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Some interesting facts about the life and work of Bernardino Ramazzini, as an **Epilogue**

Algunas curiosidades sobre la vida y obra de Bernardino Ramazzini, a modo de Epílogo

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In commemoration of the III Centenary of the death of Ramazzini, it is intended to provide a global view about some peculiarities, many of them better known than others, related to facts as his date of birth, date of death, the inspiration moment that led him to write Diseases of Workers including its main Spanish translations and his complementary work titled *The health of Princes*, among others.

Key Words: Bernardino Rammazzini, Teatrise, Dissertation, Artisans, Diseases, Occupational Health. About the Diseases of Workers (De Morbis artificum diatriba).

Resumen

Con motivo de la conmemoración del III Centenario de la muerte de Ramazzini, se pretende dar una visión general sobre algunas curiosidades, algunas más conocidas que otras, sobre determinados aspectos relacionados con su fecha de nacimiento y fallecimiento, el momento de inspiración para escribir el Tratado de las enfermedades de los artesanos y sus principales traducciones al español, así como de su obra complementaria titulada Del Cuidado de la salud de los príncipes, entre otras.

Palabras clave: Bernardino Ramazzini, Tratado, Disertación, Artesanos, Enfermedades, Salud Laboral. Sobre el Tratado de las enfermedades de los artesanos (De Morbis artificum diatriba).

WORK INSPIRATION

In his book, and using the following terms, Bernardino Ramazzini describes the moment when he felt inspired to write Disease of Workers:

> "... I am going to narrate a case which led me for the first time to write De Morbis artificum diatriba (Diseases of Workers). In this city, which in proportion to its perimeter is quite populated and that therefore has heaped houses of considerable height, it is habit to clean the sewerage across the neighborhoods every three years. As thus was happening in my house, I saw one man working in such a Caronte's dump, with anxiety and swiftness and because I was feeling sorry for his unpleasant task, I asked him why he was working so hurriedly, without doing it more calmly to avoid finishing completely exhausted; then the unfortunate man, looking upwards from the dump and staring at me, told me that nobody —unless those who know it from their own experience— could even imagine the high price to pay just for being in such a place for more than four hours: it would lead to blindness. Once he got out of the dump, I carefully examined his eyes and I found them quite red and misty and when I asked him once again which remedy do the workers use to treat such an illness, he told me that "what I am going to use right now: going home, getting locked in a dark room until the next day and wash my eyes often using mild water to alleviate the pain". I asked him once again if they felt burning sensation in the throat, or breathing difficulties, or headaches, or if the smell irritated their noses or they felt nausea. Nothing of the sort —he answered—, in this work, the eyes are the only damaged part, and if I insist on carrying on this job for a longer time, I would lose my eyesight soon, as it happened to others. And then, he said goodbye, and covering his eyes with his hands, he went home." [De Morbis artificum diatriba. Chapter XIV. About sewer workers illness.]1

This way, being 66 and with 40 plus years of professional experience, Ramazzini describes the moment when he felt the boost to write the book that granted him the nickname "the Father of Occupational Medicine".

FIRST EDITION, MODENA 1700

At the end of XVII century, when he was working as a doctor in the Prince court of the House of Est in Modena, Bernadino Ramazzini received an unexpected letter from the Senate of Venice, announcing that he had been promoted to carry out the Chair of Practical Medicine in the prestigious University of Padua. As he had by that time completed his work by the end of 1699, and as his nephew describes in his uncle's biography,

> "... Thereby, with great diligence, he hurried the publishing of his work, Diseases of Workers, which was already, finished, and its release immediately after getting the Seat just at the beginning of this century [XVIII], dedicating it to the Excellency Moderatos of the University of Padua."

The first edition of De Morbis artificum diatriba, was published in Modena in 1700, taking advantage of being nominated as Professor of the University of Padua on December 12th of the same year. He dedicated his work to the Moderators of that University, the Ilmos. y Excmos. Mr. Aloisi Musto, Federico Marcello and Girolamo Venier.

