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Theophrastus Paracelsus von Hohenheim: His Corpuscular Theory and the Spread of Paracelsianism

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The purpose of this article is to analyze Paracelsus's corpuscular theory in order to be explained how his theory redefined the terms of minima naturalia[1] *and semina rerum adding new terms, such as archeus. Initially the study refers to important information about his life and to historical theories of analysis of Paracelsus's corpuscularianism. Next, the paper undertakes a detailed analysis of his matter theory focusing on the terms of minima naturalia, semina rerum and tria prima. Finally, the research explains how Paracelsus's matter theory was adopted by his followers and constituted a controversial subject between the scholars of the sixteenth and seventeenth centuries, providing a different view of how his matter theory constituted a force key in the development of the Scientific Revolution.*

Introduction

Philippus Aureolus Theophrastus Bombastus von Hohenheim (1493-1541), known as Paracelsus, is one of the most important alchemists of the sixteenth century, since his philosophical theory influenced many subsequent physicians, alchemical and natural philosophers, such as Daniel Sennert (1572-1637). Although Paracelsus's matter theory has been investigated by many historians, he remains a controversial figure because of the complexity of his particle theory.

In this paper I will offer a detailed analysis of Paracelsus's corpuscular theory. Firstly, I will show what alchemical and philosophical theories inspired Paracelsus; secondly, the changes in the concepts of *semina rerum* ("the seeds from which things are formed") and *minima naturalia* (the smallest parts into which a homogeneous natural substance can be divided and yet preserve its essential character) in Paracelsus's theory; and, finally, the new terminology introduced by Paracelsus in his matter theory. I will also illustrate the influence that Paracelsus exerted on his contemporaries. I hope to demonstrate the importance of Paracelsus's ideas for subsequent vitalistic particle theories and for the development of Scientific Revolution, a term that historians of science use to describe the dramatic changes in scientific thought in the sixteenth and seventeenth centuries.

In order to achieve this purpose, the methodological tools, which were used, were the study of primary and secondary sources. Initially, the investigation of different oeuvres was necessary as Paracelsus's theory is not gathered into a

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1. For this and other terms used in this paper, please see the Glossary following the Bibliography.

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specific work, but is found scattered in his works. Of course, the difficulty of studying his original works must be emphasized. Many of his works and treatises began to be published and became widely known after his death by his followers, the Paracelsians. As a result, the bulk of spurious works attributed to Paracelsus throughout the sixteenth century has made it difficult to recognize the authentic and inauthentic works. The production of forgeries under Paracelsus's name was an integral part of the diffusion of Paracelsianism and many of those forgeries were widely read by scholars from many fields. For example, one of the most popular writings ascribed to Paracelsus, *De natura rerum*, which appeared in 1572 is a forgery production, but was well known and was read along with the genuine work *Archidoxis*.[2] For this reason, his matter theory has been explained mostly based on the works, which are authentic. Paracelsus's work *Opus Paramirum*, translations of his books[3] as well as the research of important historians were studied, with the intension of understanding his matter theory and the conceptual shifts that he created in it. Through the comparative history and important historical views a different historical exegesis of Paracelsus's matter theory has been proposed.

Paracelsus's Biography and Philosophical Theory

Paracelsus was born in 1493 in Einsiedeln, in the German-speaking Switzerland and lived his childhood in Villach of Austria. At the age of about fourteen, he studied as an apprentice of the alchemist Johannes Trithemius (1462-1516) studying all the popular beliefs of alchemy; while, simultaneously, he worked as an assistant in the mining school of Fugger near Villach.[4] This probably helped him to gain knowledge and experience in alchemy, medicine and mineralogy and may have influenced his later theories about the usefulness of metals in human health. Between 1513 and 1516 Paracelsus probably studied and taught medicine in Italy and from that period onwards travelled extensively in Europe, mainly as a military surgeon, spreading his theories and teaching alchemy.

2. Hiro Hirai, "Into the Forger's Library: The Genesis of De Natura Rerum in Publication History," *Early Science and Medicine* 24 (2019): 488. See also Thomas Willard, "Living the Long Life: Physical and Spiritual Health in Two Early Paracelsian Tracts," in *Religion und Gesundheit,* 347-380 (ed.) Albrecht Classen (De Gruyter, 2011), 348-50 and Didier Hahn, "Pseudo-Paracelsus: Forgery and Early Modern Alchemy, Medicine and Natural Philosophy," *Early Science and Medicine* 24 (2019): 415.

3. I have studied Paracelsus's translations on his authentic works *Opus Paramirum*, *Of the Supreme Mysteries of Nature, The Hermetic and Alchemical Writings of Paracelsus.*

4. Henry M. Leicester, *The Historical Background of Chemistry* (New York: John Wiley & Sons, 1956), 91-94.

Many historians, like William Newman, have shown that the German medical reformer was influenced by the traditional alchemical doctrines and techniques. However, what makes Paracelsus a major figure is that he wanted to distinguish himself from the traditional teachings of alchemy by sharply criticizing its doctrines, theories and methods. Paracelsus, considering himself a Christian physician, accused many scholars of not studying the nature properly and of referring to metals only in terms of sulphur-mercury, without including salt; and he blamed them of being only interested in the transmutation of metals into gold.

> "He will learn nothing from there is like the Heathen Masters and Philosophers, who follow the Substities and Crafts of their own Invention and opinions, such as are Aristotle, Hippocrates, Avicenna, Gallen etc, who grounded all their ARTS upon their own Opinions onely. And if it any time they learned anything from Nature, they destroyed it again with their own Phantasies, Dreams or Inventions, before they came to the end thereof."[5]

Although he knew many remarkable alchemical discoveries, he criticized many theories and techniques of his predecessors, explaining that many of them belonged to their fantasies. Therefore, he dealt with the alchemical doctrines, but he redefined and developed them in different directions, emphasizing that the main goal of alchemy is the creation of elixirs for the prolongation of life. He stressed that the alchemy is one of the four pillars of medicine, along with philosophy, astronomy and virtue of the physicians.[6] Thus, alchemy should be considered a process by which natural products were transformed to serve a new purpose.[7] Paracelsus sought the profound transformation of medicine by means of the art of alchemy and that is why his alchemical theory is really unique, as through it he changed the term of alchemy [8] by introducing a new term, iatrochemistry.

