

ADA AND THE ENGINE

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THE VICTORIAN ERA; OVERVIEW

Our play takes place in the mid-through-late 19th century, placing it right in the heart of the Victorian period. The period was named after Queen Victoria, who reigned over England from 1837-1901. It was a time of rapidly growing industrialization and technology—as well as a time of high propriety, emphasis on social class and great heed to reputation.

SOCIETY

Victorian society begins with the social class hierarchy. It was very strictly adhered to and was the basis on which almost everything was judged. Even the things one owned in the house was judged by who came in the door, and it all displayed the owner's level of social class. The social hierarchy was thus split into three ranks—upper, middle and lower class.

- **Upper Class** - the people of this class were, needless to say, very wealthy (and sometimes even fell into the rank of nobility.) They typically owned several acres of land, kept several servants, and inherited most of their money. (All of the characters in our play are of the upper class.)



- **Middle Class** - the middle class could usually afford a decent-sized manor and a fair amount of land but nothing too extravagant, had a few servants but would still do some of the work alongside them, and typically had to work a job, though it would be high-paying.



- **Lower Class** - the lower class lived poorly and worked low-paying jobs. The luxuries of good food and warmth were hard to come by, so they were typically and unfortunately left rather skinny, dirty and cold.



FAMILY

Reputation was everything for the Victorians...and it all started with family. Family was considered the core structure of what made a decent husband or wife. The ideal family picture was to be copied as closely as possible, or else uncertainty regarding your family would begin to spread amongst the town's gossip.

The ideal family portrait consisted of a mother, father, children (daughters and sons), aunt, uncle and perhaps a pet. The bigger the family, and the more often your family was over to visit, the better your reputation was. There was even expected to be a portrait or photograph of your family as close to the front door as possible when one entered your house, so that one could see the pride you had for your family displayed the moment they walked in.

This puts Anabella, and especially Ada, at a great disadvantage. The father has left the family (something that was simply not done at that time) leaving a small family of only a mother and daughter. No wonder gossip about Ada's reputation circled the town... what kind of wife would she grow to be, with a father who had left the family? And with the reputation Lord Byron had already developed before she was born...



DWELLINGS

A manor like that of Ada's or Lovelace's, would be the epitome of an upper class home. It typically consisted of a living room/lounge room, approximately four or more bed chambers, a gallery or music room, the drawing room (for women to retreat to during a dinner party, after supper—used for knitting, taking tea, or simply lounging), the parlor (for men to retreat to for the same reason—where they were free to smoke, drink, discuss politics and other subjects claimed unfit for women's ears), the dining room, nursery if there were children, the privy, and the kitchen/servant's quarters.



A middle class home would consist of a living room/lounge room, about four bedchambers, music room or parlor, a privy and a kitchen.



Lower class homes were usually small cottages either all in rows right next to each other, or completely isolated from the rest of town. Much of the lower class typically lived in their own separate areas.



TECHNOLOGY

The Victorian age—and the time of our play, in particular—was the time of the Industrial Revolution; technology was progressing at a rapid rate. The telegraph system was improved, electrical lines were built on middle class streets, railroads were booming, and homes began to include new technological developments. Running water was now available on the bottom floor and basements of many upper and middle class homes, and at least one privy, or bathroom, with plumbing was required in each home. Cast iron stoves were still used for cooking food and fireplaces were still the most convenient source of heat. The most common form of indoor lighting was the oil lamp, and would soon be replaced with the first gas light bulb in 1890. The post office system was also gaining popularity.

And, of course, there's the matter of progressing technology in the areas of mathematics and science, for the matter of our play. Discoveries in both were being made at a rapid pace, thanks to scientists and mathematicians such as Bernhard Reimann, Evariste Galois, Carl Friedrich Gauss, Janos Bolyai, Nikolai Lobachevsky, George Boole, Georg Cantor, Henri Poincare— and, of course, our favorite team, Charles Babbage and Ada Lovelace! It was thanks to all those listed the above that the worlds of geometry and algebra were developing, that the structure of our solar system was becoming clearer and that we had machines able to calculate equations. The world was quickly becoming an exciting place!

