

# Nicolas Théodore de Saussure

## Biography

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# Biography

Nicolas Théodore de Saussure was a Swiss botanist and a pioneer in the field of phytochemistry, the study of plant chemistry. Nicolas, born in 1767, was the son of Horace Benedict de Saussure, a Swiss geologist and meteorologist best known for his studies of the Alps. When Nicolas was in his early twenties he accompanied his father on several expeditions, including a 1787 climb of Mount Blanc to record weather observations and a 1789 climb of Mount Rosa to collect data on the weight of air. His findings from this expedition corroborated the observations of Mariotte, another researcher of the time. Reaumur's findings helped Mariotte derive his own version of Boyle's law regarding gas behavior.

In his late twenties, Saussure lived in Geneva and began his work on plant physiology. One of his most important studies involved the effect of specific minerals on plant nutrition. The academic community recognized the value of his work and promised him of a chair of plant physiology at the Geneva Academy. Unfortunately, his plans were disrupted when the French revolution broke out, and instead of staying in Geneva he elected to move to England. When Saussure eventually returned to Geneva in 1802, the position was no longer available and instead he was named an Honorary Professor of Mineralogy and Geology. Although he held this title until 1835, he never actually taught at the Academy. Instead he continued with his studies of plant physiology.

Saussure performed a series of experiments to learn more about the role of chemistry in plant physiology. His key experiments included analysis to determine how much carbonic acid was present in plant tissues and how much phosphorus there was in the seeds. He also studied specific biochemical processes in plants, like the way they convert starch into sugars, the way that flowers reach maturation, and the way plants germinate. One of his most important, yet most basic, findings was that plants need water as part of the process of photosynthesis. Much of his work in this area was published as *Recherches Chimiques sur la Végétation* in 1804. Before his death in 1845 he also contributed to studies on ecology and soil science.