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Knowledge, Inventors and Invention.

It has been frequently asserted, that "the greatest inventions have been produced by illiterate men." This is a mistake. In almost every instance, great and good inventions and discoveries have been made by men of education. It is no doubt true that the great majority of them were made by men who had not the benefit, (if a benefit it can be called in all cases) of a collegiate education, but this is no sign, although a common opinion, that they were not highly educated. Every great inventor that we have heard of, or read about, was a man of deep reflection, and devoted to the reading of good authors. With such traits of character, who shall say that "they were not men of education." Knowledge or education, does not consist in a mere acquaintance with the abstract sciences and the dead languages, but it circumscribes the whole domain of truth, whether arrayed in the most common operations of the arts, or decked in the garb of the cloister or cabinet. To assume that inventors have been generally men of little education, is to pay a high compliment to ignorance and is not very complimentary to inventors. Whitney, Cartwright and Watt were highly educated men in every sense of the word, and although Fulton, Arkwright, Telford, and a host of other great inventors, were but common mechanics in the early part of their lives, yet had they not possessed remarkable intelligence, with remarkable concentration of mind, they never would have been distinguished above their fellows. Knowledge strengthens and expands the mental powers, giving them a more powerful and grasping tone, but the grand object is to direct them aright, that they may not expend their strength on "trifles light as air." Let no man suppose that he can get along without information as well as with it—especially in devising new improvements in the arts. Without education an inventor, with a powerful and concentrated mind, may work out a useful and profitable invention. Such a man was Richard Arkwright, but if we look at the men of the present day, whose names stand out on the page of invention, we behold a Morse and a Stevenson, as highly qualified by education as their names are honored by their inventions. The majority of inventors with whom we have become acquainted, are all distinguished for a great amount of knowledge. The man who reads and reflects can generally devise and plan.

There is a common feeling among most all tradesmen about new inventions, which we want to say a few words about. It is "the spirit of despising things at first, which are produced by men out of their line of business." Men who invent something out of their line of business are generally laughed at by those in the business. Why? Because, they say, "how can they know anything about a business which they have not learned as a trade." This is not a right spirit. It is true that many men invent things which they think are new, but which have long been known to tradesmen in the business, but for all this, every work should be tried upon its own merits, be it the invention of Jew or Gentile. Whitney, Arkwright and Cartwright were neither engineers nor machinists, yet their inventions revolutionized the whole cotton manufacture.

We have often had cause of regret to see what a mass of thought and intelligence was expended by those who are termed the "most highly educated," upon subjects which have no practical bearing on the welfare of man or the advancement of the useful arts. What good will ever result from huge volumes written to prove the unity of the human race, or from long-winded dissertations on the subject of the age of Mother Earth? No good at all; and it must be admitted because it cannot be denied, that such subjects and those of a kindred nature, receive more attention in the College Hall than others of a vastly more useful character. This is the reason why such men from the workshop as Watt and Fulton, Bell and Stevenson have turned the world upside down

by their inventions, while the sages of Oxford and Cambridge have but added some new theorems to the Principia.

A Vegetable Diet.

On Wednesday of last week a Convention of Vegetarians was held at Clinton Hall, in this city, and quite a number of Delegates were presented. A Mr. Jonathan Wright declared that he had been a vegetarian forty years, and had reared a family of eight children on vegetables. He believed that humanity might save itself much labor and excitement if they would eschew flesh meat.

The Convention formed a Vegetarian Association, the objects of which are to induce habits of abstinence from the flesh of animals, and for the dissemination of information on the subject. One resolution that was adopted will show their zeal:—

"Resolved, That if man would return to Paradise and purity,—to mental and physical enjoyment, he must return to a Paradisical diet, and abstain from eating and killing animals as food."

Another resolution adopted will show their excessive modesty, and the complete fulfilment of that old saying, "it's a grand thing to have a good conceit of ourselves."

"Resolved, That as there are intellectual facts and a mental being into which an inebriate can never enter, and delights which he can never enjoy, so there are moral facts and a moral being which, to the flesh-eater, can never be revealed, and a moral happiness in which he cannot fully participate."

