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## Botanical Theology of Julius Bernhard von Rohr

### Teologia botaniczna Juliusa Bernharda von Rohr

**ABSTRACT:** Julius Bernhard von Rohr (1688–1742) was a lawyer by profession and an amateur but competent botanist. A religious man, he considered the study of nature to be a way of appreciating it as a work of God to find a way to God or to deepen one's religious faith. This combination of natural science and theology found the best expression in his *Phyto-Theologia* in which he described in detail the botanical world to show it as an expression of divine power, wisdom, and goodness. He described in great detail various plants, their parts, the uses of plants for humans and animals, and the purposefulness manifesting itself in all aspects of the flora. Von Rohr addressed the problem of theodicy as related to the botanical world and the problem of an interplay between theology and science.

**KEY WORDS:** Julius Bernhard von Rohr, *Phyto-Theologia*, physico-theology, theodicy, science and theology

**ABSTRAKT:** Julius Bernhard von Rohr (1688–1742), choć był z wykształcenia prawnikiem, zajmował się także – amatorsko, ale kompetentnie – botaniką. Jako człowiek religijny uważał, że badanie przyrody prowadzi do uznania jej jako dzieła Bożego i jest sposobem na odnalezienie drogi do Boga lub na pogłębienie wiary. To połączenie nauk przyrodniczych i teologii znalazło najlepszy wyraz w jego *Fitoteologii*, gdzie szczegółowo opisał świat botaniki i ukazał go jako wyraz Bożej mocy, mądrości i dobroci. W tym dziele przedstawił bardzo szczegółowo różne rodzaje roślin, ich elementy oraz zastosowanie na potrzeby ludzi i zwierząt. Podjął również zagadnienie celowości przejawiającej się we wszystkich aspektach flory. Von Rohr zajął się ponadto problemem teodycei w odniesieniu do świata botanicznego oraz kwestią wzajemnego oddziaływania teologii i nauki.

**SŁOWA KLUCZOWE:** Julius Bernhard von Rohr, *Fitoteologia*, fizyko-teologia, nauki przyrodnicze, teologia naturalna, teodycea, nauka i teologia

The second half of the 17<sup>th</sup> century and the whole of 18<sup>th</sup> century was a period of the flourishing of physico-theology. The period coincided with the development of modern science and the scope of investigated nature enabled by the microscope and the telescope. This was also the time of ascendancy of deism and atheism. Physico-theology was a movement trying to counter the growth of unbelief by relying on science for theological and religious purposes. Physico-theologians used the results of scientific observations and experiments to prove the existence of God by arguing that the orderliness and complexity of the world detected on the macro and micro level point to the existence of the supernatural Designer of immense power and wisdom. Physico-theologians also wanted to derive from the scientific data the attributes of God: the magnitude of His power, wisdom, and care for His creation. Such a naturally gained knowledge about God should allow them to establish moral rules. In all this, they wanted to win people over by such investigations to Christianity and to the salvation it offered.

There were numerous books on physico-theology written by scholars and by theologians, some were comprehensive in that they used data from various branches of science – physics, biology, geology, etc. to show that the presence of God can be universally detected. Some authors concentrated on one aspect of physical reality, treating it in great detail, thereby creating subdivisions of physico-theology; for example, the analysis of the world of snails and molluscs gave rise to testaceo-theology, the observations of the world of bees – to melitto-theology, the description of the avian world – to petino-theology, etc.<sup>1</sup> Phyto-theology offered by von Rohr was his contribution to physico-theology.

## Julius Bernhard von Rohr

Julius Bernhard von Rohr was born in 1688 in a noble family and was brought up in a religious atmosphere. In 1705–1710, he studied law in the University of Leipzig, but he also attended lectures on natural sciences and mathematics. In 1710 and 1712, he defended there two dissertations. In 1714, von Rohr was an assessor (Beisitzer) in Merseburg near Leipzig and in 1726, he was transferred in this capacity to Lower Lusatia. In 1731, he became a chamber counsellor

<sup>1</sup> Cf. W. Philipp, *Das Werden der Aufklärung in theologiegeschichtlicher Sicht*, Göttingen 1957; P. Michel, *Physikotheologie: Ursprünge, Leistung und Niedergang einer Denkform*, Zürich 2008; M. Vassányi, *Religious Awe at the Origin of Eighteenth-Century Physico-Theology*, [in:] *Philosophy Begins in Wonder: An Introduction to Early Modern Philosophy, Theology, and Science*, M.F. Deckard, P. Losonczi (eds.), Cambridge 2011, pp. 72–104.

