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NEW YORK, SATURDAY, MAY 16, 1903.

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.

WE NEED FEWER DOCTORS.

The other day at the convention of the American Medical Association, in New Orleans, where some 4,000 or 5,000 physicians and attendants were gathered, Dr. Billings drew attention to the decided oversupply of medical men in the United States. He attributed the surplus to the fact that the medical colleges are graduating annually from 10,000 to 12,500 physicians, when the actual needs of the country call for only about 2,500. If Dr. Billings is correct, and there is no reason to doubt his figures, from 7,000 to 10,000 young men are annually entering a profession in which they have but the slimmest hopes of making even the proverbial "comfortable living." Of course, it goes without saying that most of the professions are more or less overcrowded; but we doubt if any of them, except the Law, could afford a parallel to the condition of things brought to light at the New Orleans convention. What this disparity between the demand and supply means to this army of young men, can only be surmised; but certain it is that in the majority of cases it will involve the loss of much money, that can ill be spared, and much time, that can be spared still less. It does really seem a pity that some of these graduates have not entered other professions that are not so crowded, and can offer better prospects of remuneration. Sanitary engineering, naval architecture, and the comparatively new profession of forestry, for instance, are not overcrowded, and there will soon be a great demand for really competent automobile engineers, men who combine with mechanical ability a thorough knowledge of gas and other engines that are competing for the control of the field. Then there is the sphere of journalism, which, while abundantly supplied as to numbers, is pitiably supplied as to quality. There must be among those thousands of graduates not a few young men who have a natural gift for good writing—in these days an all-too-rare accomplishment that threatens to become a lost art.

THE PROPOSED BROOKLYN BRIDGE TERMINAL STATION.

What has become of the Mayor's or, to speak more correctly, of the Bridge Commissioner's proposed railway terminal at the Manhattan end of the Brooklyn Bridge? As suggested by Mr. Lindenthal, and laid before the Board of Estimate by the Mayor, the scheme contemplated the construction of a terminal which was to take in the subway, surface and elevated railroad systems, which now meet near the entrance to the Brooklyn Bridge; while above the terminal was to be erected a great municipal building, of such capacity that it would be possible to gather together under one roof the various city departments, many of which are located in different buildings throughout the city, and are therefore paying rents which aggregate yearly a very large sum of money. The proposal was to acquire several triangular plots of land in the immediate vicinity of the Bridge terminal, and above the ground thus acquired erect the proposed building, through which, by means of arcades, the traffic of Chambers Street and City Hall Place would find its way. Into the three-deck terminal below the city offices would run the cable and trolley cars that cross the Brooklyn Bridge, the surface cars of Fourth and Third Avenues, the tracks of the present rapid transit subway, and those of the proposed tunnel connecting the Williamsburg and Manhattan Bridges with the Brooklyn Bridge. Among the many improvements, most of them excellent in theory, proposed by the present administration, we know of none, outside of the contemplated extension of the subway system, that would confer more benefit on the traveling public.

"RELIANCE" AND "COLUMBIA."

Because the "Reliance" and "Columbia" happened to get in close company during their tuning-up work on Long Island Sound the other day, and the old boat seemed able to hold her own with her big sister, quite a little thrill of excitement, with some trepidation, was felt throughout the yachting circles on this side of the water.

As a matter of fact, the result was exactly what we predicted in these columns, the "Columbia" with her small wetted surface and generous sail plan proving equal to the "Reliance" with her large wetted surface and greater spread of canvas. Had there been a disturbed sea, the "Columbia" would probably have pulled away quite easily from the big boat. Let the two meet, however, on the Sound in a whole-sail breeze with started sheets, and there will be a very different story to tell. At the same time, there is no denying that the "Columbia" has a rare burst of speed in her in a strong wind; as witness her magnificent run on May 3, when in a piping breeze that held true throughout the run from Newport to City Island, she averaged for over one hundred knots of the course a speed of nearly fourteen knots an hour. It is probable that she was favored somewhat by the tides.

OUR ENORMOUS EXPORTS.

It is estimated by the Treasury Department that the exports of the United States for the current year will reach the great total of $1,500,000,000. It is interesting to note the growth in our exports during the past four decades. In 1870, for the first time, the total reached the $500,000,000 mark; and it took twenty years longer for the figures to swell to $750,000,000. In 1897 they reached the grand total of one billion dollars, and a 50 per cent increase was recorded in the half-dozen years that followed. The growth of imports has been always steady, and during the last five years remarkably rapid. In 1895 our imports amounted to $705,205,585. Five years later they had reached $838,761,870, while for 1903 they amount to $1,001,596,683. It is the ever-growing demand for manufacturers' materials that is responsible for this rapid increase. In the month of February last manufacturers' materials alone constituted more than one-half of the total imports.

WHAT TO ABOLISH FROM WARSHIPS.

In discussing the many conflicting theories as to what should be got rid of in warships in order to reduce their ever-growing weight and size, our esteemed contemporary, the Engineer, of London, says: "The Americans have abolished torpedoes altogether; and it may be added that the French and Germans have abolished nets. The Germans have abolished wood. If all accounts are true, the Spanish and Chinese have abolished guns, and the Turks, screw propellers also, though the Italians—who have a reputation for building light ships—still supply big four-poster beds for senior officers." The fact of the matter is (and we say it with all due deference to Admiral Dewey and the school that believes in smaller and lighter battleships), what is needed to-day is not the abolition, but the introduction of weight. Guns, torpedoes, armor, conning towers, a generous ammunition supply, powerful engines, reliable gun-mounts, good coal capacity—all of these are necessary, and all call for weight. If we are to have our fighting line made up of battleships and cruisers, this means, and always will mean, that we must have big ships. We do not need to take away, but to add; and evidently, if the experience in the "Maine" is any criterion, the addition must be in the direction of such weight as is necessary to give proper structural strength all round. It looks as though modern battleships, cruisers and torpedo boats were suffering from the same cutting down of weights that is causing such trouble in our big modern racing yachts.

