

Scientific American.

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Food—Philosophy—Bread.

This is a subject of the deepest interest to every individual. The care for "his daily bread" exercises the most important influence over every man. The savage satisfies the cravings of hunger by the spoils of the chase, the civilized man by the fruits of the earth. No nation can progress and expand without an abundance of food: hence, agriculture is the soul of all other branches of industry. The experience of civilized man has given the preference to the cultivation of cereals above all other agricultural products, as being the best adapted for his food, as their constitution is analogous to milk, and their effects in sustaining life very similar. Of all the grains which are cultivated, wheat, of which our universal leavened bread is formed, holds the highest rank. Why is this? In answering this question, our intention is to correct ignorant notions which are propagated daily through the press, as matters of science.

The food of man, or alimentary substances, perform two distinct offices in the human system, and must be differently constituted to perform these offices. To convey a clear idea of the operations of the body, we will compare it to a steam engine. The fire to raise the steam in the boiler, for driving the engine, must be continually supplied with fresh coals to maintain the heat; and the friction wears away the engine slowly, hence its joints have to be lubricated continually, and its worn-out parts repaired with new material. It is precisely the same with the human body—it is like a self-supplying, self-acting steam engine. Our food requires carbon and hydrogen to maintain the heat of the body; also nitrogenous substances to supply the waste of the parts of the human machine—muscle, bone, &c.—which are composed of nitrogen and carbon; lime, and other salts. The blood is a current of lubricating and waste-supplying material. That particular food which supplies these demands of life the best, is the most valuable. Of all the grains, wheat supplies the greatest abundance of nitrogenous substances, while all other grains supply enough of respiratory substances; in other words, respiratory substances are more plentiful and more easily obtained than the nitrogenous.

The very common opinion propagated by superficial writers on the food of man, respecting the non-nutritious respiratory substances being less necessary, as food, than the nutritious, is exceedingly erroneous—both are necessary to the development and operation of the human frame.

Our attention has been directed to this subject by an article in the *N. Y. Tribune* of the 18th inst., on the philosophy of fermented bread manufacturing, as carried on in *Berdan's Baking by Machinery*. It states that "the oven to perform the baking is constructed upon such a principle, that the alcoholic evaporation of one set of loaves is absorbed by another set, so that little, if any of the nutriment of the flour is lost. This is by far more important to mankind than all the ingenious machinery contrived to facilitate the work."

Although we consider this to be the accomplishment of an impossible feat—chemically and mechanically—in any oven yet constructed, we will endeavor, in our next number, to show that it is of very little consequence whether the alcohol, which is a respiratory and not a nutritious substance, is saved or lost in bread. We will do this, not in reference to the oven mentioned, which is a very ingenious one, and confers much credit upon its inventor and constructor, but to throw more general light on the chemical principles involved in bread making.

Reform of Weights and Measures.

We really hope that Congress will soon cease to fritter away valuable time in making party speeches, at the expense of the people, instead of doing real useful work, in reforming bad, and enacting necessary new laws for their benefit. It will be a shame if this Congress

adjourns without doing something to effect a reform in our conglomerate weight and measure statutes. The most intelligent men in our country have been calling for such a reform for a number of years; the measure would be a popular one, because it is good; and as it is equally acceptable to members of all political parties, we hope they will soon show some zeal for such a worthy object of legislation.

We do not care so much for the names that may be adopted for different weights. We want a simple uniform system for both weights and measures, and as the centesimal system is the most simple, let it be adopted. We really hope, however, that in the adoption of the centesimal system, the terms of the French, for which some of our scientific savans seem to have such a strong predilection, on account of their jaw-breaking extensiveness, will not be adopted.

Milimetre, centilitre, decalitre, myriolitre, also gramme, miligramme, centigramme, chiliagramme, and myriogramme, French terms, which our professors of chemistry now employ too often, may do very well for men who delight in words "of wondrous length and thundering sound," to amaze the rustics, but they are not suitable for such a business-like people as ours. They are too long, have a too near resemblance of sound, and would lead to frequent mistakes in business. The same terms as those now employed in our weights and measures should be retained, only their standard should be changed.

