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Thoughts on the conception of Nature in Byzantium (11th-12th Centuries)

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Abstract: This paper examines a new way of looking at nature in Byzantium in the 11th and 12th centuries, and how this may have impacted the conception of the individual. This shift in mentalities is studied by analysing several testimonies from this period, as well as other contemporary elements such as a pronounced taste for gardens and hunting. The study of artworks reinforces this perception, which bears witness to the Byzantines' desire to reflect on their place between nature and Creation.

Keywords: Nature; *Physis*; *Physiologus*; Hexaemeral Literature; Hunting; Gardens; Byzantium.

ES Reflexiones sobre la concepción de la naturaleza en Bizancio (siglos XI-XII)

Abstract: Este artículo se centra en el surgimiento de una nueva visión bizantina de la naturaleza en los siglos XI-XII y lo que esto podría implicar para la constitución del individuo. El estudio de este punto de inflexión en la mentalidad bizantina se realiza a través del análisis de varios testimonios contemporáneos, pero también de otros elementos como el marcado gusto por los jardines y la caza que aparecen aproximadamente en la misma época. El estudio de las obras de arte refuerza esta aprehensión, que atestigua el deseo del hombre bizantino de reflexionar sobre su lugar en relación con la naturaleza y la Creación.

Palabras clave: Naturaleza; *Physis*; *Physiologus*; Hexaéméra; caza; jardines; Bizancio.

Contents: 1. The concept of nature in medieval thinking. 2. Making nature visible in Byzantium (11th-12th centuries). 3. Conclusion. 4. References. 4.1. Primary Sources. 4.2. Bibliography.

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The ancient Greek concept of φύσις is very close to what is currently understood by most as nature. Hence, and as pointed out by Th. Arentzen, V. Burrus, and Gl. Peers, “in philosophical and theological discourse, *physis* tends to signify nature, but the Greek term *physis* is as slippery as the modern English term *nature* [...] it can also be translated as “origin,” “growth,” or “the natural form or constitution of a person or thing as a result of growth”; it is closely related to the verb *phyo*, “to grow,” and through it to the word for plant, *phyton*.¹ The polysemy of the Greek term stems from

the conception of nature, which varied throughout Antiquity and the Middle Ages.²

² On the term φύσις (and also φυσιολόγοι and φυσιολογία), see Stavros Lazaris, *Le Physiologus grec*. t. 1. *La réécriture de l'histoire naturelle antique*. Firenze: SISMEL – Edizioni del Calluzzo, 2016, 39–40; John Sallis, *The Figure of Nature: On Greek Origins. Studies in Continental thought*. Bloomington, Ind.: Indiana University Press, 2016. In general, on the concept of nature in Antiquity and during the Middle Ages, see e.g. Michel Terrasse, Emmanuel Pouille and Danielle Jacquart (ed.), *Comprendre et maîtriser la nature au Moyen âge: mélanges d'histoire des sciences offerts à Guy Beaujouan*. Genève; Paris: Librairie Droz; Librairie Champion, 1994; Daniella Fausti, “L'idea di natura nel mondo antico”, in: Alberto Peruzzi (ed.), *Pianeta Galileo*. Firenze: Centro stampa del Consiglio regionale della Toscana, 2005, 89–101; Gérard Naddaf, *The Greek Concept of Nature*. Albany, NY: State University of New York Press, 2005; Gérard Naddaf and Benoît Castelnérac, *Le*

¹ Thomas Arentzen, Virginia Burrus and Glenn Peers, *Byzantine Tree Life: Christianity and the Arboreal Imagination*. Basingstoke: Palgrave Macmillan, 2021, 78–79.

Even today, the definition of nature remains problematic. To take just one example, R. Hepburn, philosopher and founder of environmental aesthetics, defines nature as follows: “By ‘nature’ I shall mean all objects that are not human artefacts. This will of course include living creatures.”³ Nature, then, is everything that is not man-made. However, man is a natural being, a product of nature. In this sense, everything that man does is *ipso facto* a part of nature. Moreover, if we exclude man from nature, we will also have to exclude all those animals, starting with the horse, which over the centuries have been entirely transformed by man. Not only does R. Hepburn place man outside nature, but he continues his specific definition: “I can afford to ignore for the purposes of this study the many possible disputes over natural objects that have received a marked, though limited, transformation at man’s hands.”⁴ He therefore speaks of ‘natural objects’, but in the text in which he gives this definition, he uses the examples of spaces and not objects, i.e. realities ‘in’ which we are situated rather than realities that are ‘in front of’ us (object = *ob-jectum*, ‘thrown in front of’): a forest, a plain.

After these brief remarks on the concept of nature, I would like to develop in my paper some ideas about the emergence, albeit timid and short-lived, of a new Byzantine view of nature from the 11th to the 12th centuries, and what this might mean in terms of the emergence of the individual. More specifically, in the first part of this paper, I will look at the turning point in the Byzantine mentality⁵ of the concept

of nature, through a brief presentation of a series of factors that bear witness to this. In the second part, I will examine how this change took place in the way nature was represented in Byzantium. In conclusion, I will look at the reasons why this new conception of nature in Byzantium lasted so short-long, in contrast to the situation in the West.

1. The concept of nature in medieval thinking

For several centuries, people in the Middle Ages drew the concept of nature from that of Creation. With the arrival of Christianity, “nature” became synonymous with “created”, as an emanation of the creative power of God, himself “natura”, who breathes life into things. Nature was like a book written by God, and the physical world was not open to man’s search for the physical causes of phenomena - the only direct cause being divine will. In fact, since ancient times, the Church Fathers provided the “right” answer for good Christians. The root causes were inaccessible, because no scientist could interpret God’s creative will; these questions were the domain of theology, and nature was interpreted as a book written by the finger of God.⁶

At the same time, it was deemed worthwhile to try and understand how the world worked, as this increased our admiration for the unique phenomenon of Creation. So, apart from texts on natural history and Christian morality, such as the Greek *Physiologus*,⁷ a strong Hexaemeral tradition⁸ developed at an early date (Philo of Alexandria,⁹ Basil the Great, Ambrose of Milan, Pseudo-Eustathius’ commentary in *Hexaemeron*, John Philoponus,

