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COSMIC THEOLOGY
OF JOHANN GOTTLIEB WALPURGER

Abstract. Johann Gottlieb Walpurger was a representative of a physico-theological movement in Germany. He was interested in proving the existence of God and the nature of His attributes from the investigation of nature in general and of insects and bees in particular. Not a researcher himself, he relied on the publishes scholarly records to represent the state of the art knowledge about the physical world. However, his main emphasis was on the spiritual application of the knowledge gained from science.

Keywords: Johann Gottlieb Walpurger; physico-theology; cosmo-theology; the existence of God.

Johann Gottlieb Walpurger (1690–1761) studied in the University of Wittenberg becoming a magister/master in 1715. Then he was a tutor in Dresden. In 1723, he was ordained pastor (Pfarrer) in Markersbach; in 1729, he was a pastor in Reichenberg, and in 1735, a pastor and inspector in Waldheim (all locations in Saxony).¹ His major work is a four-volume opus *Cosmo-theological investigations of the most important wonders and truths in the realm of nature and of grace for the glorification of its worthy Maintainer to shame the unbelief and for a general edification*. At the height of the popularity of

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¹ Karl Gottlob Dietmann, *Die gesamte der ungeänderten Augsp[urgischen] Confeßion zugehörige Priesterschaft in dem Churfürstenthum Sachsen*, vol. 1 (Dresden: Sigmund Ehrenfried Richter, 1752), 1302–1306; Johann Georg Meusel, *Lexikon der vom Jahr 1750 bis 1800 verstorbenen teutschen Schriftsteller*, vol. 14 (Leipzig: Gerhard Fleischer, 1815), 381–382.

physico-theology, Walpurger wanted to make his own contribution to this field taking cues from several physico-theologians, Derham, Ahlwardt, Sulzer, Ray, Nieuwentijt, Fabricius, Scheuchzer, and others.

1. THE WORLD

Walpurger presented the state of the art in various branches of science based on the information published by the recognized scholarly authorities of the times. In a chapter devoted to light he wrote that light was a subtle matter (C 1.32)² moving very quickly (33). Descartes considered a particle of light to be a sphere, which was accepted by many. Walpurger presented the results of the investigation of color performed by Huyghens, Newton, and Wolff (34). However, such information, in the spirit of the times, was reconciled with the Biblical account of creation. And thus, Walpurger agreed with Luther that the light created on the first day was not as bright as the light after the creation of the sun (35).

Walpurger discussed clouds (C 1.54), winds (65) in separate chapters, and the earth (121). Its form is a sphere flattened at the poles which was recently shown by the expedition of Maupertuis (131). It is full of holes filled with water and fire which cause the many changes on the surface of the earth (156). As to the atmospheric phenomena, we learn, for example, that “Snow and ice cover the surface of the earth and prevent their vapors to that end that they rush all the more violently with the approaching spring and increasing warmth, and may again provide us with the comforts of which the winter had robbed us. And by such constant alternation, all disgust is prevented, which tends to creep up on us with the amount and permanence of the good in general, and we longingly await the future, because we only lose the present for a while to that end that we would not get tired of it” (137). And Walpurger went to other details: the underground as “a treasury of inexhausti-

² References to the following Walpurger's works will be used: C — *Cosmotheologische Betrachtungen derer wichtigsten Wunder und Wahrheiten im Reiche der Natur und Gnaden zur Verherrlichung ihres glorwürdigsten Urhebers zur Beschämung des Unglaubens und zur allgemeinen Erbauung*, vol. 1 (Chemnitz: Johann David Stöbel, 1748); Johann Christoph und Johann David Stöbel, vol. 2, 1749; vol. 3, 1752; vol. 4, 1754. Each volume has a Vorrede/ Preface which is unpaginated in vols. 1–2 and has a separate pagination in vols. 3–4. G — *Der Grosse Gott im Kleinen, auf eine seiner Majestät anständige Weise, an dem edlen Geschöpfe der Bienen, nebst einer Präliminar-Abhandlung von dem Ungeziefer überhaupt, Schrift- und Vernunftmäßig vorgestellt* (Chemnitz: Johann Christian Stöbel, 1762).

ble riches,” including metals (141) and precious stones (145), underground water (147), caves (148), and underground fires (152). The topic of Copernicanism also came up, for which Walpurger expressed a rather lukewarm commitment. The Copernican system or the system of Tycho de Brahe can be chosen, although “it cannot be denied,” that one system, presumably Copernican, leads to better astronomical tables and is a better testimony of the greatness and omnipotence of God (156). Also, the Copernican system is accepted by most scholars (218). It is a hypothesis which has an advantage over others, but it can be false (220; cf. 2.135).

