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WILL THE COMING MAN DRINK WINE?

Continued from page 131.

Of all the experiments which have yet been undertaken with a view to trace the course of alcohol through the human system, the most important were those made in Paris a few years ago by Professors Lallemand, Perrin, and Duroy, distinguished physicians and chemists. Frenchmen have a way of coöperating with one another, both in the investigation of scientific questions and in the production of literature, which is creditable to their civilization and beneficial to the world. The experiments conducted by these gentlemen produced the remarkable effect of causing the editor of a leading periodical to confess to the public that he was not infallible. In 1855 the *Westminster Review* contained an article by Mr. Lewes, in which the teetotal side of these questions was effectively ridiculed; but in 1861 the same periodical reviewed the work of the French professors just named, and honored itself by appending a note in which it said: "Since the date of our former article, scientific research has brought to light important facts which necessarily modify the opinions we then expressed concerning the *rôle* of alcohol in the animal body." Those facts were revealed or indicated in the experiments of Messrs. Lallemand, Perrin, and Duroy.

Ether and chloroform—their mode of operation; why and how they render the living body insensible to pain under the surgeon's knife; what becomes of them after they have performed that office—these were the points which engaged their attention, and in the investigation of which they spent several years. They were rewarded at length with the success due to patience and ingenuity. By the aid of ingenious apparatus, after experiments almost numberless, they felt themselves in a position to demonstrate, that, when ether is inhaled, it is immediately absorbed by the blood, and by the blood is conveyed to the brain. If a surgeon were to commit such a breach of professional etiquette as to cut off a patient's head at the moment of complete insensibility, he would be able to distill from the brain a great quantity of ether. But it is not usual to take that liberty except with dogs. The inhalation, therefore, proceeds until the surgical operation is finished, when the handkerchief is withdrawn from the patient's face, and he is left to regain his senses. What happens then? What becomes of the ether? These learned Frenchmen discovered that most of it goes out of the body by the road it came in at—the lungs. It was breathed in; it is breathed out. The rest escapes by other channels of egress; it all escapes, and it escapes unchanged! That is the point; it escapes without having *left* anything in the system. All that can be said of it is, that it entered the body, created morbid conditions in the body, and then left the body. It cost these patient men years to arrive at this result; but any one who has ever had charge of a patient that has been rendered insensible by ether will find little difficulty in believing it.

Having reached this demonstration, the experimenters naturally thought of applying the same method and similar apparatus to the investigation of the effects of alcohol, which is the fluid nearest resembling ether and chloroform. Dogs and men suffered in the cause. In the moisture exhaled from the pores of a drunken dog's skin, these cunning Frenchmen detected the alcohol which had made him drunk. They proved it to exist in the breath of a man, at six o'clock in the evening, who had drank a bottle of claret for breakfast at half-past ten in the morning. They also proved that at midnight the alcohol of that bottle of wine was still availing itself of other avenues of escape. They proved that when alcohol is taken into the system in any of its dilutions—wine, cider, spirits, or beer—the whole animal economy speedily busies itself with its expulsion, and continues to do so until it has expelled it. The lungs exhale it; the pores of the skin let out a little of it; the kidneys do their part, and by whatever other road an enemy can escape, it seeks the outer air. Like ether, alcohol enters the body, makes a disturbance there, and goes out of the body, leaving it no richer than it found it. It is a guest that departs, after giving a great deal of trouble, without paying his bill or "remembering" the servants. Now, to make the demonstration complete, it would be necessary to take some unfortunate man or dog, give him a certain quantity of alcohol—say one ounce—and afterward distill from his breath, perspiration, etc., the whole quantity that he had swallowed. This has not been done; it never will be done; it is obviously impossible. Enough has been done to justify these conscientious and indefatigable inquirers in announcing, as a thing susceptible of all but demonstration, that alcohol contributes to the human system nothing whatever, but leaves it undigested and wholly unchanged. They are fully persuaded (and so will you be, reader, if you read their book) that, if you take into your system an ounce of alcohol, the whole ounce leaves the system within 48 hours, just as good alcohol as it went in.

