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# The Conversion and Destruction of the Infidels in the Works of Roger Bacon

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## ABSTRACT

The chapter is devoted to the views of Roger Bacon, a Franciscan thinker and scientist of the 13th century, on the conversion of infidels. His position was closely connected to his eschatological and astrological views and his conviction of the Anti-Christ's coming in the non-distant future, the cause for uniting the Catholic world. Bacon proposed ways and means for the most effective conversion of infidels (the study of languages, preaching, rational arguments) and for the destruction of those who could not be converted (from optical weapons to 'Greek fire'). The author notes the similitude between Bacon's views and those of authors such as Thomas Aquinas, Ramon Lull and Pierre Dubois.

*Нашествие монголов, активное покорение тевтонцами народов Прибалтики и одновременно постепенная утрата крестоносцами позиций на Ближнем Востоке усилили внимание авторов XIII века к проблеме обращения иноверцев в христианство. В настоящей статье анализируются взгляды на способы обращения "неверных" францисканского мыслителя Роджера Бэкона (около 1220-1292).*

*Позиция Бэкона в отношении обращения иноверцев находится под влиянием его эсхатологических взглядов: вслед за арабскими и еврейскими авторами, а также Иоахимом Флорским францисканец придерживался убеждения о последовательной смене доминирующих религий, шести "сект", включающих иудаизм, религию халдеев, египтян, ислам и религии Христа и Антихриста. Развитие каждой из "сект" Бэкон связывал с воздействием небесных тел и считал возможным астрологическими методами установить, когда каждая из "сект" достигнет могущества и начнет приходить в упадок. Бэкон считал, что в его время астрологические факторы благоприятствуют христианству, однако в обозримом будущем он ожидал пришествия Антихриста, ссылаясь также на сообщенные Вильгельмом Рубруком сведения о перемещении монголов, совпадающие с предсказаниями мудрецов древности.*

*Поэтому обращение "неверных" и укрепление позиций христианства приобретали для него особую актуальность. Бэкон убежден в способности католичества привлечь в свои ряды большую часть иноверцев и в том числе схизматиков-православных, однако допускал, что некоторые из "неверных" не могут быть обращены. Против них он предлагает использовать богатый военный арсенал, включающий разные*

*виды оптического оружия, греческий огонь, взрывчатые вещества и удивительное средство воздействия, способное подчинить волю населения целого государства.*

*Однако куда большее внимание францисканец уделил разработке способов привлечения иноверцев к христианскому вероучению – проповеди, убеждению посредством доводов, не исключая использования и рукотворных “чудес”, производящих сильное впечатление и демонстрирующих могущество христианства. Достойное применение в диалоге с иноверцами и их обращении должно было найти знание языков, изучение которых занимало одно из ключевых мест в системе обучения, разработанной Бэконом – составив греческую и еврейскую грамматики, он обращается к теме изучения языков в большинстве своих крупных сочинений.*

*Приводя примеры мудрости и добронравия нехристиан, Бэкон, в сущности, выдвинул идею развития культурных взаимосвязей христианского и нехристианского мира, однако обращение иноверцев к христианству оставалось для него первостепенной задачей.*

*В российской историографии (О.В. Трахтенберг, А.С. Горелов) особо отмечается позиция Роджера Бэкона относительно действий тевтонцев против прибалтийских язычников, прежде всего пруссов. Францисканец осудил стремление немецких рыцарей подчинить пруссов и оправдывал их сопротивление, при этом не сомневаясь, что пруссы легко обратились бы в христианство, если бы сохранили свободу.*

*В последней части статьи прослеживается связь идей Бэкона и других авторов XIII – начала XIV столетия, – Фомы Аквинского, Раймонда Луллия и Пьера Дюбуа, относительно обращения “неверных” и путей достижения при этом наибольших результатов. Необходимость изучения языков, убеждения посредством аргументов и другие предложения, сформулированные Бэконом и его современниками, оказали немалое влияние на последующее развитие европейской мысли, обретя новую актуальность в XVI в., в период Реформации и освоения Нового Света с его языческими обитателями.*

Analyses of the theological writings of the 13th century pinpoint the conversion problem for this century. The causes for returning to the conversion of pagans and heterodoxies seem quite obvious. From 1230-1240, the Mongol invasions, which spread to the Adriatic Sea devastating ancient Russia, Poland and Czechia, brought terrible damage to Hungary. Also known as the *Tartari*, the Mongols and their savage destruction shocked all of Europe. In the Near East, the Turks destroyed the Crusader states step by step, and Jerusalem was only returned to the Christians in 1229 as a result of successful negotiations between Frederick I and the Egyptian Sultan, although the Muslims captured it again in 1244. The Seventh Crusade, organized by Louis IX the Saint, was not successful, and the last Crusade organized by the same king ended in his death because of an epidemic in the Crusader army.

