SCIENTIFIC AMERICAN

ESTABLISHED 1845

MUNN & CO., - - Editors and Proprietors

Published Weekly at

No. 361 Broadway, New York

TERMS TO SUBSCRIBERS

One copy, one year for the United States, Canada, or Mexico $3.00
One copy, one year, to any foreign country, postage prepaid. £0 16s. 5d. 4.00

THE SCIENTIFIC AMERICAN PUBLICATIONS.

Scientific American (Established 1845) ..... $3.00 a year
Scientific American Supplement (Established 1876) ..... 5.00 "
Scientific American Building Monthly (Established 1885) ..... 2.50 "
Scientific American Export Edition (Established 1878) ..... 3.00 "

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MUNN & CO., 361 Broadway, New York.

NEW YORK, SATURDAY, JULY 26, 1902.

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.

THE SHIPPING TRUST AND HIGHER RATES

Irrespective of the attitude of the American people toward trusts in general, there is no doubt that the announcement of the formation of the Shipping Trust was received in this country with a distinct feeling of pride and satisfaction. It was felt that the acquisition of various lines purchased by the trust, by which the American merchant marine was augmented by several hundred thousand tons, tended to place it in a position of pre-eminence such as it has not enjoyed since the decadence of shipbuilding in this country following the outbreak of the War of the Rebellion. The movement was looked upon to a great extent as a peaceful victory, made possible by the existing prosperous material conditions in this country. The news of the formation of the trust was received in Great Britain with a feeling which well-nigh approached consternation and led to immediate Parliamentary investigation. This feeling was a perfectly natural one. The possibility that several large fleets of steamers might without warning be transferred from one flag to another was certainly food for much thought and reflection; and even after it became understood that foreign-built ships could not, under our present navigation laws, fly the Stars and Stripes, it was feared that national pride might bring about legislation tending to make such an event possible. It was appreciated, and with reason, that the possible loss to the British Naval Reserve of such magnificent steamers as the "Oceanic," "Teutonic," "Majestic," "Minneapolis," "Minnehaha," and other of the larger ships of the various lines would be distinctly detrimental to England's position as a sea power. This feeling has, of course, been greatly allayed by a better understanding of the laws of this country, which, unless some action antagonistic to the trust should be taken by Parliament, would not admit of any change being brought about in the status of the vessels in question. Those intimately acquainted with shipping interests of both countries have somewhat wondered how it would be possible for the trust to pay dividends upon the enormous capitalization of the company. Very few details in regard to the existing status of affairs, however, have been given to the public; but it is pretty generally understood in shipping circles that the trust has been established for the purpose of making certain combinations with the transcontinental railroad lines, by which freight may be transported over land and sea on advantageous terms. Such a development is in the ordinary course of events and in entire harmony with the spirit of the times, and it is easy to see that great advantages may be derived from such a combination.

The feeling of gratification over the acquisition of these foreign properties, however, is somewhat mitigated by the discovery that simultaneously with the formation of the trust, passenger rates have been substantially advanced. This indeed will be unwelcome news. The rates previously exacted on the better class of transatlantic liners had, it would seem, almost reached the limit of possibility. It will be a matter, therefore, of unpleasant surprise to Americans traveling in Europe to find upon engaging their return passage to America that the rates on some of the steamers controlled by the trust have been advanced from 20 per cent to 35 per cent. It is difficult to foresee what the result of this policy will eventually be. It is problematical whether this increase of rates will not produce a feeling of prejudice against the lines controlled by the trust, and will not perhaps stimulate the establishment of other independent lines offering more popular and alluring rates to the traveling public. It will be an interesting matter to watch what the outcome of the movement will be. The American people form a great traveling public, a large majority of which husband their resources, and carefully consider what the expense of a transatlantic trip would be before starting on a voyage to the other side. Any serious increase in the expense of crossing the ocean may have a material effect in modifying such plans either by discouraging foreign travel or by diverting such custom to other lines not controlled by the trust.

