SCIENCE.—SUPPLEMENT.

FRIDAY, JANUARY 28, 1887.

HISTORY OF THE AGASSIZ ASSOCIATION.[1]

As we begin the publication of a magazine devoted to the interests of the Agassiz association, it would seem to be necessary to rehearse to the large circle of acquaintances we now meet for the first time our history and our hopes.

Asking the indulgence, therefore, of our members, to whom the facts are already familiar, we will condense from addresses delivered in Philadelphia and Davenport as succinct an account as possible of the history and aims of our society.

The first hint that ever came to us of the formation of a society for the study of nature is found in one of Jacob Abbott's famous Rollo books, — 'Rollo's museum.' Published more than thirty years ago, that little black volume is still as good a guide as any known to me, to put into the hands of young persons who wish to organize themselves into a society. It was a half-conscious recollection of the pleasure I derived from reading this book when a child, that led me more than ten years ago to propose a similar society to the pupils in the Lenox high school.

The proposition was received with enthusiasm. Nearly half the school joined the society, which was first called, I believe, the Lenox high school scientific society. Our work was extremely simple. One boy kept a daily record of the temperature as indicated by a somewhat questionable thermometer; one kept the record of the weather, which was quite laconic, being something like this, "Monday pleasant, Tuesday rain, Wednesday cloudy, Thursday hot, Friday pleasant, Saturday rain." Then we began collecting specimens. I remember one boy collected buds from twenty or thirty different kinds of trees. He got them all on the same day, and, by comparing them, learned something about the times of leaf development.

One expedition was made to study the sections of trees that had been cut down. We wished to find whether the heart is always in the middle of the tree or not. We found it always nearest the coldest and windiest quarter. "Ye see, the wind blows the wood away from the heart," a contemplative rustic explained; thus unconsciously illustrating the tendency of untenable theory to follow in the wake of observed phenomena. With these and other simple observations our little society busied itself, and prospered for several years. At one time there were on my desk about a hundred cocoons of curious form. One of the boys had found what he called 'pea-pods growing on a lilac-bush,' and brought these cocoons all gathered from one tree. Each was enclosed in a lilac-leaf curiously folded around it. At that time I had never seen a cocoon yield up its imprisoned life. One day our school was visited by Mr. George Walton, one of the Massachusetts board of education. It so happened that while he was listening to some recitation or other, I noticed one of the pea-pods acting in a strange manner. It rolled over of its own accord.

I quietly picked it up and handed it to Mr. Walton without a word. While he held it in his hand, there emerged one of those beautiful creatures known as Attacus promethea. It hung down from the dry cocoon by its fore-legs, and slowly expanded its wonderful wings. None of us had seen the bursting of a chrysalis before, and we were all deeply interested and delighted. We then told him of our little society, and showed our other treasures. He urged us to tell our plans to friends about us, and to show them our specimens. So, at a convention of teachers that met soon after, I gave a short account of the matter, and, opening a satchel, covered the table with specimens which had been gathered and prepared by the children. The thing seemed to them so pleasant and so simple and easy to do, that at the close of the meeting no less than fifty teachers crowded around the table to examine the bugs and butterflies, the stones and woods, flowers, ferns, and grasses, and to ask all sorts of questions. Several similar and corresponding societies were formed.

About the same time there appeared in the *New England journal of education* a short article by Count Pourtales (a former pupil of Professor Agassiz) on the subject of school scientific societies. From this article we first learned of the Swiss societies of like nature, and of the boys and girls who wear badges of green fir and go together for frequent field and forest excursions. Thus gradually grew the thought of extending to others what had proved so pleasant to ourselves; and as the *St. Nicholas magazine* had organized, and for a time maintained, a society called 'The bird-defenders,' it was natural to apply to that magazine for space in which to print an invitation to

[1] From the first number of *The Swiss Cross.*

all who might be interested to join us in our work. This request was granted, and the invitation appeared six years ago, and was widely accepted.