As many historical studies have proved Paracelsus, inspired by the Renaissance philosophical syncretism, was looking for the truth of God's work, which is hidden in Nature and in the Sacred Scriptures.[9] He stated that the process of knowledge is something that starts from our senses and goes beyond

5. Paracelsus, *Of the Supreme Mysteries of Nature. Of the Spirits of the Planets. Of Occult Philosophy. The Magical, Sympathetical and Antipathetical Cure of Wounds and Disease. The Mysteries of the Twelve Signs of the Zodiac* (trans.) R. Turner (print.) J. C. for N. Brook and J. Harison (London: Library of Congress, 1656), B2.

6. Paracelsus, *The Hermetic and Alchemical Writings of Paracelsus, Volume II* (ed.) Arthur E. Waite (1976), 148.

7. Antonio Clericuzio and Piyo Rattansi, *Alchemy and Chemistry in the 16th and 17th Centuries* (London, Boston: Kluwer Academic Publishers, Boston, 2013), 17.

8. Georgiana D. Hedesan, "Inventing and Alchemical Adept: Splendor Solis and the Paracelsian Movement," *Academia.edu* (2019): 68.

9. Hirai, *Le concept de Semence dans les Théories de la Matière à la Renaissance: de Marsile Ficin à Pierre Gassendi* (Turnhout, Belgium: Brepols Publishers, 2005), 180.

us. The knowledge of the world starts from what a man is able to see, but in order to understand the world itself, the man must understand the invisible part of nature. Paracelsus emphasized that reality is visible and invisible at the same time, and that invisible offers wisdom, while the visible offers knowledge.[10] The knowledge of the world comes through these two polarities, or otherwise through the "transmutation" of the invisible into visible and vice versa. As he stressed in *Opus Paramirum* (1529-1530), this is accomplished only through alchemy, which is the only true science that can help us conquer the divine plan of the world. For Paracelsus only the alchemist can penetrate the surface of bodies and discover their components, so that each of them can be seen and touched. The alchemist should create tinctures and elixirs and this can be fulfilled only if they find the quintessence of all things. Therefore in the world exists a quintessence.

> "The transforming and digesting art of alchemy is the signature art of the medical author who understands nature itself as the bearer of a macrocosmic stomach or archeus,(…) the diseases associated with tartarus (…) such processes (…) are interpreted in the Sixth Treatise on the basis of macrocosmic processes in nature."[11]

The alchemist can create *tartarus* with the help of this quintessence, which many times is called *archeus.* This quintessence is an occult supreme power within the cosmos and was conceived as a double nature, the visible or earthly and the invisible or astral; and these two parts are in every living or lifeless being.

Additionally, Paracelsus supported the theory of correspondences between the world, "macrocosm", and man, "microcosm". All parts of the human body correspond to natural things and planets. This correspondence is achieved through "sympathy" and "antipathy", which are the invisible forces of nature and are identified with the invisible and occult *spiritus*, or quintessence, which has a lesser corporeality. In the "microcosm", man, the *spiritus* is the mediator between the intangible body of the soul and the material body, and it develops the soul by building the "astral body". Consequently, Paracelsus added an *anima* or soul into the human corpus *spiritus* and this *anima* is the living breath of God.

However, what really distinguished him from his predecessors is his theory of natural bodies. As claimed by Paracelsus matter is composed of *tria prima*, namely salt, mercury and sulphur. This theory was an extension of the medieval alchemical theory of pseudo-Geber sulphur and mercury, and was not deprived of the gendered allegory of the alchemists, since in many of his treatises, like *Philosophia de Generationibus et Fructibus Quatuor Elementorum*, he called sulphur "male seed" and mercury "female seed". Paracelsus stated that these principles are not really referred to the well-known substances, which bear the same name

10. Clericuzio and Rattansi, *Alchemy and Chemistry in the 16th and 17th Centuries*, 2013, 18.

11. Paracelsus, "Opus Paramirum," in *Paracelsus Theophrastus Bombastus von Hohenheim 1493-1541: Essential Writings* (ed. and trans.) Andrew Weeks, volume 5 (Leiden-Boston: Brill, 2008), 19.

"*These are certainly distinct from the common substances of those names.*"[12] Generally, it could be supported that the t*ria prima* are constitutive of all bodies albeit invisibly. The sulphur, or *feuer* or *resina*, is the "male seed."[13] The mercury, or *cataronius*, is the noblest and "female seed."[14] Lastly, the salt, or *balsam* can be characterized as the "neutral seed."[15] The *tria prima* are not always the same in all physical bodies, but differ qualitatively and quantitatively.[16]

According to Paracelsus alchemists could extract these three principles from a body and inject them into powerful medicines.[17] The *tria prima* operate within the living body as occult force and there is only one way to make them visible, hence to demonstrate their existence. This method was fire.

> "That is to say, the fire proves the three substances and presents them pristine and clear, pure and clean"[18] "The fire in the furnace is compared to the Sun"[19] "Now we come to speak of a manifold spirit of fire, which is the cause of variety and diversity of creatures (…) for the transmutation of the fire is made in the elements, in which the bodies it is imprinted by this fire."[20]

For him this fire comes from Heaven. He did not perceive fire as an Aristotelian element. He viewed it as being something more spiritual and active than the sublunary elements and one of its roles was to separate bodies. This philosophical separation was a fundamental act to create the invisible to visible, and the spiritual to material. Thus, with the help of fire, alchemists could extract from a body its fleeting "spirits" and *tria prima* and incorporate them in medicine.

Also many historians have explained that Paracelsus, insisting that the cures were part of nature, accepted the homeopathetic Germanic folk tradition that "like cures like"[21] and the "action at distance" through which he explained the transmission of diseases, especially the pandemic ones, and how to fight them through the knowledge of the composition of matter. For example, he stressed that mercury asserted itself as the only effective cure against syphilis.[22] Opposing

12. Ibid, H 1:74, 321.

13. Ibid, H 1:79, 332.

14. Ibid, H 1:78, 331.

15. Ibid, H 1:79-H 1:80, 332-333.

16. Clericuzio and Rattansi, *Alchemy and Chemistry in the 16th and 17th Centuries*, 2013, 22.

17. Hedesan, "Theory in the Seventeenth Century: Robert Boyle Against the Paracelsian Tria Prima," *Springer* (2016): 17-18.

