THE SEARCH FOR THE SOUL OF PLANTS

Fabrizio Baldassarri and Andreas Blank (eds.), *Vegetative Powers. The Roots of Life in Ancient, Medieval and Early Modern Natural Philosophy*, International Archives of the History of Ideas Archives, volume 234 (Cham: Springer, 2021), ISBN 978-3-030-69709-9, 459 pp.

Sabin Dumitru COROIAN*

This volume is constructed around the activity of several research projects and contains the talks held at different international conferences. For this reason, the volume coordinated by Bladassarri and Blank proposes a rather eclectic approach, built on various perspectives on how the concepts of vegetative soul and vegetative powers were developed in the medieval and early modern thought. Despite the ongoing debate around the meaning of the Aristotelian concept of the vegetative soul, there is a common agreement that is a set of capacities (powers) that enable the living body to specify its nature. The principle of individuation in Aristotelian terms is given by the actualization (by the action of the formal cause) of something existing in potential (the material cause). Vegetative soul regulates processes such as generation, nutrition, growth, contributing thus to the uniqueness of each living body. Intersecting different areas of investigation, the study of the vegetative soul represented an important subject of study for medieval and early modern natural philosophers following (and sometimes trying to refute) Aristotle, for theologians interested in the materiality vs. immateriality of the soul, or for alchemists preoccupied with agents triggering transmutative processes in nature. (p.1)

In Aristotelian terms, the vegetal bodies are endowed only with vegetative soul and, consequently, with vegetative powers, the other two capacities, namely the animal and the rational soul pertaining to superior instances, such as animals and plants. Although recently there is an increase in the literature investigating the concept of soul (Baldassarri 2017, Corcilius and Perler 2014, Heinämaa and Reuter 2009, Perler 2009, Perler 2015, Salatowsky

* "Vasile Goldiş" Western University of Arad, Faculty of Social Sciences and Humanisties, Department of Social Sciences and Humanities, 86 Rebreanu str., Arad, Romania. E-mail: coroian.sabin@yahoo.com

2006), the study of the "vegetative soul" is still meager. The current volume proposes to fill this gap and to analyze the concept of "the vegetative soul," its manifestation in vegetal (but not exclusively) bodies, and its essential functions, namely those of nutrition, growth, reproduction. (p.2)

The book is divided into twenty-five chapters, the introductory chapter, *Missing a Soul That Endows Bodies with Life: An Introduction*, written by *Fabrizio Baldassarri and Andreas Blank,* sets an overview of the present study by briefly presenting the relevance of the component chapters. Each sections of this volume presents a distinct case study, ranging from the study of the concept of soul in Plato's *Timaeus* and that of the vegetative soul in Aristotle's *De anima*, to the Eighteenth Century analyzes of vegetation, life and organisms in the works of Wolff, Hanov or Bichat.

The second chapter, *Soul, Parts of the Soul, and the Definition of the Vegetative Capacity in Aristotle's* De anima, written by Klaus Corcilius, extensively discusses the Aristotelian definition of the vegetative soul and its parts, stressing the essential role of the vegetative soul as the principle of life for every living body. In addition, the chapter claims that the vegetative capacity covers various activities, and that in *De anima*, Aristotle does not provide a clear description of the way in which the soul is responsible for vegetative activities. (p.14)

In the third chapter, *Embodied Intelligent (?) Souls: Plants in Plato's Timaeus*, Amber D. Carpenter delves into Plato's description of plants in the famous dialogue *Timaeus*, namely as living organisms with different forms of sensation. Apart from perception and desire, plants seem to have a kind of "collective intelligence," not specifically but rather partially individuated and integrated in the cosmos itself. (p.40)

In the fourth chapter, *The Vegetative Soul in Galen*, Robert Vinkesteijn shows how Galen reinterpreted the Platonic tripartition of the soul, the Aristotelian hylomorphism, Hippocratic elemental theory and various Hellenistic influences, locating the vegetative soul in the liver, the spiritual soul in the heart, and the rational soul in the brain. In the case of plants, even if there is no organ called the liver, the vegetative soul builds all the organs from the seed through vegetative power after the creation of the plant. This eclectic explanation emphasizes the role of plants in the discussions about the vegetative soul and it stresses the significant part bestowed to plants in the analogy between plants and human beings. (pp. 57-58)

