

Contemporary Thought.

CO-EDUCATION, as practised in the majority of American colleges, has received a hearty endorsement from Rev. H. R. Haweis, the popular London clergyman, lecturer, and writer, now on a visit to this country. Mr. Haweis believes that the English can take a great many hints from the joint education of men and women; that it is a system which has a refining influence on both sexes and much preferable to the system practised in England, of having separate ladies' universities like Girton and Newnham. His ideas are the result of a three-week's visit at Cornell, where, for sixteen years, co-education has been successfully tried.—*Chautauquan*.

THE American elements have no respect for even so venerable a thing as the Egyptian obelisk. They are veritably eating it up. To prevent this irreverent destruction, workmen have been sent to Central Park to encase the monolith in a coating which, it is believed, will prevent further depredation. Every loose flake of the stone is being removed. After this the surface of the stone will be heated in sections and the protector, a compound of paraffine and creosote, will be applied. This compound penetrates the pores of the stone, and hardens. It resists the action of acids, alkalis, gases, and all extremes of temperature, and produces no other effect on the appearance of the stone than to make it slightly darker.—*Chautauquan*.

JUDGING by the number of ex-teachers who have become prominent in American politics, one might conclude that the schoolroom is not an unusual stepping stone to greatness. Since 1880 the United States have had three presidents whose novitiate has been served at the teacher's desk. In Congress, the members who have tried to teach the young ideas how to shoot may be counted by scores; those whose efforts have been eminently unsuccessful, at least by dozens. The memory of Mr. Blaine's ill-success in a Kentucky military academy is said to have militated against his success as a presidential candidate. The thoughtful, patient-looking Speaker Carlisle is said to be a typical pedagogue in appearance. Lothrop, Minister to Russia, managed to subsist as a teacher in Michigan for nine months. Minister Cox taught for three months in an Ohio school, and might possibly have remained in the profession, if the parents of his pupils had not unanimously requested his resignation. But some American statesmen have been successful teachers—notably President Garfield, who was all his life connected with educational institutions.—*Halifax Critic*.

THE most useful work which Professor Hyatt has done, and that for which he deserves much credit, is in connection with popular science-teaching. His way of teaching is original, and tended to inspire the student with a love for natural history, by teaching him to look about for himself and observe what there is to see. His first interview and study with Louis Agassiz had much to do with shaping his course, and formed the basis of his system of teaching. Since this study has had such an important bearing upon his life, we reproduce the account of it in Professor Hyatt's own words. Professor Hyatt says: "He gave me a Pentacrinite, or stone-lily, a rather complex

fossil, and told me to study it. This I thought to be easy work, so I took a stroll in the afternoon and thought little of it. Next morning he came up to my table and asked me what I had found. I had never studied from Nature before, and began giving a very general description, saying that it was a fossil petrification, etc., and had what appeared to be the beginning of a stem. When I got to this point, he said, in an impatient tone: 'Stop! stop! you don't know anything about it. It is just what I expected. You haven't told me anything that you know. Look at it again and tell me something that you see for yourself!' I had faint book remembrances, and had been relying upon these. Taken all aback at this, I began to work. I thought about it all day and dreamed about it at night. Next morning I began to tell him what I had found out, and before I was one quarter through he stopped me, saying: 'That is good; but,' he added, 'you have not yet told me what I want.' With this he pointed to the side of the room where star-fishes, ophiurians, and sea-urchins were kept, and told me to see what more he wanted. In this blind way, with no further hint, I worked unsuccessfully for a long time: then I found that I had omitted the most conspicuous point, the star-like appearance. Not knowing whether this was of importance or not, I timidly reported at the next interview this resemblance to the star-fishes, and Professor Agassiz was satisfied. This burned into my mind the most important lesson of my life: how to get real knowledge by observation, and how to use it by comparison and inference."—From "*Sketch of Alpheus Hyatt*," in *Popular Science Monthly for December*.

