

STREET RAILWAY IMPROVEMENTS.

STEAM TRAMWAYS AT BIRMINGHAM.

A new tramway three miles in length, connecting Birmingham with the suburbs of Aston, has been newly laid for steam cars, and Major-General Hutchinson, R. E., government inspector, recently made an examination of the line. The steam car proved equal to every reasonable demand upon it, and in point of speed, noiselessness, and steadiness it surpassed expectations. The average rate of speed was about eight miles an hour, and the facility with which it was pulled up and set going again was one of the most notable features of the trial. The government inspector imposed some severe tests on the steepest gradients, but the mechanical power was always equal to the occasion. The passage of the carriage through the streets, even at its highest speed, did not appear to have any terrifying effect upon horses, and the ease with which it can be pulled up is a great safeguard against accidents.

ELECTRICITY ON TRAMWAYS.

A public trial of an electrical tram-car, fitted with the Faure-Sellon-Voickmar cells, took place on Saturday last on the lines of the West Metropolitan Tramways Company between Kew and Hammersmith. A slight difference between the gauge of the tram-line and the wheels of the car prevented the attainment of such results in the matter of speed as were to have been anticipated under more favorable conditions. Enough was, however, shown to justify the belief that by the use of the accumulators a valuable and workable motor has been secured. As a consequence of his trial of the new electrical car on the eastern section of the line, General Hutchinson, the board of trade inspector, is enabled to state that the car ran for about a mile along the Acton-road at a very fair rate of speed, about 6 miles an hour appearing to be the maximum and this with a weight of some five tons. In appearance the car is similar to an ordinary tram-car. The car was lighted with incandescent lamps from the same accumulators used for propelling purposes, and electric bells were also furnished for communicating with the driver. Dr. Siemens said that the speed of the car to which General Hutchinson had made reference was not by any means to be looked upon as a final speed.—*London Railway Times*.

THE LATEST FEMALE BLACKMAIL.

A correspondent informs the *London Times* of a romantic incident which has recently occurred in a prosperous London suburb. A devoted young high church curate, of interesting appearance and great popularity in his district, was waited upon by a young lady of considerable attractions, but with an air of deep melancholy and clad in a somewhat ascetic garb. She invited him to her house and revealed to him a fatal secret. She had conceived a deep, a passionate love for the curate himself. She knew, she said, that her passion was hopeless; he, in his devotion to the church, for which she loved him all the more, had vowed himself to a life of celibacy, and she would carry her attachment to the grave, which she felt was not far off. But there was one kindness which it was in his power to grant her, the remembrance of which would bring consolation to her dark and weary path. Would he, before they parted forever, give her one kiss? After some timidity and agitation, the young curate, touched with pity, complied. The lady shed another tear, bade him adieu in a hollow voice, and he departed. A few days afterward he received a neat little parcel, graciously tied with a piece of blue ribbon, and opening it found an instantaneous photograph (cabinet size) of him—elf kissing the young lady. Accompanying this was a communication from the fair creature herself, that there were eleven more copies and that he might have the whole dozen at £20 apiece. Should he not be in want of them it was her intention to dispose of them in another quarter. A photographer had been concealed. Negotiations on the subject are said to be proceeding.

THE CENSUS OF INDIA.

The work of tabulating the first general census ever taken in India is about completed. In an area of 1,372,588 square miles, or a little over one-third of that of the United States, there is a population of 253,891,821, or over five times the population of the United States. There are nearly as many dwelling places in India as people in this country. The males exceed the females by about 6,000,000. Much trouble was experienced in getting the natives to answer questions concerning their condition, and the military authority was in some cases called in, but out of a population of over 228,000,000 there were found to be 20,938,627 confessed widows, the percentage to the Hindu population being 19.71 and to the Mohammedan religion 12.93. The percentage of widows in England is 1.22 and in Italy 2.71. The reason of this abundant crop in India is the law that widows cannot marry again. Of this vast horde of people but 13,000,000 can read and write, and but 4,900,000 are under instruction. The doctrine of exclusive salvation, with a dubious probationary provision for the heathen, stands in pretty bold relief in the following table giving the religious status of India:—

Hindus.....	89,937,450
Mohammedans.....	50,121,685
Nature-worshippers.....	6,426,511
Buddhists.....	3,418,884
Christians.....	1,862,634

Of the Christians over one-half are Roman Catholics. There are beside these several million of minor divisions of oriental religious beliefs.

"I NEVER go to a temperance hotel," once said Artemus Ward, "they sell such poor liquor there." Artemus was from Maine and knew what he was talking about.

SAVED BY OIL.

(From Chambers's Journal.)

