NATURAL DISASTERS IN MAMLŪK EGYPT (1250–1517): PERCEPTIONS, INTERPETATIONS AND HUMAN RESPONSES

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Lastly, in this preface I present a few comments concerning the system of transliteration, dates and editorial symbols used in this study. Throughout the manuscript I have utilised the Arabic transliteration system approved and published by the Library of Congress.¹ In accordance with The Chicago Manual of Style,² I have

rendered in English the Arabic words that exist in English. Years, months, and days are recorded as given in the Arabic sources, i.e. Hijrī dates and Coptic months appear along with their corresponding Gregorian equivalents. The Hijrī date is separated from the Gregorian date with a slash, for example, 702/1302–3 or 702/1303 when the Hijrī month is given and the exact dating is possible. When Hijrī or Gregorian dates appear in isolation, A.H. (Hijrī) and A.D. (Gregorian) accompany them, as for example in 702 A.H. or 1303 A.D. For the computation of dates I used a calendar converter available here:


Square brackets, i.e. [ ], appear when information, which is essential to our understanding of some translated parts, is missing from the original texts. Suspension points between brackets, i.e. [...] , mean that certain parts of the text have been omitted. When square brackets are italicised, i.e. [...], it means that they appear in the western translations of the original texts.

I have retained the system of folio numbering as it appears in the manuscripts and the published guidelines to them. Accordingly, the following three types of numbering are given in the references:

– If two pages of the folio have separate numbers, they are written accordingly, e.g. fol. 345, fol. 346.

– If each folio consisting of two pages has one number—which is mainly the case with manuscripts from Staatsbibliothek zu Berlin—the front of the left side page appears along with the folio number and the letter a and the reverse side of the page appears with the same folio number and the letter b, like, for example, 21a, and 21b. This is in accordance with the method used by William Ahlwardt who catalogued the Arabic manuscripts of the Staatsbibliothek zu Berlin.³

– Some of the manuscripts, mainly those from the Egyptian National Library and Archives, have no numbers or are unreadable. In such

cases, the counting of folios begins with the right side, numbered as fol. 1v (verso), and continues with the left side numbered as fol. 1r (recto). This method is in accordance with the system of right-to-left languages such as Arabic.
1. Introduction

During the last decades, scientific interest in the environment, natural hazards and disasters has increased enormously. A number of scientists make climate change responsible for the rise in the number of natural hazards such as floods, droughts, storms, and hurricanes, which are referred to as “natural disasters”\(^1\) in this study. With the synonymously, although they have different connotations: the former designates an environmental event; the latter is a social event as “disasters do not occur out of context but are embedded in the political structures, economic systems and social orders of the societies in which they take place.” (G. Bankoff, *Cultures of Disaster. Society and Natural Hazard in the Philippines*, London: Routledge 2003, 152.) See the distinction between these terms presented on the basis of the equivalent German concepts “Naturgefahr” and “Naturkatastrophen” in D. Groh, M. Kempe et al., *Einleitung. Naturkatastrophen—wahrgenommen, gedeutet, dargestellt, in Naturkatastrophen. Beiträge zu ihrer Deutung. Wahrnehmung und Darstellung in Text und Bild von der Antike bis ins 20. Jahrhundert*, ed. D. Groh, M. Kempe et al., Tübingen: Gunter Narr Verlag 2003, 14–15.
help of different interdisciplinary methods, they try to reconstruct the climate of the past centuries not only in Europe\(^2\) but also in the Middle East.\(^3\) This kind of information can contribute to a better understanding of the physical circumstances of some catastrophic


events in the past, present and future. However, such scientific work focuses mainly upon the collation and evaluation of data, which at its core conveys environmental aspects.\textsuperscript{4}

Apart from the scientific research, there has been a marked rise of interest in the study of natural disasters across the fields of the humanities and social sciences.\textsuperscript{5} After all, natural hazards with

\textsuperscript{4} Groh, Kempe et al., Einleitung, 13.

catastrophic outcomes are often generated in the process of the

combined effects of physical, social, economic, political, and other factors. This argument strongly emphasises the hybrid character of a natural disaster, seeing it as a multidimensional social phenomenon,\(^6\) lacking a unanimously agreed definition, as examinations of such events cross the boundaries of nature and culture.\(^7\) nature and culture are dynamic phenomena.


\(^7\) The word “culture,” for which it is hard to find an adequate all-embracing definition, refers here, as David Alexander defines it, to a “summation of beliefs and behavioural patterns, the imprint of history and the force of achievements of a particular people. It is made explicit in artefacts and symbols, ideas and systems of values. The resulting cultural systems are both the fruit of past actions and a strong conditioner of future ones” which may change due to a foreign influence as “cultures are dynamic phenomena.
society. This character makes them equally objects of the natural and social sciences. However, in order to understand how disasters influence and transform human cultures, it is necessary to examine them from the perspective of a specific socio-cultural history. This means that this research not only sees a natural phenomenon take that can mutate [...]” D. Alexander, *Confronting Catastrophe. New Perspectives on Natural Disasters*, Oxford: University Press 2000, 61–62.

centre-stage but also the human factor—the individual and his/her behaviour.

Accordingly, this thesis aims to study how people perceived and interpreted natural disasters, and what measures they took to prevent their occurrences, as well as to mitigate their effects in a specific culture, i.e. Mamlūk Egypt. The choice of approach derives from the state of current research, which, as presented below, reveals a lack of thorough studies on natural disasters in Egypt during the period of the Mamlūk reign (648–922/1250–1517). The latter was in particular uniquely dependent for its survival upon the Nile, which was the source of a number of disastrous events, all of which are in need of extensive research and focused evaluation.

Apart from this, I have chosen to focus on this region and period because they are marked by socio-cultural literary accomplishments,¹⁰

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¹⁰ The enormous productivity of Mamlūk authors in the light of numerous narrative sources from the Mamlūk period is remarkable and indisputable. See U. Haarmann, Mamluk Studies—A Western Perspective,
achieved and maintained across the millennia of Egyptian history. During its history, Egypt witnessed a spectacular rise from a province—for centuries relegated to the periphery of power: Roman, Byzantine, Umayyad and ʿAbbāsid\textsuperscript{11}—to the Fāṭimid Caliphate\textsuperscript{12}


the “imperial metropolis”\textsuperscript{13} of Mamlūk Sultanate. This process, rich in transcultural flows and enhanced by the consolidation of Arab-Muslim society and culture in north Africa and Spain, turned Egypt, whose imperial role culminated during the Mamlūk epoch, to the centre of material and intellectual exchanges between the eastern and western Islamic lands.\textsuperscript{14}

2. State of Research

Since the 1980s several researchers have contributed to our understanding of natural disasters\textsuperscript{15} such as earthquakes, excessive

\begin{footnotesize}
\begin{enumerate}
\item Humphreys, Egypt in the World System of the Late Middle Ages, 447–448.
\item See Eric Jones’ general distinction of disasters as 1) geophysical (earthquakes, volcanic eruptions, tsunamis) 2) climatic (hurricanes, typhoons, hailstorms, floods, droughts), 3) biological (epidemics, epizootics, outbreaks of crop disease, locust invasion), and 4) social disasters (warfare, settlement fires, collapse of man-made structures). E. Jones, \textit{The European}
\end{enumerate}
\end{footnotesize}
floods, droughts, and epidemics that befell the Islamic Middle East between 661 A.D. and 1500 A.D.¹⁶ These disasters caused massive depopulation, collapse of the agrarian economy, malnutrition, and famines. William Tucker is one of the few scholars to have conducted preliminary work in this field of study, and two of his papers, *Natural Disasters and the Peasantry in Mamlûk Egypt*¹⁷ and *Environmental Hazards, Natural Disasters, Economic Loss, and Mortality in Mamlûk Syria*,¹⁸ give a general treatment of natural disasters which befell Mamlûk territories. However, the limited scope of such papers do not allow him to show the whole picture of disasters and responses to them and so he addresses people’s general attitudes to calamities, focusing mainly on psychological aspects.¹⁹

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Most of the other studies of a general character do not explore natural disasters in special socio-cultural contexts—an important aspect for the study of disasters and their impact. Moreover, they focus on one specific disaster, treating them in isolation from different perspectives. In these studies, epidemics—the most destructive of all calamities—is the best-explored field, thanks to the research of Michael Dols\textsuperscript{20} and Lawrence Conrad.\textsuperscript{21} Furthermore, Mușṭafă Anwār Ṭāhir,\textsuperscript{22} Emanuela Guidoboni,\textsuperscript{23} ʿAbdallāh Yūsuf al-Ghunaym,\textsuperscript{24}


Charles Melville, and Nicholas Ambraseys\textsuperscript{25} have made significant contributions to the investigation of earthquakes in the Middle East. Their earthquake catalogues have reconstructed the chronology of earthquakes, which provides a basis for systematic research. However, some of the records in them require a critical review, which

\begin{itemize}
\end{itemize}
I will present in the corresponding chapters. Moreover, these studies do not demonstrate earthquakes in socio-cultural historical contexts, as they have not attempted to show the impact of earthquakes on specific cultures and societies in terms of perception, interpretation, and response.

Thus, scholars like Mustafā Anwar Ṭāhir, Anna Akasoy, Konrad Hirschler, Donald Little, Reinhard Schulze, Lutfallah Gari, and


29 K. Hirschler, Erdbebenberichte und Diskurse der Kontinuität in der postformativen Periode, Der Islam 84 (2008), 103–139.

30 D. Little, Data on Earthquakes Recorded by Mamluk Historians: An Historiographical Essay, in Natural Disasters in the Ottoman Empire. Halcyon
Emanuela Guidoboni\textsuperscript{33} generally outlined this issue, elucidating basic interpretations of earthquakes in the Islamic Middle East. Their studies have shown that along with physical explanations—which Arab authors like Ibn Sīnā (Avicenna) (d. 428/1037),\textsuperscript{34} al-Bīrūnī (d.


\textsuperscript{34} Ibn Sinā, \textit{al-Najāh: fī al-ḥikmah al-maṣṭiḥiyah wa-al-ṭabi‘iyah wa-al-ilāhiyah}, al-Qāhirah: Muḥyī al-Dīn Ṣabrī al-Kurdi 1357/1938, 152–157. Ibn Sinā (Avicenna) was a prominent physician and Islamic philosopher of Persian origin. Natural sciences presented in his most prominent works such as \textit{al-Shifā‘} (\textit{The Book of Healing}) and \textit{Kitāb al-qānūn fī al-ṭibb} (\textit{The Canon of}
after 440/1048),\textsuperscript{35} and other Arab scholars\textsuperscript{36} transmitted from Greek theories—most interpretations of these events, bearing a


“normative”\textsuperscript{38} character in Islamic tradition, have theological, mythical or cosmological\textsuperscript{39} connotations.\textsuperscript{40}

Islamic Science at the Johann Wolfgang Goethe Institute 1992, 16–25. al-Bīrūnī was one of the greatest scholars of his time. He was fluent in physical and natural sciences and distinguished himself as a historian and linguist. (D. Boilot, “al-Bīrūnī,” \textit{The Encyclopaedia of Islam}, vol. 1, Leiden: Brill 1954, 1236–1238.) He was also a prominent astronomer and mathematical astrologer. F. Sezgin, \textit{Geschichte des Arabischen Schrifttums}, vol. 7, Leiden: Brill 1970, 188f.


\textsuperscript{38} Hirschler, Erdbebenberichte, 103–139.

\textsuperscript{39} This term is used here in its old sense of the word, denoting study of the universe as a whole. For more details about this concept see S. Colafrancesco, Premessa—Foreword, in \textit{Cosmology through Time. Ancient and
Finally, despite the huge number of secondary sources relating to the Nile floods, most of these studies focus on statistical hydrological records, geographical, economic, climatic, and water-management aspects, in particular, in the political context of post-Mamlûk countries, situated on the banks of the Nile. Only a few studies

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41 About 550 titles containing the word Nile appear in the databank of Index Islamicus.

explore the disastrous impact of floods during the Mamlūk era (648–922/1250–1517). These studies are Stuart Borsch’ papers on the Nile floods and irrigation system.\(^{43}\) Fekri Hassan’s papers on extreme Nile floods and famines in the context of global climatic changes,\(^{44}\)

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William Tucker’s encyclopaedic entry on floods\textsuperscript{45} and Yaacov Lev’s paper on famines.\textsuperscript{46} However, none of these papers holistically treat the perceptions, interpretations, and human responses to Nile-related disasters.

As no thorough study of natural disasters currently exists covering how people perceived, interpreted and combated them during the Mamlûk period (648–922/1250–1517) from a historical socio-cultural perspective, this thesis seeks to fill this gap by exploring these issues based on the selected primary sources. The aim is to contribute to a better understanding of the socio-cultural atmosphere and conditions.


prevailing during the period under consideration. This thesis also seeks to show the necessity of a holistic treatment of natural disasters as one disastrous event usually generates others.47

3. Research Frame and Limitations

Before presenting the scope of the study and methods of research, in the following I will give a brief overview of the geographical-historical background of the research frame and limitations. The Mamlūks, a word meaning “owned” in Arabic, were originally military slaves brought to Egypt as young boys from their homelands in Central Asia and raised as Muslims. They acquired military training as well as religious instruction and upon graduation they served as

warriors for the Ayyūbid Sultans, the ruling dynasty of Egypt founded by Ṣalāḥ al-Dīn (d. 589/1193).48

Realising the strength of their position after the assassination of the last Ayyūbid Sultan of Egypt Tūrān Shāh Ibn Ayyūb (d. 647/1250),49 the Mamlūks seized power in 648/1250 under the rule of Shajar al-Durr (d. 655/1257),50 the latter's step mother and widow51 of al-Ṣāliḥ


49 Tūrān Shāh was al-Ṣāliḥ Ayyūb’s son. Amitai-Preiss, Mongols and Mamluks, 17–19.

Ayyūb, the ruler of Egypt from 637–647/1240–1249. Over the next two centuries, the Mamlūk Sultans ruled over Egypt, Syria, and Palestine. As defenders of Islam, they also offered their protection to the holy cities of Mecca and Medina. As a result of external conflicts, political, social, and economic tensions, as well as the increase of devastating epidemics, droughts, and famines, in


particular during the fourteenth and fifteenth centuries A.D., the Mamlūks began to lose their power and could not prevent the Ottoman invasion in 922/1517. Consequently, one by one their territories fell under Ottoman rule.

Although these natural disasters as a whole had a crucial impact on the society in the Mamlūk regions, it is not possible to conduct a thorough examination of catastrophic events across the whole Sultanate, as the Mamlūks controlled a vast territory for more than two centuries. Hence, I will set some limitations concerning the research frame at the outset.


56 Winter, The Ottoman Occupation, 490–517.
This study focuses on the nature and impact of the major types of natural hazards—earthquakes, excessive floods, Nile-induced droughts, and famines—which specifically afflicted Mamlūk Egypt, the political and administrative centre of the Sultanate. Through its history, the latter was especially disaster-prone because of the Nile’s proximity and its topography up until the twentieth century A.D., when, after several unsuccessful attempts, the Aswān High Dam\(^{57}\) was finally constructed to control the Nile’s flow through the delta.\(^{58}\)


What follows is a general outline of research methods employed in this thesis and the main questions and arguments addressed within it.

4. The Scope of Study: Questions and Methods of Research

4.1. Outline of Part I

This study consists of two major parts. Part I entitled *Natural Disasters Perceived and Interpreted by Mamlūk Authors: Plurality, Transculturality, and Continuity of Interpretations*, offers a theoretical basis paying particular attention to cultural perceptions and interpretations of natural disasters. Its two chapters examine how Arab writers of the Mamlūk period (here taken loosely to mean the period between the thirteenth and the early sixteenth century A.D.) perceived and interpreted natural disasters. These chapters trace the origins and the transmission of major interpretations by means of textual comparison and analysis. They shed light on the microstructure of texts, their function, and the authors’ respective intentions. The primary aim of the enquiry here is to bring to light the overall picture of theoretical explanations, which Mamlūk authors presented isolated from the discourse of the socio-cultural impact of natural disasters.
Chapter 1 opens with the thoroughly neglected astro-meteorological explanations of disasters, which show the causality of celestial phenomena with regard to events on earth. Chapter 2 treats natural disasters in the cosmographic genre of “wonders and oddities” (‘ajāʾib wa-gharāʾib). The latter not only brings together attempts at physical explanations, derived mainly from the works of antique philosophers and early Muslim savants (ninth–eleventh century A.D.), but also widely spread fictional stories, which display natural disasters as “marvellous oddities of creation.”

All of the interpretations included in these chapters are viewed from a transcultural perspective, i.e. in comparison with the views of the specific cultures, which played a significant role in their development and maintenance. This transcultural perspective focuses on the “entanglement, intermixing and commonness”59 of interpretations, which partially accords to Wolfgang Welsch’ theory of

transculturality, promoting “not separation, but exchange and interaction.”\textsuperscript{60} The aim is to show how the interpretations of natural disasters were formed, and to what extent their plots depended on their pre-Islamic counterparts.

