

## The professor and the seamstress: an episode in the life of Jacob Henle

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### Abstract

*Jacob Henle was a great German anatomist and one of the most important histologists of all times. One of the most commonly used eponymous terms in renal histology is the loop of Henle, but many other anatomical and pathological findings are associated with his name. During his stay in Zurich he fell in love with Elise Egloff who worked as a maid and seamstress in the house of one of his friends. No one could ever imagine how the wide social chasm that separated the servant-girl and the professor could be bridged. Henle arranged for his sister Marie to educate Elise and give her social polish. In a short time Elise was transformed into a lady of the world. A year and a half later Jacob and Elise were married. This episode inspired the novelist Auerbach to write the novel "The Professor's Wife", and the play "Pygmalion" by George B Shaw. (Gac Med Mex. 2015;151:762-9)*

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**KEY WORDS:** Jacob Henle. Elise Egloff.

### Introduction

The story that is going to be told describes a passage in the life of a great character in the history of medicine, Friedrich Gustav Jacob Henle (1809-1885). Henle is known for his morphological studies, which led to incorporate his name to several structures of the human body. He is considered to be the creator of modern histology and one of the greatest anatomists of all times, whose impact on medicine, according to Newell, can be compared to that by Andreas Vesalius<sup>1</sup>. Of his numerous morphological findings, perhaps the most widely known are Henle's loop in the kidney and Henle's internal root sheath of the hair follicle<sup>2</sup>, but there are more than 10 Henle eponyms (Table 1).

Henle was a student and close collaborator of Johannes Peter Müller (1801-1858); coworker of Rudolf Virchow (1821-1902), Theodor Schwann (1810-1882), Albert von Kölliker (1817-1905), Friedrich Schlemm (1795-1858), Moritz Heinrich Romberg (1795-1873), and Friedrich Sigmund Merkel (1845-1919) (who described the Merkel cells, married Anna, Henle's daughter, and succeeded him as anatomy professor at the University of Göttingen); he was teacher of Robert Koch (1843-1910) and Heinrich Wilhelm Gottfried Waldeyer (1836-1921) and great friend of the musician Felix Mendelssohn (1809-1847) and of the polymath Alexander von Humboldt (1769-1859)<sup>3</sup>.

A curious episode of Henle's personal life was that of his first marriage with the seamstress and governess Elise Egloff (Fig. 1), a romance that inspired the novels

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Date of reception: 26-12-2014  
Date of acceptance: 07-01-2015

**Table 1. Henle eponyms**

- External sphincter of the bladder (Henle's sphincter)
- Internal root sheath of hair (Henle's layer)
- Thin renal tubule (loop of Henle)
- Trachoma glands of Henle (conjunctival lymphoid follicles)
- Henle's membrane-*lamina basalis choroidea* (Bruchs membrane)
- Nervous stratum (*stratum nerveum*) of Henle (retinal layer composed exclusively by cones and rods)
- Henle's fibers (photoreceptor internal fibers)
- Henle's layer (plexiform external layer of the retina)
- Henle's fiber layer of the macula lutea
- Henle's ampulla (external half of uterine tube)
- Henle's layer of internal cremaster
- Hassall-Henle warts (bodies) (small excrescences of the Descemet membrane of the cornea)
- Henle's fissure (fibrous tissue between cardiac muscle cells)
- Henle's ligament (tendons of the transverse muscle of abdomen)
- Henle's sheath (perineurium)
- Vascular endothelium (of Henle)
- Henle's spine (suprameatal spine that serves as a landmark in the mastoid area)
- Henle's *demodex folliculorum*
- Henle's internal cremaster

