Innate Heat

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Abstract

Innate heat is a fundamental concept in Galenic medicine, referring to a physiological heat proper to living beings. Originating in the heart, it takes part in the vital and organic functions of the human body. As instrument of the soul, it animates the body in a similar way to a bodily flame. Its nature and role is bound up with the definition of life within a theoretical framework combining natural philosophy and medicine. Consequently, physiological debates on innate heat often converged on cosmological, chymical, and embryological considerations on the origin, composition, and transmission of life.

In Renaissance Galenism, innate heat is traditionally described as a bodily substance of a subtle nature, transported by the spirit, and transmitted at birth through the seed. It is also related to the radical moisture, so that the calidum innatum often refers to the vital substance formed by the spirit, the innate heat, and the radical moisture. Within the human body, the innate heat is sourced in the heart and cooled down by the inspiration of air in the lungs during breathing. At the same time, it is spread through the whole body to operate the vital functions. In particular, it is the instrument of the vegetative soul in order to achieve the physiological operations of generation, growth, and nutrition – mainly digestion and coction. It is also in charge of forming the vital spirit in the left ventricle of the heart.

Synonyms

Calidum innatum; Calor innatus/nativus/vitalis; Vital heat

Heritage and Rupture with Tradition

Galen systematized the notion of heat in his medical theory built upon Hippocratic, pre-Socratic, Platonic, Aristotelian, and Stoic philosophies (Solmsen 1957). In this respect, the Galenic physiological system owes a significant debt to Aristotelian biology, which theorized the nutritive functions of the innate heat (Freudenthal 1995). It is also rooted in the Stoic pneuma responsible for the sensory and motive functions (Debru 1996).

The Galenic definition of innate heat was transformed by Fernel’s physiology, influenced by Ficinian Platonism (Fernel 1567). Fernel developed a medical theory of spirit and innate heat grounded in the Aristotelian definition of vital heat as a substance analogous to the element of the stars and contained in the foamy part of the seed (Aristotle 736b30). While the Galenic interpretation suggested innate heat as an elemental substance, Fernel defined it as non-elemental and akin to solar heat. It is then transported by a celestial resident spirit (spiritus insitus), which is distinct from the three Galenic flowing spirits and plays the role of a bond between soul and body. This spirit is composed of ether – the Aristotelian fifth element – whose subtle nature allows it to host the bodily heat and to be the soul’s first instrument.

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performing the physiological functions. In addition, it is connected with the total substance of the living body, whose properties are occult and cosmological (Fernel 1548).

Fernel’s theory of innate heat sparked long-lasting debates in late Renaissance Galenic medicine (Walker 1958). Moreover, the discussion of the existence of a cosmic innate heat often slid into the nature and role of the spirit insitus, initiating further medical debates on the generation of living beings and the plastic virtue of the seed (Hirai 2011). By contrast, Paracelsian medicine disregarded the concept of innate heat, whose subtle nature and physiological functions were attributed to the animal or vital “balsam” protecting the body from putrefaction (Severinus 1571; Hirai 2005; Bianchi 1982).

In the first half of the seventeenth century, the Renaissance concept of innate heat was challenged as to the chymical and physiological aspects of its vital status and nutritive function. Harvey called into question the physiological triad of the spirit-heat-moisture by disqualifying Fernel’s definition of spirit and by minimizing the role of the heart (Harvey 1628). Only vital heat and radical moisture remained as mere properties of the blood, which in turn took the role of the vital substance inherent to the seed and analogous to the stellar element (Bono 1990). Later on, the concept of innate heat would be reshaped by mechanistic and chymical theories of combustion and fermentation, illustrated by Descartes and van Helmont (Mendelsohn 1964).

Cross-References

- Aristotelianism
- Elements, Natural
- Fernel, Jean
- Ficino, Marsilio
- Galen and Galenism
- Generation/Embryology
- Harvey, William
- Physiology: Renaissance Philosophy
- Radical Moisture
- Stoicism

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