At the same time, the knights of the Teutonic Order occupied the territories in the Baltic Region and suppressed any attempt at resistance by pagan nations, with great

cruelty. In the *Reconquista*, the Christians captured most of the Iberian Peninsula with the exception of Granada, and these new regions were inhabited by Muslim and Jewish populations.

At the beginning of the 13th century, theologians such as Jacques de Vitri (1170-1240), lauded and cited as an example to others those clergymen who could preach in a common language and who would “subvert the terrible vices” of their own flock<sup>1</sup>. However, from the middle of the 13th century, the theme of the conversion of infidels became more visible in the writings of western European authors. One of these was Roger Bacon (born around 1220 and died in 1292), a Franciscan thinker and scientist.

### ROGER BACON ON RELIGIOUS CHANGE AND THE CHRIST VERSUS ANTI-CHRIST BATTLE

The problem of the conversion of the infidels was closely connected to Bacon’s eschatological views, which are very interesting in themselves. Under the influence of the Arab Abu Mashar, Jewish authors (maybe Maimonides), and Joachim of Fiore<sup>2</sup>, an author of heretical teaching, together with reference to patriarchs and prophets, Roger Bacon believed in the changing of the six sects or religions (*secta*) of the world<sup>3</sup>. These sects were: the Jews, the Chaldeans, the Egyptians, the Agarens or Saracens (i.e. Muslims), “who were from Hagar and Ishmael”, the sect of Christ and the sect of the Anti-Christ<sup>4</sup>.

These sects would replace each other until the time when the final battle would take place between the forces of Christ and the Anti-Christ. The time of the Anti-Christ could be determined by astrology, which was very important to Bacon: like many of his contemporaries, he believed in the influence of heavenly bodies on earthly processes. It should be noted that he divided astrology into ‘true astrology’, which only explored the influence of heavenly bodies and the tendencies caused by them, and ‘false astrology’, which predestined inevitable events<sup>5</sup>. The emergence of various sects was connected with the constellation of the planets. For example, the sect of the Saracens arose under the influence of Venus and the Christian sect was founded at the time when Mercury and Jupiter were in opposition.

Bacon said that we could foresee the advent of the Anti-Christ with great accuracy<sup>6</sup> by just using astrological information. We should be prepared for a great battle between the armies of Christ and Anti-Christ, and it must end in victory for the forces of Christ. Referring to the “Cosmography”, written by the Franciscan Ethic of Istria (3rd century), we are reminded that at the time of the advent of the Anti-Christ, the nation “closed beyond the Caspian Gates” will break in on the world, rush upon the Anti-Christ and manifest him as the God of Gods. There was no doubt for Roger Bacon that this nation was the *Tartari*, which was beyond the Caspian Gates, but now the Gates had been broken in accordance with the information of friars (i.e. William Rubruk) who, on a mission from Louis IX the Saint, travelled across the lands of the *Tartari*<sup>7</sup>. Bacon was optimistic about the future of Christianity, although he did not rely on God’s grace

only, proposing a system of measures which should help the Christian forces to achieve victory.

One of the most important measures was the conversion of the infidels to Christianity, and Bacon mentioned it practically every time he described the use of cognition and natural investigation for the Church and State of the faithful. In Bacon's main works, the State of the Faithful, *respublica fidelium*, was the community of all Catholics and the ideal Christian state. The organization and structure of it were described by him in the seven part work of moral philosophy, the *Opus Majus*. Bacon wrote about ideal laws of the state and the successful use of experimental cognition for the good of the inhabitants of the *respublica fidelium*<sup>8</sup>.

The conversion of infidels was very important for Bacon, not only because he cared about their souls, but also because they might otherwise join the army of the Anti-Christ. Bacon believed in the conversion of the greater part of the people by "great efficacy and the glory of the Christian faith"<sup>9</sup>, and he thought that the Greek Orthodox Church would become subordinate to the Catholic Church<sup>10</sup>.

But some men and nations could not be converted. Bacon did not name the causes of this problem clearly, but we can suppose that one of the causes lay in the influence of the climate and the heavenly bodies in the place of habitation because, following Ancient and Arab authors, Bacon believed that these factors affected character, frame of mind and natural conditions<sup>11</sup>. In any case, according to Bacon, before the advent of the Anti-Christ, all non-converted nations and states must be destroyed, as they were potential allies of the Anti-Christ<sup>12</sup>.

## THE METHODS OF WAR AGAINST THE INFIDELS

Bacon proposed a very impressive military arsenal to destroy the enemies of Christianity.