18. Paracelsus, "*Opus Paramirum, The First Book,"* 2008, H 1:69, 305.

19. Paracelsus, "*Of the Supreme Mysteries of Nature, Chapter I*," 1656, 2.

20. Paracelsus, "*Of the Supreme Mysteries of Nature, Chapter II*," 1656, 3-4 (B4).

21. Paracelsus in his work *Opus Paramirum* and, especially in the treatise "*On the invisible diseases*", explained that the physician should investigate the poison that have caused the disease and process it to use it as an antidote (H 1:239, H 1:244).

22. Emma Priesendorf, "Paracelsianism and the Theoretical Foundation of Chemical Medicine," *History Matters* 12 (2015): 73.

to the phlegmatic humour theory of Galenic medicine, Paracelsus developed his corpuscularianism in order to comprehend nature. Through it he explained that the diseases of human body are due to dysfunctions caused within the body itself, when the *tria prima* are not in the proportion they should be, stressing that a major cause of diseases is the extraterrestrials seeds, which are found in nature and are harmful, when they enter and settle in specific organs affecting their vital force. As they deregulate the ratio of the three principles. While, at the same time he supported that some invisible diseases are caused by evil powers and devil himself, and only the miraculous powers of God could help the recovery of the body.[23]

Nevertheless, despite the fact that his theory has been analyzed by many historians, Paracelsus's corpuscularianism is really complex and is still being investigated. Many studies have been done, so as to understand Paracelsus's theory and the importance of the concept of *semina rerum*, but usually the term of *semina* was primarily understood only in the field of iatrochemistry, where *seeds* were conceived as an external factor, which affected health.[24] Two of the historians, who dealt extensively with the term of seed in Paracelsus's theory, is W. Pagel[25] and H. Hirai.[26]

Despite the great contribution of the historical studies, there is still a strong controversy regarding Paracelsus's corpuscularianism.

Paracelsus's Matter Theory

Paracelsus presents his theory mostly through his cosmotheory, which is analyzed in different works (the most important of them is *Opus Paramirum*). Initially Paracelsus explains that before the creation of the world there was nothing, God created all things by bringing something (*etwas*) out of nothing (*nichts*). Thus, he proposed the "Creation *ex nihilo*". "*God created all things. He created something out of nothing. This something is a seed. This seed indicates the end of its predestination and its functions.*"[27] He considers creation itself as a chemical

23. Paracelsus, "*Opus Paramirum, On the Invisible Diseases,*" 2008, H 1:242- H 1:243, 21.

24. For example Newman in his article "*Bad Chemistry: Basilisks and Women in Paracelsus and pseudo-Paracelsus*" explains Paracelsus's theory about *homunculus* and *basilisks* and how it was adopted, while the historian Hedesan has done important research on the nature of *imagination* and on the meaning of the *vegetable stones* and *seeds* in Paracelsus works.

25. Walter Pagel, *Paracelsus: An Introduction to Philosophical Medicine in the Era of Renaissance*, 2nd Edition (Basel: Karger, 1982), 122-124, 127-128. See also Pagel, "Paracelsus and the Neoplatonic and Gnostic Tradition," *Ambix* 8, no. 3 (1960): 130-131.

26. Hirai, *Le concept de Semence dans les Théories de la Matière à la Renaissance*, 2005, 181-186.

27. Paracelsus, "Labyrintus, V," (ed.) Sudhoff, 1922-1933, t.11, 187.

process of separation. God showed the archetypal word *fiat* at the beginning of the world, and with the use of the word *fiat*, He created the "first cause" of prime matter or the primordial immaterial seed of the word, the *yliaster*, creating everything of it. Paracelsus was obviously influenced by the Bible and the Holy Scriptures. As it is mentioned in the Bible, God created the world in seven days through his Will and his Word, accordingly Paracelsus explains that God through his Word created the cause for the creation of the first immaterial particles. The great *yliaster* can be conceived as the spiritual primordial seed or as the world-soul, which contains in it all the necessary information about the creatures and things that will be born and it gives birth to the four Aristotelian elements. Hence, this divine seed or world-soul can be conceived in two ways. Either as it is enclosed within itself the four elements and all the archetypes of their seeds, as well as all the particular seeds and the *tria prima* of all bodies and their powers, [28]or as the soul or breath of the cosmos, which is necessary for the creation of the four elements and all the archetypes of their seeds in order the particular seeds and the *tria prima* of all bodies and their powers be created. "*In the beginning, the yliaster, (…), was divided and given, fabricated and ordered the four elements. It is only such a seed from which a stem grows (...) The stem, which was born from the yliaster, that is to say the four elements.*"[29] It should be stressed that when God created the *yliaster* and made it possible to be divided, He did not need to act directly in the matter. We can support that, in Paracelsus's cosmotheory God is omnipresent, but He does not act directly in everything. Hence the *yliaster* is not only a world-soul or the first primordial seed, which contains the God's Will, but it also acts as an intermediate factor of God.

Continuing Paracelsus elucidates that God divided the *yliaster* into four parts and that is how the four Aristotelian elements, water, air, fire and earth, were created. The four Aristotelian elements are also immaterial and each one of them is responsible for the creation of all natural things and for the diversity that exists between them. The air is Heaven and circumscribed all the things. The fire is the firmament responsible for the phenomena of weather. The earth is responsible to give the vegetable fruits and the water is responsible for the birth of all the stones, minerals and their ores. It is significant that Paracelsus, although he was inspired and used the Aristotelian elements in his matter theory, he changed their meanings and their qualities. He stressed that each immaterial element has only one quality or nature. Fire is hot, water is moist, air is dry and earth is cold. For him the four elements are not the Aristotelian material causes of the natural bodies, but they are

28. Henrik Langerlund and Benjamin Hill, *Routledge Companion to the Sixtennth Century Philosophy* (London: Routledge Taylor & Francis Group, 2017), 406-407. See also Hirai, "Logoi Spermatikoi and the Concept of Seeds in the Mineralogy and Cosmogony of Paracelsus," *Renue d'Histoire des Sciences* 61, no. 2 (2008): XIV.

