

## BETWEEN THE ART OF WORDS AND ART OF MEDICINE: ANDREAS LIBAVIUS AND JOHANNES JESSENIUS

**Mirela RADU, PhD. Lecturer, Faculty of Medicine, "Titu Maiorescu" University, Bucharest**

*Abstract: Renaissance, as a period of transition between the Middle Ages and the era of scientific knowledge, was represented by polymaths who understood the need for renewal, openness to a new stage that would break away from dogma and enter the field of science. The ideal of this age was to create a more rational man, inclined to science and less and less tributary and bound by religious precepts. The microscope, introduced by Antoni Van Leeuwenhoek in 1679, had behind it stages of development in just one century: from 1590 when Hans Jansen and his son Zacharias invented the first optical microscope. We must not forget the cosmologist, mathematician and priest Nicolaus Copernicus and what gave to the world in 1543. This period of intellectual fervor would also challenge the way people understood medicine. This branch of human knowledge, at the junction of the applied sciences and the humanities, had the most to gain from the freedom that human spirituality experienced during the Renaissance. This article focuses on two personalities of medicine whose contributions would open the horizon of medicine that was in its first steps on the path of evolution, but which also enriched the German culture through their writings.*

*Keywords: intellectual fervor, humanities, renewal, rhetoric, progressivism*

The Renaissance polymath **Andreas Libavius** (1550-1616) first taught history, philosophy and lyric at the University of Jena and then took his steps towards medicine at the University of Basel. Libavius continued to practice medicine in 1591, becoming a physician in the city of Rothenburg. In 1606 he retired to Coburg where he ran the local high school. Although his origins were modest, Libavius was a convinced self-taught man. Interested in alchemy, like most scientists of the time, the German physician signed an encyclopedic work in 1597: *Alchemy*. In his treatise, Libavius reviews most of his findings. The interest in chemistry did not remain only in theory because the doctor practiced experiments including those for the preparation of hydrochloric acid, ammonium sulfate and tin chloride.

A follower of Aristotelian principles, Libavius did not confine himself to the applied sciences. His intellectual interest also included logic, physics, pharmacy, theology, and, last but not least, lyricism. All the more so this inclination towards literature as he himself had taught poetry courses. Between 1599 and 1601, the doctor wrote four volumes dedicated to the medical sciences (*Singularia*) so that in 1610 he published one of the first medical treatises in his country of origin: *Tractatus Medicus Physicus und Historia des fürtrefflichen Casimirianischen SauerBrunnen/unter Libenstein/nicht fern von Schmalkalden gelegen*.

Alchemy was a field that combined practical experiments, philosophical meditations, study of religious texts, and extensive scientific knowledge. It was the time

when various personalities asserted themselves: from the Italian Renaissance Giovanni Pico della Mirandola (1463-1494), to the pioneer of the revolution in medicine-the Swiss Paracelsus (1493-1541) to Robert Boyle, followed by the one who laid the foundations of classical mechanics-the mathematician Isaac Newton (1642-1726). Boyle's merit in this context of alchemy is that he tried to make this science credible, leaving aside the occult practices that prevented it from being understood by many scholars. Boyle sensed the need for medicine to be based on quantifiable, repeatable laboratory specimens that set clear rules. This intellectual work, of bringing alchemy out of the controversial light of metaphysics, of entering it into a new, much more solid realm, has been done with difficulty and, unfortunately, has been received by many as an offense. Libavius had to do a sustained work of transforming alchemy into a practical science and, thus, he met the opposition of his colleagues.

One of these open conflicts was with the Jesuit Jacob Gretser and Johannes Hartmann. It is worth mentioning the opposition Libavius made to Johann Hartman, adept of Paracelsus, who was the first to obtain tenure position at Marburg University (1609) with a subject on the border of chemistry and medicine: *chymiatría*. Libavius had long fought for this subject to reach academic recognition. His polemic nature, along with his studies in oratory and languages, helped Libavius impose as a polymath. In his scientific papers, language played a paramount role: twists of meaning, the use allusions, rhetorical judgments bring Libavius into the field of literary studies. Libavius education was based on the golden triad- grammar, rhetoric and logic and all his struggle was to bring these three to a consensus.