The word 'association' was chosen instead of 'society' from an impression, perhaps not entirely well founded, that that word could be taken to mean 'a union of societies,' just as society means 'a union of individuals.' And our first plan was to have these local societies entirely independent of one another, except in the general name and in the purpose of studying nature. At that time no conventions were thought of, assemblies were not in mind, courses of study had not been contemplated, a badge was not designed, nor had we supposed it possible that thorough scientific work could be systematically done by many of the chapters, if at all.

We chose the name 'Agassiz' because it was then uppermost in mind. His then recent death was fresh in the hearts of the nation; and his birth in Switzerland, where a similar organization was said to exist, rendered it especially appropriate. The choice was wiser than we knew. No one can read Mrs. Agassiz's life of her husband without feeling that no name could better stimulate us to faithful work.

Having thus selected the name, a letter was sent to Prof. Alexander Agassiz, asking permission publicly to adopt it. Professor Agassiz replied that he cordially assents that this very pleasant and useful plan for children be called the Agassiz association, and that we have his hearty good wishes for its success.

The societies that joined us during the first year or two of our existence, when our plans were still uncertain and our methods comparatively crude, retain in many cases the notion that the Agassiz association to-day is the same loose organization it was at first, — an aggregation of local societies united only in name, allowed to drift hither and thither without direction or assistance. But the necessity for careful supervision and guidance has grown more and more apparent. We have been constantly besieged with requests for 'systematic courses of study,' elaborate plans of work, personal counsel and advice. Courses of study have accordingly been added, plans of work sketched, and a regular system of reports established. The conditions of admission have been defined, and, in short, more business-like methods adopted, until we now resemble rather an extended school with numerous classes than an ordinary society.

What, then, is the Agassiz association as it appears to-day? And what claims has it upon the interest of the public? It is a union of 986 local societies, each numbering from 4 to 120 members, of all ages from 4 to 84. Our total membership is above ten thousand. We are distributed in all the states and territories with very few exceptions, and have strong branch societies and active members in Canada, England, Ireland, Scotland, Chili, Japan, and Persia.

The 986 local societies are known as 'chapters.' They take their names from the towns where they are established, and are further distinguished by the letters of the alphabet. Thus the first chapter established here was called New York (A); the second, New York (B); and so on.

I may mention four different sorts of chapters. First, family chapters. The parents and children of a single family unite for joint study and research. Chapters of this sort are especially desirable, and prove almost uniformly permanent. Chapters of another sort are found in schools. There are many teachers able and willing to give their strength and time, beyond the exacting requirements of their contracts, to the encouragement and assistance of their pupils. Under the fostering care of such men and women, the happiest results have been accomplished. Not the least important result is seen in the pleasant personal relations thus established between teacher and pupil. Chapters of a third kind are organized and conducted entirely by young persons. A company of girls or boys meet together, and decide to form a branch of the A. A. They elect their officers, draft their rules and by-laws, engage their rooms, build their cabinets, make their collections, prosecute their studies; and, if I needed to awaken interest or arouse enthusiasm, I should have only to show what our girls and boys have done even when unaided and alone. They have made lists of all the flowers that grow about them, and of all the birds that fly over their heads. They have published papers, started museums, founded libraries. In doing this they have mastered the laws of parliamentary debate; have learned to observe with accuracy, to write with fluency, to speak with power; and, after working thus for a few years, many of them have pushed themselves into schools and colleges and laboratories of the highest grade, and are now completing their self-appointed preparation for lives of commanding intelligence and cheerful service. Finally I will mention chapters of adults. In increasing numbers, men and women of mature years, feeling the need of that scientific training which the schools of their childhood failed to give, are organizing societies, joining their influence to our association, and receiving in return the benefits coming from united endeavor and from enthusiastic devotion to a common cause. But, excellent as the work of all these chapters is,

we have found some needed work beyond their individual attainment. A general convention, for example, could hardly be received and cared for by a single chapter; nor could a wide range of local observations be properly collated and discussed by the inhabitants of a single town. It has therefore been deemed wise to bring about the union of all the chapters of a city or a state into more extended organizations than the single chapter. These confederations of chapters are called 'assemblies;' the two most prominent at present being the Philadelphia assembly, and the State assembly of Iowa.