concept de nature chez les présocratiques. Paris: Klincksieck, 2008; Francisco Marzoa, “Le concept de nature à travers les âges: Aristote. la nature ne fait rien en vain”. IS@DD juin (2011): 1-3; Maaik Van Der Lugt (ed.), *La nature comme source de la morale au Moyen Âge*. Firenze: SISMEL - Ed. del Galluzzo, 2014; Irene Caiazzo, “Nature et découverte de la nature au Xlle siècle: nouvelles perspectives”, in: Pasquale Porro and Loris Sturlese (ed.), *The Pleasure of Knowledge (= Quaestio 15)*, Turnhout: Brepols, 2015, 47-72; Gisella Cantino Wataghin, “Uomo e “natura” nella tarda antichità: rappresentazione e percezione”. *Antiquité tardive* 29 (2021): 29-42. Finally, on the relationship between the Byzantines and their environment, see e.g. Ioannis Chatzifotis, *Η προστασία του περιβάλλοντος στο Βυζάντιο*. Athina: Τυπωθήτω, 2001; Anastasios Sinakos, *Άνθρωπος και περιβάλλον στην πρωτοβυζαντινή εποχή (4ος-6ος αι.)*. Thessaloniki: University Studio Press, 2003; Ilias Anagnostakis, Taxiarchis G. Koliass and Eftychia Papadopoulou (ed.), *Animal and Environment in Byzantium (7th-12th c.)*. Athina: The National Hellenic Research Foundation, 2011; Panayotis Yannopoulos, “Περιβάλλον και προπαγάνδα στο Βυζάντιο. Πολιτική εκμετάλλευση φυσικών φαινομένων από την εικονοφιλή φιλολογία”, in: *Ιστορίας μέριμνα. Τιμητικός τόμος στον καθηγητή Γεώργιο Ν. Λεονταίνη*, Athina: Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών, 2012, 272-289; Kaliopri Mavromati, *Φύση και άνθρωπος στις επιστολές της υστεροβυζαντινής περιόδου (13ος-15ος αι.)*. Athina: Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών (ΕΚΠΑ), 2014 - PhD Thesis; Veronica della Dora, *Landscape, nature, and the sacred in Byzantium*. Cambridge: Cambridge University Press, 2016; Aggeliki Bouloubasi, *Φυσικό και Ανθρωπογενές Περιβάλλον στο Βυζάντιο. Οι κρατικές περιβαλλοντικές ρυθμίσεις στη βυζαντινή νομοθεσία*. Mistras: Université du Péloponnèse (Πανεπιστήμιο Πελοποννήσου), 2021 - PhD Thesis.

³ Ronald Hepburn, “Contemporary aesthetics and the neglect of natural beauty”, in: Bernard Arthur Owen Williams and Alan Claude Montefiore (ed.), *British Analytical Philosophy*, London: Routledge & K. Paul, 1966, 285-310, esp. 285, n. 1.

⁴ *Ibid.*, p. 285, n. 1.

⁵ As Jacques Le Goff pointed out, the notion of ‘mentality’ has never been the subject of a clear and fixed definition, since, fundamentally, it was first and foremost a heuristic tool that enabled historians to explore hitherto neglected

areas of human life (Jacques Le Goff, “*Histoire des sciences et histoire des mentalités*”. *Revue de synthèse* 111-112 (3ème série) (1983): 408-415). On this term, see also Florence Hulak, “*En avons-nous fini avec l’histoire des mentalités ?*”. *Philonsorbonne* 2 (2008): 89-109.

⁶ The ability to “read” this book can help us know God (better). In several texts, we find parentheses for looking closely at God’s creations. Indeed, Job urges men to turn to the birds, which can enlighten them (*Job* 12, 7-10). We should also bear in mind what Paul wrote in the *Epistle to the Romans*: “For what can be known about God is plain to them [men], because God has shown it to them. Ever since the creation of the world his eternal power and divine nature, invisible though they are, have been understood and seen through the things he has made [...]” (Τὸ γνωστὸν τοῦ Θεοῦ φανερόν ἐστιν ἐν αὐτοῖς· τὰ γὰρ ἀόρατα αὐτοῦ γὰρ Θεὸς αὐτοῖς ἐφάνηρωσε· τὰ γὰρ ἀόρατα αὐτοῦ ἀπὸ κτίσεως κόσμου τοῖς ποιήμασι νοούμενα καθορᾶται [...]), *Romans* 1, 19-20).

⁷ On the *Physiologus*, see Lazaris, *Le Physiologus grec* (t. 1) and Stavros Lazaris, *Le Physiologus grec*. t. 2. *Donner à voir la nature*. Firenze: SISMEL - Edizioni del Calluzzo, 2021.

⁸ The title *Hexaemera* refers to the exegetical works on the events associated with the six days of Creation. On the Hexaemeral Literature, see Stavros Lazaris, “Christianizing animals: *Physiologus* and Hexaemeral Literature”, in: P. Marciniak and T. Schmidt (ed.), *The Routledge Handbook of Human-Animal Relations in the Byzantine World*, London: Taylor & Francis, 2024, 58-82.

⁹ The best known non-Christian commentary on Genesis is the *De officio mundi* by Philo of Alexandria. As early as the 1st century CE, this Hellenised Jew commented on the first chapters of Genesis, which deal with crucial issues concerning the creation of the universe, animals and man. On this text, see the critical edition by David T. Runia, *Philo of Alexandria, On the creation of the cosmos according to Moses*. Leiden; Boston: Brill, 2001. See also David T. Runia, *Philo of Alexandria: collected studies 1997-2021*. Tübingen: Mohr Siebeck Tübingen, 2023, esp. 315-328.

George of Pisidia, Anastasius of Sinai, Cosmas of Jerusalem...) with the primary aim of commenting on the first six days of Creation. This kind of literature flourished throughout the Byzantine period and had a lasting impact on the Byzantine concept of nature. However, it underwent a major change during the Middle-Byzantine period. More specifically, the 11th-12th centuries witnessed a transformation in man's conception and understanding of nature. There are many possible explanations for this phenomenon.

Gardens and parks became fashionable from this period onwards.¹⁰ It is highly likely that Emperor Constantine IX Monomachos' great love of gardens prompted him to build parks and gardens. The monastery of St. George of the Mangana¹¹ was endowed with a superb park, a vast enclosure of flower-filled lawns, hanging gardens and trees clustered around pools and fountains. This proliferation certainly contributed to the change in Byzantine man's relationship with nature. The development of gardens and parks and the transformation of the Byzantine conception of nature would most likely also have resulted in the appearance (or reappearance) of texts such as the *Hortus symbolicus*.¹² In this text, the anonymous author uses imagery to describe the virtues of the Christian soul, which are the virtues of the spiritual garden.

Besides the gardens, under Constantine IX Monomachos, a zoo was built in Constantinople.¹³ The period of the Comnenes is also known for the growth and popularity of hunting.¹⁴ This is no coin-

idence, and should also be seen in the context of the Byzantines' new relationship with nature. This relationship can be seen in three *ekphraseis* (rhetorical descriptions) on hunting from the Komnenian period. Constantin Manasses (c. 1150) wrote a brief "Ἐκφρασις ἀλώσεως σπίνων καὶ ἀκανθίδων (Description of the catching of siskins and goldfinches), a vivid account of an entertaining hunting party with a group of young bird-catchers under the lead of an old man. In another *ekphrasis* ("Ἐκφρασις κυνηγεσίου γεράνων, Description of a crane hunt), he praises the hygienic benefit of hunting. A third *ekphrasis*, authored by Constantine Pantechnes ("Ἐκφρασις κυνηγεσίου περδίκων καὶ λαγῶν, Description of the hunting of partridges and hares), describes a hunt whose products were intended to be served to the imperial table, conducted with hounds, falcons, and tame leopards probably in Thrace.¹⁵

