Le infezioni nella Storia della Medicina

Infections in the History of Medicine

The figure of the doctor and the science of medicine through Boccaccio's "Decameron"

La figura del medico e delle scienze mediche nel Decamerone di Boccaccio

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INTRODUCTION

he Italian poet, Giovanni Boccaccio, is an author internationally known not only in the scientific field but also in the field of literature. He was born in Tuscany in 1313, the illegitimate son of a merchant of Certaldo, who launched him on a commercial career hoping that his son would follow his steps. For that reason, he was sent to Naples but soon enough he abandoned commerce and the study of canon law. At Naples he began to write stories in verse and prose, mingled in courtly society. His house became the centre of literary activity. During this period, he formed a lasting friendship with Francesco Petrarch who initiated him to the world of classical authors. In that particular period, this kind of conversion was considered as a sign of renewal and progress compared to the dominant medieval spirit.

Humanism in Florence found its greatest representative in Boccaccio. In 1358 he completed his great work, the *Decameron*, begun some ten years before.

The *Decameron* – a text written in prose - is considered to be the prelude of the humanistic ideal: "the world of Decameron and the humanistic studies prepare the road for the Triumph of Man which will be manifested in Renaissance" [1]. It is the new spirit of a human-centred era characterized by change and an intense anti-

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clerical style. Apart from this tendency for renewal, we should also mention the collapse of the traditional rural feudal system and the reinforcement of private activity, enhanced by new social classes: notaries, merchants, lawyers, doctors and other self-taught professionals prevail and predominate [2].

Science is the backbone of humanistic philosophy. Under the light of this new era, humanistic studies were clearly categorized (*studia humanitatis*) and the study of medicine becomes an inseparable part of them.

Let us not forget the historical framework on which the *Decameron* is based; the plague at Florence in 1348. Boccaccio's description of this tragic event has been the subject of research on the part of scientists and philologists. Nevertheless, this is not the only link that binds the author to the science of medicine.

Throughout the tales, it is obvious that the author provides a detailed outline of medical practice; to some extent, doctors were attached to the old medieval *status quo*, at other times they seemed ready to accept the new spirit of change. The aim of the present study is to focus on Boccaccio's testimony of medical science. *The Decameron* is architecturally structured in a frame narrative, or frame tale and provides us a full description of life.

The figure of the doctor and the science of medicine in "Decameron"

The *Decameron* opens with a description of the Bubonic Plague (*Black Death*) and leads into an introduction of a group of seven young women and three young men who fled from plague-

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ridden Florence to a villa outside the city walls. To pass the time, each member of the party tells a story for every one of the ten nights spent at the villa (10x10=100). Since 31 of these tales refer to the image of the doctor, references regarding the science of medicine occupy almost 1/3 of the whole book.

The tales with a medical content can be categorised as follows: nine tales of dramatic content (two on the second day, five on the fourth day, one on the fifth day, and one tale on the tenth day) and 22 tales of a humoristic nature.

Second Day

Filomena reigns during the second day and she assigns a topic to each of the storytellers: misadventures that suddenly end happily. The element of adventure is very intense but the most important thing is that unpleasant stories have a happy ending. There are two tales which refer to medical events.

At the end of the sixth tale, there is a story about the reunion of a family and about a fainting episode which is mainly attributed to the protagonist's emotional state: <<Realizing all too soon that she had lost her children as well as her husband, and finding herself abandoned there, alone and destitute, without the slightest notion of how she was going to find them again, she fell in a dead faint on to the sand with the names of her husband and children on her lips. The cold water and other remediess helped her come to her senses>>. It is remarkable that the author makes use of this finding in order to put his heroine to the test just before the happy ending.

The reader is already emotionally charged, and this fainting episode is chosen on purpose and is completely justified given the circumstances. The presence of a doctor is not necessary. Loss of consciousness which was not due to a pathological cause was a reaction people could handle (even though none of them had a degree in medicine).

All they had to do was be patient and have some kind of experience. Boccaccio mentions the cold water – wet compresses on the patient's forehead as well as on the hands, a welter of local practical medicine. What did it consist of? It was a series of substances, such as scented salts, oils, products capable of reenergizing the senses; massages, slapping on the face. The author does not expand too much on that episode.