Embracing all the little chapters, binding into one the larger and more powerful assemblies, and making room also for individuals when chapters cannot well be formed, is our Agassiz association. There are 986 chapters, about 6 actual and 40 potential assemblies, but only one association. And the influence and prosperity of each assembly can be increased and perpetuated by spreading everywhere we go a knowledge of our local work not only, and of our local organization, but also, and even with more emphasis, a knowledge of our entire association, with its broader membership and its farther-reaching aims.

Our association is not by any means great or powerful. As yet it is young, it is ignorant, it is weak. We have no occasion for vain-glory. Yet, on the other hand, while we have no excuse for vanity, neither need we feel vexation of spirit. Our purposes are good, our methods right. In spite of our feebleness, in the face of our ignorance, critics have been indulgent, and we have been more encouraged and praised for what we have tried to do than derided for our failures or censured for our faults. Scientific men of highest repute, men like Ramsay of England, and men like Agassiz, Hyatt, Winchell, Remsen, Gould, Gilman, and Scudder of America, have extended to us the hand of recognition.

The press has almost always been indulgent; and, although we have often exposed ourselves to fair attacks of satire, our real desire to do honest work has somehow turned the most caustic pen to kindness.

In speaking of our helpers, I should be unjust if I failed to mention with renewed gratitude and honor the large number of scientists who have voluntarily devoted their valuable time to the cheerful and patient assistance of our needs. More than fifty gentlemen representing all departments of science hold themselves always ready to answer the questions that puzzle us. Thanks to their benevolence, the boy who lives in the remotest and smallest village can send his bit of stone or his curious beetle to one of these men, and learn its name and history, and, better still, be taught how he may best study by himself its structure and its history. Some of these professors have even volunteered to conduct courses of study in various branches. We have had courses in botany, entomology, and mineralogy. The course in mineralogy recently finished by Professor Crosby of Boston has been especially successful. One hundred and forty-four chapters or individuals took this course, and completed it not only to our satisfaction, but to our surprise and delight.

It seems at first thought difficult, if not impossible, to suggest any general principle of study that can apply to the whole association, for it is composed of elements so diverse.

We are of all ages, of varying capacities and differing desires, living in places widely distant and strangely different. Some of us pick our violets in June, others in January.

But there is a common ground on which all stand, — love for nature, and desire to learn. And there is one principle that underlies and determines the methods of our study. It is this: Nature must be studied from her own book.

While, therefore, we do not undervalue the printed records of others' work, and while we ever recognize in printed books and papers necessary and cherished guides, yet we believe that our first business is to meet Nature face to face. Therefore we leave the confines of the library and school, and go out under the open sky, — into the forest, and along the stream.

Forgetting theory and useless wrangling, it is our purpose to see things as they are, and to record them as we see them. It is the business of the Agassiz association to live for the truth.

Many of those who first joined our ranks are growing out of childhood into manhood and womanhood. Many adult chapters, too, are forming; and perhaps to-day one-quarter of our total membership may be over twenty years of age. What can we do for this increasing class? In the first place, we can give them the opportunity to help the younger, even as they themselves have been helped while young. It is to them, the scientists of the future, that we must soon look for special help, instruction, and guidance. Meanwhile we need them still among us to encourage us by their example, and to aid us by their work. And we want to help them too. We must provide higher courses of study, — discover the best books for students more advanced, and help those who need it to secure the best instruction. I was greatly pleased this summer, while resting by the sea, to find in the laboratory at Annisquam, among the twenty-five earnest workers who were bending day after day, and night after night, over the

dissecting-table and the microscope, no less than seven men and women who either are or have been members of the Agassiz association. Here is the moral of it: youthful observation of nature, wisely directed, grows into manly and womanly consecration to science.

