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-

lowing the advice of some friends, the man went to Pasteur to be submitted to his treatment according to the new method, which was explained in a recent 'Paris letter' to *Science*. Matters progressed favorably till the 12th of December (the accident was early in November). On that day Réveillac felt pain, at first slight and afterwards more severe, in the points where the inoculations had been made, while no pain was felt in the bitten finger. This important point was testified to by the patient himself and by the persons who lived with him, and it has been corroborated after careful investigation.

Following this pain were other symptoms, prominent among which was a general feeling of restlessness and great weakness. The weakness was so great, even on the first day, that the patient, on being advised to visit Pasteur and ask for relief, answered that he wished to, but felt utterly unable to do so. The second day the weakness increased, and the patient could hardly eat. He died on the 16th of December. During the last two days of the illness, the attending physicians witnessed symptoms in the throat of an impossibility of swallowing liquids. There were no convulsions, but only weakness and paralysis.

Professor Peter called attention to the facts, first, that the premonitory pain was not in the finger where the original poison had entered, but at the points where the inoculations had been made; second, that the other symptoms had not been those of common rabies, but of experimental hydrophobia. Instead of convulsions, paralysis was the principal symptom.

A discussion followed the reading of the paper, and the objections were made that it was by no means certain that Réveillac had died from rabies, that paralytic rabies is very rare among men, and that many symptoms of that disease were wanting. Professor Peter's criticism is, however, interesting, and is likely to attract attention. It is unfortunate, however, that we have no certain proof that Réveillac died from the inoculations. If care had been taken to inoculate animals from the tissues likely to be most affected in the patient, we should have had a better basis for deciding on the merits of the case.

THE RUBY-MINES OF BURMAH.

FOR some time past a considerable share of European political and military interest has centred in south-eastern Asia. The fact that in at least one of the countries of that region, Burmah, precious stones are reputed to be found in great quantities, will attract attention of a different order. In view of the report that British troops were about to take possession of the Burmese ruby-mines, a correspondent of the London *Times* has furnished that journal with a description of them and an estimate of their probable value.

It seems that most of our information concerning these mines comes in a more or less amended form, from the account of Tavernier, — information of two hundred years ago, to be sure, but still the basis of all subsequent accounts. He describes the place where the rubies are obtained as "a mountain twelve days' journey or thereabouts from Siren (i.e., Siriam) towards the north-east, and it is called Capelan (i.e., Kyat-pyen). It is the mine whence is obtained the greatest quantity of rubies, spinelles, or mothers of rubies, yellow topazes, blue and white sapphires, hyacinths, amethysts, and other stones of different colours. . . . Siren is the name of the city where the King of Pegu resides, and Ava is the port of the kingdom. From Ava to Siren you ascend the river in large flat boats, and it is a voyage of about sixteen days. You cannot travel by land on account of the forests, which abound with lions, tigers, and elephants. It is one of the poorest countries in the world: nothing comes from it but rubies, and even they are not so abundant as is generally believed, seeing that the value does not exceed 100,000 crowns per annum. Among the multitude of these stones you would find it difficult to meet with one of good quality, weighing three or four carats, because the king does not allow any to be removed till they have been seen by him, and he retains all the good ones which he finds among them."

Two other authorities, men who have visited these mines during this century, are Father D'Amato, who saw the mines about 1830, and a Mr. Bredemeyer, who was in charge of mines in the vicinity about 1868.

Father D'Amato's account is that Kyat-pyen is situated about seventy miles to the north-east of Mandalay. The gem-gravel occurring there was reached by pits of from twenty to thirty feet in depth; but extensive working, owing to the influx of water, was impossible with the primitive methods followed by the miners. Besides rubies, sapphires, topaz, and oriental emeralds were also found, and spinelles were abundant. All stones above a certain weight became the property of the king, provided they were not stolen and smuggled away. Facilities for this were, however, afforded by the visits paid to the mines annually by merchants from China and Tartary.

Still more recent visitors to Mandalay have found that the majority of the rubies found are less than a quarter of a carat in weight, and the larger ones are generally flawed. Sapphires,