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NEW YORK, SATURDAY, APRIL 15, 1905.

The Editor is always glad to receive for examination illustrated articles on subjects of timely interest. If the photographs are *sharp*, the articles *short*, and the facts *authentic*, the contributions will receive special attention. Accepted articles will be paid for at regular space rates.

VANDALISM AT NIAGARA FALLS.

That spirit of brutal utilitarianism which tries everything by the test of "the money there is in it," grows bolder with every success. We have scarcely cooled down from the bitter indignation that was aroused by the disfigurement of our new Subway by the bill-poster, before we are confronted with an attempt to sacrifice the beautiful American Falls of Niagara to the ambitions of a few men, who see visions of great profit in the energy of the falling waters.

We have made no protest against the previous use of Niagara Falls for commercial purposes, because it has not yet been attempted on a scale that would seriously interfere with the scenic beauties of the Falls; but the present attempt to secure legislative authority for developing something like half a million hydraulic horse-power, at the expense of the volume of water flowing over the American Falls, is so serious as to call for a halt in what is becoming a case of ugly vandalism. The New York State Geologist has stated that when 80,000 cubic feet of water per second has been taken away from the Niagara River above the Falls, the American Falls will cease to exist. The American Falls will run dry before the Canadian Falls, because the ledge over which they pass is at a higher elevation than the larger Falls on the Canadian side. The bills now before the Legislature, should they be passed, will give to the various companies that are behind them the power to take away an amount of water that will go far toward wiping out the greatest object of natural beauty east of the Rocky Mountains.

The Niagara Falls are the pride of America and the wonder of the world. They are a proper object of delight to millions of people, and they will naturally, unless they be destroyed, form, for all time to come, one of the most popular points of scenic interest in the world. On the other hand, "there is money" in these Falls—lots of it—for a few people. It is argued that there is much useful energy going to waste at the Falls, that could be turned to a great commercial advantage; but it is not necessary that this energy should be developed, inasmuch as equal energy can be developed in other ways, such as utilizing less important water falls, or by burning bituminous coal under steam boilers. But if this energy were produced from coal, it would be done with less profit to a few individuals than if it were developed at the Niagara Falls. In other words, there is more money in using up the Falls than in using up an equivalent amount of bituminous coal. Now, the object of the bills at Albany is to enable these few individuals to make that extra amount of money, represented by the difference in cost between generating a certain amount of energy from the Falls and generating the same amount of energy from anthracite coal.

That is exactly the long and short of it.

And the spirit which is back of this attempted vandalism is the same spirit that is becoming rampant throughout the whole of our commercial life—a spirit of cold, hard, ugly utilitarianism which, if not curbed in this and many other similar cases that confront us at every turn, will work irreparable injury to the ideals and the character of this, the youngest, and as many of us believe, the greatest among the nations of the earth.

THE TRUE POINT OF VIEW.

In the debate following a paper that was read at a recent meeting of the New York Railroad Club on the subject of heavy electric traction, there was the inevitable discussion of the relative economy of alternating current and direct-current traction. A new point of view was taken, however, when Mr. Wilgus stated that the question of adopting electric traction on steam roads was one rather of an increase in earnings than of a decrease in expenses. This, surely, is the lesson taught by the great success that attended the electrical equipment of the elevated roads in this city. It is true the change was accompanied by a decrease in expenses; but the economies secured in this way were insignificant compared with those that resulted from the great increase in passenger traffic, due to the larger trains, higher speed, and more frequent service, and the considerable increase in travel due to the greater comfort and cleanliness of electric traction. The success achieved on the elevated roads was due, not to the extension of the system, but to the development of the existing roads to the full measure of their carrying capacity. In the case of steam railroads, however, the increase in earnings should be, if anything, relatively larger than that on the elevated roads, for the quickening of the service, and the more frequent headway of trains, will enable the steam railroads to extend their suburban service to remoter districts, which at present, owing to the limitations of steam service, are too far removed to be reached by suburban travel. In the future, the question of the electrifying of steam railroads will not be determined by an academic discussion of the relative costs of operation of existing stretches of line, but it will be determined by a consideration of the increased earnings that would result from the wider distribution of population over a larger area of territory.

THE FASTEST 40-FOOT MOTOR BOAT.

It is well understood among designers of fast boats that we must have length for speed. Hence, in judging a high-speed performance, we must know the length of the craft that broke this or that record, before we can determine its merit. Quite a sensation has been created at the recent performance of "Napier II.," the motor boat that was constructed last year to represent Great Britain in the International Motor Boat contest. During the winter this vessel has been in the hands of her builders, Yarrow & Co., who have made considerable changes in the form of her hull, and have so far improved the boat that, during a recent trial, she covered the one-knot course used by the British Admiralty, in a strong wind and rough water, at a mean speed of 29.925 miles per hour. The changes in the model of the boat have consisted mainly in the sharpening of the entrance lines, while the twin engines have been lightened by taking metal out of the reciprocating and other moving parts. That a speed of just under 30 miles should be made by a boat only 40 feet long, is a really remarkable fact; and the "Napier II." must be reckoned as the fastest vessel of her length in the world.

In commenting on this performance, Mr. Yarrow stated that the high speed of the boat is largely due to the wonderful efficiency of the motors. If he were asked what speed he would be prepared to guarantee in a boat of the size of "Napier II.," if it were equipped with the type of boilers and engines which he places in the torpedo destroyers of which the firm turns out so many, he stated that he would not be prepared to guarantee more than 16 knots an hour. As showing the great increase of speed due to increase of length in these craft, Mr. Yarrow mentioned that a 60-foot torpedo boat with modern steam machinery is good for about 20 knots an hour, while a 200-foot boat with similar, but of course larger machinery, would make 30 knots an hour. Hence, it is inferred that since 26 knots an hour has been secured in the 40-foot "Napier" boat, 45 knots an hour could be secured in a 220-foot motor boat of the same general type.

