WHAT SHALL WE EAT?

We eat just what appetite and inclination prompts us to. Statisticians have prepared tables showing the nutrition contained in certain articles of food, and the time required to digest them in healthy stomachs. These tables are useful as information, but as guides to health they are useless. When a man orders his dinner he does not consult the state of his system, nor examine the tables to see what would suit his condition, but he asks his palate and that decides the momentous question Suppose a man, with a sick headache, for instance, to require nourishment. His ailment proceeds from a disordered stomach, therefore he must humor it and take light diet. Rice naturally occurs to him; so he takes out his work and looks for the article "rice." Rice, says the statistician, digests in one hour when boiled, and is, therefore, wholesome and nutritous. But possibly the invalid dislikes rice. He would much prefer a mutton chop, but is deterred from fear of the statistician, who tells him that mutton requires three hours to digest, and is, therefore, a needless a tax upon his system. But elsewhere in the statisticians book the invalid has read that bulk has some part in this matter of digestion, and that a large amount of easily-digested food may be required to satisfy the cravings of appetite, while an infinitessimal part of the more concentrated is quite as wholesome. More, in point of fact, for the appetite is satisfied by the food the stomach calls for, so that it is easily appeased, and does its work good humoredly, so to speak, even though it be harder.

The philosopher may lay down laws for the guidance of the human stomach, but that independent and rebellious organ disdains them. The skies above us are not more fickle than it. To-day the clouds overcast the heavens, and the aspect is lowering. The stomach that was quite tractable yesterday is insurgent to-day. A breath of anger ruffles it as the wind does the landscape, and no man can set bounds to it.

The best modern writers on physiology tacitly concede points adverted to in this article, and except where the demand is glaringly inconsistent permit invalids to eat the food they crave. The day of slop tea and dishwater soup has vanished from the hospitals; good, wholesome, nourishing broth, the spirit of beef, is given; porter and ale are administered, eggs, farinaceous food, and also mutton chops, beefsteaks and chicken, are served to patients in lieu of the low diet with which it was formerly thought proper to drench sick people. The result is seen in a much lower per centage of mortality and in a more rapid convalescence than with the erroneous ideas of old

A student of Salamanca was enjoined by his careful parent to economize in his expenditures, and, above all, retrench in his commissary department. Stimulated by this advice he repaired to the market and put this query to the dealer :—

"What is the price of cows?"

"Twenty-five dollars."

"What is the price of partridges?"

"Twenty-five cents."

"Ah! very well; partridges are much cheaper than cows; I will take two."

It is perhaps not precisely from these premises that we would argue, but the anecdote is illustrative of the fact that people will eat just what they choose, regardless of economy, so long as they can procure what they please. Dr. Hall, in his *Journal of Health*, relates that five pounds of corn meal made into bread "lasted" a family one week, but subsequent investigation revealed the fact that soda crackers were surreptitiously substituted for the unpalatable corn bread, and that under similar circumstances the loaf might have held out like the widow's cruse of oil.

There is no sacrifice more difficult for society than depriving itself of necessaries, or even luxuries, because they are dear. Thus we see one writer, confessedly without taste, decrying beef and declaring for beans because they are cheaper; still another disclaims against dress, but spends double on his table, and it is only when the article desired cannot be had that men relinquish its use.

What one man can eat with impunity poisons another. The stomach may be *trained* to endure abuse, or digest forbidden food, so to speak, with impunity. The most emaciated dyspeptic may, by practice, bring his stomach to digest buckwheat cakes, while a soda cracker lies flatulent and heavy. It is from this very peculiarity that diseases of the organ in question are so difficult to cure when they become chronic, or seated, as dyspepsia. The medicine that cures in one case has no efficacy in another, and the most powerful stimulants fail where mild tonics restore the lost vitality. What we shall eat is a matter not laid down in text books. The English laborer eats bread and cheese because it is comparatively cheap, and not because the tables say it digests easily. When he comes to this country he takes care to have plenty of beef in addition to the bread and cheese. His health is doubtless quite as good in one case as the other. Ten members of a family may require ten different medicines, and taste is not, as too many suppose, a thing to be disregarded and crushed. It is the instinct of the stomach, telegraphed to the palate and from thence communicated to the will, so that through the exercise of an instinct man orders what he likes for his dinner and keeps his body healthy.

A Subterranean Steam Engine.

The *Territorial Enterprise*, published in Colorado Territory, has the following article, which will be found interesting to engineers:—