There is a boy in Pickwick who swallowed a farthing. "Out with it," said the father; and it is to be presumed—though Mr. Weller does not mention the fact—that the boy complied with a request so reasonable. Just as much nutrition as that small copper coin left in the system of that boy, plus a small lump of sugar, did the claret which we drank yesterday deposit in ours; so, at least, we must infer from the experiments of Messrs. Lallemand, Perrin, and Duroy.

The Coming Man, then, so long as he enjoys good health—which he usually will from infancy to hoary age—will *not* drink wine, nor, of course, any of the coarser alcoholic dilutions. To that unclouded and fearless intelligence, science will be the supreme law; it will be to him more than the Koran is to a Mohammedan, and more than the Infallible Church is to the Roman Catholic. Science, or, in other words, the law of God as revealed in nature, life, and history, and as ascertained by experiment, observation, and thought—this will be the teacher and guide of the Coming Man.

A single certainty in a matter of so much importance is not be to despised. I can now say to young fellows who order a bottle of wine, and flatter themselves that, in so doing, they approve themselves "jolly dogs:" No, my lads, it is because you are dull dogs that you want the wine. You are forced to borrow excitement because you have squandered your natural gaiety. The ordering of the wine is a confession of insolvency. When we feel it necessary to "take something" at certain times during the day, we are in a condition similar to that of a merchant who every day, about the anxious hour of half-past two, has to run around among his neighbors borrowing credit. It is something disgraceful or suspicious. Nature does not supply enough of inward force. We are in arrears. Our condition is absurd, and, if we ought not to be alarmed, we ought at least to be ashamed. Nor does the borrowed credit increase our store; it leaves nothing behind to enrich us, but takes something from our already insufficient stock; and the more pressing our need the more it costs us to borrow.

But the Coming Man, blooming, robust, alert, and light hearted as he will be, may not be always well. If, as he springs up a mountain side, his foot slips, the law of gravitation will respect nature's darling too much to keep him from tumbling down the precipice; and, as he wanders in strange regions, an unperceived malaria may poison his pure and vivid blood. Some generous errors, too, he may commit (although it is not probable), and expend a portion of his own life in warding off evil from the lives of others. Fever may blaze even in his clear eyes; poison may rack his magnificent frame, and a long convalescence may severely try his admirable patience. Will the Coming Man drink wine when he is sick? Here the testimony becomes contradictory. The question is not easily answered.

One valuable witness on this branch of the inquiry is the late Theodore Parker. A year or two before his lamented death, when he was already struggling with the disease that terminated his existence, he wrote for his friend, Dr. Bowditch, "the consumptive history" of his family from 1634, when his stalwart English ancestor settled in New England. The son of that ancestor built a house in 1664, upon the slope of a hill which terminated in "a great fresh meadow of spongy peat," which was "always wet all the year through," and from which "fogs could be seen gathering toward night of a clear day." In the third generation of the occupants of this house consumption was developed, and carried off eight children out of eleven, all between the ages of sixteen and nineteen. From that time consumption was the bane of the race, and spared not the offspring of parents who had removed from the family seat into localities free from malaria. One of the daughters of the house, who married a man of giant stature and great strength, became the mother of four sons. Three of these sons, though settled in a healthy place and in an innoxious business, died of consumption between 20 and 25. But the fourth son became intemperate—drank great quantities of New England rum. He did *not* die of the disease, but was 55 years of age when the account was written, and then exhibited no consumptive's tendency! To this fact Mr. Parker added others:

"1. I know a consumptive family living in a situation like that I have mentioned for, perhaps, the same length of time, who had four sons. Two of them were often drunk, and always intemperate,—one of them as long as I can remember; both consumptive in early life, but now both hearty men from sixty to seventy. The two others were temperate, one drinking moderately, the other but occasionally. They both died of consumption, the eldest not over forty-five.

"2d. Another consumptive family, in such a situation as has been already described, had many sons and several daughters. The daughters were all temperate, married, settled elsewhere, had children, died of consumption, bequeathing it also to their posterity. But five of the sons, whom I knew, were drunkards—some, of the extremest description; they all had the consumptive build, and in early life showed signs of the disease; but none of them died of it; some of them are still burning in rum. There was one brother temperate, a farmer, living in the healthiest situation. But I was told he died some years ago of consumption."