\textsuperscript{60} W. Welsch, Transculturality, 197. Although I use Wolfgang Welsch’s definition, which demarks transculturality from inadequate concepts of single cultures, interculturality and multiculturality, I disagree with his argument that transculturality on the macro-level is “the altered cut of today’s cultures” only. (W. Welsch, Transculturality, 194f.) As the following chapters will show, pre-modern or ancient societies were no less transcultural than the globalised societies of the twenty-first century A.D. See further evolutions of the theory of transculturality in the interdisciplinary research of Heidelberg University, which produced a series of studies on Asia and Europe in a transcultural global context: www.asia-europe.uni-heidelberg.de/de/forschung/publikationen.html; M. Herren-Oesch, M. Rüesch et al. (ed.), \textit{Transcultural History: Theories, Methods, Sources}, Heidelberg 2012. G. Schenk (ed.), \textit{Disasters, Risks and Cultures. A Comparative and Transcultural Survey of Historical Disaster Experiences between Asia and Europe}, Heidelberg: Springer [forthcoming], and \textit{Journal of Transcultural Studies} www.archiv.ub.uni-heidelberg.de/ojs/index.php/transcultural/index.
Accordingly, the primary sources under scrutiny in Part I are texts that elucidate the causes of natural phenomena on the basis of a set of astrological manuscripts, among which an astrological treatise of the early sixteenth century Egyptian author Ibn Zunbul takes centre stage. Furthermore, other literary sources such as those of al-Tīfāshī (d. 651/1253), al-Qazwīnī (d. 682/1283), al-Dimashqī (Sheikh al-


Rabwah) (d. 727/1327), Ibn Qayyim al-Jawziyyah (d. 751/1350) and al-Suyūṭī (d. 911/1505) draw attention to different


Ibn Qayyim al-Jawziyyah was a Ḥanbalī theologian, born at Damascus. He was well versed in Qurʾānic exegesis, ḥadīth, and jurisprudence and was author of numerous books. As pupil of Ibn Taymiyyah (d. 728/1328)—Ḥanbalī theologian and jurisconsult—he fell in disgrace for his oppositional views, and like his teacher, was imprisoned. After two years of imprisonment, Ibn Qayyim al-Jawziyyah was released in 726/1326, soon after Ibn Taymiya’s death in the prison. H. Laoust, “Ibn Ḳayyim al-Ḍjawziyya,” *The Encyclopaedia of Islam*, vol. 3, Leiden: Brill 1965, 821–822.

interpretations of disasters. Their works convey valuable information about the creation of the world—heaven and earth—and causes of natural disasters. This short introduction of primary sources also includes other resources: especially when tracing the origin of interpretations, inherited from pre-Islamic ancient cultures such as, for example, the Assyrian-Babylonian and Hellenistic traditions, one cannot dispense with reference to additional material.

4.2. Outline of Part II

Catastrophes, the resulting terror and disorientation inevitably fostered different psychological and behavioural reactions among affected individuals and authorities, bringing about certain trends and coping mechanisms in society.\(^{67}\) Thus, Part II *Natural Disasters in Mamlûk Egypt Reconstructed from the Historical Perspective* shows the impact of natural disasters (*al-kawârith al-ṭabī'iyah* sing. *kârithah ṭabī'iyah*)\(^{68}\) on society. The latter is a modern Arabic term, not known


\(^{68}\) This modern term, stemming from the root *karatha* (ﻛَﺭﺙَ)—which means “to affect,” “to trouble” someone, “to concern oneself with” or “to care” for someone (H. Wehr, *A Dictionary of Modern Written Arabic*, ed. by J. Cowan, Wiesbaden: Otto Harrassowitz 1980, 819)—might have derived either from the Latin term “cāritās” (loving-kindness, hospitality, affection, almsgiving) or from the notion of the Greek/Latin “catastrophe,” which originally meant “reversal of what is expected, “a sudden end.” In particular, the radical of the modern Arab term *karatha* and *caritas* show similarities. From the twelve century A.D. the latter aquired the meaning of “benevolence for the poor” and “charity,” a common activity in the aftermath of disasters. However, the connection between these terms is a supposition and needs further etymological historical research. J. Simpson and E. Weiner, “Charity,” *Oxford English Dictionary*, 2 ed., vol. 3, Oxford:
to Mamlūk society, as it does not appear in any of the texts. Instead, we find in Mamlūk literature numerous equivalent but not fully synonymous expressions, generally denoting “calamity” or “heavenly disasters” (āfāt samāwīyah)⁶⁹ like muṣībah, ṭāmmah al-kubrā, al-shiddah, fanā’, fasād, qāri‘ah, baliyah, naḥs, kharāb, ūtariqah, shaqwah, dā‘irah, sū, ‘ayth, nūbah, nāzilah.

Since a disaster⁷⁰ or a catastrophe⁷¹—terms used here synonymously—are social constructs,⁷² this part examines the socio-


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cultural history of major natural hazards which befell Mamlūk Egypt, and patterns of concrete human reactions to them. Here the human factor and its relation to disasters take centre stage and the purpose is to provide greater insight into the various ways disasters affected social, political, and economic life at the local level.

Accordingly, Chapter 3 gives a general review of major disasters such as earthquakes, excessive floods, droughts, and famines in Mamlūk Egypt and presents common primary sources and methods of research which are further specified in Chapter 4 Earthquakes and Chapter 5 Excessive Floods and Disastrous Droughts. Chapter 4 offers an initial chronological overview and critical review of “doubtful” events.

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72 See footnote 6, p. 20.

73 See the definition of “doubtful” on p. 258 and in Chapter 4.2. Critical Review of “Doubtful” Earthquakes, p. 288f.
earthquakes, before systematically analysing the major disastrous earthquakes and their narrative\textsuperscript{74} plots in its final discussion. Chapter 5 addresses historical evidence of the disastrous impact of the Nile floods. In particular, in the fourteenth and fifteenth centuries A.D., the latter either rose to a dangerously high level, flooding agricultural lands and ruining harvests, or did not rise enough thus, causing drought. This, in combination with other socio-economic factors such as political and military conflicts, coupled with maladministration within and beyond the borders of the Sultanate, usually generated destructive food crises and famines.\textsuperscript{75}

\textsuperscript{74} See the theory of narratology, in which “narrative is a meta-code, a human universal on the basis of which transcultural messages about the nature of a shared reality can be transmitted.” H. White, \textit{The Content of the Form: Narrative Discourse and Historical Representation}, Baltimore: Johns Hopkins UP 1987, 1.

Relying mainly on historiographic sources, 76 which incorporate a plethora of chronicles, manuals and treatises on catastrophes, these chapters shed light on how culture and society shaped responses to these catastrophic events. They also provide an insight into the spectrum of concrete human reactions in times of a crisis. 77 Furthermore, these chapters provide answers to a number of questions, such as to what extent administrations can be held responsible for the good or bad handling of disasters, and whether there is a likelihood of inter-state conflicts and a collapse of the social order in the aftermath of such disasters. 78

The final discussion is devoted to the question of whether the Mamlūk society, which experienced a number of devastating

76 See 3.2.1. Overview of Historical Sources on Natural Disasters, p. 269.

77 See theoretical basis of the concept of “crisis” in Nünning, Krise als Erzählung und Metapher, 117–145.

78 Cf. theory of decline of East in the eleventh and twelfth centuries A.D. due to continuous climatic disasters in Ellenblum, The Collapse of the Eastern Mediterranean.
calamities, could be regarded as a “culture of disaster” as defined according to Greg Bankoff’s theory set out in his book *Cultures of Disaster. Society and Natural Hazard in the Philippines*. Here Bankoff claims that “hazard and disaster are simply just accepted [normal] aspects of daily life” for societies living in hazard-prone areas like the Philippines. In these societies, to which Mamlūk Egypt also belongs due to its proximity to the Nile, “natural hazards occur with such historical frequency that the constant threat of them has been integrated into the schema of daily life to form what can be called *cultures of disaster.*”

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80 Bankoff, Cultures of Disaster, 3.

81 Bankoff, Cultures of Disaster, 4.
PART I

NATURAL DISASTERS PERCEIVED AND INTERPRETED BY MAMLŪK

AUTHORS: PLURALITY, TRANSCULTURALITY, AND CONTINUITY OF INTERPRETATIONS

CHAPTER 1

NATURAL DISASTERS IN ASTRO-Meteorological Malḥamah Handbooks

1.1. Introduction of Malḥamah Handbooks

The descriptions found in “anwāʾ-books”\(^1\) undoubtedly show that pre-Islamic Arabs forecast the weather according to stellar and

\(^1\) There are different views about the origin and the meaning of the term anwāʾ in the early Arabic sources. According to Daniel Varisco, anwāʾ (sing. nawʾ) is a system, with which the Arabs in the pre-Islamic times used to estimate the passage of time and the state of the weather (rain, wind, heat, and cold) from setting or rising of certain star constellations. Some Muslim scholars identified anwāʾ with the twenty-eight moon stations (manāzil al-qamar); others linked it with the so-called “system of rain invocation.” (D. Varisco, The Origin of the anwāʾ in Arab Tradition, Studia Islamica 74 (1991), 5–6, 14, 24. Ch. Pellat, “Anwāʾ,” The Encyclopaedia of Islam, vol. 1,
constellatory positions. The advent of Islam not only saw the continuation of this practice but also introduced slight modifications to it. Some Arab scholars went so far as to accord astro-meteorological\(^2\) phenomena with having a direct connection with life


\(^2\) Astro-meteorology predicts events on earth based on astrological, climatic, and geophysical phenomena. We should not confuse it with the astronomical meteorology, which deals mainly with the weather forecasting, without any implication of effects on human beings. (Sezgin, Geschichte, vol. 7, 306f. S. Jenks, Astrometeorology in the Middle Ages, Isis 74/2 (June 1983), 185.) To avoid confusion, see also the distinction between astronomy
These predictions, which included the relationship between the stars and catastrophic events, were compiled and can today be found in the so-called malḥamah\(^4\) handbooks.

This chapter examines—as one kind of interpretation—the astro-meteorological predictions of catastrophic events conveyed in these and astrology, which were not strictly differentiated semantically in the Middle Ages. (M. Neumauer, “Astral Phenomena,” The Encyclopedia of the Medieval Chronicle, vol. 1, Leiden: Brill 2010, 119–123.) According to one of the definitions, astronomy (‘ilm al-hay’ah, ‘ilm al-falak, ‘ilm al-nujūm) teaches—generally speaking—about the position and the motion of heavenly bodies, acquired through observations and mathematical calculations; whereas astrology (ṣināʿat al-nujūm or aḥkām al-nujūm) derives predictions of future events from the position and motion of heavenly bodies. (S. Pines, The Semantic Distinction between the Terms Astronomy and Astrology according to al-Bīrūnī, Isis 55/3 (1964), 345.) See more on Arabic terms M. Ullmann, Die Natur- und Geheimwissenschaften im Islam, Leiden: Brill 1970, 271–272.

\(^3\) Sezgin, Geschichte, vol. 7, 306.

\(^4\) More about this term see Chapter 1.2. Development of Malhamah Genres, p. 58f.
handbooks. While depicting these events the malḥamah handbooks also show how they were tied to and dependent upon astro-meteorological phenomena, such as the appearance of certain star groups, zodiacal and meteorological signs as well as comets and meteors. These phenomena, combined with other signs like solar and lunar eclipses, were often interpreted as bad omens, associated with different calamities. Additionally, these handbooks contain special entries on earthquakes, winds and storms, which show decisively that the origins of earthly natural hazards—triggers of disasters—are in the heavens.

Since disasters play a central role in these handbooks, this chapter aims to outline their features, structure, and content so as to help


increase our understanding of their causes and consequences in this specific context. In the interest of brevity, it will focus on interpretations in one particular malḥamah taken from an astrological treatise al-Kitāb naql min kitāb al-qānūn (An Extract from the Book of the Rules)\(^7\) a manuscript that remains unpublished. It is unique because—unlike numerous collections of anonymous\(^8\) malḥamah manuscripts—it has an author, Aḥmad Ibn ‘Alī Zunbul al-Maḥallī al-Munajjim,\(^9\) who will henceforth be referred to as Ibn Zunbul. What also makes this manuscript unique is the fact that Ibn Zunbul

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\(^7\) Apart from Malḥamah, this manuscript contains chapters on global and local topography, astronomy, history of Coptic feasts, and other information. Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn.

\(^8\) Malḥamah handbooks were mainly copied anonymously because their compilers probably feared criticism on the part of religious scholars who found any kind of predictions contradicting the message of the Qurʾān. See the discussion of this issue, p. 84f. Apart from Ibn Zunbul, we can find an extract of this genre in al-Tīfāshi, Surūr al-nafs, 337–345. The latter included a chapter on predictions based on the astro-meteorological malḥamah.

\(^9\) I will present biographical data about Ibn Zunbul and his manuscript after the general overview of the malḥamah genre. See p. 94f. and 101f.
compiled it in the early sixteenth century A.D., long after the prime age for this genre, the tenth/eleventh centuries A.D. This point therefore brings forward a question, namely, what contributed to the revival of malḥamah, thus making it timeless.

1.2. Development of Malḥamah Genres

Building an understanding of the role that malḥamah handbooks played in Egyptian society requires an introductory explanation of the term itself and its development in specific Arabic literary genres. Malḥamah is an Arabic word, probably of Hebrew or Aramaic origin, imbued with a number of meanings. In pre-Islamic Egypt, the word (milḥamōt) referred primarily to the Wars of the Lord, the Wars of Yahweh11 (the name of the God of the Israelites and Judeans),12 as illustrated in the Tanach (The Hebrew Bible, The Book of Bamidbar

10 See footnote 62, p. 82.


or to other disastrous events that were thought to take place before the End of Days.¹³

No consensus exists regarding the question of when and under what circumstances this elusive concept developed in ancient Israel. The content of the above-mentioned biblical verses is not self-explanatory either. However, there is a common agreement that this notion in the Tanach refers to God’s wars on behalf of Israel as described, for example, in the book of Devarim (Deuteronomy). The latter provides the best interpretative expression of these “holy wars,” in which God is depicted as fighting for the people of Israel, helping them to protect their national unity and territorial inheritance.¹⁴


¹⁴ See more references to the spectrum of “holy war”, its meaning and function in the Hebrew Bible in R. Firestone, Conceptions of Holy War, 102–107. G. Jones, The Concept of Holy War, in The World of Ancient Israel Sociological, Anthropological and Political Perspectives, ed. R. Clements,
The prominent Arab lexicographer Ibn Manẓūr (d. 711/1311–2) defines *malḥamah* pl. *malāḥim* as “a great slaughter, battle,
war” (al-waq‘ah al-ʿāzīmah, al-qatl, al-ḥarb) with many casualties.\(^\text{16}\) It is also seen to belong to the semantic field of the word \(\text{laḥm} \) “meat, flesh” which automatically evokes the metaphorical association of corpses lying in fields of battle. Occasional references in the chronicles\(^\text{17}\) and western dictionaries also attest to the fact that it means a “bloody fight, slaughter, massacre, fierce battle.”\(^\text{18}\) Later this word extended its denotation into Arabic literature,\(^\text{19}\) acquiring the meaning of “prediction, eschatological prophecy, apocalypse, vision of the future.”\(^\text{20}\) This last meaning best describes the content of the


\(^{18}\) Wehr, Dictionary, 861.


\(^{20}\) Ben-Shammai, Saadia’s Introduction to Daniel, 16.
malḥamah, the genre of predictions, which prophesies wars, among other disastrous events, and which thus reflects its original Hebrew meaning.

Beginning in the Islamic Middle Ages, the variations of the word’s meanings—“war” versus “prediction”—became distinguishable in at least three literary genres, all known as malḥamah. These are

(a) apocalyptic malhamah of pseudo-historical character²¹
(b) astro-meteorological malḥamah²² and
(c) malḥamah-heroic poem.²³

As all of them bear the same name, the particular astro-meteorological malḥamah (b), which is of relevance here, is often

²¹ Fahd, “Malḥama,” 247.
²² Fahd, “Malḥama,” 247.
²³ Malḥamah in this context is a collective name of seven classical Arabic poems. M. Kreutz, Sulaymān al-Bustānīs Arabische Ilias: Ein Beispiel für arabischen Philhellenismus im ausgehenden Osmanischen Reich, Die Welt des Islams 44/2 (2004), 162.
confused in the literature with the apocalyptic *malḥamah* of pseudo-historical character (a). The following explanation intends to highlight common features of these two genres, while at the same time pointing out the differences between them.

(a) Apocalyptic *Malḥamah* of Pseudo-Historical Character

From the end of the Umayyad period (the mid-eighth century A.D.), a series of traditions (*aḥādith*) appeared which revealed the general nature of this old concept, at least in its initial stage. In these traditions, according to Suliman Bashear (an expert in early Islamic history and religious thought), *malāḥim* were overwhelmingly associated with Arab-Byzantine wars (seventh–eleventh A.D.)

24 Ben-Shammai, Saadia’s Introduction to Daniel, 17.


centuries) in Syria. The connection with these specific wars in the formation period of Islam was so exclusive that in ḥadīth-compilations malāḥim became almost synonymous with these wars. Some of the traditions mention that these conflicts were to end with the conquest of Constantinople, which would be the last major eschatological event preceding the appearance of al-Dajjāl and the sign of the “hour” before the end of the world.

27 There are some traditions in which other wars in early Islam are also called malāḥim. These are the “four malāḥim” of paradise on earth, referring to the battles of Baḍr, Uḥud, al-Khandaq, and Khaybar, headed by the prophet. (Bashear, Apocalyptic and other Materials, 205.) Some other traditions differentiate between the “small” and the “great malḥamah,” (Bashear, Apocalyptic and other Materials, 184, 186.) and even between five malāḥim. “The two have elapsed and there remain three: the malḥama of the Turks in the Jazīra, the malḥama of the Aʿmāq and the malāḥim of al-dajjāl to be followed by no other malḥama [...].” Bashear, Apocalyptic and other Materials, 189.