EDUCATION

School, in general, usually began at age 3 and continued until around age 12, where the students could either choose to continue their education or start working. Boys (and sometimes upper and middle class girls) typically had schooling in a single room schoolhouse. The lower class couldn't afford to attend school unless they were individually schooled, or if a girl was sent to a dame school. Dame schools were informally set up by a widow or spinster and taught reading, sewing and cooking.

If they chose, boys could attend universities at age 17, after taking an entrance exam. Then they would study for a minimum of two years, choosing which lectures they wanted to attend (as long as it was in accordance with their field of study) and then would graduate with qualifications to pursue middle or upper class professions.

RELIGION

Religious freedom was growing more and more popular as we headed towards the 20th century. Unlike previous monarchs, Queen Victoria wasn't always insistent that the country follow her form of worship. It was the first time for England, really, not to be solely run by religion.

FASHION

Victorian everyday fashion for women typically consisted of the following: a full dress gathered at the back (or button-up chemise and skirt), a bustle, hoopskirt, petticoat or slip and tight cinched corset. The dress would often have a collar and cuffs that were detachable. (It was the first time women's clothing was beginning to include certain aspects of men's clothing.) Sometimes, depending on the occasion, the dress would include a sash around the neck, or a matching jacket that buttons up on the side. Hats or bonnets were always a must, along with gloves and jewelry if she was of upper class. Shoes were flat boots that buttoned up all the way to the knee.



For upper and middle class men, every day clothing usually consisted of a single-breasted frock coat with three buttons, a white drill collar vest (colors of the vest varied depending on the occasion), a tie and trousers. Hats were always worn and sometimes gloves, if upper class, and depending on the occasion.



TRANSPORTATION

The upper and middle class rode horses, horse-drawn carriages, or used public transportation. This would mean either a train or a *carrier*, which was a carriage driver that delivered the passenger wherever they wanted to go for payment, much like a modern day

taxi cab. The lower class walked practically everywhere, unless they could afford a horse. All the characters in our production would likely take a carriage to their destinations.

ETIQUETTE/SOCIAL PROTOCOL

For dinners, parties, or any sort of social gatherings in the Victorian age (which there are a few of in our play) there was a very strict protocol for socializing. How to address others, how to conduct conversation and where to sit at a table are just a few. (Etiquette books were even kept by upper class women's bedside tables.)

Conversation etiquette was essential. It was considered indecent to speak to someone without being properly introduced, especially as a lady. Topics were typically to be limited to the weather, the man's career (if speaking with a man), and perhaps current events around town. Opinions on politics, opinions on the workplace, and essentially, intelligence on a greater scale than acceptable was frowned upon coming from a woman. Therefore, Ada's great mind—along with Mary's—would not have been the most acceptable ones to pry into during a conversation.

But keeping decent conversation wouldn't have been a "problem" for Ada if she would have followed social protocol and had a chaperone by her side constantly. The lady was to be accompanied *everywhere*. (Preferably by an older, or married man.) To be seen in public alone, or—heavens forbid—with a man who was not family, was a very damaging tarnish on her reputation. So, the fact that Ada spends a good deal of time with Babbage the first night they met sends a strong message about her to everyone else. Not only was she caught speaking alone with him for a rather long time, but they were even seen *dancing* together—and when no one else was dancing. (And with no music! Social catastrophe!)

Regarding conversation, the way one addressed another was highly important. A lord was to be called "Sir" and a lady, "Ma'am" or "Madam". A servant would call them "my Lord" and "Lady". Even *whom* one addressed was very important— a person higher in social rank than you would not speak to you at all, unless *they* gave permission for someone else to introduce you. It was improper for a person of upper class to introduce oneself.