During this period, science underwent significant developments, which undoubtedly had an impact on the way in which man viewed God and his creations on Earth. Indeed, the reign of Constantine IX Monomachos was the golden age of university studies in Byzantium.¹⁶ He surrounded himself with scholars and academics. These included men such as John Xiphilinus, the famous jurist and future patriarch of Constantinople, the writer Constantine Leichoudes and Michael Psellos. It was from this small group of intellectuals in particular that emerged the idea of a vast reform of university teaching. In short, the aim was to rebuild from top to bottom an edifice that had fallen into ruin, to restore the standing of the University of Constantinople a reputation it had acquired under the reign of the first two Macedonian emperors. The emperor, although not well versed in either philosophy or literature, gave his approval. One of the spin-offs was the development of science. Indeed, while the tenth century was a period of encyclopaedias, of which only a few survive,¹⁷ the 11th and 12th centuries, under the emperors Constantine IX Monomachos, Alexis, John, and Manuel Comnenus, formed a brilliant and cultivated period that witnessed important scientific achievements.¹⁸ The field of zoology, which

¹⁰ On the gardens in Byzantium, see Henry Maguire, "A Description of the Aretai Palace and its Garden". *Journal of Garden History* 10, 4 (1990): 209-213; Charles Barber, "Reading the Garden in Byzantium: Nature and Sexuality". *Byzantine and Modern Greek Studies* 16 (1992): 1-20; Anthony Littlewood, Henry Maguire and Joachim Wolschke-Bulmahn (ed.), *Byzantine garden culture*. Washington, D.C: Dumbarton Oaks Research Library and Collection, 2002; Adam J. Goldwyn, *Byzantine Ecocriticism: Women, Nature, and Power in the Medieval Greek Romance*. Cham: Palgrave Macmillan, 2018. On the symbolism behind the imperial gardens, see in particular Henry Maguire, "Imperial Gardens and the Rhetoric of Renewal", in: Paul Magdalino (ed.), *New Constantines the rhythm of imperial renewal in Byzantium, 4th-13th centuries*. *Papers from the Twenty-sixth Spring symposium of Byzantine studies (St Andrews, March 1992)*, Aldershot: Variorum, 1994, 181-198 and on the discourse of pleasure in the garden during the eleventh and twelfth centuries, in addition to the previous references, see Curie Virág and Foteini Spingou, "The Pleasures of Virtue and the Virtues of Pleasure: The Classicizing Garden in Eleventh- and Twelfth-Century China and Byzantium". *Medieval worlds* 13 (2021): 229-265.

¹¹ On the Constantinopolitan district of Mangana, see Robert Demangel and Ernest Mamboury, *Le quartier des Manganes et la première région de Constantinople*. Paris: E. de Boccard, 1939.

¹² Margaret Thomson dates it in the 11th century (Margaret Thomson, *Le Jardin symbolique*. Paris: Les Belles Lettres, 1960 and Margaret Thomson, *The symbolic garden. Reflections drawn from a Garden of Virtues. A XIIIth century Greek manuscript*. North York: Captus University Press, 1989, this second edition is based on a much more complete manuscript).

¹³ See e.g. Arnaud Zucker, "Zoology", in: Stavros Lazaris (ed.), *A Companion to Byzantine Science*, Leiden; Boston, Mass.: Brill, 2020, 261-301, esp. 266.

¹⁴ Indeed, hunting and especially falconry had taken an important place in Byzantine culture since the eleventh and twelfth centuries (cf. e.g. Andreas Rhoby, "Hunde in Byzanz", in: Jörg Drauschke, Ewald Kislinger, Karin Kühtreiber, et al. (ed.), *Lebenswelten zwischen Archäologie und Geschichte Festschrift für Falko Daim zu seinem 65. Geburtstag*, Mainz:

Verlag des Römisch-Germanischen Zentralmuseums, 2018, 807-820; Stavros Lazaris, "Hunting in Byzantium: a case-study in falconry", in: Charles Brunet and Baudoin Van den Abeele (ed.), *Falconry in the Mediterranean Context during the Pre-Modern Era*, Genève: Droz, 2021, 261-276).

¹⁵ On these *ekphraseis*, see Zucker, "Zoology", 290; Lazaris, "Hunting in Byzantium", 264-265.

¹⁶ The idea, long held by specialists, of a general decadence in the 11th-12th centuries has been thoroughly refuted by Aleksandr Petrovič Kazhdan and Ann Wharton Epstein: Aleksandr Petrovič Kazhdan and Ann Wharton Epstein, *Change in Byzantine culture in the eleventh and twelfth centuries*. Berkeley: University of California Press, 1990².

¹⁷ On this issue, see e.g. Paul Magdalino, "From 'Encyclopaedism' to 'Humanism': The Turning Point of Basil II and the Millennium", in: Marc Diederik Lauxtermann and Mark Whittow (ed.), *Byzantium in the Eleventh Century: Being in Between. Papers from the 45th Spring Symposium of Byzantine Studies (Exeter College, Oxford, 24-6 March 2012)*, London: Routledge, 2017, 3-18.

¹⁸ On the sciences in Byzantium, see the various contributions in S. Lazaris (ed.), *A Companion to Byzantine Science*. Leiden; Boston: Brill, 2020. On the 10th and 11th centuries, Paul Lemerle's work is still a very useful source: Paul Lemerle,

was more directly concerned with this relationship between man and nature, developed particularly during this period with the reception of Aristotle's zoological texts (Michael Psellos in the 11th century drew directly on Aristotle's work and Michael of Ephesus in the 12th century commented on several of Aristotle's treatises).¹⁹ This development of the Byzantine sciences had consequences for the relationship between the God-Nature-Man triad. As a result, the legacy of scholars like Michael Psellos, John Italus and Symeon Seth gave rise to a rationalist school of thought, and the era moved towards the conquest of individuality and even naturalism.²⁰ This is evident, for example, in the *Conspectus rerum naturalium* (Σύνοψις τῶν φυσικῶν)²¹ by Symeon Seth (written after 1058).²² In this treatise, Seth shows that the Earth is spherical. He talks about the four elements, their natural location and equal quantities, as well as the phenomena of nature (rain, hail, snow, thunder, lightning, earthquakes). According to him, earthquakes are due to the heating of the earth, which produces vapours that, rising as their fine nature dictates, move the earth, which is thick by nature. Comets, phenomena of the sublunary world, are formed from humidity heated by the fire above the air. The rainbow, formed by small drops of water, cannot take the shape of a circle, according to Aristotle's calculations. All the phenomena of the sublunary world are due to the qualities of the four elements that interact with the heat or light of the Sun; everything in the world has a physical explanation, there is nothing supernatural about it. In this part of Seth's work, God does not intervene at any point.²³ What we have here is the genesis of a new rationalism for Byzantine civilisation. This original approach no longer relied on theology and its derivatives to understand and explain various natural phenomena, and this had repercussions on the relationship between the Byzantines and God as well as with nature.

This rationalism is also confirmed in another way. During the same period, we notice a phenomenon that has not aroused the interest of scholars as

much as it should have. In the third recension of the Greek *Physiologus*,²⁴ known as the Pseudo-Basil *Physiologus*,²⁵ all hybrid animals (hippocentaurus/onocentaurus, sirens, ant-lions, etc.) are banned, although it is unclear whether this is a coincidence, even if it is unlikely, or a desire to eliminate them. As I wrote recently, "this act, if it is indeed conscious on the part of the writer, constitutes a very important fact about his conception and perhaps, more generally, that of his environment and his time, about fantastic beings and their distinction from living species".²⁶ This scepticism towards fantastic creatures (previously considered to be real) and their removal from the text could also be another sign of a change in mentality that took place in the 11th-12th centuries. Last but not least, the *ekphraseis* of creation by Constantine Manasses, with its strongly poetic evocation of nature, is another example²⁷ of this change. In these examples (without any pretence of exhaustiveness), we notice a tentative shift in the relationship between the Byzantines and nature and, inevitably, with God the Creator.