"As we proceeded along the tunnel we met several cars loaded with ore, which rushed past us as we stepped aside, at railroad speed, and at length, when in some hundreds of feet, our ears were greeted by the whizzing of steam. Looking ahead, we saw the tunnel filled with white clouds of vapor, through which candles shone, each encircled by a halo like that about a stormy moon. Through the white mist, dark and indistinct, we could see the figures of men coming and going, almost persuading us that we were approaching the secret laboratories and workshops of the gnomes. Shortly after we stood beside a large steam drum and were told that we were now at the point where the steam is brought down from the boiler, 201 feet above. The steam pipe comes down through a shaft, enters the drum, thence runs along the tunnel 899 feet to the engine, which is over 400 feet below the surface of the mountain. There is a steam gauge affixed to this drum, one at the boiler and another at the engine. The difference in the pressure at the boiler and at the engine, as shown by the gauges, is but five pounds, which is a very slight loss when we consider that the steam is carried through 1,100 feet of pipe. At the Almaden quicksilver mines, where the steam is carried through 1,300 feet of pipe, the difference in the pressure in the boiler and engine is fourteen pounds. At the Gould & Curry works superheated steam will shortly be used, when the loss of pressure by condensation will be still less than at present. The steam pipe passes along the bottom of the tunnel at one side and rests in wooden boxes, where it is surrounded with ashes tightly packed about it. The steam pipe at the Almaden mines passes along the roof of the tunnel, and is merely wrapped with ropes of straw. We noticed but one or two slight breaks in the whole of the long string of pipe between the engine and at the steam drum at the shaft. The pipe is furnished with expansion joints, which slide together and draw apart, like the joints of a telescope, as the pipe is expanded by heat or contracted by cold. This expansion and contraction is very considerable in so long a pipe.

"The engine room is cut out of the solid rock, and the walls and ceiling are supported by a compact framework of heavy timbers. It is 42 by 22 feet in size. Lamps were placed in rows about the walls, and threw a bright, glaring red light through the moist atmosphere of the place, upon the ponderous machinery, and upon the workmen, who, like the kobolds of old supposed to keep guard over veins of precious metals, flitted to and fro in the sweltering chamber. Once the engine was started a circulation was produced, which made the air of the place much more comfortable. The steam from the engine escapes into some upper chamber of the mine, therefore is productive of no inconvenience to the engine room. The engine works smoothly, and produces but little noise even in this echoing cavern. The friction wheels of the hoisting gear are ten feet in diameter, being, we believe, the largest in the territory.

"The bucket used is constructed of iron, and is a huge affair, holding over a tun. The bucket is dumped into the cars by means of a simple apparatus, operated by a workman who is in attendance for the purpose. The principal feature of this dumping apparatus is a stout iron bar, which, as the bucket ascends, is placed in such a position as to catch it by the bottom when it descends and turn its contents into the car. With this dumping apparatus the danger of accident is much lessened. The main engine shaft is now down nearly 200 feet. The influx of water is very slight, and is productive of no inconvenience. The depth below the surface attained at the bottom of the shaft is over 600 feet. A working level is being opened at the depth of 100 feet from the top of this shaft, and another will soon be commenced at its bottom."

Utility of the Electric Light.

The *Courrier de Bretagne* gives an interesting account of recent experiments with the electric lights at Lorient, France. The night was dark, many spectators assembled, in addition to the engineers and officers comprising a commission appointed specially by the maritime prefect. First, the great dock, in which two ships were under repair, was rendered as light as day, so that the engineers were enabled to go down into it and examine all the details of the repairs. Next a signal mast was fixed, at 700 yards from the *Duchayla*, and at 500 from the *Panama* steam frigates; the signals given by flags from the summit of the mast were rendered perfectly visible on board the two ships by means of the electric light. A third experiment caused great surprise and admiration. A diver descended 20 feet under water, and by means of the light was enabled to distinguish the decimal divisions on a scale which was sent down to him and to give proofs of it. This experiment was deemed conclusive. It is now established that an electro-magnetic machine may be permanently fixed to light large workshops, submarine works, and narrow passages into harbors. It was further observed that when the light was brought to bear on the water shoals of fish were attracted by the unusual appearance, and continued to swim around the part lighted. Eels and other fish which were at the bottom of the sea came up to the surface.

Sound as a Time Measure.

In a recent French work entitled *Traite des Mecanismes*, by M. Haton de la Goupilliere, we find described a curious and ingenious method of measuring time, which gives thousandth parts of a second. The description is substantially as follows:—Suppose it were required to measure the exact time of the descent of the hammer of a gun-lock on the nipple. The motion is so rapid that the most delicate stop-watch is at fault. A needle might be fixed to the hammer, so as in descending to mark a curve on a blackened metal plate; but still the time would be an unknown quantity. It may, however, be measured by means of a tuning-fork, also provided with a marking needle; then while the former one marks the curve described by the hammer, the second needle will mark the vibrations of the fork; and as we know that they are isochronous, each of the small insinuosities thus obtained on the blackened plate will represent a fraction of time, and show how many such fractions elapsed before the fall of the hammer. To give an idea of the degree of precision which may be obtained by this process, let us suppose the normal French tuning-fork, which will perform 896 vibrations in a second; then the duration of each vibration will be 1-896th of a second; and as the greatest error that can be committed cannot exceed half a vibration, the measurement will be exact to 1-1792d of a second.

A Great Manufacturing Concern.—The capital of the Amoskeag Company is three millions. It has cleared ten per cent on the capital. Its chief product has cotton for the foundation, and operations in that line are doubtful till the war ends. It has made 5,842,000 yards of cloth, equal to three thousand three hundred and nineteen miles, the past year, or between ten and eleven miles each working day. That is about one-quarter of what it has done in peace times. Besides, it has manufactured twenty two steam fire engines, fourteen thousand five hundred Springfield rifled muskets, and other machinery,