ADAM DROZDEK

Duquesne University, Pittsburgh, USA https://orcid.org/0000-0001-8639-2727

JOHANN ALBERT FABRICIUS: A PROMISE OF THE THEOLOGY OF ELEMENTS

JOHANN ALBERT FABRICIUS: OBIETNICA TEOLOGII ŻYWIOŁÓW

ABSTRACT.

Johann Albert Fabricius was an eighteenth-century philologist and theologian. He contributed to the then popular physico-theology by authoring three synopses that aimed at the theology of the basic physical elements: hydro-theology, pyro-theology, and aero-theology, possibly also contemplating geo-theology. However, only one-third of the full version of hydro-theology appeared, which is very rich in scholarly content but rather thin with theological presentations.

Johann Albert Fabricius był to osiemnastowieczny filolog i teolog. Jego wkładem do popularnej wówczas fizykoteologii są zarysy trzech teologii podstawowych elementów fizycznych: hydroteologii, piroteologii i aeroteologii; być może rozważał także geoteologię. Opublikowana została jednak tylko jedna trzecia pełnej wersji hydroteologii, która zawierała sporo informacji natury naukowej. Natomiast prezentacja teologii pozostawia pewien niedosyt.

Johann Albert Fabricius (1668–1736) was a German classicist, bibliographer, and theologian. In 1686, he studied at the University of Leipzig, first medicine, but soon he devoted himself to theology. In 1693, he served as a librarian in Hamburg. In 1699, he received a doctorate in theology at the University of Kiel and became a professor of rhetoric and ethics at Akademisches Gymnasium in Hamburg. From 1708 to 1711, he was a rector of the Gelehrtenschule des Johanneums, a gymnasium in Hamburg. He earned his reputation in his times through the commented editions of classical and medieval texts and the many bibliographic compendia, in particular, one-volume *Bibliotheca Latina*, a 14-volume *Bibliotheca graeca*, and an unfinished, 5-volume *Bibliotheca Latina mediae et infimae aetatis*, which are detailed compilations of ancient and medieval authors' histories, and a meticulous

¹ Her[mann] Sam[uel] Reimarus, De vita et scriptis Joannis Alberti Fabricii commentarius, Hamburgi: Sum[p]tu viduae Felgineriae litteris piscatoriis 1737; Hans Schröder, Lexikon der Hamburger Schriftsteller bis zur Gegenwart, Hamburg: Verein für hamburgische Geschichte 1854, vol. 2, 238-259; Mathilde Verner, Johann Albert Fabricius, Eighteenth-century scholar and bibliographer, The Papers of the Bibliographical Society of America 60 (1966), 281-326.

presentation of the classical scholarship. In the last years of his life, his attention turned to physico-theology,² in which he tried to derive theological lessons from the three elements: water, fire, and air. We may only surmise that he may have also wanted to add earth to this list.

Hydro-theology

In 1730, Fabricius published a 30-page pamphlet that contained a synopsis of a work on hydro-theology.³ The prospective work would consist of ten books/chapters and each book would include sections whose content Fabricius described in the synopsis. Book 1: The nature and necessity of water. Book 2: The wise distribution of waters. Book 3: The movement of waters. Book 4: Properties of waters: temperature, softness, taste, smell, color, etc.; mineral water. Book 5: The uses of water for baptism, food, drink, watering soil, washing, extinguishing fire, dissolving some materials, hardening others, the circulation of fluid in the body, healing, bathing, cooking, dying, producing paper, swimming, sailing, and fishing; related to it was the problem of constructing wells, bridges, and dams. Book 6: Inhabitants of water: fish, snakes, crabs, insects, and plants. Book 7: Good things brought by water in vapors, fog, clouds, dew, snow, ice, and rain. Book 8: Water as a manifestation of God's power, justice, and care with a great detail on the punitive use of water. Book 9: The production of wine and other drinks such as tea and coffee; fluids in the human body: lymphatic, *chyle*, blood, tears, urine, saliva, and sweat. Book 10: The gratitude and praise of God: "Not only power and wisdom, but also the goodness of the beloved Creator shines in the investigation of water as clearly as from any other kind of creation" (29). The gratitude expressed to God "should consist in fear of God and in trust in Him, against whom no one can protect us and under whose protection no one can harm us, ... in benevolence and love toward neighbor, ... in maintaining one's purity and chastity, ... in moderate use of drinks and in disgust of drunkenness, ... and in the daily praise of God" (30).