Finally, I do not think it is by chance that in the first sustained fictional European narratives where produced in 12th century Constantinople. As R. Beaton rightly pointed out, in this kind of text, "the ideal sought through the artifice of the text is not the Christian Logos but human artistry"²⁸ and this is new evidence of the change that was taking place at this time in Byzantine mentality on a number of different levels.²⁹

²⁴ Fr. Sbordone (Francesco Sbordone, *Physiologus*. Hildesheim; New York, N.Y.: G. Olms, 1936, xi) dates it from the 10th/11th century and B. E. Perry from the 12th century (B. E. Perry, "Physiologus, ed. F. Sbordone. In *Aedibus Societatis 'Dante Alighieri,' Milan 1936. Pp. cxvii+332*". *American Journal of Philology* 58 (1937): 488-496, esp. 495 and B. E. Perry, "Physiologus", in: A. Pauly and G. Wissowa (ed.), *Realencyclopädie der classischen Altertumswissenschaft*, Stuttgart: 1941, 1074-1129 (col.), esp. col. 1114).

²⁵ On this recension, see also Ursula Treu, "Vom Löwen bis zum Wildesel. Die dritte, sogenannte pseudobasilianische Redaktion des Physiologus", in: Adelheid Rexheuser and Fairy von Lilienfeld (ed.), *Festschrift für Fairy von Lilienfeld zum 65. Geburtstag*, Erlangen: Univ. Erlangen-Nürnberg, 1982, 446-478. In another study, Ursula Treu confused this recension with the fourth: "the third is in verse and probably late. The fourth, written under the name of the monastic founder Basil the Great, comes maybe from the eleventh century [...]" (Ursula Treu, "The *Physiologus* and the Early Fathers", in: Elizabeth A. Livingstone (ed.), *Studia patristica Historica, theologica et philosophica, gnostica*, Leuven: Peeters Press, 1993, 197-200, esp. 426).

²⁶ See Lazaris, *Le Physiologus grec* (t. 1), 51.

²⁷ Apart from the bibliography cited above, on the *ekphraseis* of Constantine Manasses, see Ingela Nilsson, "Narrating Images in Byzantine Literature: The *Ekphraseis* of Konstantinos Manasses". *Jahrbuch der Österreichischen Byzantinistik* 55 (2005): 121-146. More generally, on *ekphraseis* in Byzantium, see also Panagiotis Agapitos, *Εἰκὼν καὶ λόγος: Ἐξὶ Βυζαντινῆς περιγραφῆς ἔργων τέχνης*. Athina: Εκδόσεις Ἄργα, 2006.

²⁸ Roderick Beaton, "Epic and romance in the twelfth century", in: Antony Robert Littlewood (ed.), *Originality in Byzantine literature, art and music a collection of essays*, Oxford: Oxbow books, 1995, 81-91, esp. 88

²⁹ In general, on the Komnenian romances, a literary fiction genre which grew increasingly popular from the twelfth century, among other references, see, Hans-Georg Beck, *Geschichte der byzantinischen Volksliteratur*. München: C.E. Beck, 1971, esp. § 265, 313, 318, 319; Robert Beaton, *The medieval Greek romance*. London; New York, N.Y.: Routledge, 1996, 9-88; Panagiotis Roilos, *Amphoteroglossia: A Poetics of the Twelfth Century Medieval Greek Novel*. Washington, D. C.: Center for Hellenic Studies, 2006; Elizabeth Jeffreys, *Four Byzantine Novels: Agapetus - Theodore Prodromos;*

Le premier humanisme byzantin: notes et remarques sur enseignement et culture à Byzance des origines au Xe siècle. Paris: Presses Universitaires de France, 1971. See also Bernard Flusin and Jean-Claude Cheynet (ed.), *Autour du Premier humanisme byzantin & des Cinq études sur le XIe siècle, quarante ans après Paul Lemerle*. Paris: Association des amis du Centre d'histoire et civilisation de Byzance, 2017.

¹⁹ On zoology in Byzantium, see Zucker, "Zoology". On the reception of Aristotelian treatises in Byzantium, see, among other works, Michele Trizio, "The Byzantine Reception of Aristotle's *Parva Naturalia* (and the Zoological Works) in Eleventh- and Twelfth-Century Byzantium: An Overview", in: Börje Bydén and Filip Radovic (ed.), *The Parva naturalia in Greek, Arabic and Latin Aristotelianism supplementing the science of the soul*, Cham: Springer, 2018, 155-168.

²⁰ On this phenomenon, see also Kazhdan and Epstein, *Change in Byzantine culture*, 197-230.

²¹ Ed. Armand Delatte, *Συμμεῶν μαγίστρου τοῦ Σηθ Σύνοψις τῶν φυσικῶν*. Liège / Paris: Faculté de Philosophie et Lettres, 1939, 17-89.

²² Symeon Seth was a scholar born in Antioch (or, perhaps, Alexandria), active at the courts of Michael VII Doukas and Alexios I Komnenos, as professional astrologer and doctor.

²³ In addition to the comments by Armand Delatte in his critical edition of this work, see also dans Efthymios Nicolaidis, *Science et orthodoxie - des pères grecs à l'époque de la mondialisation*. Paris: Classiques Garnier, 2018, 99-100.

In the same vein, let us quote P. Buckley, who rightly wrote that “the eleventh and twelfth centuries are known for the new freedom Byzantine historians enjoyed in introducing themselves into their work and, while it is hard to gauge how far Psellos was voicing a zeitgeist and how far creating one, his ringing declaration αὐτός “I myself” does seem to resonate beyond its context.”³⁰

A transformation in the way nature was conceived was also observed in the West, but especially from the 12th century onwards. Indeed, according to M.-D. Chenu, the 12th century “discovered nature”.³¹ Even if we need to temper the so-called “12th century renaissance”,³² on which so much ink has been spilled for almost a century and the publication of Ch. H. Haskins’ work,³³ it is undeniable that

Rhodanthe and Dosikles - Eumathios Makrembolites; Hysmine and Hysmini. Liverpool: Liverpool University Press, 2012. Also very useful for readers: Panagiotis Agapitos, “Ἀπὸ τὸ ‘ῥῶμα’ τοῦ Ἑρῶτα στὸ ἀφιγήμαν’ τῆς Ἀγάπης: Τὸ ἐρωτικὸ μυθιστόρημα στὸ Βυζάντιο (11ος-14ος αἰῶνας)”, in: Christine Angelidi (ed.), *Byzantium matures: choices, sensitivities, and modes of expression (eleventh to fifteenth centuries)*, Athina: The national Hellenic Research Foundation Athens, 2004, 53-72; Floris Bernard, *Writing and reading Byzantine secular poetry 1025-1081*. Oxford: Oxford university press, 2014; Floris Bernard and Kristoffel Demoen (ed.), *Poetry and its contexts in eleventh-century Byzantium*. London: Routledge London, 2016.