To these facts must be added one more woeful than a thousand such—that Theodore Parker himself, one of the most valuable lives upon the Western Continent, died of consumption in his 50th year. The inference which Mr. Parker drew from the family histories given was the following: "Intemperate habits (where the man drinks a pure, though coarse and fiery liquor, like New England rum) tend to check the consumptive tendency, though the drunkard, who himself escapes the consequences, may transmit the fatal seed to his children."

There is not much comfort in this for topers; but the facts are interesting and have their value. A similar instance is related by Mr. Charles Knight; although in this case the poisoned air was more deadly, and more swift to destroy. Mr. Knight speaks in his Popular History of England, of the "careless and avaricious employers" of London, among whom, he says, the master-tailors were the most notorious. Some of them would "huddle sixty or eighty workmen close together, nearly knee to knee, in a room fifty feet long by twenty feet broad, lighted from above, where the temperature in summer was thirty degrees higher than the temperature outside. Young men from the country fainted when they were first confined in such a life-destroying prison; the maturer ones *sustained themselves by gin*, till they perished of consumption, or typhus, or delirium tremens.

To a long list of such facts as these could be added instances in which the deadly agent was other than poisoned air—excessive exertion, very bad food, gluttony, deprivation. During the war I knew of a party of cavalry who, for three days and three nights, were not out of the saddle fifteen minutes at a time. The men consumed two quarts of whisky each, and all of them came in alive. It is a custom in England to extract the last possible five miles from a tired horse, when those miles *must* be had from him, by forcing down his most unwilling throat a quart of beer. It is known, too, that life can be sustained for many years in considerable vigor, upon a remarkably short allowance of food, provided the victim keeps his system well saturated with alcohol. Travelers across the plains to California tell us that, soon after getting past St. Louis, they strike a region where the principal articles of diet are saleratus and grease, to which a little flour and pork are added, upon which, they say, human life cannot be sustained unless the natural waste of the system is retarded by 'preserving" the tissues in whisky. Mr. Greeley, however, got through alive without resorting to this expedient, but he confesses in one of his letters that he suffered pangs and horrors of indigestion.

All such facts as these—and they could be collected in great numbers—indicate the real office of alcohol in our modern life: *It enables us to violate the laws of nature without immediate suffering and speedy destruction.* This appears to be its chief office, in conjunction with its ally, tobacco. Those tailors would have soon died or escaped but for the gin; and those horsemen would have given up and perished but for the whisky. Nature commanded those soldiers to rest, but they were enabled, for the moment, to disobey her. Doubtless nature was even with them afterward; but, for the time, they *could* defy their mother great and wise. Alcohol and tobacco supported them in doing wrong. That is their part—their *rôle*, as the French investigators term it—in the present life of the human race.

Dr. Great Practice would naturally go to bed at ten o'clock, when he comes in from his evening visits. It is his cigar that keeps him up till twelve and a half, writing those treatises which make him famous, and shorten his life. Lawyer Heavy Fee takes home his papers, pores over them till past one, and then depends upon whisky to quiet his brain and put him to sleep. Young Bohemian gets away from the office of the morning paper which enjoys the benefits of his fine talents at three o'clock. It is two mugs of lager beer which enable him to endure the immediate consequences of eating a supper before going home. This is mad work, my masters; it is respectable suicide, nothing better.

There is a paragraph now making the grand tour of the newspapers, which informs the public that there was a dinner given the other evening in New York, consisting of twelve courses, and kept the guests five hours at the table. For five hours, men and women sat consuming food, occupying half an hour at each vivand. What could sustain human nature in such an amazing effort? What could enable them to look into one another's faces without blushing scarlet at the infamy of such a waste of time, food, and digestive force? What concealed from them the iniquity and deep vulgarity of what they were doing? The explanation of this mystery is given in the paragraph that records the crime: "There was a different kind of wine for each course."