It was basically a struggle between the old and the new. The ancient doctrines of Paracelsus supported by mysticism and religious radicalism had no applicability in the light of new discoveries. This was the cultural context in which Libavius published *Alchemia* in 1597. The author structured his treatise very well, in four parts. The way in which scientific problems are treated is very logical and the text illustrates “a transitional phase of chemical science.”<sup>1</sup> The term alchemy that Libavius used referred to what we now call chemistry. The author considered that the *encheria* dealt with the chemical methods of preparation, *chymia* with the substances themselves and the *magisteria* dealt with the existence of qualities (hidden or visible) in the chemicals.

However, these distinctions do not relate to the modern ones between alchemy and chemistry. *Alchemia* was his most famous treatise, which describes, among other things, the possibility of transmutation and it represented the first systematic book in chemistry. This treatise stirred admiration along centuries as it was a complex paper which managed to organise an extremely diverse field: “the definition of the art, a description of its instruments, a discussion of operations, followed by preparations—that is, the basic structure of *Alchemia*.”<sup>2</sup>

<sup>1</sup> Henry M. Leicester, Herbert S. Klickstein, *A Source Book in Chemistry, 1400-1900*, Harvard University Press, 1952, p. 21

<sup>2</sup> Owen Hannaway, *The Chemists and the Word: The Didactic Origins of Chemistry*, Baltimore: Johns Hopkins UP, 1975, p. 8

Libavius did not give up entirely the old superstitions. For example, he made the parallel between transmutations of metals and the metamorphosis of the caterpillar into a butterfly, or he referred to the preconception that a dead body can bleed if the murderer is in its presence, etc. As enlightened as he might seem, Libavius was tributary to the times and society he lived in.

Yet, his castigations of Paracelsus false scientific statements was the fact that had propelled Libavius as a reforming scientist. By emphasizing the importance of experiments carried out in laboratory or testing theories empirically, Libavius placed himself in that fine line of progressists. Maybe the best definition of Libavius scientific efforts is attained by Moran who explains the German polymath's aim: "Libavius paid attention to lots of other chemical procedures to produce chemical extracts, when making his magistries, he followed a long alchemical tradition in which the primary produce was distillation and the principle purpose was to make the purest substance of all, something linked, it was thought to the first stuff of creation, and sometimes give the name *the fifth essence*."<sup>3</sup>

The fighting spirit of Libavius was considered by some exegetes as a value in itself, perceiving the books written by the physician as "equally valuable as grammatical exercises, dialectical demonstrations, and moral sermons (...) joining language, virtue and institutional authority in defense of academic wisdom."<sup>4</sup> This ability to support his ideas in an argumentative, concise and even literary way came from the period of his studies in which he had learned Latin, Greek, grammar and rhetoric. The tone of his writings is pedagogical and dialectical. This unbeatable logic, in which knowledge is based on physical truths, found in Libavius the best partisan. The doctor's dissatisfaction with Paracelsus' followers also came from the encryption they used. Advocate of concise but clear expressing, Libavius believed that the basis for understanding scientific phenomena was an adequate vocabulary. For him, the model of elegance was Horatiu's *Ars Poetica*. He created from his polemic "a didactic tool, transmuting apology into pedagogy and turning discussions of alchemy and medicine into moral, logical, and rhetorical lessons."<sup>5</sup>

Libavius brought language to the service of chemistry and medicine, skillfully used the pen in the fight against the sclerotic forms of science of his time. And this combination of literary and rhetorical abilities and science is unique in the landscape of medicine. His scientific merit is to be open, in the field of chemistry, the way of constructive discussions, using his abilities as a Latinist and orator. His intellectual ideal was a clear language that would make chemistry a coherent science, open to all. But Dr. Libavius also signed poetry. In *Missilia Clarissimorum Virorum Et Amicorum. In Lauream Poeticam Huldrichi Buchneri* (published in Jena in 1597), the doctor appears as the author of three poems. The proof of his love for fine words is that Libavius signed not

<sup>3</sup> Bruce T. Moran, *Distilling Knowledge: Alchemy, Chemistry, and the Scientific Revolution*, Cambridge: Harvard UP, 2005, p. 11

<sup>4</sup> Ole Pterre Grell, *Pracelsus. The Man and His Reputation, His Ideas and Their Transformation*, Brill, 1998, p. 136

<sup>5</sup> *Idem*, p. 149

only scientific papers but literary and philosophical ones too: *Dialectica* (1593); *Exercitiorum logicorum liber* (1595); *Dialogus logicus* (1595); *Poemata epica, lyrica, et elegica* (1602); *Syntagma selectorum* (1611); *Syntagma arcanorum* (1613).