From an officer in the service of a South of England Shipping Company, we have received the following narrative of his experiences of the use of oil in a tempestuous sea:

In April, 1869, I sailed from Cardiff as chief-mate of a barque called the *Glamorgunshire*, whose dimensions were—length, one hundred and forty-eight feet; breadth, 27.5 feet; depth, 17.5 feet; and register tonnage, 45.7 tons; built of greenheart, with iron beams, and classed at Lloyd's A1, fourteen years. As may be inferred from our port of departure, our cargo was coal, of which there were upwards of seven hundred tons on board. And I remember remarking as we left the docks, that our draught at the sternpost was equal to the depth of hold, but the draught forward was some twenty inches less. But be that as it may, although I did not measure our freeboard, I knew that it was very small, and I felt sure that in heavy weather our ship would be a wet one. Encountering a south-west gale as we left the docks, we had an opportunity of testing the capabilities of the crew, which consisted of two able-bodied seamen, two ordinary seamen, one cook-and-steward, three mates, a carpenter, the captain, and six apprentices, two or three of whom had made one voyage to sea, the others being quite inexperienced.

When we dismissed the tug off Lundy Island, we made sail, and before many hours passed, had to reef the topsails; but our apprentices would not go aloft, as they were afraid to leave the deck. Nevertheless, by dint of a little encouragement, they were induced to ascend to the fore-topmast yard, and assist to the best of their ability in reefing the sail; and before we had got south of the roaring forties, they could all hand-reef and steer in a very creditable manner. Unfortunately, our carpenter died before we reached Madeira, and as the ship was on her first voyage, there were lots of carpentering jobs to do, which devolved chiefly upon myself and the captain. So, while we were running through the trade-winds, we had managed to get the ship pretty square and ready for heavy weather.

Rounding the Cape in July—which is there the depth of winter—we edged away southward until the parallel of from thirty-eight to thirty-nine degrees south was reached, and upon which parallel it was determined that we would run down the casting. There we began to encounter stormy weather. Well do I remember that a few nights after crossing the meridian of the Cape, we had a fresh north-west wind, and were under topsails and courses, when, about half-past seven p.m., a heavy head-sea sprang up from the eastward, causing the ship to dive and plunge violently. We happened to be pumping the ship at the time when she took a heavy dive, stove in the fore-end of the fore-castle—which was a house built abaft the foremast—carried away all the trusses and cranes of the four topsail-yards, threw the third-mate on to his head, and caused my chest to turn a somersault, and remain bottom up while the decks were flooded with water, the ship having buried herself as far as the foremast. Here was the beginning of our troubles; for next day the wind hauled to the westward, and rapidly increased to a gale, accompanied by a rising sea. The wind then veered a little to the southward, when the weather became clear. We were now running before the brave west winds, and these, accompanied as they were by the stupendous seas which they raised, drove our ship at a speed of something like twelve knots an hour. These magnificent seas are a splendid sight, rolling as they do with such stately majesty, changing from dark blue at the base to gray, and then to a beautiful semi-transparent green, near the crest, that curls over with an awe-inspiring roar, breaking into froth and foam, and capping these miniature water-mountains as with snow. Yet grand in aspect as these waves are, they approach a vessel's stern in a way which is sometimes far from pleasant, for they come on us with an angry rush, rapidly increasing in velocity; and if they do not come on board, they break around with a disappointed roar.

After scudding for several days before these gales, and being pooped and quartered by many heavy seas, our vessel was becoming the worse of the buffeting. Some of the boats had been stove in, the cabin and fore-castle several times washed out, while the deck-houses themselves were as leaky as sieves. One afternoon, the captain and myself were employed calking the top of the cabin-house, when a heavy sea boarded the ship, washing us both off the house, and dashing us into the mizen-rigging, where we grasped the shrouds, and were saved from going overboard. Had we been at work a few feet farther aft at the time, we would have gone clear off the rigging and perished. Our calking-irons and mallets were swept overboard.

These gales continuing to blow day after day, our poor barque suffered much, nearly all the bulwarks having been washed away; while the long-boat, which was stowed in chocks on the main-hatch, and contained the pinnace, stowed bottom up inside, was split into two by the pinnace being driven right through her, and both lay a mass of wreck on the deck, only prevented from being washed away by the lashings and gripes which still held on. The spare spars were even washed away, dragging with them, out of the deck, the ring-bolts to which they were lashed. The after or booby-hatch was covered with a network of lashings, so persistent did the sea seem in its endeavors to wash it away.

Our time was now employed in repairing damage, and no sooner was one thing secured than something else was washed adrift; or the crew was so repeatedly washed away from their work, that it had sometimes to be abandoned

altogether. The captain began to regret that he had not lightened the ship, by heaving cargo overboard, when he had the opportunity. But it was now too late, for no hatch could have been opened without swamping the ship.