*Regina*, by Gottfried Keller (1819-1890), and *die Frau Professorin* (The Professor's wife), by Berthold Auerbach, published in 1846<sup>3,4</sup>, and the plays *Dorf und Stadt* (Village and city), by Charlotte Birch-Pfeiffer (1800-1868) and *Pygmalion* (based on the story by the Roman poet Ovidius *The metamorphoses*, where Pygmalion is presented as a sculptor in love of one of his sculptures), published in 1913 by George Bernard Shaw (1856-1950), who was awarded with the 1925 Literature Nobel Prize. In George Bernard Shaw's play, the central plot develops at Covent Gardens, London, around the florist Eliza Doolittle, whose manners and vulgar language stir the interest of phonetics professor Henry Higgins and his friend, colonel Pickering, with whom Higgins bets that he is able to teach the young girl good manners and to speak educately, and to make her pass for a high society lady in six months. Higgins manages to turn Eliza into an educated and refined woman, and ends up falling in love with her, the woman he has sculptured according to his wishes, as in the Pygmalion myth. This play was adapted to the movies in 1938, with Wendy M. Hiller (1912-2003) as the protagonist, and won the Oscar for best adapted script, which meant that for the first, and so far the only time in history, the winner of a Nobel Prize, George

**Figure 1.** Jacob and Elise (c. 1846).

Bernard Shaw, was awarded with an Oscar. In 1964, a musical remake was produced, *My Fair Lady*, directed by George Cukor and with Rex Harrison and Audrie Hepburn on the leading roles (Fig. 2). The story of Eliza Doolittle resembles that of Elise Egloff, Jacob Henle's first wife<sup>4,5</sup>.

## Jacob Henle

Friedrich Gustav Jacob Henle was born on July 19<sup>th</sup> 1809 in Fürth, a small Bavarian city, at 10 km from Nüremberg, in the bosom of a Jewish family. His father, Wilhelm Henle, was a tradesman, and his mother, Helene Sophia Diespeck, the daughter of a rabbi from Baiersdorf<sup>4</sup>. In those times, many educated German Jews saw conversion to Catholicism as a route for social climbing and, for that reason Jacob decided to convert to Protestantism. He was a very brilliant student, with ability to learn languages (he spoke German, English, French, Italian and Danish); he played the violin and the cello and sang very well. Music tied him in close friendship with Felix Mendelssohn, with whom he also shared his Jewish background. Thanks to his love for music he met Johannes Peter Müller, who became his academic advisor. It was Müller who advised him to study medicine, and Jacob was admitted in the University of Bonn in October 1827 (at 18 years of age) and graduated as a physician on April 4<sup>th</sup> 1832 with the thesis entitled *De membrana Pupillari Aliisque Oculi Membranas Pellucetibus* (About the pupillary membrane and other translucent membranes of the eye). His interest for anatomy is evidenced in a letter he wrote to his parents: "I don't know better nourishment for imagination than the beautiful formation of the human body constructed by individual bones and muscles that I know very well, and that show a perfect assembly"<sup>3,4</sup>.



Figure 2. The My Fair Lady movie and the Pygmalion play.

At the University of Bonn, Henle was an active member of the fraternity *Burschenschaften*, a type of association inspired by liberal and nationalistic ideas; Jacob accepted the bravery and honor tests imposed by the fraternity and took part in combats putting his life at risk. Thanks to his anatomical works, we know that young Henle was very skilled with the knife at the dissecting room, but he did considerably less well when he engaged in duels, since once he received a wound to his right cheek that branded him for life; in photographs he appears almost always turning his face right, possibly to cover the wound.

For some time, Henle continued his studies in Heidelberg, where he had remarkable teachers, such as the great obstetrician Franz Naegele (1778-1851) and the anatomists Friedrich Arnold (1803-1890) and Friedrich Tiedemann (1781-1861), among others, but he returned to Bonn to work at Müller's side, as he explains in a letter to his parents, "to work under Müller's 'eye' and be able to consult in case of doubt".