Even an ordinary dinner party—what mortal could eat it through, or sit it out, without a constant sipping of wine to keep the brain muddled, and lash his stomach to unnatural exertion. The joke of it is, that we all know and confess to one another how absurd such banquets are, and yet few have the courage and humanity to feed their friends in a way which they can enjoy, and feel the better for the next morning.

When I saw Mr. Dickens eating and drinking his way through the elegantly bound book which Mr. Delmonico substituted for the usual bill of fare at the dinner given by the Press last April to the great artist—a task of three hours' duration—when, I say, I saw Mr. Dickens thus engaged, I wondered which banquet was the furthest from being the right thing, the one to which he was then vainly trying to do justice, or the one of which Martin Chuzzlewit partook, on the day he landed in New York, at Mrs. Pawkins's boarding-house. The poultry, on the latter occasion, "disappeared as if every bird had had the use of its wings, and had flown in desperation down a human throat. The oysters, stewed and pickled, leaped from their capacious reservoirs, and slid by scores into the mouths of the assembly. The sharpest pickles vanished, whole cucumbers at once, like sugar plums, and no man winked his eye. Great heaps of indigestible matter melted away as ice before the sun. It was a solemn and an awful thing to see." Of course, the company adjourned from the dining-room to "the bar room in the next block," where they imbibed strong drink enough to keep their dinner from prostrating them.

The Delmonico banquet was a very different affair. Our public dinners are all arranged on the English system; for we have not yet taken up with the fine, sweeping principle that whatever is right for England is wrong for America. Hence, not a lady was present! Within a day's journey of New York there are about thirty ladies who write regularly for the periodical press, beside as many more, perhaps, who contribute to it occasionally. Many editors, too, derive constant and important assistance, in the exercise of their profession, from their wives and daughters, who read books for them, suggest topics, correct errors, and keep busy editors in mind of the great truth that more than one half of the human race is female. Mrs. Kemble, who had a treble claim to a seat at that table, was not many miles distant. Why were none of these gifted ladies present to grace and enliven the scene? The true answer is: *Wine and smoke!* Not *our* wine and smoke, but those of our British ancestors who invented public dinners. The hospitable young gentlemen who

had the affair in charge would have been delighted, no doubt, to depart from the established system, but hardly liked to risk so tremendous an innovation on an occasion of so much interest. If it had been put to the vote (by ballot), when the company assembled, shall we have ladies or not? all the hard drinkers, all the old smokers, would have furtively written "not" upon their ballots. Those who drink little wine, and do not depend upon that little; those who do not smoke, or can easily dispense with smoke—would have voted for the ladies; and the ladies would have carried the day by the majority, it is so hard to get—two-thirds.

It was a wise man who discovered that a small quantity of excellent soup is a good thing to begin a dinner with. He deserves well of his species. The soup allays the hungry savage within us, and restores us to civilization, and to one another. Nor is he to be reckoned a traitor to his kind who first proclaimed that a little very nice and dainty fish, hot and crisp from the fire, is a pleasing introduction to more substantial viande. Six oysters upon their native shell, fresh from their ocean home, and freshly opened, small in size, intense in flavor, cool, but not too cold, radiating from a central quarter of a lemon—this, too, was a fine conception, worthy of the age in which we live. But in what language can we characterize aright the abandoned man who first presumed to tempt Christians to begin a repast by partaking of all three of these—oysters, soup, and fish? The object is defeated. The true purpose of these introductory trifles is to appease the appetite in a slight degree, so as to enable us to take sustenance with composure and dignity, and dispose the company to conversation. When a properly constituted person has eaten six oysters, a plate of soup, and the usual portion of fish, with the proper quantities of potatoes and bread, he has taken as much sustenance as nature requires. All the rest of the banquet is excess; and being excess, it is also a mistake; it is a diminution of the sum total of pleasure which the repast was capable of affording. But when Mr. Delmonico had brought us successfully so far on our way through his book; when we had consumed our oysters, our cream of asparagus in the Dumas style, our kettle-drums in the manner of Charles Dickens, and our trout cooked so as to do honor to Queen Victoria, we had only picked up a few pebbles on the shore of the banquet, while the great ocean of food still stretched out before us illimitable. The fillet of beef, after the manner of Lucullus, the stuffed lamb, in the style of Sir Walter Scott, the cutlets, à la Fenimore Cooper, the historic pâtés, the sighs of Mantalini, and a dozen other efforts of Mr. Delmonico's genius, remained to be attempted.