Firstly, being a researcher in the field of optics, he had an idea for an optical weapon. It is difficult to say whether he made optical experiments or just studied the theory, but he wrote sometimes that he "knew it by experience". Bacon's knowledge of optics developed under the influence of Robert Grosseteste (1175-1253), Archbishop of Lincoln, the founder of the Oxford scientific school and author of the famous treatise *De luce* [On Light]<sup>13</sup>. He also knew and studied the *Fons vitae* [The Source of Life] by the Spanish Jew Avicbron, and the works of Arab authors (amongst them the treatise *De aspectibus* by al-Hasan, *De radiis* by al-Kindi, works by al-Haitham, and "Physics" and "Metaphysics" by Avicenna). Bacon demonstrated the same degree of interest in optics as he did in astrology. He immediately dedicated some works to optics (the most important was the treatise *De multiplicatione specierum* [On the Multiplication of Species]<sup>14</sup>, and in one of them he elaborated the idea of an optical weapon. The principle of its operation was described in his writing *De speculis comburentibus* [On Burning Mirrors]<sup>15</sup>.

The idea of burning an object over a long distance using an optical instrument was not new, and is possibly older than Archimedes' system of polished bronze shields, used, ac-

according to legend, to destroy the Roman navy during the siege of Syracuse in the second Punic War. In the Middle Ages, Gerard of Cremona translated *On Burning Mirrors*, ascribed to Diocles of Carist, a Greek physician and scientist (4th c. BC), but it is possible that its author was the Arab thinker al-Hasan, because this treatise was translated with the Arab optical work of al-Kindi. This treatise was well-known by Bacon, although he did not know who the author of *On Burning Mirrors* was<sup>16</sup>. Bacon said that his contemporary, Peter of Maharncuria, the well-known author of works on the magnet and astrolabe and a scientist-layman of the 13th century, was responsible for the burning mirror<sup>17</sup>. It is difficult to judge the reliability of Bacon's words, although Peter of Maharncuria mentioned his lost work *On the Actions of Mirrors* in his manuscript about magnets<sup>18</sup>. The action of burning mirrors is based on the concentration of light at the focal point of the mirrors and lenses, which it is possible to alter. As a result, the concentration of light can burn even seemingly incombustible things with the maximum heat<sup>19</sup>.

In his works addressed to Pope Clement IV, Bacon declared that he was able to build the optical weapon to burn at any distance (*in omnia distantia*)<sup>20</sup> and it could be used against the Saracens and Tartars to destroy their armies. Three of Bacon's most famous works – *Opus Majus* (“The Great Work”), *Opus Minus* (“The Smaller Work”) and *Opus Tertium* (“The Third Work”) – were written for Clement IV between 1265 and 1268, when their author was under the control of the Minorite friars because of his inclination towards the ideas of Joachim of Fiore. At the same time, after the unfortunate 7th Crusade, Louis IX the Saint was preparing for the 8th Crusade, the last and fatal one for him. Bacon, who wanted the support of the Pope and, maybe, the French King, proposed using this optical weapon in the Crusade under preparation, and asked for the enormous sum of one thousand marks for its construction<sup>21</sup>.

Besides the burning mirrors, Bacon mentioned other kinds of optical inventions used in war, such as enlarging and diminishing mirrors to terrify the enemy, and mirrors to help see faraway objects, similar to those of Caesar who could see the position and places of fortresses and towns in Great Britain from Gallia<sup>22</sup>. Bacon wrote that it was possible even to make mirrors to help see through walls and mountains, and he refers to the medieval legend of Socrates, who used such a mirror for finding a dangerous dragon's lair.

The means used against the Saracens were the products of alchemy – combustible substances such as ‘Greek fire’, poison gas, and a certain explosive substance which led to Bacon's becoming famous as the inventor of gunpowder. In world historiography, there are different points of view relating to this substance<sup>23</sup>. Most of them suppose that gunpowder was known to Bacon, and his description of the action of this substance makes one think that Bacon would have known, from his own experience, the very strong explosive substance that would result from mixing sulphur and saltpetre<sup>24</sup>. However, there is nothing to say that it was Bacon's own invention. This weapon was not used to undermine fortress walls, but to cause panic amongst the enemy army, “if it will be used suddenly, at the night and with sufficient mastery”<sup>25</sup>.

These terrible weapons were certainly ingenious for the 13th century, but Bacon thought that the most fearful tool was the influencing of people's conduct and frame of mind without using weapons. If someone knew how to do that, they could impose their will on people and nations by influencing their minds, and it could be affective "on the army, and on the town, and on the all peoples of state"<sup>26</sup>. It is obvious that Bacon was under the influence of the *Secretum secretorum* [The Secret of Secrets], a very important work for him, in his astrological, alchemical and medical ideas. The Arab treatise *Kitab Sirr al-asrar*, written in the 9th century, was widely-known in medieval Europe, both West and East, and was translated into Latin and other native languages<sup>27</sup>.