29. Paracelsus, "*Philosophia of Generationibus Quator Elementorum,* I," (ed.) Sudhoff, 1922-1933, t.19, 9.

cosmological receptacles. They are the matrices, which contain *tria prima* and the particular seeds of all natural things.

> "(…) so reliable the three substances, which are the Salt, Mercury and Sulphur, that prove themselves in regard to the four generations, that they are brought into the nature of the four mothers and elements."[30] "Like someone who has in a bay all the seeds of the world gathered and who sows them in the garden, this is the Nature (…) Not only must it be understood in this way, but also in the case of the element "water", as if it were a bay in which would be contained bare all the seeds and as if they were sown. (…) So the God has ordained the miracles of his Creation in the four elements."[31]

Therefore, Paracelsus stresses that the four Aristotelian elements are the matrices, which have been created by the division of the great *yliaster*. They are the vehicles of all living and lifeless beings around us and each element is responsible for the creation of different natural things. For example he states that the mother of the minerals is the water:

> "God transformed this ultimate material into raw material. Like a fruit which must generate another fruit, as a seed (…) So the ultimate matter of minerals is transformed into a raw material that is into a seed. And this seed is the element water (…) The water is an element and a mother, a seed and a root of all minerals."[32]

In another part Paracelsus refers:

> "Before heaven and earth were created, the spirit of God hovered upon the water and was carried by it. This water was matrix. For in this water heavens and earth were created (…) In it the spirit of God was carried (…) On account of this spirit (…) the human being has been created in it, and the spirit of the Lord within him (…)The water is the vessel of the seed." [33]

That means that God created each element through the *yliaster*, so as to carry His spirit, His soul, and even human beings have been created from a specific element, *water*, and *water* is the vehicle of specific seeds, which are responsible for the individuality of all things, and also contains inside it the *tria prima,* which are united with the particular seeds. Therefore, according to Paracelsus, the four elements have not exactly the meaning of *minima naturalia,* but they are the cause of the creation of *minima naturalia*. They are immaterial and their body is invisible, because they are spiritual in essence. A thing made of an element means that is not made of the body of the element, but of its essence, which is conceived as its

30. Paracelsus, "Opus Paramirum, The Second Book, II," 2008, H 1:115, 433.
31. Paracelsus, "De Mineralibus, I," 1922-1933, t.3, 41-42.
32. Ibid, 34-35.
33. Paracelsus, "De Matrice, Book VI," 2008, H 1:202, H 1:205, 645, 651.

soul or spirit. The three Paracelsian principles are what really gives a material subsistence in the elements.

The bodies of the four Aristotelian elements have been created so that they can be divided into three parts and these three parts of each element are the three principles, *tria prima*. Thus, each body of the elements and their fruits are made up of the union of *tria prima*.

> "Without the three nothing can grow, they become elements and subsequently lose their name yliaster and are now called elements (...) There are thus the four elements or only the first three (…) And there is only one everywhere of the first three, that is to say a mercury in all, a Sulphur in all, a Salt in all, but differentiated by the character."[34]

Paracelsus proposes that the three principles complete each other and together they create each Aristotelian element. Without the union of *tria prima* nothing grows up. That illustrates that the three principles are the real cause of the materialization of the world. Every natural thing has been created by the three principles and everything in this world differs from the others, because in each element the three principles are differentiated.

> "It is therefore to be known that this variety of Metals is made of the mixture of the Elements, because that their spirits are also found divers and without similitude; (…) but the manifold variety of forms interceding, hath introduced the same among the creatures. From this is may easily be gathered, why so many and so various forms of Metals are found, and wherefore there is none like to another."[35]

The variety of the *tria prima*, seeds and spirits, which also reside in them, are the real cause of why the metals have different form and characteristics. For the same reason all natural things are different from each other, because not only do they have different three principles, but also because their *tria prima* are reside in different elements. In more simple words, we can support that each element is responsible for the variety of the species, and the differences, which exist inside the same kind, are caused by the variety of the *tria prima,* seeds and spirits, which reside in the element.

The concept of *tria prima* is very important, as it constitutes the core of Paracelsus's corpuscular theory. The three principles are not material or spiritual, but something in between, as they are immaterial but they compose the real reason of the materialization of all natural things. Therefore, we can support that for Paracelsus *tria prima* have the meaning of *minima naturalia*, but he created a conceptual shift in this concept. *Minima naturalia* is generally considered the smallest point of matter, the smallest particles, from which the larger ones are

34. Paracelsus, "Philosophia of Generationibus Quator Elementorum, I," 1922-1933, t.13, 14-15.

35. Paracelsus, "Of the Supreme Mysteries of Nature, Chapter III," 1656, 4.

created. However, the three principles are not material. Of course, they are the minimal matter (*minima naturalia*), but as principles, they are immaterial. These immaterial principles are integral and necessary for the creation of matter. Furthermore, *tria prima* not only are the cause of materialization of all natural things, but also the alchemist through the technique of fire can extract these principles in order to understand the nature and to use them for making *arcana* to cure all the diseases. Thereafter, these immaterial principles become material or they are something like spirits as only in this way could the alchemist extract them. Thus, Paracelsus creates a conceptual shift in the meaning of *minima naturalia*, as according to him everything in the world has been created by and because of the three principles.