Seas are discussed (C 2.1) including types of shores (13), sand (18), salt as the noblest mineral and far more useful than any other lifeless creation (29), the ebb and flow (37), and sea animals (44), many of them described in detail; for instance, we learn about the whale that “its head is so large that it makes up the third part of its immense body, and is the same color as the body, namely black; the belly is white and almost round. It is as smooth in the water as an eel, and looks good when the sun shines on its back. It has on both sides five fins, which are quite large according to the proportion of its body, and with which it moves its immense body nimbly and swiftly, and you can see the streak in the water where it swam, for quite some distance; the tail is white and black-striped and greying, of considerable breadth, and lies flat on the water and when it needs it, it uses it as an oar; it does not move it from one side to another (56), as the fish usually do, but up and down”³ (57), etc. for two more pages. Incidentally, the topic of whales provided Walpurger an opportunity to discuss at length the Biblical account of Jonah spending three days in the belly of a whale and conclude that it was possible because Jonah was dead in this air-deprived environment and apparently brought by God back to life after he was released from the whale (2.160).

Sources, wells, rivers are a separate topic discussed at length (C 2.181), which includes the then widely discussed mechanism of replenishing seas and rivers. As much water from seas must flow out through underground channels as the amount coming from rivers. At the bottom of the sea, water is filtered downward into the ground so that salt remains (206) and this water appears later near mountains (207).

³ Johann Michael Kühn, *Merckwürdige Lebens- und Reise-Beschreibung* (Gotha: Verlegts Johann Paul Mevius, 1741), 110.

The discussion of birds includes the presentation of physical aspects of avian beaks (C 2.340), tongues (345), the face (349), including eyes (350), the sense of hearing (353), smelling (356), feeling/touch (359), the brain (361), the neck (375), throat (377), lungs (380), stomach (381), crop (385), intestines (387), kidneys (390), genitals (391), skeleton (392), feathers (394), moulting (401), eggs (404), brooding (408), care for the young (416), nests (418), and seasonal migration (421).

The discussion of air specifies that it is a corporeal entity (C 3.6) that has some weight (27). The smallest particles of air are very likely round as claimed by Descartes (7). It attaches itself to other bodies (9) and permeates everything (35). It can expand (12) and can be compressed (18). Air is necessary for life (23). The lower air is thicker and heavier than the upper air (31). Air around the earth should be distinguished from vapors and mist (32). It disperses light (36).

As to fire (C 3.142), it is most likely some matter created at the beginning. It can permeate everything. It moves from warmer bodies to colder ones (149). We don't know the form of a particle of fire (149, 202). Lamery is probably right that there are subtler materials than fire and light and faster moving (156). Particles of fire in flammable material cause light, whereby light and fire particles in air are moved and dispel darkness. If they are not united in a flammable material, but are spread in air, then they only cause warmth. Fire can expand bodies (157), it melts many materials (159), increases the weight of bodies (160), and it can be brought to a halt (163). The blood is full of fire (168). Light, fire, and sun rays can be united but also separated (170).

Moving beyond the earth, Walpurger presented the knowledge about the sun (C 3.268), which is a fiery body (273). The light created on the first day was used to form the sun and the stars on the fourth day (274). It is made from light and fire (275, 282), and it is spherical (282). The light travels 7 or 8 minutes from the sun to the earth (283). According to Newton, the sunlight consists of rays of different color (285). There are black spots at the equator of the sun (289) and it is not known what they are: maybe clouds? (291). The size of the sun is presented (292), its position (294), which is commonly thought to be in the middle of the world (295). Its motion is also discussed (300).

The moon is separately discussed (C 3.394), considered to be a spherical (418), cold body (400) as it has no light of its own (404). Its motion (416) and its size (419) are also presented.

Astronomical knowledge concerning the stars is given (C 3.489), which is to a large extent of speculative nature, in particular, as to their number (498), the differences between stars (506), their size (508), their height (510), i.e., their distance from the earth. The classification into 6 classes plus nebulous stars is included (513). Some accepted ideas are presented concerning new stars (515) and comets (519) viewed as neither stars nor planets (522).