Steven J. Williams, Assistant Professor of New Mexico Highlands University, proposed that Bacon acquainted himself with the *Secret of Secrets* (ascribed to Aristotle in the Middle Ages) when he studied at the University in Paris in the 1240s<sup>28</sup>, and that he was strongly influenced by this work, because he published his own version and wrote his own introduction.

It should be mentioned that, in Bacon's mind, many weapons and means of destruction could be made by *scientia experimentalis*, experimental science. In this case, a special discipline used for experimental cognition and practical employment of knowledge. Bacon believed, and stressed, that in the battle of the Christ and Anti-Christ armies, wisdom should be used more than the ordinary weapons used by enemies (i.e. Saracens) and tyrants of the past<sup>29</sup>.

#### THE WAYS OF CONVERTING THE INFIDELS: LANGUAGES, PREACHING, WONDERS AND ARGUMENTS

It would be a mistake to think that Bacon limited himself to the elaboration of repressive means to be used against the infidels. He elaborated a whole system of means to assist in their conversion. These means depended on the category of the converted infidels. In his *Opus Majus*, Bacon gave his own classification of infidels. There were Pagans (*Pagani*), Idolaters (*Idololatrae*), Tartars (*Tartari*), Saracens or Muslims (*Saraceni*) and Jews (*Hebraei*). He also mentioned separately, Schismatics (*Scismatici*), who weren't subordinate to the Roman Church, and the people *Aas* (i.e. Alans or Ossetes), who were not concerned with the Roman Church, but with the Greek Church<sup>30</sup>. When comparing the Pagans with the Idolaters, Bacon sympathized with the Pagans who didn't have any priests and could invent a god and make sacrifices to him. Unlike the Pagans, the Idolaters had priests and sacrifices, and the many gods among them were not all-powerful<sup>31</sup>. For Bacon, an example of the Pagan category was the Prusses (in one place of the text *Praceni*, in other – *Prusceni*), who could be converted easily, although they were subjected to cruel persecution. Bacon wrote that for Dominicans and Franciscans and "for other good men" in Germany and Poland, it was obvious that the aim of the Teutonic knights was more to subordinate than convert the Prusses, and he justified their resistance – against the violence and not against the Christian doctrine<sup>32</sup>.

The place of Bacon's *Opus Majus* is very interesting, and it is natural that it is discussed in historiography. However, from the end of the 19th century Russian historiography was interested in the problem of the Baltic people's resistance to German colonization, and didn't discuss it. Oleg V. Trakhtenberg, the philosophy historian, noted Bacon's position concerning the Prusses in his *Ocherki po Istorii Zapadnoevropeyskoy Filosofii* [Outlines of History of West European Philosophy] and underlined that Bacon condemned the Crusades to the Baltic region<sup>33</sup>. In a Russian translation of part of *Opus Majus*, A.S. Gorelov briefly characterized Bacon's views concerning the conversion of the Pagans and cited the aforementioned fragment<sup>34</sup>.

It seems that the opinion expressed by Bacon testifies to his regret concerning the use of violence against the Prusses rather than more gentle persuasion, and it is possible to hear a trace of discord between the Franciscan and Dominican orders on the one side, and the Teutonic order on the other, in his words<sup>35</sup>.

In Russian and European historiography, there is greater interest in Bacon's opinion of the Tartars<sup>36</sup>. For Bacon, the Tartars (and Saracens) were obvious enemies, and it was necessary not only to fight against them but also to talk and preach among them. On the whole, Bacon regarded them with great respect, referring to information provided by the Minorites who travelled to the Tartars (i.e. William of Rubruck and Giovanni of Plano Carpini, whose works Bacon studied, unlike many contemporary authors such as Bartholomew of England)<sup>37</sup>.

In medieval European thought, preaching was considered to be one of most effective means for converting infidels, as Rita Ríos illustrates in her contribution to the present volume with regard to the Castile and León kingdoms, at least during certain periods in the Middle Ages. It was also obvious to Roger Bacon, and he paid attention to the increasing effectiveness of it. First, there was the study of different languages – Greek, Arabic, Jewish, and also native languages such as Spanish. It was one of Bacon's *idée fixe*, and the major part of his work was dedicated to the study of languages. Bacon himself studied Greek and Jewish and compiled early grammars of these languages. One of the aims of the study of languages was for better Bible understanding. The greater part of three of Bacon's main works is dedicated to the errors of Bible understanding and the use of a better knowledge of languages to correct these errors.