Bodily contact with someone besides whom you were married to was an outrageous thought. A man never touched a woman unless assisting her over rough ground if they were walking outside. Beyond that, the opposite sex never touched the other until married. Even if they were courting, they wouldn't even hold hands. They would walk separate distances apart from one another, and if dining, would sit across from each other at the table— *never* beside each other. So once again, the idea of Ada and Charles dancing with each other, and standing so close to one another upon their first acquaintance...mind-shattering.

A lady was also not to visit another man who was not a relative, unless accompanied by a family member— nor could she receive a man in her home while alone. A family member had to be present in the room with them. So if Ada and Charles had ever visited each other, to work on the engine, while Lovelace wasn't around...Ada's reputation would have been entirely ruined—especially because she was already married.

On a lighter note, nicknames were starting to become very popular. If your husband had a nickname for you, it meant that you were a good wife to him, doing all that a wife should. The more exotic the nickname, the better it made the woman look. So, Ada's suggestion for Lovelace to call her "bird" may have been not only an attempt to break the ice and bring them closer together, but also to help her own reputation which was unfortunately already beginning to decline as she got older.

Below are some etiquette rules taken from the article, "All Things Victorian", from the website, [avictorian.com](http://www.avictorian.com). Check out this link for more information on Victorian expectations! <http://www.avictorian.com/etiquette.html>

- Etiquette played its part in Victorian clothing. It was considered 'good etiquette' to dress appropriately to one's age, and position in society.
- Etiquette manuals instructed gentlemen that they should attend to the ladies present, at all cost, putting aside their own needs, and acting as servants, guides, or even waiters, if necessary.
- "It is the duty of the gentlemen to be ever attentive to the ladies. If it be a picnic, the gentlemen will carry the luncheon, erect the swings, construct the tables, bring the water, and provide the fuel for boiling tea."
- A lady cannot refuse the invitation of a gentleman to dance, unless she has already accepted that of another, for she would be guilty of an incivility which might occasion trouble; she would, moreover, seem to show contempt for him whom she refused, and would expose herself to receive in secret an ill compliment from the mistress of the house.
- Married or young ladies, cannot leave a ball-room or any other party, alone. The former should be accompanied by one or two other married ladies, and the latter by their mother, or by a lady to represent her.
- Victorian girls were trained early on in life to prepare herself for a life dedicated to home and family if she married, and charity if she didn't. And young ladies, though advised on the importance of catching a man, were warned not to be too liberal in display of their charms. Meekness and modesty were considered beautiful virtues.
- Invitations should be sent at least seven to ten days before the day fixed for an event, and should be replied to within a week of their receipt, accepting or declining with regrets.
- Never lend a borrowed book. Be particular to return one that has been loaned to you, and accompany it with a note of thanks. -- Rise to one's feet as respect for an older person or dignitary.
- A true gentleman tips their hat to greet a lady, opens doors, and always walks on the outside.
- Break bread or roll into morsels rather than eating the bread whole.
- Conversation is not to talk continually, but to listen and speak in our turn.
- And as for the Gentlemen, they should be seen and not smelled. They should use but very little perfume, as too much of it is in bad taste.
- A lady, when crossing the street, must raise her dress a bit above the ankle while holding the folds of her gown together in her right hand and drawing them toward the right. It was considered vulgar to raise the dress with both hands as it would show too much ankle, but was tolerated for a moment when the mud is very deep. As told by The Lady's Guide to Perfect Gentility.