Chapter five, *Avicenna on Vegetative Faculties and the Life of Plants*, written by Michael Fatigati, starts from Avicenna's distinction between the vegetative faculties of plants and those of the animal soul. The vegetative faculties are subordinated to reproduction of the species, nutrition is the starting point, growth is the middle part and reproduction represents the end of the

vegetative soul. (p.73-75) Avicenna's point is rather to integrate the vegetative faculties with those of higher structure and to provide a coherent approach to concepts such as "life" and "soul, proving that possessing a vital spirit is the principal attribute of being alive. (p. 87)

The sixth chapter, *Can Plants Desire? Aspects of the Debate on desiderium naturale*, written by Marilena Panarelli, focuses on the debate regarding the possibility of plants to have senses or at least something similar to sensation. Panaralli analyzes the two distinct interpretations, regarding the ability of plants to manifest desire, the Aristotelian tradition which claims that plants don't have any kind of sensation or perception, and the Platonic tradition which claims the opposite. The discussion focuses on the main Plato's follower Plotinus and the Aristotelian. (pp. 91-92)

The seventh chapter*, Disclosing the Hidden Life of Plants. Theories of the Vegetative Soul in Albert the Great's De vegetabilibus et plantis*, by Amalia Cerrito, points to the physiological complexity of plants, by highlighting the theological and philosophical implications Albertus Magnus attributed to vegetal bodies. One central claim in her analysis is Albert the Great's position regarding the possibility that plants might be sensible creatures. (p.105)

In the eighth chapter, *On the Natural Generation of Human Beings: The Vegetative Power in a Thought Experiment by Some Masters of Arts (1250-c. 1268)*, Paola Bernardini discusses what was considered to be "thought experiments" performed by medieval "Master of Arts." This kind of experiments referred to the possibility of human generation without God's intervention and solely by natural generation based on the vegetative power attributed to humans. The three texts presented in this chapter disclose a naturalistic approach that was in contrast with the common view of the Master of Arts and the standards of the 13th century theological theories of human generation, concluding that the intellect does not represent the specific condition of humanity. (pp. 123-124)

Chapter nine, *Thomas Aquinas on the Vegetative Soul*, written by Martin Pickavé, focuses on the relation between the vegetative soul and the concept of life in Thomas Aquinas. Acknowledging that in comparison with the sensitive and intellectual souls, the vegetative soul plays a small part in the constitution of a human being, the paper highlights that, despite this, Aquinas's position on the vegetative soul displays a certain level of sophistication. (p. 151)

Chapter ten, *The Vegetative Powers of Human Beings: Late Medieval Metaphysical Worries*, written by Martin Klein, discusses the medieval perspective on the vegetative capacities as necessary for the powers of the soul particularly in relation to the unity or plurality of the substantial forms. A significant part of this chapter addresses the possibility of the vegetative power of the human soul to produce a substantial change particularly in processes that include an immaterial soul which is not generated. By taking several case studies, such as

Thomas Aquinas, William Ockham, and John Buridan among others, this chapter gives an account for how medieval thinkers tried to explain natural processes such as generation, nutrition, growth. (pp. 153-154)

The eleventh chapter *The Jesuit Cultivation of Vegetative Souls: Leonard Lessius (1554–1623) on a Sober Diet*, written by Cristiano Casalini and Laura Madella, examines how Jesuit theologians explained natural processes such as nutrition and generation as operations of the vegetative soul. Looking at Leonard Lessius, the chapter illustrates how the vegetative soul is supposed to coordinate nutrition, which is seen as the basis for physical and spiritual health of human beings. At a first glance Lessius discusses rather practical than metaphysical aspects, insisting on the role of virtues such as "sobriety" and "temperance" for a healthy life. However, Casalini and Madella successfully claim that, in Lessius' view, although the operations of the vegetative soul are regarded as the lowest of the human functions, no superior function of the human soul could be carried out without a proper regulation of the lowest powers. (pp. 177-178)

Chapter twelve by Andreas Blank, *Nicolaus Taurellus on Vegetative Powers and the Question of Substance Monism*, discusses the book review of Andrea Cesalpino's *Quaestiones Peripateticae* (1571/1593) written by Nicolaus Taurellus in 1597. Taurellus' extensive critique on Cesalpino's book points to the fact that Cesalpino's view on the vegetative powers as the result of a divine principle of activity that is inherent in all natural bodies leads to an interpretation of substance monism that is incompatible with the Christian doctrine of creation. (p. 218)