THE METRIC SYSTEM.

Many of the opponents of the metric system base their unwillingness to adopt it on the fact that it is decimal; others only on the ground that it is metric—i. e., based on a unit that is nearly 40 inches long instead of one that is 36. As regards the decimal end of it, there is not one of the American objectors who goes to England, who does not complain of duodecimal currency, with its various disadvantageous side issues. He finds his own dollar easily enough divisible and easily enough computed in all its divisions and multiples; but he complains of a 20-shilling pound and a 21-shilling guinea, and of the steps 4 x 12 x 20 on the road from farthing to pound. He never confuses the 20 hundredweights of 100 pounds each and the 20 nominal hundredweights of 112 pounds each, for although 2,240 pounds make the only legal ton in the United States, he uses almost exclusively 2,000. He forgets all our "troy" and "apothecaries'" weights, the tables for which used to wear out his soul when he was a boy, and which at forty years of age he cannot repeat. He probably uses for fine work, if he is a machinist, decimal divisions of the unit, or of one-third of the unit, as our United States standard is the yard, not the foot, in preference to the carpenter's eighths and sixteenths. He has no difficulty in laying out or laying off a third or a quarter of an inch on a decimal scale.

Those who base their objections to the system on the meter only, would do so were it divided into twelfths. They seem to think that if we were to measure in meters, we would have to change all our patterns. As a matter of fact, we would not. The designer who has any common sense and experience makes his drawings to some near unit which will give him enough stuff to bear the load or do the work. He gives himself a factor of safety according to the character of the load; and if the dimension were 39.4 instead of 40 inches, it would not cause him any worry nor make his work any the less reliable or suitable. A 3-inch shaft, so called, is really 2 15-16 inch about nine times out of ten; and no one complains of weakness because it is not just 3 inches. No one objects to putting in cold-rolled shafting because it is an even 3 inches on the so-called 3 inches size, instead of only 2 15-16. There is no confusion.

It will probably be a long time before British insular prejudice, some of which we have inherited, will consent to the adoption of either decimal subdivision or the metric unit, alone or in combination. Meanwhile there is one thing which we can do, so long as we are saddled with our present standards and subdivisions—that is, express dimensions in inches instead of in feet and inches. For instance, we can avoid writing 5′ 1″, and instead write 61 inches; because the 5′ 1″ is liable to be read 51 inches. There are times and places when such misreadings can be not merely annoying, but very expensive.

THE FIRST IRON SAILING VESSEL.

Some interesting facts have been published in England concerning the first iron sailing ship which set out from Liverpool, and its commander. The vessel with this unique distinction was the "Richard Cobden," commanded by Thomas Lidbitter. This craft was built of Coalbrookdale iron, and was launched in 1844. She was a bark of 461 tons, and had a speed of 10 knots per hour. She was constructed of iron throughout, including the rudder, rudder frame, and steering gear. Her lines were very fine, and she was five times her beam in length. She was without bulkheads, and in sailing trim she lay on an even keel. She had a great rise of floor, falling in somewhat from her bilge to the rails. In 1844-45 she set sail for China, but was laid up twice for repairs at Cork and Rio de Janeiro respectively during the passage. She aroused considerable attention at the various ports at which she called, as she was the first iron vessel ever seen, and was regarded somewhat suspiciously by the superstitious, to whom the idea of making iron float was considered as flying in the face of Providence. Her second voyage was to Bombay *via* the Cape of Good Hope and back. She covered the round trip in some seven months, which was considered a remarkable performance. She made another journey to Bombay, which she reached in 94 days. On none of these trips did the vessel make any water, so that the feasibility of utilizing iron for vessels was firmly established.

The next vessel commanded by Capt. Lidbitter was also an iron vessel launched in 1853. She was 192 feet in length, 32 feet beam and 22 feet depth. She was a three-masted craft, and was provided with an iron bulkhead abaft each mast. Like the "Richard Cobden," she was without steam power. Her first voyage was from London to Bombay, Calcutta, and Melbourne. She covered the distance between the two last named ports in 60 days. In June, 1854, she left Melbourne for home with a large and valuable cargo of wool and £300,000 in gold. The captain intended to round Cape Horn on this trip, but after passing Tasmania the ship sprang a leak during a gale, and as she listed with dangerous heaviness to port, the captain beat his way northward to Tahiti, and Papate was safely reached, but the vessel had only been kept afloat by three weeks' incessant pumping. At Papate the ship was pumped out and examined, and the leaks were found on both sides of the ship, abreast the mainmast. Three hundred rivets were knocked out and renewed before the vessel was again ready for sea. When the repairs had been satisfactorily completed, the captain again set sail, and this time safely reached London in March, 1855. The vessel was again overhauled, and the springing of the leaks was found to be due to the keelson, which instead of being made solid from end to end, was constructed in three unconnected lengths separated at the fore, main, and mizzen bulkheads respectively, and these bulkheads were found to be far too weak to withstand the enormous strains set up. The defects were remedied, and the vessel made numerous voyages, principally between Philadelphia and New Orleans, and was finally stranded in the northwest Providence Channel. More than thirty salvage ships undertook to refloat her, but as they demanded a payment of $30,000