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### APPELLATE COMMISSION REPORT FAVORABLY ON THE NEW YORK RAPID TRANSIT SCHEME.

The commissioners appointed by the Appellate Division of the Supreme Court to determine whether the rapid transit tunnel should be constructed have filed a report in favor of the building of the road. Every one who is intelligently informed as to the problem of transportation in this city, and is disposed to look at the question from a broadminded standpoint, will be glad to know that this, the greatest and most needed improvement in the history of the city, is now in a fair way to be accomplished. So rapid is the growth of New York that not even the great enlargement of their facilities which the street traction companies are now making can do more than give a temporary relief to the congested traffic. If the present system of elevated roads were enlarged, and the whole two hundred miles of street railways owned by the Metropolitan Street Railway Company were electrically equipped, it would do no more than provide a seat for every passenger in the busiest hours of the day; and unless the tunnel scheme were carried out, it would be but a very few years before the New York business man would be going to and from his downtown office hanging to a hand strap.

The report disposes of the so-called engineering risks and perils, of which the opposition has attempted to make so much, by stating at once that the road as proposed is entirely practicable. The objections raised against the Broadway scheme on the score of encroachments on vault spaces are, in the opinion of the commissioners, entirely avoided in the Elm Street plans, which call for a fifty foot width, as against a seventy foot width in the Broadway plan. The cost will not exceed $35,000,000, and in the opinion of the board $30,000,000 will pay for the road.

In regard to the second objection that the road, if built, would not pay expenses, it is estimated that as the Third and Sixth Avenue elevated railroads now carry 390,000 passengers per day, the tunnel road would have a daily capacity of 425,000. The passenger traffic of the city is increasing at the rate of 20,000,000 a year, which in the five years that will be consumed in building the new road would amount to 300,000 a day more than are now carried on all roads. This increase, together with the surplus which is now overcrowding the existing roads, should give the new road a full volume of travel.

It is estimated that the income from passenger traffic and advertising would reach $5,575,000, and the operating expenses, estimated at 60 per cent of the passenger traffic receipts, are put down at $3,285,000. The interest on $35,000,000, together with depreciation of equipment and sinking fund payment, would bring up the annual expenditure to $5,557,000, or somewhat less than the receipts.

In reply to the statement that the financial condition of the city renders the undertaking impossible, the report quotes the comptroller's testimony that if the assessed valuation of real estate increases as fast in the next decade as it has in the past ten years, it would allow the city to incur an indebtedness of $135,295,662 without any reduction of the margin which now exists between its net debt and the limit allowed by law.

We have spoken of the good work being done by the Metropolitan Street Railway Company in equipping its system with the electric underground trolley. Incidentally, a portion of the completed work gives a fair example of what the proposed underground transit will be like. We refer to the portion of the Fourth Avenue line which runs through the tunnel between Forty-second and Thirty-second Streets. The floor was asphalted and the walls and arch were whitewashed just before and after the laying of the splendid track with which the tunnel is equipped. The new cars now pass swiftly and with little noise through an atmosphere that is as pure as the most fastidious could desire, and any one that travels by this route must admit that the discomforts of the proposed rapid transit tunnel will prove to be more imaginary than real.

### THE QUEST OF THE NORTH POLE.

In all the recorded history of our race there is nothing to compare with the unfailing persistence with which the quest of the North Pole has been carried on. It is not that men have failed to show perseverance in other enterprises of a military, scientific or romantic character, or that they have suffered less or run less risk to life and limb; but the fact that renders the search for the North Pole altogether unique and incomparable is the comparative smallness of the results which are expected to crown a successful attempt.

It is not likely that even the most practical among the many explorers who have set out for the North Pole has expected to contribute to the world's store of scientific knowledge any facts that would add greatly to its sum; and it is likely that the majority of the explorers who have gone north since the time when the impracticability of a northwest passage was proved have consciously or unconsciously been moved by the pure spirit of daring and discovery, and that spirit of emulation which, properly directed, is one of the most powerful agencies of human progress.

