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ANDRÉS LAGUNA

A Great Medical Humanist

(1499–1559)

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SUMMARY

Andrés Laguna a Spanish humanist physician of the 16th century occupies an important position in the history of medicine. An illustrious and brilliant mind, pioneer of anatomy and urology, Laguna proved to be a true pacifist and humanitarian with his knowledge standards and his political eloquence. He deserves to be remembered today as the perfect example of the Renaissance men, a true *Homo Universalis*.

RESUMO

ANDRÉS LAGUNA (1499–1559) Grande Médico Humanista

Andrés Laguna, médico e célebre humanista renascentista século XVI ocupa uma posição importante na história da medicina. Uma mente ilustre e brilhante, o pioneiro da anatomia e da urologia. Laguna provou ser um pacifista e um humanitário verdadeiro com os seus padrões do conhecimento e sua eloquência política. Merece ser recordado hoje como o exemplo perfeito dos homens de renascimento, um *homo Universalis*.

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INTRODUCTION

Andrés Laguna, a 16th century Spanish physician of Segovian origin, occupies an important position in the history of medicine. Pioneer of anatomy and urology, physician and pharmacologist, Laguna made a difference in the world of his time with his exceptional intelligence, his humanitarianism, his knowledge standards and his political eloquence. He deserves to be remembered today because he gave priority to thinking, learning and knowing and revived the ancient art of healing.

EARLY LIFE

Andrés Laguna (Figure 1) was born in Segovia of Spain, in the last decade of the 15th century, around the years when the trips of Spanish Christopher Columbus had set new perspectives on the limits of the known world¹. In fact, historians disagree about the exact year of his birth. According to the most valid sources, most probable years seem 1494 and 1499, while even the year 1511 has been recorded as possible. However, based on the writings of Diego de Colmenares (1586-1651), a 16th century Segovian historian, year 1499 seems to be closer to the truth².



Fig.1 - Andrés Laguna

His father, Diego Fernandez de Laguna, a converted Jewish, was an important physician in Segovia, appreciated by his townsmen for his professional work. Andrés Laguna started his studies on the Latin language in his homeland and, though a penniless adolescent, he decided to move to Salamanca, a city with a high standard University, where he finished studies in Human Sciences, Philology and Fine

Arts, acquiring the degree of Bachelor of Arts. In Spain of that time, and especially in the University of Salamanca, humanism concerned the studying of classical texts in their original language with a critical revision in order to eliminate the medieval layers deposited on them (something especially important in the matter of medicine). Laguna would become the perfect example of Spanish humanists, who were interested not only in translating the Greek texts into Latin, but also in commenting on all these texts and renovating the practice of science³.

In Paris; His first renowned book

With this scientific background, Laguna entered the University of Paris with the intention to gain fluency in the Greek language. He was attracted to Paris of that time, especially thanks to Francis I, King of France, who encouraged all forms of culture and knowledge. In the University of Paris, Laguna, apart from Greek, also studied Medicine and Botany. His philological knowledge helped him go deep into the medical principles of Hippocrates and Galen, while he was regularly studying philosophical literature. He finished a complete course in Medicine and acquired the degrees of Master of Arts and Bachelor of Medicine³.

During his studies in Paris he published, prior to the landmark anatomical work of Andrea Vesalius (1514-1564) *De Humani Corporis Fabrica* (1543), the book *Anatomica Methodus seu de Sectione Humani Corporis Contemplati* (1535), (Study of Anatomic Methods for each part of the Human Body). In this book, where the influence of Galen is clear, Laguna presented a work based on anatomical postmortem observations; at a time when cadaver dissections were despised due to the profound horror they created. It is a work of great merit that, despite the time that has passed since its publication, maintains the credibility of many anatomical descriptions. It contains quite interesting queries about many anatomical structures, including some comments about the similarities in the frenula of two man's organs, tongue and penis⁴. He recommended the study of anatomy through dissection and not by just reading books as students were used to at that time. Among his observations on the human cadaver, he described a solitary hypoplastic kidney, a horseshoe kidney and, for the first time, an ileocecal valve, anatomic structure confirmed later by anatomists like Gabriel Fallopio (1523-1562). He also highlighted the ureters as the tubes that carry urine from the kidneys to the urinary bladder⁵.

