

THE POLYTECHNIC ASSOCIATION OF THE AMERICAN INSTITUTE.

[Reported expressly for the Scientific American.]

The first meeting of this association after its summer vacation, was held on Thursday evening, 13th inst., Professor C. Mason presiding.

The Great Eastern.—Lieut. Bartlett, chairman of the committee to visit the *Great Eastern*, being called on for his report, stated, that immediately on the arrival of the *Great Eastern*, he addressed the consignees, Grinell, Minturn & Co., advising them of the appointment and object of the committee. He received a prompt reply to the effect that the letter would be laid before the directors. But after waiting a considerable time for action from the directors, he wrote another letter, and to this letter no reply was received. Under these circumstances it was concluded that the committee had nothing to do.

Mr. Dibben was one of the committee, but visited the ship on his own account. He found it very difficult to procure information. The officers of the ship seemed to be unwilling or unable to answer questions which were pertinent to the practical working of the ship, such as, what was the displacement, midship section, lines of the ship, &c.? I was told by the engineer, that the average consumption of coal was 3 17-100ths lbs. of coal per horse power per hour. I examined the log of the ship, but it was incomplete. One card only could be found for the whole trip. On our ships it is the custom to take a card at least every day and enter it on the log. The facilities for turning the ship are admirable, and it is certain that the wheel and screw work well together. The method of bringing the force of the two engines on one wheel, and the automatic lubricator I consider very admirable.

Mr. Fisher—It is generally believed that the *Great Eastern* is a commercial failure, but at the same time, it is conceded that there is great economy in large vessels when they can be freighted, and it might be an important point for us to determine what are the limits of size.

The President considered the subject would involve matters, which, the club as a scientific society, could not entertain.

Lieut. Bartlett—There has been a great demand during the last fifteen years for large ships and fast sailers; but there is coming now a reaction. How much a ship will carry is generally of more account than how fast she will sail; one is at the expense of the other. Half clippers are now sought for more than any other kind of vessel. The present condition of commerce has no need of vessels like the *Great Eastern*. Her owners will do well to dispose of her to the English government. But the government may find that they have bought an elephant. It is not often that such a ship could be used, and there would be hesitation in risking the whole success of an important expedition on a single trust. Her tonnage divided in five vessels would be more useful. I. one end of the *Great Eastern* is aground, the whole ship is stranded. A fire, explosion, or contagion is dangerous to every soul on board.

The President—The owner of the *Thomas Powell* offers \$5,000 above its cost of construction, for any vessel which will make the trip to Newburgh in 15 minutes less time than his own boat. The offer is seriously made, and I am satisfied that if it is fully met the money will be well invested.

The Lady Elgin Disaster.—Lieut. Bartlett—By the collision of the *Lady Elgin* with the schooner *Augusta*, on Lake Michigan, on the 8th inst., 300 lives were lost, and all for the want of a little light. The case is clear, and we are constantly running such risks, yet there is no law which covers the whole ground. A few years ago, in France, in view of such dangers, a commission was appointed to examine the whole subject of beacon and signal lights for mariners. The result of this bringing together the views of scientific and practical men was a system so perfect that it was at once adopted by the chief governments of Europe, and is unchanged to this day. One of the improvements then adopted was the Fresnel light. The Fresnel light was proposed for use on our coast, and the opposition was violent, certificates and memorials came from every quarter to the effect that the old lights were good enough. But now petitions came from the owners of vessels sailing to California, for a change of the lights on Craney Island, for

the lights on fishing boats being the same size misled them. These facts made their impression on the Secretary of the Navy, and the Fresnel light was adopted and now there are 500 along our coast. In the French system the kind, color, position and intensity for lights on all kinds of vessels is prescribed. It should be so here. People seem to think that vessels should have lights proportioned to their size, that a small vessel needs only a small light, but if there is to be a variation of intensity it should be the other way, and the smaller vessels be required to carry the brightest light. The danger is to the larger, and the warning light must be distinctly seen to be avoided. A small vessel as in the case of the *Arctic* and of the *Lady Elgin* strikes low and the damage may be beyond the reach of the carpenters. Men on the schooner saw the lights on the *Lady Elgin* 20 minutes before the collision. I feel and appreciate such danger as a seaman; I have often been in peril from those little vessels unlighted. A lantern which may be purchased for \$10 or \$15 will give a light visible 10 or 15 miles away.

The President—In a trip to Newburgh I have been able to count 400 or 500 vessels, and at night many of these show no light at all. The sinking of one or two crowded steamers will some day wake up our Legislature to the necessity of some law on this subject.

Mr. Fisher—It very often happens on a small vessel that there is no one to see the danger. The helmsman has his duty to attend to, and the watch goes to sleep.

Mr. Garbanati—A few days ago there was given in one of the newspapers a list of vessels which had gone to sea and were never heard from again. If the neglect of a duty on shipboard by which the ship was imperiled were made a crime by law, watches would be more wakeful, and lights might be seen, which otherwise were invisible.

Mr. Bruce—During a trip to New Orleans on the packet ship *Yazoo*, I went on deck one night and observed a faint light over the starboard bow. There was a lookout at the mast head, but he had lashed himself to the mast and gone to sleep. I brought an officer up from below, but he could not see the light at first, in a minute or two it was found that we were in great danger, and had barely time to change our course and be safe. I had the credit of saving the ship.