However, without attempting to analyze the motives which underlie these crusades of the nineteenth century, it must be admitted that their increasing frequency, their exhibition of courage and unconquerable purpose, and the ingenuity and resourcefulness with which they are in quick succession conceived and carried out, all indicate that man has set his heart resolutely upon reaching the North Pole, and that he is within measurable distance of the day when he will stand there.

The prospects of an early discovery (so called) of the North Pole are rendered more likely by the intelligent methods which are now being proposed for future expeditions. The work that has been done already has been too much of the nature of a forlorn hope. The small party that has cut loose from the main expedition, and made the "dash for the pole," has had about as much reasonable expectation of success as would a single regiment of an invading army, if it should push ahead and attempt to reach the interior of an enemy's country without maintaining its lines of communication with the main body.

We publish on another page a timely letter from Timbirsk, Russia, in which the writer dwells upon the positive necessity for systematic and strongly organized advance, if the pole is ever to be reached. The writer, in commenting upon Mr. Wellman's proposed expedition next year, points out two elements which are liable to bring on failure, one of these being haste and the other national and personal egotism. While the suggestion that such expeditions should partake of an international character, "accepting both universal subscription and universal help," is a good one, which, if adopted, would insure the expedition being carried out on the scale which, in our opinion, is necessary to success, we think that national and personal egotism has been and will continue to be a powerful and perfectly legitimate controlling factor in Arctic exploration. The element of undue haste, on the other hand, has been a fruitful cause of failure. The expedition that sets out deliberately to journey to the pole must place no strict limit to the time which will be consumed in the effort. The expedition should be considered in the light of a hostile incursion into an enemy's country, where the rate of progress will be determined by expected and unexpected resistance. It should start from a well-supplied base and should maintain a strong line of communications. If there is one thing more than another that the tragic history of Arctic exploration teaches, it is that the northern citadel can never be taken by a dashing assault.

By far the most promising attempt, judged by the standards above given, is that which will be made by our own distinguished explorer, Lieut. Peary, during the coming year. The plan of attack includes an expedition by ship through Robeson Channel to a point as far north on the Greenland coast as possible; then an advance of the party of Eskimos, with a few selected white leaders, by easy stages to the northern terminus of the North Greenland archipelago, caches of provisions being established at each headland; and from this point the inevitable "dash for the pole"—two Eskimos, picked dogs and the lightest possible equipment being taken for the final three hundred miles.

The fact that both Peary and Wellman intend to carry their lines of communication only as far north as the mainland, or archipelago, as the case may be, extends, seems to indicate that, in their opinion, it would be impossible to establish a chain of caches or depots across the sea of ice which encircles, or is supposed to encircle, the North Pole. If it is possible to place a line of depots across the floating ice beyond the land, it seems like inviting disaster not to do so, and one is driven to the conclusion that it is only the increased cost that prevents such a plan from being carried out. If our surmise is correct, the chances of reaching the pole would be very much greater if the two or three separate expeditions which are planned for next year were to join forces, and make the attempt through an unbroken line of communications and on the general lines suggested by Lieut. Peary.

### REPORT OF THE SECRETARY OF THE INTERIOR.

In his first annual report, the Hon. Cornelius N. Bliss, Secretary of the Interior, deals at length and in an interesting manner on the condition, work and needs of this department of the government. We give below some of the topics touched upon in the report. In speaking of the devastation of the public domain by forest fires, the Secretary says:

"There are now existing nineteen forest reservations, embracing lands having an estimated area of 18,993,280 acres, which from time to time have been set aside by presidential proclamations. Thirteen forest reserves created by proclamation of February 22, 1897, were, with the exception of two in the State of California, suspended by the sundry civil act of June 4, 1897, until March 1, 1898. The suspended reservations contain an estimated area of 19,951,360 acres. The preservation of the public forests is a matter of vital interest to the entire nation. The enactment of adequate laws for their protection and the proper enforcement thereof, coupled

with the inauguration of a comprehensive forest system, can only effect such result.

"I most heartily concur in the recommendation of the Commissioner of the General Land Office that liberal appropriations be made by Congress for the forestry service.

