

Scientific.

SCIENTIFIC LECTURES IN THE HALL OF Y. M. C. A.

The course this season was opened by Prof. E. J. Houston, on the Chemistry of Water. The crowded audience was delighted with the interesting facts brought out and by the brilliant experiments by which they were made plain. The gases forming water, were investigated, the galvanic battery was brought into play and much useful information was imparted.

Prof. VOGDES, gave a fine Lecture on the anatomy of the Human Ear, very instructive and entertaining.

THEODORE D. RAND, Esq., one of our Lawyers, gave a brilliant Lecture on the manufacture of Iron. The different kinds of Ores were treated, with their reduction in the furnace. The latest improved Furnaces were explained. The Bessemer process of making Iron and Steel was fully dwelt upon, making altogether one of the most practical and useful lectures our young men have listened to.

GEORGE W. MEARS, Esq., a merchant, lectured upon Rome, giving an account of what he saw while on a visit there last summer. The streets, the people, their dresses, the soldiers, the cardinals and their equipages were all described. The Ancient Ruins, the Coliseum, the Forum, the Baths, and Temples were dwelt upon; a description of the Galleries of Painting and Sculpture in the Capital of the Vatican was followed by an account of St. Peter's and the sublime view from the top of its lofty dome. The illumination of the dome and the grand display of fireworks closed this interesting lecture.

Of this Lecture the "Express" Newspaper, says:

"THE Young Men's Christian Association of this city has wisely planned a series of lectures on different scientific subjects. On last Thursday evening, a gentleman just returned from Europe, was to have delivered a lecture on 'What I saw in Rome.' This entertaining subject, and the desire to hear one whose interesting foreign letters had been published in a Presbyterian Church paper in this city, were not sufficient, however, to induce many to brave the storm on that evening. A postponement had been announced during the day until the evening of Monday, 16th, and on that evening the hall of the association was filled, and remained so until the close of the lecture. The descriptions of sights and impressions were most entertaining and instructive. His easy narrative and graphic delineations on a black board, with diagrams and photographs, told that in every step in Rome the sublime gave way to the ridiculous. Over all the surroundings of magnificence and art—the mildew and mould of Popery; priests everywhere, not 500 or 5000, but 50,000, were there in Rome, filthy, begging, and repulsive. The lecturer is a merchant of our city, who has slept but little, and seen much in his travels, and now returns with a rich store of views, and a way of exhibiting them, that will be delightful to his friends, not only for the long evenings of this winter, but for those of many more winters, should his life be spared. Many travelers we meet, have rushed through Europe, and returned with perhaps nothing more to say of it, than the few stereotyped remarks on the difference in prices between the different countries, and their disappointment in not having been able to see the Queen, or the Emperor. Some few write books which tell us just what books have told us before, but this lecture was new and fresh, and would read well."

Prof. McQUELLAN, lectured on the University of Life; giving an interesting account of the animal creation, illustrated with skeletons and skulls of various animals, with magnificent Papier Maché models of various internal organisms.

PROFESSOR HENRY HARTSHORN gave a most beautiful lecture, descriptive of his trip to Egypt. He painted in vivid colors the varied scenes in Alexandria and Cairo, and then took his audience up the Nile, a long and delightful journey.

Rev. J. NEVINS, (Missionary) gave a grand lecture upon China, throwing the meeting open for questions and answers during the latter part of the evening. The questioning was kept up until a late hour—and much information elicited, upon the National Debt of China, their currency, their Banks, and Banking, their laws and punishments, the small feet of their women, &c., &c.

Dobson's EYE DROPS gave a thrilling lecture upon the anatomy of the Eye, at the close of which a sort of microscopic examination was made of the Retina of the living Eye—two patients from the city Almshouse being the temporary victims of the examination.

Rev. DOCTOR MARON gave one of the most interesting and entertaining lectures of the whole course, describing Switzerland and the Glaciers. His account of the Glaciers was as thorough, as a scientific student could wish, while the country, the manners and life of the Swiss, were as interesting and spicy, and at times poetic, as could be wished. His description of the lofty snow-crowned Alps was sublime and beautiful.

