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(Illustrations are indicated by an asterisk.

INFORMATION WANTED.

Some manufacturers in this country use steam power to drive their works. In the various industries many hundreds of thousands of tuns of coal are burned annually; in some instances with frightful waste, in others, at a great disadvantage, in all with very poor economy.

Connected with the employment of steam power there are many intricate and elaborate questions that can only be determined by careful experiments conducted by capable persons. Here is a case in point.

A manufacturer writes to ask what would be the economy of using the same amount of steam he now employs at full stroke in a larger cylinder at a high rate of expansion?

By turning to any of the tables of the mechanical effect of steam at various temperatures and pressures, and by the aid of the common rule for determining the value of certain grades of expansion, it is easy to arrive at a mathematical answer, but this is not what the manufacturer wants. That calculation he could make for himself.

He wishes to know what amount of work has actually been done under or approximating to his conditions and circumstances, by an engine in good order and well managed—not the theoretical but the actual duty.

Any one who is at all conversant with steam power, or has considered the subject, knows that there is no motive agent so influenced by conditions, none so trammeled by the work it has to perform. The experiments with steam engines on the two steamers, *Winooski* and *Algonquin*, in this port, for the last twelve months, prove nothing to satisfy any one, and have merely been the instruments for settling a personal quarrel between two individuals.

The Government has, however, made a set of experiments on a stationary engine, with cylinders of different dimensions, at various grades of expansion, and has obtained a great deal of information invaluable to the people. This information is withheld from them by the Commissioners in charge, Mr. Horatio Allen, of the Novelty Works, and Mr. B. F. Isherwood, of the navy.

There is no reason why it should not be made public; at all events, such portions of the experiments as have proved certain things. The money for these experiments came out of the pockets of the people, not from private sources, as in the Hecker and Waterman experiments, and some explanation of the delay in making them public property should be given.

Why are the results of these experiments not given to the manufacturing community, Mr. Allen?

COFFEE.

Few people ever drink a cup of real coffee, no matter what price they pay per pound, or what care they take in roasting it. It is the final process—brewing it, so to speak—on which all depends; this, of course, assuming that other essentials as to quality and previous preparation have been attended to.

In the article by Baron Liebig, published on page 129 of the current volume of the SCIENTIFIC AMERICAN, many hints are given which, if followed, will prove exceedingly valuable. It is not necessary to expatiate on the virtues of coffee, they are too well known, but a few hints in addition to the article mentioned are here given.

The common way of making coffee is to grind a portion in a mill, throw it in a tin pot and allow it to boil until wanted. Where so made it is wasted, and the volatile spirit evaporated. The fluid which remains is devoid of any tonic or aromatic flavor, and is nothing but a bitter decoction, compared with true coffee. French coffee is not good, because it is so greatly adulterated with chicory, but the method of making it is, and should be practiced to a greater extent, since it involves no more trouble than the old plan. A French coffee pot consists of two tin vessels, one on top of the other. In the top one is a strainer, and a tin plate pierced with holes. The coffee, ground almost as fine as gunpowder, is poured into the strainer, and the plate with the holes put over it. Boiling water is then poured in and filters through into the bottom vessel or pot. The pot should be kept on the range or stove, a few moments, until scalding hot, and the fluid which has filtered through poured in at the top again, which will extract all the flavor of the berry, and make a cup of coffee far superior to that boiled.

Liebig says, however, that a portion of the coffee should be kept out, thrown into the bottom of the vessel, and there permitted to steep, like tea. This, he says, gives the flavor, while the infiltrated portion gives the strength. We have tried this experiment with great success, and find it a vast improvement over the method of simply pouring boiling water on the top; it is, moreover, economical, because the ground coffee is exhausted more completely than by simple immersion in hot water. After standing a few moments, it is as clear as spring water, and as deep colored as claret.

The coffee sold burnt (but not ground), in stores, is as cheap to consume as green coffee. The latter costs less, pound for pound, but the waste which takes place in roasting has to be borne; besides, the imperfect manner, to say nothing of the waste of time in doing it, amounts to more than the difference of price in the two kinds.