LET me take a single example of how even a petty manufacture improved by the teachings of science affects the comforts and enlarges the resources of mankind. When I was a boy the only way of obtaining a light was by the tinder-box with its quadruple materials, flint and steel, burned rags or tinder, and a sulphur-match. If everything went well, if the box could be found and the air was dry, a light could be obtained in two minutes; but very often the time occupied was much longer, and the process became a great trial to the serenity of temper. The consequence of this was, that a fire or a burning lamp was kept alight through the day. Old Gerard, in his "*Herbal*," tells us how certain fungi were used to carry fire from one part of the country to the other. The tinder-box long held its position as a great discovery in the arts. The *pyxidicula igniaria* of the Romans appears to have been much the same implement, though a little ruder than the flint and steel which Philip the Good put into the collar of the Golden Fleece in 1429 as a representation of high knowledge in the progress of the arts. It continued to prevail till 1833, when phosphorus-matches were introduced, though I have been amused to find that there are a few venerable ancients in London who still stick to the tinder-box, and for whom a few shops keep a small supply. Phosphorus was no new discovery, for it had been obtained by an Arabian called Bechel in the eighth century. However, it was forgotten, and was re-discovered by Brandt, who made it out of very stinking materials in 1669. Other discoveries had, however, to be made before it could be used for lucifer-matches. The science of combustion was only developed on the dis-

covery of oxygen a century later. Time had to elapse before chemical analysis showed the kind of bodies which could be added to phosphorus so as to make it ignite readily. So it was not till 1833 that matches became a partial success. Intolerably bad they then were, dangerously inflammable, horribly poisonous to the makers, and injurious to the lungs of the consumers. It required another discovery by Schrötter, in 1845, to change poisonous wax into innocuous red-brick phosphorus in order that these defects might be remedied and to give us the safety match of the present day.—*Sir Lyon Playfair, in Popular Science Monthly for December*.

MRS. AGASSIZ was the companion of her husband in his scientific researches, his reading and writing, and this biography which she has prepared is in every way a thoroughly able and satisfactory record of a life singularly interesting, not only to scientific but to non-professional readers as well. He was a man of winning personality as well as high scholarly attainment. The material from which this book is largely made up was originally collected only for preservation and reference in the family; recognizing the value of the papers to Agassiz's followers and admirers, it was decided to issue this book. The two distinct periods in the life of Agassiz are sharply divided by these two volumes. The first relates to the scientist's life in Europe, and the second to his adventures in this country. As a boy he was a daring leader in all athletic sports, an infallible guide to haunts of birds and fish, and more fond of a tramp in the woods with his brother Auguste than of serious study. At ten years of age he began making notes of his observations, and continued them until nearly twenty years old. Before that time, however, he had chosen his profession, and thenceforth every step was a step forward. His sincerity and industry won him praise from the best men in his profession, among them Humboldt and Cuvier. To the former he was indebted for unflinching encouragement and most timely aid. The hand so graciously extended by the older man was never withdrawn, and it was mainly due to its kindly support that he was enabled to prosecute his studies and investigations after leaving college. In 1832 he began his career as a teacher in the University of Neuchâtel, and was most successful. His love of teaching was second only to his love of nature. Amid the duties of the lecture-room he managed to pursue his studies, and write his important work on "*Fossil Fishes*." It was published in instalments, and secured a recognition in England, America, France and Germany. His study of the Glacial Theory with Professor Guyot, naturally led him deeply into palæontology, and gave him his inspiration to visit America. It was not until 1849, however, that he managed to start upon what he purposed should be a visit here, but which proved to be his permanent home. He began his new career by lecturing in the principal cities, and by his simple and impressive handling of involved subjects secured from the people an affectionate interest which never flagged. Both volumes are full of most interesting personal matters, related in a charming, natural style. Agassiz's mental growth and devotion to zoology, botany, geology, chemistry, and palæontology successively, is told by an appreciative and sympathetic friend.—*The Book Buyer, on Life of Louis Agassiz*.