When he completed his studies, Henle travelled to Paris with Müller to visit the zoologist Georges Cuvier (1769-1832), considered to be the father of comparative anatomy. Subsequently, he returned to Germany

and moved to Berlin (capital city of Prussia) to work under the guardianship of the Swedish-descendant German anatomist and father of helminthology Israel Karl Asmund Rudolphi (1771-1832) and Friedrich Schlemm (1795-1858). Rudolphi died a few months after Henle's arrival, and was succeeded by his mentor Johannes P. Müller, which turned Müller into the central figure of Germanic medicine of those times. Müller appointed Henle as prosector, with a salary of 480 thaler a year, and associate editor of *Archiv für Anatomie, Physiologie*, the most important journal until the appearance in 1847 of *Virchows Archiv*<sup>3,6</sup>. On this period of his life, Henle met Schwann and Matthias Jakob Schleiden (1804-1881), authors of the cell theory<sup>7</sup>. Schleiden and Schwann had noticed some characteristics of the microscopic structure of animals and plants, in particular the presence of nuclei (previously described by the British botanist Robert Brown in 1831), and in 1839 they indicated that the cell constituted the fundamental unit of living beings. Schwann and Schleiden were great friends, and Schwann tells that during a conversation with Schleiden in Berlin, he suggested the idea that would originate the cell theory: "One day that I was having dinner with Schleiden (October 1837),



this illustrious botanist indicated to me the important function of the nucleus in the development of plant cells. I remembered having seen a similar organ in cells of the tadpole spinal chord, and on that moment I understood the importance my discovery would have if I managed to demonstrate that the nucleus of the spinal chord cells played the same role than the nucleus of plants in the development of vegetals<sup>7</sup>.

During his stay in Berlin, exactly on July the 2<sup>nd</sup> 1835, Henle was arrested and sent to prison for four weeks for his history as a member of the *Burschenschaften*, and was not released until the intervention of Von Humboldt and his mentor Müller. Once out of jail, Jacob was received with much affection by all his acquaintances in Berlin. People say that a lady approached and gave him a kiss when he was walking by the street, owing to the emotion she felt by seeing him walk free; Henle wrote his parents about the whole event and told them that, with that kind of awards, he would gladly spend another month in jail<sup>3</sup>.

In 1838, Henle submitted a work to the University of Berlin applying for a teaching position, *Symbolae ad Anatomiam Villorum Intestinalium Imprimis Eorum Epithelii et Vasorum Lactorum* (Contribution to intestinal villi anatomy with special reference to the epithelium and lymph or lacteal vessels), where he described his observations on the intestinal internal surface (epithelium) and the lymphatic vessels. The important contribution of this work was the discovery that the internal surface of the intestine was lined by epithelial cells, a discovery that led him to study the surface of different organs of the body, and observed everything was lined by epithelium. The concept of epithelial tissue is one of Henle's most relevant contributions to histology. He described that all mucous membranes were covered by a thin layer of cells, rather than by "coagulated mucus", as then it was assumed. In 1838, in an article entitled "Ueber die Ausbreitung des Epithelium im menschlichen Körper" (On the distribution of epithelia in the human body), he established the characteristics of epithelia and divided them in three types: *Pflasterepithelium* (squamous epithelium), *Cylinderepithelium* (columnar epithelium) and *Flimmerepithelium* (ciliary epithelium); in addition, he correctly indicated that cilia were nothing else than modifications of the cell membrane. As he illustrated in his book, this epithelial tissue was not only present in the gastrointestinal tract, but also lined serous cavities, the cerebral ventricles, the blood vessels, the larynx and the pharynx<sup>3,4,6</sup>.