In the thirteenth chapter, *Vegetal Analogy in Early Modern Medicine: Generation as Plant Cuttingin Sennert's Early Treatises (1611–1619)*, written by Elisabeth Moreau, a type of vegetative model is proposed to explain the transmission of life from one generation to another. Analysing Sennert's use of vegetal analogy for explaining generation and the origin of seed's soul and form, this chapter gives an example of how early modern natural philosophers engaged with different traditions (such as Aristotelian, Galenic, Paracelsian) in explaining natural processes. (pp. 237-238)

Chapter fourteen, *Vegetative and Sensitive Functionsof the Soul in Descartes's Meditations*, written by Igor Agostini, discusses Descartes's rejection of the determinant role of the soul in regulating processes such as nutrition, generation, growth. According to Descartes, vegetative and sensitive activities are entirely dependent on the corporeal dispositions. In the *Meditations* Descartes does not provide a doctrine of the vegetative and sensitive functions of the human body, and does not establish that they are not dependent on the human soul. However, what Descartes does in the *Meditations*, claims Agostini, is to demonstrate that the proposition according to which the vegetative and

sensitive powers are dependent on the soul is not a necessarily true proposition. (p. 253)

In chapter fifteen, *Failures of Mechanization: Vegetative Powers and the Early Cartesians, Regius, La Forge, and Schuyl*, Fabrizio Baldassarri analyzes how some of the unsolved problems in Descartes's theory about natural processes such as generation, nutrition and growth, were taken up by a number of early modern Cartesians, such as Regius, Louis de La Forge, and Florent Schuyl. The mechanization of the vegetative functions left a number of natural processes unexplained or only partially explained and this aspect is even more evident, claims Baldassarri, in the works of early modern Cartesian scholars that dealt with Descartes's medical and physiological works. (pp. 272-273)

The sixteenth chapter, *Marin Cureau de la Chambre on the Vegetative Powers*, written by Bálint Kékedi, gives an account of one of the marginal figures of the French seventeenth century intellectual milieu. Marin Cureau de la Chambre published only one book, the *System of the Soul*, in 1664. In this work, Cureau bestows cognition to every living body, including plants and the workings of the vegetative soul with those of a higher order. The author argues for Cureau's idiosyncratic approach which puts elements belonging to the Aristotelian tradition with those rather associated with the early modern period. (p. 289)

In the seventeenth chapter, *Re-inventing the Vegetable Soul? More's Spirit of Nature and Cudworth's Plastic Nature Reconsidered*, Sarah Hutton explores both Henry More's and Ralph Cudworth's positions on the role of "formative spirit" in natural processes and their indebtedness to the Aristotelian tradition of the vegetative soul. However, Hutton claims that More's "Spirit of Nature" and Cudworth's "Plastic Nature' are concepts that while reinterpret the Aristotelian concept of the vegetative soul, they are integrated in the medical tradition of the late Renaissance. In doing this, both More and Cudworth attribute functions to "formative spirit" that, claims Hutton, are rather taken from the Platonic World Soul and the Stoic tradition of "pneuma."(pp. 302-303)

The eighteenth chapter, *Margaret Cavendish and Vegetable Life*, written by *Justin Begley*, gives an account of Cavendish's view on plants. As Begley argues, Cavendish's reflections on vegetal bodies are essential for the formation of her theory of substance. Arguing against mechanical theories that attributes natural processes to a simple arrangement of particles, Cavendish's view on plants insists on the existence of an innate activity of vegetal bodies and readjusts elements coming from the Galenic, Aristotelian and Harveian theories on generation.(pp. 319-320)

The nineteenth chapter *Plantanimal Imagination: Life and Perception in Early Modern Discussions of Vegetative Power*, written by Guido Giglioni, introduces an

innovative concept, namely "plantanimal imagination," to account for early modern vegetative perception. By taking the cases of Ficino's inborn *intuitus*, Cesalpino's natural soul, Harvey's unconscious tactility, and Kepler's telluric imagination, Giglioni argues that early modern thinkers expanded perception from the animal world to the vegetal realm. Giglioni argues that, for performing operations associated with nutrition, living bodies, including plants, are capable of perceiving (recognizing) and selecting what is beneficial for them. (pp. 305-306)

