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## "THE WIZARD OF MENLO PARK"

*The Life and Inventions of Thomas Alva Edison.* By W. K. L. Dickson and Antonia Dickson. (London: Chatto and Windus, 1894.)

THE present rapid increase in the number of places where the Edison Kinetoscope is exhibited, leads one to glance through the account which was published towards the end of last year of the life and adventures of the American inventor. The career of one who started as a newsboy, and who has raised himself to fame and wealth by his quickness of perception, fertility of resource, and general shrewdness, has been too varied and exciting for the authors to succeed in rendering the narrative uninteresting.

But the pages of rhapsody with which this long quarto book is filled, combined with the extremely verbose and grandiloquent style in which it has been written, not only render the meaning well-nigh unintelligible in many places, but give a wholly false notion of Mr. Edison's character. For those who have met him must have been struck with his somewhat boyish character, his fondness for a joke, and his objection to black coats, tall hats, and formality. The Edison of this book would hardly be recognised as the Edison who, we remember, some years ago could not be induced to put on his coat or shoes to receive an English peer, well known to science, who happened to call at Menlo Park when the inventor was taking his afternoon nap.

We start, of course, with Edison's pedigree, and we are told that his father, "Samuel Edison, however, was not minded to stimulate the waning flames of patriotism by a libation of personal gore." We should have thought the father of an inventor would have known that gore was not a good sort of kindling. Then comes a description of "callow collegians dragged through an uncongenial course of study, boarding-school graduates steeped in a weak solution of accomplishments, ephemeral creatures on whose glossy plumage the dews of Parnassus have no power to rest"; but Edison, on the contrary, "despite his paucity of years," read through "fifteen feet of closely serried volumes." Then we come to an excellent portrait of Edison at fourteen years of age, which strikingly resembles the closely shaven Edison of to-day, and shows the same merry twinkle of the eye.

*Facsimiles* are given of pages of Edison's newspaper, the *Grand Trunk Herald*, started in 1862, the vast number of blots on which are explained, we suppose, by the fact that this newspaper was regularly composed and printed in a dilapidated freight car attached to a running train. His next venture in the newspaper line, *Paul Pry*, led to his being ducked by a subscriber, and, as his travelling railway printing establishment and laboratory were burnt, through the constant jolting of the springless car shaking the cork out of a bottle of phosphorus, he turned his attention to the construction of a telegraph line. This was not attended with success, since to produce an electric current, "Edison secured two Brobdingnagian cats, with volcanic tempers, attached a wire to their legs,

administered a violent amount of friction to their backs, and breathlessly awaited developments."

Afterwards he became a real telegraph operator, and when on night duty in the service of the Grand Trunk Railway of Canada, he was, in common with the other night operators, required to signal the word *six* every half-hour to show that he was awake. Preferring, however, to wander about the town, he obtained a clock and converted it into an automatic telegraph key. This key, however, would do nothing more than periodically signal the word *six*, and declined to answer inquiries, so a detective operator was put on the track, and Edison had to make his escape into the United States.

During the severe winter which followed, the ice broke the telegraph cable under the river which separates Port Huron from the Canadian city of Sarnia, on the opposite bank a mile and a half away, and further rendered all traffic across the river impossible. Communication between the two cities was, however, restored by Edison using the alarm whistle of a locomotive engine to send Morse signals. This power of overcoming difficulties brought him into public notice, and he obtained in succession several good posts as a telegraph operator. His love of fun and of making experiments, however, led him into constant trouble; but he was rewarded at the age of seventeen by making his first invention of an instrument for automatically repeating a telegraphic message.

Edison's electric device for killing cockroaches "is told in the prosaic terms of the nineteenth century," and commences, "Curiosity betrayed our Mother Eve," and so on for many lines. Edison's first patent for a "Vote Recorder" was not commercially successful, as its employment in the Massachusetts Legislature was found to interfere with the power of the House to use "*filibustering*." Then come his Universal Stock Printer and his employment as operator by the Law's Gold Reporting Company.

During the excitement connected with the operations of the Gould and Fisk ring to make a corner in gold, the stock quotation printer broke down, and Edison gave the very simple explanation that a contact spring had broken and fallen between two cog-wheels in the instrument. To describe this, however, the authors require several pages. "Inflamed by the lust of gold" (not Edison, however, for he was very poor at the time and owed 200 dollars), "and reduced to the semblance of insatiate brutes, the great sea of sentient humanity surged around the shrine of its desires," &c.

Chapter iv. commences with a description of "Edison's storm-tossed craft," and tells how "a steady gale blew from the Blessed Isles, wafting the adventurer into all tempting harbours of successful discovery." We much doubt the value of a wind blowing *from* an island, whether blest or not, to take a craft into its harbour.

In 1870 he was developing his automatic telegraph for transmitting a message by the use of a perforated strip of paper, and receiving it in Roman characters at the other end of the telegraph line; also instruments for automatically sending messages, using the Morse code, as in the well-known Wheatstone's Fast Speed instruments.

Next came the carbon button and the loud-speaking telephone. No reference is here made to Prof. Hughes microphone, or to the controversy which was carried on

about 1876, as to who invented the carbon telephone transmitter, and we are told that the Edison carbon transmitter "held the monopoly of the telephone in England for many years." In the next chapter, "the pretensions of his rival" are touched on, and Edison's remark, that "one of the biggest steals ever made was filched directly from my telephone," is quoted.