MEN, WOMEN AND CHILDREN.

Prof. S. Loomis, M. D., in the opening lecture of the 19th course of the Medical Department of Georgetown College gives the following statistics:

In England, Scotland, Ireland, Belgium, Norway, and Sweden, with entire uniformity, the number of males under ten years of age slightly exceeds that of the females. At twenty, from the emigration of young men, the number of females becomes a little in excess, and thus continues through life. In all these communities, woman has at 30, 40, 50, and 60, as firm a hold on life as man. It can hardly be that anything but a general law of human nature should prevail through all these widely separated and differing nationalities; and hence, any departure which may exist in our own country especially, in the older and more settled portions, must be due to causes existing in that immediate vicinity. By the census of 1860, there were in Ohio, England, and the State of New York, 850,000 boys and 830,000 girls under ten years of age. Here, as in the European countries named, the boys

are in excess. At twenty, in consequence of the migration of young men, the females are 15,000 in excess. At thirty this preponderance has reached 75,000. Thus far the law of life appears identical in the countries named, emigration in this country being a little in excess. But at this point the parallel stops. In Europe, whatever excess exists at thirty continues and is the same at 40, at 50, at 60, and to the end of life. In New York and New England at 40, every one of those 75,000 women have disappeared, and 2,000 besides; at 50, 20,000 in excess have followed them. We find that 95,000 females, in every decade, pass away in the very prime of womanhood, that would have lived had they been born in either Norway, Sweden, Belgium, England, Scotland or Ireland.

Gentlemen, these are facts of to-day, the facts of our communities and of our women, the facts that stare our medical men broadly in the face, however unwilling we may be to acknowledge their truthfulness.

Again, we find by the census of the State of New York, published the past year, that in that State, to-night 197,000 families sit around desolate hearthstones, where the music of childish prattle never breaks in upon the silent solitude. Twenty-five per cent. of the families of that State are childless. They have wives who never knew the name of mother. There are also in that State 148,000 families of 19 per cent. with only one child, and 140,000 for 18 per cent. with only two children each. The presence of such facts no physician can remain longer blamelessly silent.

Again, it has been apparent for several years, that in Massachusetts families were gradually becoming extinct by decay. This is not confined to one family or one locality, but to the entire State and thro' its adjoining. Now, in that community there is something radically wrong. Some of the great laws of human existence are being persistently violated, and it is especially within the scope of the Medical profession to plainly and fully expose these fatal errors.

NIAGARA FALLS.

SIGNS OF AN EARLY BREAKING DOWN OF THE HORSE-SHOE LEDGE.

The interesting question of geological and commercial importance as to what period of time is likely to be consumed by the Falls of Niagara in wearing their way up the bed of the Niagara River, past Tonawanda and Black Rock, until they become at Buffalo the Falls of Lake Erie, has been raised anew of late by some remarkable signs observed in the rapids above Horse-shoe Fall, which are thought to foreshadow an early downfall of the rock forming that magnificent cataract. For more than a year past, some watchful residents of the vicinity have marked a peculiar motion of the rapids at a point something less than half a mile above the apex of the Horse-shoe in the channel which the greatest body of water descends, and this motion has been of a character to give rise to the supposition that a breach had been made by the current through the soft shale strata underlying the limestone that forms the present ledge of the Falls. Recently the appearance of the rapids, at the point indicated, has undergone a marked change, and so exactly in confirmation of the theory stated, that those watching it do not doubt the speedy doom of the famous Horse-shoe Cataract. If the limestone ledge, over which the river now falls, is, as supposed, in course of being undermined by a subterranean stream, breaking through as far back as nearly half a mile, of course the consequence, inevitable and liable to ensue at any moment, must be an immense breaking away of the face of the cataract, changing its whole form and appearance—perhaps converting the perpendicular fall into a shooting rapid, down a steep declivity.