From this list, only two chapters appear to be theology related, the remaining chapters touch on disparate topics joined by one theme, water, although it is curious to see that somehow commonality would be found between, say, building dams and excretion of sweat. In any event, Fabricius did write one volume that presented the material of the first three books delineated in the synopsis.

² For the path which led Fabricius in the early years of his life to physico-theology, see Udo Krolzik, *Säkularisierung der Natur: Providentia-Dei-Lehre und Naturverständnis der Frühaufklärung*, Neukirchner-Vluyn: Neukirchner 1988, 156-177.

³ Jo[hann] Albert Fabricius, Hydrotheologie oder Versuch, durch aufmercksame Betrachtung der Wasser, die Menschen zur Liebe und Bewunderung des Gütigen, Weisesten, Mächtigsten Schöpffers, zu ermuntern. Indessen, daβ des belobten Herrn Derhams Werck von dergleichen Inhalt erwartet wird, Hamburg: König und Richter 1730.

Pvro-theology

Two years later, in 1732, Fabricius published a 120-page synopsis on pyro-theology. It was also planned to consist of ten books/chapters divided into sections described in the synopsis.4

Book 1: The nature and necessity of fire; "the excellence of fire is shown in that, through fire, the great Creator sends us life, light, and warmth" (6). The creation of fire, as of other elements, is implicitly stated in the first verse of the Bible. The nature of fire is different from the nature of air, water, and earth. Fire is a body since it has weight, extension, can be sensed, and moves. Fire requires the presence of air. By the goodness of God, fire can burn a variety of materials: wood, coal, fat, etc. Starting a fire in some materials using various devices such as burning/ concave mirrors (Brennspiegel), rubbing, striking, etc.

Book 2: Life and motion as two main attributes of fire. "The testimony of the Sacred Scripture, the approval of the sane reason, and the testimony of most sages, also among pagans, that GOD is a good, wise Being and Spirit completely different from corporeal fire" (16). The human soul, being a spiritual substance, is also different from fire. The soul can animate a body with which it is united, using animal spirits, which are subtle particles of fire and air. The divine providential care is manifested in the fact that fire is everywhere in nature, and is distributed in proper proportion according to particular purposes, and regulated by natural laws designed by God. This care is also manifested in the motions of all parts of nature take place in proper times, and, in particular, in the regularity of motions of celestial bodies and celestial events such as eclipses.

Book 3: The warmth and light and other important attributes. The providence of the Creator allows human bodies to withstand various temperatures, and God also provided means to protect them from extreme temperatures. Vision will be discussed. Fire is matter of light. God has given means to cope with darkness. In the afterlife, complete darkness is for the damned, light for the saved.

Book 4: The sun, the source of fire in our planetary system. Fixed stars form their own planetary systems, serving as "a wonderful praise of the infinite Creator" (33-34). The sun moves, as ordered by the Creator, to create the day and night, and the seasons, while the moon moves to measure years and months. A discussion of comets and stars is planned.

Book 5: Fire in the air; this includes lightning and thunder. Biblical events involving fire will be presented, as well as the rainbow and the northern lights.

Book 6: Fire in animals and plants. "The great masterpiece of the wise goodness and power of the beloved Creator, is manifested in the determination and

⁴ Jo[hann] Albert Fabricius, Pyrotheologie, oder Versuch durch nähere Betrachtung des Feuers, die Menschen zur Liebe und Bewunderung ihres Gütigsten, Weisesten, Mächtigsten Schöpfers anzuflammen, Hamburg: Theodor Christoph Felginers Wittwe 1732; the pamphlet was republished as an attachment to William Derham, Astrotheologie, Hamburg: Johann Carl Bohn 1745, 263-379, and 1765, 185-267.

distribution of the degrees and types of fire from the smallest to the largest, in innumerable types of minerals in the earth ... and in plants and animals on earth and also in man himself" (48-49). However, there are some limits set by God to this growth. Fire present in the eyes and the ability to see in darkness and in water. Fire is present in the blood, in the brain, in the stomach; after all, "fire [is] the perpetuum mobile [present] in the entire nature, particularly in plants, animals, and humans," which is also the cause of the nonexistence of bodies in perfect rest (54). Fire in fish, crocodiles, salamanders, chameleons, snakes, insects, and birds. Poisons, such as those found in scorpions, and antidotes provided by God in herbs. Seeds as living fire. Colors. Sweat as a way of removing inner fire. Temperaments of people and animals. The fire of faith and love for God and humans. Illnesses related to fire. Warm and hot drinks and food. An interjected remark states that there is no excuse before the judgment of God and man to the rational soul to do evil when it could have avoided it.