(Landkammerrat) of the duke of Saxony-Merseburg and, in the following year, a canon (Domherr) in the cathedral (Domkapitel) of Merseburg. He retired in 1738 and died in 1742.<sup>2</sup>

Von Rohr was an author of some three dozen bulky volumes on jurisprudence, farming, geography, religious, and theological topics. Most of his books make it very clear how he stood in respect to the Christian religion and in his last work he enlisted in the service of theology his competence in botany he had acquired over many years. He expressed his desire to follow such scholars as Boyle, Scheuchzer, Wolff, Derham, Fabricius, and others who led their readers from the investigation of nature to God, and he wanted to show the eternal power and divinity from the works of creation and maintenance to lead the reader to this knowledge and to the praise of the Creator. Von Rohr considered the works of these scholars to be useful for the learned and the unlearned. He chose what was not investigated in detail and what he had enjoyed from his young years.<sup>3</sup> He was, in fact, a consummate naturalist, and, as he wrote in 1724, he had even purchased a few years earlier some land between Dresden and Meissen in order to gain practical experience in gardening, agriculture, and growing vineyard.<sup>4</sup> “I hope and wish to end the days of my life with this investigation in my spare hours,” he said.<sup>5</sup> In this, he expressed a thought that can also be found on the opening page of his naturalist book on trees and forests, where he wanted “to present some good thoughts about that people should and can remember in looking at wild trees and then going to the woods the care of the omniscient and loving Creator and Maintainer of all things.”<sup>6</sup> Von Rohr gave the fullest expression of this sentiment in the last book he published, *Phyto-Theologia*.<sup>7</sup>

<sup>2</sup> Cf. C. Günther Ludovici, *Ausführlicher Entwurf einer vollständigen Historie der Wolfischen Philosophie*, Leipzig 1738, vol. 3, pp. 211–224; largely reproduced in *Allerneueste Nachrichten von juristischen Buchern* 19 (1742), pp. 219–239, and in *Grosses vollständiges Universal-Lexicon aller Wissenschaften und Künste*, Leipzig 1750, vol. 32, cols. 560–569.

<sup>3</sup> Cf. J.B. von Rohr, *Phyto-Theologia*, Frankfurt–Leipzig 1740 (hereafter: Ph), p. [4, 6–7] (unpaginated preface).

<sup>4</sup> Cf. J.B. von Rohr, *Compendieuse physicalische Bibliothek*, Leipzig 1724, pp. [10–11]; J.B. von Rohr, *Viticultura Germaniae oeconomica*, Leipzig 1730, p. 287. The reason for choosing this location can be gleaned from his *Compendieuse Haushaltungs-Bibliothek*, Leipzig 1726 [1716], pp. 93–94, 597.

<sup>5</sup> Ph, p. [7].

<sup>6</sup> J.B. von Rohr, *Historia naturalis arborum et fruticum sylvestrium Germaniae*, Leipzig 1732, p. 1.

<sup>7</sup> φυτόν – plant.

## Phyto-theology

In his *Phyto-Theologia*, von Rohr first presented the world of plants through their major parts: roots, stalks and trunks, bark, buds, leaves, flowers, fruit, and seeds.<sup>8</sup> For example, he said among others about roots:

Roots, like the other parts of a plant, consist of nothing but fibers; some of them are even more delicate than a hair, for they are hollowed-out little tubes with an opening below. The pith or pallid matter makes up the inner part and is used to digest the juice. It probably keeps the buds of young roots that run out to the side, [and] they can now get inside as they like. Hence it happens that when you peel off the bark of young roots, you see now and then little bumps on wood, because the buds of the roots want to break through. If you cut young roots straight through, you can actually see, especially where you put them under the magnifying glass, that fibers run through the wood around the center point of the pith, just as you would draw the radii in a circle.<sup>9</sup>

The entire section on roots is given in such a naturalist manner; however, the reason for this presentation is the theological conclusion von Rohr wanted to derive from it, which is given in a similar manner after descriptions of other parts of plants:

Recognize, O man! also in roots the greatness, wisdom, and goodness of the Lord, who gave them their essence. Who has given these lowest parts of plants so many different parts, all of which together stand in the most precise proportion, and arranged according to a common end? Who has formed them in so many different ways so that some have such a regular form as if they had been crafted by the hand of an artist, but others appear to have disorderly form? (...) None other than the Lord who also prepares/makes us in the most artful fashion and whose overseeing preserves our breath.<sup>10</sup>

Plants are imported and exported, and having described a great many trees that were brought to Germany,<sup>11</sup> von Rohr concluded that all these imports are “signs of the divine goodness which [God] constantly sends as a gift to our lands

<sup>8</sup> Cf. Ph, pp. (in order) 56, 69, 73, 78, 87, 101, and 101, 131, 146.

