

The Effects of Congelation upon Water.

Dr. Robinet, a member of the Academy of Medicine, Paris, has published an account of experiments conducted by him to test the effects of congelation upon drinking-water. It is well known that the ice which is formed in the sea yields nothing but fresh water, all the salt having been eliminated by congelation. In the northern parts of Europe this property is turned to account for the extraction of salt from sea water; for a large sheet of the latter having been left to freeze, the ice is afterwards cut away, and the unfrozen water left below is so rich in salt as to require very little evaporation to yield it in a solid state. This property will also serve to analyse wine. Suppose it was required to determine the quantity of water fraudulently added to a certain wine; by exposing it to the action of artificial refrigeration, all the water would be alone and the wine left in its purity. By a similar process, ships at sea, being short of water, might be supplied with this necessary article. We will suppose the temperature of sea water under the tropics to be 30 deg. centigrade. If a quantity be exposed in a vessel to the action of a mixture of sulphate of soda and hydrochloric acid, two very cheap commodities, the temperature of the water will fall to 10 deg. below freezing point. Let it then be exposed to a second mixture of the same kind, generally eight parts of sulphate to five of the acid, and the temperature may be lowered to 17 deg. below freezing point. Congealed water is then obtained free from salt, and may be used with impunity. Dr. Robinet has added a new fact to this theory by showing that the water of springs and rivers loses all its salts by congelation. These salts are chiefly those of lime and magnesia. The water subjected to experiment was that of the lakes of the Bois de Boulogne, the ice of which was found to be entirely free from the above-mentioned salts. Such, indeed, is the chemical purity of the water thus obtained, that it may in most instances be substituted for distilled water.

The Pennsylvania Oil Wells.

A correspondent of the New York *Evening Post*, writing from Titusville, Pa, furnishes the following in reference to the oil region in that State:—

"Almost as old as the hills surrounding it are the springs which once gave it the name of Oil Creek, and now make its fame world wide. There is but one king here, and all are its subjects. The head and front, the root and branch of every species of business, in its legitimate callings—as well as speculation in its most rampant form—is Oil; consequently you see, in close proximity on every side, oil depots, oil refineries, oil derricks, oil tanks, oil shippers and the everlasting inevitable oil team—at once a nuisance and a necessity, as you may judge from the fact that two thousand of them have passed over a given point or bridge, where a market was kept, in one afternoon, cutting up the roads in a frightful manner, and reducing them to such a state that, between mudholes, stones and stumps, you may well suppose that pleasure riders are not the order of the day. * * * For bustling activity and teeming population, we resemble western towns; while dreams of wealth, wilder and more fabulous than the Arabian Nights, have been realized in a day. What do you think of 'the big well' which flows

two thousand barrels a day, bringing its owners an income of two dollars a minute, and supplying one-third of all the oil sold here? There has been a million dollars paid by its owners for this well—one small share having been sold for fifteen thousand dollars. These are only a few facts out of the many of the wealth accruing privately and collectively to individuals. The well owned by the Dalvell Brothers brings them eight hundred dollars a day, and a sixteenth of the Sherman well a hundred dollars a day. The revenue which accrues to the Government is five millions a year.

Waste Substances in Cities.

A Company is being formed in Paris called La Campagne Generale des Chiffons de Paris. The object of this company appears to be to bring capital to the rescue of the waste substances that are cast idle in all our large cities, for want of patronage and attention requisite to make them useful in our industrial arts. The company propose to organize the *chiffonniers de Paris*, who number upwards of 25,000, and institute a demand for rags, bones, paper, broken glass, and other waste substances. From their extensive sphere of operations, it is contemplated that they will bring to light many tons of material which would otherwise be overlooked and neglected. The projectors of the company are sanguine of very excellent results, from the fruitful field they have before them. They hold out the very tempting prospect of a 25 per cent. dividend to the shareholders.

New Iron Vessel for Petroleum.

A new iron vessel, expressly built for the conveyance of petroleum, was launched on Saturday at Newcastle. The ship has, properly speaking, no hold, but a series of iron tanks extended from deck to keel. In contradistinction to the principle often necessarily adopted in many vessels built to suit particular carrying trades, neither the necessity of economizing space nor the nature of the intended cargoes have necessitated the builders of the "Atlantic" to depart from the most exact rules of taste in marine architecture; and the result is that, viewed from every point, the greatest elegance is visible in the design of their ship. Her length over all is 145 ft.; breadth of beam, 28½ ft.; and depth, 16 ft. 9 in. The launch was extremely successful.

New Gun Metal.

Messrs. Deville and Caron have lately been making experiments on the properties of a new gun-metal, a compound of silicium and copper. When copper contains rather less than five per cent. of silicium, it presents a fine bronze colour, is fusible, and rather harder than bronze, but is perfectly ductile, and can be readily worked without clogging the tools as bronze does. Its tenacity is remarkable, being equal to that of iron. Silicium is the basis of sand, and the manufacture of its compounds with copper may be made by fusing together a mixture of sand, sodium, and copper, with some common salt and fluor spar as flux.

Death of Mitscherlich.

This venerable chemist died at Berlin in August last.