Book 7: Fire in the earth: flammable materials, sulfur, naphtha, coal, peat, sources of warm water. Underground fire causes maturation of minerals and metals, and the growth of plants. The underground winds and earthquakes, "fire-spewing mountains," and the Hades.

Book 8: The use of fire: for growth, purification, shining, and healing. The question of how the sun's fire has been burning for thousands of years. Ashes. Chemical reactions enabled by fire. Alchemical attempts to make gold. The process of smelting and casting metals. The production of coins, locks, wire, various tools, glass, bricks, porcelain, and dyes. The use of fire in various forms of punishment and offerings.

Book 9: Further uses of fire: to move bodies, used in ships during wars, in light-houses, for fireworks, in magic lanterns, in magic, in firearms, and in cremation; the use of firewood for everyday usage such as in ovens. Methods of extinguishing and maintaining fire.

Book 10: Edifying lessons. The investigation of fire should inspire people to "love, fear, and praise the almighty Creator" (112) and, "in particular, to ponder on light, which should lead us to GOD, just as the wise men were guided by the star from the East to Christ" (113), since God is the Father of light and Christ is the Light of the world. "The fire of devotion, faith, love, and zeal for goodness must be enkindled and maintained by GOD, and received from Him through prayer" (114). God is a fiery wall for those who want His protection. People should trust Him in the times of misfortune. People should be grateful to God for the fire in nature, but also remember the fire in hell.

A very wide-ranging discussion was planned: fire in nature, fire in hell, and fire as a metaphor, often resulting in a highly impressionistic combination of topics. Not much on theological issues is included in this synopsis.

Aero-theology

The last physico-theological area Fabricius described was the air, for which he left a cursory 2-page outline, also planned as a work of ten books/chapters. 5 Book 1: The nature of air, the nine things it has in common with all things, particularly elasticity, corporeality, and weight, and air's specific properties. Books 2: The frightful length and width of air; its inhabitants. Book 3: Changes in the properties of air, winds, meteorites, and the signs in the air. Book 4: The uses of air in relation to other elements, weather, and the life of animals, plants, and humans. Book 5: The use of air in relation to light; the beauty of the world. Book 6: The use of air in relation to sound, book 7: to smell, and, book 8: to shipping. Book 9: The punitive use of air: storms, pests, poisoning, and air deprivation. Book 10: The wise arrangement of the abundant amount of air and in the air that the benevolent Creator used in plants, animals, and humans.

It appears that, just like previous plans, the prospective work on the theology of air would contain mostly information about the physical nature and use of this element, with some theology-related remarks spread in between and emphasized only in the last chapter.

The three synopses form a rather ambitious plan, but the execution of it was rather underwhelming since Fabricius was only able to publish one separate book that includes the material of the first three books outlined in the hydro-theological synopsis.6

Properties and uses of water

Water is not just compressed air; rather, it is a mixture of particles of air, of fiery and heavy, phlegmatic, earthly particles united into a liquid entity (4). Water is transparent, but sunrays are eventually dispersed when they come into contact with water (10). Water reflects images of things, much like a mirror (13). Sounds can be heard by someone in the water (17). Water has some hardness: a stone thrown sideways bounces/ricochets off the surface of water (22) and a stick can be broken when hitting water with it; even a bullet can be flattened and reflected by water (23). Water can be warm or cold to any degree (30), and heat can extend its volume (32). Although water is 800 times heavier than air (38), particles of fire can still elevate water upwards into the air (34). Water turns into ice by outgoing of fiery particles and the incoming of nitrous particles (35). Water softens bodies when it permeates them to the point of decomposition, which is useful

⁵ Johann Albert Fabricius, Aërotheologie, in: Friedrich Christian Lesser, *Lithotheologie*, Hamburg: Christian Wilhelm Brand 1735, xlvii-xlviii.