Vegetarians must be a moral set of mortals in their own estimation. As they have come to the conclusion that a vegetable diet will make our earth a Paradise again, we have no doubt but some of them will yet try to prove that the forbidden fruit was nothing less than a beef-steak or mutton-chop. Dr. Graham was there, and had a set-to with Dr. Wieting, a beef-eater, who was more than a match for him, and certainly gave evidence, although a vegetarian, that his vegetable diet had not imparted to him a paradisical disposition.

There is one thing which we abominate from the very bottom of our hearts, and that is, a disposition to make all scripture square with conceived opinions, instead of endeavoring to square opinions to scripture. There is not a new society organized for the ostensible purpose of any reform, without bringing scripture to bear upon their peculiar opinions to prove all the world in error but themselves. It is fearful to hear scripture handled as it is sometimes, by audacious enthusiasts. And upon the point of a vegetable diet being countenanced by scripture, to the exclusion of animal food, it is a heresy for which a great many vegetarians are responsible. If men hold opinions that are opposed to those of the scriptures (we only speak now of physical facts) let them be honest and say so. We like an honest though misguided man in preference to a hypocrite.

In looking over an address by the great Graham, delivered before the Agricultural Society of Hampshire, Mass., and published in the Tribune, we were struck with fear at the daring mutilations of Holy Writ in it. He asserts that before the flood, "as men multiplied upon the earth, they increased in sensuality and depravity, creating disease, and shortening life by eating flesh and drinking wine, and rioting in sensual pleasure, till God in mercy sent a flood to cleanse the earth from human pollutions." It is a great untruth to say that there is any evidence of flesh being eaten or wine having been drunk before the flood. It was not till after the flood that Noah received a command to eat flesh; so we have direct proof that the earth was filled with most horrible violence during the vegetarian age of the world—it was the most wicked age of the world's history.

We believe that vegetable and flesh diets are suitable for man, according to his wants, his kind of occupation, and the climate in which he lives, and the scriptures leave us to be guided by common sense and observation in reference to these things. A vegetable diet is best at the tropics, a mixed diet in the temperate climes, and nearly an entire animal diet in the arctic and antarctic regions. The grand thing to observe in respect to diet, is cleanli-

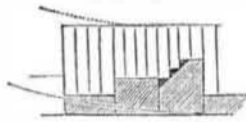
ness, regularity and moderation in partaking of it, and exercise and cheerfulness to enjoy it.

Walls of Buildings.

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Although we have stated that it was best to use the mortar as soon as possible after it was mixed, yet this is only in case it should be exposed, for it is well known that if mortar is kept covered up from the atmosphere in a heap, it is all the better for it. The Romans used to keep their mortar in this way for a year before they used it, and then they pounded it with beetles and made it into a proper thickness for use. Things are done in too great a hurry now to follow after such a good old plan. Neither clay nor sea sand (unless the latter is well washed) should be used along with mortar, as they prevent it from hardening.

FIG. 1.



Along with bad mortar and slender walls there is another evil of perhaps the greatest magnitude of all, viz., the manner of bonding them. As there are quite a number of walls made of brickwork faced with stone ashlar, it is requisite that this should be well done to prevent settling, which is an evil to which walls are liable when composed of different kinds of materials.

Fig. 1 shows a wall with a facing and backing of different courses, such as a brick wall with stone faces, and it exhibits how the wall is liable to settle on the inside as shown by the dotted lines, owing to the greater number of mortar joints in the inside than the outside. The best way to prevent this is to set the backing in cement, or some hard and quick setting mortar. In facing brick work with stone, the stones should be all truly squared and worked to sizes that will bond with the brick work. If this be neglected there will be numerous vacuities in the wall as exhibited in fig. 1. [Bond, in Masonry, consists in the

FIG. 2.