In Bacon's mind, another way to improve the dialogue between Christians and non-Christians was to search for rational arguments to persuade any interlocutors to convert to Christianity. Here, Bacon showed himself as a scholar because he preferred to use reasoning rather than other methods to convince the opposition. He addressed the sages (and infidel sages, among others) on many occasions and disregarded the crowd.

At the same time, Bacon himself did not use the arguments for 'common people'. Describing the wonders accomplished by Christian saints, Bacon named artificial wonders, which could be made by knowledge and experimental science in order to convince people of the truth of the Christian religion<sup>38</sup>. It's interesting that in his description of

wonders, Bacon divides them into true wonders as accomplished by saints and magical actions<sup>39</sup> and he even tries to explain the mechanism of inclination effect<sup>40</sup>.

However, the reasoning and discussion with sages was much more important for Bacon, and he followed the tradition of dialogue of Christian and infidel philosophers which was founded in the Early Christian epoch by the Fathers of the Church and developed by Abelard. He acknowledged that the infidels could have the wisdom and knowledge of philosophy, and at the same time that the Latins were degraded by ignorance. These critical views were typical of Bacon, who disclosed all the vices of the Latins, from clergymen's ignorance to conflicts amongst Christian kings, and the struggle for the position of Pope<sup>41</sup>. In Bacon's works, we find critical statements concerning theologians (he says that the saints and the Fathers of the Church had great success only by preaching and without any theology<sup>42</sup>) and concerning the Catholic orders, including his own Franciscan order<sup>43</sup>. It is not surprising that Bacon permanently had problems with the head of his order if he referred to the superiority of the wisdom and arguments of the infidels.

Bacon repeatedly said that a system of sciences should be used: "this wisdom aims for the Church of God, and for the state of the faithful, and for the conversion of the infidels, and the repression of those who cannot be converted"<sup>44</sup>. The repression of those who could not be converted, for example, was put into practice in medieval Spain, as Rita Ríos and Dolores Cabañas show in their contributions to the present volume. Even astrology was called to the Christian Church's use because it confirmed to the infidels the stability of the Christian religion<sup>45</sup>.

Roger Bacon, for perhaps the first time among medieval thinkers, formulated the idea of an interrelationship between Christian and infidel culture. He believed that the infidel wisdom was valuable for Christians and the infidel philosophers could be a good example to Christians<sup>46</sup>. He also believed that Christianity was much more attractive than other religions, and the infidels who had only received oppression from Christians could be converted easily through arguments and persuasion<sup>47</sup>.

## AQUINAS, LULL AND DUBOIS ON THE CONVERSION OF THE INFIDELS

In the writings of the second half of the 13th century, one of the most important themes was the search for rational arguments for the discussions with the infidels. The famous theologian Thomas Aquinas (around 1225-1274), a younger contemporary of Bacon, developed this line in his works.

*Summa contra gentiles* [The Summa against the Pagans] is the most important treatise in the formation of a fundamental arguments system. In another work, *Summa theologiae* [The Summa of Theology] Aquinas demonstrates an example of discussion with the heretics and infidels – coming from the authority of the Divine Revelation and founded on one of its postulates: if the opponent denies Divine Revelation as a whole, it should not argue by arguments the faith postulates, but it should break his arguments against the Christian faith<sup>48</sup>.

The problem of violence towards the infidels was considered by Thomas Aquinas in *Quaestiones de quodlibet* [The Questions on Anything]. When asked about the violent baptizing of Jewish children contrary to the will of their parents, he explained that the baptizing of infidel children was good for them, but he condemned any violence and stated that Jewish children should only be baptized in accordance with their parents' wishes, or after their coming of age<sup>49</sup>.

*Doctor illuminatus* Ramon Lull (around 1235-1315) dedicated his own life to the conversion of the infidels. In his great corpus of writing, we can find the same ideas, which were propagated by Roger Bacon. Lull stated the importance of rational arguments for conversion and emphasized that the use of arguments and the study of languages were much more effective than the Crusades. Lull himself studied the Arab, Greek and Jewish languages and, in 1311, after many difficulties, he received the Pope's permission for the Arab, Greek and Jewish languages to be studied in universities. Like Bacon and Aquinas, Lull tried to create a system of knowledge, and his *Ars magna* [The Great Art] is a system of mathematical and logical combinations containing, in Lull's opinion, all knowledge<sup>50</sup>.