It is possible that due to his incarceration Henle was not happy in Berlin, and in the spring of 1840, just



**Figure 3.** Cover of the book *Allgemeine Anatomie* (General anatomy), published in Zurich in 1841. It was the first text dedicated to histology, where Schleiden and Schwann's then recently described cell theory was presented.

after having celebrated his 31<sup>st</sup> birthday, he was appointed anatomy professor and director of the Institute of Anatomy of the recently founded University of Zurich. The great anatomist Albert von Kölliker (1817-1905) (he had been his student in Berlin and, among many other contributions, he demonstrated the continuity of axons with the neuronal body) became his prosector. In Zurich he published, in 1841, the famous general anatomy text *Allgemeine Anatomie*, which was the first book dedicated to histology, where Schleiden and Schwann's recently described cell theory was presented<sup>2,3,8</sup> (Fig. 3). This book served as an introduction to pathology as well. In the preface, Henle indicates: "Tissue physiology is the foundation of general and rational pathology, which tries to understand the morbid process and symptoms as necessary reactions of organic matter, endowed with peculiar powers that are non-transferrable to external abnormal influences".

At the University of Zurich, Karl von Pfeufer (1806-1869) was appointed head of the Department of Internal Medicine, and soon Henle and Pfeufer became inseparable friends and academic collaborators. Both

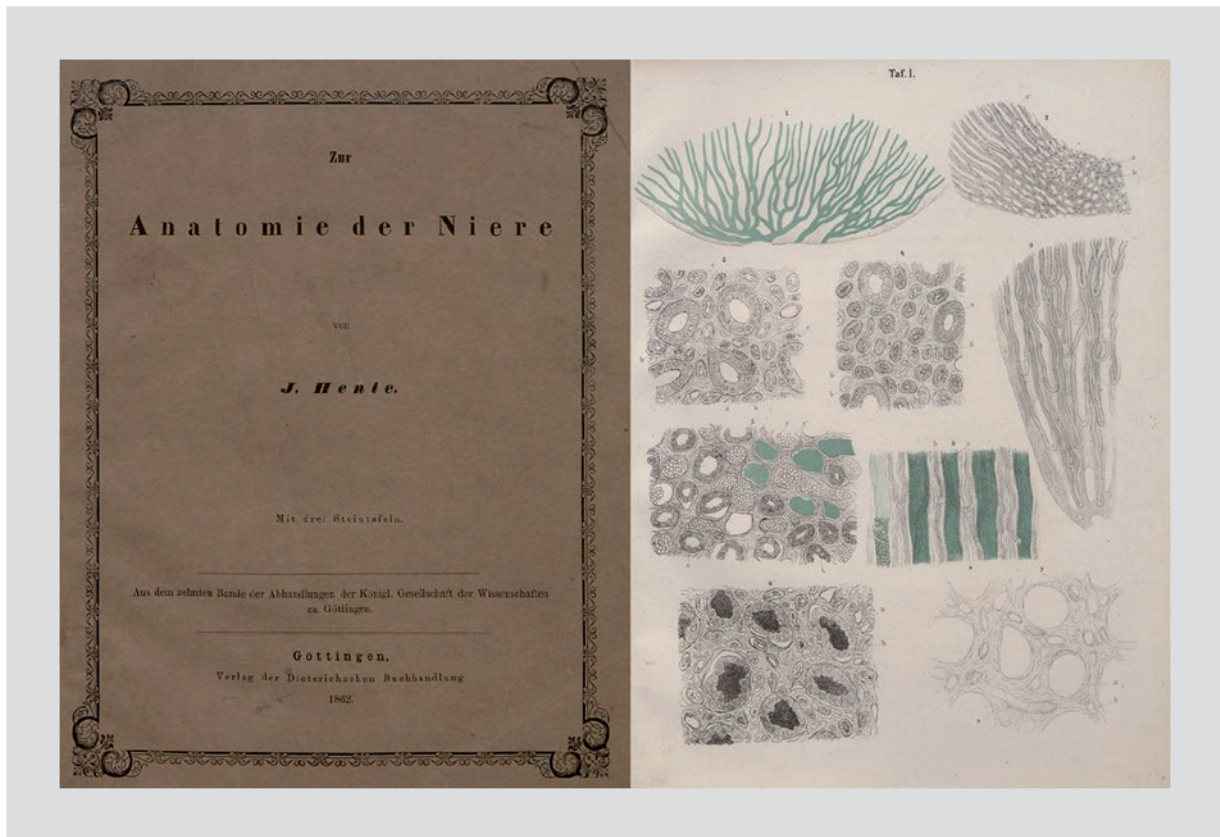


Figure 4. Cover of the book *Zur Anatomie der Niere*, published in 1862, where Henle described the loop that bears his name.