> "Three are the substances that thus give each (being or thing) its corpus. That is to say that each corpus stands in three things. The names of these three things are sulphur, mercurius, sal. When these three things are put together, there is that which is called corpus and nothing is added to them but life and which pertains to it. Thus when you take a corpus in hand, you have invisibly three substances."[36]

The three Paracelsian principles are dynamically present in all things, thereby qualifying nature and all objects within them as both divine force or virtue and process. Paracelsus claims that if the alchemist dissolves any natural thing around him, he will get sulphur, mercury and salt. But, in reality, the *tria prima* are not the same in every natural thing. They are multiple, because each natural thing is made up of its own sulphur, salt and mercury. "*For just there are many sulphura, there are also many salia (…) for this reason, it can be said that there is a single mercurius, which has as many forms and distinctions as there are sulphura and as there as salia*."[37] So, there are as many kinds of *salts* as there are many natural things around us and everything is always made up of its own unique three principles. That is why every natural thing around us differentiates from the other. Nevertheless, at this point we should notice that Paracelsus stresses that there are so many and different salts and sulphurs as all the things, but only one mercury with different forms. That is because of the nature and properties of *mercury*. In *Opus Paramirum* (1531) Paracelsus states:

> "That which burns and appears fiery to the eyes is sulphur; its consumes itself; for it is volatile"[38] "From the sulphur the corpus grows (…) Next comes the congelation of the corpus from the salt. (…) Finally, the third thing is mercurius; this is the liquor.(…) For this reason, it can be said that there is a single mercurius which has as many forms and distinctions as there are sulphura and as there as salia (…) these

36. Paracelsus, "Opus Paramirum, The First Book, II," 2008 H 1:73, 317.
37. Paracelsus, "Opus Paramirum, The Second Book, I," 2008, H 1:107, 413.
38. Paracelsus, "Opus Paramirum, The First Book, II," 2008, H 1:74, 321.

> three things are the human being, which is to say a single corpus (…) The mercurius is a (form of) smoke; for it does not burnt, but instead flees from the fire."[39]

For him salt is a solid component of matter, that means that it is responsible for the colors, balm and the coagulation, as it preserves the things from the corruption and endows them with solidity. Salt applies for compaction, freezing and unification. Sulphur is considered to be the combustible or flammable element, which make the things more or less combustible and formats the body. This means that it gives the body substance and construction. Sulphur indicates the body where manufacturing can start. Finally, mercury is a liquid and is only one with different forms. Mercury is the volatile or fluid principle, which makes things unstable, fluent, fugitive, vaporous and spiritual. Hence, mercury gives virtues and properties in every natural thing and can create drugs, *arcana*. In more simple words, for Paracelsus mercury has probably the meaning of the Aristotelian form or of the Neo-Platonic soul, and that is why mercury is only one and not so many as there are the salts and sulphurs, because it has different forms and distinctions. "*This body hath not this power and virtue in itself, but from the spirit of the Sun which is included therein; for we know that the Sun is the body of Mercury*."[40] Indeed for Paracelsus mercury is the most important of the three principles, because it corresponds to the power of the Sun, the most important celestial body, as the sun is responsible for the life of the planet. Nothing can exist without *tria prima*. But how are the *tria prima* united with their elements and how do they act?

To be able to unite *tria prima* with their elements and seeds and explain their behavior Paracelsus uses inside his theory a vitalistic occult power.[41] According to Paracelsus, into the *yliaster* seeds may exist, which have been carried by God and, sometimes he declares that they create the elements or, sometimes that they are the elements themselves, as he also refers to elements as seeds. I reckon, that this is because the same term of seeds is used with two different concepts inside his matter theory, one spiritual and one metaphorical, or we could support that it has a double nature. In his work *De mineralibus* (1526-1527) he states:

> "Like a fruit which must generate another fruit, it has a seed. This is found in the raw material. So the ultimate matter of minerals is transformed into a raw material that is into a seed. And this seed is the element "water". God has determined that there is water. He created it in Nature to produce the ultimate matter. This is in the water and take what is in it. It is subject to its strength and its preparation. It separates what is part of metals into metals and classifies each metal in its own way (…) He also

39. Paracelsus, "Opus Paramirum, The Second Book, I," 2008, H 1:106- H 1:107, 411-413.

40. Paracelsus, "Of the Supreme Mysteries of Nature, Chapter III," 1656, 5.

41. Paracelsus created the term of *archeus* in order to explain some functions of the *tria prima*.

> created for element water a harvest and an autumn so that all things may have their harvest and their fall in due time."[42]

Therefore, Paracelsus refers the element of water as a seed, so as to be easier for him to explain how the elements have been created and sown by God. While at the same time he uses the term of *semina* in order to explain the particular spiritual seeds, which exist inside the elements. He proposes that from the *yliaster* the seeds of elements come. In the element of water resides a seed, which is responsible for the creation of the prime matter (*material prima*), so as the minerals be created. Hence, the element of water is the vehicle of the individual ultimate matter of the minerals. For the minerals or any other thing be created into their final stage of their development (their ultimate matter), the seeds, which are in the element, are unique and responsible to grow accordingly to the specificity of its species already programmed in it.[43] Additionally, he interposes a specific agent of God, an occult power, in order to explain the specific separations and creation in all things. He explains that in the great *yliaster* a quintessence also exists, which is a power of specific form[44] and hints the degrees of matters. The quintessence activates the seeds inside the elements, in which the prime matter are (*material prima*). This quintessence is the original state of the entity and possesses the matter and its essence exclusively. The quintessence can be conceived as a soul, which governs the elements and the seeds and makes them adopt definite characteristics. Paracelsus identifies this quintessence as *arcanum* or *archaea* (*archeus*), when he refers to the nature of minerals or of human beings, and *vulcanus*, when he refers to minerals or other natural things.[45] So, in each element, which encloses the particular seeds and *tria prima*, there is also the *archeus*, which is conceived as the quintessence or the spirit of God that acts as a "small alchemist", who furnishes the *tria prima*. The *archeus* sleeps in the element and, when it awakes, it activates the particular seed and *tria prima*, in order to create every natural thing. As Reijer Hooykaas states in his work about Paracelsus:

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42. Paracelsus, "De mineralibus, I," 1922-1933 t.3, 34-35.

43. Paracelsus expresses the idea of the predestination. According to the Christian idea of predestination God has "programmed", in the beginning of the Creation, how all the animated and unanimated things will be, their final stage.

44. The Paracelsian quintessence is probably inspired by the Aristotelian theory of matter or by the Neoplatonic theory of soul. We should bear in mind that when Paracelsus mentions the term of quintessence in his theory about the celestial bodies, he usually refers to the element of *aether*, but when he mentions the term of quintessence in his matter theory, he refers to the *archeus.*

45. Eugene Kuzmin, *Alchemical Imagery in the Works of Quirinus Kuhlmann (1651-1689)* (Oregon: Sirius Academic Press, 2013), 156. See also Langerlund and Hill, *Routledge Companion to the Sixtennth Century Philosophy*, 2017, 406-407; Hirai, "*Logoi Spermatikoi and the Concept of Seeds in the Mineralogy and Cosmogony of Paracelsus*," 2008, VIII.