No man would willingly eat or sit through such a dinner without plenty of wine, which here plays its natural part—supporting us in doing wrong. It is the wine which enables people to keep on eating for three hours, and to cram themselves with highly concentrated food without rolling on the floor in agony. It is the wine which puts it within our power to consume, in digesting one dinner, the force that would suffice for the digestion of three.

On that occasion Mr. Dickens was invited to visit us every twenty-five years "for the rest of his life," to see how we are getting on. The Coming Man may be a guest at the farewell banquet which the press will give to the venerable author in 1893. That banquet will consist of three courses, and, instead of seven kinds of wine and various brands of cigars, there will be at every table its due proportion of ladies, the ornaments of their own sex, the instructors of ours, the boast and glory of the future Press of America.

Wine, ale, and liquors, administered strictly as medicine—what of them? Doctors differ on the subject, and known facts point to different conclusions. Distinguished physicians in England are of the opinion that Prince Albert would be alive at this moment if no wine had been given him during his last sickness; but there were formerly those who thought that the Princess Charlotte would have been saved, if, at the crisis of her malady, she could have had the glass of port wine which she craved and asked for. The biographers of William Pitt, Lord Macaulay among them, tell us that at fourteen that precocious youth was tormented by inherited gout, and that the doctors prescribed a hair of the same dog which had bitten his ancestor from whom the gout was derived. The boy, we are told, used to consume two bottles of port a day; and, after keeping up the regimen for several months, he recovered his health, and retained it until, at the age of forty-seven, the news of Ulm and Austerlitz struck him mortal blows. Prof. James Miller, of the University of Edinburgh, a decided teetotaler, declares for wine in bad cases of fever; but Dr. R. T. Trall, another teetotaler, says that during the last twenty years he has treated hundreds of cases of fevers on the cold-water system, and "not yet lost the first one;" although, during the first ten years of his practice, when he gave wine and other stimulants, he lost "about the usual proportion of cases." The truth appears to be that, in a few instances of intermittent disease, a small quantity of wine may sometimes enable a patient who is at the low tide of vitality to anticipate the turn of the tide, and borrow at four o'clock enough of five o'clock's strength to enable him to reach five o'clock. With regard to this daily drinking of wine and whisky, by ladies and others, for mere debility, it is a delusion. In such cases, wine is, in the most literal sense of the word, a mocker. It seems to nourish, but does not; it seems to warm, but does not; it seems to strengthen, but does not. It is an arrant cheat, and perpetuates the evils it is supposed to alleviate. * * * * * * * *

We drinkers have been in the habit, for many years, of playing off the wine countries against the teetotaler; but even this argument fails when we question the men who really know the wine countries. Alcohol appears to be as pernicious to man in Italy, France, and Southern Germany, where little is taken except in the form of wine, as it is in Sweden, Scotland, Russia, England, and the United States, where more fiery and powerful dilutions are usual. Fenimore Cooper wrote: "I came to Europe under the impression that there was more drunkenness among us than in any other country, England, perhaps, excepted. A residence of six months in Paris changed my views entirely; I have taken unbelievers with me into the streets, and have never failed to convince them of their mistake in the course of an hour. * * * On one occasion a party of four went out with this object; we passed thirteen drunken men within a walk of an hour; many of them were so far gone as to be totally unable to walk. * * * In passing between Paris and London, I have been more struck by drunkenness in the streets of the former than in those of the latter." Horatio Greenough gives similar testimony respecting Italy: "Many of the more thinking and prudent Italians abstain from the use of wine; several of the most eminent of the medical men are notoriously opposed to its use, and declare it a poison. One fifth, and sometimes one fourth, of the earnings of the laborers are expended in wine."