COMPLETE THE PRESENT SUBWAY PLAN.

With a considerable show of reason, it is claimed by Mr. Belmont, of the Interborough Company, that his company should be given a fair chance to complete the original rapid transit system as laid out by the Rapid Transit Commission, of which the subways recently opened constitute but an incomplete portion. It will be remembered that the original plan contemplated, in addition to the roads that are now completed, an upper east side branch through Lexington Avenue and a lower west side branch from 42d Street to the Battery. These two branches were not included in the contract of the Interborough Company, for the reason that the city's debt limit was such as to place insufficient funds at the disposal of the Rapid Transit Commission for carrying out the whole scheme. It is claimed by Mr. Belmont that the first contract was undertaken in the full expectation that, when the city was prepared to build the two branches, thereby completing the system, his company would have the first option on doing this work. It is urged that when the Interborough Company put in a bid of only $2,000,000 for building the lower Broadway, East River tunnel, and Brooklyn extension, they bid $8,000,000 less than the actual cost of the work; and that they were willing to do this in order to maintain the Brooklyn and Manhattan system of lines intact in their own hands, with a view to being able to operate them under a single five-cent fare over the whole system.

Although there is no legal obligation binding the Rapid Transit Commission to allow the present company to complete the system as originally designed, it certainly does seem as though there was a certain measure of moral obligation. At the time that Mr. Belmont and those associated with him stepped into the breach and put up the vast sums of money necessary for the inception and carrying on of this great work, the Rapid Transit Commission was at its wits' end to know where to find a bidder. It should not be forgotten that the Metropolitan Street Railway Company, which, as newly incorporated, and under a new name, is now burning with zeal to build subways, would have nothing whatever to do with rapid transit four or five years ago. It is only when the present Subway Company has proved that subways are a valuable property, that the Metropolitan interests become anxious to take up the very work at which they looked askance only a few years ago. Both the company and the city are the gainers by this change of heart; for it is probable that the Metropolitan interests will figure largely in the building of future subways. Nevertheless, it would seem desirable that, for the reasons stated above, the original subway should be completed and operated by one and the same concern, provided, of course, that their bid is put in at the prevailing prices for such work.

THE CHEMISTRY OF PAINTING AND THE PRESERVATION OF CANVASES.

BY GEHEIMER HOFRAT PROF. DR. W. OSTWALD, OF LEIPZIG.

Little improvement has been made in the technique of oil painting since Pettenkofer, forty years ago, explained its scientific principles and exposed the antiquated character of current knowledge and practice. The temperature and humidity of picture galleries is now regulated in accordance with Pettenkofer's recommendations, and his method of renovating paintings has been adopted and developed, but the important question, how to produce durable paintings, is still neglected, even by the best technicians, as is shown by the proportion of obviously short-lived works in every collection. What is still more remarkable, picture buyers, both governmental and private, pay no attention to the expectation of life of their dearly-bought treasures. I know a very costly Makart which, though little more than twenty years old, is already a senile wreck. Its brilliant colors have become muddy, all detail is gone from the shadows, and the whole picture is flaked, cracked, and wrinkled. A celebrated Knaus in the Leipzig Museum has become so covered with cracks that it has been taken down, and some of Menzel's early works are in little better condition.

So our art treasures are perishing before our eyes. Has the same condition always existed, and must it continue to exist? Neither the one nor the other. When we look at the splendid Van Eycks in the Berlin Museum, which have retained their brilliant hues almost unchanged for nearly five centuries, we infer that the swift decay of modern works is not an organic necessity. It may be objected that the method by which these durable old paintings were produced is irretrievably lost. True; but it is surely as possible to make permanent pictures now as it was then.

The first requisite is a certain amount of scientific research; the second and more important is that artists and purchasers should pay the same conscientious regard to permanence that was paid in Albrecht Dürer's time.

We require of the architect, as a matter of course, that his artistic creations shall not crumble in a few years; but the genius of the painter, it is assumed, must not be fettered by chemical laws or petty technical considerations. Yet so great an artist as Boecklin devoted his life to technical experiments, and he might have carried them further and given freer scope to his genius if he had also known a little chemistry. For example, he used pure vermilion with startling and unpleasant effect, because he fancied that vermilion is permanent when used alone but is affected by other pigments. The truth is that some varieties of vermilion withstand the action of light very well, while others turn gray or brown, whether used alone or with other colors. If one speaks to a painter of these things, he retorts that chemistry is the root of the whole evil; the Van Eycks knew nothing of it, and made durable pictures, but the modern aniline colors fade. This is unjust, for nineteenth-century artists painted fugitive pictures before aniline colors came into use. The fault is not in the colors, but in the medium. Now, as formerly, the palette of the oil painter consists chiefly of pigments of unquestioned permanence. All the yellow and red ochers, most blacks and browns, ultramarine, cadmium yellow, chrome green, and some other colors remain unchanged for thousands of years; indigo, madder, and Prussian blue endure for centuries. The former are the pigments of thirteenth-century and fourteenth-century frescoes; the latter are found well preserved in still older miniatures.

But these are not oil paintings. The medium is carbonate of lime in the frescoes, gelatine or albumen