<sup>9</sup> Ph, pp. 67–68; cf. C. Wolff, *Vernünfftige Gedancken von den Würckungen der Natur*, Halle 1723, p. 605.

<sup>10</sup> Ph pp. 68–69.

<sup>11</sup> Cf. Ph, p. 272.

new goods and we sing praise and hymns of gratitude to such a good, holy, and triune God.” However, not all plants can be imported since, for instance, plants from a warm climate may not fare well in a cold climate.<sup>12</sup> This, however, has a positive outcome, since it encourages commerce and friendly relations between peoples. Moreover, because of the desire for exotic plants, missionaries travel to far-away countries accompanying those who were looking for such plants, whereby the Gospel is spread around the world.<sup>13</sup>

What if plants that are needed to manufacture particular products are lacking? In this case, the lack has to be replaced by something else.<sup>14</sup> For example,

neither flax nor hemp is grown in Lapland, but instead a thread is prepared from the dried, pounded, and flax-shaped veins of reindeers, which the Lapland women know how to handle. In addition to this, they also make yarn from sheep’s wool, from which they weave ribbons and cloth.<sup>15</sup>

Generally, by God’s provision, in each part of the world there are resources allowing people to satisfy their needs.<sup>16</sup>

There are many uses of plants; they are for consumption and also for healing.<sup>17</sup>

The supreme Monarch created for his mortal subjects not only food that nourishes their body and maintains their strength, but also [food] that is tasty. But how few are there who sing from the bottom of their heart a praise and gratitude song for this blessing.<sup>18</sup>

Plants are used to make products important for each household such as vinegar, oil, wheat, food for cattle;<sup>19</sup> for example, the source of saltpeter is, among others

all weeds weeded out from gardens and fields, everything that is thrown away from the kitchen herbs, all kinds of leaves – leaves of willows, peach-trees, birches, alders, hazels, maples, oaks, beeches, chestnuts, cherry-trees, elderberries –

<sup>12</sup> Cf. Ph, pp. 282–283.

<sup>13</sup> Cf. Ph, pp. 292–293.

<sup>14</sup> Cf. Ph, p. 311.

<sup>15</sup> Ph, p. 330; cf. *Grosses vollständiges Universal-Lexicon...*, op. cit., vol. 64, col. 1724.

<sup>16</sup> Cf. Ph, p. 312.

<sup>17</sup> Cf. Ph, p. 390.

<sup>18</sup> Cf. Ph, p. 385.

<sup>19</sup> Cf. Ph, pp. (in order) 456, 457, 459, 461.

also needles of spruces and firs, young sprouts of firs and spruces, hop leaves, pumpkin leaves and stalks, and, in sum, all leaves that have some flavor.<sup>20</sup>

There are many properties of plants which are not obvious and need to be discovered. God gave people the ability to discover in plants their hidden properties and powers for their use.<sup>21</sup> Some of these properties were discovered by animals, for instance

a hind strengthens her young with the smell of an anthill, with watercress/nasturtium, moss and all kinds of bark from trees, and when a deer bleeds its veins through its nose, it sometimes stops the bleeding with moss from ashes or alders, indeed, in the spring it cleanses its blood with herbs.<sup>22</sup>

God thought about all people when designing the flora, including the poorest.

Does not the great, benevolent Food Master show the poorest people in all countries a special blessing that besides the general plague of shortage and starvation, he gives them such nourishment for food and drink which is tasty, strengthens their limbs, nourishes them, and gets them well, so that they are generally stronger, livelier, and healthier, also, they reach higher age than the richest and most eminent people?<sup>23</sup>

Also, food that grows most plentifully can be used by the poor. In fact, in all lands there are plants that can be considered delicacies also by the poor.<sup>24</sup>

Plants have been created not only for humans, but also for animals, birds, even insects, and thus, for instance, some insects use leaves to create their dwellings: some of them

wrap up more than one leaf, either from the side, in the shape of a pear, where they gnaw through different holes on the sides in order to have their exit and entrance through them; or [they wrap them up] lengthways together, so that they look almost like a hen's nest made of straw around a hoop, wide at the

<sup>20</sup> Ph, p. 469; G.E. Stahl, *Gründliche und nützliche Schriften, von der Natur, Erzeugung, Bereitung und Nutzbarkeit des Salpeters*, Stettin 1748 [1734], pp. 133–134.