I have been surprised at the quantity, the emphasis, and the uniformity of the testimony on this point. Close observers of the famous beer countries, such as Saxony and Bavaria, where the beer is pure and excellent, speak of this delicious liquid as the chief enemy of the nobler faculties and tastes of human nature. The surplus wealth, the surplus time, the surplus force of those nations are chiefly expended in fuddling the brain with beer Now, no reader of this periodical needs to be informed that the progress of man, of nations, and of men depends upon the use they make of their little surplus. It is not a small matter, but a great and weighty consideration, the cost of these drinks in mere money. We drinkers must make out a very clear case in order to justify such a country as France in producing a billion and a half of dollars worth of wine and brandy per annum.

The teetotalers, then, are right in their leading positions, and yet they stand aghast, wondering at their failure to convince mankind. Mr. E G. Delevan writes from Paris within these few weeks: "When I was here thirty years since, Louis Philippe told me that wine was the curse of France; that he wished every grape vine was destroyed, except for the production of food; that total abstinence was the only true temperance; but he did not believe there were fifteen persons in Paris who understood it as it was understood by his family and myself; but he hoped from the labors in America, in time, an influence would flow back upon France that would be beneficial. I am here again after the lapse of so many years, and, in place of witnessing any abatement of the evil, I think it is on the increase, especially in the use of distilled spirits."

The teetotalers have always underrated the difficulty of the task they have undertaken, and misconceived its nature. It is not the great toe that most requires treatment when a man has the gout, although it is the great toe that makes him roar. When we look about us, and consider the present physical life of man, we are obliged to conclude that the whole head is sick and the whole heart is faint. Drinking is but a symptom that reveals the malady. Perhaps if we were all to stop guzzling suddenly, without discontinuing our other bad habits, we should rather lose by it than gain. Alcohol supports us in doing wrong! It prevents our immediate destruction. The thing for us to do is to strike at the causes of drinking, to cease the bad breathing, the bad eating, the bad reading, the bad feeling, and bad thinking, which in a sense, necessitate bad drinking. For some of the teetotal organizations might be substituted Physical Welfare Societies. * *

NAVAL DEFENCES.

Col. Jervois, R. E., in a recent paper contributed to United Service Institution, makes the following remarks in regard to the use of torpedoes for harbor defence:

The successful results attending the employment of torpedoes as engines, both of attack and defence, by the Americans, and more especially by the Confederates in the recent war, have attracted considerable attention to these engines of destruction. Though the means at command were limited, and the arrangements generally of very crude description, there are official records of the destruction of no less than twenty-four ships of the Federal States, and of the injury of nine others, by means of torpedoes. The progress made in the application of these mines during the civil war in America, is shown by the fact that, while in the year 1862 only one Federal vessel was destroyed, in the first four months of the year 1865 eleven were destroyed or sunk, and four injured.

If it is considered that the area of water or passage to be defended may be perfectly closed against friendly vessels without disadvantage, the employment of torpedoes which are exploded by self-acting mechanical contrivances present advantages over torpedoes which are exploded by electricity, as being less costly, and more expeditiously placed in position.

This class of explosive machines would be of a size to contain about one hundred and fifty pounds of powder, and would be so moored as to be within the range of the bottoms of vessels of small size. They can be fitted up and placed in position with great expedition, and their cost being comparatively small, their number could be so large that even the most careful search after them by the enemy would fail to render a water safe to their ships.

These mechanical torpedoes are, however, altogether inapplicable in positions where it is desired to keep the water open to friendly vessels, and to close it effectually against an enemy.

In such instances, it is indispensable that submarine mines should be arranged to be exploded by electric currents.

Electric torpedoes or mines may either be self-acting, *i. e.*, their explosion may be accomplished by the collision of a ship with them, or with a mechanical arrangement floating near the surface, and connected by an electric cable with the mine beneath; they may also be exploded at will by operators on shore, when a ship is observed to be over them or in their immediate vicinity; or they may be so arranged that the collision of a ship with the self-acting mechanism with which they are provided will instantly give a signal at the station on shore, whereupon the mine may be at once exploded by the operator at the station. Lastly, the torpedoes may, by simple means, be so arranged that they may be either exploded spontaneously by a passing ship, or at the will of the operator on shore, in the possible event of the ship not coming into contact with the self-acting trap.