Last but not least, the human body is presented as a machine comparable to a clock (C 4.10), which gets an entire fourth volume for itself. Starting with a general overview, Walpurger proceeded in his discussion from the top of the body to the bottom considering the anatomy and physiology of each part in succession. The solid body parts (4.179) include bones (185) along with the skin of bones (periosteum) (190), the skin of the body (191), nerves (192) that include the nerves for sensing and the nerves for motion (193), both kinds being filled with the subtlest fluid; and so, sensations from the body goes through the nerves to the brain and is communicated to the soul (194). Then, there are blood vessels (197), muscles (198), veins (203), lymphatic vessels and glands (206). For instance, about cartilage we read that it is “slippery, smooth and shiny, somewhat softer and more flexible than a bone, and, according to most opinions, just as insensitive as the bones. All bones are at the beginning cartilaginous, even the teeth — which are so hard and firm because they have to work a lot over time and have to make the food small, just as the millstones grind the grain and turn it into flour — [are cartilaginous] as long as they are tucked in the jaw and tend not to become hard until they have broken through, and since much more cartilage is found in the bodies of young animals than in the [bodies] of old and adult animals, of which the comparison of veal and beef provides a sufficient proof, and at the same time teaches us that the cartilage becomes with time hard like a bone. But it is precisely because of this that tender children are far more likely to be hurt, lame and crippled in their limbs than adults, and also it cannot be denied that broken arms and legs are far more difficult to heal in old people than in children” (191).

Fluid parts of the human body include the blood (C 4.268), the nourishing fluid or *chyle* (271), salt water (273), gastric fluids (275), pancreatic juice (276), synovial fluid, saliva (278), bile (282), nerve fluid which is the noblest fluid (285), and semen (287).

The head, “the residence of soul” (C 4.318), is presented through the discussion of the skull (319), the brain (321), eyes (326), ears (331), the nose (337), the mouth (340), and skin (344).

The structure of the upper body (C 4.420) includes the torso (421), the spine (424), shoulders (427), arms (428), hands (429), lungs (433), the diaphragm (437), the heart (438), and the pericardium (441).

Parts of the lower body include the belly (C 4.510), the gullet/feed-pipe (513), the stomach (514), intestines (517), the liver (520), the spleen (522), kidneys (524), the bladder (526), and genitals (529). As an example, about the tiny gall-bladder we learn that “the blood is brought to it [liver] from the bowels of the abdomen through the portal vein, so that the bile may be secreted from it, just as the gallbladder in the form of an elongated pouch, or of a pear, attached to its lower part and the [hepatic] ducts from it can also be clearly seen, through which the bile, which has been separated by glands designated for it, is conducted to it, and is introduced through the bile duct into the duodenum, where it mixes with the food that enters the intestines, and, in addition to the acidic pancreatic juice, it contributes not insignificantly to the preparation of the *chyle*, as, in the meantime, what is left over remains in the gallbladder and is kept safe for further use” (521).

The presentation of the human body ends with legs and thighs (580), shinbone (583), and feet (584).

Each presentation of the physical world is richly documented by references for the authorities of all ages including ancient Greeks and Romans.

Walpurger treated his scholarly sources respectfully and, on epistemological note, he stated that “rational natural scientist uses experience as his foundation and does not go further than the ground on which he can set his foot; he leaves to posterity what the circumstances of the present time do not allow him [to do]” (C 2.517). Nothing is more dangerous in natural science than making one’s own hypotheses to be the foundation to explain the makeup of things instead of relying on experience and using as foundation what nature by itself reveals (2.176). “Experience makes a peasant wiser in his occupation than a doctor can be, who gives in to the prejudices of his intellect” (177).

As powerful as human cognitive abilities can be, they are always limited and this realization should be always present in all scholarly pursuits. However, humans can hope for an improvement in the epistemological province since, after death, human cognitive powers will be sharpened, human knowledge will grow and (C 1.105) and so will the knowledge of nature, and thus people should restrain their “untimely curiosity” (106). With such increased powers, humans will reach the level of angelic beings who have better and clearer knowledge than humans whose knowledge is clouded by the senses (88).

2. COSMO-THEOLOGY

Physico-theology attempts to make statements about the existence of God and His attributes based on the investigation of the physical world. Different physico-theologians focused on particular aspects of nature to make theological conclusions, such as water, atmospheric phenomena, fauna, flora or only a part of those, such as grass, flowers, and the like. Walpurger called his approach cosmo-theology only in the title of his work and did not discuss the meaning of this phrase, but the scope of the coverage indicates that he meant the entire universe, going even beyond the physical universe by also discussing the nature of angelic beings, of the soul, and the afterlife.

“As many millions of different creatures as we find in the three realms of nature [namely] in animals, plants, and minerals, each kind retains its essence, its properties and perfections for itself, and from the beginning of the world to the present nothing has changed or has been lost. Should we ascribe it all to some accidental chance?” Reason rebels against it (C 3.485).

The arrangement of the universe on every level points to a careful design by an intelligent agent, who only can be God. There are some who see the world as the result of the random motion of matter and of a chance arrangement of its parts, beginning with atoms. Walpurger, with his omnipresent teleology and the conviction of the constant providential care of God for the world, saw no place for any chance in the world.