<sup>21</sup> Cf. Ph, p. 369.

<sup>22</sup> Cf. Ph, p. 398; C. Wolff, *Vernünfftige Gedancken von den Absichten der natürlichen Dinge*, Halle 1724, p. 475.

<sup>23</sup> Ph, p. 491.

<sup>24</sup> Cf. Ph, pp. 491, 502.

top and narrow at the bottom; or they put many rolled up leaves lengthways one after the other, or they wrap the leaves obliquely on top of one another like a hollow pipe. But there are also some that do not wrap the leaves on top of each other, but still lie between two equal leaves, the lower of which is, as it were, their floor, the upper, as it were, their roof, which they hold together with a thread, so that air or some other coincidence cannot separate them. Others chew the leaves into a powder, and knead them with a sticky moisture, as it comes out of their bodies, and build houses from them.<sup>25</sup>

## Teleology

Nothing happens by accident both in the world of nature and in the world of grace. God uses natural means to punish people, and yet the use of these means is not natural. Whatever takes place in nature is according to God's will.<sup>26</sup> If a purpose is unclear to us, this does not mean that there is none. And so, in all details of the world of plants such purpose is present.

Plants have been created with particular properties to serve specific purposes. And thus, God created trees to build houses, ships, and various tools.<sup>27</sup> The consistency of wood depends on the size of air-openings, which is not accidental but is an expression of the wisdom and goodness of the Builder of heaven and earth;<sup>28</sup> in this way, wood of different hardness can be used for different purposes.<sup>29</sup>

The height of plants is a testimony of God's care for people and animals.<sup>30</sup> Building houses would be much costlier and harder if all lumber were short. Moreover, fruit would be easily stolen if fruit trees were shorter. The number of birds would be smaller if they could not safely build their nests on tall trees. On the other hand, fruit such as strawberry and bilberry grows very low since it would be very difficult to collect it from tall trees.<sup>31</sup>

Each plant is a masterpiece of divine omnipotence. There is nothing accidental, there is always a reason for their particular makeup. It is the sign of God's goodness and wisdom that only a very few plants sprawl on the ground; most

<sup>25</sup> Ph, pp. 521–522; cf. F.C. Lesser, *Insecto-theologia*, Frankfurt 1738, p. 191.

<sup>26</sup> Cf. Ph, pp. 578–579.

<sup>27</sup> Cf. Ph, p. 71.

<sup>28</sup> Cf. Ph, p. 169.

<sup>29</sup> Cf. Ph, p. 2.

<sup>30</sup> Cf. Ph, p. 43.

<sup>31</sup> Cf. Ph, p. 44; J.B. von Rohr, *Historia naturalis...*, op. cit., p. 3.

of them grow upward. Trees stand upright, but are elastic enough to withstand winds. Weaker plants use other plants to grow upwards.<sup>32</sup>

If some plants did not have thorns, people and animals would destroy them too soon and they would be denied to those for whom God has designed them. They can be used as hedges.<sup>33</sup> Besides, “thorns and thistles of the kingdom of plants” can wake people up to repentance.<sup>34</sup>

Plants have been created in such a fashion that they bloom in different times for human enjoyment but also when fruits of one plant are destroyed by frost, fruits of other trees that bloom at another time can make up for the loss.<sup>35</sup>

Even something as insignificant as moss growing on trees has a purpose. It protects trees from cold winds, so it grows on the north side of trunks. It also protects trees from people and animals. Some mosses have healing powers; some people use them to feed livestock and as sealing material of dwellings.<sup>36</sup>

Nuts are in hard shells so that they are protected from birds to be gathered by humans,<sup>37</sup> although some birds can break through these shells. Therefore, some nuts have bitter covering; “If the birds insert their beak into it and feel the bad taste, they soon lose their appetite to continue pursuing this food.”<sup>38</sup>

The shape of fruit is not accidental but stems from God’s wisdom since their rounding is most appropriate.<sup>39</sup>

Rotten wood is not an unfortunate and useless side-effect of the death of trees.<sup>40</sup> Rotten wood and leaves are the best fertilizer.