28 According to Arab tradition, al-Dajjāl is the Antichrist (al-Maṣīḥ al-kadhdhāb) or a certain man of the Jews (rajul min yahūd), who will come forth in the last days and claim falsely to be a prophet. Ibn Manẓūr, “Dajjāl,” Lisān al-ʿarab, vol. 1, Bayrūt: Dār lisān al-ʿarab 1988, 948. See
Accordingly, the apocalyptic *malḥamah* of pseudo-historical character (a) shows connections to wars, waged by the Arabs against the Byzantines. This kind of *malḥamah* often has a moral core and is associated with the literature propagating the approach of the Mahdī (“the rightly guided”).


29. See more on different types of apocalyptic literature in Islam, such as moral apocalypses, the apocalypse of weeks, political apocalypses on the Umayyads and ‘Abbāsids, apocalypses about *fitan* (“conflicts,” “temptation,” “tests”) as well as historical and messianic apocalypses in D. Cook, *Studies in Muslim Apocalyptic*, *Studies in Late Antiquity and Early Islam*, Princeton: The Darwin Press 2002, 20–21, 333–385.


A number of these texts, attributed to the great mystic Ibn al-ʿArabī (d.
astrology—which incorporates astronomical and mathematical calculations—apocalyptic malḥamah (a) makes predictions about the duration of the world and Islam, as well as the fate of individuals, dynasties,\(^3\) nations and kings.\(^3\)

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638/1240), was commented and circulated up until the seventeenth century A.D. Fahd, “Malḥama,” 227.


\(^3\) Ibn Khaldūn, Muqaddimah, vol. 2, 209.
(b) Astro-meteorological *Malḥamah*

Conversely, the astro-meteorological *malḥamah* (b), which can be classified as a branch of “general” astrology, is primarily concerned with the prediction of future events (social and natural disasters), derived from astrological, climatic and geophysical phenomena.

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34 See the classification of and description of “general” astrology in footnote 31, p. 66. The origin of this classification goes back to Ptolemy’s *Tetrabiblos*. When outlining the objectives of “general” astrology, Ptolemy (d. ca. 100 A.D.) defines it as follows: “Of the general inquiry itself, a part, again, is found to concern whole countries, and a part to concern cities; and further, a part deals with the greater and more periodic conditions, such as wars, famines, pestilences, earthquakes, deluges, and the like […].” (Ptolemy, *Tetrabiblos*, 117–121.) More details about the further subdivision of astrology can be found in Boudet, “Astrology,” 61–62.
without using highly sophisticated methods of calculation.\textsuperscript{35} The astrological phenomena refer here to simple observations of celestial signs—such as the rising of Sirius\textsuperscript{36} (\textit{al-Shīrā}), the position of the seven planets in the zodiacal signs, and lunar or solar eclipses. The climatic phenomena refer to winds, storms, thunder and lightning, while the geophysical phenomena refer to earthquakes, volcanic eruptions and tsunamis.

One of the reasons for the confusion between these genres derives from the fact that both of them include descriptions of natural

\textsuperscript{35} Savage-Smith, Introduction, xxvi–xxxvii.

disasters as part of their content. However, the apocalyptic *malḥamah* of pseudo-historical character (a) announce that the End of Days is to arrive by unusual catastrophic events such as floods, storms and earthquakes, treating them marginally, whereas the plot of the astro-meteorological *malḥamah* (b) mainly builds on predictions of such disastrous events. The marginal inclusion of natural disasters in the apocalyptic *malḥamah* (a) and their exclusive treatment in the astro-meteorological *malḥamah* (b) constitutes the major difference between these genres.

Since the astro-meteorological *malḥamah* (b) along with natural disasters occasionally prophesy wars, treated in the apocalyptic *malḥamah* (a) specifically, the thematic inclusion of *malāḥim* “apocalyptic wars” in both of these genres is the reason why they bear the same name, which is confusing at first sight. The following excerpt from Ibn Zunbul’s astro-meteorological *malḥamah* (b) illustrates the thematic inclusion of “apocalyptic wars,” the major link between these two different genres.

37 Cook, Studies in Muslim Apocalyptic, 333–385.
“An Account on the Rising of Sirius in the Sign of Gemini (al-Jawzāʾ)

It is a sign for strong eastern winds blowing for three weeks [...]. The Nile will rise and become stable; insects will befall the corn and the beans, but the merchants will make profit [...]. Discrepancies, fear, anguish, terrible conflicts, and epidemics among the dogs and cats will spread [...]. A king will rise against the lands of the West. Great misery will befall another king. People will fear that he will die. There will be malḥamah ʿażīmah (a great “apocalyptic” war) and while the king might conclude a pact with the other [king], but the ships will be exposed to many disasters (āfāt kathīrah) [...]. Byzantium (al-Rūm) will carry out a raid against Islam. It will be cold and icy. There will be wars (ḥurūb) in Egypt. The Byzantines and many creatures will be destroyed [...]. Armies will be moving in the lands of Egypt. There will be a discrepancy among the Arabs in Syria and al-Jazāʾir, and some Muslim cities will be deceived by a trick. The king of Egypt will move from city to city and will destroy a famous city.
There will be deaths among sheikhs. The summer will be good.
But God knows better.”

We can best understand the significance of Ibn Zunbul’s passage in view of the history of the Mamlūk Sultanate, and the events that occurred shortly before the Ottoman invasion which Ibn Zunbul witnessed as a contemporary. Mamlūk Sultanate was, in fact, more than usually preoccupied with wars between great empires—perceived as apocalyptic—with economic problems caused by the shift of trading routes, and political conflicts within the Sultanate itself. The choice of the specific term *malḥamah* to convey its

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38 Ibn Zunbul, al-Kitāb naqīl min kitāb al-qānūn, fols. 40a.
39 See biographical data on Ibn Zunbul in Chapter 1.4. *Biographical Data on Ibn Zunbul*, p. 94f. which shows that Ibn Zunbul had close ties to Maḥmūd Bāshāh, Ottoman governor of Egypt and Yemen (r. 973–975/1566–1567).
earliest meaning of historical “apocalyptic wars” next to the more general word for a “war” (ḥarb pl. ḥurūb) seems intentional in this extract and shows a clear distinction between these two concepts, emphasising the role of “apocalyptic wars” during the Mamlūk period in particular.

As David Cook, an expert on apocalyptic literature in Islam, has noted, the majority of apocalyptic texts “reflect historical reality of a certain time period” and “when they were first put into circulation they reflected what was actually happening (or at least what the apocalyptist saw through the eyes of his very specific world view).”

As a result, by using the term malḥamah, Ibn Zunbul not only provided his readers with a revisionist picture of past disasters, like the wars between the Arabs and the Byzantines, the raids of the Crusaders and the Mongol invasion that brought an end to the ʿAbbāsid Caliphate, but also projected them forward as warnings related to current and future events. This is reflected in the wars

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41 Cook, Studies in Muslim Apocalyptic, 313.
against the Mongols and the Crusaders during the early Mamlūk period,\textsuperscript{42} as well as the increasing fear of an Ottoman invasion in the early 16\textsuperscript{th} century A.D.\textsuperscript{43}

The thematic inclusion of \textit{malḥamah}, referring mainly to the Arab and Byzantine wars,\textsuperscript{44} is omnipresent in Ibn Zunbul’s\textsuperscript{45} and other astro-meteorological \textit{malḥamah} texts, despite the historical irrelevance of the Byzantine Empire during Ibn Zunbul’s lifetime. This inclusion also shows the possibility of adapting the structure and content of these old texts to any historical context thus making the predictions in the astro-meteorological \textit{malḥamah} (b) timeless.

1.3. Popularity of Astro-meteorological Malḥamah

The above-mentioned historical events, during which the population most probably suffered hardships, have contributed to the production

\begin{itemize}
\item[\textsuperscript{42}] Northrup, The Baḥrī Mamlūk Sultanate 1250–1390, 248, 252.
\item[\textsuperscript{44}] See p. 63f.
\item[\textsuperscript{45}] See, for example, pp. 70, 93, 108, 115, 122 and 124.
\end{itemize}
of *malḥamah* astro-meteorological manuals, which, though one-sided, tried to make sense of catastrophic events. Numerous collections of *malḥamah* located in manuscripts in various libraries around the world attest to their popularity. In his catalogue Wilhelm Ahlwardt lists about thirteen manuscripts comprising of astro-meteorological predictions.\(^{46}\) *The Egyptian National Library*\(^{47}\) and *the National Library of France*\(^{48}\) also preserve a collection of this genre.


More of the same genre is preserved in the *National Library of France*: Ms. Arabe 2578 (1171), fols. 1–41; Ms. Arabe 2579 (983), fols. 1–14; Ms. Arabe 4580,6 (1921), 86 fols.; Ms. Arab 2633 (1109).
Despite some structural and contextual discrepancies, almost all of them are associated with the transcultural pseudo-author Hermes,⁴⁹

⁴⁹ There are different, often contradictory, legends about Hermes, which is a mingling of various traditions. The most frequently cited knowledge about him in the primary and secondary sources distinguishes between three pseudo-authors called Hermes: Hermes the First, who lived in Egypt before the Flood and was identified there with Egyptian God Thoth, (F. Peters, Hermes and Harran: The Roots of Arabic-Islamic Occultism, in Magic and Divination in Early Islam. Published in the Series the Formation of the Classical Islamic World, ed. by E. Savage-Smith, Aldershot: Ashgate 2004, 58. U. Koch-Westenholz, Mesopotamian Astrology. An introduction to Babylonian and Assyrian Celestial Divination, Copenhagen: University of Copenhagen 1995, 132. M. Plessner, Hermes Trismegistus and Arab Science, Studia Islamica 2 (1954), 51), Hermes the Second, who lived after the Flood in Babylon and revived the sciences after the great destruction, and Hermes the Third, who was a physician and alchemist, living in Egypt after the Flood. Knowledge and learning reached Greece through Asclepius from the third Hermes, who is associated with the Hermes of the Corpus Hermeticum. (Plessner, Hermes, 51–52. D. Pingree, The Thousands of Abū Maʾshar, Studies of the Warburg Institute, London: The Warburg Institute of University of London 1968, 15–
whom Jewish tradition identifies with Enoch, the Persian tradition with Hūshank and the Muslim tradition with Idrīs.⁵⁰ Therefore,


western literature refers to this Hermetic collection as the *Arabic Hermetica*.  

Some versions of these treatises also bear the names of, or refer to, Aristotle (d. 322 B.C.), Alexander the Great (d. 327 B.C.) and

51 The astrological *Arabic Hermetica* and its forerunners, attributed to Hermes Trismegistos, should not be confused with the *Corpus Hermeticum* having theological and philosophical content. (Gundel and Gundel, Astrologumenen, 12, 27.) The latter was compiled between the first and the third centuries A.D. (E. Iversen, *Egyptian and Hermetic Doctrine*, Copenhagen: Museum Tusculanum Press 1984, 26) and comprises eighteen treatises, the Latin version of the Asclepius and various other fragments. Hermes Trismegistus, *Die griechischen Traktate und der lateinische “Asclepius,”* ed. by C. Colpe and J. Holzhausen, vol. 1, Das Corpus Hermeticum Deutsch: Übersetzung, Darstellung und Kommentierung in drei Teilen, Stuttgart-Bad Cannstatt: Frommann-Holzboog 1997.

52 See the manuscripts in *Staatsbibliothek zu Berlin*: Arsatālis [sic. Aristūṭālis], *Kitāb al-akhām fi ḥawādith al-ayyām ‘an Arsatālis al-faylasūf*, Ms. Mf 39 (5873), fols. 1–38, copied by Ibrāhīm Ibn ʿAbd-al-Raḥman in 872/1468; Ms. Mf. 39,6 (5914), fols. 85-96; the *Egyptian National Library*: Ms. DḤ 16,2, fols. 73r–117v; Ms. K 3852, 1100 A.H., fols. 68 and other manuscripts listed in
Ptolemy (ca. d. 100 A.D.),\textsuperscript{54} suggesting that these world figures were their narrators. Certain parts of the \textit{malḥamah} are also ascribed to Dāniyāl (Daniel),\textsuperscript{55} another pseudo-author, whose name is connected with Daniel in the Bible. Like Hermes, Daniel, has acquired various

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\textsuperscript{53} See the manuscripts in The \textit{Egyptian National Library}: Anonymous, \textit{Fi al-ḥawādith al-samāwīyah}, Ms. DM 1156,4, fols. 45–87 and later copies of the same manuscript: Ms. ŢM 159, 1221 A.H., 52 fols., Ms. DM 1092, 1296 A.H., 141 fols. and; Ms. S 4467.5, fols. 59–74. Sezgin, Geschichte, vol. 7, 64.

\textsuperscript{54} Some of these texts are linked to Ptolemy, see for example, Staatsbibliothek zu Berlin, Ms. We. 1155 (5916); \textit{Kitāb bulūgh al-amāniyah fīmā yataʿallaqu bi-ṭulūʿ al-shiʿrā al-yamāniyāh}, Egyptian National Library, Ms. DM 994, 1271 A.H., 16 fols. (copies Ms. DM 59,2+3, 1000 A.H.; Ms. DJ 289,2, 1222 A.H., fols. 56–59.; Ms. DM 1056,1, 1308 A.H., fols. 1–33; Ms. DM 788, 1050 A.H., 40 fols.; Ms. ḤM 2,2, 1290 A.H., fols. 203–209; Ms. DM 79,2, 1150 A.H., fols. 4–13; Ms. Sh 72, 1301 A.H. 13 fols.). Sezgin, Geschichte, vol. 7, 41–48. Ullmann, Die Natur- und Geheimwissenschaften, 282–285.

associations in different cultures and although the Qurʾān does not mention Daniel, Muslim tradition venerated him as a prophet, as a revealer of the future and of eschatological mysteries.\textsuperscript{56} This group of astro-meteorological malḥamah, if copied separately, usually bears the title \textit{Malḥamat Dāniyāl}.\textsuperscript{57}


The number of collections and the variations in their titles and dating makes their systematic analysis quite difficult. Hans Georg Gundel rightly noted that these variations explained astrological Hermetic scripts’ acquisition of hybrid forms throughout the centuries.\textsuperscript{58} Since most of these handbooks were copied anonymously—for whatever reasons\textsuperscript{59}—tracing the course of their history and sorting out their biographical data becomes a difficult task, particularly because they have also been distorted by centuries of transmission. Although some \textit{malḥamah} manuscripts explicitly refer to the Yemenite author of the Umayyad period, Wahb Ibn Munabbih (d. ca. 114/732),\textsuperscript{60} as the

\textsuperscript{58} Gundel and Gundel, Astrologumena, 14.

\textsuperscript{59} As was mentioned earlier in footnote 8, p. 57, \textit{Malḥamah} handbooks were copied anonymously because their compilers probably feared criticism on the part of religious scholars who found any kind of predictions contradictory to the message of the Qur’ān. However, by adding the names of the well-known personalities, like Aristotle or Alexander the Great, the compilers ensured the readers’ interest.

earliest known author who compiled an astro-meteorological malḥamah,\textsuperscript{61} according to Julius Ruska, the greater part of the Arabic malḥamah originated during the tenth or eleventh centuries A.D.,\textsuperscript{62} the era of translation movements in the ʿAbbāsid period.\textsuperscript{63} Some of these texts were then re-translated from Arabic into Latin.\textsuperscript{64}

\textsuperscript{61} See, for example, the following manuscript in the Egyptian National Library, Ms. DḤ 16,2, 1133 H, fols. 73–117, cited above in footnote 52, p. 78 and the article by R. Khoury, Un Fragment astrologique, 139–144.


\textsuperscript{64} Jenks, Astrometeorology, 185–210.
At least three sources of this genre can be dated from the Mamlūk period:

(1) the anonymous original copy of Kitāb al-Malḥamah (Book of Malḥamah) dedicated to the late Mamlūk Sultan Qāytbāy (r. 872–901/1468–1496)\(^{65}\)

(2) the anonymous Kitāb fi al-ḥawādith al-samāwīyah [...] min kalām Dāniyāl wa-Hirmis wa-Dhī al-Qarnayn (The Book of Heavenly Events Transmitted from the word of Daniel, Hermes and Alexander the Great)\(^{66}\) and


\(^{66}\) Anonymous, *Fī al-ḥawādith al-samāwīyah*, Egyptian National Library, Ms. 1156,4 DM (copies Ms. 1092 DM, Ms. 159 ṬM), ca. 800 A.H., fols. 45v–87v. Unsurprisingly, this manuscript was compiled during the late fourteenth century A.D, the period during which people faced an increase in disastrous droughts, famines and epidemics. See Chapter 5.8. *Case Studies of Disastrous Droughts: Causes, Effects, and Cultural Responses*, p. 555f.
(3) Ibn Zunbul’s astro-meteorological *Malḥamah*, which I will analyse below.  

Although the number of *malḥamah* sources, dating from the Mamlūk period, is currently restricted to these three sources, we can assume that the astro-meteorological predictions were circulating widely in Mamlūk society. We have evidence that religious scholars and jurists wrote polemical works against astrologers who made and spread predictions. Among the prominent personalities—who were


68 As I have noticed in footnote 8, p. 57, al-Tifāshī (d. 651/1253) was another author who included a chapter on predictions based on the astro-meteorological *malḥamah*. al-Tifāshī, Surūr al-nafs, 337–345.


arduous opponents of this genre and criticised investment of faith in them—were Ibn Taymiyah (d. 728/1328), Ibn Qayyim al-Jawzīyah (d. 751/1350), and Ibn Khaldūn (d. 808/1406). For them astrology needed to be forbidden because it was a dangerous competitor to the religious basis of Islamic society.

