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ON THE SUBJECT OF MICROCOSM IN CZECH MEDICAL LITERATURE OF THE 16th CENTURY

ABSTRACT: The paper deals with a topic of microcosm in Czech medical literature of the 16th century. The subject itself, which is the concept of man as a miniature universe, has its origin in ancient thought, and even centuries later it underwent a number of updates. Microcosm is primarily an interpretative framework that allows us to put man into the context of the whole creation – the world and interpret his physical constitution and the processes that take place in his body. Humoral pathology, the basic theoretical concept of ancient, medieval, and early modern medicine builds on this concept of microcosm. In the paper I follow three branches of old Czech reflection about the subject of microcosm: a) a concept of periodization of human life, b) an analogy between man and the universe proving the uniqueness of the human organism, c) a theory about aging of the world as the cause of an outbreak of a plague epidemic. I have been using medical prints from the 16th century written in old Czech. Their authors were either university-educated physicians or personalities showing qualified interest in medical subjects, in one case the identity remains questionable. I have been using the method of comparative analysis and I have been considering older traditions in interpretation.

KEYWORDS: Microcosm – Medicine – 16th century – Old Czech literature

The idea of man as a microcosm has its origins in ancient philosophy, nonetheless the issue still had relevance in later centuries (Allers 1944). What is characteristic for this concept is the interpretative framework for explaining human nature through an analogy with its environment in the broadest sense. Thus the entire universe mirrors the human being. A positive approach to man is inherent in the concept of microcosm. The world is the work of a Creator and as such is permeated by harmony and order. Man is a miniature but authentic copy and therefore his organism gains the same order and harmony as the world that surrounds it. Jacques Le Goff notes in this regard that the rediscovery of the subject of man as a microcosm in medieval times was of great importance to the spiritual climate of the 12th century because it offered a way to overcome negative attitudes towards the human body and corporeality in general (Le Goff 1999). This was a part of a wider system of thought in early medieval society, which can be described as spontaneous Manichaeism (Zbiral 2007).

The central parallel between man and the outside world was based on the idea of four elements that make up everything created. These elements: fire, water, air and earth have a few basic features: fire is hot and dry, air is hot and humid, water is cold and wet and earth is cold and dry. In a human body four corresponding humours are found: blood, phlegm, bile, and black bile. Analogously to elements the blood was understood as hot and wet, phlegm cold and wet, bile hot and dry, and black bile cold and dry. According to humoral pathology, which may be traced back to Hippocrates, physical health depends on the balance of these four humours. If this balance is violated then disease breaks out in the body (Schott 1994).

The idea about the age-related changes in the human body was understood in a similar way. As time passes natural heat in the body decreases, the body gets colder and harmful moisture accumulates in larger and larger quantities which cause disease. The basic temporary framework of the human life span was based on the number four and also dealt with the analogy of the microcosm-

macrocosm: the four elements and their characteristics, four bodily juices, the four life stages of a man. This concept can again be traced back to Hippocrates and Ptolemy, it is the comparison of the four stages of human life to four seasons: childhood is interpreted as spring, youth as summer, old age as autumn and decrepitude as winter (Paravicini Bagliani 2002). In writings of a scholarly abbess Hildegard of Bingen an analogy of the course of a year and the human life is even worked up into the concept of twelve life stages when every month corresponds with one life stage (Schipperges 1997).

In the medical literature written in Czech we can find the topic of the four stages of human life in the work of a the physician John Kopp (Kopp z Raumenthalu 1536). Kopp's work is based on the medical tradition, especially Avicenna. He describes physiological changes in the human body in detail, but he does not refer to an analogy with seasons. In his interpretation, the first life phase is characterized by heat and moisture, the second stage by heat and dryness, the third stage by coldness and dryness and the fourth stage, paradoxically again, by coldness and dryness at their maximum. This last physical constitution is to be confronted with an increasing amount of harmful bodily moisture, which certainly does not contribute to good health (Kopp z Raumenthalu 1536).

Henrych Rankovius (Rankovius 1980) has a different approach to the issue of the periodization of the human life, which is, however, related to the concept of microcosm – macrocosm. Rankovius assumes that every seven years there is a planetary conjunction with Saturn's dominant position which has a significant effect on the human body. Every seventh year is then transitional to a certain degree and brings change. Therefore it is possible to periodize human life on the basis of seven-year periods with the utmost definition of life span set at 70 years. Rankovius believes that the number seven interconnects all things (*septimum numerum rerum omnium fere nodum esse*), in other words, he again recalls the bond between a man and surrounding world (Rankovius 1980). A major manifestation of this bond is the impact planets and constellations have on a human being and particular organs of the body. Nevertheless the influence of stars is just the tip of an iceberg of a great number of various links between a man and components of the created world, that enable mutual correspondences, analogies and affections (Foucault 2007).

Analogies between a man and the world were not restricted only to four elements and their characteristics. For example in the middle of the 12th century Honorius Augustodunensis worked up the topic of a man as a microcosm considering the entire range of mutual interactions: material substance of a man consists of four elements. His body is of the soil, blood is from water, breath from air, bodily heat from fire. A human head is round similar to the celestial sphere, a pair of eyes match to two celestial bodies (i.e., the Sun and the Moon) and seven openings on the head match to seven celestial harmonies. The chest, which is moved by breath

and cough, is compared to the air. The belly takes all fluids like the sea takes all rivers. The legs support the weight of the body similarly to the Earth. The human eyesight is from the fire of heaven, hearing is from the highest air, smell from its lower part, taste from water, touch from the soil. Human bones have the hardness of stones, nails have the power of trees, hair the beauty of plants (Gurevič 1996).