> "the 'Archeus terrae', the earth spirit, guides theirs Development. Not only that the Archaeus as an externally working principle of life Promotes the formation of minerals, a spirit of life is also assumed in the minerals. Out the spirits of life come out of the air and with the help of Archaeus seek one to them matching body. Conversely, the body only accepts what is "spiritual to it", such as wine."[46]

Thus *archeus* plays a major role in Paracelsus's theory, because it helps him explain how the occult forces activate *tria prima* and unite them with the particular seeds.[47] He also uses the *archaea* in order to explain the generation of people.

> "The human being has his prima material in the limbus, which was the sulphur, mercurius and sal of the four elements which were combined into a human."[48] "As for the sperma (…) it is limbus and does consist of the four elements and it possesses a certain array of powers. These powers are properly known as impressions, (…) God inherits everything from limbus; He inherits it instead from the limbus; for he has been made by the hand of God."[49]

He describes that in the generation of people, for which the women's womb has a precious value, the *archeus* lives in the limb of the sperma of the man and then inside the womb of the woman, the *archeus* or *architect* is activated and is responsible for making the *seeds* of the man fertile. Inside the *sperma* are the elements and *tria prima*, which are able to grow up and create a new human being. Furthermore, he explains that the *archeus* has the impressions, which belong to the Heaven and have been created by the God.[50] Therefore, the *archeus* or *vulcanus* is an invisible occult agent, which activates the seeds and the three principles, in order to have their specific properties. This is how Paracelsus explains the relationship between *tria prima* and their elements and particular seeds; and the unity between the invisible and visible matter.

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46. Reijer Hooykaas, *"Die Chemische Verbindung bei Paracelsus"*, Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften," *Jstor* 32, no. 3 (1939): Bd.32, H3, 167-175.

47. That is one of the main reasons that the Paracelsian matter theory is considered vitalistic, as he used occult theories in order to explain the composition of matter. Of course, instead of *archeus,* he could have used the power of God, but the Paracelsian God, was an omnipresent God, who did not act directly in the matter. From his works it becomes clear that Paracelsus prompted the idea that God created occult powers, so as to govern and help the proper functioning of the world and everything in it.

48. Paracelsus, "Opus Paramirum, The First Book, II," 2008, H 1:76, 325.

49. Paracelsus, "Opus Paramirum, The Second Book, VII," 2008, H 1:135- H 1:137, 487-493.

50. Hedesan, "Paracelsian Medicine and Theory of Generation in "Exterior Homo", a Manuscript Probably Authored by Jan Baptiste Van Helmont," *Medical History* 58, no. 3 (2014): 387.

> "I must say now that we have to understand how the three things unite in one body. Take this example, every seed is a triple seed (…) As only one seed appears, we see that these three things are one (…) When the growth begins, these three elements grow each being mixed and united in its nature, in a body not in three (…) so these three things give one body and they are invisible in this one."[51]

In every Aristotelian element there is a specific seed, which contains the necessary information for the thing that will be created and probably activates the *tria prima* with the help of *archeus.* The three principles are immanent there and act as one body. According to their function and characteristics, they grow and create every kind of natural things.

Also, inside the elements there are seeds, which are called "little seeds" or "centre". These seeds are invisible, particular for every natural thing and are activated by *archeus* in order to start the creation of the prime matter. This means that the seeds with the help of *archeus* either contain all the important data for the future natural things and activate the three principles, which are probably enclosed in them, or are united with three principles and being inside them, as *tria prima* also bear the necessary information for the future natural things. The only sure, as Hirai has supported, is that the three principles acquire some of their characteristics, because of these seeds, which have a connection with the *yliaster* and the spirit of God.[52] Or in other words, the specific seeds, which are responsible for the different characteristics of *tria prima*, already contain in them God's Will, because they have been divided into different elements by the *yliaster*, which initially contained them. The three principles, when are activated with the help of *archeus*, they "grow" and act as the soul, the spirit and the essence of this element and, in relation to their properties, they take their final form, ultimate matter. Thus, according to their element, their specific seeds and their properties, the three principles with the help of *archeus* are responsible for the creation of all natural things.

Consequently Paracelsus's corpuscular theory is based on the concept of *tria prima*. Of course his theory is complicated and in some parts he does not explain explicitly the role of seeds or *tria prima.* Nevertheless, it is really fascinating how he achieves to present, firstly, how the world and all things have been created; secondly, the synthesis and function of matter; and thirdly, how matter decomposes and dies. The German physician, believing that the generation of the things is just like the generation of the living beings, elucidates that the elements of the three principles suffer death as much as all the other things.[53]

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51. Paracelsus, "Opus Paramirum, The Second Book, II," 1922-1933, t. 9, 82.

52. Hirai, *Le concept de Semence dans les Théories de la Matière à la Renaissance*, 2005, 196-197.

53. It is fascinating that Paracelsus supports that only the elements are subject to decay and death and not the *tria prima*. This is probably because elements contain inside them the predetermined information of their death, which God has given. According to

Paracelsus's theory is characterized vitalistic, as he used occult powers, like *archeus*, which are distinct from chemical or physical forces. He was inspired from his predecessors alchemists, but he changed the concept of many terms and redefined alchemy by placing it on the "altar" of medicine. Firstly, it is obvious that Paracelsus was influenced by the alchemical medieval two principles of sulphur-mercury. He used this doctrine adding a third principle, salt, so as to explain the composition of matter. However, he changed the meaning of the two principles, since the *tria prima* were considered neither elements, nor incorporeal spiritual forces, nor had the common concept of *minima* particles from which matter is composed, but were something among these three. Indeed it can be supported that Paracelsus created a conceptual shift in the term of *minima naturalia*. *Tria prima* are invisible immaterial elements, which are responsible for the creation of matter, but the alchemists through a specific procedure could extract them. Therefore, the three principles are not something completely material or spiritual, but the *minimal* immaterial-material elements, which, although they are spiritual, can be extracted and create corporeal matter. Secondly, Paracelsus was inspired by Aristotelianism, as he used the four Aristotelian elements, as well as the divine element of aether, but he changed their functions and meanings. For him the elements were not conceived as the *minima* elements, which constitute the matter, but they were incorporeal matrices of *tria prima,* which could not exist without the three principles. The four Aristotelian elements were now responsible for the creation of *tria prima* and were equally important as *tria prima*, but they acquired a different meaning into his theory.