³⁰ Penelope Buckley, “Mode of Identity: Attaleiates, Komnene, and Psellos”, in: Michael Edward Stewart, David Alan Parnell and Conor Whately (ed.), *The Routledge Handbook on Identity in Byzantium*. London: Routledge, 2022, 395-423, esp. 395. As early as the 1970s, Seymour Epstein maintained that there are three conceptual systems, two of which are of primary importance for the notion of the self: the “rational system”, which provides the conscious statements about the “self”, and the “experiential system”, associated with emotions (Seymour Epstein, “Cognitive-experiential self-theory”, in: Lawrence A. Pervin (ed.), *Handbook of Personality: Theory and Research*, New York: The Guilford Press, 1990, 165-192, esp. 167-169). See also Barbara H. Rosenwein, “Y avait-il un « moi » au haut Moyen Âge ?”. *Revue historique* 1 (2005): 31-52, esp. 41.

³¹ Marie-Dominique Chenu, *La théologie au douzième siècle*. Paris: J. Vrin, 1966², 21.

³² There is a vast bibliography on the 12th century renaissance. For example, readers can consult: Gregory Tullio, “La nouvelle idée de nature et de savoir scientifique au XII^e siècle”, in: John Emery Murdoch and Edith Dudley Sylla (ed.), *The Cultural Context of Medieval Learning. Proceedings of the First International Colloquium on Philosophy, Science and Theology in the Middle Ages (September 1973)*, Dordrecht; Boston: D. Reidel Publ. Company, 1975, 192-218; Karl Frederick Morrison, *History as a Visual Art in the Twelfth-Century Renaissance*. Princeton: Princeton University Press, 1990; Robert Louis Benson and Giles Constable, ed. *Renaissance and renewal in the twelfth century*. Oxford Oxfordshire; New York: Oxford University Press, 1991²; Caiazzo, “Nature et découverte de la nature au XII^e siècle”; Alex J. Novikoff, *The twelfth-century Renaissance: a reader*. 2017. Chris Ferguson has published a very useful annotated bibliography (Chris D. Ferguson, *Europe in transition: a select, annotated bibliography of the twelfth-century renaissance*. New York: Garland, 1989).

³³ Charles Homer Haskins, *The renaissance of the twelfth century*. Cambridge: Harvard university press, 1927. On the subject, see Charles Burnett’s study (Charles Burnett, “The twelfth-century renaissance”, in: David C. Lindberg and Michael H. Shank (ed.), *The Cambridge history of science*, Cambridge; New York: Cambridge University Press, 2013, 365-384). With particular reference to nature and its ‘alleged’ rediscovery during this period, see S. Ritchey’s point of view (Sara Ritchey, “Rethinking the Twelfth-Century Discovery of Nature”. *Journal of Medieval and Early Modern Studies* 39, 2 (2009): 225-255). It is true that certain events are often exaggerated. To take just one example, the account of the

a profound change took place on several fronts. According to I. Draelants and E. Frunzeanu, this development can be explained by a favourable climatic period,³⁴ relatively stable political conditions and economic prosperity due to better yields. Far from the precarious state of institutions in previous eras, due to the frequency of wars and food shortages, towns were now emerging or growing, and urban schools were flourishing, taking over from the abbeys’ cultural monopoly. Lastly, this period was characterised by various translations from Greek and Arabic into Latin, which made scientific works from Antiquity and the Arabic-speaking East available in Europe for the first time.³⁵ The resulting intellectual vitality enabled certain Western scholars to distinguish between works created by nature and those created by man and, of course, those created by God the Creator.

2. Making nature visible in Byzantium (11th-12th centuries)

In addition to the examples taken from Byzantine texts, the way in which painters suggested, constructed, conveyed, communicated and even ‘veiled’ the meaning of nature provides a better understanding of the change that took place in Byzantine mentalities during this period. From then on, the appreciation of nature changed, albeit timidly, and this shift can be seen in a number of artistic monuments, contemporary with the different factors seen above. This is very important, because art is usually seen as a late reflection of changes that took place earlier. The 11th and 12th centuries were a parenthesis in the way nature was represented in Byzantium. Of course, nature was always a source of inspiration for the Byzantines, but for a long time it was a physical manifestation of Creation, which had to be grasped more as a whole than in its details. A closer look at Byzantine pictorial works reveals a certain abstraction amongst many Byzantines when representing nature, particularly in places of worship.

Indeed, according to H. Maguire, “from the fourth until the eighth centuries the depiction of nature continued to raise difficulties for Christian viewers, as both surviving texts and works of art

ascent of Mont Ventoux by Petrarch, sometimes called the first humanist, needs to be put into perspective. We must not forget that Petrarch, on reaching the summit of Mont Ventoux, did not describe the landscape before his eyes, but opened Augustine’s *Confessions*. It’s true that Petrarch climbed to the top for the sole purpose of enjoying the view, but he didn’t seem to be aware of the change in society’s mindset. In my opinion, this is still the preamble to what was to come in the West. That said, these preludes will have a profound effect on the mentality of medieval people, although they must be analysed with care.

³⁴ As part of the Collège de France’s annual chair on the environment, Kyle Harper (Oklahoma University) led several sessions on climate change in Antiquity and the Middle Ages (<https://www.college-de-france.fr/fr/agenda/cours/histoire-societe-climat-entre-fragilite-et-resilience>). Also very useful: Adam Izdebski and Johannes Preiser-Kapeller (ed.), *A Companion to the Environmental History of Byzantium*. Leiden: Brill, 2024.

³⁵ Isabelle Draelants and Eduard Frunzeanu, “Génération, Force, Mouvement, Habitude: définitions théoriques médiévales de la nature”, (halshs-02424212): 2 (<https://shs.hal.science/halshs-02424212/>).

make abundantly clear.³⁶ F. Baratte also concluded that, apart from a few rare exceptions, miniaturists were not interested in the representation of nature in illustrated manuscripts from late Antiquity.³⁷

According to H. Maguire, “in the fourth century many church writers attacked cults or magical practices that centered on elements of nature, and their hostility must partly explain the relative avoidance of such subjects in the floors of mid- and later fourth century churches.³⁸” In the following century, a pupil of John Chrysostom, St. Nilus of Sinai, is said to have written around 430 to Prefect Olympiodorus: “Being, as you are, about to construct a large church in honor of the holy martyrs, you inquire of me in writing whether it be fitting to set up their images in the sanctuary inasmuch as they have borne testimony of Christ by their martyrs’ feats, their labors and their sweat; and to fill the walls, those on the right and those on the left, with all kinds of animal hunts so that one might see snares being stretched on the ground, fleeing animals, such as hares, gazelles and others, while the hunters, eager to capture them, pursue them with their dogs; and also nets being lowered into the sea, and every kind of fish being caught and carried on shore by the hands of the fishermen; and, furthermore, to exhibit a variety of stucco-work so as to delight the eye in God’s house; and lastly, to set up in the nave a thousand crosses and the pictures of different birds and beasts, reptiles and plants. In answer to your inquiry may I say that it would be childish and infantile to distract the eyes of the faithful with the aforementioned [trivialities]. It would be, on the other hand, the mark of a firm and manly mind to represent a single cross in the sanctuary, i.e., at the east of the most-holy church, for it is by virtue of the one salutary cross that humankind is being saved and hope is being preached everywhere to the hopeless; and to fill the holy church on both sides with pictures from the Old and the New Testaments, executed by an excellent painter, so that the illiterate who are unable to read the Holy Scriptures, may, by gazing at the pictures, become mindful of the manly deeds of those who have genuinely served the true God, and may be roused to emulate those glorious and celebrated feats [...]. And as for the nave, which is divided into many compartments of different kinds, I consider it sufficient that a venerable cross should be set up in each compartment; whatever

is unnecessary ought to be left out.”³⁹ Even if this passage was apparently falsified by the iconodules in their strategy to misappropriate certain writings for their own benefit,⁴⁰ it betrays a clear hostility towards the possibility of using natural elements in a place of worship.⁴¹