The same reflections can be found in the book of Matthew Philomatus Dačický about obstetrics (Dačický 1576). Here the author points out that old wisemen compared a man to the world and called it a microcosm. The text contains identical parallels to the heavenly realm, the Sun, the Moon, the air and the sea and it is evident that it is based on the widely known Honorius text (the so-called *Elucidarium*). He also reminds that a man is placed in the hierarchy of all creatures somewhere in the middle between animals and angels. Together with lower animals a man has his physical substance and general senses whereas with angels a man shares intellect and thus he resembles them. Matthew Philomates Dačický included his debate about microcosm in the chapter about the brain, which he defined as the seat of heavenly lightning and divine emotions in a man. His purposeful placement and layout naturally imitates heavenly sky by which a man is even more likened to the outside world (Dačický 1576).

Another old Czech tractate about the plague dating back to the year 1538 contains a striking update of the subject of microcosm-macrocosm. Unfortunately, the text has been preserved incomplete without a title page. Josef Jungmann mentions the printer and translator Ulrich Velenský from Munich as its author (Jungmann 1849), results of modern research have not confirmed this opinion yet.

The tractate explains the causes of an outbreak of recent plague epidemics on the basis of mutual interconnection of the large and small world. In the introduction the author observes that the arrangement of man and the world is similar and notes that it is due to this similarity that the Greeks called the world a macrocosm, i.e., the larger world and a man a microcosm, i.e., the smaller world. First, he studies man. When a man is young, all physical processes take place without problems: a man sleeps well, digests well, no harmful moisture accumulate in his body and so almost no illnesses endanger him. Moreover his senses are sharp, he has a good memory and intellect. However, when he reaches the last stage of life, a man lacks appetite, sleeps poorly, and his intellect, memory and senses no longer serve him well. His body loses natural heat and therefore it accumulates harmful moistures, which cause many diseases.

From the analogy with youth the author deduces that the world had probably worked flawlessly in the similar way when it was young. The planets moved in their regular orbits and all life on Earth benefited from their influence. With power they had the planets managed to eliminate various pollutants in the air. For the author a proof of harmonious functionality of the world is regular changing of seasons without any extreme differences. Furthermore

people living in these conditions many centuries ago were supposedly healthy, well built and their life expectancy was much longer than today. Besides, claims the anonymous author, the Holy Scripture says that life before the Flood lasted even several hundred years. He even supports the statement with a very interesting argument, that well preserved ancient bones found occasionally throughout the Czech lands prove the better physical state of the pre-diluvial people (...a protož lidé těch věků, urostlí, zdraví, silní a převelmi dlúhověcí bývali. Jichž to mnohých kostí do dnešního dne porušení neberau. Jakož hnátové a zubové jich i u nás v Čechách nacházejí se...). After the Flood the human life began to get shorter due to God's influence. Moses died at the age of one hundred and twenty but he still was in excellent physical condition as proved e.g., by the fact that at the time of his death he had all his teeth. Under King Solomon a maximum life span was one hundred years and from that time it decreased. Our author notes that in his time only few people reach the age of sixty in a full health (Anonymus 1538).

The cause of this trend is said to be aging of the world and the subject is thus seen in the context of traditional way of thought. From the perspective of medieval authors history follows the line of gradual decline and the universe – a macrocosm undergoes stages similar to those of a man. The last stage, usually identified with presence is viewed as the old age. *Mundus senectit* – the world is getting old. In the 12th century the chronicler Otto of Freising wrote on the subject: We see how the world grows feeble and breathes out, so to speak, as a dying old man (Le Goff 1991). Taking these ideas into account the author of the old Czech anonymous treatise about plague characterizes his own era as the "age generally wretched" and aging of the world is mirrored in tiredness of the planets. Frequent solar and lunar eclipses, climatic changes, and instability of weather prove the gradual decline. Moreover extreme temperature fluctuations occur. Similarly to the poorly functioning body of an old man who cannot prevent the accumulation of harmful bodily moistures causing diseases, the aging world cannot prevent the formation of negative phenomena, which are the source of plague outbreak (Anonymus 1538).

The plague is unequivocally associated with a miasma – poisonous air that can penetrate the body either directly or through infected food (*mor...nic jiného není, nežli neduch přichytedlný od potrav a neb povětrí jedovatého nakažení pocházející...*) (Anonymus 1538). Therefore the changes of weather result in concentrations of plague poison in the air. Medieval physicians often saw the cause of plague in a negative influence of the planets, nonetheless such a broad ecological interpretation in the Old Czech treatise on plague is not usual. Our author is also interesting for the fact that

he does not perceive plague separately but he includes it in the history of diseases. In the pre-diluvial past mankind was not vexed with diseases and therefore there was no need for medicine. However the "golden age" eventually ended and in the period of Pliny the Elder the number of known diseases reached three hundred. The first physicians – Apollo, Asklepios were regarded for their ability as gods and they received divine reverence. At the time of writing of this book there were supposedly more than five thousand diseases, of which one thousand deadly. The anonymous author claims that the number constantly rising due to additions of new, previously unknown diseases. The treatise therefore reaches a conclusion that the task of "modern" medicine is to react to this situation and find new ways of treatment (Anonymus 1538).

This text on plague from the 1530s shows the relationship between man and the outside world in a new and extremely unfavourable light. The world gets inevitably older as does man. The aging process of an individual is enhanced by that of human race. One is inevitably in worse condition than it was centuries ago and in this unfavourable situation he must face new complications caused by the aging world. Not very a optimistic prospect from a period less than five hundred years ago.

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