**Jan Jesensky (Johannes Jessenius)** (1566-1621) came from a family of Polish Razes who had gained their freedom by an imperial decree of 1562. In the first part of his life the doctor had been raised in the spirit of German Protestantism but later through his studies in various countries, this influence would be a much broader one. Jessenius is a representative figure of European Renaissance.

Jessenius was born in Wrocław, Poland, and studied philosophy and medicine in Wittenberg, Leipzig, Germany. In Leipzig he studied and lived in the house of the anatomist Georg Walther where he also performed vivisections. In 1587 he completed his philosophical studies with the dissertation *De animae humanae immortality*. He went to Padua where he studied under the guidance of the famous Girolamo Fabrizio d'Acquapendente or Hieronymus Fabricius (1537-1619).

The latter, an illustrious anatomist, linked his name to the discovery of venous valves, which would be the first step towards the theory of blood circulation whose author was William Harvey. Fabricius had opened in Padua *Theatrum Anatomicum* (1594), a room in which dissections were performed and which allowed the general public to attend to learn. Jessenius' anatomic writings are a blend of medical knowledge and literary art. His culture was obvious as he wrote in Latin, by inserting "fables and quotations from the Bible and ancient authors" as Ladislav Borovansky' observed. All his papers, although aimed at describing medical findings were, at the same time, a cultural journey into the medical and cultural past: "It is therefore necessary to understand Jessenius' book not as a textbook but as a publication aiming at educating laymen with the purpose of advertising-filled with quotations of old classical authors."<sup>6</sup> For example, *Anatomiae Pragae* contains poems signed by physicians co-workers of the time such as Jacobus Typotius, Tobias Fischer, Basilius Plinius. His own verses are meant to stir a philosophical approach of the world:

"Zoraštris prisci, quog noftro huic  
 efte benigni  
 IndoEto Sero Seclo: tam cong  
 dita dudum  
 Æternis tenebris , ac fors bufti ipfius  
 illos  
 lam perpeffa olim cineres; hinc rede  
 dite luci  
 Carmina , & aliqie Sophie monumen.  
 ta docete .  
 Non vos , Jollicito Manes ego, & evos  
 co bufto:

<sup>6</sup> Ladislav Borovansky. *Remembering Jessenius*, In Jan Jessenius from Jasená. The course of the autopsy ceremoniously performed by him in Prague L.P. MDC, to which the Bone Treaty was attached, pp. 11-27, Prague: Karolinum, 2004

Carmina follicito veftra , Qlongo edo  
 co bufto.  
 Tu quof Iesseni refonas eadem oma  
 nia mecum: (...)  
 Aggreffus rerum Molem : monumeni  
 ta ea prisca (...)."<sup>7</sup>

The thinking system of the Polish polymath was an eclectic one. Like his studies, the conception of life and evolution that Jessenius propagated was one at the crossroads of belief in Lutheranism, Renaissance, medical sciences, and philosophy. Extensive readings have helped Jessenius to make references to Plato, Aristotle, and even religious texts in his works. His cultural ideal was a reconciliation of science with philosophy. To consider them distinct branches of human knowledge was tantamount to a disservice to both.

A work from 1591 signed by him, *De divina humanaque philosophia, progymnasma peripatheticum*, has the manifest value of his convictions. In this text, Jessenius intertwines religious and philosophical beliefs in an attempt to answer the question of the origin of life. In the same year he signed *Provinciis contra tyrannos*. The work was not to be printed until 1614, but it was an act of courage through the broad political views it promoted. Aware that a world of dictators cannot withstand in the long run and familiar with Aristotle's political writings, Jessenius pleads in this text for equality between rulers and subjects. It is not so much an equality but an equity on both sides of the political barricade. The author pleads for the necessity of the popular revolt in case this "contract" was violated by politicians. In other words, the people have the right to sanction those leaders who do them disservice. This demonstrates the broad views of this Renaissance polymath long before the ideals of the French Revolution.

