

Scientific American.

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Canadian Railroads.

This continent is destined to be the great caravansera or half-way house, of the commercial world; indeed, it is fast becoming so. From the icy ocean of the north, it stretches through the equator to the 56th degree of south latitude, interposing between Europe and many of the richest regions of the old "Orient" and the new "Great West." Long and dangerous is the sea voyage from the east Atlantic around the stormy capes of Horn and Good Hope, but the time is not far distant when such voyages will become sensibly fewer; the Atlantic will yet be united to the Pacific by iron bands, and the hoof of the iron horse will soon be heard thundering through the defiles of the Rocky Mountains, carrying the joyful news of the iron bound nuptials of the two great oceans. This is determined by the people of the United States—it is a manifest destiny affair, and must be accomplished.

There is another country—our next door northern neighbor, that is now fully awakened to a just sense of the advantages of railroads, their necessity to her growth and prosperity.—A scheme to construct a railroad through Canada to the Pacific was proposed two years ago, and Mr. Whitney—our American Whitney—endeavored to impress the people of England, when in London at that time, with the importance of his scheme for such a purpose.—Whether such a project will ever be carried out or not we cannot tell; there are natural obstacles to such a work in Canada, such as heavy snows for four months in the year, which will always detract from its payability at least. A system of railroads for Canada, however, is not only proposed, but projected and commenced, and some of the heaviest capitalists in England have come forward with their influence and money to construct and sustain them. The eminent engineer, Robert Stephenson, was recently in Canada making examinations and giving counsel about their plans and construction, and no man from experience, in a certain sense, is better qualified to do so, yet we think that in surveying and laying them down, some of our American engineers should be associated with the enterprise, as their experience is of a more practical character, considering the nature of the country, than that of English engineers.—The inhabitants of the cities of Montreal and Toronto gave Mr. Stephenson dinners, at both of which he made excellent speeches; they were full of common sense, scientific and practical information. He counselled them to adopt a general system, and said:—"In advising that system, he would strongly urge upon their attention, the mistake he conceived to have been made in the United States of North America.—There they carried their competition to an absurd extent, because they have between various places four lines of single railroads. The object being, that every man possessing property in the country, wishes a railway to go through it, and by the influence of intrigue, succeeds in doing so. The consequence is, that the country is scattered over with imperfect lines of railway, that are incapable of giving cheap conveyance, and what is more important to the public, they cannot give safe conveyance, as you know well by the accidents which have occurred within the last few months. His experience in England enabled him to hold it as a maxim, that where combination is impossible, competition is impossible. That was his position, and he had never known it wrong; and he believed it was impossible to make it wrong. Suppose these separate lines of railway had combined in the first instance, they would have made a double line of railway at much less expense, and they would have worked it with perfect safety. Is it therefore not perfectly evident, that the multiplication of single lines in a country, is the most injudicious mode of intersecting a country?—They must begin by single lines, he would admit; but before making competing lines, let him enjoin upon them to duplicate the single lines they had got, and they would have more dispatch, more safety, and more business. And

nothing can be more at variance with this course than that pursued by Massachusetts and New York; but they are now beginning to see the folly of such a course."

We hope the people of Canada will lay up this advice in their hearts, and act upon it; it is sound and judicious. From the first we have been the advocates of double lines of railroads, but at the same time we detest monopolies, when under bad management, and we have also had sad experience in the United States, of which Mr. Stephenson does not seem to be aware, of the want of competing lines, especially in New Jersey. We must also say that he is in error about every owner of land in the United States wanting a railway to go through it. Hundreds among us, for good reasons to themselves, opposed railroads passing through their lands. He is right, however, about double tracks; let the people of Canada, (many of whom we know to be much devoted to science, inventions, and progress) exert all their influence to get double tracks, and let them be fenced in and well guarded.

To Mechanics—Strikes.

In a letter which we have received from one of our intelligent and constant readers, we find these words:—"I found one or two of the old club somewhat offended at you—one in consequence of some words made use of by you in your article on Mechanics' Strikes; the objectionable remark being that employers should unite and frown down all attempts on the part of the employed to increase their wages. The other gentleman was offended because, in an answer to one of his letters, in your correspondent column, about what he considered a new invention, he was told it was three thousand years old."