Around the end of the 13th century to the beginning of the 14th century, authors influenced by Bacon began to propagate the importance of the study of languages. A French writer and lawyer Pierre Dubois paid attention to the work of conversion in his treatise *De recuperatione Terrae Sanctae* [On the regaining of the Holy Land, around 1307]. Referring to Bacon with great respect, the author believed that children should learn different languages, such as Greek, and Arabic, because with their help, the Catholic Church and monarchs could contact infidels and have discussions, thereby attracting them to Christianity<sup>51</sup>. Dubois proposed another way – the conversion of the infidels with the help of women. Wives who were firm in their faith could convert their infidel husbands – the Eastern monarchs, hierarchs and notables<sup>52</sup>. Some Spanish medieval laws included this consideration, as Rita Ríos shows in her article.

It is possible to conclude that Bacon's writings were the beginning of the discussion concerning the problems of the conversion of the infidels, a discussion, which was intense from the middle of the 13th century to the middle of the 14th century. There were the ideas of the study of languages, the search for rational arguments to persuade the infidels, the building of a united system of knowledge used for the needs of the Catholic Church and the state in the works of famous thinkers, theologians and scholastics. At the same time, Bacon proposed a lot of different and terrible means to destroy non-converted infidels. The ideas formulated in this period exerted an important influence on the development of views that followed concerning relations with infidels. New growth of interest in this theme came in the 16th century in connection with the Reformation and the discovery of the New World and pagan American inhabitants, and was discussed by Jesuit thinkers<sup>53</sup>.

## NOTES

- <sup>1</sup> This is a common place in the works at the second part of the 12th c. – the first part of the 13th c. See Jacques de Vitri, *Historia Occidentalis*, Fribourg 1972; Jacobus Vitriacensis, *Sermones de tempore*, Venice 1578.
- <sup>2</sup> Condemned partly by the 4th Lateran Council and condemned further by the Council of Arles in 1263, the views of Joachim of Fiore (1130-1202) contained the idea of the three Eras changing – the Era of God the Father, the Era of God the Son and the Era of the Holy Spirit, and the seven periods. Joachim thought that his time was the sixth period and the time before the advent of the Anti-Christ.
- <sup>3</sup> R. Bacon, *Opus tertium in Fratris Rogeri Baconi opera quaedam hactenus inedita*, London 1859, p. 49; Id., *The “Opus Majus”*, 3 vols., London-Edinburg, 1897-1900, vol. I, pp. 254.
- <sup>4</sup> *Ibid.*, vol. I, p. 254.
- <sup>5</sup> Bacon states his astrological views in many of his works, and his Introduction to the *Secret of Secrets* is dedicated to astrology and astronomy. The bibliography of Bacon’s astrological views is rich and one of the best researched. For the latest investigations see J. Hackett (ed.), *Roger Bacon and sciences*, New York 1997, especially J. Hackett, *Roger Bacon on Astronomy-Astrology: The Sources of the Scientia Experimentalis*, pp. 175-198.
- <sup>6</sup> Bacon, *The “Opus Majus”* cit., vol. I, pp. 268-269.
- <sup>7</sup> *Ibid.*, vol. I, p. 268; V.I. Matuzova, *Angliyskie srednevekoveye istochniki IX-XIII vv. Teksty, perevody, komentarii*, Moscow 1979, p. 207.
- <sup>8</sup> There are the prolongation of life, the struggle with diseases and the use of different technical mechanisms facilitating their lives. See Bacon, *The “Opus Majus”* cit., vol. I, pp. 250-253; Id., *Compendium studii philosophiae*, in *Fratris Rogeri Baconi opera quaedam hactenus inedita*, ed. J.S. Brewer, London 1859, p. 395.
- <sup>9</sup> [“omnes nationes infidelium praedestinatae ad vitam aeternam convertantur magna efficacia at gloria fidei Christianae”]: Bacon, *Compendium studii philosophiae* cit., p. 395; Bacon, *The “Opus Majus”* cit., vol. II, p. 220; Bacon, *Opus tertium in Fratris Rogeri Baconi opera quaedam hactenus inedita*, London 1859, pp. 83.
- <sup>10</sup> [“Et propter istius Papae bonitatem, veritatem et justitiam accidet, quod Graeci reverentur ad obedientiam Romanae Ecclesiae”]: Id., *Opus tertium* cit., p. 86.
- <sup>11</sup> Id., *The “Opus Majus”* cit., vol. I, pp. 8, 250; Id., *Compendium studii philosophiae* cit., p. 422. Also in *Opus Majus* (vol. I, p. 394) Bacon appealed to the words of Aristotle to Alexander the Great about the connection between the atmospheric change and change of tribes’ morals.
- <sup>12</sup> Id., *Opus tertium* cit., p. 95; Id., *The “Opus Majus”* cit., vol. II, p. 252.
- <sup>13</sup> See Latin text R. Grosseteste, *Die philosophischen Werke des Robert Grosseteste, Bischofs von Lincoln*, Münster 1912.
- <sup>14</sup> This treatise was researched and edited by the English historian David Lindberg, now the most competent investigator in this field, with a fundamental introduction. For the last work dedicated to Bacon’s optical ideas, see D. Lindberg, *Roger Bacon on Light, Vision and the Universal Emanation of Force* in J. Hackett (ed.), *Roger Bacon and Sciences*, New York 1997, pp. 243-276.
- <sup>15</sup> The critical edition of this source was mentioned in the book by D. Lindberg.
- <sup>16</sup> See D. Lindberg, *The Transmisson of Greek and Arabic Learning to the West*, in *Science in the Middle Ages*, Chicago 1978, pp. 52-90.
- <sup>17</sup> Bacon, *Opus tertium* cit., p. 47.
- <sup>18</sup> We do not have any information concerning a more complete edition than that of the 16th century: Petri Peregrini Maricurtensis, *De Magnete seu Rota perpetui motus libellus*, Augsburg 1558.