In the seventh tale of the second day we find a

quite detailed reference to a medical event. It is not about a true illness, but more like a pathological side-effect due to a poor emotional state. We have the story of a young man who stays in bed and suffers weight loss because he is not allowed to confess his love. In this part of the text, Boccaccio's intention is to present a vibrant, emotional portrait of the young lover. The young man loses weight and is on the verge of death, because of his suffering. This is the only symptom the author refers to.

There is no other description about other symptoms (e.g., fever, blood disturbances etc.). This kind of anorexia based on emotional suffering may have other pathological repercussions, such as continuous weight loss, loss of strength, and atony, in hyper-sensitive personalities [3]. The family of the young man suspects that the cause of the illness is psychological, which is why they keep asking him why he is so sad. The fact is that the "patient" manages to confuse the issue by complaining about his weakness. Thus we cannot tell whether his poor mental state is due to the illness itself. We therefore see that, due to the lack of adequate checkup instruments and laboratory control, the medical community was unable to reach definitive conclusions.

Weight loss was always considered to be a serious symptom and was given due attention. The method of taking one's pulse - one of the oldest diagnostic tools - finally betrays the nature of the patient's illness and is strictly connected to the cardiovascular system. Although we have a dramatic novella, the episode is described with some humour and it reminds us an old, traditional medieval belief which is also described in Umberto Eco's book, "The Name of the Rose".

Fourth Day

There are many dramatic tales on this day, due to the nature of the assigned theme. Half of them present medical data. Filostrato reigns during the fourth day, in which the storytellers tell of lovers whose relationship ends in disaster. This is the first day a male storyteller reigns. The first tale is the most dramatic of the whole Decameron.

Tancredi, Prince of Salerno and father of Ghismonda, slays his daughter's lover, Guiscardo, and sends her his heart in a golden cup: Ghismonda, the daughter, pours upon it a poisonous distillation, which she drinks and dies. <<After her father had left, Ghismonda, unflinching in her harsh resolve, had called for poisonous herbs and roots, which she then distilled and converted into a potion, so that, if things turned out as she feared, she would have it ready to hand>>. Medicine is strictly connected to pharmacology. There are substances extracted from plants that could save life and others that could take it away. There is always the other side of the coin and there is always a purpose to be served.

During the late medieval period, right before the dawn of Humanism, the production and use of drugs was in the hands of unauthorised people who could make use of them for therapeutic purposes or not, based on empirical knowledge or scripts of their times. The fifth tale follows the same logic as the one above; the background and conception of the story are the same as the previous one. A young girl, Lisabetta, falls in love with Lorenzo, a friend of her brothers. The overprotective brothers find out about the relationship, slay her lover and bury him in the courtyard.

The dead man appears to her in a dream, and shows her where he is buried: she secretly disinters the head, and sets it in a pot of basil, over which she weeps for a long time every day. <<The young woman constantly followed this same routine and from time to time she attracted the attention of her neighbours. And as they had heard her brothers expressing their concern at the decline in her good looks and the way, in which her eyes appeared to have sunk into their sockets, they told them what they had seen, adding: "We have noticed that she follows the same routine every day".

The brothers discovered for themselves that this was so, and having reproached her once or twice without the slightest effect, they caused the pot to be secretly removed from her room. When she found that it was missing, she kept asking for it over and over again, and because they would not restore it to her she sobbed and cried without a cause until eventually she fell seriously ill.

And from her bed of sickness she would call for nothing else except her pot of basil. The girl went on weeping and demanding her pot of basil, until eventually she cried herself to death, thus bringing her ill-fated love to an end>>. The basic difference between the two tales is the fact that Lisabetta does not commit suicide, she is left to die, she languishes slowly, she gradually loses her beauty and her strength. She suffers from a terrible emotional breakdown. Her beloved is dead, her brothers are assassins. She clings to the only object fate has left her; a pot containing the relics of her beloved. It is the only way to cling to the illusion of keeping him alive. Nevertheless, since she knows that nothing can substitute him, her sorrow at the loss and the murder remains.

