

this commodity, a position they retained for centuries. But during the past thirty or forty years, cane sugar has found a strong competitor in beet sugar. Now, Germany stands at the head of the sugar producing nations, and the beet furnishes the principal portion of the sugar on the market. This position has not been attained through the superiority of the beet as a sugar producing plant—for it is more difficult to manufacture sugar from it than from the cane—but through the energy, perseverance, and almost endless work of men of science.

In 1747, Marggraf, a German chemist, the director of the Academy of Science at Berlin, discovered sugar in different members of the beet family. His pupil and successor, Karl Achard, built in 1799 the first beet sugar factory near Berlin. He spent a fortune and a large portion of his time in developing the industry, and he may be said to be the father of it. Shortly before Achard's death, Napoleon I. placed such restrictions on the importation of sugar into the continent of Europe that at one time it reached the price of about 75 cents a pound. In addition to this import tax he compelled farmers to plant a definite area with sugar beets, and in other ways assisted the beet sugar industry. It flourished for a time, but appeared to be almost dead, especially in Germany, after these favourable legislations were removed. However, improved methods of manufacture and a careful attention to the cultivation of the beet, together with reduced prices in other farm crops, have made it an industry which, instead of receiving a bounty, pays a handsome revenue to the state in the form of an excise duty.

It is largely to the promoters of the beet sugar industry that we are indebted for the great reduction in the price of sugar. They have placed it within the reach of all, and transformed the luxury of yesterday into the necessity of life of to-day. They have also revolutionized the cane sugar industry—an industry which, although perhaps a hundred times as old as its young rival, still looks to it for instruction.

The plant from which sugar was almost exclusively made till the introduction of the sugar beet is the sugar cane, *Saccharum officinarum*. It is a plant which in appearance is not unlike Indian corn. The stalk is from one to two inches in diameter at its base, and generally from five to eight feet in height, although occasionally, especially in the more southern countries, it reaches fully double that length. The colour varies