The attitude of the English press has certainly undergone a great change within the last few weeks. The Shipping World, of London, actually welcomes the entry of Americans into the trade. In a recent editorial it goes on to set forth its views as follows:

"There is a vast amount that we can learn from them. It may be worth while to quote a few instances. Take the case of grain. In America 20-ton freight cars bring the produce into, say, Boston. It goes into elevators by machinery, and is passed into the central warehouse, and thence by mechanical conveyors direct into the ship's hold. Compare this with the system at, say, Bristol, where it is actually discharged by hand, or at Liverpool, where, although it is elevated onto the quay or into warehouse, it is busheled and portered by hand, carted to railway depot, and loaded into 5-ton trucks by hand. The railway companies still indulge in a timeworn fairy tale about 20-ton frieght cars being impossible owing to the construction of the sidings, but they forget to explain how Pullman cars are dealt with on these same tracks. The case of coal affords a further instructive illustration. The American designs 5000-ton steam colliers, has them built on the Tyne, tips coal into them at the coaling port, discharges it by grabs onto a wharf, whence it falls into holds or bunkers, and all at a cost of 2s. a ton! Liverpool brings it round from South Wales by 500-ton coasters, often discharges it by hand into lighters, and loads it into bunkers by hand at a cost of 7s. 6d. to 10s. a ton. America builds floating wharves or piers at a cost of thousands, Liverpool spends millions in masonry. America charges so much a day for lying at a wharf. Liverpool for an hour or a month charges 1s. 4d. a ton for her masonry enclaves. Such instances could be multiplied almost indefinitely."

The advanced methods employed in America as set forth in the foregoing describe the conditions as they existed before the trust was formed. There is no reason to believe but that the immense capital controlled by the trust will enable it still further to extend and improve the mechanical conditions as they exist. There is no doubt, however, that any effort to increase the rates in freight or fares will be deeply resented, and the popularity of the enterprise, upon which so much of its prosperity relies, will depend largely upon the policy pursued by the trust with reference to these matters.

THE NEED FOR FIREPROOF ELECTRIC CARS.

A few weeks ago Mr. George Westinghouse wrote a letter to one of our leading daily papers, in which he warned the public against the dangers from fire to which electric cars, particularly on elevated and subway systems, are exposed. If we remember rightly, reference was made to the disaster to the Liverpool Elevated Railroad, in which a whole train was quickly consumed at a point in the line where the road passed from an elevated into a subway structure. It was only by the sheerest good luck that any of the inmates of the train escaped, as the fire, once started, swept through the train with great rapidity. The letter referred to was written at a time when the question of the electrifying of the New York Central Railroad and New Haven lines in this city was under active discussion, and it was intended as a warning against the too hasty assumption that by the substitution of electricity for steam in the operation of railroads, the dangers from fire and other causes would be completely eliminated.

Since the appearance of the letter, which, on account of the distinguished position in the electrical world occupied by Mr. Westinghouse, created something of a sensation, there have been several practical illustrations of the force of the warnings given. On street railway cars there has been something of an epidemic of burnt-out fuses, which, being improperly safeguarded, have set fire to the cars with more or less serious results; and it was only within two weeks that on the Manhattan Elevated Railroad a three-car train caught fire and was completely and quickly consumed. This last accident, although fortunately not attended with any personal injuries or loss of life, for the reason that the train was not in active service, is a much more serious accident than the burning of a street car, for the reason that the chances of escape for the passengers on a street car are favorable, whereas the breaking out of fire on an electric train on the Elevated Road is liable to result in a positively awful catastrophe. Should such a fire occur between stations on a single-track structure, and be accompanied by a complete disablement of the motive power, so that the train were halted between stations, the passengers would be shut up in a veritable fire-trap. The end doors of the train being locked, and the platforms overhanging the edges of the elevated structure as they do, it will be seen that the only chance of escape would be the doubtful expedient of leaping to the street below. If the dangers due to isolation of the train would be great on an elevated road, they would be even greater in a subway tunnel, particularly if it should happen to be a single-track tube; for in this case there would be the added horrors of asphyxiation by the extremely heavy fumes which would be given off by the burning insulation and the heavily varnished woodwork of the car.