- A young lady should be expected to shine in the art of conversation, but not too brightly. Etiquette books of the era concentrate on the voice, rather than the content of speech, encouraging her to cultivate that distinct but subdued tone.
- When introduced to a man, a lady should never offer her hand, merely bow politely and say, "I am happy to make your acquaintance."
- While courting, a gentleman caller might bring only certain gifts such as flowers, candy or a book. A woman could not offer a gentleman any present at all until he had extended one to her, and then something artistic, handmade and inexpensive was permissible.
- Young people should not expect friends to bestow wedding gifts. It is a custom that sometimes bears heavily on those with little to spend. Gifts should only be given by those with ties of relationship, or those who wish to extend a warm sentiment of affection. In fact, by 1873 the words 'No presents' received are engraved upon the cards of invitations.
- A gentleman may delicately kiss a lady's hand, the forehead, or at most, the cheek.



A COMPLETE ETIQUETTE IN A FEW PRACTICAL RULES

1. If you desire to be respected, keep clean. The finest attire and decorations will add nothing to the appearance or beauty of an untidy person.
2. Clean clothing, clean skin, clean hands, including the nails, and clean, white teeth, are a requisite passport for good society.
3. A bad breath should be carefully remedied, whether it proceeds from the stomach or bad teeth.
4. To pick the nose, finger about the ears, or scratch the head or any other part of the person, in company, is decidedly vulgar.
5. When you call at any private residence, do not neglect to clean your shoes thoroughly.
6. On entering a hall or church, the gentleman should always precede the lady in walking up the aisle, or walk by her side if the aisle is broad enough.
7. A gentleman should always precede a lady upstairs, and follow her downstairs.
8. On leaving a hall or church at the close of entertainment or services, the gentleman should precede the lady.
9. A gentleman walking with a lady should carry her parcels, and never allow a lady to be burdened with anything whatever.
10. If a lady is travelling with a gentleman, simply as a friend, she should place the amount of her expenses in his hands, or insist on paying the bill herself.
11. Never carry on a private conversation in company. If secrecy is necessary, withdraw from the company.
12. Never sit with your back to another, without asking to be excused.
13. It is as unbecoming for a gentleman to sit with legs crossed as it is a lady.
14. Never thrum with your fingers, rub your hands, yawn or sigh in public.
15. Loud laughter, loud talking, or other boisterous manifestations should be checked in the society of others, especially on the street and in public places.
16. When you are asked to sing or play in company, do so without being urged, or refuse in any way that shall be final; and when music is being rendered in company, show politeness to the musician by giving attention. It is very impolite to keep up a conversation. If you do not enjoy the music, keep silent.
17. You should never decline to be introduced to anyone or all the guests at a party to which you have been invited.
18. To take small children or dogs with you on a visit of ceremony is altogether vulgar, though in visiting familiar friends, children are not objectionable.



DISEASES

Popular diseases in the Victorian age were cholera, smallpox, scarlet fever, typhoid, the measles and syphilis. According to Ada's symptoms described here and there in the script, she could very well have developed a case of syphilis. It was a hereditary (and usually sexually transmitted) disease, causing loss of memory and seizures of the brain and heart, amongst many other things. If not a case of cancer, this could very well be the case since her father slept with several women. And though it's passed down through one's genes when born, it's often dormant until later in adult years, and then only takes a few months to take over the body entirely, leading to an eventual death. Morphine was said to be the only medicine for it, so it makes sense that Anabella and Lovelace continually give her morphine at the end of the play.

OUR CHARACTERS: THE HISTORICAL FIGURES

ADA LOVELACE



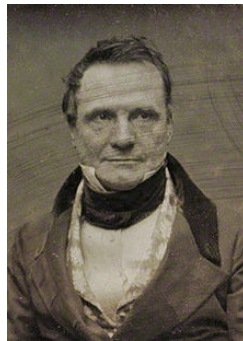
Born Augusta Ada King-Noel, Countess of Lovelace, Ada was born in London on December 10th, 1815 and died at the age of 36 on November 27th, 1852. She was born to poet Lord Byron and Anabella Milbanke, Lady Wentworth. She was, as we know, a mathematician and writer, (though she preferred to call herself a “poetic scientist and analyst”) known for assisting Charles Babbage in the creation of the Analytical Engine. She studied mathematics with a great love and passion, which soon led her to working with scientists like Andrew Crosse, Sir David Brewster, Charles Wheatstone, Michael Faraday, author Charles Dickens and even Luigi Menabrea.