Professionally, Jessenius began his ascent by practicing medicine in Wroclaw, then in Dresden, where he became a physician at the court of Saxony. In 1593, Jessenius published *Zoroaster, Nova, brevis veraque de universo Philosophia* with as its central theme what for the physician was an important aspect: understanding the universe through the prism of philosophy. The following year, 1594, he was appointed professor of surgery and then professor of anatomy. The Saxon period of this polymath's life was the culmination of his medical and cultural career.

Arriving in Prague for more political reasons and in search of fame beyond German borders, Jessenius brings to public attention a dissection lesson held at Reckova. Success in important circles was not long in coming. Back in Germany, the doctor published a paper (*Johannis Jessenii a Iessen, Anatomiae, Pragae, Anno M.D.C. abs se solenniter administratae historia*) describing the Prague dissection. In addition to his political dedication to all his work, *Anatomiae, Pragae* ended with verses written by Dr. Jessenius himself. The paper is a treatise on the internal organs but what it brings new is the description of their physiology as well as detailed descriptions of the sense organs.

<sup>7</sup> Jessenius, Johannes, 1566-1621. *Zoroaster: Nova, Brevis, Veraque De Universa Philosophia*. Wittenberg: Ex. off. Cratoniana, 1593, p. 18

Some critics credit Jessenius as the one who made known in Germany the work *Nova de Universis philosophia*, belonging to another scientist - Franciscus Patricius.<sup>8</sup>

Surgery was his hallmark in the field of medical sciences, and in 1601 Jessenius returned with a paper (*Institutiones chirurgicae quibus universa manu medendi ratio ostenditur*) in which he defended this science of pseudo-surgeons. Considering that the art of surgery cannot be practiced and mastered by anyone, the author claims a special status for it. The perspective that Jessenius brings is a completely innovative one.

For this enthusiast of the study of anatomy, surgery was the next and natural step of putting humanity at the service through its practical benefits. And we are referring here to the great surgery, which is all the more special in those times. The surgeons, according to the author, must not limit themselves to minor surgery but must have the courage to perform important operations on the internal organs or to remove congenital defects or tumors. The years to come will perfect him both in the art of surgery and in the handling of a growing number of surgical instruments. The doctor and semiology also pay special attention, because the correct diagnosis of some diseases brings with it the finding of the appropriate cure. In other words, Jessenius perceived medicine not as a science with separate fields but as a system of scientific knowledge in which every element from anatomical parts, physiology, semiology, to surgery, come to complement each other. This integrative vision is certainly of a humanist by definition.

In 1602, returning to Prague, Jessenius dissected the body of his brother-in-law who had died of typhus. The disease was wreaking havoc on the German military. Prague's cultural and professional climate is close to the doctor's, so he decides to settle there. In 1606, following a new plague epidemic, Jessenius published his notes on this scourge in his work *De cavenda tollendaque sopra consilium*. What this treaty brings new is the scientific perspective. Let us not forget that, desperate for the ravages of this disease for more than two hundred years, Europeans were trying to find explanations: from the ethnicity of the sick, to divine punishment or climate change.

Jessenius correlated proper hygiene with the decrease in the number of diseases, which led, in consequence, to the conclusion that this disease is a communicable one. At the same time, the doctor insisted on a varied diet, the use of spices and optimal hydration. Jessenius also studied the composition of the blood and stated that blood-letting was not a safe practice because it could increase the patient's weakness. This conclusion would arouse the opposition of the confreres who appealed to the blood-letting as a last chance for recovery. Like most cultured people of the time, Jessenius wrote texts on the medicine he practiced, treatises on communicable diseases and surgery, as well as philosophical and even lyrical works. He held the position of rector of two universities: Wittenberg and Prague.