By taking every precaution known to modern engineering, it would be possible in the construction of the cars, both as regards the car itself and its electric equipment, to reduce the danger of fire to a point at which it would cease to be a cause of anxiety. In the first place, most careful attention should be given in the construction of the electrical equipment to the question of insulation. The fact that in Europe engineers have been using a 3000-volt current directly on the cars shows that it should not be a difficult matter to so insulate the low-tension direct current which is in use in this country, that fire from a burnt-out fuse or from short-circuiting would be a practical impossibility. A further insurance against fire, not less effective than the first, would be the construction of cars either entirely of metal, or of the best variety of fireproof wood. Of course there are a hundred-and-one kinds of so-called fireproof wood on the market, and many of these are of extremely poor quality, the fireproofing in several cases being only temporary, and rapidly passing off on exposure to the weather. There are some fireproof woods, however, that are worthy of the name, woods that lend themselves to manipulation by woodworking tools, that will take a very fair finish, and varnish well. The combination of the very highest type of insulation with metal or wood fireproofed cars would, we feel perfectly safe in stating, completely eliminate the danger of fire from the electric trains, which within the next three or four years will be running in vast numbers throughout the city and in its suburban service.

That there was nothing over-alarmist about the letter of Mr. Westinghouse, recent events have proved. Unless the methods of car and train construction suggested be complied with, we fear that it will not be many months before another tragedy involving loss of life will be added to the many which have occurred with alarming frequency of late in this city. These methods can be adopted at a cost which will not be in any sense prohibitive; and as we are satisfied that great corporations like the Manhattan Elevated, the New York Central, and the construction company which hopes within a couple of years to open our great subway system, are desirous of making railroad travel perfectly safe, we confidently believe that now, while the question of equipment is under consideration, they will see to it that suggestions of such obvious utility as those indicated above will be incorporated in their rolling stock.

NEW CUBAN PATENT AND TRADE-MARK LAW.

Still another change has been made in the Cuban patent and trade-mark laws, and the Cuban Republic has now an independent patent and trade-mark system.

It will be remembered that when Cuba was a Spanish possession there were two methods by which an invention or trade-mark could be protected in Cuba. The usual procedure was to secure a Spanish patent and have it extended to the Spanish colonies, including Cuba, by registrations in the Spanish colonial office. It was, however, also possible to secure a Cuban patent which was independent of the Spanish patent; though, of course, the property in inventions which were protected in Cuba by Spanish patents, which had been extended to the colonies, could not be affected by the subsequent issue of Cuban patents; neither could inventions which had become public property in Cuba be protected by the issue of a Cuban patent, for the idea in the issue of a patent is always the grant of rights in return for the disclosure of the invention and not the grant of rights without consideration, or the impairment of the rights of the public to an invention which has become public property. This was the situation in Cuba at the close of the Spanish-American war. Under the administration of the United States War Department provision was made for the extension of Spanish and United States patents to Cuba, but it was no longer possible to secure the extension of Spanish patents by merely complying with the provisions of the Spanish law under which the registrations were made in the Spanish colonial office. The United States War Department circulars, which had the effect of law, provided for the protection of inventions in Cuba by the filing of certified copies of United States or Spanish patents in the office of the Governor-General of Cuba. It will be seen, however, that the provisions for the grant of independent Cuban patents were not revoked and that it was still possible to secure patents and register trade-marks in Cuba which were not founded on the grant of a patent or the registration of a trade-mark in another country. This was the law up to June 20, 1902, for the laws of the United States War Department remained in force until they were revoked by the Cuban government. The Cuban authorities have, however, now revoked the laws permitting the extension of United States patents and trade-marks, and it is now necessary to file independent Cuban applications under the Cuban law, which in substance has existed during the Spanish possession and the United States occupation.