It is therefore a special provision of the dear God that large forests which can in no other way be fertilized like the fields and other land-pieces, and otherwise they would become sterile over time, especially on arid sandy soil, through this single means they have a way to get new nourishment and strength by themselves.<sup>41</sup>

<sup>32</sup> Cf. Ph, pp. 24–25, 28–30, 72–73.

<sup>33</sup> Cf. Ph, op. cit., p. 32.

<sup>34</sup> Ph, p. 5.

<sup>35</sup> Ph, pp. 109, 141.

<sup>36</sup> Cf. Ph, pp. 174, 177–179, 181–182.

<sup>37</sup> Cf. Ph, p. 134.

<sup>38</sup> Ph, p. 135.

<sup>39</sup> Cf. Ph, p. 139.

<sup>40</sup> Cf. Ph, p. 194.

<sup>41</sup> Ph, p. 195.



Ash can be used as a fertilizer, different kind of ashes for different soils and plants; they can be used for cleaning to remove spots and thus, everything on earth, even the most despised material, shows God's wisdom and goodness by the ways it can be used.<sup>42</sup>

One area discussed by von Rohr are curiosities, even monstrosities and von Rohr himself saw some of them, e.g., an apple within an apple, a lemon within a lemon, a willow tree with roses, and the like. In his opinion, such phenomena show the freedom of God who can create unusual plants. Instead of wondering about such plants, people should praise God's power.<sup>43</sup>

## Theodicy

There are many unpalatable things in the world, in the botanical world in particular, and von Rohr has an extensive presentation of such phenomena.

There are poisonous plants and at one point von Rohr stated that Satan wanting to diminish the glory of God destroyed some useful plants and changed them into poison.<sup>44</sup> However, this transformation at best could be considered as done according to God's will by His permission, since von Rohr also stated that poisonous plants did not arise randomly, but they should be viewed as clear signs of God's omnipotence, wisdom, and goodness. This is because some poisonous plants can be used for healing; some may be used for other purposes; some are poisonous to animals but not to humans;<sup>45</sup> some poisonous plants grown in different soil or climate cease to be poisonous. Besides, God informs more and more people about such plants.<sup>46</sup> Moreover, God also created plants that can be used as antidotes healing noxious effects of poisonous plants; for example, consider olive trees growing in Italy: the oil is consumed but is also a medicine for scorpion bites and against poisonous plants, which is the sign of God's care since there are many scorpions and many poisonous plants in Italy.<sup>47</sup>

Claims are made that there are harmful and useless plants; however, such a description is the result of human ignorance. Humans do not see the full picture. They see the damage, but not the benefit. Such plants had been created

<sup>42</sup> Cf. Ph, pp. 205, 211, 214.

<sup>43</sup> Cf. Ph, pp. 332, 337–339, 347.

<sup>44</sup> Cf. J.B. von Rohr, *Physicalisch-oeconomischer Tractat, von dem Nutzen der Gewächse*, Coburg 1736, p. 4.

<sup>45</sup> Cf. Ph, pp. 535–535.

<sup>46</sup> Cf. Ph, p. 359.

<sup>47</sup> Cf. Ph, pp. 536, 304.

by the good Creator, after all;<sup>48</sup> that is, their usefulness is a consequence of the nature of the good Creator, although people may not see it or they do not approve of the use for which God designated them. Besides, the less useful such plants are, the smaller is their number.<sup>49</sup> Most of the time, such plants have an off-putting smell and taste.<sup>50</sup> They grow mostly separately from other plants. They are used as medicine. Such plants can be considered a part of God's curse concerning the earth giving weeds and thorns,<sup>51</sup> so, they are useful – as a scourge.

God's punishment and teaching takes many forms: through taking away plants, through drought, hail, storm, heavy rain, and the plague of mice or moles.<sup>52</sup> Through hail angry God teaches people,<sup>53</sup> but, by the grace of God, it seldom happens. Plagues do happen, but, by the grace of God, they are concentrated in some areas and they very seldom happen; besides, when a plague of locusts strikes, birds feed on them making their number smaller; also, people can collect them in bags. A plague of caterpillars is also infrequent and does not occur every year. Larvae can cause an indescribable damage, but, by the grace of God, only in hot and dry weather.<sup>54</sup>

In such events, no human means will suffice when God decided to use damages as lessons and dispatch vengeance against the godless. However, every person is obligated to lessen damages. Books should be studied that describe methods of dealing with disasters.<sup>55</sup> That is, when an affliction strikes, people should use their knowledge to counteract it even in the full knowledge that it is an act of God. In particular, although fires of forests are for the most part punishments from God, von Rohr gave advices about how to extinguish them.<sup>56</sup>

“Such plagues are like other punishments and teaching, which come from God's wisdom and love, are decided and arranged according to the behavior of people as seen by GOD from eternity.”<sup>57</sup> This is to wake unbelievers from the sleep of security and call them to repentance and to bring believers to greater

<sup>48</sup> Cf. Ph, pp. 540–541.