The Teatrise includes a Preface, 42 chapters dedicated to the different illnesses that affect every single occupation he tackles, and a last chapter, which is not index-linked, focused on the illnesses of artits professionals. Due to an unknown reason, and as an

enigma which remains unsolved, the Diseases of Workers is actually made up of 41 chapters, because there is no chapter VIII from the very first edition published in Modena in 1700, shifting straight from chapter VII to chapter IX.

In the Preface², the author discloses the main conceptual basis that deals up with the illness from a professional point of view, in which every single paragraph and even every single line speaks for itself. This leads up to the first Teatrise in the History that globally addresses the concept beyond the healing practices of the illness, remarking the importance of inquiring about in every single profession, in order to gain some insight about the possible origin of the illness to be treated.

- "... Indeed, it is necessary to admit, that sometimes, important illnesses come from certain professions, so that when they expect to get resources not only for their own life but for supporting their families, they often contract dangerous illnesses and die while cursing their jobs."
- "... from the workers hovels —which, in this aspect, are like schools from which become instructed—, I tried to take out the best that curios people can taste, and —which is even more important— to provide medical healing or preventive cares, related to the illnesses that used to affect the workers."
- "... There are lots of things that doctors must try to enquiry when looking after a patient, through the same patient or through those who attend them, following the rules of the Divine Preceptor: when being in front of the patient, you may ask him what does it really hurt, which is the reason, how long does it hurt, if he defecates normally and what does he eat. These are the words used by Hippocrates in his book of Affections; "allow me as well to add this question: which job do you carry out."

Ramazzini was probably conscious that with this work he was facing a different challenge from that one that he had in other works along his extensive professional trajectory. With this work, he provoked uncertainty, broking the mould. Like a child who starts taking his first steps, he dedicates the following sonnet, charged with recommendations and warnings in the presentation of the book to the society:

THE AUTHOR

TO THE BOOK

Shaking with excitement, O book of mine!, anxious to see the light But first, listen to the paternal advices; In a few words I will show you the fortune the destiny bestows on you.

Given that you are promising something new to the scholars, To you will turn the curious ones forthwith; Yet once they have read a couple of pages, You might be relegated to shops and alleys, Where the common people buy the sausage, the brine and the fat.

> Don't you suffer: that's usual, Even with the thick pandects That habitually end up in cones For the mackerel, the pepper or the stodgy cumin.

Nevertheless, in spite of the fears bearing on Ramazzini about a possible failure in his work, the Teatrise of Diseases of Workers reached an unsuspected success for the author up to the moment it was put into circulation. In the Acts of the erudite from Leipzig, 1702, we find the following comment in relation to his work:

"Being honest, taking into account the great variety of subjects dealt with, this work is certainly reduced, but it is as well decorated with a refined and elegant language. This language is the result of a wide and tireless experience and of countless medical, philosophical and mechanical observations, taken not only from ancient authors -Greeks and Romans— but especially from modern ones. It is as well beautified with the different and required practice standards aimed to the professions, which not only have an extraordinary utility for doctors, but for all the people who feel curiosity on such topics".

Moreover, the work was translated into German just after editing it, reaching a very big success among the professionals of this whole land. Limsenbarth arquiater doctor of the Duke of Wüttemberg, sent from Turin a letter to Ramazzini which said:

> "After reading, some years ago, the very erudite Teatrise of Diseases of Workers, although translated into German, I made an effort to obtain an exemplar in Latin (at the moment of reading, I do prefer to read it in the original version). But all my efforts were in vain, since all the exemplars were sold out. I would be very pleasant if you could send me one!"

Proud of the news, Ramazzini sent him an exemplar through Giovani Fantoni, Anatomy teacher of the University of Turin.

THE SECOND EDITION, PADUA 1713

In 1713, one year before Ramazzini died being 81, the second edition of Disease of Workers was published by the printing house Giovanni Battista Conzatti from Padua. Regarding to the previous edition, Ramazzini added 12 chapters about different workers illnesses no addressed before. Due to an unknown reason, as happened with the VII chapter withdraw in the first edition, in this one the XV chapter, dealing with the illnesses of workers, had been removed.

