trust that the time when it will be introduced into our schools will only be so far removed as is necessary for the preparation of teachers capable of imparting that instruction in the most elementary form. The only difficulty was to find teachers equal to the task; for, in

his estimation, the elementary instruction was the most difficult.

It was still a mistaken view with many, that a teacher is always sufficiently prepared to impart the first elementary instruction to those entrusted to his care. Nothing could be farther from the truth; and he believed that in entrusting the education of the young to incompetent teachers, the opportunity was frequently lost of unfolding the highest capacities of the pupils, by not attending at once to their wants. A teacher should always be far in advance of those he instructs; and there was nothing more painful than for a teacher to feel that he must repress, if possible, those embarassing questions which the pupils may wish to ask, but which may be beyond his reach.

He conceived that nothing but the inexhaustible thirst for knowledge which is imparted in human nature, enables children to sustain their interest in study, when the elements are imparted to them in the manner they are. Could anything be conceived less attractive than the learning of those twenty-four signs which are called letters, and to combine them into syllables, and then into words; and all taught in the most mechanical and hum-drum way, as if there was no sense in it! And yet, there is a deep sense in it, and there is, in those very letters, materials for the most attractive and instructive information, if it were only in the head of the teacher when he has to impart it. Let him show his young pupils how men have learned to write their thoughts in words; how the art of writing was invented; in what way it was done in the beginning; how it has been shortened in its operations, which are now so rapid that the writer follows the words of the speaker with as great certainty as if he saw them already written, and had only to copy them ; and then the child will be eager to emulate that, and will be ready to avail himself of the advantages which a possession of the art will give him over those who have it not.

But then, I say in order to create this interest in the child, it is not sufficient that he be taught mechanically, that such a figure is A, and that B, and C, and so on, but he is to be shown how men came to write the letters in that way, and that the letters are only syllables to express thoughts, and that the earliest and simplest ways of representing these thoughts was by showing objects as they are. I have been a teacher since I was fifteen years of age, and I am a teacher now, and I hope I shall be a teacher all my life. I do love to teach, and there is nothing so pleasant to me as to develop the faculties of my fellow-beings who, in their early age, are intrusted to my care, and I am satisfied that there are branches of knowledge which are better taught without books than with them; and there are some cases already so obvious that I wonder why it is that teachers always resort to books when they would teach some new branch in their schools.

When we teach music, we do not learn it by rote, we do not commit it to memory, but we take an instrument and learn to play upon it. When we would study natural history, instead of books let us take specimens—stones, minerals, crystals. When we would study plants, let us go to the plants themselves, and not to the books describ-ing them. When we would study animals, let us observe animals; and when we would study geography, let us not resort to maps and text-books, but take a class of children and go into the fields, and look over the hills and valleys, the lakes and rivers, and learn that a knowledge of the earth consists in knowing what mountains and hills there are, what rivers flow, what are the accumulations of water and the expanse of land. And then, having shown them that land, let us show them a representation of what they know, that they may compare it with what they have before them, and tell them that that is the way in which the things that they have seen may be repre-sented, and then the maps will have a meaning for them. Then you can go to maps and books, but not before you have given them some hints as to what these things mean, and what east, west, north and south are; not merely by representing them by the letters E., W., N. and S. upon a square piece of paper, with all sorts of dots upon it, one representing Spain, the other France, the other England, the other the United States, which in their estimation have about the size of the paper on which they have learned it.

I well remember that when I was a teacher at Neuchatel, I objected to this mode of teaching geography in our schools. I was satisfied it could be done otherwise, and I asked that I might have a class of the youngest children, who were admitted to the school, and teach them in another way. The Board of Education would not grant me leave, and I resorted to another means. I took my own children, my oldest, a boy of six, my girls, children of four and a half and two and a half years, one hardly capable of walking, and invited the children of my neighbours. Some came upon the arms of their mothers, others were able to walk by themselves. I took these young children upon a hill above the city, and there showed

them the magnificent crescent of the Alps standing before them, their peaks piercing the clouds, and told them how far away they were, then pointed to the hills between these, and the lake at our feet; and when they had become very familiar with all these, and enjoyed the beautiful scenery, I took from my portfolio a raised map, in which the natural features of the country are attempted to be imitated, in paste-board, and turning them away from the scene, I showed them everything represented on a small scale, and they recognized the very peaks they saw before them; they saw the lake which was spreading before them as a blue spot upon that map; and so they learned the meaning of maps, and afterwards could appreciate the map which was not even raised, but only with black and white marks representing the same features. From that day, geography became no longer a dry study, but a desirable part of their education.

I have undertaken to address you upon the desirableness of introducing the study of natural history into our schools, and of using that instruction as a means of developing the faculties of children and leading them to a knowledge of the Creator. Natural History, I have already said, should be taught from objects and not from books, and you see at once that this requires teachers who know these objects; not only teachers who can read and say whether a lesson has been committed faithfully to memory, but they must know these objects before they can teach them, and they should bring these objects into the school, and not only exhibit them to the scholars, but place them in the hands of each scholar.

Some years ago I was requested by the Secretary of the Board of Education to give some lectures on Natural History to the teachers in different parts of the State, in those interesting meetings which are known as Teachers' Institutes. I had been asked to give some instructions upon insects, that the teachers might be prepared to show what insects are injurious to vegetation and what are not, and be the means of imparting that information to all.

I thought the best way of answering the call was, to place at once an object of this kind into their own hands, for I knew that no verbal instruction could be transformed into actual knowledge; that whatever I might say would be carried away as words, and not as the impression of things—and what was needed was the impression of things. Therefore I went out shortly before the exercises commenced, and collected several hundred grasshoppers and brought them into the room, and having first etherized them, so that they should not jump about, I put one of them into the hands of each teacher. It created universal laughter. It appeared ridiculous to all. But, I have the satisfaction of saying that the examination of these objects had not been carried on long, before every one became interested, and instead of looking at me, they looked at the thing.

At first, I pointed to things which could not be easily seen. They said, 'These things are too small to be seen.' I replied, 'Look again, and learn to look, for I can see things ten times smaller than those to which I have called your attention; it is only want of practice that renders you unable to see them.' The power of the human eye is very great, and it is only the want of practice which sets such narrow limits to its powers.

Having examined one object, take another which has some similarity to it, and analyze its parts, and point out the differences between that and the object examined before, and you are at once upon that track, so important in all education, which consists in comparison. It is by comparison that we ascertain the differences which exist between things; it is by comparison that we ascertain the general features of things; and it is by comparison that we reach general propositions. In fact, comparisons are at the bottom of all philosophy, and without comparisons we never can generalize; without comparisons we never get beyond the knowledge of isolated, disconnected facts.

Now, do you not see what importance there must be in such training—how it will awaken the faculties and develop them—how it will be suggestive of further inquiries and further comparisons? And as soon as one has begun that sort of study, there is no longer a limit to it. In this way, we can become better acquainted with ourselves, we can more fully understand our own nature and our own relations to the world at large. We can learn how we are related to the whole animal kingdom, if we once begin that comparison. At first it might seem difficult to find any resemblance between man and a quadruped, or between the quadruped and birds, or between birds and reptiles, or between reptiles and fishes; and if we were to attempt to compare a fish with man, the very idea would seem preposterous; and yet, the two are constructed upon the same plan; the same elements of structure which we may trace in the fish are presented again in man, only in a more elevated combination; and it may be shown, in the simplest way, that there is a plain gradation leading up from the fish to the noble stature of mau. And these comparisons are the best means of developing all our faculties, because they call out not only the powers of observation, but also the ability of the mind to generalize and at the same time discriminate. They call