

Alfred Nobel



In 1888 the Paris press reported Nobel's death with the headline:

“Le marchand de la mort est mort” (the merchant of death is dead).

Actually, they had confused Alfred's brother's death with Alfred's, but it was nevertheless a statement about Alfred Nobel. Implicitly, it reflected the facts that:

He was an important international figure, living in Paris;
He had made a great fortune in the arms business;
He was not popular in France (because of his smokeless powder business), and in fact he had few friends and many enemies and competitors.

Victor Hugo characterized him as “the wealthiest vagabond in Europe.” He was a multifaceted individual: an inventor (trained in chemistry, he had 355 patents in explosives and synthetic materials), an intellectual (fluent in 5 languages, he wrote novels, poetry, drama, and volumes of letters in Swedish, Russian, German, English, and French), an idealist (he supported the peace movement), a truly international figure ... and a hermit.

Born in Stockholm, Sweden, 1833, his father Immanuel Nobel was an engineer and businessman in the construction industry, and he experimented with and used explosives in construction. Alfred Nobel was actually descended from a long line of inventors, beginning (at least) with Olof Rudbeck, the best-known technical genius of 17th-century Sweden's "golden age." He had three brothers who survived to adulthood, and his mother, to whom he was very close.

In 1833, the year he was born, Nobel's father went bankrupt. Shortly thereafter, he moved to Russia and became prosperous in the Russian arms business owing to international tensions with England that culminated, eventually, in the Crimean War. Alfred moved to Russia at the age of nine and was privately educated in St. Petersburg, where he was tutored in science and the humanities. He particularly liked English literature, physics, and chemistry. During the period 1850-52, his father sent him to study in Sweden, France, Germany and the United States. In the US he spent time with John Ericsson, who invented the screw propeller and during the US civil war built the first ironclad warship, called the *Monitor*. In Paris Nobel met a chemist named Ascanio Sobrero, who had invented nitroglycerine. This liquid was a powerful explosive, but was so unstable and dangerous that it was felt to have little practical value.

In 1852 Nobel returned to Russia to join the family business. By this time the Crimean war (1853-1856, Charge of the Light Brigade, and all that) was heating up and Russia was purchasing large quantities of naval mines to keep the British at bay, so the business was booming (pardon the pun). During this time Alfred began experiments with nitroglycerine. Not only was it unstable and likely to explode at the slightest provocation, but when detonated it did not explode reliably. In 1863 Alfred was awarded his first patent, for "blasting oil" (a mixture of nitroglycerine and black powder (!) that was more reliable), and soon after he got a patent for a blasting cap (a wood plug filled with black powder, ignited by a fuse) to detonate the oil. Alfred's career was off and running.

But in 1863 the fighting in Russia was over and his father again went bankrupt. The family moved back to Stockholm in 1864, although Robert and Ludwig remained behind in Russia, founded the Russian oil industry, and became immensely wealthy (wealthier, even, than Alfred). In Stockholm, Immanuel, Alfred, and Emil continued work on the development of nitroglycerine for blasting. It was dangerous stuff, as mentioned before, and in 1864 Alfred's brother Emil was killed in an explosion. The business was forced out of Stockholm (!) and Nobel's father, Immanuel, had a stroke. Alfred took over the family business at age 31.

Dispassionately, Alfred forged ahead. Blasting oil was powerful stuff, and demand for it grew. Initially the production was carried out on a barge in a nearby lake, but eventually they got permission to build a factory on a remote shore of the lake. Eventually Nobel had factories in Germany and Scotland as well; the archaic politics and bureaucracy in England made it impossible to work there. But safety remained a problem. Often the blasting oil was delivered by drunk farm boys, and to keep workers from falling asleep at their job they had to sit on one-legged stools! To deal with this, the manufacturing was done in wooden sheds separated by earthen walls. Only one or two workers worked in a shed so that no more than one or two would be killed in an accident. But after each accident, the shed would be rebuilt and expanded. During this time Nobel looked for a safer form of nitroglycerine, but nothing worked. Finally, in 1866, the factory in Krümmel, Germany had a really serious accident. In the course of cleaning up after the accident, Nobel discovered that by mixing the nitroglycerine with a local variety of very fine, porous sand (called *kieselgur*, the skeletal remains of ancient amoebas), he formed a

putty-like substance that could not be detonated by dropping it or by heating it. But his blasting caps would detonate it. He patented this invention in 1867, and called it dynamite. The simultaneous development of diamond bits and pneumatic drills to make holes in rock made dynamite an immediate commercial success in the construction industry. The rest, as they say, is history.

By the time he died, Nobel had plants and laboratories at 90 places in 20 countries. One of the most important of the many businesses he eventually owned was the arms firm of AB Bofors, in Karlskoga, Sweden. He lived most of his later life in Paris, where he had a major laboratory from 1873 to 1891. Because of the bad public relations in France, he moved from Paris to San Remo, on the Italian Riviera, where he set up another laboratory. He died there of a cerebral hemorrhage on December 10, 1896.

What kind of man was Alfred Nobel? Truly, he was an international citizen. As he said, "my home is where I work, and I work everywhere." As an inventor he was brilliant. As a businessman he accumulated an enormous fortune. As a human being he was introverted, lonely, and suffered from poor health (migraines and heart trouble). He wrote poetry and drama, and held radical political views.

Nobel had many acquaintances, as one might imagine for such a wealthy and intellectual individual, but few friends, though he counted among his friends such leading intellectuals as Victor Hugo and Countess Bertha von Suttner. He was close to his mother, who lived in Sweden, and was in the process of moving his residence back to Sweden when he died. Aside from her, his most trusted "friend" may have been Ragnar Sohlman, a young engineer in his firm. When Sohlman was married, not long before Nobel's death, he doubled Sohlman's salary and got a house for them in San Remo, Italy. Nobel never had a chance to give him the house before he (Nobel) died.