Lieut. Bartlett—This was a case of gross neglect on the part of the look-out. It could not happen on a government vessel; every ten minutes the officer of the deck calls, "bright look-out ahead," and the look-out must answer. On smaller vessels, however, where men are obliged to keep watch and watch, they cannot always keep awake on their watch. And this fact is a stronger reason for bright lights.

The subject for the next meeting's discussion is the report of the committee on "Cut-off Experiments."

VENTILATE THE SHOP.

[Communicated to the Scientific American.]

Few things are more insidiously undermining the constitution and vital stamina of many "young people" than the want of shop-ventilation, particularly in the evening, when the gas is lighted. This subject cannot be discussed at a time better than when the shop windows gradually begin to be closed against the approaching cool weather.

There are many trades, the occupation in which is very light and requires little or no exertion. Stationers, fancy wool, toy shops and the like, nearly all keep their doors closed "because it is so cold;" the result is that the burning gas vitiates the air in the shop, and the assistants inhaling this, the circulation of the blood is lowered, and the outward cold is felt all the more. Again, there are some shops the contents of which naturally yield emanations of an unhealthy kind, when a free current of air is excluded. Who, for instance, can go into a shoe shop, the doors of which are kept closed, without at once discerning the unpleasant odor of old and new leather? The same may be said of a ready-made clothes depot; the peculiar odor of the cloth and fustian, the burnt gas, and the confined breath of the people serving therein, make it exceedingly disagreeable to a stranger on entering out of the fresh air. If a remark be made by a purchaser that the shop "smells close," the assistant is almost sure to reply that "they don't notice it." What, however, they do notice, is headache, languor, loss of appetite, ennui, debility, palor

of the face, blotchy skin, redness of the nose, white face, all unheeded warnings to ventilate the dwelling-place, which if not attended to, produce worse results.

Many tailors' shops are very ill ventilated; some, where they drive a good trade, have been enlarged by the addition of neighboring houses, all the fire-places have been removed, and but one or two entrances are left to the whole building, and the doorways are cramped up with goods in a manner that positively keeps customers away. There are on the other hand many trades where the door is always open; the result is that all engaged in it are healthy, and never complain of being cold. Look at the butcher boy, blooming and healthy; furniture dealer, taverners, and many other occupations are, as a general rule, healthy, because of the free ventilation of their shops or places of trade.

The nose is the gate to the lungs, and whatever is indicative of unpleasantness is unhealthy, and should be shut out. Instead of closing the doors to keep the shop warm, it is better, if the cold is severe, to wear warmer underclothing—half-gloves, thick stockings, warm jackets, and wooly neckerchiefs. In winter dress accordingly in warm clothes and plenty of them. Sufficient attention is not paid to this matter. We put on dark colored clothes and think they are warm; in summer we wear light colors because they look cool; but what is required is thick or thin clothing as the season varies. It is thus only that we may defy the effects of excess in heat and cold. Arising from well-known causes cold air, particularly fresh air, warms the person that breathes it more than warm air. It is proverbial that a person sitting quietly in a room "feels a draft" from every cranny. "The key-hole blows enough to turn a mill," though they "creep into the fire," and roast themselves, they have always one side cold, yet a little exertion in fresh open air would put them into a glow.

As gas burns, and people breathe, water is produced and exhaled; if this steam be seen condensed on the inside of windows, you may be sure the shop wants ventilating. Dust of every kind should also be avoided with scrupulous care. Every morning when the shop is dusted, doors and skylights should always be wide open so as to clear away the dust as it flies about. It avails but little to dust without getting rid of it out of the premises; to make a dust with a brush in one place for it to settle in another is labor in vain. Persons who take a morning or evening draft of dust are sure to be troubled with air-tube complaints. This then is another reason to ventilate the shop.—SEPTIMUS PIESSE.

COATING PATTERNS.

MESSRS. EDITORS:—In answer to an inquiry, in a late number of your valuable paper, for a substitute for wax, in coating patterns. I would state that I have used on patterns that require any quantity, the ordinary gas-fitting cement, and find it an excellent substitute. T. S. Philadelphia, Pa., Sept. 10, 1860.

[Wm. L. Wemmell, of this city, says that Prince's metallic paint, which is composed of 72 parts of oxyd of iron to 28 parts of cement lime stone, when mixed with shellac and applied to patterns, forms a very durable coating. H. B. Weaver, of South Windham, Conn., says, the best and cheapest coating I have ever used is composed of a solution of gum shellac in alcohol, with equal quantities of red lead and venetian red by weight, sufficient to give a light red color to the solution; then add a small quantity of Venice turpentine to prevent the lead and venetian red from setting.

ANNEALING STEEL.

MESSRS. EDITORS:—I see an article headed "Tempering Steel," on page 135, Vol. III. (new series) of the SCIENTIFIC AMERICAN. I have observed with surprise that many blacksmiths, as well as others, are ignorant of the fact, that if you dip steel at a red heat which is barely distinguishable in a tolerably dark place, such as the bottom of a tub, it will thoroughly anneal, and that you can in that way anneal steel which will scarcely anneal in any other way. JOURNEYMAN.

Rome, Ga., Sept. 7, 1860.

KEEPING SWEET POTATOES.—A correspondent who has had experience in the matter, informs us, that the keeping of sweet potatoes depends mainly on the kind of land in which they are grown; sandy land producing tubers which keep the best.