Another characteristic of this second edition is that he adds a "Teatrise" [Disertation] about the healthcare of the consecrated virgins, dealing with the healthcare of the nuns from a preventive more than a pathologic and curative approach of the illness, as Ramazzini explains:

> "... It was really my intention to dissert about the illnesses of virgins and its treatment, but I considered convenient to talk about it before talking about the health preservation, since it has more merit to preserve the illnesses that healing them."

Due to the big success of the first edition of the Teatrise it had been translated to several languages and the whole edition was sold out, and therefore he needed to release the second edition, as his nephew describes:

> "Ramazzini realized that his Diseases of Workers had been translated into German, and that it had received a really favourable welcome in other nations and as the exemplars from the edition of Modena were sold out, and many science men were looking for a new edition, Ramazzini enriched the book adding a supplement to approach to 12 illnesses which were no considered before adding a dissertation, about the healthcare of consecrated virgins. And everything together was delivered to the house of Padua printer for the reprint."

Realising that most of the books didn't became wrapping paper for fish, Pfeiffer or the stodgy cumin, in this second edition he supressed the sonnet "From the Author to the Book". This sonnet was dedicated to his work, with curious warnings about the possible failure when releasing it but respecting as well the warm welcome this second and extended edition may have. And as he did in his first edition, after dedicating the work to the Moderatos from the University of Padua, in this case, Sir Jerónimo Venir, Sir Francisco Loredán and Sir Juan Francisco Morosini, begin the presentation of his new Teatrise as follows:

> "How laborious ingenuity moments are, and how upsetting experiences does the author have even after creating them. Just those who spend their lives among words are able to talk about it, trying to conceive something really useful just for having the feeling that they, themselves and their successors, have truly lived. Oh Illustrious and Excellent Moderators! Indeed, when someone, especially in this period reach in censors publishes a work according to their abilities and strengths must just to stay alert, subjected to the different thoughts the critics are going to have. Well then, I think there is a very special criteria to follow and trust when it comes to discerning: it is hearing the news that your work, in any other place- very specially abroad- has had a new edition..."

FIRST SPANISH TRANSLATIONS OF HIS WORK

De Morbis artificum diatriba's first translation into Spanish was made by Susana Victorica and Codazzi Aguirre in 1949 in the city of Rosario, Argentina. As a reference they used the Latin text from the edition of Ramazzini's "Opera Omnia" from 1717 that featured the text from the first version of the book, published by the author in Modena, in 1700. This translation was sponsored by the American Union of Occupational Medicine and published under the title "Dissertation about the diseases of workers". It was reissued by the Province of Buenos Aires' Occupational Medicine Society in the year 1987³.

In 1983, the Occupational Medicine and Safety Institute (created in 1944) and the National Occupational Medicine School (created in 1948) were responsible of the next Spanish translation. Both were part of the Spanish National Health Institute (INSALUD) from the Spanish Ministry of Health and Consumer Affairs. The philologists José L. Moralejo and Francisco Pejenaute were the translators in charge, taking "De morbis artificum Bernerdini Ramazzini..., Roma, 1953, Ex Typographia Caroli Columbi" as the source material. This last publication included the original Latin text of the facsimile from the second edition, published by Ramazzini back in 1713 in the printing workshop of Giovanni Battista Conzatti in Padua. A biography of Ramazzini written by his nephew Bartolommeo and the chapter "De virginum vestalium valetudine tuenda dissertatio (About the health and care of consecrated virgins)" were added to this facsimile^{1,4,5}.

There are some differences between both translations. The Argentinean translation source was the first edition, published in Modena in 1700, whereas the Spanish translation used the second edition, published in Padua in 1713. Another important difference can be found in the chosen translation for the title. The Spanish version (Moralejo-Pejenaute, Madrid, 1983) justifies the difference between the translation of "De Morbis artificum diatriba" as "Treatise of the diseases of artisans" instead of "Dissertation about the diseases of artisans", like the previous translation did (Victorica-Codazzi, Rosario, 1949). According to the Spanish philologists, the Latin term "Diatriba" comes from the primary meaning of a "conversation to enjoy the time with other people" and in that era it used to refer to one of the philosophical communication ways. However, in modern Spanish the term Diatriba', as defined by the Dictionary of the Spanish Language Academy (RAE) as a violent and insulting speech or writing against something or someone⁷". Hence the neutral and more academic definition of 'Treatise' that fix better with the meaning of the book. Another reason provided by Moralejo and Pejenaute is that in the first translated version by Victorica and Codazzi, there were some interpretation mistakes that they considered relevant. Those were the reasons they used to consider appropriate to have another translation of the work "De Morbis artificum diatriba" into Spanish.⁶ Lastly, since the Spanish version uses the original 1713 edition, it includes not only the treatise, but also the biography of Bernardino Ramazzini written by his nephew Bartolommeo Ramazzini, 12 additional chapters and "About the health and care of consecrated virgins".