"Attention is directed to the law, which provides a penalty for the cutting or destruction of live oak or red cedar, or other timber on the public lands. It is open to serious objection, in that it is inadequate for the punishment of offenses to which it relates; it fails to discriminate clearly and justly as to what constitutes a crime with respect to the use of public timber. As this law is the principal penal statute upon which the Land Department has to rely to check the waste and destruction of public timber, its failure to meet the ends desired is a serious matter, and legislation more in accord with the needs of the times should be secured."

Secretary Bliss calls attention to the report of the Commissioner of Pensions, already published, which shows that on June 30, 1897, there were on the pension rolls 976,014 names, an increase of 5,336 during the year. Of these there were 16 widows and daughters of revolutionary soldiers, 7 survivors of the war of 1812, 281 widows of soldiers of that war, 18,994 survivors and widows of the Mexican war, 6,661 survivors and widows of Indian wars, 663 army nurses and 438,064 survivors and widows and children of deceased soldiers and sailors of the war of the rebellion. The latter number represents those pensioned on account of disabilities or death resulting from army and navy service. The number of persons remaining on the rolls June 30, 1897, who were pensioned under the act of June 27, 1890, which allows pensions on account of death and disability not chargeable to the service, was 508,799.

The number added to the rolls during the year was 54,072, the number dropped from various causes was 41,122, and the number of claims of various classes disallowed was 76,234. The amount disbursed for pensions during the year was $139,799,242.12, exceeding the amount disbursed during the fiscal year 1896 by the sum of $1,584,480.18. During the year 994,454 pension certificates were issued.

The Secretary indorses the recommendation of Commissioner Evans for the passage of a law providing that no pension shall be granted to the widow of any soldier who shall hereafter marry. As to the status of pension claims generally, he says:

"There are about 200,000 pension claims awaiting adjudication, and it is estimated that 40 or 50 per cent thereof will be finally admitted. If these claims are rapidly adjudicated, they will swell the pension roll from $5,000,000 to $7,000,000.

The receipts of the Patent Office during the fiscal year exceeded the expenditures to the amount of $317,135.05, and the money covered into the Treasury from fees in patent cases from July 4, 1836, when the office was created, to June 30, 1897, in excess of the amount expended, reached the sum of $5,093,614.23. A greater number of applications for patents were filed during the year 1896 than in any previous year in the history of the Patent Office, and yet the number filed during the first six months of 1897 has exceeded by more than 7 per cent the number received in the first half of 1896. From January 1, 1897, to June 30, 1897, there were filed 25,559 applications. During the same period the total receipts of the office were $722,897.47, a gain of $102,015.50 over the six months immediately preceding. These figures are used as a basis for a recommendation for increased clerical force and office accommodations.

## THE AMERICAN BEET SUGAR INDUSTRY.

(Continued from page 323.)

To sum up, then, nearly seventy years of experiment in the beet sugar manufacture in the United States has brought the industry to such a point that we can produce in one year only enough to supply the nation's requirements for about a week. Europe, on the other hand, long ago began to export beet sugar, Germany alone sending us last year some 800,000 tons, or about twenty times our home production. That we have not made better progress in so long a period is due to no climatic obstacles. We have a sugar beet belt stretching from ocean to ocean and of no mean width, inferior in few parts to Europe and in some sections surpassing its most favored beet districts in both soil and climate. The early failures must therefore be ascribed to a want of thoroughness on the part of the pioneers, due to inexperience and a lack of sufficient capital. Theirs was no easy road to travel, and it would have been nothing short of marvelous had they succeeded in securing an immediate foothold for a new manufacture and an untried crop.