⁶ Jo[hann] Albert Fabricius, Hydrotheologie oder Versuch, durch aufmerksame Betrachtung der Eigenschaften, reichen Austheilung und Bewegung der Wasser, die Menschen zur Liebe und Bewunderung ihres Gütigen, Weisesten, Mächtigsten Schöpfers, zu ermuntern, Hamburg: König und Richter 1734.

in the digestion of food to produce *chyle* (54). There are nine properties that characterize all bodies, including water; the first two were identified by Descartes: 1. extension (58), and 2. solidity or impenetrability; the other six properties were identified by Musschenbroek: 3. the power of inertia; 4. mobility, 5. *quiescibilitas*, whereby bodies can be in motion or at rest (59), 6. gravity, 7. *figurabilitas*, i.e., having a particular shape (60), and 8. attraction; and the last property was determined by Fabricius himself: 9. divisibility (61), although it is unknown if this divisibility is infinite (62).

Water is found in largest quantities in seas and oceans. Seas are useful since it is easier to reach distant lands by ship than by land (126), and so various aspect of the seas are touched upon: their depth – assessed to be one German mile (ca. 7.5 km, 4.6 miles) – and the makeup of the seafloor (92). Some verses say that the waters of the sea go underground to places where rivers originate (141), which was a theory widely accepted at that time, and so, the sea is like the heart for the earth, the underground passages are like arteries, and the rivers are like the veins (135). A supposition is made that there are probably underground connections between all seas (167).

A closely related topic is rivers, which are said to originate in mountains where clouds are stopped (127) and water from these clouds forms rivers. Also, "due to their height, mountains are best suited to further divide water, which in itself is a heavy and liquid body, and to make it flow away, so that rivers take their course until they finally can't go any further, or until they reach the sea. As a result, the earth receives the great benefit that it is watered everywhere with the rivers, much like a garden of GOD" (128).

Fabricius presented many more uses of water. For example, water can refresh plants, animals, and humans, and also can nourish and heal (67). Water can clean and purify (70), which would include baptism instituted by Christ. Water also extinguishes fire (72), but water is not entirely an enemy of fire, since fire can warm up water (73); after all, some fire particles are always in water (75).

When it came to human anatomy, Fabricius somewhat widened the issue by speaking not only about water in the human body, but about any fluids. And thus, we learn that "The mouth is filled with so many small sources of moisture that the movement of the tongue is thereby enabled, and also such fluid is prepared that the chewed food begins to dissolve and is thus half-prepared to be delivered to the stomach. There is another moisture in the stomach, which aids complete digestion, just as all the passages and intestines in the human body function and move with the help of their own fluids." The entire body is filled with fluids and the excess is expelled as urine and sweat (225). And so, the entire body can be viewed as *machina hydraulico-pneumatica* (226). The body is full of vulvulae/valves to control the flow of fluids through their passages including blood (227).

Theological remarks

According to Fabricius, the role of natural sciences is to detect various uses of water to see that in water, as in the entire nature, there is nothing redundant, nothing without purpose and the investigation of such issues is the human obligation. In this, the investigation of water becomes hydro-theology which leads people to God since it allows them to see that all things have their Creator, who, in particular, has infused water with such properties that it can meet various needs (82).

Each property of water allows people to wonder about the greatness of the works of God (80). The more they contemplate water, the better they see that the world is a magnificent clock made with all diligence by the good Master for wise purposes, in which the greatest spring is fire, and water, air, and earth are large wheels so artfully made and so precisely fitted with one another that through their constant working most wonderful things come into being. Every attribute of water is useful (81).

The elements of nature and their beauty speak about the goodness, power, and wisdom of God, and the investigation of nature points to a design detectable in it that comes from the Creator. This can be seen by anyone who wants to use his eyes and intellect (387).

This key aspect of hydro-theology – its role in leading people to God – does not appear very often on the pages of *Hydrotheologie*. Most of the time, the existence of God is simply taken for granted, and references to God are made in such statements as that by God's wisdom, water, like other bodies, moves toward the center of the earth (65); that God gave various laws about water (71); that, by the goodness of God, water, so useful for humans, is abundant in nature, and because of this abundance, people forget to express their gratitude and can appreciate the gift of water only when there is a lack of it (86); that God created two ways to maintain the freshness of waters: their motion and salt (122); that the good God created natural havens to anchor ships (205); that in the variety of mills – to produce flour, paper, felt, etc. – people should count on an extraordinary piece of wisdom that God gave people the sense to build them (416); etc.