Moreover, Laguna described heart's muscle fibers and valves. He had observed the movements of heart in animals and the blood's propagation to the arteries, so he was aware of the dynamics of blood circulation⁶. This description appeared long before the famous treatise of William Harvey *De Motu Cordis* (1628) that describes the blood circulation⁷. According to Anastasio Chinchilla (1801-1876) physician and historian⁸, the text presents *political* characteristics as it often compares the human body with the society and particularly, with traders.

In the opinion of Laguna, brain and heart have a special relationship with each other seeking for good governance for their *people*⁹. At that time, parallel to his studies in philology, he translated into Latin the works of Galen *De Urinis*¹⁰.

Practicing medicine across Europe

In 1536, with the degrees he had acquired in the University of Paris, he moved back to Spain, and attended medical courses in the Universities of Alcalá de Henares and Toledo. In Toledo he acquired the Doctoral degree and in Alcalá he was responsible for a University department. Moreover, in both cities, he was practicing medicine for a living⁹. In addition to medicine, Laguna, especially interested in therapeutics, personally practiced pharmacology throughout Europe, collecting data from a wide range of sources, not only from texts but also from practitioners of any kind, from healers to witches¹¹.

Having gained recognition for his medical training, in 1539, Laguna was invited by the Emperor Charles V to the Imperial Court, in Netherlands. He was distinguished and was appointed Physician of the Court. Due to his position, he accompanied Emperor Charles V in his military campaigns in Europe and became very active as a surgeon for the armies of the Emperor. After the Emperor's passing, his heir too, Philip II, asked for Laguna's services.

In 1540, during an epidemic plague that was ravaging the city of Metz, he moved there and stayed for five years practicing medicine. He earned the esteem and personal sympathy of the habitants for his unselfishness, medical knowledge and skill in the art of medicine, while he kept raising the spirits of the citizens who, in front of this tragedy, were just hoping for salvation through their loyalty to the emperor¹².

After leaving Metz, Laguna moved to Italy and attended dissection classes in the University of Padua, while later he moved to the University of Bologna, where he was given the position of Professor and was honored as a physician. There, he helped organizing the department, with his anatomical knowledge and influence¹.

In addition, Spanish Cardinal Francisco Mendoza de Bobadilla (1508-1566), a friend of Pope Julius III, having been affected by some serious illness during a trip, summoned Laguna to Germany. The physician helped into the successful finding of the cure¹³.

Pacifist and humanitarian

Laguna developed political activity, particularly during the struggles between John Calvin (1509-1564) and the Pope and the continental wars. He was never afraid to come to the front and declare his own opinion.

In 1545 he was invited by the University of Cologne to perform a speech about peace at the Aula Magna of the University, entitled *Europa que a si mismo se atormenta* (Europe the Self-Tormentor). In this speech, he referred to

the religious wars, the war between Charles V and Francis I, and the warfare between the reigning princes of Europe. He mentioned some traditional European carnivals and festivals and compared them to the misery and the plagues caused by the disputes between the papacy and the Lutherans and the political wars, of which the most important victims are the people¹⁴.

This speech contributed to the reconciliation between princes and kings of Christianity and revealed that Laguna was not only a great physician, whose extensive anatomical knowledge was widely recognized, but also a great humanitarian.

His discourse was published a few days after its reading, on the press of Johann von Aachen, in the College of Arts in Cologne. It is a work which forebodes ideas of French social philosophers of the Enlightenment, like Montesquieu and Voltaire¹⁵.