The problem is mainly psychological, with pathological dimensions. She stops feeding herself on a regular basis, she begins to lose weight. Her eyes lose their vitality; she has the looks of a mentally disordered person, who is beyond this world.

Her brothers commit a second murder by cutting out the last bridge of communication with her beloved. The young girl falls into despair. Her exhausted health and her emotional turmoil lead to a sudden heart failure. Throughout the whole tale, the presence of a doctor is not mentioned.

The sixth tale of the fourth day is about the tragic ending of the love story between Gabriotto and Andreuola.

Andreuola loves Gabriotto: she tells him a dream that she has had; he tells her a dream of his own, and dies suddenly in her arms. <<But then I dreamt that, whilst the doe was asleep, resting its head upon my chest, a coal-black greyhound appeared as if from nowhere, starving with hunger and quite terrifying to look upon. It advanced towards me, and I seemed powerless to resist, for it sank its teeth into my left side and gnawed away until it reached my heart, which it appeared to tear out and carry off in its jaws.

The pain of it was so excruciating that I came to my senses, and the first thing I did on awakening was to run my head over my left side just to make sure that it was still intact; but on discovering that I had come to no harm, I laughed at myself for being so credulous. But in any case, what does it signify? [...]

As they lingered there together, Gabriotto suddenly heaved a tremendous sigh, enfolded her in his arms and said: "Alas, my dearest, comfort me, for I am dying". And so saying, he fell back to the ground and lay motionless upon the grass >>.

The author mainly focuses on the nightmare and on the fact that it came true the next day. The nightmare is seen as a presentiment of imminent death. Boccaccio's approach is mainly metaphysical. From a more realistic, modern point of view, one would say that, according to the description, the acute pain that woke our hero up was rather due to an episode of angina or myocardial infarction and shock [3]. Though such episodes appear around the age of 40, the young man may well have suffered from a certain congenital cardiac disease without knowing it.

The seventh tale is about this strange game between love and death. Simona loves Pasquino; they are together in a garden where their amusement ends in tragedy.

Pasquino rubs a leaf of sage against his teeth, and dies; Simona is arrested, and, with intent to show the judge how Pasquino died, rubs one of the leaves of the same plant against her teeth, and likewise dies. <<Pasquino turned to the huge clump of sage and detached one of its leaves, with which he began to rub his teeth and gums, claiming that sage prevented food from sticking to the teeth after a meal. After rubbing them thus for a while, he returned to the subject of the picnic about which he had been talking earlier.

But before he had got very far, a radical change came over his features, and very soon afterwards he lost all power of sight and speech. A few minutes later he was dead. [...] Stramba exclaimed: "Ah! You foul bitch, you've poisoned him!" [...]

He asked her to show him precisely how it had happened, whereupon Simona walked over to the clump of sage, and did as Pasquino had done, she rubbed one of the sage-leaves against her teeth.[...] She met the very same fate as the one that had stricken Pasquino, to the no small amazement of all those present. [...] Crouching beneath the clump of sage, there was an incredibly large toad, by whose venomous breath they realized that the bush must have been poisoned>>.

The aim of the author is to point out the young girl's innocence and devotion towards her beloved. The very simple act of cleaning one's mouth proved to be fatal, and what is worse is the fact that as nobody witnessed the fact, our heroine was accused of his death. Simona's love and the need to rid herself of the unfair accusation make her repeat the same mistake Pasquino made (of course she did not know she would have the same tragic ending). This re-enactment of his death cost his wife's life. This tragic end proved her innocence and led to the truth. From a medical point of view, the following aspects are interesting: the alteration of the hero's face does not entail colour change; it is rather an oedema. Loss of sight and difficulty in speech probably show collapse, suppression of the cardiac and respiratory function and eventually shock [3]. As far as the first death is concerned, the possibility of an allergy could stand, but if the two deaths were attributed to an allergic crisis that would be a strange and interesting coincidence. Otherwise, we should highly consider the possibility of autosuggestion or the possibility of a heart attack due to intense emotion –let us not forget that our heroine, crushed by the loss of her beloved one, was very afraid that she would end up in court under a false accusation.