Throughout the book, the authority of the Bible is acknowledged. Biblical quotations appear abundantly, particularly if they mention water directly or indirectly (as a river, sea, rain, etc.) literally or metaphorically (such as living water) with some comments which may elucidate the meaning of some verses with the help of empirical data. Biblical miracles related to water, starting with its creation, are simply stated as manifestation of God's power. On the other hand, what is an outright miracle may, in another form, be a common occurrence, a miracle of nature,

⁷ Such comments "are expected in the case of an author and a reader who trust the Bible and ask themselves what is the precise understanding of Biblical texts when confronted with the statements of natural science," Sven Grosse, Abgründe der Physikotheologie: Fabricius – Brockes – Reimarus, in: J.A. Steiger (ed.), Das akademische Gymnasium zu Hamburg (gegr. 1613) im Kontext frühneuzeitlicher Wissenschafts- und Bildungsgeschichte, Berlin: De Gruyter 2017, 321.

as it were. For instance, the miracle of turning water into wine performed by Christ in Cana is something God performs every day by turning water inside grapes into wine (51). About the miraculous outflow of water when Moses struck a rock, Fabricius said that "GOD reveals this to Moses and lets him perform and obtain through a miracle what elsewhere he gives in nature so powerfully that streams flow from the rocks and wells are dug in mountains" (131), and he referred to reports of miners. However, not all Biblical accounts are taken literally. For example, according to Fabricius, Adam and Eve were not expelled from paradise but from the state of happiness, and the cherubim guarding the paradise are but images of God's power that prevent sinners from making such a paradise (147). That is, Fabricius was not as much concerned about proving the existence of God but about acknowledging by people God's providential presence everywhere in nature. "Isn't that a wonderful and gratefully received thing that in the whole of nature, the Lover of our life has made such an arrangement that the waters all over the world have to provide such a perpetuum mobile for our benefit and refreshment, and the large and small movements of waters set up for useful intentions can now be steadfastly continued for many thousands of years and will continue to be maintained as long as it pleases GOD to let this world-edifice stand" (326).

The Hydrotheologie is a dazzling mixture of topics that relate somehow to water, but for all of them, Fabricius tried to provide the state of the art results of observations and experiments. He frequently slipped into his favorite topic, bibliography, and very often the *Hydrotheologie* reads like an annotated bibliography. Fabricius presented an enormous array of references and always backed a discussion of a particular topic by indicating sources of his information. He was not a scientist and, at best, as far as his own observations, he referred to common sense experience, but when needed, he quoted articles and books of scholars and experimenters whose names are very often recognized even today: Halley, Pascal, Boyle, Mariotte, Newton, Hevelius, Cassini, Hooke, Boerhaave, Malpighi, Fahrenheit, and many others. 8 When discussing seas, he not only presented many facts related to the physical nature of sea water and sea behavior but presented various aspects of maritime laws also on some four dozen pages. If a reader were interested in what science has to say about various aspects of nature related to water, the Hydrotheologie is a great resource, considering that some sections are accompanied by bibliographies. However, the book was presumably aimed at theology, and, in that respect, it is rather disappointing. It encourages the reader to recognize the divine presence in nature and thereby the expression of gratitude for the gift of creation, and it is helpful to a believer to see better the ways of God and appreciate God's presence in things which are often taken for granted. Thus, the *Hydrotheol*ogie is a popular science book intertwined with dogmatics with strong devotional

⁸ The content of the book is thus largely "transmitted experience" (*vermittelte Erfahrung*), as described by Ralph Häfner, Literaturgeschichte und Physikotheologie: Johann Albert Fabricius, in: Steiger, Johann Anselm (ed.), 500 Jahre Theologie in Hamburg: Hamburg als Zentrum christlicher Theologie und Kultur zwischen Tradition und Zukunft, Berlin: De Gruyter 2005, 54.

aspects. However, the theological aspect of the book is barely discernible and, in that respect, the title of the book is overpromising. In defense of the book, it can be said that it includes about a third of the planned full version of hydro-theology. It runs for 435 pages, thus, if everything went to the plan given in the synopsis, the entire work could have about 1400 pages, and a similar size could be expected for treatises on pyro-theology and aero-theology, each one planned to have ten chapters. Fabricius did plan to continue his work on hydro-theology, as evidenced by references in the published part to future discussion of some topics in later books/ chapters (e.g., in book 4 (57) or book 5 (69)). The chapters which would concentrate on theology would be book 8, mainly related to the use of waters by God for punitive purposes, and a short book 10, for an expression of gratitude, although it does not quite appear that theology would be much discussed there. In any event, Fabricius did not continue his physico-theological work, possibly drawn back to his bibliographical occupations, working on Bibliotheca Latina mediae et infimae aetatis, the first volume of which came out in 1734.