After iconoclasm, especially in monumental art, portrayals of animals and plants tended to become less naturalistic and there was less concern to differentiate individual species. This was not simply due to a general tendency to abstraction and schematization in medieval art, because the lack of definition was selective. Portraits of saints, for example, could be highly differentiated, even as the motifs from nature became less so. Moreover, naturalism in the portrayal of flora and fauna was greater in certain contexts, such as in the pages of manuscripts or in high-status ivory carvings.⁴²

However, the situation changed in the 11th and 12th centuries. During this period, we witness a brief return of interest in all terrestrial creation.⁴³ Indeed, and this is very important, while the Byzantines were never particularly at ease with the representation of animals and plants, particularly in the public sphere, there was a hiatus between the 11th and 12th centuries. During these two centuries, there was a concentration of works of art adorned with images associated with the courtly pleasures of the feast and the hunt, which should be seen in the context of the development of hunting (see above).

There was also a degree of naturalism in the depictions of certain works of art from this period. To take just a few examples, the famous *Physiologus* of Smyrna (*Izmir, Euaggelikê Scholê*, B. 8 [olim 48]), dates from the 11th century, and features a narrative style of iconography that tends towards a certain naturalism.⁴⁴ This is also the case of the *Cynegetica* written by Pseudo-Oppian in *Marc. gr. Z 479*⁴⁵ or the *Sinai. gr. 1186*⁴⁶ and *Laur. Plut. IX.28*⁴⁷ which contain the *Christian Topography* (*Topographia*

³⁶ Henry Maguire, *Nectar and Illusion: Nature in Byzantine Art and Literature*. Oxford; New York, N.Y.; Auckland: Oxford University Press., 2012, 23.

³⁷ François Baratte, “Représenter la nature: l'exemple des manuscrits”. *Antiquité tardive* 29 (2021): 125-138, esp. 136. For earlier periods, and especially for the representation of plants, see the latest monograph by Allison Thomason, Joanna Day and Annette Lucia Giesecke, “The Representation of Plants”, in: Annette Lucia Giesecke and David John Maberley (ed.), *A cultural history of plants*, New York: Bloomsbury Publishing Plc, 2022, 175-211.

³⁸ Maguire, *Nectar and Illusion*, 23. See also Henry Maguire, “Christians, Pagans, and the Representation of Nature”, in: Dietrich Willers (ed.), *Begegnung von Heidentum und Christentum im spätantiken Ägypten Beiträge*, Riggisberg: Abegg-Stiftung, 1993, 131-160.

³⁹ Transl. by Cyril Mango, *The art of the Byzantine Empire, 312-1453. Sources and documents*. Englewood Cliffs, N.J.: Prentice-Hall, 1972, 32-33 (ed. PG 79, col. 577-580, epist. 61).

⁴⁰ On the use of this testimony by the iconodules, see Hans Georg Thümmel, “Neilos von Ankyra über die Bilder”. *Byzantinische Zeitschrift* 71 (1978): 10-21.

⁴¹ It should be noted, however, that the situation in the private sphere during this proto-Byzantine period was different. As Maria Parani recently wrote, during the Early Byzantine period, scenes from life at home (bathing, adornment, feasting) and the country (picnics, agricultural and bucolic activities, hunting, fishing), circus games, images inspired by nature (animals, birds, fish, trees, and flowers), personifications (terrestrial, temporal, cosmic, or of abstract concepts), and mythological figures and narrative scenes, were popular (Maria Parani, “Secular Art”, in: Ellen C. Schwartz (ed.), *The Oxford handbook of Byzantine art and architecture*, 2021, 117-132, esp. 127-128).

⁴² Maguire, *Nectar and Illusion*, 8.

⁴³ Ibid., 67. See also Parani, “Secular Art”, 127-130.

⁴⁴ See Lazaris, *Le Physiologus grec* (t. 2), 312-313.

⁴⁵ On this manuscript and its miniatures, see Ioannis Spatharakis, *The illustrations of the Cynegetica in Venice Codex Marcianus graecus Z 139*. Leiden: Alexandros Press, 2004.

⁴⁶ Reproduction: <https://www.loc.gov/item/00271076642-ms>.

⁴⁷ Reproduction: <https://tecabml.contentdm.oclc.org/digital/collection/plutei/id/148247>.

Christiana) by Cosmas Indicopleustes⁴⁸ (all three also from the 11th century).⁴⁹

In other codices too, nature, although not luxuriant, is more prominent than before. The ground, previously shown as dry earth, becomes green and flowers are painted here and there, even if their presence could have been avoided without detracting from the meaning of the image. This is the case in the Menologium in the *Hagion Oros, Monê Esphigmenou*, 14 (Lambros 2027)⁵⁰ and in the *Book of Job* contained in the *Sinai, Monê tês Hagias Aikaterinês, gr. 3*.⁵¹ Both date from the 11th century. The two codices (*Vat. gr. 1162 et Paris. gr. 1208*) containing the homilies of James the Monk of Kokkinobaphos date from this period.⁵² Nature is also depicted to a greater extent than before. The same observation can be made of certain psalters (e.g. *Vatopedi 761, Paris. gr. 20, Add. 40731...*) dating from the 11th century, where nature, and in particular animals, are better observed than before.⁵³ In the following century, we also note a greater sensitivity to the natural environment of individuals, who are represented in a more abundant vegetation made up of trees, bushes, flowers and grass (*Paris. gr. 74*, for example ff. 138^v and 139^r).⁵⁴ This desire to place man in a more luxuriant natural environment can also be seen in the octateuchs (see for example *Vat. gr. 746*, ff. 30^v, 31^r, 32^r, 43^r, ...).⁵⁵ Gradually, realism becomes more prominent and the

trees start to look like trees, even if the problem of scale remains.