Some observers at the Falls anticipate this grand catastrophe at an early day. In confirmation of these opinions, we find it stated in The Hamilton (Ontario) Times, that, within a few weeks past, "Dr. J. N. Osborne, at Chippewa, has noted a marked and constant change in the motion of the rapids at the point indicated, and it is also reported that indications are discovered of the pouring of a subterranean stream into the gulf below the Falls, which the absence of the mist, it is thought, would reveal beyond a doubt." The same paper remarks that a gentleman from the Falls, with whom it has conversed, fully believes that the days of the Great Horse-shoe are numbered.

If it be the fact that this grand cataclysm is soon to occur, geologists will only be able to account for it by the supposition of a great fracture or fissure in the southward dipping bed of limestone over the outcropping edge of which the river falls. Prof. Hall's elaborate survey of the geology of the Niagara River region, made in 1842, showed that, at the present site of the Falls, sheets of hard limestone rock, of the formation known as the Niagara limestone, cover the surface of the country, and form the edge of the cataract to the depth of between 80 and 90 feet. Under this extending to the foot of the fall, are the shaly layers of the same formation. All these strata slope downward, against the current of the river, at the rate of about 25 feet to the mile, and in the rapids above the fall the uppermost layers of the Niagara limestone succeed one stratum above another, till about 50 feet more is reached to the thickness of the formation, when all disappear beneath the outer soft shales of the next series above, which is that of the shales and marls of the Onondaga salt group. We see, therefore, that both above and below the hard limestone, there are soft shale formations, easily to be cut by a rapid current; but the lower of these shale beds can only be reached, and the limestone undermined by a fracture in the limestone itself. It is very possible that such a fissure exists at the point where the changed motion of the ra-

pids has been observed, and that through it the river has found its way to the underlying shales and cut a subterranean passage.

Should the undermined ledge of the Horse-shoe give way, the Falls will perhaps recede at one step a greater distance than they have been borne back by the wearing of two or three centuries. Sir Wm. Lyell estimates the average recession in recent periods to have been about a foot a year. It is certain that a considerable change in the situation of the Falls has taken place since Father Hennepin rudely sketched his view in 1678; for in that sketch we have exhibited a third fall, from the Canadian side toward the east, across the line of the main fall, and caused by a great rock that turned the divided current in this direction. In 1750 this feature had already disappeared when Kalm, the Swedish naturalist, visited the place.

It is probable that the rate of recession, since the waters of Niagara River first began to cut out the gorge above Lewiston, has varied greatly at different periods, as the formation of the river bed has varied. From the present site of the Falls, the strata above described gradually rise toward Lake Ontario to higher levels, till along the great terrace, the capping is of the lower 20 feet of the Niagara limestone, below which the shaly strata form the next 80 feet of the steep slope; next appears a succession of calcareous layers, shales, and sandstones, belonging successively to the Clinton and Medina formations. Through these piles of strata, the river has worked its way back, receding, probably, most rapidly, where, as in the present position, the lower portion of the cutting was composed of soft beds, which, being hollowed out, let down the harder strata above, and less rapidly where the strata near the base were hard sandstones.

It was the opinion of Prof. Hall in his report that the effect of continued recession must be to gradually diminish the height of the Falls, both by the raising of the bed of the river at their base and by the slope of the massive limestone to a lower level. The thin-bedded limestone above being swept off, the succeeding shales and marls of the Onondaga group must immediately follow, and the Falls, he thought, may become almost stationary, when their base is at the base of the massive sandstone and their upper line is as now over its upper edge. This Prof. Hall thought likely to be the case after a further recession of about two miles, and the height of the fall must then be reduced to about 80 feet.

In 1818 and in 1828 great fragments of rock fell at the Falls with a concussion which shook the whole country around as by an earthquake. If our citizens are presently awakened some morning by a shock which starts them from their beds, they may know, if they have read The Express, that Horse-shoe Fall has become a memory of the past.—Buffalo Express.

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NEW YORK, OCT. 16, 1866. I have known J. M. Page, Esq. of Georgetown, for many years. He is a man of high standing and of high moral character. His last week in good health. His case was a most remarkable one, and actually cured in three weeks.

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