The author of the letter says, he has "searched through the back numbers of the Scientific American, along with the person mentioned, to find out if you used the language about strikes attributed to you, and could not, and yet he asserts you did use such language."

We never expect to edit a paper to please everybody; we never have tried to do so, and never will; in fact we never say anything with the distinctive object in view of pleasing anybody. It makes no matter what subject we write upon, we endeavor to present the truth, as we view it, independent of the smile or frown of any person; and the consequences we leave to take care of themselves. Our correspondent, however, will look in vain to find such language as that attributed to us about strikes, and the man who made the assertion did not read correctly, or has not acted honestly in the premises. In respect to strikes, we think they are in general the most foolish means mechanics can use to increase their wages. Great "blowers" are the last men we would trust, and yet these are the men who oftentimes exercise the greatest influence on exciting occasions, and exercise it always for evil. Men have a perfect right to refuse to work for any wages employers may choose to give, but no body of men have a right to coerce an employer to give \$2 per day to a man who is only worth \$1, nor to act upon a system which reduces the man who is worth \$3 per day to work for \$2. As a question of justice, piece-work is the only correct way of selling labor. Employers often do wrong to their workmen, and vice versa. One distinctive object of ours is to make the employer and the employed understand one another better, for their interests are one—not antagonistic. They do not all—yea, very few of them—feel this, and this is the reason why many of them often injure one another. Our object is to spread intelligence, promote good will, and make them both richer and better, and consequently happier. We deprecate the spirit in an employer who tries to squeeze out of his workmen the greatest amount of skill and toil for the lowest dribbles of wages, and we deprecate the bad spirit in workmen, who are only eye-servants—who cannot be trusted out of sight.

To Preserve Gum Arabic Solutions.

MR. EDITOR—A few drops of alcohol, or any essential oil, will preserve a quart of the mucilage of "gum arabic" or "gum tragacanth" from spoiling. A small quantity of dissolved alum will preserve flour paste. S. A. C. Hartford, Conn.

New Light—Kerosene Gas.

On Wednesday evening, the 28th inst., we were invited to examine a new method of illuminating the "Art Union" Rooms in this city. Two apparatuses were erected to exhibit different improvements, to accomplish the same end—namely, the production of a cheap, good light. One apparatus produced an illuminating gas by forcing air through eupione, or some of the benzole series of fluids obtained from New Brunswick asphalt, and from this it was conveyed to the burners. In a small apparatus of this kind, the air was forced through the fluid, by clock work machinery. The gas produced in this way, is asserted to be 50 per cent. cheaper to the consumer than ordinary oil and burning fluids. The picture gallery of the "Art Union" was lighted up with gas produced by destructive distillation from the same kind of asphalt.

The inventor of these new modes of producing artificial illumination is Dr. Gesner, of Nova Scotia; he secured a patent in this country in 1850, for his method of producing gas from the asphaltum, and he is the inventor of producing hydro-carbon fluids from the same substance. We witnessed some very satisfactory experiments with the gas made from asphaltum, by Dr. Gesner, in 1850, but the recent instance was the first of beholding its application on such an extensive scale. The New Brunswick asphaltum has the property of producing, by simple destructive distillation, an excellent combined light-carburetted-hydrogen and olifent gas, which requires only to be cooled by passing it through water without the use of a purifier, as in coal gas apparatus, when it is then ready for burning. The passing of air through naphtha and benzole fluids, thereby impregnating it with carbon and hydrogen, in the proper quantities for producing a bright light, is nothing new; but hydro-carbon fluids, produced from the asphaltum, and employed for this purpose, is a novel application. At one time we had some of this asphalt in our possession; it is rich in the production of volatile matter, and by those who have made the comparison, it is said that it yields one-third more of good gas than the best Cannel coal. In our list of Claims, this week, it will be perceived that a patent has been granted for the production of paraffine oil from coal—it is the same as that produced from asphalt: and the substance, in itself, is not new. The question in which we are interested is the cheapness of these products. None of these hydro-carbon substances—gases and fluids—will supersede coal gas, unless they can be produced much cheaper. A company has been formed in this city to carry out Dr. Gesner's discoveries in asphalt productions, for illumination. We can say, from what we know personally, that the process of making gas for illumination, from New Brunswick asphalt, is the most simple of any for such a purpose; the manufacture of gas from oil, resin, and coal, involves more complicated operations and apparatus. We hope the enterprise will be successful; cheap light is a grand element in the elevation, comfort, and happiness of the human family.