<sup>49</sup> Cf. Ph, p. 542.

<sup>50</sup> Cf. Ph, p. 545; J.B. von Rohr, *Physicalisch-oeconomischer Tractat...*, op. cit., p. 54.

<sup>51</sup> Cf. Ph, pp. 546–547, 550.

<sup>52</sup> Cf. Ph, pp. 571–572, 574.

<sup>53</sup> Cf. Ph, p. 222. And, in particular, hail in a vineyard should be seen as a punishment from God, cf. J.B. von Rohr, *Viticultura Germaniae oeconomica*, op. cit., p. 281. On a wider scale, war is also God's punishment; cf. J.B. von Rohr, *Anweisung zur wahren Gemüths-Ruhe*, Leipzig 1732 (hereafter: A), p. 511.

<sup>54</sup> Cf. Ph, pp. 225–226, 229.

<sup>55</sup> Cf. Ph, pp. 262.

<sup>56</sup> Cf. J.B. von Rohr, *Historia naturalis...*, op. cit., p. 40.

<sup>57</sup> Ph, p. 574.

self-knowledge to make them purer and more proven.<sup>58</sup> Death and illness are God's punishment of unbelievers, but they must be for good purpose when they afflict believers. When an ignorant child eats a poisonous plant, the child goes to heaven, but this punishes parents. Afflictions are not good for the body but good for the soul.<sup>59</sup>

## Science and theology

As already mentioned, physico-theologians have three goals: convincing unbelievers from the harmony and order of nature that God exists; determining God's attributes from the order of nature; and deriving moral lessons from the fact that God is the Creator of nature. As to von Rohr, he started with the assumption that God exists; it may very well be that the fact of the existence of God was so obvious to him as not to require any argument. In fact, for him, those who do not want to believe in God are the greatest fools. Then come the fools who believe in the existence of God but they live in a constant state of sin, the deists. There are levels of foolishness. The highest level is when acting against reason, the lower – acting without reason.<sup>60</sup> Foolishness is caused by a loss of the image of God whereby reason is obscured and will is damaged; then, not praying, so that people do not call upon God; followed by disordered affects or desires; haste; following examples considered reputable; ignorance; stubbornness; and trust in one's own power. On the other hand, wisdom comes from one's own reflection: from the rules of wisdom and facts; from one's own experience; from the experience of others; and from books.<sup>61</sup> As to books, not all of them are to be considered and the priority of revelation shows here as well. In his advices to the prince, von Rohr described in detail which books should be banned; and so, the prince should not allow printing atheistic books, books that reject all religions or treat all religions equally; heretical books; books that cast doubt on the authority of the Bible; indecent books, etc.;<sup>62</sup> and if no banning is enacted, still, people should avoid reading books that disturb their peace: writings of atheists and deists, books on witchcraft, prophecies, dream

<sup>58</sup> Cf. Ph, p. 575.

<sup>59</sup> Cf. Ph, pp. 579–580; A, p. 543.

<sup>60</sup> Cf. J.B. von Rohr, *Einleitung zu der Klugheit zu leben*, Leipzig 1730 [1715] (hereafter: E), pp. 8–9.

<sup>61</sup> Cf. E, pp. 10–13, 15–17; J.B. von Rohr, *Versuch einer erleichterten und zum Gebrauch des menschlichen Lebens eingerichteten Vernunft-Lehre*, Leipzig 1726, pp. 33–50.