founded the so-called school of rational medicine and, in 1862, the journal *Zeitschrift für rationelle Medizin* (Journal of Rational Medicine) became one of the most important of the 19<sup>th</sup> century<sup>3,5</sup>. These close friends were invited to Heidelberg, and both accepted the invitation, and therefore Henle continued his studies on histology research at the University of Heidelberg (1844-1852). Subsequently, he was appointed professor at the University of Göttingen (1852-1885), where he stayed for 33 years. There, he directed the Institute of Anatomy and died at the age of 76 years, being a professor and head of the Department of Anatomy and Physiology.

It is difficult to decide which Henle's most important contribution was, since he studied practically the entire anatomy and development of the human body, but possibly the best known eponym is Henle's loop of the kidney<sup>6,8</sup>. In January 1862, Henle presented before the Scientific Society of Göttingen his findings on the fine structure of the kidney. In this manuscript entitled *Zur Anatomie der Niere*, he indicated that there were two types of tubules in the renal medulla: one was the already known papillary tubule of Bellini, and the other were tubules of smaller diameter that were lined by a plain squamous epithelium and ran parallel to the collecting

ducts and returned forming a "lasso" or "loop" towards the medulla (Fig. 4). Henle could not show the connection of these newly described tubules with the rest of the collecting system, but three years later, Franz Schweigger-Seidel (1834-1871), a German physiologist born in Weißenfels, associated these Henle's tubules in continuity with the rest of the renal tubular system (Schweigger-Seidel's name is not applied to any renal structure, but the periarterial sheath that covers the penicillate arteries of the spleen bears his name)<sup>10</sup>. More than 100 years had to elapse for Henle's loop function to become known and be incorporated to the concept of countercurrent multiplier mechanism that allows for an adequate osmotic means to be provided in order to concentrate the urine.

Another important contribution of Henle was the discovery of the presence of microorganisms in sick animals' secretions. Henle proposed the term *contagion* as the infection mechanism in the book *Pathologische Untersuchungen* (Pathological investigations), published in Berlin in 1840<sup>11</sup>, but he failed to demonstrate the presence of these microorganisms as a direct cause of any disease. Many years later, one of his students, Robert Koch, a student of the University of

Göttingen, made Henle's prophecy on the bacterial theory fruitful. On December the 6<sup>th</sup> 1841, while he was working at the University of Zurich, he presented, before the Natural Sciences Society of Zurich, the description of *Demodex folliculorum*, a mite that lives in hair follicles. These observations were published in the local newspaper (!), and possibly for this reason this discovery remained unnoticed for a long time<sup>3</sup>. According to many of his students, Henle's *Annual report*, which was duly published from 1856 to 1871, was eagerly awaited. This manuscript covered the most important advances on pathology, histology and special and general anatomy. These yearly publications became famous for their comments, and some say that early spring every year, when the reports appeared, many scientists of that time trembled as they went through the pages looking for Henle's comments on their investigations<sup>2-4</sup>.

Henle had a disagreement with his teacher Müller with regard to the use of the microscope. Henle claimed that the use of this instrument should be mandatory for medicine students for microscopic anatomy recognition. Conversely, Müller considered that the microscope should be used only for research. It took a couple of years for Henle to convince the entire medical community of that time on the convenience of mandatory use of the microscope, and Purkinje in Poland and Henle in Germany established the subject of microscopy (histology) in the medical curriculum.