To have really good coffee, that strengthens and stimulates, the beverage must be strong, strong in distinction to weak; not dense enough to bear an egg. Persons of weak digestion find that weak coffee creates flatulence and is a burden grievous to be borne, while the reverse is the case with strong coffee. A tea cup full of ground coffee will make from five to six cups as strong as it should be. Of course there are stomachs which can bear turpentine, but they are happily in the minority.

Coffee should never be brought in contact with iron. Tinned coffee pots that have been used for some time are apt to get worn on the surface, so that the iron the tin plate is made of comes through. When this occurs the coffee will be bitter and black, for it attacks iron, forming an acid very quickly. This any one can see by putting a few drops on a case knife.

Above all, to have good coffee, the pot must be scrupulously clean. It should be scalded every morning before using and once a week a piece of soda as large as a walnut should be put in the pot and boiled thoroughly. The result will surprise many who thought their vessels clean.

A HAPPY FAMILY.

In a late issue of this journal we published an article under the head of "Hours of Labor in English Factories," which contained an account of the unhappy condition of many of the workmen and children, and of their moral and physical degradation from causes wholly within control. It is not necessary to reprint portions of the evidence there made public, nor to set forth again the melancholy record. A brighter and pleasanter task awaits us. Last week we had the sorrows of labor, to-day we have the foil in the pleasures, the happy homes and the social joys of some French workmen.

Monsieur Godin Lemaire, the proprietor of a large iron foundery at Guise, France, has exalted ideas of the comfort and well-being of his workmen and provides for them on a magnificant scale. Not content with merely handing out a certain sum weekly through his agents for their support, he does more. He provides a home, and calls the occupants his family. Such indeed it is. He erected two fine buildings on a street in Guise, near a river, and in the center of about fifteen acres of beautiful land, well shaded.

The buildings are four stories high, and built so as to form a hollow square in the center. This is covered in with an immense sky-light, so that in all weathers it can be used as a play ground for the children. Iron balconies are fitted along each story, and access is obtained inside the court to every room or suite of rooms in the building. Every suite has its own cellar and storeroom, and the amplest facilities for drainage are provided. The water is raised by steam to tanks on the roof, and there are fountains that play on every landing, besides hot and cold baths. The dust holes are emptied daily, and the closets three times a day, and the most rigorous cleanliness in other respects is observed.

No time is lost by the house wife in running about town for her supplies. The ground floors are occupied by stores, where vegetables and all other necessaries may be purchased, and this at the very lowest of low rates. All profit above enough to pay the expense of the establishment, accrues to a household fund, thus giving each individual the benefit of his or her economy.

There are many other features of interest in this novel undertaking which cannot be alluded to in detail. M. Lemaire, the proprietor, takes every thing into consideration, and even provides colored worsted balls for the babies of the household, so that all, from the youngest to the oldest, feel his fatherly care.

It is too much to expect that any such establishment will ever be erected in this country, for many reasons. Moreover, it is doubtful whether affairs could be so conducted as to make it agreeable for Americans of all shades of religious belief and social tastes to reside under one roof in the manner described. "Unitary homes" have always descended in the social scale with us, and however honest the individuals composing such communities may be, the world looks upon their motives with suspicion. Some infatuated persons, defying public opinion, form communities and live in a miscellaneous condition, neither coming under the hand of the law nor being respected by the world at large, but this state is not a desirable one for those who value the good opinions of their fellow men. A scheme that would give mechanics good comfortable homes in the suburbs, that would provide every essential of life, that would insist on cleanliness, on outward respectability at least, conformance to the observances of Christian communities, that would lessen the labor of housekeeping by mechanical contrivances of the simplest description, that would save the time of the mechanic in attending to odd jobs after he had done a hard day's work, we say, if such comforts could be afforded at a reasonable sum the value would be inestimable.

Plans somewhat similar have already been carried out, but in a much less perfect way, but we hope the day is not far off when the workman will have as comfortable and as secluded a home as the professional man.

AN English photographer has invented a substitute for the vise, in which is screwed the head of the victim who is to have his picture taken. The new apparatus is fastened solidly to the floor, and as a movable clamp which fits the back, while the head rest is comparatively agreeable.

A SPECIAL train went through from Boston to Portland on Saturday with a single passenger—a gentleman who had engaged his passage on the European steamer, missed the morning train, and paid $300 to be put through in time.