In addition to illustrated manuscripts, we note a certain naturalism in the mosaics of the Daphni monastery for instance. Here, although the figures remain austere and expressionless, nature is more luxuriant and better observed than in the works of previous centuries.⁵⁶ Similarly, the casket showing Adam naming the animals, preserved in the Museum für Angewandte Kunst Köln, also features a well-observed nature.⁵⁷ As Chr. Walter noted, "The Macedonian 'Renaissance' was a 'peak', while the eleventh century was a 'valley', a 'period of estrangement from the classical tradition'. Yet such a proposition is reversible. In terms of iconographical development, the eleventh century was a 'peak' and the Macedonian 'Renaissance' a 'valley'."⁵⁸

This change, which testifies to man's desire to reflect on his place in nature and in Creation, is probably a sign of the genesis of the individual in Byzantium.⁵⁹ This emergence of individuality can also be seen in a number of other iconographic details. Indeed, on closer inspection, in the majority of works from the 12th century, Moses is depicted as looking at God. Of course, we know of other representations with almost identical iconography (e.g. *Paris, BnF, grec 510*, f. 52^v [lower register], 9th c.),⁶⁰ but it was not until the 12th century that this iconography of Moses became widespread. If this is not a coincidence (due to the loss of artworks), this iconographic peculiarity, which to my knowledge has never been highlighted by specialists, is very important because it demonstrates a new place for man in relation to God in Byzantine thought at the time.

In a completely different context, can we interpret similarly a painting in the original Engleistra portion of the monastery of Saint Neophytos

⁴⁸ On these two manuscripts and their miniatures, see Wanda Wolska-Conus, *Cosmas Indicopleustês, Topographie chrétienne*. Paris: Ed. du Cerf, 1968, 47-50 and 124-231; Wanda Wolska-Conus, "La «Topographie Chrétienne» de Cosmas Indicopleustês: Hypothèses sur quelques thèmes de son illustration". *Revue des Études byzantines* 48 (1990): 155-191. For *Sinai. gr. 1186*, see also Kurt Weitzmann, *Illustrated manuscripts at St. Catherine's monastery on Mount Sinai*. Collegeville, Minn.: St. John's University Press, 1973, 19-20 and Maja Kominko, *The world of Kosmas. Illustrated Byzantine codices of the Christian Topography*. Cambridge: Cambridge University Press, 2013.

⁴⁹ In general, on some illustrated manuscripts produced in the 11th century, see Kurt Weitzmann, "Byzantine Miniature and Icon Painting in the Eleventh Century", in: J. M. Hussey, D. Obolensky and S. Runciman (ed.), *Proceedings of the XIIIth International Congress of Byzantine studies (Oxford, 5-10 September 1966)*, London: Oxford University Press, 1967, 207-224. For illustrated scientific manuscripts (from all periods), see the references cited below.

⁵⁰ George Galavaris, *Ζωγραφική βυζαντινών χειρογράφων*. Athina: Εκδοτική Αθηνών, 1994, figs. 130-133.

⁵¹ *Ibid.*, fig. 107; Anne Boonen, "Étude iconographique des scènes bucoliques illustrant le Discours 44 (chap. 10-11) de Grégoire de Nazianze", in: A. Schmidt (ed.), *Studia nazianzenica*, Turnhout: Brepols, 2010, 1-41, esp. 19. On the illustrated scientific manuscripts of the *Book of Job*, see Stella Papadaki-Oekland, *Byzantine illuminated manuscripts of the Book of Job: a preliminary study of the miniature illustrations, its origin and development*. Turnhout: Brepols, 2009.

⁵² On this conventional name, see Jeffrey C. Anderson, "The Seraglio Octateuch and the Kokkinobaphos Master". *Dumbarton Oaks Papers* 36 (1982): 83-114.

⁵³ On this manuscripts, see Suzy Dufrenne, *L'illustration des psautiers grecs du Moyen Age: Pantocrator 61, Paris grec 20, British Museum 40731*. Paris: C. Klincksieck, 1966; Anthony Cutler, *The Aristocratic psalters in Byzantium*. Paris: Picard, 1984, 26-29; Galavaris, *Ζωγραφική βυζαντινών χειρογράφων*, figs. 94-97.

⁵⁴ For a colour reproduction: <https://gallica.bnf.fr/ark:/12148/btv1b105494556?rk=21459;2#>.

⁵⁵ For a colour reproduction: https://digi.vatlib.it/view/MSS_Vat.gr.746.pt.1 (first part) and https://digi.vatlib.it/view/MSS_Vat.gr.746.pt.2 (second part).

⁵⁶ See, for example, the prayer of Joachim and Anne in the narthex (reproduction Anthony Cutler and Jean-Michel Spieser, *Byzance médiévale, 700-1204*. Paris: Gallimard, 1996, fig. 206).

⁵⁷ Reproduction: Adolph Goldschmidt and Kurt Weitzmann, *Die byzantinischen Elfenbeinskulpturen des X-XIII Jahrhunderts*. Berlin: B. Cassirer, 1930, t. 1, 61-62; pl. LXVIII (118). See also: Andrea Paribeni, "Il cofanetto di Colonia con storie di Adamo ed Eva", in: Fabrizio Conca (ed.), *Byzantina Mediolanensia. Atti del V Congresso Nazionale di Studi Bizantini (Milano, 19-22 ottobre 1994)*, Rubbettino: Soveria Mannelli, 1996, 319-338.

⁵⁸ Christopher Walter, "Expressionism and hellenism. A note on stylistic tendencies in Byzantine figurative art from Spätantike to Macedonian Renaissance". *Revue des Etudes Byzantines* 42 (1984): 265-287, esp. 286.

⁵⁹ The phenomenon of the genesis of the individual in Byzantium, although recently reconsidered, has been studied in much greater depth in the medieval West. See for example Caroline Walker Bynum, "Did the Twelfth Century Discover the Individual?". *The Journal of ecclesiastical history* 31, 1 (1980): 1-17; William James Simpson, *Sciences and the self in medieval poetry Alan of Lille's "Anticlaudianus" and John Gower's "Confessio amantis"*. Cambridge: Cambridge university press, 1995; Aron Ākovlevič Gurevič, *La naissance de l'individu dans l'Europe médiévale*. Paris: Éd. du Seuil, 1997; Brigitte Bedos-Rezak, "Medieval Identity: A Sign and a Concept". *American Historical Review* 105, 5 (2000): 1489-1533; Vincent de Coorebyter, *Un monde sans moi est-il possible ? l'individu au Moyen âge*. Rennes: Editions Apogée, 2022.

⁶⁰ For a colour reproduction: <https://portail.bibliissima.fr/ark:/43093/1fdata81f02248ef0278f247bdbc6d65fd113e-ce56b9b4>.

of Cyprus?⁶¹ The picture is of Deesis. In this iconography, Christ is usually depicted between the Theotokos and Saint John the Baptist, traditionally considered to be the most effective intercessors with God. The version produced for the Neophyte's cell shows Christ seated on a throne. He holds a closed book and raises his right hand in a gesture of blessing. The Theotokos and John the Baptist stand on either side of him, their hands outstretched in prayer. They are praying for Saint Neophytos of Cyprus, who appears in the scene. This portrait of the monk is in his cell, where he spent his days praying, studying, writing and sleeping. It is accompanied by a text addressed to Christ. While the text is a prayer that the saint might have repeated frequently in his meditations, the image shows both the prayer and the divine answer. For an outsider, the text on the wall could apply to anyone; it is the portrait of Saint Neophytos of Cyprus that tells the viewer that this is not a general prayer, but a very personal and specific request. What's more, Christ's gesture in the fresco tells everyone that he has responded favourably to the person who was begging him. Of course, it is likely that this unexpected iconography is simply linked to Neophytos' personality. However, the likelihood that such a choice was the direct consequence of a profound change in Byzantine thinking at the time about man's place in relation to God (and his creations here below) should not be dismissed.