### **The professor and the seamstress**

When Jacob decided to move from Germany to Switzerland, he surely did not imagine that destiny was waiting right across the border. Upon his arrival to Zurich, Jacob fell in love with the daughter of a captain of the army, who immediately accepted his marriage proposal, but a few days later the lady broke his heart, since Henle found out that she had accepted his proposal only to make her former fiancée jealous and this way conquer him back. The lady had taken advantage of Henle, she had applied him one of the oldest tricks in love issues. Heartbroken, Jacob took refuge in his studies and in music, and learned to play the cello<sup>4</sup>.

During his stay in Zurich, Henle met Elise Egloff, the governess of the house he lived in, home of Carl Jacob Löwig (1803-1890), a German chemist, discoverer of bromine<sup>4,5</sup>. Chronicles say that Elise trembled with joy whenever she served Jacob at table and listened with emotion, behind the kitchen closed door, when he raised his voice in song or played the violin. One day, Mrs. Löwig saw Elise almost with tears of passionate

rapture listening Henle sing, and she immediately informed Jacob that Elise was in love with him. Jacob then confessed that he was also very fond of Elise; he even said that the first time he laid eyes on her he had a deep love sensation and wrote: "And there occurred the most ludicrous thing that could ever happen to a wordly cavalier in a relationship of this kind. I interested myself not only in the girl's beauty but also in her soul". A few years before, he had written his parents that as soon as he completed his studies "he would look for a good job (...) and marry a young, beautiful, intelligent and rich young girl, who spoke French, played the piano and knew how to ride horses". However, Cupid tied Jacob with Elise.

Elise Egloff was born in Tägerwilten, Switzerland, on January 21, 1821<sup>5</sup>. She was raised at her grandfather's home, Hans Jakob Egloff and, after his death, Elise learned needlework and worked as a seamstress before she started working as a governess with the Löwig family<sup>3,5</sup>. At 21 years of age, when she met Jacob, she was a very beautiful young girl<sup>5</sup>. When Elise noticed she was in love with Jacob Henle, she could not bear the fact of not being able to engage in a sentimental relationship with him due to sociocultural differences (he was already a professor and she, a maid), and she decided to leave the Löwig's home and work as a seamstress. Henle looked for her, found her, and told her that, since they came from socially different worlds, their love was impossible. However, in spite of having agreed not to see each other again, their mutual passion swept them closer and closer together, and Henle insisted on visiting the place where Elise mended clothes.

The cultural abyss that divided them was wide, and due to the prejudices of the epoch, it was highly unlikely for them to be able to establish a sentimental relationship. Given that Jacob used to visit Elise frequently, social rumors started spreading on the possible relationship of the professor and the seamstress, and German society of those days was ready to completely engulf them. However, as we will see, the way Jacob and Elise confronted the situation was the perfect shield against those social prejudices.

### **Listening**

#### **Phonetically reading**

In 1844, Henle was invited to work at the University of Heidelberg and thought that he could bring Elise along – who already possessed more charm and beauty than many a high-born dame – and educate her to



become his wife. He then spoke with his sister Marie, told her that he had fallen in love with a good young girl, although not cultivated enough to become his wife, and asked for help to educate her. In the spring of 1844, Henle brought Elise to Marie's home in the city of Traben-Trarbach and, aided by her husband Mathieu, Marie educated Elise. While Mathieu taught her classic poetry, Marie instructed her in music, piano, drawing and in the intricacies of social intercourse. Some of the letters sent by Elise to Jacob have been preserved. In one of them, dated on February 6<sup>th</sup> 1843, and entitled "Most venerable Herr Professor", she narrates her stay at his sister house and tells him how much she misses him. In these letters of that "socio-cultural training" period, currently in possession of one of Jacob's granddaughters, Lizzie Marie Stein, one can notice the progressive change in the writing style and spelling; in the first ones, there are different spelling and stylistic mistakes, and those written years later show much better style<sup>13</sup> (Fig. 5).