Patents on Medicines.

Having received a number of communications respecting the securing of patents for new medicines, such as linaments, &c., a few words on the subject will be useful to all such enquirers. At one time patents were freely granted by our government for medicines, but no such patents are granted now. Ignorant of this fact many persons may, within the past few years, have applied for patents on medicines, thereby losing one third of their patent fees, and all the incidental expenses. Those who have applied to us to make application for patents on medicines, have always been informed of the rules of the Patent Office in respect to such applications. Although we believe that a "new and useful medicine" is strictly embraced under the head of "new and useful compounds," which are patentable subjects, yet the abuse of patents for quack medicines, which at one time were so very common, no doubt led to the decision of the Patent Office in respect to this class of subjects. It is not against the law to grant a patent for a new and useful medicine, but in accordance with its provisions; nevertheless, it is a long time since a patent has been granted for such a subject matter. It is amu-

sing to look back and see what funny compounds were at one time patented. For a composition of French brandy, spirits of turpentine, and Indian turpentine to cure the toothache, Prof. Penning, of Ohio, obtained a patent in 1829, and not to be behind the Professor, another patent was also granted at the same time to accomplish the same object, to Thos. White, also of Ohio; his composition, however, was totally different, viz., camphorated brandy, oil of peppermint, camphor, turpentine, and a few other hot stuffs. At that period the art of dentistry was in a low state in comparison with what it now is, hence the field was very extensive then for toothache drops.

Our Streets.

We cannot avoid giving utterance to the benevolent wish, that some grim griffin would take our city fathers by the nape of the neck, and hold their delicate olfactories for one hour, daily, within an inch of the most odorous pile of filth to be found in our streets. We should then indulge in a faint hope of something being done to purify us from the pestiferous piles of filth which now emit their disgusting odors in every street, lane, and alley of our populous city.—Even Broadway is not exempt, but if we turn into some of the less fashionable streets, the rotten cabbages and kitchen slops that emit their plague-engendering miasma, is perfectly loathsome. The city press, with one voice has so often called the attention of the Common Council to this state of things, that it seems of late to have grown weary of the fruitless task. The laws are doubtless well enough if they were only enforced; but our lazy Aldermen, and more lazy Street Commissioner, seem determined to win for themselves a world-wide reputation, and are zealous to serve the public, as long as they can do so at four dollars a day and nothing to do, or rather nothing done. We can hardly understand how human beings can breathe an atmosphere so largely mingled with carbonic acid and sulphuretted hydrogen, without almost immediate death. That the results are shockingly deplorable, any one can witness by looking at the weekly report of the Board of Health.

Increase of Matter.—Good Opinions of Subscribers.

Owing to a change of type for our correspondent and claim columns, no less than one-eighth more matter is now added to every number of the Scientific American. We have received many very complimentary letters from our readers, since we commenced this volume, all wishing us a brotherly "God-speed" in our work. Without exception, they say, that for neatness and execution, it is the first paper in our country.

Sydenham Palace.

In the last number of the "Scientific American" we called attention to the re-erection of the old Crystal Palace at Sydenham. It may interest some of our readers to be informed that Messrs. Avery, Bellford & Co., of London, will act as agents for any parties who may wish to offer contributions for exhibition. The above firm is in every way worthy of the confidence of our citizens.

Premium for Lightning Rods.—To Ship Owners.

In order to prevent the frequent occurrence of vessels being struck with lightning at sea, by encouraging the use of lightning conductors, the Board of Underwriters of this city have agreed, until further notice, to make a return of two and a half per cent. on the amount of premium upon vessels provided with approved lightning rods, and keeping the same on board, and in use, or to pay a proportionate part of the cost of such rods, if the same be less than two and a half per cent. of the premium on the whole value of the vessel. The return to be made on the affidavit of the assured, or the officers of the vessel, when the premium becomes due.

The frequent occurrence of disasters to vessels by lightning have led to an investigation which has resulted in establishing the protective qualities of good lightning rods.

Correspondence.

We have received a number of interesting communications on different subjects, lately—they will meet with attention soon. One is from Lieut. Hunt in answer to the article by "Engineer" on steam boiler explosions.