Fabricius was part of the physico-theological movement in Germany; however, he joined the movement when it was already in full swing. His own original input is not very impressive; the only original input is the names of the three areas of physico-theology: hydro-theology, ¹⁰ pyro-theology, and aero-theology. It is interesting to suppose that maybe he wanted to complete the three with the fourth: geo-theology to cover all the four basic elements. So, his original input was rather a promise of one. Arguably, more important contributions were his translations of Fénelon's Démonstration de l'existence de Dieu and of the two works by Derham, Physico-theology¹¹ and Astro-theology; moreover, Fabricius also compiled a useful annotated bibliography of physico-theology that he added to Derham's Astrotheologie. 12

⁹ Lessers's *Lithotheologie* and Zorn's *Petino-Theologie* are about that size. "If all those planned [Fabricius'] books had had the same volume as the three he wrote, Hydrotheologie, Pyrotheologie and Aerotheologie would have had a total volume of well over 4,000 pages," Erik Petersen, Intellectum liberare. Johann Albert Fabricius - en humanist i Europa, København, Museum Tusculanums Forlag 1998, 746.

¹⁰ It seems that Derham contemplated a work on hydro-theology, cf. the subtitle of the 1730 edition of *Hydrotheologie* and William Derham, *Physico Theologie*, Hamburg: Christian Wilhelm Brand 1736, p. xlvi ("Hydrotheologie" is interjected by Fabricius, not in the original), p. 121, a note added by Fabricius, p. 984, note 6 (the parenthesized remark at the end is added by Fabricius); cf. Friedrich Christian Lesser, Kurtzer Entwurff einer Lithotheologie, Nordhausen: Joh[ann] August Cöler 1732, 13; Lithotheologie, xx-xxi.

¹¹ To be precise, as Fabricius stated in the preface, he revised and amplified the Christian Ludewig Wiener's translation of this work.

¹² Jo[hann] Albert Fabricius, Verzeichniß der Alten und Neuen Scribenten, die sich haben lassen angelegen seyn durch Betrachtung der Natur, und der Geschöpfe die Menschen zu Gott zu führen, in: W. Derham: Astrotheologie, Hamburg: Theodor Christoph Felginers Wittwe 1728, xiii-lxiv; 1732², xiii-lxxx; Hamburg: Johann Carl Bohn 1765⁵, xv-xc. This is a continuation of his physico-theological bibliography given in Jo[hann] Albert Fabricius, Delectus argumentorum et Syllabus Scriptorum, Hamburgi: Sum[p]tu Theodori Chrisophori Felginer 1725, 286-295. On that subject, cf. Kaspar von Greyerz, Back to the roots? J. A. Fabricius's "Register of ancient and mod-

Through his terminological impact, through his translations and bibliographies, but also through the spirit of the *Hydrotheologie*, Fabricius contributed to the promotion and popularization of physico-theology, thereby popularizing science. ¹³ Since it is a human duty to investigate nature to gain knowledge about God and His attributes, what can be better equipped for such an investigation than science? Promoting science is thus promoting the work of God and thereby the pious recognition of God's living presence in the world and in human life, and this surely has eschatological impact which for a professional theologian like Fabricius was of great importance.