In a year and a half Elise was transformed from a humble seamstress into a lady of the world who moved amid general approbation in various social circles. On October 1845, Jacob and Elise met after one and a half year, and Jacob was amazed with the transformation. On December 1845 Jacob sent a letter to his father that read: "Now I am engaged to a young girl from Tägerwilen that I met in Zurich. She is orphan and poor, but beautiful and brave, and her name is Elise Egloff. She has been living for a year with my sister, who has helped her to acquire a good German education, since she was not educated enough for Swiss standards, given my high academic rank".

The engagement was announced on the first months of 1846, and on March of that same year, young, beautiful, and now educated Elise Egloff, of 25 years of age, became Elise Henle, the professor's wife (*Frau Professor*), who then was 35 years old. They married in Trier, the oldest city of Germany, located on the right bank of the Moselle river, and spent their honeymoon in Vienna, where they were greeted by the foremost medical men of the day, including Carl von Rokitansky (1804-1878), who were impressed by Elise's charm and beauty. On their way back to Heidelberg, Jacob and Elise attended a theater play in Weimar. The Grand Duke of Saxe-Weimar-Eisenach, Charles Frederick (1783-1853), who was among the audience, had someone sent to inquire who Henle's beautiful companion was. This situation did not upset Jacob, but on the contrary, he was flattered. When the play concluded, they were invited by the Grand Duke to have a glass

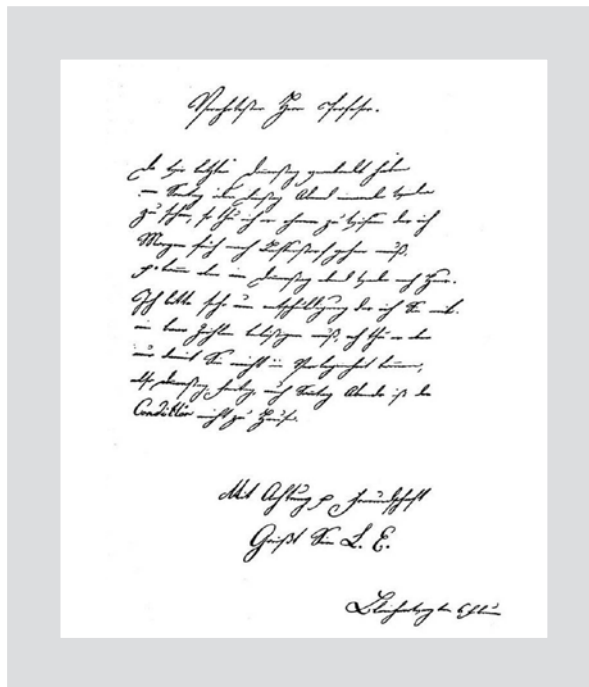


Figure 5. Oldest known letter from Elise Egloff, dated on February 6<sup>th</sup> 1843; it reads: "Most venerable Herr Professor".

of wine and Elise also captivated the ladies of royalty without any of them suspecting that some years before she might have well been their seamstress<sup>4</sup>.

Unfortunately, the Henle-Egloff marriage lasted a little less than three years, since Elise contracted pulmonary tuberculosis and died at 5 in the afternoon of February 21<sup>st</sup> 1848 at 27 years of age in Jacob's arms. They had two children: Carl, who was born in December 1846, and Elise, born in January 1848. Society criticized Henle, saying that Elise's intense sociocultural change would have favored the progression of the disease. Merkel (his son-in-law) stated: "It is highly possible, even probable, that the strong emotion and the powerful spiritual work of the last two years have accelerated the disastrous outbreak of suffering"<sup>14</sup>. Elise was buried in the Mount of Heidelberg cemetery, in the presence of professors Reinhard Blum and Ludwig Hausser, both Jacob's colleagues at the University of Heidelberg. Henle could not attend his wife's funeral due to an ailment. It appears that the Henle-Egloff couple lived very happily. Chronics say that Elise, in addition to beauty, had an extraordinary energy, very good attitude and great capacity to happily enjoy life, an emotion that she shared and knew how to spread to her family. One year after Elise's death, Henle travelled to Coblenz to visit his father and there he met a friend of her sister Helene, Marie Richter, the daughter of a Prussian army officer, and Jacob fell in love once

