



35 THOMAS EDISON

1847 - 1931

The versatile inventor Thomas Alva Edison was born in 1847, in the town of Milan, Ohio. He had only three months of formal education, and his schoolmaster considered him to be retarded!

Edison created his first invention, an electric vote-recorder, when he was only twenty-one years old. It did not sell, and thereafter Edison concentrated on inventing objects that he expected would be readily marketable. Not long after the vote-recorder, he invented an improved stock ticker system which he sold for forty thousand dollars, a tremendous sum in those days. A series of other inventions followed, and Edison was soon both wealthy and famous. Probably his most original invention was

the phonograph, which he patented in 1877. More important to the world, however, was his development of a practical incandescent light bulb in 1879.

Edison was not the first to invent an electrical lighting system. A few years earlier, electric arc lamps had been utilized for street lighting in Paris. But Edison's bulb, together with the system of distributing electric power that he developed, made electric lighting practical for ordinary home use. In 1882, his company started producing electricity for homes in New York City, and thereafter the home use of electricity spread rapidly throughout the world.

By setting up the first distribution company that carried electrical power into private homes, Edison laid the groundwork for the development of an enormous industry. It is, after all, not only the electric light which uses this power source today, but the whole array of home electrical appliances, from the TV set to the washing machine. Furthermore, the availability of electric power from the distribution network that Edison had established greatly stimulated the use of electricity by industry.

Edison contributed enormously to the development of motion-picture cameras and projectors. He made important improvements in the telephone (where his carbon transmitter markedly improved audibility), in the telegraph, and in the typewriter. Among his other inventions were a dictating machine, a mimeograph machine, and a storage battery. All told, Edison patented more than a thousand separate inventions—a truly incredible total.

One reason for Edison's astonishing productivity is that early in his career he set up a research laboratory at Menlo Park, New Jersey, where he employed a group of capable assistants to help him. This was the prototype of the large research laboratories that so many industrial firms have since established. Edison's origination of the modern, well-equipped research laboratory, where many persons work together as a team, was one of his most important inventions—though, of course, one which he could not patent.

Edison was not merely an inventor; he also engaged in manufacturing and organized several industrial companies. The most important of these eventually became the General Electric Company.

Although not by temperament a pure scientist, Edison did make one significant scientific discovery. In 1882, he discovered that in a near-vacuum, an electric current could be made to flow between two wires that did *not* touch each other. This phenomenon, called the Edison effect, is not only of considerable theoretical interest, but has important practical applications as well. It led, in time, to the development of the vacuum tube and to the foundation of the electronics industry.

For most of his life, Edison suffered from seriously impaired hearing. However, he more than compensated for that handicap by his astonishing capacity for hard work. Edison was married twice (his first wife died young) and had three children by each marriage. He died in West Orange, New Jersey, in 1931.

There is no dispute concerning Edison's talent. Everyone agrees that he was the greatest inventive genius who ever lived. His parade of useful inventions is awe-inspiring, even though it is probable that most of them would have been developed by others within thirty years. However, if we consider his inventions individually, we see that no one of them was of really critical importance. The incandescent light bulb, for example, although widely used, is not an irreplaceable part of modern life. In fact, fluorescent light bulbs, which operate on a completely different scientific principle, are also widely used, and our everyday life would not be much different if we had no incandescent bulbs at all. Indeed, before electric lights came into use, candles, oil lamps, and gaslights were generally regarded as reasonably satisfactory sources of light.

The phonograph is certainly an ingenious device, but no one would claim that it has transformed our daily life to the extent that radio, television, or the telephone have. Furthermore, in recent years, quite different methods of recording sound have been developed, such as the magnetic tape recorder, and today it

would make relatively little difference if there were no phonographs or record players at all. Many of Edison's patents related to improvements of devices that other persons had already invented and that were already in quite usable form. Such improvements, although helpful, cannot be considered of major importance in the overall sweep of history.

But although no single one of Edison's inventions was of overwhelming importance, it is worth remembering that he did not invent just one device, but more than one thousand. It is for this reason that I have ranked Edison higher than such renowned inventors as Guglielmo Marconi and Alexander Graham Bell.

Edison in his laboratory at Menlo Park.