This applies to all the failures recorded down to 1890. The plants were not only located unwisely, but were too small to be successful even without that drawback. Since then two factories have been thoroughly unsuccessful. The one at Staunton, Virginia, was destroyed by fire after it had been operated on a small scale, and made a very little raw sugar, and the one at Menominee Falls, Wisconsin, was not completed until toward the end of last winter, by which time the siloed beets, none too rich in the beginning, had so deteriorated in sugar content that they could not be worked up with profit, and the result was the failure of the sugar company. Neither one of these failures however, is any proof that the States of Virginia and Wisconsin are unsuited for sugar beet culture. On the contrary, experiments with the crop in various points of these States indicate that they both have desirable sections for the establishment of beet sugar factories, but any resumption of the industry must be on a larger scale, with enough capital behind the scheme to tide over the agricultural uncertainties of the first year or two. Of the other plants mentioned, none can be called a distinct failure, because they are still running, although some of them have not been as profitable as was expected when they were built. All of them had their trials at the start, and it may be said that for some years to come the first campaign or two of a new factory will not be free from tribulations of one kind or another. The oldest of them, which is operated by the Alameda Sugar Company, at Alvarado, California, achieved success only after a long uphill struggle occasioned by lack of capital and the difficulties of establishing a new branch of agriculture in a country only partially developed. Those behind the project chose their location wisely, and to this choice and their close study of the situation of the industry must be attributed the stable foundation of beet sugar manufacture in this country. Coming later, as it did, the Watsonville factory, which was recently purchased by the American Sugar Refining Company (at a figure said to be 300 for the capital stock), had its way in a measure paved for it, but still had its pioneer work to accomplish. The next plant to be installed, that of the Oxnard Beet Sugar Company, at Grand Island, Nebraska, profited in a measure by the work of its predecessors, and yet, with the untried prairie to conquer, it had obstacles that were unique. This and the one built by the Norfolk Beet Sugar Company, at Norfolk, in the same State, a year later, have had on the whole unprofitable careers, though each succeeding season has undoubtedly brought them nearer to the desired goal. Drought, excessive rains at the wrong periods, the failure of both the State and nation to redeem promises of protection by bounties, and the inability during the earlier years to convince the farmers that beets could be grown profitably at the prices offered—all made the progress of the industry in Nebraska exceedingly uphill work. The Chino factory, built by the Chino Valley Beet Sugar Company, also suffered from drought and the loss of federal bounty and was obliged to endure bad seasons before it attained the great prosperity that ultimately came to it. At Lehi, the plant of the Utah Sugar Company likewise failed to profit long by the McKinley bounty, and while drought was conquered by irrigation of the crop, the use of water at first made the beets somewhat low in sugar and purity. However, an American-built factory that could be run economically, very conservative management and the co-operation so characteristic of the Mormons, have made the course of this factory perhaps the smoothest of all. It certainly has lost nothing, even if it has not made a fortune in the six campaigns of its history. Comparatively smooth, also, has been the brief history of the plant of the Pecos Valley Beet Sugar Company, at Eddy, New Mexico. It probably had the least unsuccessful first campaign of any of our beet sugar factories, irrigation securing for it a fair sized crop of extraordinarily rich beets that but for the difficulties encountered in working it up would have realized a handsome profit. So then, to sum up the general history of the sugar beet in the United States, whatever failures there are to record may be set down to the natural obstacles that lie in the path of any new industry of such great magnitude and importance, and, far from impeding its progress, have helped to place it on a sounder basis. To-day beet sugar manufacture in this country is an established success, even if—as has been stated—nearly seventy years of experiment have given us but nine factories to work up this season's crop.

As for the future, what with the protection that the Dingley act gives sugar, and the growing desire of farmers to familiarize themselves with the culture of the sugar beet for manufacturing purposes, it is full of hope. It would be more than desirable to have this country eventually produce all the sugar that it consumes, and it is because of the possibility of some time bringing this about that the new industry is looked upon with the greatest favor and interest; for, with the cane belt so restricted to a few States that it may never have an annual output of more than a quarter of our present consumption, everything depends practically upon the sugar beet. Allowing for the cane crop of the Southern States and Hawaii (the latter must be included, as it enters free of duty), we should require some 350 beet sugar factories, each with a daily capacity of 500 tons of beets, to manufacture the sugar that we now import; and, considering the rapid growth of this nation, before the erection of so many expensive plants could be brought about, it can readily be seen that there will be little danger of over-production for years to come. Thus far, California has shown the greatest development. Its four factories will, this season, turn out about two-thirds of all the beet sugar made in the United States, and, if the various projects in the air materialize, another year will see an immense increase in the output of this State.