more. A few months later they got married and had four children: Adolf, who became a surgeon, Anna, who married Friedrich Merkel, Sophie and Emma. His children were brought up in Göttingen, where Henle was appointed professor in 1852 and where he worked for the rest of his professional career.

## Epilogue

As previously mentioned, in 1845, Berthold Auerbach knew about the story of Jacob and Elise and wrote the work entitled *Die Frau Professorin* (The professor's wife)<sup>15</sup>. In 1847, Charlotte Birch-Pfeiffer read Auerbach's novel and wrote a play that was very successful. Auerbach protested arguing plagiarism, and tried unsuccessfully to sue Pfeiffer for copyright infringement. In spite of this issue, the play contributed to the popularity of Jacob and Elise's story, who personally met Auerbach. After Elise's decease, Jacob and Berthold further strengthened their friendship, since Auerbach had lost his wife in childbirth around that same time. However, when Henle knew that the story of the novel Auerbach had written was based on the intimacy of his marriage, the friendship was broken, since he felt betrayed when he knew that his friend had taken advantage of a very intimate and personal situation and wrote: "I was really surprised by the way he [Auerbach] used my tragic marriage for his work".

Jacob Henle was a great human being and, as a teacher, he was highly appreciated and loved by his students. He was a brilliant speaker, and some of his former students used to say that his lessons were entertaining, stimulating, a taste of wisdom seasoned with varied proposals on the function and origin of different human tissues, with a highly unique touch of humor<sup>3,6,16</sup>. Henle's highly productive and plentiful academic work can be divided in four periods: the Berlin period (1834-1840), the Zurich period (1840-1844), the Heidelberg period (1844-1852) and the final Göttingen period (1852-1885).

His family life was very quiet and he had many friends, who gathered at his place to sing and play the piano and the violin. Numerous students shone around Henle, including Emil Du-Bois Reymond, Ernst Wilhelm von Brücke (1819-1892), Albert von Kölliker, Theodor Langhans, Friedrich Merkel and Wilhelm Waldeyer, who payed him tribute for his retirement and told him: "Most respected professor, please accept our sincere gratefulness for all you have been for science and for us. We congratulate you for this great day we celebrate and want to express our wishes that you may have many more days of true happiness and may plenty

beneficial activity be granted to you". Unfortunately, these wishes didn't come true, since Jacob Henle died on May the 13<sup>th</sup> 1885 of a renal sarcoma with metastases to the vertebrae at 76 years of age<sup>2</sup>. There is a street in Göttingen with his name: Jakob-Henle-Straße, and another in his native town Fürth.

There was no part of the human body that old Jacob (*der alte Jakob*), as his students used to call him, did not explore under the microscope and, with no doubt, Henle is the greatest histologist of all times. He also made incursions in comparative anatomy, in the anatomical structure of different animals and in anthropology. He wrote the biographs of three of his friends, Albrecht von Haller, Ernst Heinrich Weber and Theodor Schwann, and had his last work published in 1844, on the human nail and the horse's hoof. Henle elevated anatomy to an unprecedented degree of perfection, which has served as the basis to all contemporary investigators of morphological sciences. As written by American poet Henry Wadsworth Longfellow (1807-1882) in *A psalm of life*:

Lives of great men all remind us  
We can make our lives sublime,  
And, departing, leave behind us  
Footprints on the sands of time.  
Footprints, that perhaps another,  
Sailing o'er life's solemn main,  
A forlorn and shipwrecked brother,  
Seeing, shall take heart again.

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