

Louis-Jacques Thénard Biography

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Biography

Although Louis Thénard's farming family was large and poor, they gave education a high priority, scrimping and saving to send Thénard to school in a larger town. By age 17, he had moved on to study in Paris, where he became a professor and met his lifelong friend and co-worker, Joseph Gay-Lussac. Perhaps the contrasting personalities of the two chemists--Thénard's forceful, Gay-Lussac's reserved--made their collaboration more fruitful. For several years, they competed with British chemist Humphry Davy to discover and characterize new elements. To some degree, this competition reflected the uneasy political relations between France and England at the time.

In one case, the French team clearly won: Thénard and Gay-Lussac discovered the element boron just nine days before Davy. Also, they used a different technique to produce other elements in greater quantities than Davy had. The two chemists pioneered photochemistry by exploring the effect of light on various chemical mixtures, and they classified vegetable substances into three groups, one of which is now known as carbohydrates.

Thénard made another great discovery on his own. In 1818 he discovered hydrogen peroxide, a valuable compound used today as an antiseptic and bleaching agent. For several years he studied the chemical, defining its properties and using it to prepare new peroxide compounds.

Early in his career, Thénard became interested in how certain metals could promote chemical reactions--speed them up or prompt them at lower temperatures--without the metals themselves being affected. Then in 1823, he heard of an experiment in which platinum made hydrogen and oxygen combine at room temperature, and he decided to pursue his interest further. Working with French chemist and physicist Pierre-Louis Dulong (1785-1838), Thénard found that other metals such as (palladium, rhodium, and iridium) had the same effect as platinum. The two chemists studied numerous reaction conditions and contributed significantly to what is now known as the science of catalysis.

At the French government's request in 1804, Thénard created a blue pigment which today bears his name. Thénard's blue, made of cobalt compounds, was used to color fine porcelain. It replaced earlier colors that could not withstand the heat of porcelain-manufacturing furnaces. The compensation he received from France finally allowed Thénard to achieve financial security.