

Cigarette Smoking.

Scarcely less injurious, in a subtle and generally unrecognized way, than the habit of taking "nips" of alcohol between meals...

The Discoverer of Beet Sugar.

On the 7th of last August a century had elapsed since the death of Andreas Sigismund Marggraf, the discoverer of beet root sugar.

The domain of chemistry was enriched by him with a large number of important discoveries, and he it was who first appreciated the value of the microscope as an aid in chemical analysis and research.

His successor and pupil, Franz Carl Achard, who was born in Berlin, April 28, 1753, and died on his estate in Schlesia, April 20, 1821, converted Marggraf's discovery into a valuable agricultural reality...

Fermentation of Dextrine.

Liebig, in his last essay on the subject, says: "A solution of dextrine will not ferment when mixed with beer yeast; if sugar is added to this mixture a large portion of the dextrine is decomposed just like sugar into alcohol and carbonic acid."

There seems to be some connection between this and the remark of Brown and Heron, that the converting power of the comparatively inactive barley albuminoids (barley diastase) can be increased after it is separated from the grain...

O'Sullivan also noticed something similar. In his essay on dextrines he says: "None of the dextrines herein described are fermentable by Saccharomyces cerevisia, but they produce alcohol, carbonic acid, etc., if active diastase (i. e.,

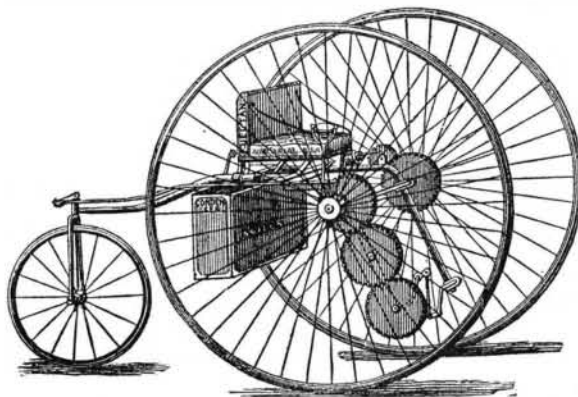
malt extract made cold) and yeast are both added together. Malt extract alone does not hydrate the lower dextrines in the cold, nor does yeast alone effect any change...

With maltose, as with canesugar, fermentation sometimes comes to a standstill when 50 or 60 per cent have disappeared. The slightest addition of active diastase sets it going, and the whole mass is finally decomposed in the second fermentation.

THE STEAM VELOCIPEDE.

The steam tricycle shown in the accompanying engraving, which we borrow from La Nature, was invented and constructed by Sir Thomas Parkyns, who called it "The Baronet."

Messrs. Bateman & Co., of Greenwich, who were commissioned by Sir Thomas Parkyns to construct his steam tricycle for sale, have been obliged to modify the whole structure of it before offering it to the public; for the in-



SIR THOMAS PARKYNS' STEAM VELOCIPEDE.

ventor, although he possessed excellent ideas and knew how to apply them, was lacking in the special knowledge necessary for the construction of a machine practically adapted for working.

These engineers began by studying the steam tricycle very closely, and, by modifying the form of certain parts and strengthening them, and by replacing the horizontal boiler with a recently invented very powerful rotary motor, they hope in about six months to be able to offer the trade a steam tricycle which shall be perfectly irreproachable as to construction, security, and speed.

Sir Thomas Parkyns' velocipede could scarcely exceed a speed of seven to nine miles an hour, but the new manufacturers desire to make it attain a speed of thirteen miles, and to thus give it the power of ascending declivities of a certain grade, so that it will not be necessary to combine the action of the feet with that of steam.

Messrs. Bateman & Co. would have carried their studies of the new steam tricycle much further ere this had they not been overburdened with urgent work, and especially had there not been a law in England forbidding the use of any steam motor on the streets unless it was preceded by a person on foot and ran at a maximum speed of three miles per hour.

The inventor hopes, however, before long to obtain permission for the steam tricycle to run without restriction, seeing that it emits no smoke, gives off no steam (owing to its condenser), will make but little noise, and will have the appearance of one of those ordinary tricycles that are met with in so great number in the streets of London.

Anthracite Coal Wanted in London.

Dr. Frankland says that if the average daily consumption of coal for domestic purposes in London in winter is taken at 33,333 tons, one product of the combustion of this enormous weight of coal, as ordinarily consumed imperfectly in open fire-grates, is 667,460,000 cubic feet of steam at 0° C.

tive film, it was proved by another set of experiments that by merely blowing coal smoke on the surface of water for a few seconds, the evaporation was retarded by from 77.3 to 81.5 per cent. The experiment was afterward made crucial as regards the analogy with fogs, by observing the rate of evaporation of drops of water suspended in platinum loops.

New Mode of Obtaining Oxygen from the Air.

P. Margis, in Paris, prepares oxygen for technical purposes by the dialysis of atmospheric air, using a peculiar form of dialyzer. Atmospheric air is pumped or forced through an India-rubber membrane several times.

The dialyzing membrane used by Margis is prepared by dissolving 50 parts of caoutchouc in 400 parts by weight of carbon disulphide or light petroleum ether (naphtlia), specific gravity of 0.65, 20 parts of normal alcohol, and 10 parts of ether.

The gas obtained by a single dialysis contains enough oxygen to increase the illuminating power of a rich gas or hydrocarbon ten times, if we accept the statement of the inventor. It also possesses all the properties needed for metallurgical purposes.

Like Mallet's process of making oxygen from the air by passing it through water, the exposure is not limited to the power required, but includes keeping several air pumps in order and preventing leaks of all kinds.

On the Digestibility of the Albuminoids in various Kinds of Food.

Drs. Stutzer, Fassbender, and Klinkenberg have been examining the digestibility of various kinds of food. The method employed is that of Stutzer, who extracts the ferment from the digestive organs of slaughtered animals, the membranes of the stomach and the pancreas, and allows a solution of it to act upon a weighed quantity of the food at the temperature of the blood.

Table with 5 columns: Food Item, Digestible Albumen, Fat, Carbo-Hydrates, Phosphoric acid. Rows include Nestle's Children's food, Wahl's, Fresh white bread, etc.

A dozen oysters weighed 86 grammes, or about 3 ounces, so that 14 oysters contain as much digestible albumen as one hen's egg.

Rapid Raising of Coal.

On Saturday, August 9, the Briggs Shaft Colliery at Scranton, Pa., hoisted 612 mine cars in 5 hours. During that time it was stopped 15 minutes, but for which delay 32 more cars would have been raised.