Chapter twenty *"Vegetative Epistemology": Francis Glisson on the Self-Referential Nature of Life*, written by Dániel Schmal focuses on plant perception in the case of Francis Glisson. Glisson's theory of perception implies that vegetative organization is based on self-referential (but unconsciousness in the case of plants) perception. As puzzling as it sounds, Glisson's theory of plant perception postulates the idea that plants organize themselves according to their perception, even in the absence of conscious sensation.(p. 361)

Chapter twenty-one, *Life in the Dark: Corals, Sponges, and Gravitation in Late Seventeenth Natural Philosophy*, written by *Raphaële Andrault*, discusses the re-shape of the early modern notion of life as the result of the manifestation of vegetative powers. Looking at Nehemiah Grew, John Ray and Ralph Cudworth, Andrault argues that in the second part of the seventeenth century England there was no agreement on what a "vital phenomenon" meant. Also, Andrault points to the early modern lack of strictness in respect to boundaries between physical, mechanical and vital theories, claiming that the domain of "vital phenomena" and "living beings" was subject of interpretation. (pp. 366-367)

The twenty-second chapter, *Vegetable Life: Applications, Implications, and Transformations of a Classical Concept (1500–1700)*, written by Fabrizio Bigotti, uses the *scala naturae* approach, according to which the vegetal realm was considered the first and fundamental manifestation of life, to point to the complexity of this theme in various seventeenth century medical and philosophical works. Based on various functional analogies, this approach, claims Bigotti, was used to provide various early modern authors with a criterion of classification of the *materia medica*. Also, this chapter discusses how the notion of the vegetal soul was combined and adapted in light of the seventeenth century mechanical philosophical trends. (pp. 383-384)

Chapter twenty-three, *The Notion of Vegetative Soul in the Leibniz-Stahl Controversy*, written by François Duchesneau, analyzes how the notion of the vegetative soul features in the Leibniz-Stahl controversy. Duchesneau points to how both Leibniz and Stahl distanced themselves from what they interpreted to be the "vegetative soul". Duchesneau first analyzes what each of the two authors take to be the vegetative soul and why this concept fails to provide a basis for explaining physiological functions in both cases. Finally, Duchesneau shows how the eighteenth-century naturalists explained vegetative life using

either the frame of "organic mechanism" (Leibniz) or "vital principle" (Stahl).(p. 417)

Chapter twenty-four, *Vegetation and Life from Wolff to Hanov*, written by Matteo Favaretti Camposampiero, discusses the cases of Christian Wolff and Michael Christoph Hanov. If Wolff, a supporter of mechanical philosophy, strongly rejects the notion of vegetative soul, his follower, Hanov, in explaining natural processes and life, seems to appeal to something that resembles a "vegetative force."

The last chapter, *Bichat's Two Lives*, the twenty-five chapter, written by Tobias Cheung, presents Xavier Bichat's (a late eighteenth French medical doctor) view on what he calls the "organic" and "animal life" of humans and animals. According to Bichat, the organic life is composed of the principal organs that maintain and perpetuate processes such as assimilation, consumption and excretion, while the animal life includes sense organs, the nervous and the locomotors system. Cheung stresses the role of and the forms of interaction between both "lives" as well as the differences between animals and humans. No last, Cheung analyzes how Bichat's position on the two lives impacted on the fields of medicine, anatomy, physiology, the philosophy of human and animal subjectivity, and anthropology. (pp. 439-440)

The papers collected in this book contribute to designating a much clearer picture of how the philosophical concepts of vegetative soul, vegetative powers, vegetative life, attributed to plants, animals, and human beings, were interpreted throughout the medieval, early modern and modern periods, and how they interacted with other theories, such as theological interpretations of Creation, corpuscularianism, and mechanical accounts of life generation and growth. Focusing on plants, the contributions in this volume demonstrate that vegetal bodies did not play a marginal role for the natural philosophers who engaged in explaining natural processes but, on the contrary, plants were often used by these naturalists to illustrate their claims and, via analogies, to transfer knowledge to superior instances.