- <sup>19</sup> ["in loco... combustionis est maxima lux et claritas, et maximus calor"]: Bacon, *De speculis comburentibus* in D. Lindberg (ed.), *Roger Bacon's Philosophy of Nature. A Critical Edition with English Translation, Introduction and Notes of De multiplicatione specierum and De speculis comburentibus*, Oxford 1983, p. 318.
- <sup>20</sup> Bacon, *Opus tertium* cit., p. 46.
- <sup>21</sup> ["qua voluerimus, constaret plus quam mille marcas antequam specula sufficientia fierent ad hoc"]: Bacon, *Opus tertium* cit., p. 46.
- <sup>22</sup> Id., *Epistola de secretis operibus artis et natura et de nullitate magiae in Fratris Rogeri Baconi opera quaedam hactenus inedita*, London 1859, pp. 534-535.
- <sup>23</sup> This question was discussed in the first quarter of the 20th century: H. Hime, *Roger Bacon and Gunpowder*, in A.G. Little (coll. and ed.), *Roger Bacon. Essays Contributed by Various Writers on the Occasion of the Commemoration of the Seventh Centenary of His Birth*, Oxford 1914, pp. 321-336; L. Thorndike, *A History of Magic and Experimental Science*, New York 1958, vol. II, pp. 688-691; L. Thorndike, *Roger Bacon and Gunpowder*, in "Science", 1915, 42, pp. 799-800.
- <sup>24</sup> ["horribilis sonus nascitur in ruptura tam modicae rei, scilicet modico pergameni, quod fortis tonitruum setiatur excedere rugitum, et coruscationem maximam sui luminis jubar excedit"]: Bacon, *The "Opus Majus"* cit., vol. II, p. 218; *Un fragment inedit de l'opus tertium de Roger Bacon precede d'une etude sur ce fragment*, Quaracchi 1909, p. 153; *Part of the Opus tertium of Roger Bacon including a fragment now printed for the first time*, Aberdeen 1912, pp. 49-50.
- <sup>25</sup> ["Quaedam vero auditum perturbant in tantum quod si subdito et de nocte et artificio sufficienti fierent, nec posset civitas nec exercitus sustinere"]: Bacon, *The "Opus Majus"* cit., vol. II, p. 218; Id., *Epistola de secretis operibus* cit., p. 536.
- <sup>26</sup> Id., *The "Opus Majus"* cit., vol. II, pp. 216-17; Id., *Epistola de secretis operibus* cit., p. 538.
- <sup>27</sup> There are a lot of publications and research of various medieval versions and copies of *Secretum secretorum*, for example, M. Manzalaoui (ed.), *Secretum secretorum: Nine English Versions*, Early English Text Society, 1977, vol. 276; W.F. Ryan, C.B. Schmitt (eds.), *Pseudo-Aristotle, The Secret of Secrets: Sources and Influences*, London 1982.
- <sup>28</sup> S.J. Williams, *Roger Bacon and the Secret of Secrets*, in J. Hackett (ed.), *Roger Bacon and sciences*, New York 1997, pp. 365-394, esp. pp. 365-367; S.J. Williams, *Roger Bacon and His Edition of the Pseudo-Aristotelian Secretum secretorum*, in "Speculum", 1994, 69, pp. 57-73.
- <sup>29</sup> Bacon, *The "Opus Majus"* cit., vol. II, pp. 221-222 etc.
- <sup>30</sup> *Ibid.*, vol. I, pp. 301-302; see also many places especially in the vol. II, pars IV of *Philosophia moralis*.
- <sup>31</sup> *Ibid.*, vol. II, p. 369.
- <sup>32</sup> [Et quando Christiani conferunt cum Paganis, ut sunt Praceni et aliae nationes conjunctae, de facili cedunt et vident se erroribus detineri. Cujus probatio est quod libentissime volunt fieri Christiani, si Ecclesia vellet dimittere eos in sua libertate et gaudere bonis suis in pace. Sed Christiani principes qui laborant ad eorum conversionem, et maxime fratres de domo Teutonica volunt eos reducere in servitutem, sicut certum est Predicatoribus et Minoribus et aliis viris bonis per totam Alemanniam et Poloniam. Et ideo repugnant, unde contra violentiam resistunt, non rationi sectae melioribus]: Bacon, *The "Opus Majus"* cit., vol. II, pp. 376-377.
- <sup>33</sup> O.V. Trakhtenberg, *Ocherki po istorii zapadnoevropeyskoy filosofii*, Moscow 1957, p. 148.
- <sup>34</sup> A.S. Gorelov, *Filosofia Rodzhera Bekona i eyo mesto v istorii evropeyskoy kultury* in R. Bacon, *Izbrannoye*, Moscow 2005, pp. 24-25.
- <sup>35</sup> Bacon, *Opus majus* cit., vol. II, p. 377.
- <sup>36</sup> See, for ex. Matuzova cit., pp. 191-235; M.P. Alekseev, *Sibir' v izvestiyakh zapadnoevropeyskikh putesh-estvennikov i pisateley*, Irkutsk 1941, pp. 23-27; G.G. Pikov, *Iz istorii evropeyskoy kultury*, Novosibirsk 2002.

