

common return for the capital invested. In some of the retired streets of the city, further up town, the rents are less, but those which border on the business parts command prices correspondingly great. Having now obtained a sliding scale of rents from \$1,200 to \$600, let us look at the means which people generally have to pay for such accommodations. It is safe to assume that one cannot, as a general rule, pay more than one-sixth of their income for house rent; if any one does this, with a family always in the back ground relying on him for maintenance, they must, in order to pay the first-named sum, have an income of at least \$6,000 per annum. Now, as that sort of salary is, unfortunately, remarkably scarce at the present time, we had better leave this part of our subject and come down immediately to more rational sums; say, for instance, from \$600 to \$1,500 per annum. There are many modifications of this question which ought to be considered before going farther, which we are not able to discuss; and these questions may be embraced in the natures of the professions which occupy our citizens, and the requirements of them, as regards houseroom, rent, &c. For example, the mechanic, whose employment is exclusively laborious; he does not require, although his taste may exact it, so much of elegance or decoration as the man whose calling is intellectual, and who depends in a great degree for his mental culture and sustenance upon the material matters with which he comes in daily contact. These things being self-evident, we shall not pursue them further.

Taking up the amount of our incomes again, we find that for one of \$1,000 we shall have, if it is divided by one-sixth, about \$167 with which to satisfy the landlord. Now let any one look at the apartments, not-houses, which are to rent for these prices, and it will be seen that they are wholly unfit for civilized habitation. Not only are they full of dark holes of bedrooms, where one stifles in the summer, but they abound in vermin, and are uncleanly to the last degree. Something different is required, and that is, houses constructed on principles wholly at variance with those just mentioned. This suggestion is not at all difficult to carry out. There should be buildings put up with reference to the wants of gentlemen with small incomes. A man with a limited purse may often have as much, or more, refinement than he who reckons his dollars by thousands, and it is in behalf of a large class—by far the majority—of our citizens, that we raise our voice on this subject. If tenement-houses can be erected and made to pay a sure dividend, that is the rent in advance, of 15 per cent, certainly dwelling-houses of the new style can be run so as to amply remunerate their owners, even with the present rates of taxes. The buildings to which we have reference should embrace conveniences on one floor for satisfying all the actual wants which arise in daily life; as, for instance, the elevation of coals from the cellar, the conveying away of slops, in short, the many conveniences which modern machinery substitutes for muscle. Strict privacy should also be guaranteed to every dweller within the walls. We venture to assert that if such dwellings were erected, they would not only be full the year round, but command better rents than the miserable holes which are now the only refuge of hundreds of families in this city. New York life differs materially from that of towns and cities elsewhere in the States, and to meet the character of it we should have suitable homes to retire to at the close of the day. Nothing has a greater or more beneficial effect upon society generally than the observance of those usages and amenities which are alike the distinguishing features of civilization and Christianity.

DONALD MCKAY ON THE FRENCH NAVY.

Donald McKay, who is now in Paris, has just communicated to the *Commercial Bulletin* (Boston) a very interesting account of the condition and size of the French navy. According to the heading of the communication "France is Mistress of the Seas"—a statement not quite warranted by the facts given. The transformation of the French navy to armor-clad vessels commenced in 1855, and it will be completed in 1870, when it will consist of forty first-class iron-cased frigates, with armaments varying from 36 to 52 guns each (all rifled and breach-load-

ing), having engines of from 900 to 1,200 horse power, and all possessing a speed exceeding twelve knots per hour. The naval estimate for 1863 amounts to 143,418,920 francs—nearly \$30,000,000. The steam navy of France at present is composed of 325 vessels of all classes, and there are forty-two building. There are six iron-cased frigates afloat, and ten building; and there are fourteen iron-plated batteries afloat and seven building; and there are 119 sailing vessels belonging to the navy. Mr. McKay states that, of the sixteen iron-cased frigates afloat and in the course of construction, only two are entirely of iron; and he says:—"It is now regretted by the Government that these two were not constructed of wood, for experience has already proved, and without any contradiction, that these vessels, on account of their bottoms fouling rapidly, will not be capable of keeping up in speed with the wooden-built and coppered frigates. The *Warrior*, of the English fleet, has lost from this cause two knots of her original speed, and it is generally conceded that these iron-built men-of-war ships will have to be taken into dock at least every three months, to clean their bottoms." Mr. McKay alludes to the speed of the pirate *Alabama* exceeding that of any vessel in the American navy, and she is wooden-built and copper-bottomed. In our opinion these views of McKay should be modified.

It is indeed true that the bottoms of iron vessels become foul, and thus far no paint or cement used for coating them has prevented the adherence of barnacles; but the evil is not so great as has been represented, else why should the mercantile classes of Great Britain prefer them to all others? Merchants are shrewd business-men; they look more to profit and loss than Governments, and if the expenses of maintaining iron vessels were so great as has been alleged, of course merchants would prefer wooden steamers. But it is a fact that not only the English, but the French and German ship-owners have discarded wooden steamers, and have superseded them with iron screw-steamers.

