

## XXV. GASEOUS SUNLIGHT.

## NATURAL GAS—ITS WONDERS AND ITS GEOLOGY.

ILLUMINATING and Heating Gas is one of the products of the earth. Its escape is a geological phenomenon. Its pressure, its volume, its composition, its permanence, are facts from which the geologist deduces past conditions in the world's history. It was stated in the last talk that its origin is undoubtedly similar to that of oil, and that oil is chiefly the product of the distillation of shales charged with vegetable matter—probably ancient sea-weeds which grew in veritable "Sargosso Seas." As sun-light is the active agent in vegetable growth, a stem or a leaf is simply a body of transformed sun-light. When imbedded in the rocks it is strictly and literally fossil sun-light. In petroleum, ancient sun-light is preserved in liquid form; in natural gas it is gaseous.

The escape of burning gas from the earth has been observed for ages. For more than fifty years, the gas escaping with the brine from the wells of the Kanawha Valley, West Virginia, has been employed in the evaporation of the brine. It has long been utilized in some salt mines where it escapes through crevices. In a similar way, it enters coal mines, and is known to miners as *fire damp*, since, mixed with a certain proportion of atmospheric air, it becomes violently explosive. The Chinese have for centuries, employed natural gas for lighting and heating. On the Cumberland, in Kentucky, gas accumulates in underground reservoirs, and the elastic pressure is sometimes attended by explosions, constituting earthquakes of local extent, and lending some plausibility to the ancient theory of those phenomena. At Fredonia, New York, are gas emissions which have attracted attention for many years, and have long been utilized for lighting and heating. A gas spring was discovered here in 1821. The gas at that time accumulated was used for lighting a mill and several stores. It was also introduced into a few public buildings, and was brought to the attention of Lafayette when he