The property in patents and trade-marks which were registered in Cuba under the administration of the United States War Department will undoubtedly

receive the full protection of the Cuban law, for it is a principle of international law that private property acquired under one sovereignty will be protected by the succeeding powers.

ST. LOUIS AIRSHIP PRIZES.

It has long been known that one of the features of the Louisiana Purchase Exposition is to be an airship contest. Valuable cash prizes have been offered aggregating two hundred thousand dollars. Of this sum one hundred thousand dollars is offered as a grand prize; fifty thousand dollars has been appropriated for minor prizes for airships, balloons, airship motors, kites, etc.; and fifty thousand dollars has been set aside to pay the expenses incident to the competition.

The contest for the one hundred thousand dollar prize is open to all, without limitation as to the power used or the mechanical principles employed. No applicant will be allowed to compete who does not present satisfactory evidence that he has at some time made a flight over at least a mile course and return with a machine similar in principle to that which he proposes to use in the competition. If this rule is enforced Santos-Dumont is almost sure to carry off the prize. No airship will be admitted to the contest for the grand prize which requires any permanent connection with the earth, or which is not absolutely free in its flight after the start is made.

Four minor prizes are offered of the respective value of three thousand five hundred dollars, three thousand dollars, two thousand dollars and one thousand five hundred dollars; these prizes will be awarded to the four competitors who finish nearest the winner of the grand prize. Each of the contestants, however, must have made the full course three times, each time at an average speed of at least ten miles an hour.

The contestants for these various prizes will sail over an L-shaped course, the legs of which are of unequal length. The shorter leg will be in full view of all parts of the exposition grounds. Three captive balloons will mark the course. The starting point will be at the angle formed by the two legs; each aeronaut may sail over the course in any direction he pleases, but he must encircle the captive balloons in opposite directions. The length of the entire course will be not less than 10 miles (16 kilometers) nor more than 15 miles (24 kilometers) reckoned in an air line from center to center of the captive balloons.

The grand prize of one hundred thousand dollars is to be awarded to the competitor whose average speed during his three fastest trips around the course is the greatest. The competitor at any trial may pass over the course, without stopping, as many times as he desires in a continuous flight, in which case his time will be the average time in which he covers the full course. Such a journey counts, however, as but one trip. The average time made on each of the three trips required must be at the rate of at least 20 miles an hour, including the time consumed in starting and landing.

No exact date has been set for the contest; but it has been decided that the competition must take place between the first day of June and the thirtieth day of September, 1904. The specific weeks for the trials will later be determined by an international jury. Each competitor is to make at least one trial within each of these weeks; but he is at liberty to choose whatever days the exposition gates are open to the public. He must announce the date of his trial sufficiently in advance to permit publication in the morning papers.

A prize of two thousand five hundred dollars is offered for the flying machine, not carrying an operator, which will make a straightaway run of a mile and return to approximately the starting point in the shortest time. Besides its appurtenances, the machine must carry a load of ten pounds. A special course has been laid out for this contest.

A prize of two thousand dollars is offered for the gliding machine, mounted by an operator, which will advance in a calm or against the wind at a vertical angle most acute with the horizon. The machine must make at least twenty glides of not less than four hundred feet each. A prize of one thousand dollars is offered for the gliding machine, mounted by an operator, exhibiting the best automatic stability in the wind during at least forty glides of not less than four hundred feet each. The competitors are permitted to provide special appurtenances for starting and landing.

A first prize of two thousand five hundred dollars and a second prize of one thousand dollars are offered for airship motors other than the machine winning the grand prize, having the least weight and the greatest efficiency in proportion to their power. No limitations as to type are imposed. The motor must, however, have a minimum capacity of one brake horse power, and must not exceed the maximum of one hundred brake horse power. The weight of the motor is to include all appurtenances for a run of one hour. It must be so constructed that it can be attached to an apparatus for making a brake test, and a continuous run of ten hours for ascertaining the trustworthiness and durability of the apparatus.