<sup>62</sup> Cf. J.B. von Rohr, *Einleitung zur Staats-Klugheit*, Leipzig 1718, pp. 445–446.

interpretation, books promoting vice, and alchemy.<sup>63</sup> What seems to be left are scholarly and religious books. The latter are not just for strengthening the faith of a believer, but also for igniting it: religious books can, through the action of the Holy Spirit, convert the godless or at least temporarily stop their sinful life and touch their conscience.<sup>64</sup>

Natural theology without revealed truth is insufficient.<sup>65</sup> This can be taken to mean that the physico-theological goal of proving the existence of God is impossible. However, von Rohr could say that such a proof would be insufficient. The authority of the revelation always surpasses the authority of natural theology; thus, the results of the latter should be considered as tentative, as something to be confirmed by revelation to be truly embraced as truth. Reason can be a decent guide, but it should be reason healed by God, not affected by passions, and religion should be chosen that is grounded in the Bible,<sup>66</sup> which would mean that the most reliable reason or intellect is that of a convert to Christianity. Reason can, and should, be sharpened, exercised, made more effective and it can only be sharpened by pure mathematics;<sup>67</sup> in fact, the more people sharpen their reason, the better they can serve God and the world, to the extent that “a mathematician recognizes God’s wisdom, as He showed it in the creation of the world, better and more correctly than other people.”<sup>68</sup> Sharpening the mind makes it more effective, but the foundational truth should still be provided by revelation without which natural theology exercised by such a sharp mind can establish it (the existence of God, in particular) on a less certain footing.

There is a touch of circularity in this approach. We read, on the one hand, that intellect (*Verstand*) of a wise Christian is illuminated by God and that the Holy Scripture is for him the only foundation;<sup>69</sup> on the other hand, a claim is made that reason is used to show that the Scripture is of divine origin,<sup>70</sup> which can be restated as: the Scripture illuminates reason, reason illuminates the Scripture, or rather the way it should be viewed. Von Rohr also said that

<sup>63</sup> Cf. A, pp. 248–250.

<sup>64</sup> Cf. J.B. von Rohr, *Unterricht von der Kunst der Menschen Gemüther*, Leipzig 1732 [1714], p. 104.

<sup>65</sup> Cf. E, p. 36.

<sup>66</sup> Cf. E, p. 48.

<sup>67</sup> Cf. E, p. 93.

<sup>68</sup> J.B. von Rohr, *Derer Mathematischen Wissenschaften Beschaffenheit und Nutzen*, Halle 1713, pp. 18, 131.

<sup>69</sup> Cf. E, p. 36.

<sup>70</sup> Cf. J.B. von Rohr, *Versuch einer erleichterten...*, op. cit., p. 27.

“in the knowledge of God, of the world, and of oneself, sciences are indisputably most necessary.”<sup>71</sup> It seems that von Rohr would settle for some kind of feedback: both morality and the natural law flow from the knowledge of God’s perfections<sup>72</sup> a better knowledge of God gives people a better knowledge of nature and the knowledge of nature leads them to the knowledge of God, but the knowledge of nature can provide a better understanding of the Scriptures;<sup>73</sup> true worldly wisdom teaches people about the attributes of God, the knowledge of God leads them to a better knowledge of nature, and the knowledge of nature must lead them to the knowledge of the Creator.<sup>74</sup> So, knowledge fortifies revelation and revelation strengthens knowledge. This, to von Rohr’s mind, should not be surprising since when reason avoids various pitfalls that can lead it astray, it arrives at truths that would not contradict faith because there should be a harmony of reason with faith.<sup>75</sup> In fact, he set one of his books in such a fashion that he presented issues according to reason and then according to faith to show that the results are not contradictory. In this way, those who trust reason alone could be led to revelation by seeing the unity of teachings according to reason and according to revelation.<sup>76</sup> For example, according to reason, dissatisfaction comes from the fact that people have wrong ideas about things. Science must be made practical. “The more practically science is learned, the more can one’s happiness be brought about.”<sup>77</sup> Making money should not be its goal, its goal should be self-knowledge. Moreover, humans are born to promote the glory of God and increase their own and their neighbour’s happiness, so they must also make science work for the good of others.<sup>78</sup> According to faith: natural science, as everything else, should be conducted for the glory of God, thus, scientists should see the omnipotence, wisdom, and love of God in nature. God’s attributes show in the large and in the small, in an elephant and in a gnat.<sup>79</sup> People should see that God rules in everything, see that, in particular, something good comes from something evil for those who believe.<sup>80</sup> Because of the harmony between faith and reason, they should cooperate, they

<sup>71</sup> J.B. von Rohr, *Compendieuse physicalische Bibliothek*, op. cit., p. [1].

<sup>72</sup> Cf. A, p. 251; J.B. von Rohr, *Versuch einer erleichterten...*, op. cit., p. 331.

