

comes up for more. Man saw this and made a diving-bell. *Patent rights* are not a modern institution. Over a century and a half ago Louis XIV. granted a patent to one De Beaumont for the sale of manufactured snow and ice; but the old Roman had the same luxuries. The Duke de Bouillon took out a patent for a "rat and vermin exterminator." Madame de Maintenon, shortly before she became virtually queen of France, took out a patent for an improved oven. A Frenchman secured the sole right to make and vend rotary steam engines, the idea of which he is said to have stolen from Hero of Alexandria. An enterprising Englishman went into one of the museums at Rome and saw a "portable kitchen" dug from the ruins of Herculaneum; he then returned home and patented the creation of some gastronomic philosopher who won fame and fortune out of the same "cooking stove" two thousand years ago.

The use of illuminating gas, the distillation of sea-water, the process of disinfecting the air, the method of preserving fresh fruits, the hydraulic press, the fire-engine, and the construction of iron ships, are all "borrowed ideas." Captain Congreve, while in the employ of the East India Company, witnessed the great destruction of life caused by the fiery projectiles thrown by the Mahrattas. He went to England and introduced the formidable "Congreve rocket;" but India had had it for a thousand years. Philostratos called them "torrents of fire" and "flaming clouds for the destruction of armies." The air gun was an idea of Hero of Alexandria; and the steam gun a dream of Leonardi da Vinci. Many governmental usages supposed to be of modern origin date from remote antiquity. The Athenians had a stringent custom-house law. Aristophanes in one of his plays hit hard the socialistic theories of the modern Fourier. He was also the first writer to notice the fact that when good money and depreciated money are thrown together into circulation the bad currency drives out the good. In 1373, shortly after the battles of Crécy and Poitiers, Nicholas Oresme, a French churchman, wrote a "Theory of Money" that was as clear and practical as Adam Smith gave to the world. Copernicus wrote as well on the subject of wealth and its creation as he did on the true economy of the heavens. Zenophon and Aristotle preached upon the beneficial effect of the division of labor, so much enlarged upon by the modern political economists. The world then had its "Society for the Suppression of Cruelty to Animals." The Athenians were so rigidly strict in protecting the brute creation from useless tortures, that the Areopagus on one occasion pronounced sentence of death against a child for tearing out the eyes of a monkey.

The Romans had their "Census Tables." Life assurance was practised, the principle of calculation being the same as our own. Hotels had their registers in Rome in the Augustine period, and Marco Polo says the same system was enforced by the Khan of Tartary. Maritime insurance was in force in 1425. Life-insurance originated in Denmark. Plato endorsed the establishment of agencies to establish matrimonial alliances. Franklin did not discover the principle of conducting the electricity; the Etrurian priest had often brought it to the earth; Photius alludes to the iron-pointed rod for the dispelling of thunder clouds; and Tullus Hostilius

was killed while trying the experiment which Franklin succeeded in. Magnetic attraction and repulsion were plainly indicated by Lucretius. Theophrastus and Pliny had a faint idea of the modern telegraph. Homeopathy was understood by Paracelsus, who recommended the cure "like by like;" and the negroes of Africa escape the effects of the poisonous bite of the "tampon" by an administration of one of these insects, bruised in the medicine they administer. Hydropathy was practised by the Romans. Sea-sickness was ward off by the ancients with the means advocated to-day—a tight belt around the waist.

Jenner did not discover vaccination; the Persians and Hindoos have practiced it for ages. Phrenology was in vogue with the Hindoo Brahmins a thousand years ago. China had artesian wells two thousands years ago. Pisciculture has long been practiced in China. Metallic pens made of silver were used by the Turks centuries ago. In 1760 one Tighaine de la Roche foretold the invention of the daguerreotype. Many of our theatrical appliances were in vogue among the ancients, especially the plan of inflating the popularity of actors; plaudits were bought and sold. By the order of Nero a great "army of admiration" was organized and salaried in Rome; and any *claqueur* failing to "come in" at the right point in the play, or the fight, was thrown to the wild beasts!—*Journal of Applied Chemistry.*

#### THE COMBUSTION OF COAL—ECONOMY IN FUEL.

It is unpleasant to see the waste so generally practiced in regard to that high priced necessity, fuel. Our people for generations have used wood as a fuel. Coal, though extensively used, is comparatively a new substance, and hundreds of families who burn it, know but little practically, and understand less chemically, of its properties. It is simply a condensed carbon—condensed as compared with wood—capable of generating an intense heat when properly managed, and liable to disappoint the housewife when not properly managed. It requires a large amount of oxygen to produce perfect combustion, and as we have no ready means of producing this gas in our dwelling, apart from its natural admixture with the other gases which make up the volume of the atmosphere, we must use that atmosphere as a means of combustion.

But some, in the management of their fires, seem to suppose that an addition of fuel will insure an increased combustion, and develop an additional degree of heat. No idea can be more mistaken. Coal, and especially anthracite coal, should be always furnished with a sufficient amount of oxygen to keep the fire bright. It is only smothering and retarding the fire to put on a thick layer of coal, or as some do, fill the fire box, from a layer of two inches of ignited coal, to its utmost capacity, with fresh fuel. The consequence is, that for a time the fire is choked; until the heat of the lighted or igneous mass has received sufficient vitality from the admission of air to impart a portion of its heat to the new coal.

Evidently, then, it is important in the management of coal fires that oxygen, sufficient to pro-