The torpedoes would be placed some fathoms below the surface, and at such distances apart that the explosion of one would not seriously affect those in its vicinity. Their charges would be sufficiently large to ensure the destruction of a ship by their explosion, not merely when immediately over one of them, but even if any portion of her were within forty or fifty feet of that position. It is obvious that by arranging the torpedoes in two or more checkered lines, a vessel, even if passing harmlessly between two torpedoes in one line, must come within destructive range of a torpedo in the second or the third line. The placing of torpedoes at considerable depths, and their arrangement for optional explosion from on shore, must render it extremely difficult for an enemy to interfere with such a defensive arrangement, and such interference is impossible if the area of water defended is guarded by artillery. It is often stated that the torpedoes may be removed by night, but this objection is effectually met by lighting up the channel by the electric lights or other lights which may be employed for that purpose. The Federals used to bombard Charleston, I was going to say, by candle light. The knowledge and experience acquired within the last few years regarding the application and effects of explosive agents more destructive in their action than gunpowder, have demonstrated that some of them, and especially gun-cotton, may be advantageously employed in submarine mines. The Austrians used gun-cotton as the explosive agent in torpedoes, which were applied by them to the defence of Venice, and the results which they obtained in experiments with these indicated that a submerged charge of 40lbs. of gun-cotton produced destructive effects at least equal to those obtained with 1,000lbs. of powder. Improvements recently made by Mr. Abel, the chemist of the War Department, in the preparation of gun-cotton have led to a very considerable reduction in the space occupied by a charge of the material, and experiments with the new form of gun-cotton have demonstrated that very important advantages, both as regards destructive effect and reduction in weight and dimensions of a charge, are secured by the substitution of gun-cotton for gunpowder as the explosive agent in torpedoes.

[Col. Jervois also spoke in terms highly commendatory of Capt. Moncrieff's plan of mounting guns, as follows:]

I must now notice a very important invention with regard to gun-carriages, which, probably, will very greatly affect the construction of the parapets of open batteries, and which, though not a substitute for turrets in all cases, will afford the advantage of lateral range obtainable from turrets and guns on turn-tables or *en barbette*, without exposure of the gun to direct fire, except at the time when it is being laid and discharged.

The principle I refer to is that which has lately been so successfully dealt with by Captain Moncrieff, of the Edinburgh Militia artillery. Very ingenious suggestions, with a view of attaining the same object, have also lately been made by two officers of engineers, Lieutenant Hogg and Lieutenant Lloyd. These two last-named officers proposed to effect the object by different plans, but both by means of two guns, one counterbalancing the other, and to fire alternately.

Captain Moncrieff, in his plan, mounts the gun on a carriage with curved sides, which rock on a level platform; attached to the carriage is a counterpoise weight, rather in excess of the weight of the gun, thus enabling it to get up like a man, to fire over the parapet, while it stores up the recoil, and when fired, the gun makes, as it were, a low curtsey, and retires behind the parapet.

The great point of this invention is, that it enables us to protect guns in open batteries by a parapet unweakened by openings, and thus to have the advantage of the great lateral range of barbette batteries even at a low level above the water without exposure, except at the moment of firing; it enables us at the same time to avoid the expense of iron shields for embrasures for open batteries.

Some extra expense may probably be necessary for this gun-carriage as compared with one of the late service-pattern carriages, but I doubt the Moncrieff carriage being dearer than a muzzle-pivoting carriage (which is necessary to afford the smallest opening for an embrasure), and it is with this that its cost should be compared.

After witnessing the late experiments with this carriage, I did not hesitate at once to submit proposals for the application of the invention to several of our new works of fortification. Works constructed for carriages of this description will not afford protection against vertical fire, nor are they applicable in cases in which casemated structures are necessary.

MR. EZRA CORNELL, the celebrated founder of the Cornell University, at Ithaca, N. Y., announces publicly that young men desirous of paying their own way in obtaining an education, will be given employment upon the large farm connected with the institution, or in its machine shop, where they will be engaged in making tools, machinery, models, and patterns. Better exercise than rowing or football, more remunerative, and conducive to good habits and morals.