During the night-watches the vessel was steered by two able seamen, of whom there was one in each watch; the captain and myself for night after night taking our shift of four hours at the wheel, which required two hands to manage it. These grand seas still rolled after us, or passed us with their tremendous roar; while others would break over the taffrail and dash on board, when we, before we were aware of what was coming behind us, would be knocked down, washed under the wheel, and on some occasions far forward from the wheel. The cabins would be filled, so that the watch was almost continuously employed during the night in baling out the houses and cabins.

It was one middle watch while at the wheel, assisted by one of the able seamen, that the wind was blowing with unusual fury, accompanied by hard squalls and a tremendous sea, which broke on board with such frequency, knocking about and bruising us at the wheel, that we began to wonder if it were possible for the vessel to survive till daylight. At about four a.m. a great breaker came roaring, in its destructive and irresistible fury, over the taffrail, followed almost immediately by another, which washed us away from the wheel, burst in the cabin doors, filled it, and also the ship's deck up to the level of the topgallant rail. Our little vessel staggered and trembled under the pressure, for she was now completely submerged. Had a third comb of a sea followed the second, I think she would have certainly foundered. As it was, she seemed to hesitate for a moment as to whether she would float or sink; and just as we were thinking she was going down, she seemed to shudder and shake herself, and began to rise and recover her way. She had been nearly at a standstill during this dire ordeal.

After regaining the wheel, which was done almost immediately after the second sea broke on board, and in much less time than it has taken me to relate what happened, we found the vessel within two or three points off her course, and quickly got her straight again. When conversing with my companion, he informed me that he had served several years in schooners employed in carrying fruit from the Western Islands to England, and that when running before a heavy gale and high sea, it was the custom to have two canvas bags filled with oil and hung one over each quarter, whence the oil dripped into the sea, and diffusing itself over the surface, smoothed the waves. This statement I repeated to the captain, who without any hesitation gave his sanction to the experiment; and as soon as it was daylight, I sent this man to make two bags such as he had seen used on board the fruit schooners. When flattened out, these bags were of a triangular shape, with the apex cut off, and when filled with any liquid, assumed a conical form. In fact, they were none other than the sailors' duff-bags. These bags might contain each about half a gallon of oil, but into each was poured only about a quart, for we had not much to spare; the mouths were securely tied, and then they were hung one over each quarter. The oil now began to drip slowly into the sea; and after a few minutes, the effect produced seemed the work of magic. Although the wind was still blowing a fierce gale, the sea seemed to be comparatively hushed, and, in the wake of the vessel, calm; for instead of the angry roar which we had been so accustomed to hear at our backs while steering the vessel, all was quiet, save occasionally a bigger and more furious wave would lap a little of its subdued crest over the taffrail and quarters with a hissing and defiant noise. What was before a great combing sea, was now reduced to a huge mountainous swell, which rolled harmlessly up to us and passed us with a smooth and almost combless crest. But on each side of our track, and where the oil had not diffused itself, the waves still broke and roared with unabated fury.

For many days we ran before these noble gales and seas; but not another ever came on board. At times the canvas bags became clogged with the oil, and then they were pricked with a large roping-needle, which was attached to one of them by a lanyard for that purpose. The quantity of oil used, so far as I remember, did not exceed half a gallon in the twenty-four hours. Compared with such a small quantity of oil, the effect of it upon the sea was almost incredible.

Relating the above facts to some friends in Nagasaki, among whom was an Irishman, the latter remarked that it was no wonder the sea was smoothed with the oil, since the latter was so slippery that the wind could not take hold of it. Now, I have since learned from your *Journal* that this really is the reason, though I was perhaps disposed to think at the time that the Irishman was only quizzing me.

NICKEL MINE.—The *Boston Popular Science News* announces the discovery in Oregon of nickel ore. It is composed of a silicate of nickel and magnesia, is very valuable, and hitherto has only been known to exist in New Caledonia. It is from this double silicate from the mines in New Caledonia that most of the nickel used in the arts has been obtained. The New Jersey and other nickel mines in this country contain sulphides, difficult and expensive to work. The *News* adds that these nickel (sulphide) ores are in the hands of a monopoly, it believes, "who work them by a secret process." The Oregon deposit, if extensive and easily worked, is considered by the journal named more valuable than an ordinary gold mine. Nickel, so long neglected, "owing to its apparent uselessness," is now of first importance in the arts. It is the only one of the cheaper metals which resists oxydation with great pertinacity, and is not too heavy for carriage. Its use for coinage bids fair to greatly increase.