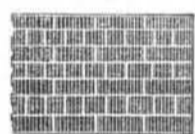
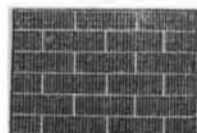


FIG. 3.



placing of the stones, or bricks in such relative positions that no joint in any course shall be in the same plane with any other joint in the course above or below it. This is called breaking the joint.] There used to be only two kinds of bonds made use of by bricklayers, called English and Flemish bond. Fig. 2 is the English, and fig. 3 the Flemish bond. In the English there is one row lengthwise, called stretchers, and the second row is placed in a contrary direction and called headers. In the Flemish bond, the headers and stretchers are alternate in the same course. This is a very neat and excellent bond, and all the old brick houses in New York used to be built in this manner. It is not so strong as the English bond, but infinitely better than the plan at present employed for facing, which has no bonds at all, but is made up of stretchers from top to bottom, like fig. 4. The appearance of this wall is by far the neatest, but strength is sacrificed to appearances. It is a common custom, also, to build the interior walls with five rows of stretchers and one of headers, thereby paying a reckless regard to good bonds and giving bad mortgages for the security of their strength.

FIG. 4.



In building walls which have to sustain a vertical pressure, four things should never be lost sight of, viz., uniformity of construction throughout the whole thickness; the proper bonding of the courses; the right distribution of the load, and good mortar. In all walls there is some settlement, but the danger does not lie in the amount but in the irregularity. This is the cause of fractures, and all their

attendant evils. We have seen in too many walls the ends of joists and other timbers built into the walls. This is liable to lead to irregular settling from the shrinking of the timber, and in all cases, it is recommended to guard against this evil by leaving proper recesses for the ends of the timbers, and the strength of the mason work should be entirely independent of them. It used to be more customary than it now is to employ a great number of cross iron ties in brick walls. This, we suppose, would be considered too expensive to be employed generally and extensively now, but we recommend this good old way and taking care to tar the ties to prevent the iron from oxidizing.

All masons know the evils of poor walls, and those of experience know how to build good walls. The object of these remarks is to draw the attention of others who are interested in the same, to the subject, in order that they may be able to judge between good and evil in the matter, and devote some attention, intelligently, to prevent evils which have become a common disgrace to our city. Masons would rather erect good than poor walls, but it is an old and a trite saying, "the tailor must cut according to his cloth."

The City of Glasgow Steam Propeller.

This fine ship, which we have already briefly noticed, sailed from this port to Glasgow on last Saturday, on her first return voyage. As this vessel is the pioneer of a new line, opening up a regular steam communication with a new country, it is worthy of more than a mere passing notice. She is an iron ship, and the finest model of one that ever entered New York Harbor. She is propelled by a four fluke Woodcroft screw, of 13 feet diameter. She has two engines of the combined power of 350 horse. They are the most compact marine engines that we have yet seen. The beams are overhead above the hot wells, and geared to a shaft with a large cog wheel, with wooden teeth, which gears into a pinion on the propeller shaft, making two revolutions for one of the first shaft. The engines are both on one side, balanced by a large coal bunker on the other. The engines are very built, though not so ornamental as either of the Liverpool steamers. She has three boilers, and carries 6 lbs. of steam only. This vessel is bark rigged and carries a great deal of canvass. Her tonnage is 1600 tons. She is fitted to carry 1200 tons cargo, and 80 cabin passengers. Her accommodations for passengers are of a very superior character, especially for comfort. The builders and owners of this iron ship, from stem to stern, are Messrs. Todd & McGregor, engineers, Glasgow, who unite in themselves the qualities of practical and scientific engineers. Both of them before commencing business for themselves were in the employ of Napier & Co., the one as foreman for a number of years, and the other as first steamboat engineer,—they are therefore self-made men, and now conducting a very extensive business, being considered the best builders of iron steamships in Great Britain, and have now contracts on hand for some years ahead.

The appearance of this vessel, as she left the wharf on Saturday, was very graceful, as she is so full rigged and has such a clear water run. Thousands of Scotchmen were assembled to witness her departure and gave "shouts repeated," as she was departing on her voyage home to "Bonny Scotland."

Capt. Matthews, formerly of the Great Western, is her commander—he is a very able and successful Captain.

Great Reduction in Telegraph Tolls.

Notice is given that, on the Morse line of telegraph, the rates of tolls between Boston and New York, and between Boston and Portland, will be twenty cents instead of fifty on the first ten words or less of each communication. To New York, two cents for each additional word; to Portland, one cent each added word.

M. Jules Alex., of Paris, has presented a petition to the French Assembly, stating that he has discovered a new method of education whereby a child may be taught to read in fifteen lessons. He asks for an appropriation of 50,000 francs.