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71 See about Ibn Taymiyah in footnote 65, p. 44.
72 See about Ibn Qayyim al-Jawzīyah in footnote 65, p. 44.
Despite occasional punishments of astrologers for false predictions and attacks against their practices, which Sunnī clerics declared as contradicting the Qur’ānic sūrah 27:66 and 31:34—divinatory profane literature, to which the astro-meteorological malḥamah belongs, enjoyed a popularity among the Egyptians from the thirteenth century A.D. In his Muqaddimah, this is how prominent

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76 al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 918–919.
historiographer Ibn Khaldūn (d. 784/1382) explained the reasons for the popularity of this genre: “one of the qualities of the human soul is the desire to learn the outcome of affairs that concern (human beings) and to know what is going to happen to them, whether it will be life or death, good or evil.”

The records of the Mamlūk chroniclers, indeed, show that people were disposed to believe in astro-meteorological predictions. They document repeatedly how the astrologers prophesy solar eclipses and earthquakes. For example, while reporting the events of the year 801/1398–9, the chronicler Ibn Ḥajar al-ʿAsqalānī (d. 852/1449),


82 Ibn Ḥajar al-ʿAsqalānī was the supreme Shāfiʿī judge appointed by Sultan Barsbay (r. 825–841/1422–1438). He was considered “the greatest religious scholar of his age.” See about this chronicler in J. Bacharach, Circassian Mamluk Historians and their Quantitative Economic Data, Journal of the American Research Center in Egypt 12 (1975), 79. S. Massoud, The Chronicles
says that, according to astronomers (ahl al-hay’ah), an earthquake would occur on the first days of the year. This news spread quickly among the people. But this prediction did not come true, as expected, and “God accused the foreboders of lying.”

In another case, the chronicler al-Maqrizi (d. 845/1442) reports that after the astrologers’ (al-munajjimūn) prophesy of the coming of a...
solar eclipse in Jumādā II 834/February 1431, people were called to fast in New Cairo and do generous deeds. As the day came and no solar eclipse occurred, those who had warned of it were rebuked.\textsuperscript{85} Referring to the same event, the later chronicler ʿAbd al-Bāsiṭ (d. 920/1514)\textsuperscript{86} noted that the Sultan violently punished accused troublemakers.\textsuperscript{87} Similarly, the astrologers spread rumours that a disastrous earthquake would ravage [probably Egypt], supposedly on 3 Rabīʿ I 891/8 March 1486.\textsuperscript{88}

\textsuperscript{85} al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 855.

\textsuperscript{86} ʿAbd al-Bāsiṭ Ibn Khālil was physician and chronicler of the late Mamlūk period, who travelled a lot during his lifetime. See more about his biography in ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,1, 23–48. Massoud, The Chronicles and Annalistic Sources, 67–69. Bacharach, Circassian Mamluk Historians, 82.\textsuperscript{9}

\textsuperscript{87} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 296.

\textsuperscript{88} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,8, 19.
Furthermore, part of an astro-meteorological malḥamah is unsurprisingly part of a Thousand and one Nights, as one of the tale’s components. Its inclusion in one of the best-known literary collection of popular stories, which is a treasure trove of the social history of the time and a histoire de mentalités, also indicates that people were acquainted with these kinds of predictions. In one of the tales an astrologer asks the slave Tawaddud to share her knowledge about the art of astrology. At first she introduces the principles of astrology such as the names and qualities of the seven planets and the lunar stations. But when asked to talk about the weather predictions derived from celestial signs she becomes reluctant to continue her story, calling all those astrologers who produce almanacs heretics (zindiq). To back up what she says, she cites the Qurʾānic sūrah 31:34:

89 Kitāb alf laylah, vol. 2, 523.

90 Haarmann, Mamluk Studies—A Western Perspective, 336.

91 Haarmann, Mamluk Studies, 343.

“Verily, with God alone rests the knowledge of when the Last Hour will come; and He [it is who] sends down rain; and He [alone] knows what is in the wombs: whereas no one knows what he will reap tomorrow, and no one knows in what land he will die. Verily, God [alone] is all-knowing, all-aware.”\(^93\)

However, with the permission of the Caliph, who is probably the one most eager to hear about these predictions, she gives a full account of an astro-meteorological almanac (\textit{taqwīm}).\(^94\) This almanac presents both disastrous and non-disastrous events dependent on the influence of seven planets and the day of the week,\(^95\) on which the first day of the year, probably January,\(^96\) would begin. The following excerpt illustrates this kind of prediction:

\(^93\) Muḥammad, \textit{the Qurʾān}, 632.

\(^94\) Kitāb alf laylah, 524.

\(^95\) Kitāb alf laylah, 523–524.

\(^96\) In Ibn Zunbul’s \textit{malḥamah}, which also includes a section with similar methods of predictions, January (Kānūn al-thānī) is explicitly mentioned. Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 57b–58a.
“So, if the first day of the year begins on Sunday, that day is the Sun’s and this portends (though God alone is All-knowing) oppression of kings, Sultans and governors. There will be much miasma and lack of rain. The people will be in great disorder. The grain-crop will be good, except for lentils, which will perish. The vines will rotten, the price for the linen will rise and the wheat will become cheap from the beginning of Ṭūbah\textsuperscript{97} to the end of Baramhāt.\textsuperscript{98} In this year there will be


\textsuperscript{98} Baramhāt is the seventh month of the Coptic calendar, which falls between 10 March and 8 April. Wassef, “Coptic Calendar,” vol 2, 439. de Blois, “Taʾrīkh,” 261. Malaty, The Coptic Calendar, 10.
much killing among kings, however, plenty of good in this year. But God knows better.”

The predictions continue in the same mood, using the remaining days of the week. Ibn Zunbul’s astro-meteorological malḥamah also contains a section with a similar method for making predictions:

“If January (Kānūn al-thānī) falls on Saturday (al-Sabt), it will be cold and icy in Kānūn. A man of rank will die in the land of the West. The winter will be long the next year. The midsummer (qayẓ) will be extremely hot. Lentils will be scarce [...]. In spite of it, there will be abundance. But some sheikhs will die, and epidemics (āfah) will spread among the livestock. The vine will be scarce. There will be little rain in April and Mai. It will be extremely cold in February […]. Many [people] will suffer from fever. The pregnant will be intact. There will be many wars in the Byzantine regions.”


100 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 57b–58a.
Taking into consideration the popularity of *Thousand and One Nights*, which, as Ulrich Haarmann notes, were given their final structure and form in Mamlūk Egypt, the above-mentioned implicit and explicit historical evidence leads us to deduce that both ordinary people and officials were familiar with this kind of astro-meteorological prediction. Moreover, people were inclined to believe in astrologers’ predictions despite their reputations as beguilers. Astro-meteorological predictions were, therefore, powerful sociological forces that directly influenced people’s worldviews and behaviour towards natural disasters, indubitably shaping social structures and interpretative patterns.

1.4. Biographical Data on Ibn Zunbul

Before moving to the analysis of Ibn Zunbul’s astro-meteorological *Malḥamah*, I will here offer a short introduction about the author. We

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102 Haarmann, Mamluk Studies, 336.
have little data about him—except for fragmented information gained from his own manuscript\textsuperscript{103} as well as several articles\textsuperscript{104} and very brief records in \textit{The Encyclopedia of the Medieval Chronicle},\textsuperscript{105} as well as Carl Brockelmann’s\textsuperscript{106} and Wilhelm Ahlwardt’s catalogues.\textsuperscript{107}

Judging from his \textit{nisbah} (al-Maḥallī) and the information contained in the treatise itself, it is obvious that he came from Maḥallah.\textsuperscript{108} However, Maḥallah does not relate to one specific location in Egypt.

\textsuperscript{103} Ibn Zunbul, al-Kitāb naqīl min kitāb al-qānūn, fols. 79a–79b.


\textsuperscript{107} Ahlwardt, Die Handschriften-Verzeichnisse, 285–286.

as this term is the first constituent element of the names of places in more than a hundred towns and villages in Egypt.

Of these the most famous is al-Maḥalla al-Kubrā, an important town on the shore of the Nile between Damietta and New Cairo. He gives his date of birth, unknown until now, as 910/1504 in his malḥamah, and states that his birthday coincided with the conjunction of Saturn and Jupiter, a natural phenomenon that usually occurs every twenty years. According to Mamlūk authors, it induces


110 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 79a–79b.
outstanding changes on earth such as the Deluge, the End of the World, the fate of kings and dynasties, and disasters like wars, epidemics, floods and earthquakes.

Ibn Zunbul’s allusion to this conjunction was not an exaggeration, as there is evidence for its occurrence in 910/1504. Uncertainty surrounds the date of his death, though Wilhelm Ahlwardt suggests that Ibn Zunbul must have died in 980/1572. Similarly, Carl Brockelmann dates his death after 960/1552. Since neither of them cite their sources, we cannot trace the evidence for their claims. However, from the manuscript itself we learn that Ibn Zunbul


114 Ahlwardt, Die Handschriften-Verzeichnisse, 286.

prefigured Maḥmūd Bāshāh’s\textsuperscript{116} death in 975/1567,\textsuperscript{117} which makes Wilhelm Ahlwardt’s and Carl Brockelmann’s arguments plausible.

Relying on historiographical tradition, some scholars have subsequently argued that Ibn Zunbul must have been in the service of the last Mamlūk Sultan Qānṣawh al-Ghawrī (r. 906–922/1501–1516).\textsuperscript{118} They suppose he was an eyewitness of the Sultan’s expedition in 922/1516 because he gave a detailed description of this expedition, even though there is no explicit evidence of it. Some

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\textsuperscript{117} In Ibn Zunbul’s manuscript Maḥmūd Bāshāh asks Ibn Zunbul to interpret his dream which Maḥmūd Bāshā sees as an omen for his coming death. Thereafter, Ibn Zunbul reports the latter’s assassination in 975/1567. Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fol. 113b f.

\textsuperscript{118} Sultan Qānṣawh al-Ghawrī was “the last great Mamlūk Sultan.” See more about the period of his reign in Garcin, The Regime of the Circassian Mamlūks, 298–299.
\end{footnotesize}
\end{quote}
Historians like Doris Behrens-Abouseif\textsuperscript{119} and Robert Irwin expressed their doubts about this assumption,\textsuperscript{120} which becomes more comprehensible now when we know the date of his birth. If he were in the service of Sultan al-Ghawrī (r. 906–922/1501–1516), this would mean that in 922/1516 he was twelve years old, a young age for being “a civil officer at the war division.”\textsuperscript{121}

Concerning his professional activities, explicit references in his own work suggest that he spent much of his life as an astrologer, dream interpreter\textsuperscript{122} and presumably as a geomancer (\textit{al-rammālī})\textsuperscript{123} in the

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\textsuperscript{119} B. Lellouch, Ibn Zunbul Aḥmad b. ʿAlī (d. 1574), \textit{Historians of the Ottoman Empire}, ed. C. Kafadar, H. Karateke and C. Fleischer, 1–2.
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\textsuperscript{120} Irwin, Ibn Zunbul, 4.
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\textsuperscript{121} Brockelmann, Geschichte, vol. 2, 298.
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\textsuperscript{122} Ibn Zunbul, al-Kitāb naqīl min kitāb al-qānūn, fols. 109a–113b.
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\textsuperscript{123} Ibn Zunbul, al-Kitāb naqīl min kitāb al-qānūn, fols. 118a f. Geomancy (\textit{ʿilm al-raml}) is a method used to foretell the future from the patterns formed by the sand or rocks tossed on the ground. This method for making predictions was popular during the Mamlūk period. (Langner, Untersuchungen, 97–98.) See more about other divinatory methods of
\end{flushright}
service of Maḥmūd Bāshāh.\textsuperscript{124} He combined the profession of a chronicler\textsuperscript{125} with that of an astrologer and earned money by predicting the future. Such a combination was not unique in Egypt. Rulers in Mamlūk political circles often patronised astrologers.\textsuperscript{126} Some of the Mamlūk Sultans, such as al-Nāṣir Muḥammad Ibn Qalāwūn\textsuperscript{127} and Sultan Qāytbāy (r. 872–901/1468–1496),\textsuperscript{128} were making predictions in Langner, Untersuchungen, 64. Savage-Smith, Introduction, xiii–li.

\textsuperscript{124} Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 110a f.

\textsuperscript{125} Irwin, Ibn Zunbul, 3–5. According to Michael Winter, Ibn Zunbul is not a reliable chronicler as his historiographic work “is a kind of romance.” Winter, The Ottoman Occupation, 491.

\textsuperscript{126} Saliba, The Role of the Astrologer, 357–362.

even known to have an interest in astrology,\textsuperscript{129} predictions and interpretations of prodigious signs (\textit{u\textsuperscript{2}jūbah}).\textsuperscript{130} From the number of manuscripts that have survived we can consider him to have been a popular author who claimed to have been an eyewitness of the Ottoman conquest of Egypt in 922/1517.\textsuperscript{131} He also maintained close ties with the Ottoman court during the years after the conquest.\textsuperscript{132}

\textbf{1.5. Ibn Zunbul’s Malḥamah}

As already mentioned above, Ibn Zunbul’s astro-meteorological \textit{malḥamah} is part of \textit{al-Kitāb naql min kitāb al-qānūn} (\textit{An Extract from the Book of the Rules}), which is comprised of chapters 22 and 23 of the

\begin{footnotesize}
\begin{enumerate}
\item Northrup, The Baḥrī Mamlūk Sultanate, 252–253. See also footnote 352, p. 388.
\item See footnote 65, p. 83.
\item D. King, The Astronomy of the Mamluks: A Brief Overview, \textit{Muqarnas} 2 (1984), 82.
\item Winter, The Ottoman Occupation, 491.
\item Lellouch, Historians of the Ottoman Empire, 2–8.
\end{enumerate}
\end{footnotesize}
unpublished encyclopaedic compendium *Qānūn al-dunyāh (The Rule of the World)*. This compendium not only integrates *malḥamah* but also brings together a wide array of geographical information with historical knowledge pertaining to the places described. Furthermore, it also devotes significant space to the explanation of celestial and terrestrial phenomena.\(^\text{133}\)

From the beginning of Ibn Zunbul’s *malḥamah*, it is clear that the author must have been familiar with the knowledge of the ancient scholars, since he often refers to Ptolemy (ca. d. 100 A.D.),\(^\text{134}\) Plato (d. 347 B.C.), Aristotle (d. 322 B.C.), and other Greek philosophers.\(^\text{135}\) Like most Arabic works on matters of antiquity, this handbook is predominantly composed of extracts copied from older authorities without giving precise sources of information. He also integrated

\(^{133}\) Irwin, Ibn Zunbul, 5.


\(^{135}\) Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fol. 22b.
topics taken from the Arab books of his predecessors such as al-Kindī (d. ca. 256/870), Abū Maʿshar (d. 272/886), Ibn Yūnus (d. 399/1009) and al-Bīrūnī (d. 440/1048), to whom he often refers. It is clear that Ibn Zunbul’s *malḥamah* wrote about issues that had been common knowledge among astrologers. Although this


139 See about al-Bīrūnī footnote 35, p. 30.

140 Ibn Zunbul, al-Kitāb *naql min kitāb al-qānūn*, fols. 18b, 24b, 25a, 25b, 36b, 37a.
kind of literature is known to have derived from the Assyrian-
Babylonian omina tradition, it brings forward many other cultural
influences that need to be examined. As malḥamah handbooks were
regularly copied, remodelled, and adapted to specific geographic-
historical situations, no thorough history of this genre exists, a fact
that makes the reconstruction and dating of the original version
difficult.

1.6. Structure and Content of Ibn Zunbul’s Malḥamah

To trace the history of the development of Malḥamah, one must begin
with the study of its structure and content. A helpful first step would
be to comparatively analyse the techniques used to predict natural
disasters, along the way untangling and sorting the different input
from the varied sources which influenced it. The following pages
exemplify the stages of this process and are devoted to a structural

141 Furlani, Eine Sammlung, 157. A. Fodor, Malhamat Daniyal, in The Muslim
Loránd Eötvös University 1974, 85.

142 Ibn Zunbul uses different methods for predictions, which here I call
techniques.
and contextual analysis of Ibn Zunbul’s *malḥamah* and similar treatises. In the pages detailing this process, I aim to trace the transmission of the manuscript’s ideas and reveal the motives behind its composition. The objective is not only to highlight the intricate entanglement of cultural flows and historical agencies that culminate in the manuscript, but to demonstrate their importance for Ibn Zunbul’s society and time. It thus constitutes a process that demonstrates both the most important historical intellectual currents and their impact on, and place in, the world.

The first section (I) of Ibn Zunbul’s *malḥamah* begins with the derivation of portents/omens (*dalāʾil/dalālah/ʿalāmah*) from the position of the moon in the various zodiacal signs at the heliacal rising of Sirius.¹⁴³ The latter is referred to in the text of the *malḥamah* as “the birth of the year” (*mawlid al-sanah*).¹⁴⁴ Accordingly, this part of Ibn Zunbul’s text and most other *malḥamah* treatises bear titles similar to *The Book of Hermes about the Judgments Made from the Rising*

¹⁴³ See about Sirius footnote 36, p. 68.