Nobel was quite disillusioned by the people with whom he dealt in his businesses, and once wrote "Lawyers have to make a living and can do so only by inducing people to believe that a straight line is crooked. This accounts for their penchant for politics, where they can usually find everything crooked enough to delight their hearts..." He was constantly battling with cheating partners, archaic bureaucracies, and lawsuits.

His health was never good, and this may have contributed to his interest in medicine and his founding of the Prize in Physiology or Medicine. His poor health and depression may be explained at least in part by his lifestyle. He traveled extensively and had no real home. His business ventures were very stressing (and sometimes dangerous!), and he worked as much as he could in his chemistry laboratories, where there were toxic chemicals.

By age 43 (after 12 years at the helm of the family business) Alfred Nobel felt old. He began a search for an assistant with the advertisement "wealthy, highly educated elderly gentleman seeks lady of mature age, versed in languages, as secretary and supervisor of household." Bertha Krinsky (from a family of minor nobility fallen on hard times) got the job, but she was with him only a few weeks before Nobel went on travel. Before he

returned she went back to Austria to marry Count von Suttner. Nevertheless, the relationship with Countess von Suttner lasted the rest of Nobel's life (by correspondence; he saw her only once). She became very influential in the peace movement (she wrote *Lay Down Your Arms*) and is probably responsible for the Nobel Prize for Peace, which she actually won some years after Nobel's death.

The only other woman in Nobel's life was Sophie Hess. She was a lower class store clerk who was quite handsome, but irresponsible. As someone who knew them said, "It is difficult to understand how a man of such intellect and high ideals could become infatuated with this untalented and indolent little creature," but he was quite attached to her and called her "dear sweet child." It seemed to be a painful relationship for Nobel, and he finally set up a stipend for her to separate himself from her. She eventually ended up marrying a Hungarian cavalry officer by whom she had had a child.

Nobel lived in Paris from 1873-1891, and had a laboratory outside Paris in Sevrans, about 10 miles northeast of the city. Sevrans was at that time the French capitol of gunpowder and explosives, and home of the government-owned Poudrerie Nationale. Nobel had access to a firing range located adjacent to the one used by the French army. In 1887 Nobel developed what he called ballistite, sometimes referred to as the "crowning glory" of his research career. A form of smokeless powder, it quickly replaced black powder in the armories of the world. However, the French were already using a nearly smokeless powder developed by a French chemist, so when Nobel offered his product to the French gunpowder monopoly, l'Administration des Poudres et Salpêtres, pride and politics intervened and they rejected it. Thereupon, Nobel offered ballistite to Italy, who immediately accepted. The French were infuriated that he would sell arms and arms technology to a foreign power, as well they might be, and a violent press campaign ensued. The French government accused him of espionage, confiscated his small quantities of ballistite and much of his laboratory equipment, and threatened to throw him in jail.

Although it developed out of research Nobel was doing on explosives for construction and mining purposes, ballistite was his first direct venture into arms production. Of course, Nobel's father made (and lost) one of his fortunes in the arms business for the Tsars, and Nobel was educated by this largesse. Moreover, as important as dynamite was (and remains) for commercial and industrial progress, many people were killed in its production and use, including Nobel's own brother. But for Alfred Nobel, these unfortunate accidents could never be allowed to stop progress. Finally, in his last years Nobel acquired the firm AB Bofors, in Karlskoga, Sweden, which remains one of the largest arms manufacturers in the world. How are these arms profits to be reconciled with Nobel's idealistic interests in peace and medicine? It seems that Nobel's long correspondence with Bertha von Suttner represented a somewhat aloof participation in peace activities. Nobel contributed money, but never became directly involved. In fact, he wrote her in 1891 "Perhaps my factories will put an end to war sooner than your congresses: on the day that two army corps can mutually annihilate each other in a second, all civilized nations will surely recoil with horror and disband their troops." Although this remark seems naive in light of what transpired in the 20th century, his

naivete should not be confused with evil intent. In 1945 Albert Einstein in a speech following the use of the atomic bombs on Japan said "Alfred Nobel invented an explosive more powerful than any then known--an exceedingly effective means of destruction. To atone for this 'accomplishment' and to relieve his conscience, he instituted his award for the promotion of peace." It is not at all clear that Nobel actually felt this way, and it may be that Nobel really developed arms technology because the opportunity was there and supported his work. In this sense he might be compared with Werner von Braun, who developed rockets for Hitler because he loved rocketry and Hitler would buy them, and Werner Heisenberg, who led the German atomic bomb project in part, he argued, to save German science. The deaths and destruction they caused seem to have been collateral effects, but not their objective even in wartime.

Nobel left Paris in 1891, following the ballistite affair, and moved to San Remo, on the Italian Riviera. The warm climate was good for him, and he set up a laboratory there. By the early 90's Nobel's depression seemed to be better, but his heart problems were severe. He wrote that "My heart troubles will keep me in Paris for another few days, at least ... Isn't it the irony of fate that I have been prescribed nitroglycerine, to be taken internally! They call it Trinitrin, so as not to scare the chemist and the public."

When Nobel died, he was in San Remo, Italy, alone with only paid servants, none of whom even spoke his native tongue (near the end, after a stroke, he lost the ability to speak except in Swedish). He wrote "how sad it is to be without a friend who could whisper a consoling word, and would one day gently close one's eyes." Ragnar Sohlman was in transit and arrived in San Remo a day or so after Nobel's death. A simple service was held in San Remo, where Nobel was cremated. A funeral with much pomp was held in Stockholm, where his ashes are now buried.