Now let us see what happens in the eighth tale of the fourth day. Girolamo loves Salvestra: yielding to his mother's prayers he goes to Paris; he returns to find Salvestra married; he enters her house by stealth, lays himself by her side, and dies; he is borne to the church, where Salvestra realizes that she never stopped loving him, lies down by his side, and dies. <<So the young man lay down at her side without attempting to touch her, and, concentrating his thoughts on his long love for her, on her present coldness towards him and on the dashing of his hopes, he resolved not to go on living. Without uttering a word, he clenched his fists and held his breath until finally he expired at her side. [...] The girl's heart, which had remained sealed to Girolamo for as long as he was smiled upon by Fortune, was unlocked by his far from fortunate death.

The flames of her former love were rekindled, and no sooner transformed into so much compassion that she edged her way forward, wrapped in her mantle, through the cluster of women mourners, coming to a halt only when she was almost on top of the corpse itself. Then with a piercing scream, she flung herself upon the dead youth, and if she failed to drench his face with her tears, that was because, almost as soon as she touched him, she died, like the young man, from a surfeit of grief>>. The hero commits suicide, without using any kind of poison or instrument.

He dies of asphyxia, being unable to cope with the unbearable pain. He cannot wait, but nature does not help him carry out his decision to die painlessly. Thus, in this case, the respiratory function is forcefully suspended. The function of the circulatory system is blocked and there is no air supply in the brain. The determination and the courage in the face of death compete with his love and desperation. A stubborn personality - we may say - that staggers between the will to die and the weakness to live. However, things are different for Silvestra. Suffering a terrible, excruciating shock, she probably has heart failure.

Fifth Day

The fifth day contains the tragic story of Federico degli Alberighi and Monna Giovanna. Federigo degli Alberighi, who loves but is not loved in return, spends all the money he has in courtship, in the attempt to gain her attention. He is left with only a falcon, which, since he has nothing else to give her, he offers to his lady to eat when she visits his home, then she, learning of this, changes her mind, takes him for her husband, and makes him rich.

The ninth tale mainly focuses on the excellent character of the knight. Nevertheless, medicine's incapacity to cure the little boy plays a catalytic role in the evolution of the story. << ... The boy happened to be taken ill. Being her only child, he was the apple of his mother's eye, and she sat beside his bed the whole day long, never ceasing to comfort him. Every so often she asked him whether there was anything he wanted, imploring him to tell her what it was, because if it was possible to acquire it, she would move heaven and earth to obtain it for him>>. The little boy wanted to have the falcon, Federico's only possession. Giovanna goes to ask for it and, since he has nothing else to give her, he offers it to his lady to eat when she visits his home. The knight's sacrifice is a devastating revelation for both protagonists.

Giovanna finally realizes there is nothing she can do to save her beloved child. <<But now that her hopes of obtaining the falcon had vanished she began to feel seriously concerned for the health of her son, and after thanking Federico for his hospitality and good intentions, she took her leave of him, looking all despondent, and returned to the child. And to his mother's indescribable sorrow, within the space of a few days, whether through his disappointment in not being able to have the falcon, or because he was in any case suffering from a mortal illness, the child passed from his life>>. The author does not give much evidence about the nature of the child's illness. However, we understand that the child stays in bed for days and that his condition becomes worse, due to loss of strength. The desire towards the falcon is unlikely to be the cause of the illness. The fact that his wish did not come true may have accelerated the course of the illness and may have deteriorated his mental state. Even the author himself admits that the death was not due to the falcon but was meant to happen. Indeed, at that time, infant mortality was a common reality that afflicted children of every social class.

Tenth Day

The fourth tale is one of the last dramatic tales of Decameron, related to medicine. This last one has a happy ending. Our heroine is married and she is in the first months of her pregnancy. While her husband is on a trip, she encounters an incredible adventure. <<At the time of which we are speaking, Nicoluccio was absent from Bologna, and his wife, being pregnant, was staying at an estate of his, some three miles distant from the city, where she had the misfortune to contract a sudden and cruel malady, whose effects were so powerful and serious that all sign of life in her was extinguished, and consequently she was adjudged, even by her physicians, to be dead>>. She loses her senses and is struck by what we would call "apparent death". It is a case in which the person is presumed to be dead while alive.