This first technique (1) is one among many other methods for making predictions in the astrological handbooks, attributed to

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Hermes. Predictions usually start with the zodiacal sign of Aries (al-Ḥamal) and end with Pisces (al-Ḥūt). Here is an example of predictions linked to the rising of Sirius in the sign of Leo (Asad):

“The wise Hermes said strong winds (rīḥ ʿaẓīmah) will blow towards north and east for days [...]. Stars will become red and will burn like fire. Streams of water will tide over the rest of the lands. The Nile will rise extremely [...]. There will be unrest and wars [...]. People will suffer from fever; pregnant women, birds, and animals will miscarry [...]. The water of the Nile will become unhealthy and will change, and there will be a prodigy (āyah) in it. There will be a solar and lunar eclipse. People will make profits from oil. The price for wheat will sink from Hātūr\textsuperscript{146} to Baʾūnah\textsuperscript{147} [...]. Birds and pigs will die.


Locusts will appear [...]. The upper lands (al-Ṣa‘īd) and Egypt will be destroyed. It will be hot, and strong hot winds (sumūm) will blaze. There will be tremors (rajjafah) and a great earthquake (zalzalah ʿazīmah) [...]. The stream of the Nile will colour red like blood. But there will be abundance in the land of Egypt, Syria and Byzantine [...] Rains will be pouring down out of season. The merchants will benefit. And if Mars is in the [house of] Leo, the honey, bloodshed, and robbers will increase. And there will be a great event (waqʿah ʿazīmah) in the land of India. A man who is famous in the city of rivers will be killed. But God knows better!”

148 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 41a–41b. Cf. Anonymous, Kitāb Hirmis, Ms. Фирк. Сам. VII 13, fols. 2a f., in which predictions are given for “the birth of the year” in conjunction with zodiacal signs of Aries, Taurus, Gemini, Cancer and Lion and planets Mars, Venus, Mercury and the Sun. Some pages with the remaining zodiacal signs are obviously missing in this treatise. Cf. also with the other texts mentioned in footnotes 46–48, p. 74f. and footnotes 52–54, p. 78f.
Although the tremendous influence of Assyrian-Babylonian celestial divination on *malḥamah* has long been assumed, texts using Sirius (Sothis) as a device for prognostications must have reached the Arabic *malḥamah* through Egyptian intermediaries. The crucial element supporting this assumption is that the heliacal rising of Sirius, which does not play a prominent role in Assyrian-Babylonian omina, indicated the rise of the Nile and determined the beginning of the new year (1 Tūt/11–12 September) in ancient Egypt. The Copts called this star the “flood-bringer” due to the proximity of its rising with the annual rise of the Nile. In addition, it is known that

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149 See footnote 141, p. 104.

150 See footnote 36, p. 68.

151 Tūt is the first Coptic month, which corresponds to the period between 11 September and 10 October. Wassef, “Coptic Calendar,” vol. 2, 438.


Astrologumena related to the heliacal rising of Sirius existed from Hellenistic times.\textsuperscript{154}

To illustrate this connection, I have here included one of the few astrological texts preserved in a demotic papyrus (31222 Egyptian Museum) dating from the second century B.C.\textsuperscript{155} Although the greater part of the text is missing, the translation of the text, published by George Hughes, shows resemblances to the malḥamah’s structure and technique:

“The influences of Sothis (Sirius): If it rises when the moon is in Sagittarius: .......... grain in the field [.......] (2) in the country of the Syrian... death will occur. ..... will abound in weakness by night and day. [....] will (3) go ... and he (it) will

\textsuperscript{154} Astrologumena is the antique genre, which can be considered equivalent to the Arabic malḥamah prognostications. Cf. Gundel and Gundel, Astrologumena, 14–15, 56–57.

be filled. If it (Sothis) rises when Saturn is <in> Sagittarius: The king [will] fight ... of his and he will ......... (4) prince in Egypt. Pharaoh [.....] will go to .... . The inundation (of the Nile) will come to Egypt. [.....] (5) will occur in the country of the Parthian....”

There are relatively frequent references to the Nile in the *malḥamah*, which is another indication of its connection with the Hellenistic-Egyptian prototype. These references suggest the authors’ interest in the Nile, which otherwise would be quite inexplicable on the part of an author living somewhere in Mesopotamia. The *malḥamah’s* ascription to Hermes Trismegistos, who evolved out of syncretism of the Egyptian God Thoth¹⁵⁷ and the Greek Hermes,¹⁵⁸ is a final proof of the text’s Hellenistic-Egyptian relations.


¹⁵⁷ In Ancient Egypt Thoth was regarded as the moon-god, the “ruler of the stars,” of the “cosmic order and of religious and civil institutions.” He was also god of wisdom and science, inventor of writing, and designator of the
The second section (II) of Ibn Zunbul’s *malḥamah* is attributed to Dāniyāl (Daniel).¹⁵⁹ This attribution strikingly shows the significance of Jewish culture¹⁶⁰ for the transmission of this part of the Arabic seasons, months, and years. Fowden, The Egyptian Hermes, 22. Malaty, The Coptic Calendar, 9.

¹⁵⁸ The Greeks in Egypt during the Hellenistic period identified Thoth with their god Hermes. (Gundel and Gundel, Astrologumena, 12.) “Like Thoth, the classical Greek Hermes was associated with the moon, medicine and the realm of the dead.” Both of them were messengers of the gods and the interpreters of “the divine will to mankind.” Fowden, The Egyptian Hermes, 22–24.


¹⁶⁰ Gundel and Gundel, Astrologumena, 49–56, 259. References to similar divinatory texts in Hebrew can be found in J. Greenfield and M. Sokoloff, Astrological and Related Omen Texts in Jewish Palestinian Aramaic, in *Al Kanfei Jonah: Collected Studies of Jonas C. Greenfield on Semitic Philology*, ed.
malḥamah. It consists mainly of omens derived from celestial and terrestrial signs. Accordingly, the second technique (2) of this second section refers to the change of celestial signs: occurrences of solar (kusūf al-shams) and lunar eclipses (khusūf al-qamar), halos


Ibn Zunbul, al-Kitāb Ṽaqal min kitāb al-qānūn, fols. 45a–56a.


Ibn Zunbul, al-Kitāb Ṽaqal min kitāb al-qānūn, fols. 46a–47a. Omen texts concerning lunar eclipses were popular in the Mesopotamian scholarly divination. They were disseminated both east, as far as India, and west of Mesopotamia, to Egypt. Their transmission to Egypt must have taken place during the fifth century B.C. (F. Rochberg-Halton, Aspects of Babylonian Celestial Divination: the Lunar Eclipse Tablets of Enûma Anu Enlil, Archiv für Orientforschung. Beiheft, Horn: Verlag Ferdinand Berger 1988, 7–30. R. Parker, A Vienna Demotic Papyrus on Eclipse and Lunar Omina, Providence: Brown University Press 1959. Gundel and Gundel, Astrologumena, 263. Cf. Labat, Un Calendrier Byblyonien, 143–151.) In the first half of the second
around the sun and the moon (al-dāʾirah ḥawla al-shams wa-al-qamar), and different appearances of the new moon (hilāl). The predictions based on lunar and solar eclipses are the oldest techniques to be found in manuals from different cultures.

All the predictions in section two are made according to similar schemata, predominately arranged by month. They usually begin with predictions for April (Nīsān)—the first month of the Babylonian year—and end with predictions for March (Adhār), except for references to omens relating to the appearance of the new moon during the twelve months of the Muslim calendar. The latter must


Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fol. 48b.

Gundel and Gundel, Astrologumena, 265.
have developed later in accordance with structural requirements of Arabic malḥamah text, as illustrated in example (c).

(a) “Dāniyāl, peace be upon him, said: ‘If there is a solar eclipse in April, there will be injustice, kings will be destroyed and replaced. The sovereign of Egypt will rise against his enemies. If the eclipse happens in the direction of the East, the prices will rise there and the riots will be frequent in the land of the non-Arabs (al-ʿajm). If the eclipse happens from the direction of the West, the prices will rise in Byzantine [there will be a famine] and their king will die. The wars, hunger and famine (ghalāʾ) among them will spread [...]’.”

(b) “Dāniyāl, peace be upon him, said: ‘If there is a halo around the moon in April, it is an omen for the increase of

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winds, earthquakes, and clouds. But the crops and the fruit will be good [...].”

(c) “The month of Ṣafar [the second month of the Muslim calendar]: If the new moon has an erect position, ulcers and sore-throat will spread among the young boys and the rain will be frequent. If it is in a lying position, the locusts and rats will be numerous.”

There are structural similarities between the techniques deployed in the first two examples and predictions of the Assyrian-Babylonian

168 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fol. 48a. This passage is almost identical with the passage about the halos around the moon in Anonymous, Kitāb Hirmis, Ms. Фирк. Сам. VII 13, fol. 8b. Cf. Fodor, Malhamat Daniyal, 111.

“omina.” The latter belonged to the collections of *Enūma Anu Enlil*, which served for the soothsayers as manuals for predictions and disaster aversion in Mesopotamia. The omina texts are highly structured, just like the *malhamah*, and have a fixed order for each of the natural phenomena observed, making entry location relatively easy.

The predictions in these collections also begin with the month Nīsān, which is an obvious sign of the Assyrian-Babylonian influence. The following translation of one of numerous Assyrian-Babylonian texts written in cuneiform script on clay tablets shows

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170 It is a corpus of Assyrian-Babylonian divinatory omens written in cuneiform script on clay tablets. Labat, Un Calendrier Bybylonien. Parker, A Vienna Demotic Papyrus.

171 “*Enūma Anu Enlil* [...]” (when the gods Anu and Enlil) were opening words, after which a collection of omina predictions are titled. Rochberg-Halton, Aspects of Babylonian Celestial Divination, 5.

172 Hübner and Hunger, “Astrology.”

that the structure of the predictions has a characteristically Babylonian schematic fashion, which can also be found in the texts of other ancient cultures.  

“If the beginning of the year on the 14th day of Nisannu a lunar eclipse occurs: There will be lamentation in the land of the enemy and the land will dwindle; the king will die. 
If [...] on the 15th day an eclipse occurs: famine; the people will sell their children for money. 
If an eclipse occurs on the 16th day: A destructive wind will rise and Mars will rise and destroy the herds [...].”

Meteorological phenomena constitute a third technique (3) used in the malḥamah to make predictions. These terrestrial signs included

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174 Cf. the Arabic malḥamah with the text about lunar and solar eclipses in Parker, A Vienna Demotic Papyrus.

175 Rochberg-Halton, Aspects of Babylonian Celestial Divination, 253. For more examples see also Labat, Un Calendrier Bybylonien, 143–151.
thunder (raʿd),\textsuperscript{176} observed during different days of the month, lightning (barq),\textsuperscript{177} rainbow (qawsu quzaḥin)\textsuperscript{178} the appearance of meteors and comets (kawkab la-hu dhanab “a star with a tail”),\textsuperscript{179} winds (rīyāḥ) and storms (zawābiʿ)\textsuperscript{180}—observed throughout the year, as can be seen from the following example:


\textsuperscript{177} Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 50a–50b. Cf. Lydus, \textit{Liber de Ostentis}, 95f.

\textsuperscript{178} Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 50b–51a.


\textsuperscript{180} Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 56a–57b.
“If in February (Shubāṭ) something similar to a fire or a column of light or a comet appears in the sky, nothing good is to be expected in that year. Hot wind (shawb) will afflict the crops; earthquakes (zalāzil) and lunar eclipses (khusūfāt) will be frequent; rivers will rise to an extreme height; rains will be out of season; a non-Arab king will die [...]”  

Except for the omens connected with lightning and rainbow, all of the predictions begin with April (Nīsān) and end with March (Ādhār). These entries, initially used to predict future events, were likely based on Assyrian-Babylonian omens. During the later centuries, some of the entries initiated specific branch of Arabic malḥamah related to thunder, known also in Greek tradition as Brontologia or

181 Ibn Zunbul, al-Kitāb naqīl min kitāb al-qānūn, fol. 55b.
183 See, for example, the anonymous manuscript Ḥawādith al-nujūm wa-al-ruʿūd wa-al-zalāzil wa-al-khusūf fī shuhūr al-sanah, known as al-Raʿdiyah (The Book of Thunder), Egyptian National Library, Ms. ṬM 214, copied
These handbooks were already widely spread in the Byzantine Empire.¹⁸⁴

The fourth technique (4) in Ibn Zunbul’s *malḥamah* includes omens derived from geophysical events like earthquakes (*ṣalāzil*).¹⁸⁶ With some textual variations, these techniques appear in all of the *malḥamah* astro-meteorological texts. One example of portents related to the occurrence of earthquakes during a specific month is as follows:

1321/1903, which was probably compiled by a twelfth century A.D. Christian author.

¹⁸⁴ In the Byzantine Empire, texts classified as *Brontologia* or *Tonitrualia* were predictions related to the occurrence of thunder. Gundel and Gundel, Astrologumena, 260–261. C. Bezold and F. Boll, Reflexe astrologischer Keilinschriften bei griechischen Schriftstellern, in *Sitzungsberichte der Heidelberger Akademie der Wissenschaften*, Heidelberg: Carl Winter’s Universitätsbuchhandlung 1911. Lydus, Liber de Ostentis, 54f.


“If it [an earthquake] occurs in Tammūz (July), the Nile will rise in that year. Looting and rise in prices will spread in the lands of the Byzantines and Syria.”

This type of prediction shows similarities not only with Assyrian-Babylonian omina, but also with the Greek Hermetic text on earthquakes, probably compiled by Byzantine author Johannes Laurentius Lydus in the sixth century A.D. A comparative analysis of these texts shows that they share a common structure, but the Greek and the Assyrian-Babylonian texts are more laconic than Ibn Zunbul’s version. The latter includes a number of geographical names and refers to historical events which are absent in the Greek

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prototype. Moreover, earthquakes in the *malḥamah* are interpreted not only as bad omens, causing calamities, but also as good omens such as the prognoses concerning the good harvest and profits for the merchants, which is not the case in the above-mentioned prototypes.

The third section (III) of Ibn Zunbul’s *malḥamah* begins with predictions of omens linked to January (Kānūn al-thānī), coinciding with the seven days of the week. It is plausible that this fifth technique (5) generated from the prototype, which originated after the 1st century B.C. when Julius Caesar introduced the calendar reform in 46 B.C. This kind of prediction is very popular and can be found in most of the *malḥamah* texts. This method of prediction also appears in *Thousand and one Nights* as mentioned previously.\(^{189}\) The predictions in both texts start with Saturday.\(^{190}\) The following example is drawn from Ibn Zunbul’s *malḥamah* and illustrates what would happen if the 1st of January had fallen on a Wednesday:

\(^{189}\) Kitāb alf laylah, 524. The Book of the Thousand Nights, 183. See p. 92f.

\(^{190}\) Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 57b–60a.
“If January falls on Wednesday, hot winds will spoil the crops. But the fruits will become numerous [...]. The Muslims will attack the Byzantine [...]. In Syria and the land of Persia, people will die because of the plague (ṭāʿūn). The lands of Egypt and Fayyūm will be much exposed to them. Rains will be scarce [...]. In the end of February there will be strong winds, thunderbolts, lightning, thunders and earthquakes [...]”\textsuperscript{191}

This kind of prediction had existed in the manuals of the so-called \textit{Kalandologion} long before Ibn Zunbul’s \textit{malḥamah} was compiled. A Coptic text with a similar structure and closely related Vienna papyrus K 5506 belong to this group of predictions,\textsuperscript{192} which are related to the coincidence of 6 Ṭūbah/ca. 14 January with each of the seven days of the week. The schematic outline of these Coptic texts shows parallels with Ibn Zunbul’s \textit{malḥamah} and another anonymous

\textsuperscript{191} Ibn Zunbul, al-Kitāb naqī min kitāb al-qānūn, fols. 59a.

Arabian manuscript titled Kitāb gharāʾib al-funūn wa-mulaḥ al-ʿuyūn (The Book of Curiosities [Oddities] of the Sciences and Marvels for the Eyes). According to Emilie Savage-Smith, an anonymous eleventh A.D. century author probably compiled this unique treatise, which an Egyptian or a Syrian scribe then copied during the thirteenth or fourteenth centuries A.D.

“When the sixth of ṭūbeh falls on the first day of the week (Sunday) [...] the winds will bring severe storms. The summer heat will be moderate, pains and fevers will increase, the waters of the Nile will rise, intense war will break out. A king will appear, the fruit of the vineyards will become scarce, the

193 Anonymous, Kitāb gharāʾib, Bodleian Library, MS. Arab. c. 90.

ships of the sea will have a safe journey, and wheat will become scarce and expensive.”

The fourth and final section (IV) of Ibn Zunbul’s malḥamah includes an agricultural almanac (taqwīm). This sixth technique (6) not only predicts events for the whole year with reference to Egypt, Syria, Babylon, Persia and other parts of the world, but also mentions events connected with the rise of the Nile, the days when important Coptic-Christian, Jewish and Muslim feasts are celebrated and certain agricultural crops are to be cultivated. Predictions, which resemble the previously mentioned examples, are derived from the position of

195 This passage is E. Savage-Smith’s translation taken from the edition of the anonymous Kitāb gharāʾib, Bodleian Library, MS. Arab. c. 90, fol. 22a. See also Anonymous, Hādhihi malḥamah, Staatsbibliothek zu Berlin, Ms. Mo 197 (5903).

196 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 57b–88a. See about agricultural almanacs footnote 1, p. 53f.

197 Cf. Varisco, A Rasulid Agricultural Almanac, 110.
the lunar mansions (manāzil) and the anwā’\textsuperscript{198} for each day of the solar calendar beginning with January.\textsuperscript{199}

“January begins on the 6 of Ṭūbah. It is said that there are good things and blessing in that month. And if it thunders during the first half of it, the year will not be good. If it thunders towards the end, there will be battles on the shore of the sea. People will suffer from eye disease. The year will be cold; the fruits will be in abundance. Cows will die. There will be earthquakes in the East [...] On the 6 [of January] [...] it is said that epidemics disappeared in Egypt and blessing came down to the Nile and all waters. [...].”\textsuperscript{200}

The last seventh technique (7) for predictions is specifically related to the state of the Nile and its impact during the year.\textsuperscript{201} Although not

\textsuperscript{198} See about anwāʾ footnote 1, p. 53.