3. Conclusion

These are just a few examples of this change in the way nature was observed and represented, which would require an in-depth, diachronic study, in particular to check that we are not dealing with a coincidence in the conservation of texts and artworks.⁶² Having said that, this brief overview of literary and pictorial works nevertheless reveals the emergence in the 11th-12th centuries of a new way of looking at nature and, through it, at God the Creator.⁶³

However, unlike the West, where this renewal endured, the changes seen in Byzantium in the 11th-12th centuries came to an abrupt end. There were many complex reasons for this, starting with the state of the Byzantine Empire at the end of the

12th century. From the last years of the reign of Alexis I Comnenus until almost the end of the reign of Manuel I, the Byzantine Empire was surprisingly calm compared to the final disintegration that followed, culminating in the sack of Constantinople in 1204. Weakened by wars and endless power struggles, Byzantium was unable to withstand the Crusaders' attack.⁶⁴ Even if the long-term consequences of this historic event need to be put into perspective, it certainly left deep scars on many Byzantines and writers, such as Niketas Choniates, who portray Constantinople as desolate and in ruins. 1204 sealed the divorce between East and West and brought to an abrupt halt this new relationship between the Byzantines, nature and God the Creator.

The Crusader conquest completely changed the institutional landscape of Byzantium. All the institutions of the empire were abolished. The emperor and patriarch fled. As a result, the schools of higher learning, which were state institutions funded either by the patriarchate or by the emperor, immediately ceased to exist.⁶⁵ If we add to this the destruction of libraries and the disappearance of manuscripts, the catastrophe seems absolute. Even if this catastrophe led to an unexpected revival during the Palaeologan dynasty, it destroyed the freest minds, like Michael Psellos, John Italus and Symeon Seth (see above). From now on, with a few rare exceptions,⁶⁶ science would fall into the hands of the Church, and with it the Byzantine concept of nature and God the Creator. The Hesychast doctrine, which emerged in the 13th century and found its most ardent defender in the Athonite monk Gregory Palamas, greatly influenced the representation of nature and, by the same token, man's place in relation to it and to God. Although this powerful movement, which permeated the whole of Byzantine society, was not an absolute brake on the development of Byzantine

⁶¹ The events in the life of Saint Neophytos are recounted in the typikon of the monastery he founded. On 24 June 1159 he discovered the cliffs and caves where he was to spend the rest of his life in Cyprus's hinterland. He built his cell in a rock cavern and within a year had carved out his cell, a tomb and a chapel in the rock. In 1182/1183, the previously partially decorated hermitage was decorated with a complete set of wall paintings. On this monastery and the paintings, see e.g. Cyril Mango and Ernest J. W. Hawkins, *The Hermitage of St. Neophytos and Its Wall Paintings*. *Dumbarton Oaks Papers* 20 (1966): 119-206; Robin Sinclair Cormack, *Icons et société à Byzance*. Paris: G. Monfort, 1993, 229-265.

⁶² Indeed, the 11th and 12th centuries are among those with the highest percentage of surviving manuscripts (see Filippo Ronconi and Stratis Papaioannou, "Book Culture", in: Stratis Papaioannou (ed.), *The Oxford handbook of Byzantine literature*, New York, N.Y.: Oxford University Press, 2021, 44-75, esp. 50-51). That said, it seems unlikely to me that the concentration of so many elements (literary and artistic) is coincidental.

⁶³ This digression on Byzantine mentalities also reveals that nature is a fluid notion, not only today, but also in Byzantine times.

⁶⁴ The Empire began to disintegrate under the reign of Isaac Angelo: Cyprus passed into the hands of the Westerners (Lusignans), and the Bulgarian Empire was resurrected by Tsar Ivan Asen I. The distress of Byzantium was so obvious that the doge of Venice, Enrico Dandolo, realised that the Empire could be conquered, which the Italian Normans had failed to do on several occasions. Dandolo was a brilliant politician: he knew how to take advantage of both the fourth crusade launched by Pope Innocent III and the claims of the young Alexis Angelo, son of Isaac whom his brother Alexis III had dethroned and blinded. Under the pretext of ousting the usurper, the Crusaders willingly allowed themselves to be diverted towards Constantinople. On 13 April 1204, the Crusaders forced their way into the city and subjected it to appalling pillage. And following a plan carefully prepared in advance, the Empire was divided between the Republic of Venice and the Frankish knights. There is a vast bibliography on the Fourth Crusade. For example, see Mathieu Eychenne, *L'histoire de la quatrième croisade à travers les historiens français et anglais d'après 1914: une tentative de mise au point*. 1999 - PhD Thesis; Angeliki Laiou, *Urbs capta: the fourth Crusade and its consequences = la IVe Croisade et ses conséquences*. Paris: Lethielleux, 2006; Cécile Morrisson, *Les croisades*. Paris: Presses Universitaires de France, 2020¹².

⁶⁵ On advanced scientific education in Byzantium, see Immaculada Pérez Martín and Divna Manolova, "Science Teaching", in: Stavros Lazaris (ed.), *A Companion to Byzantine Science (4th-15th C.)*, Leiden: Brill, 2020, 53-104.

⁶⁶ A good example is the case of the doctor John Zacharias Aktouarios (Petros Bouras-Vallianatos, *Innovation in byzantine medicine: the writings of John Zacharias Aktouarios (c.1275-c.1330)*. Oxford: Oxford University Press, 2020).

humanism, it did have a major influence on the ideas of several Byzantine scholars who tried to reconcile pagan science with orthodox religion. The same applies to Byzantine art,⁶⁷ including the illustration of scientific manuscripts from the 13th-15th centuries.⁶⁸ The period between the 11th and 12th centuries was therefore short but, in many ways, intense and unique in the Byzantine civilisation.

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⁶⁸ On illustrated manuscripts of scientific content from this period, see, among others Zoltan Kádár, *Survivals of Greek zoological illuminations in Byzantine manuscripts*. Budapest: Akadémiai Kiadó: distributed by Kultura, 1978; Alfred Stückelberger, *Bild und Wort: das illustrierte Fachbuch in der antiken Naturwissenschaft, Medizin und Technik*. Mainz am Rhein: Ph. von Zabern, 1994; Minta Collins, *Medieval herbals: the illustrative traditions*. London; Toronto: British Library; University of Toronto Press, 2000; Stavros Lazaris, *Art et science vétérinaire à Byzance. Formes et fonctions de l'image hippiatrice*. Turnhout: Brepols, 2010; Stavros Lazaris, "Scientific, Medical and Technical Manuscripts", in: Vassiliki Tsamakda (ed.), *A Companion to Byzantine illustrated manuscripts*, Leiden: Brill, 2017, 55-113 & figs. 113, 118-138; Alexandra Durr, *L'image toxicologique à Byzance: fonctions et usages des miniatures des "Alexipharmaka" et des "Thèriaka" des pseudo-Dioscoride durant les derniers siècles de l'Empire*. Fribourg: 2018; Lazaris, *Le Physiologus grec* (t. 2).

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