Our centesimal system of coinage is the best and most simple in the world; mills, cents, dollars, are short words, distinct, and few in number, just suited to a business people. Let the same objects be kept in view in the terms adopted for weights and measures. The terms inch, foot, yard, rod, and mile may still be retained in centesimal linear measure and so may gill, pint, quart, gallon, and bushel, in measures of capacity. These terms are short and very distinct, excellent for business purposes.

Congress as a duty should now take up this subject so that the people may be instructed in their duties, as many of the States have passed laws relating to weights and measures, while Congress alone has the constitutional power to pass such laws. Take up any work on weights and measures, and we find that Maryland, Pennsylvania, Ohio, and New York have standards of their own, all of which are unconstitutional if they conflict with those of the United States, and if they do not they are useless—nonsensical.

In Philadelphia a bushel of oats is reckoned at 24 lbs., in Ohio, 32 lbs.; in Maryland the marine tun is 2000 lbs., in Pennsylvania a tun is 2000 lbs., while the United States tun is 2240 lbs. The State of New York has a special law for liquid measure, 8 lbs. of pure water being the standard for a gallon; it has also a standard bushel of dry measure, amounting to 2211.84 cubic inches—equal to 80 lbs. of pure water—while the United States bushel is 2150.42 cubic inches.

A reform of our weights and measures is positively demanded, so that we may have a uniform system, clear and simple, established throughout our country.

Opinion on the Verdict of the Alliance Railroad Accident.

The cause of the railroad collision which recently occurred at Alliance, Ohio, as noticed by us last week, has been attributed to the recklessness of John Cherry, the engineer of the Cleveland and Pittsburg Railroad train. This is the verdict of the Coroner's Jury which sat at Alliance to investigate the cause of the death of the eight persons, who lost their lives on that occasion. From the evidence which we have read as given in that case, we are of opinion that the verdict does not go far enough. The engineer, John Cherry, did not shut off his steam and break up his train in due season, it therefore dashed into the train of the Pittsburg and Chicago Railroad, on the crossing, while it was standing across the track at Alliance; and so far he is apparently guilty. But was it not supremely stupid and wrong to have the train that was smashed standing across the track at that moment? And does not the conductor

of that train deserve censure as well as John Cherry? He could easily have stood on his track, out of the risk of any such danger; while there is always risk of danger in having a train stand in such a position at any time. A running train is liable to have its breaks rendered inoperative, and the engineer cannot easily judge the exact momentum of his train, so as to break up and arrest it within a certain distance of a station. These are probabilities which can easily be guarded against in reference to a collision by a train standing at a station—it can stand out of the reach of danger. Why was not this done in the case of the train that was crushed at Alliance?

(Correspondence of the Scientific American.)
The Woodworth Patent Extension.

WASHINGTON, D. C., Dec. 20, 1856.

EDITORS SCIENTIFIC AMERICAN—I have just been informed by a Member of Congress, that the schemers for the extension of the great Lumber Planing Monopoly—the Woodworth Patent—have, as a last resort, agreed to cut down their demands somewhat. They offer to accept a Bill granting an extension, but providing that all who are now using the Patent, shall be entitled to its free use during the term of the extension. "All we ask," say the schemers, "is that only the new comers shall pay us tribute."

In other words, they say, "Only give us liberty to plunder the public at large, for a while longer, and we will omit to call on those few private individuals."

By this show of liberality, the schemers hope to influence Congress in their favor; and especially as, by this very move, in connection with large bonuses, they have disarmed all opposition from the present users of the Patent. Many of the users, who but recently were the powerful opponents of the schemers, are now, to their lasting disgrace, hard at work to promote their nefarious designs. Some of these men are brought here for exhibition to the Members of Congress. "See there," say the schemers; "there's a man who makes more Woodworth machines than any other in the country. He ought to know whether it's right to give us an extension Ask him." And when they ask him, he tells a plausible story of Woodworth's poverty, talks of justice, and says the patent ought to be extended.

My informant tells me, however, that "it won't do." He says the schemers have, perhaps, bought up some few leading Members of the House, but that's all. He is sure they have not influence enough to get a vote. He says there is a deadly feeling of hostility towards it among Members, and as the question is not connected either with Niggers or Kansas, it cannot pass. More anon. B.