"The individual mistress of Edison's heart until now had been science, but a new potency was at hand equally strong, but immeasurably more subtle and all-pervading." Then the authors drop into poetry, which they have a way of doing on all possible occasions. Later on we are told that "prior to his marriage Edison portioned out the hours of sleeping and waking by the ebb and flow of the Divine afflatus," and that his "blood after having served the purpose of stimulating the capillary vessels of the brain, and inducing inventive capacity, soon retreats quietly to its legitimate source." We note in this chapter references to "Mrs. Noah's superior faculties," the Roman Empire, Carthage and her glory, a Phœnician axiom, and a disquisition on "the sickly and mercurial sentimentality of the Oriental and Latinic races," "the Plutonian broths of Sparta," "the delicious pastoral flavour to the *Allegretto* and the *Lycidas*." We presume Milton's title "*l'Allegro*" was not long enough for the authors; and all this while Edison has been left gazing at a test-tube in a large photograph on page 95 of this book.

By 1876 forty-five of his distinct inventions were in different processes of completion; £100,000 had been realised from the manufacture and the sale of patents; and the throng of sight-seers to Edison's laboratory at Newark became so great that he moved to Menlo Park, twenty-four miles from New York, and stacked there his "cases of every ordinary and extraordinary device born of that prolific parent, necessity."

The first sketch of the phonograph, on p. 123, is of real interest, for we regard the phonograph as scientifically the greatest of Edison's achievements, in that Edison accomplished with its use, in an extremely simple way, what the previous elaborate talking-machines could not perform. But why the microscopic examination of the tin-foil showed that "the feminine members of the alphabet were less aggressive in their outlines than their masculine coadjutors," or why the "long E vindicated her rights to female enfranchisement," we know not.

Descriptions of various forms of phonographs, phonographic dolls, &c., take us to the end of chapter xi. Chapter xii. is devoted to telegraphing from trains in motion, a subject that is certainly worthy of more consideration than it has yet received, and to Edison's pyromagnetic motor, which, from its principle of construction, could never have been commercially successful.

The chapters on the development of the glow-lamp by Edison, and those associated with him, are some of the most interesting in this book. Phlegmatic indeed must be the reader who does not feel inspired by the enthusiasm which led Edison to despatch Mr. Moore to search through China and Japan, Mr. McGowan to explore the American continent from the Atlantic to the Pacific, and Mr. Ricalton to seek in India, Ceylon, and the neighbouring countries for a vegetable fibre suitable for being carbonised into a glow-lamp filament. But, if the reader be

of a critical temperament, his pleasure at reading the account of these explorations will be diminished by the many faults which mar the description.

For example, the large picture on p. 217 of "Cingalese Women, photographed by Mr. Ricalton in his Search for Fibre," was never taken in Ceylon, since it is obviously a photograph of a group of *Japanese* girls posed in front of a theatrical back scene. One of these girls is sitting on a Western rustic garden-chair; so, perhaps, the photograph was taken in New York or Paris, on the principle followed by the special correspondent in the Soudan war, whose envelopes bore the St. John's Wood post-mark. Oddly enough, the book contains several other photographs of Cingalese people taken by Mr. Ricalton; but the authors do not seem to have been struck with the fact that a comparatively small island like Ceylon should have possessed inhabitants of such a variety of different types.

A great deal of tall talk follows about Edison's work on the dynamo machine. "Ah! potent wizard, you shame the records of the Arabian nights and the fabled glories of the East," &c., with the following surprising bit of information for the Englishman: "To-day there is not a hamlet in England, however insignificant, which is not in vital connection with the central sources of supply," that is, has electric energy supplied to it from a central electric light station. Passing over pages of grandiloquence, we come to a long description of Edison's factory and laboratories at Orange. The pictures remind us of what we ourselves saw when visiting Edison, but we have no recollection that in the laboratory "fragrant gums and spices recall memories of the fair Babe of Bethlehem." In fact, what we chiefly remember was our surprise at the large number of phonographs which we saw in course of manufacture, and Edison's sallies of laughter at the simplicity of the English in being so easily gulled by limited liability companies.

Although this book is in parts as silly as anything we have ever read, it is nevertheless full of interest; for it gives a graphic picture of the struggles and success of one who is certainly remarkable for his quickness of insight, originality, and capacity for long stretches of hard work, even if we do not agree with the authors that he is "the greatest genius of this or any other age." Even if we were not told on the title-page that the book was written by W. K. L. and Antonia Dickson, we should feel quite sure that it was a joint production, one of the authors being Edison's superintendent of the experimental department in New York, and the other a poetic rhapsodist who has never read her "Mark Twain." The illustrations are well executed, the printing and paper good, and the general get-up of the book all that can be desired of an expensive quarto volume to lie on the drawing-room table. But why was it not edited? asks the English reader. "P. D."

#### CRIMINAL IDENTIFICATION.

*Finger-print Directories.* By Francis Galton, F.R.S., (London: Macmillan and Co., 1895.)

IT will be remembered that the Departmental Committee which reported in the beginning of last year upon the best method of identifying habitual criminals, re-