The man who succeeds in driving an airship motor by energy transmitted through space, in the form of electric radiation or any other form of electric energy, will win a prize of three thousand dollars. At the point of reception, and at a distance of at least one thousand feet, the energy must measure one-tenth of a horse power.

Four prizes of five thousand dollars are offered to the aeronauts who attain the greatest altitude, starting from the exposition grounds; who remain longest in the air; who land nearest the Washington Monument in the city of Washington, D. C.; and who travel the longest distance in one flight in any direction. These contests will be open to balloons, airships and all aeronautical vehicles of any type, carrying at least one person.

A competition for kites will also be held, which will be open to all without limitation as to form or dimensions of apparatus. A competitor may present several kites if he so desires. There will be two classes of kite competition, one for an altitude of five hundred feet to be reached with a line of eight hundred feet in length, and one for the greatest height attained by a single kite flying at the end of a line not less than one mile in length.

In the competition with eight hundred feet of line, three prizes are offered having the respective value of five hundred dollars, three hundred dollars and two hundred dollars. In the competition for height, a first prize of eight hundred dollars, a second prize of five hundred dollars, and a third prize of two hundred dollars are offered. The contests will be each two hours in duration.

The general regulations applying to the aeronautical contests state that hot-air balloons are to be excluded. The exposition will provide a suitable inclosure for the aeronautical grounds, and will defray all necessary operating expenses. Each competitor must provide any special structure or apparatus at his own expense. No competitor will be allowed to furnish his own fuel or manufacture his own gas. The exposition will provide at cost price all gas or fuel.

THE MEERSCHAUM INDUSTRY OF TURKEY.

The British Foreign Office has issued a report upon the meerschaum mining industry of Constantinople. This product which is extensively utilized for the manufacture of pipes is almost entirely confined to Turkey. The meerschaum can be mined by any person at Sari-sou, Sepetdje, Gheikli, and Menlou, on payment of five pias to the Administration of Mines—the cost of a permit. The mines of Sari-sou are situated at a distance of about seventeen miles to the east of Eskichehir. The pit at Sari-sou was opened twenty years ago, but to-day there are 8000 mines opened, of which, however, only 2000 are worked, the remainder having been abandoned. Some 4000 miners work these mines, and every Friday a market is held at which they dispose of the blocks of meerschaum they have extracted during the week. For the accommodation of the workmen some 1000 huts have been erected.

At Sepetdje, about eighteen miles to the northeast of Eskichehir, there are some 20,000 pits in a space of six miles, of which only 150 are worked, all the others being exhausted. It is said that these mines were opened 1000 years ago, which is not incredible, as it is well known that magnesia was formerly used for many purposes, other than the fabrication of pipes: moreover, fuller's earth used to be worked on a vast scale by the ancients. The meerschaum mines are worked by some 500 miners, who live in the surrounding villages. At Gheikli, in the neighborhood of Sepetdje, there are 3000 pits, of which only 100 are worked, giving employment of 400 miners.