Claus Spreckels is building at Salinas a plant which it is claimed will have a daily capacity of 3,000 tons of beets, thus exceeding by about 500 tons the largest one in Europe. Rumor has it also that one of the sugar king's sons is about to build a big factory, and that still another for both beets and Hawaiian raw sugar will go up at Crocketts.

The special advantages of California are several. In the northern part, where the Watsonville and Alvarado plants (both within 100 miles of San Francisco) have shown the best average results thus far obtained in this country, the soil and climate possess not only the best qualities of Europe—excellent beets growing hand in hand with very high tonnage—but it is surpassed in one important respect, the short winter season permitting planting to be distributed over a long period and harvesting prolonged, without danger of killing frosts.

Southern California makes even greater claims for superiority. It has a wealth of sunshine, considerable moisture from sea and mountains, and a goodly store of subterranean water, but is not drought-proof, and may eventually be obliged to irrigate certain of its lands. However, six years of work at Chino have proved the possibility of raising big crops of rich beets there in an average season, and that the wiseacres who insisted that proper culture was practicable only in a temperate climate were greatly mistaken. Therefore, unless other difficulties arise, the Chino and Los Alamos plants—each 30 odd miles from Los Angeles—are the nucleus of what is destined to become a big sugar producing district.

Meanwhile, New Mexico is running after California's laurels. Last season, at Eddy, the average sugar and purity of the beets were unprecedented, and with abundant water supplies for irrigation purposes and sunshine 300 days in the year, the pioneer manufacturers in that territory firmly believe that they have found the ideal section of the United States for beet culture.

A new 500 ton plant is talked of at Roswell, 75 miles north of Eddy, and as soon as the country thereabout becomes a little more thickly populated, there is every reason to believe that beet sugar will be a staple product of New Mexico.

In Utah further development will probably be quite slow. There is plenty of land in the valleys, and that irrigation would render suitable for beet culture, but lacking, as it does, the continued sunshine of the South, it is still questionable whether the application of water in this way can be so regulated as not to keep the sugar and purity down to a rather low point.

Nebraska, also, is not likely to show rapid or immediate progress in the industry. Drought and the lack of sufficient surface water to make irrigation practicable debar a considerable portion of the State from profitable agriculture, and, while eastern Nebraska has some very fine sections of land that in a normal year can be depended upon for crops that will compare favorably with Europe, the general results have not been good enough to warrant anything but most cautious progress. Two of the most desirable sites are now looking for a factory, and if such a one were built of not less than 500 tons capacity, it could, without doubt, be made to pay well.

To sum up, therefore, the future of the industry in California and New Mexico is quite rosy; in Nebraska and Utah it is somewhat problematical, though by no means dark; while New York, being about to engage in its first practical test, is as yet hardly a fit subject for prophecy. It may be said in its favor, however, that it seems to have an abundance of good beet land, climatic conditions that are all right, if rains are not too heavy at harvest time, a class of farmers that are more used to the intense culture that the beet requires than those west of the Mississippi, and, lastly, very cheap coal and other important supplies.

So far as other States of the Union are concerned, several of them promise well, judging by the reports from agricultural experiment stations and test patches of farmers—Iowa, Minnesota, Michigan, South Dakota, Indiana, Colorado, Washington and Arizona having shown very satisfactory analyses. None of these, however, is likely to enjoy any immediate boom as a sugar State.

The eyes of capitalists are, for the present, turned upon California and New Mexico, and until they have their quota of beet sugar factories, it looks as if the progress of the industry in other States would be slow, unless local capital takes the thing in hand, as has been the case in Utah and New York. In other words, while the industry is bound to develop, and develop with as great rapidity as proper caution will allow, the capitalist who has half a million dollars or so to invest in a beet sugar plant will naturally choose what seem to be the most favored spots, so long as they last, and profit by the pioneer work of others, rather than undertake it himself.