It is said about a particular event: “it happens by accident, and it is not worth paying attention to, but I have to admit that I am no friend of random and blind accidents, yes, I also believe that even the slightest occurrences in the world are under God’s rule, and have their sufficient reason in his power, wisdom, and goodness, and even the smallest thing is worthy of my attention, and I am so superstitious/prejudiced that, in my opinion, not one hair falls from the heads of men, when God’s providence would not manifest itself” (C 1.262). Some consider, for instance, the distribution of waters on earth to be accidental whereby they show that “their thoughts are immature and are the fruit of the spirit that dares to measure the greatness of the divine wisdom by their little understanding” (281). God who counts the drops of rain did not create any drop of water in vain (282). And thus, after describing the mechanism of filtering water by sand to remove salt and impurities to make it fit for drinking (C 2.105), Walpurger commented that there is no one with a foolish intellect who this wonder of nature would ascribe to a blind chance except for a wise atheist who is dumb and shameless enough to claim it (106).

The makeup of the body of birds “is so wonderfully prepared that no one but a stupid atheist can convince himself that it had grown together by chance from the smallest parts of matter without any wisdom and understanding” (C 2.339). And the same goes for the bodies of all animals: “Indeed, we cannot be sufficiently amazed at the wisdom and care of our most gracious and supreme Creator, who not only made such an assembly of all parts of living creatures, by virtue of which they perform all movements and actions that are necessary and for which they are fit, and can perform them comfortably, but also bestowed on them favors and privileges, whereby they maintain themselves, and accomplish what they must do in the easiest way” (4.232).

There are some rather brief thought experiments mentioned by Walpurger to show the unacceptability of randomness as the source of orderliness. For example, no one would expect that a text of a book would be formed when letters were tossed out from a sack (G 47). Or: get letters forming a sentence in your hand and throw them to the floor repeatedly and see whether the sentence can be recreated. Similarly, just try throwing three stones and see if they form tips of an equilateral triangle. Can all the matter in the world form itself randomly to create the visible universe? (C 3.488).

People can try to experiment to see that randomness does not quite work. If a key could fit a lock by accident, then a locksmith may try to make a thousand keys without seeing a lock and see if any of them would fit that lock (C 1.199). Also, waters are in motion, which makes them healthy and useful; they move of themselves and the wildest atheist must see here traces of the wisdom of God (129), when water gets to roots and in plants, upwards through tiny vessels, circulating on earth and in air (130).

Thus, the makeup of the world and any of its parts clearly points to the design by an agent whose power and wisdom have to be on truly cosmic scale, and that can only be God. God is a Creator, but He is also a lawgiver and the recognition of God’s creative power should lead to the recognition of God’s moral law violation of which can have eternal consequences. And this is what Walpurger was focused on by drawing moral lessons from the knowledge of the observable world.

3. EDIFYING ANALOGIES

Scholarly knowledge about the physical world is good and useful, but such knowledge is not an ultimate end for rational beings. God revealed His nature in His works. People were endowed with reason to derive unknown truths for

what they know and know about the invisible God from visible works (C 1.43). Creation should be used only as a means of leading a person to God (1.27). For these reasons, physical observations need to be seen from the religious angle and teach religious lessons. By the structure of his work, Walpurger wanted to teach such edifying lessons. Each chapter has two parts, in the first part some area of nature is covered; in the second, called *Anwendung*, he made a transition from the domain of physics to the domain of grace by providing spiritual interpretations of physical phenomena, many a time of a rather eyebrow-rising quality. Here are some examples.

“Waters with which God make a vault above [on the second day of creation] come from the depths; thus lower yourself in humility so that God can raise you high; since what is small and nothing in his eyes, he makes into something, but what wants to be something, he makes into nothing” (C 1.51).

The higher a cloud is the less useful it is for the ground; when it comes down, it becomes useful rain. People in high positions are of little use for the world the prouder they are and their usefulness grows with the level of their humility (C 1.61).

Because of the cold weather, water can turn into hail which may do damage to the earth. A person whose love becomes cold and merciless, can do a lot of damage to others (C 1.61).

The Cape of Good Hope “reminds us of the hope in faith that we have, as a firm anchor of our souls, which walks into the interior of the curtain [in the Temple], where the Forerunner has entered for us, Jesus, who has become a high priest for eternity” (C 2.15).