In 1995, the functions of the Spanish Occupational Medicine and Safety Institute were transferred to the Ministry of Health and Consumer Affairs. This institute would disappear in the year 2000, and its National Occupational Medicine School (ENMT) became a part of the Instituto de Salud Carlos III (ISCIII). That is the reason why the school made a third reissue in 2007 of the Spanish version translated by Moralejo and Pejenaute back in 1983. This edition is the most recent version of "Treatise of Diseases of Workers" by Bernardino Ramazzini in Spanish. As the two previous issues (1983 and 1999) it includes the biography of the author, written by his nephew Bartolommeo Ramazzini and About the health and care of consecrated virgins^{1,4,5}.

THE UNKNOWN SISTER OF DISEASE OF WORKERS

Ramazzini had a poor health since his first job as a very young medic in the duchy of Camino y Marta, where he contracted marsh fever. In the beginning of 1702, his condition got worse. The tachycardia he suffered from time to time aggravated and in June of that year, during his vacation in Modena, 'he was two steps away from death' according to his nephew. He was then assisted by his colleagues and friends of Modena, Giovanni Battista Davini y Francesco Torti. In the past, the three of them worked as a team for de Este. In November, once recovered from the illness he returned to Padua to continue with his job as a professor in the university.

In the winter of 1703 he suffered from a severe migraine in the right side of his head, and a glaucoma that caused the loss of sight of one eye, and then some time later the other. He required the assistance of his grandchildren, who acted as lecturers and copyists to continue with his professional life in education. During the following years, despite his blindness, he managed to have a dynamic professional life and the success still followed him. Towards the end of September 1706 the Science Academy of Berlin (founded recently by the Prussian king) named him a full member. On the 18th August 1708, Bernardino received a letter with the Venice Senate stamp on it, informing him of his appointment as the president of the Véneto School. This position was offered to just four head medical professors. On the 21st March 1709, he was promoted from the Second to the First Chair of Practical Medicine of the University of Padua. Just to complicate even more the idea of definitely retiring to Carpi or Modena to rest at the age of 75, the Academy of Arcades named him numerary membership the same year with the title of "Licoro-Languiano", giving him as usual by the Academy, a large farm.

Despite his elderly, blindness and his delicate health condition worsening over the years, he tried to battle every single day with enviable life strength. Being aware of his situation and of the responsibility assumed by occupying the Chair, he began to worry about the limitations that age may bring if he continued teaching at the University. Such instability was described by his nephew as it follows:

> "... however, it violently disturbed his spirit, and due to his age and poor health, he occasionally saw himself incapable of continuing with the daily lessons; so he insisted to the Moderators of the University of Padua, getting the kind response that he should keep instructing his students at his own discretion and as much as he could do, since the state was satisfied just with having Ramazzini at Practical Medicine Primary Teacher at the University of Padua."

In summer of the same year 1709 and just trying to have a break, he took holidays in Modena with his friend Antonio Vallisneri, teacher of the same University. One of the programmed and compulsory appointments was visiting the Dukes House in the city, where he was working as a doctor for many years and thus, there were strong friendship ties between he and the family. Along the conversation, Ramazinni commented to the Duke Reinaldo that if time allowed it, he wanted to write a new book dedicated to his nephew Franceso II, who preceded him as Duke of Modena and had worked for him as a court physician.

As he came back to Padua at the end of autumn, Bernardino started to write his promised work attending his grandsons who sometimes worked as amanuensis. In no longer as a year, at the end of 1710, he appeared in the printer of Giovanni Battista Conzatti with his new work, the Health of Princess, for publishing it.