All the biological functions of the organism are blocked and become unnoticed, so that the person gives the impression of having died. Mobility and sensitivity functions are suspended; we have loss of conscience and full respiration and blood circulation pause. Given the symptoms, many people were buried while still alive. This is what happened to our heroine, according to Boccaccio. Only she was lucky enough because the person who most admired her did not resist the temptation to give her a last kiss. Messer Gentile de' Carisendi, from Modena, disinters a lady that he loves, who has been buried for dead, and he realizes that the woman is still alive.<<He examined her more closely and discovered that she was in fact still alive, though the actual signs of life were minimal and very weak>>. When a person is in the state of apparent death, his heart function is imperfect but continues. Due to his intense feeling, the man was able to see the spark of life that the relatives and the doctor were unable to detect.

She, being reanimated, gives birth to a male child. The survival of the foetus raises important questions. There is no reference so far of a case of apparent death involving pregnant women. The author's aim is to emphasize the miracle achieved, to underline the strength of love and the limits of human strength. Though original in its conception, the episode described is rather far-fetched. An overall consideration of the nine dramatic tales leads to the following conclusions: to a great extent, the illnesses described are due to the patient's mental state, which changes negatively and is often worsened by the fact that a desire (sexual or otherwise) is not fully corresponded or fulfilled.

We have already seen the eighth tale of the second and fourth day, in which the child's obsession to have the falcon leads to deterioration of his health and the fatal end.

We have also seen cases of suicide due to emotional breakdown. Such is the case of Ghismonda, who consciously commits suicide by taking poison (tale 1, fourth day), as well as the case of Simona (tale 7, fourth day) who is led to death unconsciously. Both cases show two things: in the medieval world, anyone could possess general notions of pharmacology and knowledge about harmful drugs was quite common.

Nevertheless, this kind of knowledge cannot be considered scientific, because of the fact that people were still very much attached to superstitions and false stereotypes.

This explains the logic of Ghismonda who makes the poison herself and is automatically driven to suicide, and the logic of Simona's death, which was due to a chewed leaf poisoned by a large reptile's breath (a frog). However, the case of Girolamo's suicide (tale 8, fourth day) is quite spectacular and strange. He manages to create a suffocation episode that suspends breathing, one of the basic functions of the organism. The power of self destruction due to emotional desperation is proven to be much stronger than the self-preservation instinct. In the same tale, Salvestra suffers from cardiovascular death which is due to her emotional burden. We also have the case of Gabriotto (tale 6, fourth day) who died from some kind of cardiac arrest but whose death was attributed to bad luck. In both cases, death is attributed to emotional reasons and to bad luck. Cardiac arrest was more likely to strike older people. Donna Bentolo faints, scaring everyone, as if she were dead (tale 4, second day). Those around her are afraid she has had a heart failure. Fainting - or loss of consciousness - was related to the suspicion of heart arrest. That said, we conclude tha:

- a) in the dramatic tales, causes of illnesses and death are attributed to pathological factors;
- b) in the surgery field, little is known about

neoplastic diseases. The heart is subjected to study which is still underdeveloped. It must be borne in mind that the tales deal with human passions, so the heart as such has a symbolic function, it is a way of expressing emotions;

c) the presence of a doctor, a general practitioner, is scant or non-existent. The doctor as a specialist appears in two out of nine tales (tale 7, second day/ tale 9, fifth day).

In the other seven, the doctor's role is undertaken by either an old experienced woman (tale 6, second day/ tale 4, tenth day) or is completely absent (tales 1, 5, 6, 7 and 8, fourth day). This absence of a doctor could be explained by the fact that the author feels the need to point out the tragic character of the stories, as well as the role of inevitability of fate. The protagonists were destined to die, so the presence of a doctor would not have made any difference at all. However, there are two tales in which the doctor's image is clearly depicted. This was not a scientist who worked alone. The patients of the second and fifth day are examined by a group of doctors; they used to work that way in order to prevent fatal mistakes. The patients' families preferred this group of doctors in order to secure a more complete and accurate diagnosis.

