

*the gas used to illuminate the streets?* Hydro-carbon, or a compound of hydrogen and carbon; the hydrogen unites with the oxygen of the air, forming water, the carbon becomes heated to a glow, and thus gives the light. *Is an escape of illuminating gas dangerous to life?* It is dangerous to breathe, and is very liable to explode if a light is taken near it. *How can we detect an escape of gas?* By our sense of smell. *What are the other sources of hydro-carbon in our dwellings?* The decomposing animal and vegetable substance of drains and water closets. Great care should be taken to secure effective drainage, and in keeping the drain pipes in order. *What is heat?* Heat is a form of energy. It consists of vibratory motions of the particles of matter or results from such motions, and gives rise to the well known sensations of warmth and cold. *What are its effects?* Expansion, fusion, evaporation, and decomposition. *What are the principal sources of heat?* The sun, chemical action, mechanical action, sound, light and electricity. *Why do burning glasses set fire to combustible substances?* Because they gather all the rays of heat that fall upon them to a single point or focus, thus making the heat more intense at that point. *What is fire?* It is the rapid union of elements. *What is smoke?* Small particles of solid carbon, which have not been consumed by heat. *Why does smoke ascend?* Because it is held in heated air; when the air becomes cold the smoke settles. *Why does smoke ascend more directly one day than it does another?* Because the air is not of the same density at all times. *How is heat diffused?* By conduction, convection and radiation. *What is conduction?* The process by which heat passes from the hotter to the colder part of a body. *Why does not a piece of wood burning at one end become hot at the other?* Because wood is a bad conductor of heat. *What is convection of heat?* The method of diffusing heat by actual motion of heated fluid masses; as when hot water rises from the bottom of a vessel, and