<sup>73</sup> Cf. A, p. 253.

<sup>74</sup> Cf. J.B. von Rohr, *Versuch einer erleichterten...*, op. cit., p. 331.

<sup>75</sup> Cf. E, p. 46.

<sup>76</sup> Cf. A, p. [10].

<sup>77</sup> A, p. 245.

<sup>78</sup> Cf. A, pp. 246–247.

<sup>79</sup> Cf. A, p. 251; J.B. von Rohr, *Versuch einer erleichterten...*, op. cit., p. 330.

<sup>80</sup> Cf. A, p. 252.

should refer to one another. Therefore, theologians should know something about botany if only to shed some light on some Biblical passages,<sup>81</sup> and a true scholar (Gelehrter) should promote the glory of God, and recognize attributes of God, particularly His wisdom, better than others.<sup>82</sup>

## Some issues

In his books, particularly in the *Phyto-Theologia*, von Rohr tried to balance the weight of reason with the weight of faith and in his use of science he showed great competence and erudition. He frequently referred to his own experience and observations of the botanic world when presenting botanical knowledge. However, to a large extent, he relied on the knowledge published by others. He advised prospective authors that when writing a book, they should show what they take from other books.<sup>83</sup> In his own books, von Rohr indicated at the end of a paragraph or of a section what sources he had used. However, his use of other sources was quite infrequently simply copying them word for word, copying entire sentences, paragraphs, or pages, without indicating what had been copied.<sup>84</sup> Only in isolated cases did he show it by using quotation marks, but most of the time he did not, and some examples of such copied fragments are indicated above in footnotes related to quotations from his *Phyto-Theologia*. He once stated that some plagiarize texts from other authors without mentioning their names and they should be fined.<sup>85</sup> Apparently, he found it sufficient just to mention the names of authors.

Another problem with his *Phyto-Theologia*, actually, with all his books, is the lack of illustrations. Curiously, he said that he had learned some drawing in his youth. He had a notebook that he carried with him on his walks, in which he described new plants he encountered and did it better with words than with a brush.<sup>86</sup> Apparently, he had more trust in the descriptive power of his words than in an illustration he could provide. The bulkiness of his books (several of

<sup>81</sup> Cf. J.B. von Rohr, *Physicalisch-oeconomischer Tractat...*, op. cit., p. 154.

<sup>82</sup> Cf. J.B. von Rohr, *Erleuchtete und zum Gebrauch des Menschlichen Lebens eingerichtete Tugend-Lehre*, Nürnberg 1740 [1729], p. 280.

<sup>83</sup> Cf. J.B. von Rohr, *Versuch einer erleichterten...*, op. cit., p. 252.

<sup>84</sup> For a quite serious infraction found in his Latin treatise, *Introductio in iurisprudentiam privatam Romano-Germanicam*, Lipsiæ 1718, see: F.C. Gottlob Hirsching, *Historisch-literarisches Handbuch*, Leipzig, vol. 2, pt. 1, pp 106–107.

<sup>85</sup> Cf. J.B. von Rohr, *Einleitung zur Staats-Klugheit*, op. cit., pp. 459–460.

<sup>86</sup> Cf. J.B. von Rohr, *Physicalisch-oeconomischer Tractat...*, op. cit., pp. [5–7].

them have a thousand pages or more) seems to indicate that he wanted to show that the adage about an image being worth a thousand words is indeed true. This lack of illustrations may have been a reason for his *Phyto-Theologia* not being a great commercial success (it had only two editions, in 1740 and 1745).

More importantly, his goal was to make people see the hand of God in nature to appreciate God's providential care, power, wisdom, and goodness. However, he made hasty transitions from the analysis of some parts of the flora to God's attributes, the transitions which are far from obvious. And so, he spoke about God's infinity, perfection, *omniscience*, *omnipotence*, and even about God's triune nature. It is not very clear how these attributes and particularly their infinite nature were derived from the investigation of even the most complicated aspects of nature. Von Rohr took these attributes from the Biblical teaching and from theological teachings of his church. This is where seemingly von Rohr's idea about the harmony of reason and faith is at play: reason concluded from the investigation of nature that God was powerful, wise, good, etc., which theology extended to infinite power, omniscience, i.e., infinite wisdom, infinite goodness, which all amounted to God's infinite perfection. However, for his readers, such theological subtlety may not have mattered much and they could be convinced by the richness of the botanical material competently presented to them that this conclusion was made on the basis of the investigation of nature alone.

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