\textsuperscript{199} Ibn Zunbul, al-Kitāb naqāl min kitāb al-qānūn, fols. 63a–88b.

\textsuperscript{200} Ibn Zunbul, al-Kitāb naqāl min kitāb al-qānūn, fols. 65a–65b.

\textsuperscript{201} See the anonymous manuscript, Hādhā kitāb qāʿidat al-Nīl, Staatsbibliothek zu Berlin, Ms. Mo 198 (5915).
included in Ibn Zunbul’s *malḥamah*, it is obvious that texts of this kind are to be classified in the *malḥamah* genre not only because of the striking parallels between them, but because some *malḥamah* texts include it as a separate section.\(^{202}\) To arrive at an idea of what these predictions look like an example is included here taken from a manuscript entitled *Risālah fī maʿrufat zīyādat al-Nīl wa-al-ḥawādith al-mustaqbalah ʿalā ḥasab al-kawākib* (*An Epistle Comprising Knowledge about the Inundation of the Nile and Future Events depending on the Planets)*:

“Mushtarī (Jupiter). [...] The Wise said [...] ‘If the “drop” (*al-nuqtah*)\(^{203}\) falls on Thursday night, the blessed Nile will reach that year twenty-two cubits and some fingers.\(^{204}\) The Nile will be great and it will be blessed for everything that year [...]’. If the planet, which is called Mushtarī (Jupiter), appears, there

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\(^{203}\) See the explanation of this term below, p. 130.

\(^{204}\) See more about the measurement units in cubits and fingers in footnote 25, p. 419; footnote 137, p. 453; footnote 172, p. 463; footnote 304, p. 501.
will be disasters (*shiddah ‘aẓīmah*), epidemics (*balā’*), deaths, and destruction (*fanā’*) of families during that year [...]. Yet if it falls on Thursday, there is a great catastrophe (*qāṣim*) for the servants bringing death and fighting. But God knows better!”

In this passage, the anonymous author, probably an astrologer, referring to the knowledge of the “Wise” (supposedly Hermes), compiled general predictions about the maximum level of the Nile’s rise and its impact during the year. The predictions are derived

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206 See more about the measuring of the Nile’s level in Chapter 5.5.1. “The Good News” (*al-Bishārah*), 460f. and different methods for the prediction of the Nile’s rise in Chapter 5.3.2. *Explanations about the Causes of Periodical Flood*, 441f.
from the position of seven planets and the day of the week, during which the so-called “drop” (nuqṭah) would occur.

In fact, on the night of “St. Michael’s Feast” (ʿAyd Mīkāʾil) on 12 Baʿūnah/ca. 19 June—which was also called “the Night of the Drop” (Laylat al-nuqṭah) and which was a popular festive day up until the 19th century A.D.\(^{207}\)—people (the Copts)\(^{208}\) believed that the Archangel Michael\(^{209}\) asked God for the rise of the Nile.\(^{210}\) Thereafter,  

\(^{207}\) W. Lane, *The Manners and Customs of the Modern Egyptians*, London: J.M. Dent & Sons Ltd. 1923, 495.


\(^{209}\) According to the Coptic Christians, the Nile rises through the power of Christ at the intercession of the archangel Michael and the saints. (L. Kakosy, *The Nile, Euthenia, and the Myths*, *The Journal of Egyptian Archaeology* 68 (1982), 297. Oestigaard, *Water, Culture and Identity*, 144.) In Coptic Christian tradition, St. Michael the Archangel plays an important role, comparable to that of the Virgin Mary. Among the functions ascribed to him are: the role of God’s Angel, praying to God, welcoming the souls of the dead to heaven, and achieving victory over the devil. M. van Esbroeck,
during that night people thought that a “miraculous drop” was to fall into the Nile, causing its annual rise. Astrologers used this belief to calculate the precise moment of the drop (nuqtah), making diverse predictions about the Nile and its impact during the year.


Describing this event in the nineteenth century A.D., Edward William Lane noticed that people in Cairo and its neighbourhood spent the night on the banks of the Nile or at home with friends. Lane, The Manners and Customs, 495f.

Lane, The Manners and Customs, 495. William Popper mentioned that this habit was probably a reflection of the Ancient Egyptian poetical idea. According to it, tears of Isis, as she wept for Osiris, falling into the Nile, caused its rise. Popper, The Cairo Nilometer, 68.

Lane, The Manners and Customs, 495.

See also p. 443f.
The late Mamlūk chronicler Ibn Iyās\(^{215}\) records in the annals of 916/1510 and 920/1514 attest to the significance of this astro-meteorological habit in its historical context, especially for the Copts. He mentions that “the Night of the Drop,” which is also known as the day for the weighing of “the mud” (al-ṭīnah)\(^{216}\)—as another method


\[\text{216} \quad \text{During this night, a certain amount of mud (sixteen qīrāṭ/1 qīrāṭ=0,064l: Wehr, Dictionary, 804) was wetted with the Nile water. The mud was weighed the next morning, and in proportion to the increase in weight, the ultimate rise in the height of the Nile that year was predicted. (Ibn Iyās, Badāʾīʿ al-zuhūr fi waqāʾīʿ al-duhūr, ed. by M. Muṣṭafā, vol. 4, Istanbūl: Maṭbaʿat Maṭbaʿat 1931, 193–194. Popper, The Cairo Nilometer,}

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for predicting the Nile’s rise, occurred on a Monday, upon which *al-Khamāsīn*²¹⁷ passed through without harm and no spread of plague in Old Cairo was reported.²¹⁸

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68.) See other methods for predictions connected with this specific day in Lane, The Manners and Customs, 495–496.

To conclude, most of the astro-meteorological *malḥamah* handbooks, not necessarily containing the word *malḥamah* in the title, include all sections with either the seven previously described techniques or some parts of them. These techniques are rooted in the handbooks’ origins in long-term processes of cultural and textual interactions.

With regard to the structure of *malḥamah*, all predictions share the same outward form developed in the Assyrian-Babylonian prototype. Its opening consists of the “*if*”—“*then*” clauses that describe the relation between hypothetical causes and their effects: *If* something happens at a specific time, *then* disastrous or non-disastrous events, with nearly identical pattern, are to be expected. This structure was rather easy to remember\(^\text{219}\) and met the needs of ordinary people who wished to understand why calamities afflicted them.

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\(^{218}\) Ibn Iyās, *Badāʾiʿ*, vol. 4, 375.

\(^{219}\) Fodor, *Malhamat Daniyal*, 95.
The calendar was another structural element used for making predictions. Most of the examples presented above started their predictions in Nīsān (April), which is a remnant of the Assyrian-Babylonian omina. A few exceptions have developed under the influence of Julian and Muslim calendars. Finally, because of Egyptian and later Hellenistic innovations, such as the introduction of the zodiac, more elaborate techniques for making predictions found their way into the Arabic malḥamah.

With regard to the content, astro-meteorological malḥamah predictions, like its prototypes, were concerned in particular with the welfare of different countries and sovereigns. Disastrous events were there described as dependent on astro-meteorological signs and these events included floods, the delay of the rains, variations in the regular seasons, earthquakes, eclipses, storms, hot winds, famines, epidemics, appearance of locusts, the spread of rats, diseases, the destruction of cities, chaos, wars, an enemy incursion, the fates of kings and ordinary people, cities and regions.

220 Koch-Westenholz, Mesopotamian Astrology, 132, 163–164.
In order to fit the interests and circumstances of the particular recipients, anonymous copyists or authors like Ibn Zunbul adapted predictions to the regional perspective of the time by means of analogies. They included historical events known to the Arab audience in the framework story of the *malḫamah*. For example, Ibn Zunbul mentions the Mongol (Tatār) invasions or the raids of the crusaders,\(^{221}\) which cannot be found in the versions of *malḫamah* predating the thirteenth century A.D.\(^{222}\)

1.7. The Origins of *Malḥamah*: a Relic of Assyrian-Babylonian Omina and Hermetic Tradition of Late Antiquity

Now that we are more familiar with the structure and content of Ibn Zunbul’s *malḫamah* and have grappled with the problems of its interpretation, we can inquire into its origins. It is evident that *malḫamah* were copied from some prototype that originated in the pre-Islamic period. However, as this analysis has shown, they do not originate from one particular prototype but from several: Assyrian-Babylonian, Egyptian-Hellenistic, Jewish, Byzantine Greek, and

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\(^{221}\) Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 79a, 44a.

\(^{222}\) Cf. an earlier *malḥamah* in Fodor, Malhamat Daniyal.

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Coptic. This becomes clear from the techniques and other elements used for predictions of disastrous events.

It is impossible to know exactly how and when the Assyrian-Babylonian and Hellenistic tradition was subsequently transmitted further. The assimilation of these traditions could have occurred when northern Syria and Babylonia were parts of the same political organisation, the Persian Empire, during the rule of Achemenians (ca. 550 B.C.–330 B.C.), or, more probably, that of the Seleucids (312 B.C.–63 B.C.).\(^{223}\) Though unsophisticated, these techniques came into existence in the course of complex transcultural interactions and different textual influences. The textual traditions represented in the Mesopotamian omen series spread by means of cultural interchange to Egypt, Greece, and as far as India.\(^{224}\)

\(^{223}\) Peters, Hermes and Harran, 69.

Arabic astro-meteorological *malḥamah* originated as a result of its transmission, whereby ancient Mesopotamian concepts were modified and integrated during Hellenistic times.\textsuperscript{225} But exact sources are difficult to come by across the centuries and cultures. This complexity stems from the fact that *malḥamah* handbooks were copied by scholars interested more in gathering information than in preserving any author’s work, except for the most authoritative such as Hermes, Daniel, or Aristotle. Earlier texts of Arab *malḥamah* which were ascribed to these pseudo-authors probably came to existence in Iraq during the ‘Abbāssid era.\textsuperscript{226} There are implications that during this period (eight–ninth century A.D.), known as the “golden age of Islam,” most famous astrologers of the time, such as Māshāʾīlāh (d. ca. 200/815)\textsuperscript{227} and Abū Maʿṣhar (d. 272/886),\textsuperscript{228} to whom Ibn

\textsuperscript{225} Rochberg-Halton, Aspects of Babylonian Celestial Divination, 12–14.

\textsuperscript{226} Fodor, Malhamat Daniyal, 88.

\textsuperscript{227} Māshāʾīlāh, Abū Maʿṣhar, and other scholars probably translated antique *Astologumena* during the reign of Caliph al-Maʾmūn (r. 813–833 A.D.). Gundel and Gundel, Astrologumena, 14, 275.

\textsuperscript{228} Abū Maʿṣhar is known to have transmitted a treatise titled *Kitāb al-malḥamah al-murawīyah ʿan al-Iskandar*, Egyptian National Library, Ms. S
Zunbul refers in his treatise, translated the main classical texts into Arabic and made use of them in Baghdad.  

The transformation of *malḥamah* probably took place during this period via translations of classical Greek texts into Pahlavi,  

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4467, 1200 A.H. Muslim scholar and bibliographer Ibn al-Nadim (d. 385/995) also mentions in his *Fihrist* that Abū Maʿshar wrote a number of astrological treatises, many of which have survived only as titles. For example, he compiled a *Kitāb al-malāḥim* as well as a treatise titled *Kitāb al-amṭār wa-al-riyāḥ wa-taghayyur al-ahwiyah*, which must have dealt with predictions. Sezgin, Geschichte, vol. 7, 328.


Syrian,\textsuperscript{231} Nabatean (ahl Ḥarrān)\textsuperscript{232} or directly into Arabic. There is, indeed, a rather voluminous branch of predictions extant in these and other languages, which shows that this kind of literature was extremely popular in the Middle East, especially in Mesopotamia.\textsuperscript{233} However, the examination of the existing Syrian texts\textsuperscript{234} reveals that they have only some echoes of Arabic malḥamah.

\begin{itemize}
  \item \textsuperscript{231} Sezgin, Geschichte, vol. 7, 313.
  \item \textsuperscript{233} Fodor, Malhamat Daniyal, 89.
  \item \textsuperscript{234} Anonymous, \textit{The Book of the Zodiac (Sfar Malwašīa)}, tr. by E. S. Drower, London: The Royal Asiatic Society 1949. Syriac omens are also found in several small tracts, of which only parts have been published and translated. (See, for example, G. Furlani, Astrologisches aus syrischen Handschriften, \textit{Zeitschriften der Deutschen Morgenländischen Gesellschaft} 75 (1921), 202.) One is \textit{the Book of Prognostications Kitāb al-dalāʿil (Ktōbō d-shūdōʾē)} of al-Ḥasan Ibn Bahlūl, dating from 556/1160–1, (Fahd, “Malḥama,” 247) and the other is \textit{Syrian Anatomy Pathology and Therapeutics or The Book of}
Instead more similarities can be found in the so-called “Book of the Zodiac” copied in the Mandaic language of lower central Iraq in twelfth and thirteenth centuries A.D.\textsuperscript{235} A striking divergence between malḥamah and the Mandaic text is, however, the lack of any reference to the Tigris or the Nile, though the latter plays an important role in all the types of the Arab malḥamah.

There are more indications that astro-meteorological malḥamah could have been transmitted directly from classical Greek\textsuperscript{236} into Arabic\textsuperscript{237}.  

\begin{flushleft}
\footnotesize
Medicines with an English translation by W. Budge, vol. 1, London: Oxford University Press 1913, copied probably in the twelfth century A.D. (Fodor, Malhamat Daniyal, 85). These texts deal with weather and medical prognostications derived from the astrological phenomena.
\end{flushleft}


\textsuperscript{236} References to Greek narrators can be found in Anonymous, Kitāb Hirmis, Egyptian National Library, Ms. 132 DM; Ms. DM 502; Anonymous, Hādhā kitāb malḥamah, Staatsbibliothek zu Berlin, Ms. Spr 1936 (5912); National Library of France, Ms. Arabe, 2578, Ms. Arabe 2579.

\textsuperscript{237} As mentioned above, we can find some fractions of Malḥamah in Lydus, Liber de Ostentis and Boll, Catalogus, 167f.
Although there is no thorough verbal congruence between the Greek texts and *malḥamah*, there is a substantial agreement in their structure and specific points, especially regarding the types of calamities listed in them.

Based on this information, I conclude that the *malḥamah*, inspired by a diversity of influences, lacks a direct literary link, but drew inspiration from several, many of which I have identified above. Concepts that were modified during the Hellenistic period originated in ancient Mesopotamia. During the course of its origination, this ancient connection with the classics was bequeathed by the Arab scholars of the ʿAbbāsid period to the authors of later centuries, like Ibn Zunbul. The universal desire to predict and possibly avert future disastrous events\textsuperscript{238} ensured both the survival of this ancient tradition

\textsuperscript{238} In the Assyrian-Babylonian tradition appropriate rituals played a significant role for the aversion of disastrous events. (Koch-Westenholz, Mesopotamian Astrology, 13.) We do not have any evidence for similar rituals conveyed in the Arabic *malḥamah*, which does not mean that they do not exist. In the Arab culture magic, which ‘seeks to alter the course of events, usually by calling upon a superhuman force (most often God or one
and the subsequent development of the Arabic genre of astro-
meteorological *malḥamah* predictions.

It is also clear that the astro-meteorological *malḥamah* stand quite
apart from the apocalyptic *malḥamah*, with which it is often confused
in western secondary literature. The material’s actual function is
unknown, however, it can be assumed that people would believe in
warnings encased in astro-meteorological handbooks during times of
political crisis or natural disasters, as they were designed to
encourage and warn the believer, and to show him his place in God’s
plan.

During the Mamlūk period, Muslim scholarly interest in copying and
commenting upon the old traditions of *malāḥim* had received a new
impetus, a task that certainly helped to save this kind of material
from withering away. The existence of this astro-meteorological genre
reflects a contemporary social need for this kind of popular belief.

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of his intercessors),’ (Savage-Smith, Introduction, p. xiii.), plays a significant
role. The use of magic can be seen as an equivalent to the rituals. See, for
example, J. Ruska, Ḳazwīnīstudien, Islam 4 (1913), 19, 22.
The repetitive nature of predictions supported the deterministic character of this belief and helped people cope with disasters, which increased especially during the last decades of the Mamlūk reign.\(^\text{239}\) In particular, the belief in the astro-meteorological predictions foretelling the Nile’s level and the consequences this could have for the year,\(^\text{240}\) attest to the significance of this belief among the population.\(^\text{241}\)

\(^{239}\) See the discussion in *Chapter 5.8. Case Studies of Disastrous Droughts: Causes, Effects, and Cultural Responses*, p. 555f.


\(^{241}\) See more sources in K. Chalyan-Daffner, *Predictions of “Natural” Disasters in the Astro-meteorological Malḥamah Handbooks*, in *Occult*
Drawing conclusions, the importance of Ibn Zunbul’s *malḥamah* can be summarised as follows: It has preserved a pre-Islamic heritage—it is a relic of Assyrian-Babylonian omina and the Hermetic tradition of Late Antiquity—and was passed on as a matter of tradition. Its content contains a mixture of thoughts and ideas derived from various sources with evidence existing of its transformation from the Assyrian-Babylonian omina, Egyptian-Hellenistic, Greek, Jewish, and Coptic scripts. In addition, by finding its way into Arab tradition, the text has gone through various modifications. Equally important are the changes and adaptations of the perception of disasters to Mamlūk culture, beliefs, and history.