The Woodworth Patent Expired on the 26th inst., and we have no information by telegraph, or otherwise, that it has received any attention from Congress. It is, therefore, public property.

We are sorry that we have not on hand the Political Rooster to crow forth our heartfelt joy at this great result.

"This is glory enough for one day," and we will spike our guns until we have more time to hold a *post mortem* examination of this vile carcass. We hope to get time, before long, to pay some merited attention to certain officials, in or about the Capitol, who have no need to be thanked for this result. Vile fellows, they would barter away the bones of the beloved Washington for the wedge of gold or the Babylonish garment.

Reaping Machines in California.

Our correspondent, W. M., who had previously written to us, stating that the reaping machines sent to California had generally proved unsatisfactory and useless, because of their inferior construction—being too weak—has written to us again on the same subject. He has been out among the farmers around Stockton, and has learned from them that harvesting machines, to be successful in that country, must be made much stronger than those which have hitherto been sent there, and, if possible, they must be made with fewer parts. When a machine breaks down in that country, the expense for repairing is very great, and it is also very difficult to get them

repaired by competent machinists. Many reaping machines were thrown into the ditches by California farmers, because they broke down so easily, and could not be repaired.

During the past season all self-raking attachments were abandoned, because the crops were light; manual labor was employed to better advantage. If the crops were heavy, however, our correspondent believes that self-rakers would be used, if they were made strong and simple.

How Fires Occur.

A paper box full of matches was exhibited to us a few days ago by Quarterman & Son, John st., this city, which explained how some fires have taken place from causes deemed unaccountable, and how their premises narrowly escaped a conflagration. The box was labelled "Telegraph Friction Matches, manufactured by H. & M. Bentz, No. 104 Norfolk street, N. Y.," and the tips of the whole of the matches had been on fire, and were completely charred. The bunch had been placed in an open tin box set on a shelf, and during the hours of night a rat had knocked it over, the matches had fallen down on the floor, ignited, and burned until they were charred, then most fortunately, went out.

Had they fallen among waste rags, paper, or any combustible materials, they would have set them on fire, and the result would probably have been the destruction of the whole store.

We believe that many fires which could not be accounted for have taken place from similar causes. Had the above-named store been set on fire by these matches nobody would have known the cause; it would, perhaps, have been set down as "the work of an incendiary."

Friction matches should always be kept in metal boxes with spring catch lids, to prevent them falling to the floor, and igniting in the manner described. We cannot be too careful, nor employ too many safeguards against fires.

Rumors from Washington.

It is rumored that the Hon. Charles Mason, now Commissioner of Patents, has been, or will be, tendered a seat in the Cabinet of the President Elect—the post which rumor assigns to Judge Mason being that of Secretary of the Interior.

It has often been said in our hearing that in the difficult and delicate exercise of the appointing power, President Pierce has in no instance done himself and the country greater credit than in the selection of Judge Mason for the office of Commissioner of Patents. This office has, in times past, been most unworthily filled, and now that the right man has been found for the right place, we should rejoice in common with our citizens generally if Judge Mason would consent to remain. But if this cannot be, we should like very much to see him placed in the Cabinet to exercise the supervision over the Patent Office now imposed upon the Secretary of the Interior.—Familiar with all the intricacies of the law, together with a thorough knowledge of the growing interests of the great West, no other man could be selected who is better qualified to discharge the duties of the Secretaryship.

The Solar Compass Bill.

On the 12th inst. a Bill, embracing a large appropriation to the inventor of the "Solar Compass," was defeated. The inventor of the compass is Wm. H. Burt, U. S. Deputy Surveyor, Philadelphia. It is stated to be an excellent instrument, but it had been used without government authority, as a private undertaking by those executing government contracts; government, therefore, had no right to make such an appropriation. The persons who used the instrument should be made to pay for it, yet the decision of Congress, in withholding an appropriation, we believe to be perfectly right.

Steamships for Whaling.

A company in Scotland are about to engage in hunting whales with steamships, instead of the old slow coach sailing vessels, which have hitherto been employed.

What is Sheathing Metal?

It has been decided in the U. S. Circuit Court, this city, that sheet zinc intended for sheathing ships, is not liable to tariff duty.