Let us not forget that the lower social classes had no access to a doctor's help. This was considered to be a privilege of noble families, who could afford the expense. The poor could have recourse to local practitioners. Unfortunately, in the case of the little boy from the landed gentry, his wealth was not able to save him. The medical team did their best but in vain. On the contrary, the case of the young man who had no pathological cause is of positive outcome.

There is a young doctor in the team who manages to stand out. Out of love and dedication for his work, he finally solves the mystery of the illness, based on acute observation and careful experimentation. This is the only picture we have of a doctor, the only tale where he actually plays an essential role. The doctor is not the protagonist (that is the part played by the lovers) but he has a secondary function which acts catalytically and leads to the resolution of the story. The doctor's figure combines all the elements that define his identity as a scientist and clearly distinguishes him from the medieval standards.

Keywords: Decameron, Boccaccio, plague, Middle Ages, humanism.

SUMMARY

In the person of Boccaccio the humanism of Florence found its major representative. In 1358 he completed his great work, *The Decameron*, begun some ten years earlier. Considered the prelude to the new spirit that was to be manifested by the Renaissance, it was written in the spirit of a human-centred era. In the tales of *The Decameron*, based on events occurring during the plague at Florence of 1348, Boccaccio provides a detailed outline of how medical events were viewed at a time of transition from the Middle Ages to the new age of change.

The Decameron opens with a description of the Bubonic Plague (Black Death). Boccaccio knows that it started in the East, and attributes it either to the influence of heavenly bodies or to God's anger over the wicked deeds of men. But the symptoms

of the plague are not like those in the East, where he has heard that a sudden gush of blood from the nose is a sure sign of impending death. Instead, there are swellings, the buboes, in the groin and under the armpit, growing to the size of a small apple or an egg, then large purple or black spots on other parts of the body, and death soon afterwards. This leads to the story of a group of seven young women and three young men who fled from plague-ridden Florence to a villa outside the city walls. To pass the time, they organized themselves so that each person at night has to amuse the others by telling a story. The stories, told over ten days, contain dramatic and or humorous, elements, and many refer in one way or another to the way illness was conceived and managed in those times.

RIASSUNTO

L'Umanesimo fiorentino trova in Boccaccio il suo maggiore esponente. La sua opera principale, il Decamerone, viene portata a termine nel 1358 dopo circa dieci anni di lavoro. Considerata quale preludio al nuovo spirito che il Rinascimento stava per esprimere, quest'opera è stata redatta in accordo ai dettami di un'era che poneva l'uomo al centro del mondo. Nelle novelle de Il Decamerone, basate sugli eventi accaduti durante la peste di Firenze del 1348, Boccaccio descrive in maniera dettagliata come gli eventi medici fossero percepiti in un momento storico di transizione, dal periodo medievale a quello di una nuova era di cambiamento.

Il Decamerone si apre con una descrizione della peste bubbonica (morte nera). Boccaccio è a conoscenza che la malattia ha avuto il suo esordio in Oriente e ne attribuisce la causa o all'influenza di "corpi superiori" o all'ira divina scatenata dalle inique azioni umane. Ma i

sintomi della peste sono diversi da quelli osservati in Oriente dove Boccaccio ha sentito parlare degli episodi di epistassi improvvisa quali segni certi di morte incombente. Al contrario, in Occidente si osservano rigonfiamenti, bubboni, localizzati all'inguine e alle ascelle, che raggiungono le dimensioni di una piccola mela o di un uovo, cui segue la comparsa di macchie di colore porpora o nero in altre parti del corpo, e la morte interviene immediatamente dopo. Nell'opera si narra la storia di un gruppo di giovani, sette donne e tre uomini, che per sfuggire al contagio della peste che imperversava a Firenze, si trasferiscono in una villa fuori città. Per tenersi occupati e divertirsi, i giovani decidono di raccontare a turno, ogni sera per dieci sere, una novella. Ouesti racconti, dai contenuti drammatici e/o umoristici, si riferiscono spesso, in un modo o nell'altro, a come la malattia era percepita e gestita in quell'epoca.

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