

Daniell. The lime-ball, Bude, Boccus, and electric lights have been exhibited experimentally for street-lighting, but are too expensive. Upon the Patent Air-light (from the vapour of hydrocarbon, mixed with atmospheric air), proposed in 1838, upwards of £30,000 were expended unsuccessfully.

An ordinary candle consumes as much air while burning as a man in health while breathing; the same may be said with regard to gas, oil-lamps, etc., bearing a proportion to the amount of light evolved. One hour after the gas of London is lighted, the air is deoxydized as much as if 500,000 people had been added to its population. During the combustion of oil, tallow, gas, etc., water is produced. In cold weather we see it condensed on the windows of ill-ventilated shops. By the burning of gas in London during twenty-four hours, more water is produced than would supply a ship laden with emigrants on a voyage from London to Adelaide.

## THE FORMS OF WATER.

### *No. 5. Architecture of Snow.*

WE now resemble persons who have climbed a difficult peak, and thereby earned the enjoyment of a wide prospect, made ourselves masters of the conditions necessary to the production of mountain snow, we are able to take a comprehensive and intelligent view of the phenomena of glaciers.

A few words are necessary as to the formation of snow. The molecules and atoms of all substances, when allowed free play, build themselves into definite and, for the most part, beautiful forms called crystals. Iron, copper, gold, silver, lead, sulphur, when melted and permitted to cool gradually, all show this crystallizing power. The metal bismuth shows it in a particularly striking manner, and when properly fused and solidified, self-built crystals of great size and beauty are formed of this metal.

If you dissolve saltpetre in water, and allow the solution to evaporate slowly, you may obtain large crystals, for no portion of the salt is converted into vapour. The water of our atmosphere is fresh though it is derived from the salt sea. Sugar dissolved in water, and permitted to evaporate, yields crystals of sugar-candy. Alum readily crystallizes in the same way. Flints dissolved, as they sometimes are in nature, and permitted to crystallize, yield the prisms and pyramids of rock crystal. Chalk dissolved and crystallized yields Iceland spar. The diamond is crystallized carbon. All our precious stones, the ruby, the sapphire, beryl, topaz, emerald, are all examples of this crystallizing power.