There must be a constant influx of water to sources for them not to dry out; “this reminds us of the wretchedness which dwells in the creature as a whole and also in us without God” (C 2.263). And again, staying on the topic of sources, “the earth is full of the goodness of the Lord, and this includes primarily the fresh sources and groundwater, which we discover in the rising sun, but the goods that the Lord offers us in the kingdom of grace, and whose sources we discover in Christ and through Christ, who is called in Scriptures the rising from on high and the sun of righteousness” (272). Moreover, the length, width, depth, and size of many rivers show us the length, etc. of God’s goodness (313).

Feathers are used to stuff beds so people should be thankful to God when they go to sleep and when they wake up and should not abuse their beds whether to laziness or to sinful lusts (C 2.577 misnumbered as 477).

“In the mines, smelters are those who smelt the ore that has come to the smelters according to its type, and with the appropriate blows put it through

the furnace and melt it, separate the work from the dross, pour it out and deliver it to be driven off.⁴ ... And this reminds [us] a spiritual smelter to do everything that contributes to the advantage and benefit of the highest mountain and liege lord, namely Christ Jesus, as [the one] who redeems his flock through his own blood ... The Word of God must be his fire,” etc. (C 3.218-219).

Many consider the sun to be in the middle of the universe, which brings to mind the words about the blindness of the Israelites at the time of the arrival of Christ who came in the midst of them to become a Mediator between humans and God (C 3.379).

“Just as the head is the residence of the rational soul, which makes use of the nerves of the brain and the spinal cord for the sensory sensations and for the movements of the body, and from there rules over the entire body; so our Savior is also the head of his congregation, of which wisest institutions everything that takes place there is dependent” (C 4.351).

Theological topics sometimes appeared unexpectedly. When discussing breath (C 4.491), just on the power of the similarity of words, Walpurger made a hasty and ungainly transition to the problem of the Holy Spirit and the *Filioque* controversy concerning the procession of the Holy Spirit (493).

In most cases, such statements are just the beginning of an elaboration that could run for several pages frequently turning into elaborate preaching-style pronouncements, so much so, that the *Anwendung* portions are usually longer, oftentimes much longer than the reports concerning the physical nature.

When discussing various aspects of the earth, Walpurger stated after Pliny that the greatness of God shines best in the smallest; after Scaliger that among the smallest works of God there are the greatest and the powers of nature are best visible in the smallest; and after Augustine that God is great in small things as He is in great things (C 1.196). This aspect of the physical world apparently captivated Walpurger’s imagination more and more since a decade after his *Cosmo-theological investigations* posthumously his book was published under the title *The great God in the small presented in a Scriptural and rational way in a manner fitting His Majesty on the noble creature of the bees, together with a preliminary treatise on insects in general*.

⁴ Johann Theodor Jablonski, *Allgemeinen Lexici für Künste und Wissenschaften*, vol. 2 (Königsberg und Leipzig: Zeisen und Hartung, 1767), 1308; while copying, Walpurger changed *für* to *vor* thereby garbling a part of the meaning of this definition.

4. INSECTS

Following published research, Walpurger presented the world of insects: their development (G 34), classification (71), their movement (90), their (96), their apparent wisdom and desires as manifested by their instincts (103).⁵ “Some insects are naturally destined for a longer life and they build extremely comfortable graves and dwellings underground, in which they spend the winter without life, motion or food. They work on it with the greatest zeal in the expectation of a better condition, and without fear of death, which, driven by nature, they choose as the way to a better life.” In spring, they resurrect from the dead (110). This process is the result of an instinct given by God to protect these insects from extinction in winter when there is no food for them (117). Also, the makeup of insects is astonishing in its complexity and harmony. Tiny insects become more beautiful when seen magnified (135), whereas small products of man lose their shine when they are magnified (136).

Walpurger paid particular attention to bees. He described their senses (G 220): hearing (221), smell (225), taste (227), the queen (229), their architectural prowess (237), their regiment and police (240), their behavior and lifestyle which led him to extoling their apian virtues: bees are frugal, diligent, clean (255), they clean one another (258), and display exemplary chastity (306). However, when angered, they are very dangerous (259). Apparently, they even love music (269). Bees’ housekeeping is the best among insects. It is a well-functioning republic (302) and each bee has its tasks in it (303): there are security bees, searchers, guides, workers, builders, and cleaners (304). However, in presenting bees it was not about the usefulness of bees, but “how the investigation of this noble insect can lead to the glorification of God who created it for humans for their best” (270) and moral lessons should be drawn, as well. And so, bees’ cleanliness points to the moral that great is a wife that is clean and diligent, but the cleanliness of one’s soul is more important as testified by Jesus’ rebuke when Pharisees criticized Him for eating bread with unwashed hands (314) and the blood of Jesus is the best means for the purity of the soul (316).