- <sup>37</sup> Bacon, *The "Opus Majus"* cit., vol. I, pp. 268, 305.
- <sup>38</sup> *Ibid.*, vol. II, pp. 220-221.
- <sup>39</sup> Id., *Opus tertium* cit., p. 29.
- <sup>40</sup> *Ibid.*, pp. 96-97.
- <sup>41</sup> Id., *Compendium studii philosophiae in Fratris Rogeri Baconi opera quaedam hactenus inedita*, ed. J.S. Brewer, London 1859, pp. 398-403 etc.
- <sup>42</sup> ["et horum notitiam habet ecclesia sine studio theologiae, et habuit a principio per doctrinam Apostolorum"]: *ibid.*, p. 427.
- <sup>43</sup> *Ibid.*, pp. 399, 426.
- <sup>44</sup> ["quod refertur haec sapientia ad ecclesiam Dei et rempublicam fidelium et conversionem infidelium et repressionem eorum qui converti non possunt. Et quia in multis quae nunc numerari non possunt necessaria est ecclesiae..."]: Id., *The "Opus Majus"* cit., vol. I, p. 253 etc.
- <sup>45</sup> ["philosophi... sectam seu professionem fidei Christianae confirmant et nobiscum concordant in stabilitate hujus sectae"]: *ibid.*, vol. I, p. 254.
- <sup>46</sup> Id., *Opus tertium* cit., p. 50.
- <sup>47</sup> Id., *Opus majus* cit., vol. II, p. 376 etc.
- <sup>48</sup> ["sacra Scriptura, cum non habeat superiorem, disputat cum negante sua principia, argumentando quidem, si adversarius aliquid concedat eorum quae per divinam revelationem habentur; sicut per auctoritates sacrae doctrinae disputamus contra haereticos, et per unum articulum contra negantes alium. Si vero adversarius nihil credat eorum quae divinitus revelantur, non remanet amplius via ad probandum articulos fidei per rationes, sed ad solvendum rationes, si quas inducit, contra fidem. Cum enim fides infallibili veritati innitatur, impossibile autem sit de vero demonstrari contrarium, manifestum est probationes quae contra fidem inducuntur, non esse demonstrationes, sed solubilia argumenta"]: *Summa theologiae*, I-a, q. 1 a. 8 co. In world historiography, an universal system of quotes exists concerning Thomas Aquinas' works and we have used this system without the pages and data of editions. The best critical edition is *Editio Leonina* (Rome 1882-1930) in 15 volumes.
- <sup>49</sup> Quodlibet II, q. 4 a. 2.
- <sup>50</sup> The best edition of his works: Raimundi Lulli, *Opera omnia*, Frankfurt 1965, vol. 1-8.
- <sup>51</sup> P. Dubois, *De recuperatione Terre Sancte. Traité de politique générale par Pierre Dubois*, Paris 1891, pp. 49-50.
- <sup>52</sup> *Ibid.*, pp. 50, 70-71.
- <sup>53</sup> Many thanks are due to my TWG colleagues for their benevolent advice and remarks.

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