The only place where the Administration of Mines authorized meerschaum to be extracted is Menlou, and here there are only twenty pits actually worked by 100 workmen. The working of these meerschaum deposits, called the Eskichehir, mines which formerly were actively worked, is reduced to 1770 pits, giving employment to some 5000 miners, the greater proportion of whom are Kurds and Persians. These deposits are worked on the following primitive systems: A foreman or ganger, having from two to fifteen men under his supervision, having pegged out a piece of ground, generally a meter wide, a pit is sunk until a red, clayey earth, which is the first sign of the existence of magnesia, is reached. Sometimes this is reached at a few meters from the surface, but as a rule the miners have to dig down some 20 meters, and often 40 and even up to 60 meters, before reaching the red earth, wherein the meerschaum is disseminated in kidney and other irregular forms. The volume of these blocks seldom exceeds 30 to 40 cubic centimeters, the greater part of them being the size of a walnut, or an apple. On reaching the gangue containing the blocks of magnesia, the miners drive horizontal shafts through the red clay. This, however, is no easy matter, as they cannot detach or pick off more than 50 grammes of the clay at a stroke. Some of these galleries are no less than a quarter of a mile in length, and it sometimes happens that owing to these being pierced at random different gangs meet underground. They work night and day, the galleries being lighted with petroleum. After a certain quantity of blocks have been extracted, the meerschaum still enveloped in its gangue is drawn out of the pit, and stacked in the miners' barracks. These blocks are bought by the manufacturers of Eskichehir in job lots every Friday, and there are some 150 persons who regularly attend these markets. The meerschaum is then taken to Eskichehir, where the blocks are cleaned, the operation consisting of scraping and cutting the blocks with a sharp instrument or knife, the meerschaum being still soft and easily cut into any shape or form. Over 1100 persons are occupied in cleaning and shaping these blocks, which, after being thoroughly cleaned, are separated into four classes, according to size and quality. These blocks being ready for sale, a bargain is struck between the pipe manufacturers and the commission agents and merchants at Eskichehir, of whom there are about a dozen. The latter then pack the blocks of these four classes with very great care into boxes of equal size, each block being wrapped in cotton to avoid any friction or shock between the pieces. The actual annual output of these mines varies from 120 to 150 tons. The Eskichehir meerschaum is very highly prized in Europe on account of its superior quality, and these deposits, notwithstanding that they have been worked for centuries, are still considered to be inexhaustible.

SHAPIRA THE PHILOLOGICAL FORGER.

The recently published biography of Sir Walter Besant contains an interesting anecdote of Shapira, who may well be regarded as the prince of philological impostors. Shapira was a Polish Jew, who had been converted to Christianity but not to Christian honesty. Many years ago he visited Sir Walter Besant and submitted to him a document which he said refuted every theory held by modern theological students. Shapira was a good actor. At first he would tell nothing of the discovery. Then, after much hard pressing he confided to Sir Walter with apparent reluctance that the document was nothing less than a contemporary copy of the book of Deuteronomy written on parchment. Hesitatingly Shapira exhibited a piece of his precious manuscript. It was written in the Phœnician characters of the Moabite Stone in fine, black ink and was still bright and legible after three thousand years.

Shapira fabled interestingly of his wonderful find. He told how the manuscript had been preserved because it had been deposited in a perfectly dry cave in Moab. Besant urged him to proclaim his discovery to the world. Shapira hesitated; but finally he consented to reveal his discovery to two persons, Dr. Ginsburg, the great Hebrew scholar, and Captain Conder, the Surveyor of Western Palestine. Mr. Besant invited both these gentlemen to visit him on the following day. Dr. Ginsburg thought that the invitation included his friends and brought with him practically the whole British Museum and all the Hebrew scholars in London. Conder also came. Amid much ill-suppressed excitement, Shapira unfolded his manuscript. One of the company remarked that the parchment was strangely modern in appearance and that it spoke well for the art of the time of Moses. When the company separated, a professor of Hebrew remarked, "This is one of the few things that could not be a forgery and a fraud."

William Simpson, of the Illustrated London News, had no great respect for the wily Shapira. Conder quietly observed that "all the points objected to by German critics have vanished in this new and epoch-making trouvaille. The geography is not confused, and Moses does not record his own death." Simpson, who knew all the caves of Moab, and also knew that they were damp and earthy, said, "There is not a dry cave in the country." "Then you think?" questioned Besant. "Precisely," said Simpson.

While the learned professors were hanging over the manuscript for days, and were preparing commentaries, Clement Ganneau came over from Paris to see the document. "I know," he said, "how this manuscript was obtained. The parchment is cut from the margins of Hebrew manuscripts, some of them of considerable antiquity. The writing is that of yesterday."

Ganneau's statement was only too true. Shapira received the manuscript without a single offer to buy it. His mind became unbalanced. His failure and the work of preparing his admirable forgery proved too much for him. He hanged himself.

Peary Relief Expedition.

On the afternoon of July 14 the Peary Arctic Club's relief ship "Windward" sailed for the Arctic regions to bring back Lieut. Peary. The "Windward" took on provisions to last her for a year.