In Rome; His second renowned book

In 1545, he resided in Rome where he continued his teaching and became personal physician of Popes Paul III and Julius III. The latter rewarded his work by giving him the titles of *Palatine Count* and *Knight of the Pontifical Order of St. Peter*, which had been founded in 1520 by the late Pope Leo X. During his staying in Rome, besides his work at the Vatican University, he contributed to the knowledge of urology with his book *Methodus cognoscenci in vesicae collo carunculas* (Methods for studying the bladder neck tissue), which is considered a landmark for urology¹⁶. The book describes new features of the bladder neck, including voiding disorders, dysuria, abnormal appearance of the urine stream, urinary frequency etc. It is a work explaining man's urological disorders and referring to unknown, until that time, prostate's diseases⁹. For this contribution to the knowledge of urology, E. Desnos, in his book *Histoire de l'Urologie* called Laguna the *Spanish Ambroise Paré*¹⁷.

His translations

His knowledge of Latin and Greek helped him translate into Latin the works of Aristotle and Hippocrates, a work which gave him the title: *Spanish Galen*. He published translations like *On the Cosmos and On the Virtues* of Aristotle and the *Philosophical History* of Galen³.

He also published in Basel in 1551 the work *Epitome galena Pergami operum* (Epitome to Galen's advancing work), in which he tries to reconcile Galen's doctrines with those of Hippocrates¹⁸.

His greatest translational work, however, was the translation from Greek into Castilian of the works of Dioscorides, the famous 1st century Greek pharmacologist, adding multiple comments and certain interpretations¹⁹. In this book, which was published in Antwerp in 1555, in Salamanca in 1558 and in Valencia in 1561, Laguna described the poisonous plants, including plants from Europe and from

the New World. His commentary and references were explicit enough to show that American drugs were taken very seriously when no similar drugs were available for common illnesses or when they were associated with the healing of new and dangerous diseases. He included among new plants only those that were absolutely necessary to cover therapeutic needs. In order to understand clearly and translate correctly all the kinds of plants, he tried to contact individuals in Egypt, Greece and the coastal regions of North Africa^{20,21}.

Back to Segovia

Tired of his hectic way of living, Laguna decided to return to his beloved Segovia to rest but he seemed like an almost stranger visitor to his relatives and friends after all these years. Narrating his trips to Rome, Germany, Netherlands, Antwerp and his fighting of the epidemic, he wrote the book *Discurso breve*²².

Just like the contradictive sources about his birth, the recordings on his death vary. According to some he died in his hometown, shortly after a trip from Antwerp to Segovia, while other sources record that he died during that trip after being affected by a massive bleeding from hemorrhoids and was transferred to Segovia. Some mark Guadalajara as the city of his final days, while both late 1559 and early 1560 appear in literature as probable. He was buried in the parish of San Miguel, in Segovia¹.

His legacy

Andrés Laguna's medical and literary activity was unremitting. He was one of the most illustrious and brilliant minds of the sixteenth century, as he achieved excellence in medicine, teaching and social activity. Among his pioneering work are his anatomical urological observations, his notes on bladder's disorders and his important social comments on Spain and Europe. He stressed the need for a better knowledge of human anatomy, without which medical practice would be inevitably imperfect.

He used the historical medical sources not only for his studying, but also for pointing out which, forgotten by many, features could be used in today's practice. That way he set an example, even for today's researchers, of how the study of history of medicine could hold an important role in contemporary practice. He followed the lead of the great Renaissance artists, scientists and philosophers by travelling throughout Europe and visiting many Universities, and apart from being, himself, a strong personality, he developed a prolific way of studying and utilizing the work of others.

Laguna developed a strong interest for classical sources and offered a rebirth to the textual criticism. He turned to the Latin and Greek scientific tradition and testified the art of translation and the rise of vernacular languages. He revived the philosophy of education and achieved a high level of scholarship. He used the knowledge he had acquired for publishing exceptional medical works without personal ambition.

For his plethoric personality and global perspective, for his deep knowledge and erudition, for his writings, for his social concern and humanitarianism, Andrés Laguna deserves to be remembered and revived as a true *Homo Universalis*.

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