Her work with Charles Babbage, however, was what changed the world of technology as we knew it. She was the first to realize that his Engine could do more than simply calculate, and eventually created the first algorithm for the machine to process. Notes and notes were written and translated by Ada about the Engine and its possibilities, which have been studied rigorously over the centuries, helping us to create the first computers, cell phones, iPhones, etc.—as we see at the end of the play. (Babbage even became so enamored with her and her work, that he nicknamed her “Enchantress of Number”.)

In July of 1835, she married William, 8th Baron King, becoming Lady King, and had three children. Immediately after giving birth, she developed an illness that never quite seemed to be cured entirely—symptoms lead it to have been either uterine cancer or a form of syphilis.

In 1838, William was named Earl of Lovelace, making Ada “Lady Lovelace”. After this and into her later years, Ada began to develop a reputation for behaving promiscuously with other men and even gambling (which was beyond unladylike at the time). Unfortunately, she ended up leaving herself and her husband very much in debt by the time she died in 1852. She left her most treasured heirlooms to a man she’d had a very scandalous relationship with, as well as corresponded via letters constantly— Andrew Crosse’s son, John Crosse. (Perhaps certain aspects of their relationship were what inspired some parts of the relationship between Ada and Babbage in our play!)

CHARLES BABBAGE

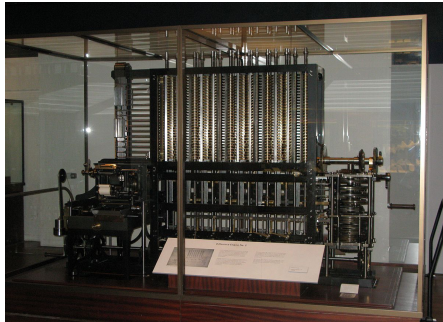


Mathematician, philosopher, inventor and mechanical engineer, Charles Babbage was born December 26th, 1791 in London, and died October 18th, 1871. He, of course, was most known for his work with the Difference Engine, later developing into the Analytical Engine with the help of Ada Lovelace.

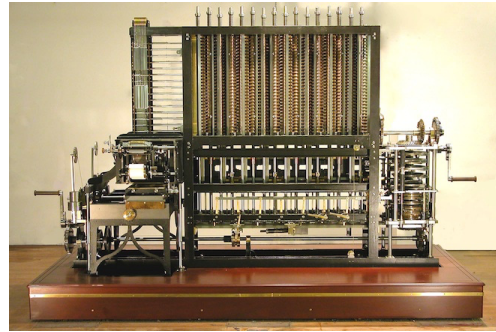
His love for mathematics and science began in his school years, eventually leading him to Cambridge University. After graduation, he founded the Astronomical Society, took up the position of Lucasian Professor of Mathematics at Cambridge, wrote three books, took up publishing, began engineer work tabulating and calculating impossible equations using machines he invented, and finally began work on the Difference Engine. That, of course, led to the eventual Analytical Engine that changed computing devices as we knew it.

In July of 1814, he married Georgina Whitmore. They had eight children, though only four of them survived childhood. Georgina passed in 1827—the same year in which also died his father and two of his sons. After that, he dedicated the rest of his life strictly to his work, even declining knighthood and baronetcy, until he eventually passed away in 1871.

His work is still studied rigorously today, and despite the harsh ups and downs of his life, we have him to thank for the amazing amount of inventions and discoveries he gave us. Today he is even considered the “father of the computer”.



The Difference Engine



The Analytical Engine

LORD BYRON



Born George Gordon Byron, 6th Baron Byron, Lord Byron was born on January 22nd, 1788 and died April 19th, 1824. He is known today as one of England’s most popular poets and of the leading figures of the Romantic movement.