In this new Work Ramazinni described the main preventive measures that nobles and aristocrats should have for preserving health. And so, Ramazinni, a doctor who learnt to combine the medicine practice between luxurious bedrooms and insalubrious workshops, understood that similar lections from very different abodes were to be learnt. In order to complete his scientific work he dedicated a specific treatment for every single social pole he was working with throughout his long professional life.

Despite accounting the success reached throughout his countless works and treaties, Conzatti regrated to publish it in his printer arguing that it would result in an economic failure despite the editorial success guaranty which the famous and renowned signature of Ramazinni, author of the new Teatrise may have. In contrast with his previous works, dealing with illnesses, this work was focused on preventive aspects, which no longer was an attractive topic for the doctors of that time since they were more excited about aetiology and illness' treatment than about topics related on promotion of the health through hygiene and preventive measures. But as Ramazinni had a commitment with the Duke Reinaldo of writing this Teatrise, dedicated to his nephew Francesco, Prince of Modena, he financed himself the costs for publishing it. The printer o Giovanni Batista Conzatti from Padua, edited, at the end of 1710, the Work titled The health of princess, dedicated to the Serenísimo Prince of Modena Francesco de Este fulfilling honourably his promise.

Yet it seems the editor Conzatti didn't select the better option this time, and shortly after the book reached a huge success like other Ramazzini's works. The treatise earned wide acclaim in the Acta Eruditorium (scholar minutes from the German city of Leipzig) and it was praised by Giovanni María Lancisi, Archiater of the Pope Clement XI. Ramazzini's work was so requested by protomédicos and archiaters of noblemen that a reissue was published in Leipzig in 1711, with a foreword by the notable Miguel Ernesto Ettmüller, descendent of Miguel Ettmüller, author of the then famous Medical Pandects8.

ABOUT LIFE AND DEATH OF BERNARDINO RAMAZZINI

The several dates of birth of Ramazzini

Many publications note on November 5th of 1633 as the date of birth of Bernardino Ramazzini, since this is the day mentioned in his biography, written by his nephew Bartolommeo. Precisely, this date would be the same as his death, on November 5th 1714. According to this, he would turn 81 on that day. Some sources indicate November 3rd 1633 as Bernardino Ramazzini's birthday, such as Wikipedia and all of those who take this reference as their source. Nevertheless, this date is clearly wrong. The coincidence of both dates as the biography written by his nephew says, something considered incidental for some authors, could be due to an error made by his nephew as he might have mistaken both dates.

Around 1985, the *Medical* Federation of the Province of Buenos Aires was looking for a date to commemorate the Day of the Occupational Medicine. The promoters of the idea knew that it could not be other than the birth of the universally regarded Father of Occupational Medicine, Bernardino Ramazzin. And as they proposed it, they found out that in different information sources there were different birthdates, November 5th and October.4th Spite of the inquiry done at that moment, nobody was sure about the birthdate of Bernardino Ramazinni. The doctor Guillermo D'Aragona, active member of the Medical Federation of the Province of Buenos Aires, ready to solve the doubt about his birthdate, made a note to the Major of Carpi, Ramazinni's hometown, to confirm the birth date which was figured in the Official Registry of the city. On the 12th Juny 1985 the Federation received a note from the Mayor of Carpi, Mr. Werther Cigarini. Dr. Guillermo D'Aragona was told, that the birth date of Ramazzini that was registered in the baptismal certificate of the local Church was 4th October 1633, and that 5th November 1714 was his death date. It was cleared as well, that the mistake on the dates was due to his nephew Bartolommeo, who made an error when publishing his biography causing confusion repeated in most of the bibliographical citations³.

The Medical Federation of the Province of Buenos Aires, in the Direct Commission session from July 6th 1985, and based on the datum obtained from baptismal act from Bernardino Ramazinni (collated in the archive of the city of Carpi), the Occupational Health day was unanimously proclaimed the 4th October. Such resolve is registered at the Federation's³ Information Bulletin number 15 of that society.

This fact reveals that the anecdotic coincidence between the birth date and the death date found in his biography was just a confusing date, and that Bernardino Ramazzini was born on 4th October 1633.