⁵ It is true that “‘Instinct’ seems to have been rather flexible in its meaning, for we observe that Walpurger includes in the term sensory perception, cognition, desire, dislike and memory, only excluding reason and reflection as strictly human or angelic attributes,” Lois Armour Westen, “*Melitto-Logia, the mythology of the bee in eighteenth-century German literature*, PhD diss. (Urbana: University of Illinois, 1952), 63.

Incidentally, the cleanliness of bees apparently contradicted the Biblical account of Samson who killed a lion on his way to Timnah to make his marriage vows and found honey inside this lion's carcass when he came later for the marriage ceremony (Judges 14:5–8). Would clean bees establish a colony inside a rotting flesh? Not really, according to Walpurger who said one year elapsed between the two visits, enough time for the carcass to be just a skeleton cleaned by insects and elements of all flesh (G 291).

Still, people should learn from bees how to maintain their household in order, in particular, for people in authority who should see that orderliness serves the good of their subjects and strengthens their throne (G 322). Also, pious people are like bees when they gather best teaching from the Scripture and religious books which are like "green meadows and trees blooming with flowers and blossoms" and pass it to others like bees pass their honey (324). It would be great if people loved their monarch and also Christ as bees love their queen and be obedient to them (352).

May God be great in the small (Ps. 148:10) (G 2). The sun is more useful than a fly, but the makeup of a fly endowed with sensory organs exceeds the makeup of the lifeless sun (6). In investigating nature, nothing should be considered to be in vain and unnecessary. Insects convince us about the wisdom of God more than amazingly big giants (8). Also, no blade of grass is too small to praise the Creator and extoll His wisdom.⁶ And hence, as Walpurger stated, "if I were to judge God according to the human way, I would have to say that God applied more wisdom and deliberation to create an insect that lives, moves, nourishes, and reproduces than to make a sun that surpasses the size of the earth millions of times" (G 161).

Walpurger's fascination with insects and bees in particular came from the fact that the greatness of God manifests itself so clearly in the analysis of the anatomy, physiology, and social organization of some insects. He considered the latter to be a splendid lesson for humans to follow. As to physico-theological treatment of insects, Walpurger followed the much more comprehen-

⁶ J[ohann] G[ottlieb] W[alpurger] P[astor] pr[imarius] und I[nspector(e)] zu W[aldheim], *Schrift- und Vernunftmäßige Betrachtung der allerheiligsten Lehre von der Genugthuung Christi, nebst einem Sendschreiben, worinnen die abscheulichen Vergehungen Hrn. Joh. Christian Edelmanns in Berleburg, wider diese und andere höchst-wichtige Wahrheiten einem guten Freunde zu Gefallen aufrichtig bemercket, bescheidenlich widerleget, und sonderlich mit Lutheri Worten, zu Rettung obangeregter Wahrheiten freundlich bestrafet worden* (Leipzig und Görlitz: Marchesche Buchhandlung, 1743), 195 [for the meaning of the abbreviation J.G.W.P. pr. und I. zu W., see the title page of the *Cosmotheologische Betrachtungen*].

sive example of Lesser.⁷ As to the physico-theological treatment of bees, he became an example followed by Schirach, an accomplished apiarist who was also an ecclesiastic, like Walpurger.⁸

5. THE SOUL

Insects can sense and know, they can desire and dislike, so they have souls, although different from the souls of angels and people. Descartes too hastily deprived animals of souls (G 101–102).

However, this is an irrational soul. Following Christian Wolff, Walpurger viewed Intellect (Verstand) as a faculty to grant humans clear presentation and the ability for general concepts, and reason (Vernunft) as an ability to see the connection between things, and to make conclusions to discover new truths (C 4.98). Animals lack these faculties since their work never changes routine (G 249). They build their constructions always the same way; birds, for instance, always stock food the same way even though doing that differently would preserve it better (250).

The human soul and the soul of angels is a simple substance, not compound, it has no parts (C 1.4, 82, 103). A material and compound soul would change, like a body, so memory of old things would be lost (3.63). Corporeal things would be unable to think even if they were not destroyed. As immaterial, the soul is immortal (64), although God is able to annihilate souls (66). Did God create the soul for the short earthly life? (67). This would be difficult to reconcile with God's power, wisdom, and goodness. Souls await reward and fear punishment, which feelings would be in vain if the soul died with the body (68).

The soul of humans and animals is in the brain (C 2.363; G 217). Animals do not have reason or intellect and their souls are much lower than human souls. Animal behavior is fixed which shows that they have no reason.

⁷ Friedrich Christian Lesser, *Insectotheologia* (Franckfurt: Michael Blochberger, 1738).