Bibliography

- Fabricius, Jo[hann] Albert, Hydrotheologie oder Versuch, durch aufmercksame Betrachtung der Wasser, die Menschen zur Liebe und Bewunderung des Gütigen, Weisesten, Mächtigsten Schöpffers, zu ermuntern. Indessen, daß des belobten Herrn Derhams Werck von dergleichen Inhalt erwartet wird, Hamburg: König und Richter 1730.
- Fabricius, Jo[hann] Albert, Pyrotheologie, oder Versuch durch nähere Betrachtung des Feuers, die Menschen zur Liebe und Bewunderung ihres Gütigsten, Weisesten, Mächtigsten Schöpfers anzuflammen, Hamburg: Theodor Christoph Felginers Wittwe 1732.
- Fabricius, Johann Albert, Aërotheologie, in: Friedrich Christian Lesser, *Lithotheologie*, Hamburg: Christian Wilhelm Brand 1735, xlvii-xlviii.
- Fabricius, Jo[hann] Albert, Hydrotheologie oder Versuch, durch aufmerksame Betrachtung der Eigenschaften, reichen Austheilung und Bewegung der Wasser, die Menschen zur Liebe und Bewunderung ihres Gütigen, Weisesten, Mächtigsten Schöpfers, zu ermuntern, Hamburg: König und Richter 1734.
- Fabricius, Jo[hann] Albert, Verzeichniß der Alten und Neuen Scribenten, die sich haben lassen angelegen seyn durch Betrachtung der Natur, und der Geschöpfe die Menschen zu Gott zu führen, in: W. Derham: *Astrotheologie*, Hamburg: Theodor Christoph Felginers Wittwe 1728, xiii-lxiv; 1732², xiii-lxxx; Hamburg 1765⁵, xv-xc.
- Fabricius, Jo[hann] Albert, *Delectus argumentorum et Syllabus Scriptorum*, Hamburgi: Sum[p]tu Theodori Chrisophori Felginer 1725.
- Greyerz, Kaspar von, Back to the roots? J. A. Fabricius's "Register of ancient and modern writers" of 1728, in: A. Blair, K. von Greyerz (eds.), *Physico-theology: religion and science in Europe, 1650–1750*, Baltimore: Johns Hopkins University Press 2020, 90-100.

ern writers" of 1728, in: A. Blair, K. von Greyerz (eds.), *Physico-theology: religion and science in Europe, 1650–1750*, Baltimore: Johns Hopkins University Press 2020, 90-100.

¹³ "Firstly, Fabricius' writings contribute to the development and popularization of the natural sciences by imparting knowledge about nature. (...) Secondly, Fabricius promotes the study of nature. ... Fabricius further creates a positive climate for the development and development of natural sciences by demonstrating the compatibility of the new scientific findings with the traditional worldview," Henrik Petersen, B. H. Brockes, J. A. Fabricius, H. S. Reimarus: Physikotheologie im Norddeutschland des 18. Jahrhunderts zwischen theologischer Erbauung und Wissensvermittlung, PhD diss., Kiel: Christian-Albrechts-Universität 2004, 167.

- Grosse, Sven, Abgründe der Physikotheologie: Fabricius Brockes Reimarus, in: J.A. Steiger (ed.), Das akademische Gymnasium zu Hamburg (gegr. 1613) im Kontext frühneuzeitlicher Wissenschafts- und Bildungsgeschichte, Berlin: De Gruyter 2017.
- Häfner, Ralph, Literaturgeschichte und Physikotheologie: Johann Albert Fabricius, in: Steiger, Johann Anselm (ed.), 500 Jahre Theologie in Hamburg: Hamburg als Zentrum christlicher Theologie und Kultur zwischen Tradition und Zukunft, Berlin: De Gruyter 2005, 35-57.
- Krolzik, Udo, Säkularisierung der Natur: Providentia-Dei-Lehre und Naturverständnis der Frühaufklärung, Neukirchner-Vluyn: Neukirchner 1988.
- Petersen, Erik, Intellectum liberare. Johann Albert Fabricius en humanist i Europa, København, Museum Tusculanums Forlag 1998.
- Petersen, Henrik, B. H. Brockes, J. A. Fabricius, H. S. Reimarus: Physikotheologie im Norddeutschland des 18. Jahrhunderts zwischen theologischer Erbauung und Wissensvermittlung, PhD diss., Kiel: Christian-Albrechts-Universität 2004, 167.
- Reimarus, Her[mann] Sam[uel], De vita et scriptis Joannis Alberti Fabricii commentarius, Hamburgi: Sum[p]tu viduae Felgineriae litteris piscatoriis 1737.
- Schröder, Hans, Lexikon der Hamburger Schriftsteller bis zur Gegenwart, Hamburg: Verein für hamburgische Geschichte 1854, vol. 2, 238-259.
- Verner, Mathilde, Johann Albert Fabricius, Eighteenth-century scholar and bibliographer, The Papers of the Bibliographical Society of America 60 (1966), 281-326.

Keywords: Johann Albert Fabricius, physico-theology, hydro-theology,

pyro-theology, and aero-theology

Slowa kluczowe: Johann Albert Fabricius, fizykoteologia, hydroteologia,

piroteologia i aeroteologia