A reflexion about the death date of Ramazzini

With no exception, in every single text and reference about the date of death of Bernardino Ramazinni, it is pointed out the 5th November as the death date of Bernardino Ramazzini. It was as well confirmed in the clarification that Dr. William D' Aragona held the Mayor of Carpi, Werther Cigarini. However, if we just take into account the biography written by his nephew, Bartolommeo, unless being a mistake, Bernardino Ramazzini died at four in the morning of 6th November. In such biography the related events to his death date are described by his nephew as it follows:

> "Months after editing the mentioned dissertation, 5th November 1714, fast 16 hours later and before going to the University for teaching his students, he suffered a serious stroke. All close friends and teachers of Parma as well, Giovanni Bapttista Morgagni, Antonio Vallisneri, Giacomo Viscardi and Alejando Knips Macoppe, the most outstanding doctors went together when advising such a sudden misfortune. There was no remedy that would stop the precipitate deterioration of the risky life of his friend. It is not surprising, cause even according to the aphoristic testimony of the old man of Cos [Hippocrates],-It is impossible to stop a strong stroke; a light one, it is not easy-. And so, after having had a hard fight, relying just on his strength of an old man, and for twelve hours, with such a bitter enemy, he finally surrendered to the invincible disease. About four o'clock in the morning and amid the consternation of the entire University of Padua, he closed the last day of his life, in the year of our salvation 1714."

Considering that his nephew situates the beginning of the stroke "almost at sixteen hours of 5th November, 1714", and noting then that he had a "tough fight...for twelve bours" to finally die "close fourth bour of that night", it is easy to assume that it must have occurred around 4am on 6th November 1714.

Finally, and as another curiosity about the dates enigma, in the original biography of Bernardino Ramazinni, written by his nephew Bartolommeo, doctor as well in Modena and therefore, colleague for many years of his uncle Bernardino, we also found another date mistake as he describes "that "he was buried in the church of the nuns of St. Helena, in Padua, on 6th November 1614"9. It is an evident mistake, since he died on 1714 according with the data of the official registry. But in the translation of the biography edited in Spain, first by the INSS in 1983 and subsequently reprinted by the National School of Occupational Medicine in 2007, the original sentence is respected, keeping the erroneous date of 1614, accompanied by an explanatory footnote by the translators Moralejo and Pejenaute clarifying this issue (note 37).

An epitaph in an Epilogue mode

The admiration that Bartolommeo Ramazinni must have for his uncle led him to write his biography, considered one of the few documents that we have to rebuild the life of Bernardino Ramazzini. But as an unsatisfied part of this personal admiration of his uncle, and as professional recognition as a professional colleague, Bartolommeo missed after his burial, the presence of an epitaph which remarked what for him represented, and continues to represent for many the figure of Bernardino Ramazzini as a precursor and father of Occupational Medicine. So, at the end of the biography, the following wish is revealed:

> "Now, as there was no memorial inscription in his tomb, and to the extent that I can, I will praise the name of an extraordinary man with the inscription that should be written as follows:

INSCRIPTION TO BERNARDINO RAMAZZINI

From Carpi, Philosophe and Doctor In other time Primary teacher of the Theoretical Medicine In the Academy of Modena Finally, Primary Teacher of Practical Medicine at the University of Padua. Who, having lost a great person in Humanities, Being older than eighty, Disappeared from the world On 5th November in the Year of our Salvation 1714. To show his affection He wrote this inscription His lover nephew, son of his sister, BARTOLOMMEO RAMAZZINI Written on 5th November Of the same year Doctor in Medicine"

This epitaph, written by his nephew, is used as an Epilogue to close this Supplement. From the National School of Medicine of the Institute of Health Carlos III, we want to pay tribute the person, life and work of Bernardino Ramazzini. Contributing with this special issue published in the magazine of Occupational Medicine, we want to commemorate the third Anniversary of the death of the considered Father of the Occupational Medicine. Although, if I am allowed to add and in order to calm down his nephew, may not exist a better Epitaph than the permanent of his work throughout the centuries. Even more, it is recognized as the innovative base which opens the door to a new science field representing the axis health-work for any company regardless the level of development, opening with his contribution a new path in the long way of the knowledge evolution.