All this confirms that the astro-meteorological *malḥamah* absorbed, reflected, and modified interpretations of natural phenomena through the transference of transcultural knowledge. In this respect, Mamlūk authors like Ibn Zunbul reworked interpretations of disasters that they knew from pre-Islamic ancient cultures by adding new understandings gleaned during transcultural interactions.


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2.1. Introduction of Cosmographic Works

This chapter is devoted to the interpretations of natural hazards found in the Arabic cosmographic works of the Mamlûk period. Although no Mamlûk scholar identified himself as a “cosmographer,” nor is there any Arabic word at the time that corresponds to this term, I use it because the sources under scrutiny here treat topics that belong to the cosmographic genre. By giving a “general description of the world” and “the constitution of the whole order of nature,” this literature—defined by Syrinx von Hees in a specific context as “an Arabic encyclopaedia of natural history”—brings together not only

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information on physical aspects of natural phenomena, but also numerous fictional tales about why catastrophes happen.

Generally speaking, this genre covers subjects such as geography, meteorology, mineral, vegetable, animal and human world, ancient myths, stories of prophets, and famous architectural structures of world significance. It includes accounts of planetary motion, the recurrence of the seasons as well as natural disasters like earthquakes, excessive floods, and droughts. What is noteworthy here is that natural disasters in this context are usually referred to as “strange” (gharīb) “wonders of creation” (ʿajāʾib al-makhlūqāt).3 Since these terms often appear in the titles of books, western scholars classified this type of literature under the so-called genre of ʿajāʾib.4


4 von Hees, The Astonishing, 102.
In the following, I will present some of the major trends in the interpretation of natural disasters in these ʿajāʾib works, which offer a completely different focus from that conveyed in the previous chapter. The examination in this part will start with the definition and explanation of the constituent elements of the ʿajāʾib literature, before giving an overview of how Mamlūk authors of this genre treated catastrophes, namely not as disastrous events but as “marvellous oddities”—a term coined in the course of the research.

The purpose here is to draw attention to the development of two specific interpretative patterns, which elucidate another approach to natural disasters such as earthquakes, floods, and water-induced droughts. Firstly, there are the physical explanations of “marvellous oddities” based on the knowledge of Greek philosophers and early Muslim savants and, secondly, widely spread fictional explanations of these “oddities” by Muslim storytellers (qiṣaṣīyūn or qaṣṣāṣ).5

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In order to understand these two different interpretations of natural disasters in the Mamlūk writings, I will observe them from a transcultural perspective, that is to say, comparing the influence of foreign traditions, which played a significant role in their development and maintenance. The aim is to show how they were formed and to what extent their plots depended on their pre-Islamic counterparts. Therefore, the information presented in this chapter is not only drawn from the works of the Mamlūk scholars, but those of their Muslim ancestors, who ensured the continuity of the knowledge gleaned during the centuries of cultural encounters, exchange and entanglements.

2.2. The Arabic Literary Genre of ‘Ajā’ib wa-Gharāʾib: Disasters as “Marvellous Oddities”

In the medieval Arabic and Persian literature, we frequently come across the terms ‘ajā’ib and gharāʾib (“marvels” and “oddities”). They not only appear in the body of the texts,⁶ but in a large number of

titles.\textsuperscript{7} Both of these terms have a range of meanings depending on the context in which they appear.\textsuperscript{8} In general, \textit{ʿajāʿib}, the plural form of \textit{ʿajībah}, indicates “amazing,” “marvellous,” and “wondrous”\textsuperscript{9} things, referring usually to objects that exist in reality, and the term plays an important role in the context of a religious worldview, in the sense of something that astonishes. Here it designates the wonders of God’s creation (\textit{ʿajāʿib al-makhlūqāt}), to which all natural phenomena belong.\textsuperscript{10}

\begin{footnotesize}
\begin{enumerate}
\item von Hees, The Astonishing, 102.
\item von Hees, The Astonishing, 113.
\item von Hees, The Astonishing, 105–106.
\end{enumerate}
\end{footnotesize}
Likewise, the wonderful is often the strange and the inexplicable. This link is reflected in the term *gharāʾib*, the plural form of *gharībah*, which signifies not only “strange,” “uncommon,” “rare,” “unfamiliar,” “extraordinary” and “odd,” but also “astonishing, amazing, and marvellous” things or events. Both of these words were borrowed from categories which form the basis of at least two genres: (a) *ʿilm* (science, religious knowledge) and (b) *adab* (literature).

As a technical term in *ʿilm* (science, religious knowledge)—in *qurʾānic* and *ḥadīth* studies—the *ʿajīb* (wondrous) signifies God’s creation, its entities, and processes, viewed as part of God’s “signs.” As these signs play a significant role in the *Qurʾān*, studying the features of creation and the marvels of the world became one form of worshipping God.

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12 Wehr, Dictionary, 668.


Gharīb (“odd”) designates in this context rare and unfamiliar expressions in the Qurʾān and in Ḥadīth.15

In the second group of texts belonging to adab (literature) these terms spanned the scope of cognitive reactions to the extraordinary and unusual, with ʿajāʾib as the more encompassing term and gharāʾib as a rhyming complement rather than a denotative extension of it.16 The latter is probably positioned deliberately to evoke the readers’ attention.17


17 von Hees, The Astonishing, 102.
al-ʿAjāʾib and al-gharāʾib topics in adab (literature), which is under consideration here, had a long history in the Arabic sources. We can find them, for example, in the famous early ninth century A.D. Kitāb al-ḥayawān (Book of Animals) compiled by the well-known Arab prose writer al-Jāḥiẓ (d. 255/868–9). However, the best-known forerunner of this genre encompassing these motives is al-Qazwīnī’s (d. ca. 682/1283) ʿAjāʾib al-makhlūqāt wa-gharāʾib al-mawjūdāt (The Wonders of Creation and the Oddities of Existent Things). Mamlūk

20 Although al-Qazwīnī’s The Wonders of Creation is regarded as the archetype of ʿajāʾib literature, the origin of this genre goes back to the late twelfth century A.D. al-Qazwīnī’s predecessor Muḥammad Ibn Maḥmūd-ī Ṭūsī compiled a source with the similar content entitled ʿAjāʾib al-makhlūqāt. B. Radtke, Die älteste islamische Kosmographie Muḥammad-i Ṭūsīs ʿAğāʾib ul-maḥlūqāt, Islam 64 (1987), 279–286.
21 See about al-Qazwīnī footnote 63, p. 43.
22 In this book, which consists of two parts: ʿAjāʾib al-makhlūqāt (The Wonders of Creation) and Āthār al-buldān (The Ancient Monuments of
authors consulted this early thirteenth century A.D. work a lot, and in 
the western literature it is often referred to as the Cosmography 
because it covers all those topics with which a cosmographic work 
generally deals. In this book, al-Qazwini (d. 682/1283) gives a clear 
definition of these terms, showing an obvious distinction between 
them.

According to him, al-ʿajab (wonder, astonishment) is a source of 
“bewilderment to which a person is exposed because of the lack of

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Countries), al-Qazwini (d. ca. 682/1283) sets out to give a description of all 
the phenomena of the natural world. For more details about its content and 
structure see M. Goeje, Kazwini’s Cosmography (Book Review), Academy 1 
(1869/1870), 111. S. von Hees, al-Qazwini’s ‘ajāʾib al-makhlūqāt: An 
Encyclopædia of Natural History? in Organising Knowledge. Encyclopædic 
Activities in the Pre-Eighteenth Century Islamic World, ed. D. Pingree and H. 
Routledge 1985, 696–699. Radtke, Die älteste islamische Kosmographie, 
279.

23 See the topics of the cosmographic genre on p. 147.
knowledge about the cause of the thing or how it is affected.”

In this case, the “wonder” (al-ʿajab) is in particular the familiar, everyday occurrence of life such as the rising of the sun, the growing of plants and the digestion of food, whereas “strange,” “extraordinary,” and “odd” (al-gharīb) things occur rarely and stand in contradiction to normal things. Their occurrence can relate to the astral phenomena or the wondrous influence of prophets or saints through God’s power.

In al-Qazwīnī’s description, among other phenomena, the following events belong to the category of gharīb: tremors and earthquakes, thunderbolt, prediction of the soothsayers, appearance of comets (“stars with tails”), falling of meteors, out of season snowfall and hailstorm, transformation of a dry land into a sea and sea into a dry land, and monstrosity. All these events are called gharīb because


26 al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 9.

they are so extraordinary and rare that their causes are not immediately understood. Taking into consideration the obvious distinction between these terms it is henceforth plausible to define this genre, instead of just ‘ajā‘ib, as ‘ajā‘ib wa-gharā‘ib (“wonders and oddities”).

2.3. Disasters as “Marvellous Oddities” in the Cycle of Destruction and Revival (al-Fasād wa-al-Kawn)

This differentiation is typical of the Arabic genre of ‘ajā‘ib wa-gharā‘ib, as compared to the Western Medieval tradition of “wonders,” which does not make clear distinction between the “marvellous” and “odd”. (Cf. Daston and Park, Wonders, 10, 23–24, 40, 49–52, 57). Instead, in the western medieval tradition, we have another distinction for the modern English concept of “wonder,” which derives from the Latin concepts of “admiratio” “mirabilia” and “miracula.” The first, “admiratio,” refers to the emotion itself, the second, “mirabilia” (marvels), which, broadly speaking, corresponds to the Arabic ‘ajā‘ib wa-gharā‘ib, refers to mysteries or natural things of great significance, and the third, “miracula” (miracle), is done by God directly or through the saints outside the ordinary course of nature. See other details in Bynum, Wonder, 8. Savage-Smith, Introduction, xxix. Daston and Park, Wonders, 16.
“Marvellous oddities” like earthquakes, floods, droughts, and storms are treated as normal happenings in ʿajāʾib wa-gharāʾib literature. They reoccur over and over as a part of “God’s plan” also revealed in the Qurʾān 30:19, in which the earth is in constant process of transformation, which happens through periodical destruction and revival (al-fasād wa-al-kawn). Some of the Mamlūk scholars regarded this process as an ordered whole governed by natural laws. Although it is generally accepted that during the Mamlūk period interest in natural sciences (al-ʿilm al-ṭabīʿī) gradually diminished and the physical perspective of natural phenomena was not closely

29 Netton, “Nature as Signs,” 528–536. Qurʾān 30:19: “He [it is who] brings forth the living out of that which is dead, and brings forth the dead out of that which is alive, and gives life to the earth after it had been lifeless.” (Muḥammad, the Qurʾān, 619.) See also p. 181.


discussed, in their works we encounter allusions to the transformation theory and physical explanations of natural phenomena, derived from Aristotle’s (d. 322 B.C.) “natural philosophy.”


These theories, based on deductive methods and abstract reasoning, found their way into the Mamlūk ʿajāʾib wa-gharāʾib as well as historiographical literature\textsuperscript{34} through the works of earlier Arab scholars, who played a dominant role in the development of the sciences\textsuperscript{35} in Islam. Among these scholars are the following early Muslim savants of the ninth–eleventh century A.D.: Yahyā Ibn al-Bīṭrīq (d. ca. 215/830), Ḥunayn Ibn Ishāq (d. 262/876),\textsuperscript{36} al-Masʿūdī

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\textsuperscript{35} See some of the early Arab classifications of the fields of “science” in Kheirandish, Organizing Scientific Knowledge, 135–155, 143.

\textsuperscript{36} Both of these authors, Yahyā Ibn al-Bīṭrīq and Ḥunayn Ibn Ishāq, have paraphrased Aristotle’s Meteorology. See, for example, their physical
(d. 345/956), the anonymous tenth A.D. century authors Ḥikmat al-Ṣafā’ (“the Brethren of Purity”), al-Maḏawi (al-Muqaddasī) (d. ca. 390/1000 century), Ibn Sinā (Avicenna) (d. 428/1037), al-Bīrūnī explanations about the cause of earthquakes connected with the Aristotelian exhalation theory. Lettinck, Aristotle’s Meteorology, 183, 212. See also footnote 36, p. 31.


(d. 440/1048), and other scholars. It is well known that they widely used and commented on Aristotle’s Meteorology, which served as a basis for the evolution of meteorology (‘ilm al-āthār al-ʿulwīyah “science of the upper signs”) as a discipline. Hence the following pages are devoted to the discussion of these theories and their reflection in the Mamlūk sources.


41 See about al-Bīrūnī in footnote 35, p. 30 and his reflection of natural phenomena based on his own observations in al-Bīrūnī, Kitāb taḥdīd, 43–44.


43 Although this discipline was generally known as the “science of the upper signs” (‘ilm al-āthār al-ʿulwīyah), it not only covered meteorological subjects but also subjects of the subterranean core. Sezgin, Geschichte, vol. 7, 214. Lettinck, Aristotle’s Meteorology, 1.
According to Aristotle’s theory of the earth’s transformation,

“[…] the same parts of the earth are not always moist or dry, but they change according as rivers come into existence and dry up. And so the relation of land to sea changes too and a place does not always remain land or sea throughout all time, but where there was dry land there comes to be sea, and where there is now sea, there one day comes to be dry land.”44

These changes occur gradually under the influence of the sun. However, they follow an order and a cycle, “just as winter occurs in the seasons of the year, so in determined periods there comes a great winter of a great year and with it excess of rain.”45

Despite the similarities between these theories in the Greek and Arabic sources,46 the undefined “great year” in Aristotle’s citation

44 Aristotle, Meteorology, Book I, 18.
obviously caused some confusion. According to Godefroid de Callataÿ, the cycle which Aristotle (d. 322 B.C.) had in mind was the Great Platonic Year, a period in which all heavenly bodies would come back into conjunction. Plato (d. 347 B.C.) subdivided this period into ages separated from one another by major floods or conflagrations.47

What the Arab authors mean by the transformation cycle—as will become clear later in this chapter48—is the conjunctional “Great Year” consisting of 36,000 years, which corresponds to “the cycle of equinoctial precession.” Hipparchus presumably first identified it in the second century B.C. and Ptolemy (ca. d. 100 A.D.) then popularised it a few centuries later.49

47 de Callataÿ, World Cycles, 183.

48 See p. 175.

One of the earliest examples illustrating Aristotle's transformation theory, which is not specifically linked to the revolution of the sun but to subterranean movements of water, is conveyed in al-Masʿūdī's prominent work on history and geography Murūj al-dhahab wa-maʿādin al-jawhar and known as The Meadows of Gold and Mines of Gems. There he mentions that, according to the logicians (ṣāḥīb al-manṭiq), the earth is never the same: there is no spot on earth that is always wet or dry.

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50 Cf. Aristotle’s theory, p. 162f.

51 al-Masʿūdī, Murūj, vol. 1, 111. al-Masʿūdī (d. 345/956) does not identify who the logicians were. According to the definition taken from The Encyclopaedia of Islam, ʿilm al-manṭiq is the “science of logic”—also called the science of balance (ʿilm al-mizān), “because this is a means of weighing arguments (ḥud̲j̲ad̲j̲) and demonstrative proofs (barāhīn).” From this definition, which shows that ʿilm al-manṭiq is a method rather than a science itself, corresponding to the distinction made by Aristotle between “common axioms” and “entirely demonstrated conclusions,”—we can imply that ṣāḥīb al-manṭiq refer mainly to the classical Greek philosophers and their Arab followers, like those listed in footnotes 36–42, p. 159f. See also on ʿilm al-manṭiq R. Arnaldez, “Manṭiḳ,” The Encyclopaedia of Islam, vol. 6, Leiden:
Although this theory formed part of the common knowledge in the earlier Arab sources, only a few Mamlûk authors reflected on it. One of the Mamlûk representatives, who alluded to the transformation theory and discussed physical interpretations of natural phenomena, was al-Dimashqî (d. 727/1327).\(^{53}\) His book, *Nukhbat al-dahr fi ʿajāʾib al-barr wa-al-bahr (Selected Passages on Wonders of Lands and Seas)*,\(^{54}\) compiled in al-Qazwînî’s style,\(^{55}\) through nine chapters treats subjects of the ʿajāʾib wa-gharāʾib genre, such as knowledge of the shape of the world, descriptions of its regions with their peculiarities (mountains, seas, lakes, rivers, wells, springs, vegetation, ancient monuments, animals and human beings), regarded as “wonders of creation.”

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\(^{52}\) al-Masʿûdi, *Murūj*, vol. 1, 111.

\(^{53}\) See data about this author in footnote 64, p. 44.

\(^{54}\) al-Dimashqî, *Kitāb nukhbat al-dahr*, 3.

