THE COMPARATIVE SOCIAL STANDING OF MECHANICS THROUGHOUT THE WORLD.

To the lover of his kind, to the philanthropist generally, few things in the wide range of social questions present a more interesting spectacle than the condition of the toilers and moilers who underlie the whole political systems of the world. The foundations of society rest, in a great measure, upon the mechanic arts. This is a broad assertion, and is supported by the following argument:—Although laws are framed for the guidance and protection of the community, these laws and enactments are of themselves, in our country at least, projected, carried out, and supported in force by members of the mechanical world at large. Take the working classes, that is, those who exist by manual labor, for they are in excess of the professional ones who live exclusively by their brains or those of others, and we shall find that the masses are represented by the followers of the several handicrafts; the hewers of wood and drawers of water form a noble army recruited from underneath all suns, gathered from every quarter of the globe, and exercising their several vocations alike in the torrid and the temperate zones. The comforts, the pre-eminence, the distinctions which are open to these men, the political privileges they may enjoy, their hopes, and the mundane prospects open to them, should excite no small part of our consideration. In a state of turbulence they excite the utmost alarm in any Government, but quietly fulfilling their destinies, rising with the sun and toiling long after the going down of the same, they accomplish and carry out the inevitable course of natural laws.

The well-being and, consequently, the tranquillity of this class of men depend upon several things; among these may be found the standard of wages, their social status, and their general intelligence. These material matters are, in their turn, dependent, as to the first issue, upon the demand for the workmen's services; as to the second, upon the particular form of government under which they live; and, lastly, upon the liberality of the State. A man who lives solely by selling his labor, will, in most instances, carry it to the market where it will command the best price. Various causes conspire against the consummation of this plan—such as the natural ties of locality, home attachments, or encumbrances of one sort or another, and these are providential so far as they restrict emigration. Were it not for these irrevocable laws the country that is especially favored in respect to the points mentioned would soon be overrun and reduced to a level with the others. Let this be taken as a solution of the question, why all countries are not alike, or why one is not as good as another, and we have, limitedly, the secret of superiority. As we have said, the capital of the workman is his hands and brain; and the country which pays him the most for the use of one and the development of the other is the one which he will select as the theater of his operations.

We make a distinction between the use of hands and the development of brain power, as the best means of conveying the idea of invention. Invention is the product of thought, and this thought originates in the brain; consequently, wherever there is the best field for invention—where the discoverer is the most fully protected in his rights—that, most assuredly, will be to him the promised land. Comparatively few workmen, in this age, are satisfied to jog contentedly along with the saw and the hammer as companions. No! this is the era of enlightenment and useful discovery. And as the incentives to mental action are great, viewed in the light of ordinary human aspiration, just so strong is the struggle to obtain the prize of wealth which it holds out.

Let us look at our own country to-day, or rather as it was before the broils of politicians had obscured all the fair landscape with the smoke and turmoil of battle, and threatened for a time to overthrow all law and order; let us see what our footing is in reference to the caption of our article. With us the workman is respected as an important member of society; in return for the years of his apprenticeship, he will receive, on an average, from $450 to $600 per annum, Not that a great many do not obtain more, but the rather that this is a fair average of the compensation received by all trades. This sum, depleted by the holidays and necessary relaxation from toil which is demanded by the body, is all that he has to support his family and establish them in some decent occupation. The State cares for their education, and he need be only at the expense of maintenance. On his table the mechanic in our country can place all kinds of meat, also fish and poultry, if he be luxurious in his tastes; fruits, vegetables, flowers, these are all within the reach of his means, and can be indulged in limitedly. Thus far the inner man; what of the brain and its needs? In nearly every ward of the cities which spread themselves broadly over the land there are well-stocked schools and academies which will take not only the workman's children and make able scholars of them, but also himself in the evening, if his education has been neglected, and put at his disposal the primary branches of knowledge, which, once mastered, make all others comparatively easy.

Thus are the two great and most pressing wants provided for—the body and the brain. So also, if we look at the operations of the commercial transactions of the country and the bearing these have upon the mechanic's interests, we shall find so moderate a scale of prices in respect to food, clothing and the intellectual pleasures, that he may have not only enough to feed himself and little ones abundantly, but also find a surplus with which he may clothe himself like a gentleman, and visit the concert or theater as often as is necessary. Also, in the legislation of the land, his voice may be as loud and his influence as strong as any millionaire of the metropolis; he exercises his own judgment, and if oppressive or corrupt laws are put in force, it is the fault of the class to which he belongs. Nay! he may himself, enjoying the confidence of his fellow-citizens, aspire to any seat of power in the land. Few names shine more brightly on the roll of honorable distinction than those who were formerly heard of only in the workshops and mills.

