustle of London business and frivolity, alike kept a diary; and although the one may chronicle the doings of a Court, and the other the variations of the weather, each book is valuable for the same quality. Both these men were keen observers of what was going on around them, both tell us with simple accuracy of what they saw. The courtier collected materials which have become history, the parson made observations which have materially assisted the study of natural history. White's *Selborne* is valuable, partly because it is not written to support any theories, and there is no attempt to twist facts so as to make them dovetail into some pet hypothesis. No doubt a few assumptions made by the author have not been borne out when further light was thrown on the subject, but he never fell into the same sort of mistakes as Audubon. His vanity never carried him away, and there is no straining after fine writing. The most apparently trivial circumstances are introduced in so charmingly simple a manner that we cannot wish the least of them omitted. Why is it that nowadays we find so few observers of this simple but reflective sort? It would now certainly be impossible to find a man of education who, like Gilbert White, had never seen a modern map of Scotland, and who hoped when he did

that he might find Lord Breadalbane's seat and "beautiful policy" recognised by the map-maker as "too curious and extraordinary to be omitted." But the higher education of to-day keeps the brain so busy that it has no time to use its eyes. Many a brilliant and cultivated man is full of astonishment when, as he sits on the bank of a quiet stream, ruralizing for a day's holiday, a scientific friend points out to him all the wonders that are to be seen within the space of a few square inches; dozens of different water plants, all with their distinct classes and habits; hundreds of living organisms dancing along the stream; mosses in endless variety clothing the banks, pebbles showing the geological formation of the district. He is delighted, and gets twice the pleasure out of everything from knowing a little of what it all means.

It is strange that, in country parishes at any rate, naturalists of the type of the Vicar of Selborne are not oftener met with. A clergyman's duties oblige him to spend so large a portion of his time in the open air that with a little trouble he can soon learn a great deal. When going his round of visits from hamlet to farm, through the squire's park and along the quiet hedgerows, he has abundant opportunity for studying his furred and feathered parishioners, as well as those whom he has to supply with blankets and flannel petticoats. A knowledge of grasses and the soils suitable to them does not injure him in the opinion of the farmers, however bovine they may be. Old Betty will be much more likely to listen to his exhortations if he can tell her all about her favourite herbs and where they grow. She makes wonderful decoctions, to the wrath of the dispensary doctor and the delight of her patients, who invariably form their opinion of the merits of a medicine in proportion to the vileness of its taste. Her respect for the parson becomes worship if he will partake of some of her simples and say they have done him good. Then, too, the choir would not sing worse because they were taught to distinguish the different keys in which owls hoot, or to observe how painfully discordant it is to hear two cuckoos discoursing, one in D and the other in D sharp, while perhaps a rival suitor proposes from a neighbouring wood in C natural. Above all, by interesting the children of the parish in the marvellous mechanism of all living organizations, he might do much to check that cruelty to animals which arises more from ignorance and thoughtlessness than from an actual desire to inflict pain. A child could scarcely wish to kill a fly after having seen its feet magnified, or to put out the eyes of a bird when it understood the beauty of their formation. The parson can often, like Waterston, clear the character of some of the animals which are destroyed unconvicted of the crimes of which ignorance accuses them. He may show that nature can so beautifully balance things that she may sometimes be left to select for herself what is to live and what to die, that to destroy little birds is to encourage the ravages of insects, that crows amply pay for all the corn they eat, and that barn-door owls do not suck pigeons' eggs, but help the cats to protect the stack-yard from the attacks of field-mice. There is scarcely anything which arouses a more healthy curiosity in children, or cultivates their intelligence in a better way, than teaching them to examine into the out-of-door things which they generally pass without notice. A late famous naturalist, on going to a new parish, found the school in a deplorable state. The pupils seemed so dull and stolid that it was impossible to teach them anything. He made all sorts of plans for their improvement, but the bright idea struck him one day that he would take them out botanizing on their Saturday half-holidays. The results of the experiments were miraculous, and from learning to take an interest in the number of petals appertaining to each flower, they soon began to understand their multiplication table, and reading came of itself after they had been taught to use their eyes. Pious people would no doubt be shocked if their pastor neglected Balaam's ass or Elisha's bears, and told the children of the Sunday School something about the robin redbreast that hopped round the door. The destruction of the Philistines' corn by Sampson may be more improving, but the little ones, we fear, would prefer to hear how the oak grows from the acorn, or what gives its colour to the violet. It is sad to think that an acquaintance with the anatomy of a pigeon's wing is not religious knowledge, although sound views about the plagues of Egypt are essential to orthodoxy.

There are few things which would be found more civilizing and attractive to the young men of a country parish than a local museum. It is surprising how easily it can be formed, and in how short a time it becomes, if well managed, a source of pride to the villagers. It may, of course, contain any antiquities that have been found in the neighbourhood, or the carvings which have been removed from the church during its restoration, or any brasses for which room could not be discovered except in the vicarage lumber-room. The principal things, however, to bring together are those objects which belong to every-day life. The school children might by degrees form a complete collection of the wild flowers, ferns and