Now, one thing our association ought to do in the near future is to secure control of one or more tables in this and other thoroughly equipped laboratories, and place them year by year freely at the disposal of such of our number as may show themselves worthy. May we not in time hope to establish here and there laboratories of our own, manned by our own professors?

We wish also to establish courses of study with greater regularity, and of wider range. I should like to see a yearly correspondence course in each of the branches of natural science, conducted by the best teachers of America. I should wish these courses, specimens included, to be absolutely free; and I should wish the men who give them well paid for their time and work.

At present, as we depend entirely upon volunteers, our courses, though frequent, are rather desultory, and accompanied with some slight expense for specimens and printing. To do all we hope to do will cost much money, and the money must be raised. The Agassiz association must be endowed, and the money will come, as time and devoted labor have long since come. There are plenty of wealthy men and women ready to give money as soon as we can prove that it can be given safely, worthily, and well. Now, here we have a school of more than ten thousand pupils, confined to no one city, no one state, no one denomination. We have a corps of fifty volunteer instructors. We need no expensive buildings. And if we find that in order to meet the needs of our maturing membership we need a fund of ten or twenty or fifty thousand dollars, whose income shall be applied to giving worthy young men and women a chance to work under competent instruction, I have faith to believe that some man will be found deep enough in pocket, and broad enough in heart, to endow the Agassiz association as he might a collegiate chair or a private school. Let each chapter and each member be like Diogenes, ever peering about with lighted lantern to find this man.

But we need not wait for that. There is enough we can do unaided; and, indeed, I am inclined to think that labor voluntarily expended by boys and girls in building their own cabinets, and by girls in decorating and caring for their assembly-rooms, is the cause of the truest satisfaction and enjoyment, and is also productive of the greatest interest in the weightier matters of scientific study. You can see most clearly through a microscope that you have worked and waited for.

If the endowment ought to come, it will come in due time; but in the mean while let each continue to do his best where he happens to be. The way to help the whole association is to give your best attention to your individual work. Let the little ones gather their pebbles and their flowers. Let the elder look more closely into the structure and the habits of bird, or beast, or plant. Let us all be always living for the truth, and striving to read in every leaf of Nature's book her lesson of faith, her lesson of hope, her lesson of love.

Admirably has one of our Iowa chapters united science and humanity. Organized as a society of scientific workers, it has made itself also a band of mercy. It has proved, that, although the eye of Science is keen, her heart need not be cold, and that her hand, however cunning, may yet be kind. Two kindred spirits were Agassiz and Audubon; and very many who, with us, have enrolled themselves under the name 'Agassiz,' have also joined the Audubon society, while many others are learning — regarding birds not only, but every living thing — never needlessly to hurt or to destroy.

But Agassiz was not only merciful: he was devout. Before opening his famous school at Penikese, he bowed his head in silent prayer; and, as the ocean-breeze gently lifted his whitening locks, every head was bowed with reverence, and it seemed as though the Spirit of God were there. We therefore beg our members, as they walk through this fair garden of the Lord (and this thought I echo from the lips of Dr. Parkhurst), not to let the beauty of the creation hide from them the face of the Creator. We do not believe that faith is inconsistent with intelligence, hope at variance with knowledge, or love opposed to science. "The garden of the Lord should not conceal the Lord of the garden." Let us study with the eye not only, but with the heart; and may we all be lifted to a sweet consciousness of Nature's ministrations, the beauty of her handiwork, the music of her singing, and the tenderness of her love. Harlan H. Ballard.

A CRITICISM OF PASTEUR.

At the meeting of the Paris academy of medicine, Jan. 4, Professor Peter, the well-known antagonist of Pasteur's theory, read a paper concerning a case of death by hydrophobia after preventive inoculations.

It seems that a cart-driver by the name of Réveillac was bitten in the finger some time since by a mad dog. Twenty-four hours after the accident the wound was cauterized; and the next day, fol-