⁸ Adam Gottlob Schirach, *Melitto-theologia: Die Verherrlichung des glorwürdigen Schöpfers aus der wundervollen Biene* (Dresden: Waltherische Hof-Buchdruckerei, 1767); Schirach acknowledged his debt to Walpurger in the preface, p. xxiii. Apparently, both Walpurger and Schirach were not aware of an early effort presented in a long outline of a prospective book which never materialized: Schreiben Joh[ann] He[i]nr[ich] Zorn's an den Editorem der fortgesetzten nützlichen "Anmerkungen darinnen er einen Entwurf seiner Melitto-Theologie liefert," *Fortgesetzte nützliche Anmerkungen* 18(1744): 463–503.

Walpurger saw bees starting to build their habitation in a wrong place (C 2.371). Animals repeat their work each year without inventing anything new (374). Animal wisdom and their behavior are but the result of the drives of nature that God put in the animal souls (G 244).

Animals have a soul that can have clear concepts, thoughts, and ideas of individual objects that they can also remember, the soul which hates and flees, or loves and chooses what presents itself to the five senses. They cannot make general ideas. A lamb does not know that it is mortal just as all animals (C 2.524). By the laws of nature, the animal soul cannot turn into the human soul (525). Is the animal soul immortal? Generally, there is no article of faith concerning annihilation or renewal of inanimate and animate nature (3.264). God never revealed what He wants to do with animal souls after their death. And Walpurger left the problem of the immortality of animal soul open. However, he agreed with Joachim Lange that the destruction of the world at the end of times is contrary to the Scripture; it is contrary to the sane reason since it does not agree with the power of God; it is absurd to think that the world created to glorify God should be annihilated; the bodies will be restored in a perfected state (265). Luther also spoke about the renewal: the creation hopes for the salvation with humans (cf. Rom. 8:19) (261). That would indicate, article of faith or otherwise, that Walpurger would see the renewed world to be filled with all animals, fish, birds, and insects that ever lived, at least with their souls.

6. THEODICY

There are some things in nature that humans can find unpalatable, even outright evil. However, in making such judgments, they should always believe that God's works are always good (C 3.465). The orderliness of the world cannot be made better, it is unimprovable, although it is not the only possible (487). The created world is the best for fulfilling God's purpose which is the revelation of His glory and the exercise of His goodness.⁹ And again, the entire world and all events in it have as their goal the glory of God, the best of the pious, and the punishment of the godless; thus, nothing happens out

⁹ Johann Gottlieb Walpurger, "Die Wunder Gottes in der Regierung seiner Kirche: aus Röm. XI, 33 vorgestellt [1741]," in *Samlung auserlesener und überzeugender Canzel-Reden, Nach dem Glauben der Auserwählten Gottes und der Erkenntniß der Wahrheit zur Gottseligkeit* (Hamburg: Johan Jacob Korn, 1742), 51.

of order even if our small intellect cannot grasp the whole picture and cannot grasp the idea of this order. The fact that everything in the world takes place in an orderly fashion can be derived from the basic understanding of its Creator not only basing it on the Scripture, but also from nature (1.76).

Vapors and dust in air lead to thunders, hail, and storms can make great damage, but the benefit is far greater since the life in pure air would not be useful/good (dienlich). Only the irresponsible judgment of weak minds says otherwise (C 3.127). Storms do cause damage, but also move air thereby preventing it from becoming foul and unhealthy (128); they cool down air making heat endurable. "In nature, what is bad and apparently damaging for us can by no means be compared with the good resulting from it, and that we act wisely if we do not wish for better arrangements" (129). And thus, who knows if the strong wind that overturn towers, uproots trees and causes flood is not needed to purify air and for the reservation of most of the earth for best purposes? (112).

Infant mortality? God calls to Himself so many children by their early death since He sees that their life would be harmful or even damnable (C 4.240).

Volcanoes are outlets for fire; without them, lands would be plagued by earthquakes (C 1.486). Admittedly volcanoes can cause some damage; however, "if indeed a small evil is necessary according to its wisest arrangement in the world, still, such [evil] is allowed to no other end as that a greater [evil] is avoided and a great deal of good is brought about and promoted by it" (489). That is, the existence of what can be considered harmful to creation should be considered through the cost-benefit calculus: the good always outweighs the bad and thus the latter should be endured with patience.

There were some complaints about of human deficiencies in comparison to animals. Some think that as man learned from fish how to swim, he will learn from birds how to fly with the help of machines as the ones already tried by some inventors (C 2.568). However, God be praised that people cannot fly since if they could, that would be dangerous to them; also, robbers could easily escape with their loot (2.570).