The thickness of iron casing in the French frigates afloat, as well as those on the stocks, is four and three-quarter inches near the load line, and four and three-eighths above. *La Gloire*, *Invincible* and *Normandie* are simply timber-hull vessels cased with iron. They have attained a speed of thirteen and a quarter knots per hour under steam alone, with men and armament on board. They roll easily, are tight, steer well, and are efficient fighting ships. The ten new iron-clad frigates on the stocks are similar to *La Gloire* in outline, but they will carry their battery fourteen inches higher. Their dimensions are, length, 265 feet; breadth, 56 feet; mean draft, 25½ feet. The iron-cased frigate, *Normandie*, has made the voyage across the Atlantic and is now at Vera Cruz. She has proved to be a good sea-vessel.

Several private establishments in France are filling orders for the Government. M. Arman, at Bordeaux, is building two iron-cased floating batteries. They are to be covered with six-inch plates, and armed with 180-pounder steel guns. At Nantes, M. Gouin is building two similar batteries, but their plates are only four and three-quarter inches in thickness. The whole dockyard organization in France is very perfect, and arrangements were lately made at Toulon and Cherbourg whereby provisions, &c., could be put on board of a fleet in half a day for an army of 60,000 men. All the naval constructors in the French service are allowed to submit their plans to a commission, and the plan offering the most advantages, though perhaps coming from the lowest rank, is accepted. Mr. McKay recommends this excellent system to our Government. He asserts, that in comparison with the French and English navies that of America is not worthy of the name, and he recommends that twelve first-class iron-cased frigates be commenced without delay. He also recommends that no iron ships be built, but wooden ships covered with plating. He says:—"Iron ships ought not to be adopted in our sea-going fleet, for the following reasons:—

"1. The fouling of their bottoms (against which no remedy has been found yet) and consequent loss of speed.

"2. The weakness of their bottoms, and consequent liability of soon breaking up whenever they touch.

"3. The impossibility to give them a good ventilation, all the artificial means having failed to produce

a good ventilation on account of the many water-tight bulkheads necessarily used in their construction.

"4. Their great unhealthiness, as proved already by the few cruises made by the *Warrior* and *Defence*."

The second reason against iron vessels advanced by Mr. McKay, has been proven to be groundless. However, wooden vessels covered with armor may be the best for us to adopt. It should not be forgotten however, that the English entire iron frigates, so called, are composed of wood and iron. The framing, inner lining, and armor are iron; the middle casing is thick teak planking. In all likelihood the French large breach-loading navy guns will prove very inferior, like the Armstrongs, to muzzle-loading guns. Mr. McKay has heard that several large frigates of over seven thousand tons are to be constructed for our navy. He regrets this, because he considers them unsuited to the shoal waters of most of our ports.

SCREW-CUTTING LATHES.

When threads are cut with tools, in lathes, they are, provided the leading screw is a good one, more accurate than those made by dies. They require, however, much more time than the latter tools; this matter can and should be remedied. Lathe-makers seem to think that in providing changes of gear they fulfill all the requirements of the tool for this special purpose. In reality, many more appurtenances are necessary—guides, steadiments, doctors, side screws on the rest to gage the depth of the thread, &c. These might all be furnished, and a lathe turned out, for the avowed purpose of cutting screws and for doing nothing else, just as milling machines are made which will execute any curvature or angle desired in iron, brass, or any other metal. So also for cutting up nuts, there should be an attachment, by gearing or otherwise, that would cause the rest to travel back and forth like a planing machine bed; all the workman would have to do, in this case, would be to run the tool in or out, as the motion changed; he would then be sure of hitting the thread every time. In fractional threads and with old lathes this is sometimes a matter of difficulty. Here are suggestions which we think would, if followed up, result in the production of a lathe which would be highly popular with manufacturers.

AN IMPORTANT FACT.

A recent editorial article in *Mitchell's Steam Shipping Journal* (published at Liverpool, England,) contains the following item of information, relative to some peculiarities which it has discovered in our harbor; these will doubtless be highly appreciated, if not heeded, by mariners generally. Speaking of the *Great Eastern*, it says:—"In the Thames she grounded at low water, but in New York, where she anchored, there is no tide, and the River Hudson keeps up a continuous flow of water." We have carefully examined the remainder of the article from which the extract is taken, in the hope of being able to find some explanation of the statement that the Hudson keeps up "a continuous flow of water," and that we have no tide here; but being unable to discover any thing bearing on these points we have reluctantly given up the search. We would like to inquire of our astute cotemporary if there are in England any rivers that operate on the "palpitation" principle? All the rivers in this country, so far as we know, keep up "a continuous flow of water." Whenever they fail to do this we look upon them as mere mud-holes—something like the Thames at low tide.

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