Thirdly, it becomes clear that Paracelsus was influenced by Neo-Platonism and the theory of *semina rerum*. In Middle Ages, the doctrine of *logoi spermatikoi* became popular among the scholars. In the Stoics' system *logoi spermatikoi* were responsible for the transmission and preservation of the specificity of each type of natural thing. Plotinus (205-270 AD) used this idea by modifying and spiritualizing its materialist content, while Augustine (354-430 AD) through his theory of seminal reasons transmitted into the Latin world and Christianized the theory of the incorporeal *logoi spermatikoi.* Nevertheless, the most important scholar for the establishment of *semina rerum* was Marsile Ficino (1433-1499). Ficino developed a theory, which is based on the rule of the "seminal force" over matter, and linked it with the Thomistic understanding of Aristotelian forms. As a result, in the period of Renaissance, the theory of *semina rerum* for the understanding of composition of matter was really common, and sometimes the alchemists comprehended the two volatile or active principles of sulphur and mercury as seeds. Thereafter, it is obvious that Paracelsus was influenced from the Augustinian or Ficinian tradition, as well as from the medieval alchemical

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Paracelsus, alchemists can extract *tria prima* from a corpse, so the three Paracelsian principles are not destroyed or die and continue to bear their properties. This means that *tria prima* cannot provoke corruption and death.

doctrines.[54] Last but not least, in Middle Ages some alchemists stressed that alchemy had to be used in medicine using the meaning of *semina* in their theories. One of the most important was Jerome Fracastor (1478-1553), who attacked to Galen's doctrine and used the concept of seed to explain the diseases that are transmitted through direct contact. Thus, as the historian Hirai supports, Paracelsus had probably been inspired by Fracastor's theory about the *seminaria contagionum*, "*semina* on contagions" using the term of seeds in order to explain some diseases.[55]

Conclusion

Paracelsus wanted to break the tradition in order to develop a different form of science in medicine and, by studying his corpuscular philosophy, we can claim that he achieved it. Through his alchemical theory, not only did he introduce iatrochemistry, but he succeeded a "scientific shift", as he created conceptual shifts and new terms. His theory of *tria prima* was the milestone for many later corpuscular theories and, even if some scholars criticized it, they were so influenced by him, that they tried to prove through their theories whether or not Paracelsus's theory is valid. His natural philosophy is so crucial that some historians, like Lucien LeClerc, stressed that the first major confrontation of the Scientific Revolution was between Paracelsus and Galen, rather than Copernicus and Ptolemy,[56] and they placed Paracelsus at the beginning of the moment aimed at breaking with antiquity and Middle Ages by constructing a completely new form of alchemy and medicine from fiat principles.

Having thoroughly analyzed Paracelsus's corpuscularianism, we can affirm and strengthen this view, as Paracelsus proposed a new form of thought. Paracelsus was influenced by his predecessors, however he brought a huge "drop" in the continuation of the "normal science" of alchemy by proposing a different "paradigm". According to him alchemy should be put in the service of medicine. His theory and statement was not something really extraordinary or new, since many alchemists before him were interested in medicine and created elixirs or worked as physicians. What was really new is that for Paracelsus the main goal of alchemy is medicine. He did not just believe that alchemists could contribute in medicine, but stressed that they are the real physicians and nobody should follow the Galenic doctrine. The alchemists must study metallurgy so as

54. Langerlund and Hill, *Routledge Companion to the Sixtennth Century Philosophy*, 2017, 405. See also, Hiro, "Logoi Spermatikoi and the Concept of Seeds in the Mineralogy and Cosmogony of Paracelsus," 2008, III-IV; Hirai "Seeds Sprouting Everywhere," *Annals of Science* 64, no. 3 (2007): 413-415.

55. Hirai, *Le Concept de Semence dans les Théories de la Matière à la Renaissance*, 2005, 73-75.

56. Lucien Leclerc, *Histoire de la Medicine Arabe: Les Sciences en Orient* (Paris: Ernest Leroux, 1876), 358.

to examine their substances for understanding the nature in order to use this knowledge for the creation of *arcanas* for human health. That is probably one of the main reasons why he built a corpuscular theory. Hence, we can support that Paracelsus created a "transformation of the paradigm", as he opposed to every previous authenticity, even Aristotle's theory, promoting a new critical thought, which he believed would lead the alchemists into the Truth. Additionally, Paracelsus not only did establish *tria prima*, but he changed the meaning of *semina rerum* and *minima naturalia*. He used the meaning of seeds with two different meanings, one metaphorical and one spiritual; and proposed that *tria prima*, the *minima* particles, are not material but immaterial and at the same time can be extracted. Thus, Paracelsus supported a new "paradigm" and provoked an "anomaly" and a rift with previous alchemical matter theories. As Kuhn proposed a new theory "*to be accepted as a paradigm, a theory must be seem better than its competitors*."[57] Indeed Paracelsus's theory was accepted and was followed by the majority of the alchemists of the sixteenth and seventeenth centuries, who supported that his theory was better than the Galenic theory. Paracelsus's philosophy was the milestone for many scholars of that era; and through the analysis of his particle theory we can declare with tangible arguments that he provoked a "scientific shift". Hence, alchemy participated in the "Scientific Revolution"[58] and this statement can be supported throughout the analysis of the development of Paracelsianism.

The significance of the Paracelsian theory became apparent as early as the beginning of the sixteenth century, when many followers of Paracelsus, such as Adam de Bodenstein (1528-1577), began to edit and publish his manuscripts regardless of their authenticity. In fact, the chronicler Daniel Specklin regarded the year 1517 as one of particular importance in the cultural history of Europe, marked by the efforts of Paracelsus, who became known as the Luther of medicine.[59] Petrus Severinus (1542-1602) and Oswald Croll (1563-1609) were among the first known physicians to publish detailed responses about the German reformer. Particularly Severinus can be characterized as the most important follower of Paracelsus, because through his work *Idea Medicinae* (1571) not only did he explain Paracelsus's philosophical theory, but he promoted Paracelsianism in whole Europe. As a result, during the second half of the sixteenth century, the manuscripts of Paracelsus circulated, studied and printed. In France, the medical community was quickly split into Galenist and Paracelsian camps that violently argued about the therapeutic usefulness of chemically prepared mineral-based

57. Thomas S. Kuhn, *The Structure of Scientific Revolutions* (The University of Chicago, 1970), 17.

58. I use the term of "Scientific Revolution" as it was proposed by Kuhn and is still used by many historians of science.