From these observations we deduce the fact that America must be, of all places, the most desirable one for mechanics, and certainly, compared with other parts of the globe, it would appear so. Look for a moment upon the social standing of mechanics in the old countries—in England for instance. The mechanic in that kingdom is as widely different from his coadjutor here as the countries are distinctly separated by the sea which flows between them. It is true that there are institutes and places for public gatherings, where the artisan may listen to lectures and themes discussed by the most eminent of his profession; there are, moreover, protective societies, in which the compliance with certain fixed rules and the payment of a monthly subscription entitle the member to the support of his fellows, both morally and materially. With all these advantages, however, there is, in the English workman, a lack of the particular individuality which is so dear to the heart of the American artisan. Merge the latter in the mass, and you destroy his efficiency. Appeal to his personal skill and knowledge and you incite, not him alone, but the whole of his comrades, to act in such a manner that they also shall receive this coveted reward. The English form of government may be adduced as the reason for this. The aristocrats are so powerful that the laborers and petty tradesmen associate only with themselves, and are denied, generally, those opportunities of social cultivation which are here attainable; though it may be remarked that gentility, like poetry, is inborn and cannot be assumed. So also as regards the wages, the American workman has decidedly the advantage. English artisans with whom we have conversed, assure us, however, that the average amount of wages received per week by them is about thirty shillings, or $7.50 of our money. Now, if these figures are correct, we cannot think that the prices of food are so vastly less abroad than they are with us; for, at the same scale of prices, even, the mechanic here would have much the advantage of his brother in Europe. At all events those mechanics who come to this country will not compare favorably with the mass here.

Throughout Europe the case is much the same; the Government is the controlling power, for or against the workman, and allows him just such privileges as it pleases. If we look at France, we shall find the wine-shops and cabarets full of police, who, clothed in the dress of honest citizens, listen to conversations and ingratiate themselves into the confidence of groups, in order to find out the topics discussed. By such means the Government is always informed of the tranquillity or restlessness of the so-called lower classes. In Austria it is the same, and as well in Italy and some other of the smaller principalities that border on the Danube. In Germany the workman is free, comparatively; he goes to his beer-shop, sings, dances—does, in short, what he will, so that he only keep out of mischief. In all of these aspects of mechanic life we see features that are exclusively national and which enable the proficient to recognize artisans of different nationalities at a glance wherever they are met. The British mechanic is apt to be lowering, beery and sulky; but he is steady when at work, a skillful man, generally, in the details of his business, and thorough. The Frenchman is gay, vivacious, and volatile to a fault; he is often found over his *vin ordinaire*, and is an enthusiast in his profession, but not by any means so thorough as his neighbor across the Channel. So also the German; his traits are sluggishness, a general-tobacco-and-lager halo surrounding him, and a heavy lumpish way of working, which is in strong contrast with the others previously mentioned; these qualities act against the production of any very fine mechanical work; in general, German wares are coarse and heavy. If we look at the American mechanic we shall find a combination of all the qualities above cited. He is energetic, enthusiastic and full of ways and means to overcome special difficulties. His disposition is to hurry through with his business as fast as possible. Time is money with him, and a deal of it, too; he consequently urges his powers to their fullest extent. It would seem that the attention of the mechanic in this country is given chiefly to invention, so many are there brought forth, and this can be accounted for by the value of the patents. Many and many a handsome fortune owes its existence to the well-directed efforts of a few hours' thought. The number of discoveries of this kind multiply every year in all branches of art, science and manufacture, and we hold to-day, as we have always held, the reputation of being the most ingenious people on the globe.

Much more time and thought could be profitably employed upon the subject of this article than it is in our power to bestow; it is one full of interest, and we hope from time to time to say a few words upon our progress in the mechanic arts, as also upon the superior intelligence and mental qualities generally of our American mechanics.

HOMES FOR MEN OF MODERATE INCOMES.

There are some peculiar phases of city life which present food for thought, and afford opportunities for observation which, if properly improved, cannot fail to be of service to a vast majority of our citizens. In our last volume we presented our readers with some statistics concerning the cost of living, or, rather, of the bare support of life; "living" being a general term, which includes many things besides the mere staff of life. Let us now look at the manner in which families are obliged to live with reference to their apartments. It is a well-known fact that, owing to the value of real estate, and the enormous taxes with which property-holders are saddled, rents are high and the accommodation given therefor correspondingly limited. It is by no means uncommon to pay $1,000 or $1,200 per year for the use of a house whose surroundings, in the way of neighbors and the streets adjoining, are very far from being desirable. As we descend in the scale of prices, we shall find dwellings in the heart of the poorer quarters, on the eastern side of the city, which are rented to many families—say from four to forty, and in some cases to still greater numbers (these figures do not designate individuals, they represent families); from the curbstone to the garret every room is thickly crowded with human beings. Such tenements are rented in suites of separate apartments, for which a monthly rent is exacted, varying with the distance from the street, those nearest the sky being of course the cheapest. The average receipts for one of these tenements will amount to the astonishing sum of $600 or $800 per annum. This in houses which are not by any means worth ten times those sums; indeed, we are told by those who ought to know—the landlords—that fifteen per cent is not at all an un-

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-loading), 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 clases, 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. KcKay 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-built 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 Cherburg 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 vesseis 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 tuns 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.