

half full of whiskey and into this was poured a quantity of the liquid air. Mr. Tripler stirred it for a few minutes and it became brittle ice. He turned it out on a plate and passed it around. Pure alcohol was treated in the same way with like results, as was sulphuric acid and several other acids. Finally mercury was frozen into solid sticks so that it could be whittled with a knife like ordinary lead.

Into either end of a stick of the frozen mercury about an inch in diameter and four inches long were screwed rings. The stick was then suspended from an upright and to the lower end was attached a twenty-pound weight. The mercury remained solid enough to sustain the weight for eighteen minutes. A hammer was made of frozen mercury with which Mr. Tripler drove several nails into a plank.

A beefsteak was suspended in the liquid air, and when it was withdrawn it was cracked up in the hands like so much dried bark. Eggs and fruit were frozen so hard that they crumbled into dust under the blows of a hammer. A big onion, when subjected to the liquid air, came apart in scales, under slight pressure, that looked like pieces of broken china. A piece of frozen tin was snapped in the hand like a pane of window glass, and tempered steel, dipped in the liquid, was afterward hammered up as if it had been papier mache.

An ice tumbler was moulded and into it was poured a quantity of liquid air. It was stirred up until it boiled furiously.

"That liquid air in the ice tumbler," said Mr. Tripler, "is boiling harder than water ever boiled in any metal vessel."

EFFECT ON EXPLOSIVES.

The effect of the liquid air on explosives was shown in two sections of

shattered pipe, one of iron and one of brass, which Mr. Tripler said had been rent asunder by the liquid in conjunction with a bit of cotton waste.

Its effect on non-combustibles was illustrated by taking felt and carbon, showing the little effect which a match had on them, and then touching them off in a blaze after applying the liquid air.

Its expansive property was shown by exploding it in a tank and shooting a wad of paper with great force up to the high ceiling.

The most interesting of the experiments resulted from pouring a quantity of the liquid air into a glass jar partially filled with water. It set the water boiling furiously. An ordinary teakettle of water was set boiling over a gas flame until the steam poured merrily forth from the spout. The kettle was removed, and into it was placed a ladle of liquid air. The steam became violent in a moment and nearly blew off the lid.

"It does not take me long to get up steam my way," continued Mr. Tripler.

HEAT MEASUREMENT.

Aside from the prospective commercial value of liquid air, it would, if an absolute zero could be reached, form the basis for a new thermometer which would be a great advantage in the natural sciences. All present measurements of heat are relative, and the Fahrenheit thermometer merely marks the height attained in a tube by a column of mercury at the temperature of melting ice and at the temperature of boiling water. The tube has been arbitrarily divided between these points in the tube into 180 points called degrees. Below the freezing point thirty-two degrees more are marked off, creating an arbitrary zero.

This leaves the measure of heat in all the laboratories arbitrary. It is