Starting with 1608, a period of travel through several European states follows, as well as the publication of a historical work dedicated to the Hungarian monarchs *Regis Ungariae, Mathiae II. Coronatio* (1609). As a physician to King Mathis, Jessenius

---

<sup>8</sup> See *Patrizi and Natural Philosophy: The Zoroaster* by Johannes Jessenius, in *Fruits of Migration: Heterodox Italian Migrants and Central European Culture. 1550-1620*, Edited by Cornel Zwielerlein and Vincenzo Lavenia, Brill, Leiden, Boston, 2018, p. 63

accompanies his patron but also begins his work as a historian as he writes *Ad divum Matthiam Caesarem*. In 1617 he decided to settle in Prague as rector of the university there. Political involvement increased and in 1618 he was present at meetings of the representatives of the Czech states in Karlovy Vary. Ferdinand II arrests him and brings him to Vienna where he stays in prison for several months after which he is released. In 1620 he was arrested again this time and was convicted of *Crimen laesae majestatis*. The sentence was a particularly cruel one: cutting the tongue during life, beheading and tearing the body to four.

Understanding the need for knowledge not only cultural but also in connection with the human body itself, Jessenius published a work *Anatomiae, Pragae* (1601) dedicated to the dissection of the human body. The purpose of the text was not only purely scientific information, but much broader. Jessenius used this opportunity to advertise his guild but also to bring the anatomical knowledge of the body closer to the common man. In addition to the detailed description, as far as the state of knowledge of the time allowed, Jessenius made this text a rare culture by references to classical authors. Thus, his text proves to be a link between the art of dissection and culture. A completion of this work appeared in the same year under the title *De ossibus tractatus*. Although this period of the Renaissance was still dominated by mysticism, the vast majority of scholars intuited the need for scientific principles on which to base the study of medicine.

From a medical point of view, the Renaissance was based on the teachings of the ancients. The writings in the field from that period are very numerous. Our article focused, though not exhaustively, on personalities of medicine who also had literary inspiration. The most important feature of the period is the discussion of the separation of medicine from other arts but also of other sciences between them so that a specialization of each field can be made.

The fact that people of culture realized the need for these delimitations was a preliminary step in identifying distinct areas of scientific research, each with a separate set of applicable rules. At the same time, the problem of separating medicine from the humanities arose. This period of intellectual effervescence is characterized by the oscillation of scholars between knowledge based on philosophy or natural phenomena on the one hand and the religious, revealed by mystical intuition.

Doctors played a special role in this era of transition. They were the spearhead of change because they sensed the need for objective demonstrations, impartial research, highlighting weaknesses of certain theories and, in general, reasoned support for views. Being, together with the monks, almost the only ones who had the openness to culture, the doctors were the ones who understood the value of literature as a means of disseminating information. The secularization of the medical sciences was only the first stage of the social and cultural evolution that would come in the following centuries. Whether they wrote purely scientific texts or created literary texts, physicians were an important source of Renaissance writings.

**BIBLIOGRAPHY**

- Ladislav Borovansky. *Remembering Jessenius*, In *Jan Jessenius from Jasen. The course of the autopsy ceremoniously performed by him in Prague L.P. MDC, to which the Bone Treaty was attached*, pp.11-27, Prague: Karolinum, 2004
- Grell, Ole Ptere *Pracelsus. The Man and His Reputation, His Ideas and Their Transformation*, Brill, 1998
- Hannaway, Owen *The Chemists and the Word: The Didactic Origins of Chemistry*, Baltimore: Johns Hopkins UP, 1975
- Jessenius, Johannes, 1566-1621. *Zoroaster: Nova, Brevis, Veraque De Universa Philosophia*. Wittenberg: Ex. off. Cratoniana, 1593
- Jessenius Johannes *Patrizi and Natural Philosophy: The Zoroaster*, in *Fruits of Migration: Heterodox Italian Migrants and Central European Culture. 1550-1620*, Edited by Cornel Zwierlein and Vincenzo Lavenia, Brill, Leiden, Boston, 2018
- Leicester, Henry M.; Klickstein, Herbert S. *A Source Book in Chemistry, 1400-1900*, Harvard University Press, 1952
- Moran, Bruce T. *Distilling Knowledge: Alchemy, Chemistry, and the Scientific Revolution*, Cambridge: Harvard UP, 2005