Many people were drawn to him and his eccentric, confident personality. (He even poked fun at himself for his deformed leg that was slightly in-turned due to infantile paralysis.) Soon, he had a very large following and it only grew bigger as he engaged himself in politics and poetry. Soon becoming the author of the famous poem, “She Walks in Beauty”, Byron traveled across Europe spending his time engaging in excesses often expected of a writer— art, love affairs and debt being a few of them. He had an immense love for adventure, nature, and living life with no strings attached.

Therefore, out of his many love affairs (some of which also involved men) Ada Lovelace was Byron’s only legitimate child. She was born of his wife, Anabelle Byron, whom he married in 1815. But he continued his scandals with others men and women, and eventually developed an incestuous relationship with his half-sister. For reasons unknown (though it’s said that his own actions had caused him to go mad), Byron left his wife a month after Ada was born, and eventually died of disease during the Greek War of Independence in 1824.

LORD LOVELACE



Born William King-Noel on February 21st, 1805, Lord Lovelace was known as the Honorable William King until 1833, when he was accepted into lordship, becoming Lord King.

He maintained one of the most honorable reputations in all of England at the time, engaging in politics and science, succeeding in the barony and becoming Viscount Ockham and 1st Earl of Lovelace FRS (Fellow of the Royal Society).

In 1835, he married Ada Byron, raising three children of their own—and only five years later, he was appointed Lord-Lieutenant of Surrey, holding post long into his elder years. When Ada died, he re-married to Jane Jenkins, giving her one son. It was his son had with Ada, however, who would soon grow to be named Ralph Gordon, Viscount Ockham and 2nd Earl of Lovelace, succeeding in his father’s place, when Lord Lovelace would eventually pass at age 88, in 1893.

MARY SOMERVILLE



Mary Fairfax Somerville, born December 26th, 1780, was a Scottish scientist and writer. She very passionately studied mathematics and astronomy, and even taught herself numerous forms of geometry.

Aside from her studies, she also maintained a rather exciting social life, attending numerous parties and gatherings, and earning herself the nickname “the Rose of Jedburgh” by the people of Edinburgh.

In 1804, she married her cousin, Captain Samuel Greig, baring him two children. He moved them to London (where she met Charles Babbage and tutored Ada Lovelace in

mathematics). He unfortunately gave very little approval of her studies— but when he died in 1807, she gratefully moved back to Scotland to continue her work.

In 1812, she re-married another cousin, Dr. William Somerville of the Army Medical Board, who greatly supported and encouraged her studies and passion for astronomy. With him, she bore four children and soon became known as one of the most interesting and extraordinary women in Europe!

As her career took off, she published her translation of Lord Braugham's *Mecanique Celeste*, under the title *Mechanism of the Heavens*, which quickly made her famous. She began writing and translating several papers, changing the way we viewed outer space and our solar system. She pursued her work passionately until she died on November 29th, 1872— her work continuing, even so, to pave the path for future scientists and astronomers.

ANABELLA BYRON



Anne Isabelle Milbanke, 11th Baroness Wentworth (and nicknamed “Anabella”) was born on May 17th, 1792. She was very intelligent from a young age, gifted in the ways of classical literature, philosophy, science and mathematics. (Lord Byron even nicknamed her the “Princess of Parallelograms”.) However, as she grew older, her love for her studies diminished and she grew strictly religious, set firm in her ways.

Her strict religious morals, in fact, were essentially what persuaded her to marry poet Lord Byron. She found him so immoral (and boyishly charming) that it's said she married him solely out of hope that she could set him on a cleaner path. The marriage, however, only lasted until she bore him a daughter, Ada.

After he left, Anabella worked hard to keep Ada from following the lifestyle he led, though it ended up being in vain (as we can tell from the play). Nonetheless, she stayed consistently by her daughter's bedside until she died— and passed away herself from breast cancer on May 16th, 1860.