59. Charles Webster, *From Paracelsus to Newton: Magic and the Making of Modern Science* (Dover Publications, 2005), 3-4.

drugs. The French Paracelsianism reached at its zenith between 1610 and 1650. Accordingly, in Germany Paracelsianism was mostly connected with religion. Protestant ideologists drew the Paracelsians into their seemingly endless debates about the nature of medicine and what the implications of the Paracelsian theory are, using the religious dogma and secondary texts proliferated.[60] In fact, the impact of Paracelsian dogma in Germany was so huge that the Protestants had to rack their brains over the writings of Paracelsus, before they began to attack the religious and radical church critics. What is really crucial is that even if in Germany Paracelsianism was considered a threat for the church, in England Paracelsianism was identified with the Protestantism. The English Paracelsianism is largely featured after 1650, where the English Paracelsians had to confront both Aristotelians and Galenists. Paracelsians hoped to replace the old doctrines with the Christian, Neoplatonic and Hermetic, Paracelsian theory, which, as they claimed, could analyze all natural phenomena. Consequently, we comprehend that Paracelsus's theory was adopted, modified and was integrated in different ways. There is no unanimity in the Paracelsian dogma, because, depending on the country and their religious or political beliefs, Paracelsians changed and modified their teacher's theory. Nevertheless, many historians have shown that Paracelsians shared some common ideas.[61]

From the beginning of the sixteenth century, the Paracelsian philosophy caused so strong reactions that almost all the scholars dealt with the Paracelsian doctrine. Already from the 1570s there has been a huge segregating between the scholars who followed him, "Paracelsians", his attackers, "anti-Paracelsians", and the "compromisers."[62] Many of his attackers studied him in detail as well as the philosophical theories of his followers, so that they could overthrow him. Something which confirms us that Paracelsus's theory was not only adopted by many scholars, but really shook the foundations of the established theories. Actually, the Paracelsian dogma inspired so many scholars, where it was often spread not by its followers but by its attackers, many of whom, although they criticized Paracelsus, were influenced by his corpuscular theory and, despite denying it, often used the Paracelsian terminology and meanings in their own matter theory, such as Walter Charleton (1619-1707) did. For example, the Paracelsian ideas in English early medical literature indicate that many English

60. Jole Shackelford, "Early Reception of Paracelsian Theory: Severinus and Erastus," *The Sixteenth Century Journal* 26, no. 1 (1995): 123.

61 . Priesendorf, "Paracelsianism and the Theoretical Foundation of Chemical Medicine," 2015, 71. See also Debus G. Allen, *Man and Nature in the Renaissance* (Cambridge University Press, 1978), 33-51.

62. The terms of "anti-Paracelsians" and "compromisers" have been created by the historians, although it should be stressed that in the 16th -17th cent., many scholars attacked to Paracelsians using the term of "pseudo-scientists", while at the same time the Paracelsians or Helmontians used the same term for their opponents.

scholars first learned about Paracelsus through Thomas Erastus's (1524-1583)[63] and Andreas Libavius's (1550-1616) censure, who were two of the most important attackers of the Paracelsian theory.

To sum up, Paracelsus is a key figure in the development of the alchemical corpuscular theories, because he inspired many scholars. Of course, many times the scholars of that era did not study the authentic texts of Paracelsus. Consequently, his matter theory was misunderstood and propagated, as some pseudo-Paracelsian terms and concepts were incorrectly established, and many times certain scholars criticized Paracelsus without having read his original works. Nevertheless, Paracelsus's theory became a landmark for many significant physicians, alchemists and natural philosophers. Some of whom are, John Dee (1527-1608), Jan Baptist van Helmont (1580-1644), Robert Fludd (1574-1637), Robert Boyle (1627-1691) and Isaac Newton (1643-1727), who possessed a major edition of works of Paracelsus. In fact, it is well known that Newton used Paracelsian terminology in his *Principia* (1687) and *Opticks* (1704). In few words, Paracelsus's matter theory is important, because through it he laid new foundations for the concepts of *semina rerum* and *minima naturalia*, and generally, for the vitalistic corpuscular theories.

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63. Shackelford, "Early Reception of Paracelsian Theory: Severinus and Erastus," 1995, 124, 126.

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Glossary

Archeus: the esoteric "small alchemist", occult power.

Four Aristotelian elements: According to the theory of Aristotle everything in the geocosmos has been created by the four elements, namely earth, air, fire and water.

Logoi Spermatikoi: In Stoicism the seminal reason (*logos spermatikos*) is the cosmic source of order; its aspects are fate, providence, and nature. Subordinate *logoi* seem to perform something of the function of Plato's forms. *Logos* also has another aspect: it is what enables us to apprehend the principles and forms, i.e. it is an aspect of our own reasoning.

Minima naturalia: were developed by Aristotle as the smallest parts (atoms, particles) into which matter could be divided and still retain its essential character.

Semina rerum: the theory that everything in the universe has been created by seeds. The terms and theories of "seeds" (*semina*), "seeds of reasons" (*semina rationem*), "seminal principle" (*principium seminal*), "seminary" (*seminarium*) are grouped under the simple name of "concept of seed" and usually called "*semina rerum*".

Tinctures, elixirs, *tartarus* and *arcana*: (these terms have almost the same meaning) drugs.

Tria prima/three Paracelsian elements: According to Paracelsus (1493-1541) *tria prima* are the three basic principles of sulphur, mercury and salt by which all the substances and matter, in general, are composed.

Vitalism: the theory that the origin and phenomena of life are dependent on a force or principle distinct from purely chemical or physical forces.

Yliaster: the prime matter or the primordial seed by which all the other elements have been created.