Frequently a complaint was waged about apparently less glorious elements of creation: what are snakes for? What is the purpose of creating flies and gnats and other bothersome insects? Frequently, human limited vision and knowledge prompts such questions. Snakes? Perhaps they are needed. Maybe they carry some medicine that is unknown to us (G 20). Eggs of insects are the food of fish and birds which, in turn, become food for humans (22). Birds feed on worms and insects and birds are useful for humans as food, as

material (their plumes) (166), their singing gives pleasure (167). The fish feed on insects (168) and fish are the food of people (169). Some dyes are made from insects (176). Weather can be predicted by the behavior of insects (179). Insects are used as medicine, whether it really works or not; for instance, “scorpions, when burned into powder and administered, push out the urine left behind by the kidney- and bladder-stone” (180). Everything God created is good, although our weak mind may not see it (23). Consider insects that can be seen only through the microscope and consider their makeup. If we see no purpose of their existence, at least we should see that they show the greatness of God (24). Also, as the Scripture testifies, God wants people to learn from ants and snake (25).

Created things are good for the pious, harmful for the godless. Fire, hail, hunger, and death were created for vengeance to punish sinners and so were wild animals, scorpions, snakes (G 29), and floods (C 2.111). Plagues are teaching tools of God, but He will save His friends from plagues, wars, hunger (G 122). “God can overcome the proud by the most disdainful creatures, and drive the mightiest armies of great lords through the multitude of insects” (145).

Theodicy is one of the most difficult and often the least convincing part of any theological reasoning and Walpurger’s attempts are not particularly impressive in that quarter. In fact, so is not his cosmo-theological effort. Physico-theology is about proving God’s existence and His attributes from the makeup of the physical world or one of its parts. Walpurger did make some theological statements, but they are hardly of an overwhelming theological quality. His most convincing argument is that randomness can hardly be seen as the principle to be used for the existence of order in nature. However, Walpurger was satisfied here mainly with making a statement, not to say, exclamations, but reasoning is lacking even though in a very few rather fleeting examples he did try to prove that an order does not arise from randomness. Also, his physico-theological discussion of God’s attributes is rather unsatisfactory; for instance, God’s infinite knowledge. Why infinite? Nowhere was an attempt made to show that God’s attributes should be infinite. When he said that the harmony and relations between objects point to God’s infinite wisdom, His immeasurable goodness and the eternity of God’s essence (C 1.Vorrede [17]), he made a statement which was not sufficiently backed up by an argument. He could have used, for instance, the principle he adopted from Leibniz and Wolff that the existing world is the best that can be. If so, all possible worlds would have to be investigated: a world which consists of only one particle (Walpurger did not speak of atoms), another of two

particles, another yet of three particles, etc., for each world consisting of a finite number of particles and a finite number of relations between them. Only an infinite mind could see each such world in its entirety, even though each world would be scrutinized in succession (although, in the divine eternity there is but an infinite presence). However, such a reasoning would be based on the best-possible-world principle, which is of purely theological nature not derivable from an investigation of nature, and hence, not a physico-theological principle. However, notwithstanding the title of his main work, physico-theology or rather cosmo-theology was not a major task for Walpurg. He was an ecclesiastic deeply caring for his flock who wanted to use any means to provide for a spiritual growth of believers, and, in fact, also of unbelievers whom he wanted to bring to the Christian fold. If theology was not entirely convincing, moral and spiritual lessons he derived were his main goal and that is why the Anwendung portions of his work are much larger and much wordier than the reports about the physical world. He was not a researcher himself like many physico-theologians (e.g., Derham, Schirach, Boyle, Lesser), although he had attended university lectures on natural sciences (1.Vorrede [20]) and often referred to his own observations. Sermonizing was his forte and that is why so much preaching is included in the text. He only enlisted the existing scholarly research to the pastoral service and also “it would be ungrateful not to use the new truths/discoveries for the glory of God and for the edification of people” ([22]).

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KOSMICZNA TEOLOGIA JOHANNA GOTTLIEBA WALPURGERA

S t r e s z c z e n i e

Johann Gottlieb Walpurger był przedstawicielem ruchu fizyko-teologicznego w Niemczech. Interesował się udowodnianiem istnienia Boga i natury Jego atrybutów na podstawie badań przyrody w ogóle, a owadów i pszczół w szczególności. Sam nie był badaczem, polegał na publikacjach naukowych, które przedstawiały stan wiedzy o świecie fizycznym. Jednak główny nacisk położył na zastosowanie wiedzy wyniesionej z nauki do życia duchowego.

Słowa kluczowe: Johann Gottlieb Walpurger; fizyko-teologia; kosmoteologia; istnienie Boga.