\(^{55}\) Dunlop, “al-Dimashḳî,” 291.
al-Dimashqī (d. 727/1327) opens one of the chapters about the formation of mountains and their indispensable function in nature\textsuperscript{56} with an introduction of a physical explanation, according to which, mountains and hills sometimes “come into existence as a result of earthquakes caused by winds which are accumulated under the earth. They sway underneath and lead to the rise of one part of it [earth] and the sinking of the other.”\textsuperscript{57}

Implicit in this explanation is, first, the theory of the cyclic transformation of the earth, causing creation and destruction interchangeably\textsuperscript{58} while, second, it delineates causes of an earthquake

\textsuperscript{56} See also about the function of mountains in Ibn Sīnā, \textit{al-Shifā\textasciiacute{}}. \textit{al-Ṭabī\textasciiacute{i}yāt. al-Ma\textasciiacute{ā}din wa-al-āthār al-\textasciiacute{u}lwīyah}, ed. by ‘A. Munta\textasciiacute{s}ir, vol. 5, al-Qāhirah: al-Hay\textasciiacute;ah al-‘ammah li-shu\textasciiacute{r}ūn al-ma\textasciiacute{ṭ}ābī\textasciiacute{i} al-amīrīyah 1385/1965, 10–12. Ibn Qayyim al-Jawzi\textasciiacute;yah, Miftāḥ dār al-sa\textasciiacute{ḍ}ādah, vol. 1, 226f. al-Nuwayrī, \textit{Nihāyat al-arab fi funūn al-\textasciiacute{a}dab}, vol. 1,1, al-Qāhirah: Ma\textasciiacute{ṭ}ābī\textasciiacute{i} Küstātsūmās wa-shurakā\textasciiacute{ḥ}u 1970, 218. al-Qazwīnī, ‘Ajā’īb al-makhlūqāt, 150–151.

\textsuperscript{57} al-Dimashqī, Kitāb nukhbat al-dahr, 84.

\textsuperscript{58} Aristotle, Meteorology, Book I, 18–21.
from a physical perspective. Both of these explanations go back to Aristotle’s *Meteorology*. To support and enliven his statement, al-Dimashqī (d. 727/1327) adds three stories about earthquakes and his own reflections on their effects. This inclusion of historical events in the ‘ajāʾib wa-gharāʾib genre with the purpose of elucidating his topic, distinguishes his approach from that of his predecessors.

The first earthquake he uses as an example to support his statement happened in Syria in 723/1323–4. According to al-Dimashqī (d. 727/1327), it rained little that year (723/1323–4) so that the sources of the wells almost dried out. Therefore, God sent an earthquake

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59 Aristotle, Meteorology, 36–42. Lettinck, Aristotle’s Meteorology, 209. See the details of physical explanations for earthquakes in *Chapter 2.4. Physical Explanations of Earthquakes Based on the Knowledge of Greek Philosophers and Early Muslim Savants of the Ninth–Eleventh Centuries*, p. 187.


during summer days. As a result, the wells sprang out and the rivers rose so much that they surpassed its usual amount by three or four times.  

62 He continues that “this is true. Strong winds sometimes overcome some parts of the earth laying them open, making holes and snatching everything on its way until they sink.”  

63 This example does not depict an earthquake as a disaster but as something which brings forth new sources of water, vital for the people to survive the drought.  

62 al-Dimashqī, Kitāb nukhbat al-dahr, 84.  

63 al-Dimashqī, Kitāb nukhbat al-dahr, 84. Cf. the references to the theories of Aristotle, Isidor of Seville and Albertus Magnus presented in Schenk, ‘... prima ci fu la cagione de la mala prodenza de’ Fiorentini...’ Disaster and ‘Life World,’ 365–369. 

al-Dimashqī (d. 727/1327) offers two more examples of earthquakes, not mentioned in any of the modern catalogues, to further support his statement. He says that an earthquake occurred near the mountain Aqra'\textsuperscript{65} (Syria)\textsuperscript{66} in 719/1320. Apart from this he reports that in this region there were more than three hundred olive trees which the wind uprooted and carried away with the dust to a remote place.\textsuperscript{67} In the same year, the wind swept away the nearby Monastery of St. Simeon (Dayr Sim'ān known also as Qal'at Sim'ān),\textsuperscript{68} along with its stones, monks and all that was inside it, including wheat, provisions, and cattle. Afterwards it seemed as if they never existed there and nobody had ever heard of them. According to him, a legal report

\textsuperscript{65} al-Dimashqī, Kitāb nukhbat al-dahr, 85.
\textsuperscript{66} al-Dimashqī, Kitāb nukhbat al-dahr, 23.
about this event was even written and presented to the Sultan al-Nāṣir Muḥammad Ibn Qalāwūn (d. 741/1341).\(^{69}\)

al-Dimashqī’s third story is even more impressive as he says that an earthquake led to the sinking of a mountain in Jerusalem near the wellspring of Farrūj (unidentified) in 700/1301, creating a deep ravine. He described the latter as one of the “marvellous wonders” (\textit{min al-ʿajab al-ʿajib}), called “the cave of wonder” (\textit{Maghārat al-ʿajab}), “which existed up until [his] lifetime.” The cave al-Dimashqī most probably refers to is Maghārat al-Shamūʿ, known among other names as the Soreq stalactite cave.\(^{70}\) The author described the cave by comparing it with an oblong, beautifully vaulted structure. The water

\(^{69}\) al-Dimashqī, Kitāb nukhbat al-dahr, 85. See about al-Nāṣir Muḥammad Ibn Qalāwūn footnote 127, p. 100.

\(^{70}\) It is surprising that this cave, described by the 14\textsuperscript{th} century author al-Dimashqī so picturesquely as a well-known place, was accidentally discovered in 1968 during rock-blasting for a nearby quarry and is nowdays a national nature reserve of Israel. See about this cave in M. Bar-Matthews et al. (ed.), The Eastern Mediterranean Paleoclimate as a Reflection of Regional Events: Soreq Cave, \textit{Earth and Planetary Science Letters} 166 (1999), 85–95.
in the cave dripped down from the sides, picturesquely shaping the stones underneath the drops which formed crystals of different colours and shapes.71

All of the three stories support al-Dimashqi’s statement that earthquakes occur from time to time, changing the surface of the earth, a process which causes, on the one hand, periodical destruction of some places and, on the other hand, initiating the creation of new mountains, hills and ravines. But this destruction is not necessarily envisaged in a negative sense. After all it replants trees, gives birth to mountains, and creates new sources of water and beautiful ravines. It even leads to the disappearance of “undesirable monks,” which must have been regarded more as a wonder than a disaster, at least from the Muslim perspective of the time. Such an attitude was obviously the result of the tensions between Muslims and Christians which would have been fresh in al-Dimashqi’s mind after the bloody conflict

71 al-Dimashqi, Kitāb nukhbat al-dahr, 85.
of the last crusades in 690/1291, which he must have experienced as a contemporary.\textsuperscript{72}

The idea that an earthquake causes changes on earth is also conveyed implicitly in the previously mentioned manuscript, \emph{The Book of Curiosities}.\textsuperscript{73} Its author mentions that “some earthquakes cause fires. Others fling out huge stones. Others cause springs to gush forth that were previously dry, while others desiccate springs that were flowing.”\textsuperscript{74}

\begin{flushright}

\textsuperscript{73} See p. 125.

\textsuperscript{74} Anonymous, Kitāb gharāʾīb, Bodleian Library, Ms. Arab. c. 90, fol. 21b.
\end{flushright}
“Sometimes these earthquakes occur under the sea, in which case they cause the sea to cast things from one place to another. Other times the waves roll up on top of each other, creating a huge wave that clashes into one spot and so the sea is transported onto the land. Yet other times it lifts things from the sea, causing springs to appear and rivers to flow. This occurs repeatedly in the depths of the sea until the water [sea level] swells and the waves dwindle.”

The Mamlûk chronicler Ibn al-Dawâdârî (687–736/1288–1336), who was al-Dimashqi’s contemporary, expressed in his chronicle

75 Anonymous, Kitâb gharâʾib, Bodleian Library, Ms. Arab. c. 90, fol. 21b.
similar views about the relationship between the natural phenomena and the periodical change of the earth. After depicting the effects of the historical disastrous earthquake of 702/1303, he devoted a separate chapter, explaining the causes of earthquakes:

“It is claimed that mountains appear when water and clay combine under the heat of the sun. What concerns the cause for their rising high, it could happen because of shaking caused by an earthquake (zalzalah) with a tremor. Some regions sink whereas others arise. What has ascended turns into stone, as it was mentioned in the first example [described previously]. It can also happen, when the wind takes the dust from one place to another making hills and lowlands. Then it becomes hard as stone just as it has been mentioned in the first example.

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77 This earthquake will be discussed in detail in Chapter 4.4. The Disastrous Earthquake of 702/1303: A Comprehensive Account of Effects and Attitudes, p. 323.
The author of the Almagest said that every 36,000\textsuperscript{78} year stars change their directions and make one circle within the twelve zodiacal signs. When they move from the north to the south, poles of the stars as well as projections of their rays on parts of the earth change. Night and day, four seasons and the earth [also] undergo change so that the populated lands devastate. Lands turn into sees, sees into lands; plains turn into mountains, mountains into plains [...].

Sometimes the sea turns into a dry land and a dry land turns into a sea because the more the part of the sea rises, as it was mentioned, the more the water rises. It flows over its banks and covers some of the land with water. This continues that way until a land turns into a sea [...].\textsuperscript{79}

This passage must have been drawn almost word for word from al-Qazwini’s ‘Ajā‘īb al-makhlūqāt.\textsuperscript{80} It is noteworthy that al-Qazwini (d.

\textsuperscript{78} Cf. p. 163.


\textsuperscript{80} al-Qazwini, ‘Ajā‘īb al-makhlūqāt, 149–150.
682/1283) regards these changes on earth as “marvellous events” (ḥawādith ʿajībah), which occur in the world during the regular repetition of years, “with the appraisal of the all-knowing and almighty God.” In comparison to al-Dimashqī (d. 727/1327), who also treats these events as wonders, Ibn al-Dawādārī (d. 736/1336) and al-Qazwīnī (d. 682/1283), by mentioning Ptolemy’s Almagest, connect the transformation of the earth with the astral phenomena, a theory that was especially popular in the earlier period of Islam.

We can find it in one form or another in the anonymous writings of the tenth A.D. century Ikhwān al-Ṣafāʾ (“the Brethren of Purity”), al-Bīrūnī (d. 440/1048), Ibn Sīnā (d. 428/1037), and al-Masʿūdī (d.

81 al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 87.
82 Ptolemy, Ptolemy’s Almagest.
83 al-Ṣafāʾ, Ichwān es-Safā, 66f. de Callatay, World Cycles, 188. See also footnote 38, p. 160.
Some of them also held celestial movements responsible for the changes on earth and linked these changes to Ptolemy’s “cycle of equinoctial precessional cycle,” consisting of 36,000 solar years, which were required for the transformation of mainlands and seas.

Likewise important for the transformation of the world in this theory is the revolution of the Sun through the signs of the Zodiac. According to al-Bīrūnī (d. 440/1048), this process brings order out of chaos and generates, among other things, greater cycles governing historical and geological changes. In his book on India, al-Bīrūnī (d.

86 al-Mas‘ūdī, Murūj, vol. 1, 111. See about al-Mas‘ūdī footnote 37, p. 160.
87 See p. 163.
88 de Callataÿ, World Cycles, 185–187.
89 See about al-Bīrūnī footnote 35, p. 30.
440/1048) clarifies this notion further by citing the opinion of the “ancient Greeks”:91

“The catastrophe 92 comes on like a deluge or an earthquake, bringing destruction either by the breaking in of the surface, or by drowning with water which breaks forth, or by burning with hot stones and ashes that are thrown out, by thunderstorms, by landslips, and typhoons; further by contagious and other diseases, by pestilence, and more of the like. Thereby a large region is stripped of its inhabitants, but when after a while, after the disaster and its consequences have passed away, the country begins to recover and to show

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91 al-Bīrūnī, India. The Land and the People. Abridged Edition of E. Sachau’s English Translation, ed. by Q. Ahmad, New Delhi: National Book Trust 1993, 175. al-Bīrūnī (d. 440/1048) does not identify whose opinions he specifically means. He simply refers to the opinions of “the ancient Greeks,” most probably having in mind the opinions of the Greek philosophers.

92 In the original text, the Arabic plural form of the word “catastrophe” (al-āfāt) is used. al-Bīrūnī, Kitāb al-Bīrūnī fi taḥqīq mā lil-Hind, Ḥaydar Ābād: Maṭba‘at majlis dā‘irat al-ma‘ārif al-‘uthmāniyah 1377/1958, 317.
new signs of life, then different people flock there together like wild animals, who formerly were dwelling in hiding-holes and on the tops of the mountains. They become civilized by assisting each other against common foes [...].”

What is most striking about this passage is the shift of focus from purely physical discussion of natural phenomena to their social impact, something which is absent in ʿajāʾib wa-gharāʾīb works. In al-Bīrūnī’s discourse, a natural phenomenon acquires a new, social significance. He calls natural hazards catastrophes, which influence the rhythm of history and the rise and fall of civilisations. This perception partially reflects the ideas of the prominent Mamlūk scholar Ibn Khaldūn (d. 808/1406) when he spoke in his famous Muqaddimah about the causes of the rise and fall of cities and dynasties. Calling a natural phenomenon a disaster emphasises the difference between the discourses on natural disasters in ʿajāʾib wa-gharāʾīb literature—which treats them as God’s “marvellous


94 See about Ibn Khaldūn footnote 73, p. 85.

oddities”—and in the historiographic genre, to be presented in Part II of this thesis, which is more concerned with the social impact of disasters.

The main conclusion to be drawn from the above analysis is that the reception of classical Greek heritage on natural phenomena did not end during the Mamlūk period, as is generally accepted. Apart from the early Arab sources, which served as a basis for the Mamlūk authors, we even have references showing the direct transmission of Greek thought into the sources of the Mamlūk period. The evidence presented here highlights the continuity of the knowledge transfer as having foreign roots.

Ancient Greek theories and Islamic revelation shaped knowledge about natural phenomena in the ʿajāʾib wa-gharāʾīb works, elaborating it into a system of its own. The few Mamlūk narrators of Aristotle’s

96 See footnote 32, p. 158.
97 See the diagram of winds with Greek names for the types of wind, written in Arabic letters in Anonymous, Kitāb gharāʾīb, Bodleian Library, MS. Arab. c. 90, fol. 21b.
theory were stimulated, on the one hand, by their Arab ancestors who favoured classical Greek heritage; on the other hand, they found legitimation for this theory in the Qurʾān, which emphasises the marvels of God’s creation and their role in the governing of these cycles. After all, “He [it is who] brings forth the living out of that which is dead, and brings forth the dead out of that which is alive, and gives life to the earth after it had been lifeless” (the Qurʾān 30:19). 98

2.3.1. Cycles of Destruction and Revival in Other Cultures

An interesting parallel to the idea of the earth’s transformation, though in a more complex form and referring to the destruction of the whole universe by a cataclysm, can be found in other cultures. 99 The most prominent example of this belief is the universally known

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98 Muḥammad, the Qurʾān, 619.

doctrine of the deluge. One of the earliest cyclic theories of ever-renewing world-ages goes back to the Babylonian conception of the universe. The cyclic theory was current among the Pythagoreans and

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was introduced into Greece by Berosus (ca. 290 B.C.), a Babylonian priest.\textsuperscript{101} The traces of this theory, which shows that much of the world was subject to decay as well as growth, can be seen in the cosmology of Ancient Egypt,\textsuperscript{102} in the religion of the Avesta,\textsuperscript{103} in Indian mythology\textsuperscript{104} and the myths and doctrines of different cultures.\textsuperscript{105} This theory was founded on the belief that, “after the analogy of day and night, of the waxing and waning of the moon, and of the eternal round of the seasons, the entire Universe itself is subject

\begin{footnotes}
\footnote{103}{Avesta is a collection of sacred texts of Zoroastrianism composed in the Avestan language. J. Rypka, \textit{Iranische Literaturgeschichte}, Leipzig: Otto Harrassowitz 1959, 7.}
\footnote{105}{Gray, Jeremias et al., “Ages of the World,” 184f.}
\end{footnotes}
to an ever-recurring circle of change,” which goes through phases of creation and destruction.\textsuperscript{106}

While looking for analogies in other cultures,\textsuperscript{107} one notices that the idea of cyclic renewal of the earth developed even further: for example, Hindu\textsuperscript{108} and Buddhist\textsuperscript{109} systems agree that the universe

\textsuperscript{106} Gray, Jeremias et al., “Ages of the World,” 197.

\textsuperscript{107} See, for example, the Mexican mythology in V. Garcia-Acosta, Risks and Disasters in the History of the Mexico Basin: Are they Climatic or Social?\textit{The Medieval History Journal} 10/1&2 (2007), 133.

\textsuperscript{108} Orthodox Hindus recognise four Ages of the World (\textit{yugas}). (Gray, Jeremias et al., “Ages of the World,” 200). See more on the Hindu ancient literature of the period of epic (A. Keith, Indian Mythology, in \textit{The Mythology of all Races}, ed. L. Gray and G. Moore, Boston: Marshall Jones Company 1917, 103.) In the Vedic cosmology, we find that the universe goes through cycles of creation and destruction. In the \textit{Purāṇas} these cycles are assumed to be of 8,64 billion years. S. Kak, Greek and Indian Cosmology: Review of Early History, \textit{History of Physics} (2003), 4. Mackenzie, Indian Myth.

\textsuperscript{109} The notions of the Buddhists about the Ages of the World are similar to those of the orthodox Hindus. (Gray, Jeremias et al., “Ages of the World,”
moves in vast cycles, each of which contains four ages, and which have been and are to be repeated in infinite succession.\footnote{110} Thus they disagree as to whether these cycles go on forever.\footnote{111} In this process, the four major material elements in all things—earth, water, fire and earth—play a significant role. Any disturbance in their balance has an effect on the world and if the balance is severely disturbed the result is a cosmic disaster whose nature is determined by one of the elements that has gained prevalence.\footnote{112} Hence it is believed that major periods end in the destruction of the universe by fire or water.\footnote{113}

\footnote{202, 188.) In the Buddhist conception of China and Japan, the universe is also in a state of perpetual cyclic change. James, Creation and Cosmology, 47–48.}


\footnote{112} Gray, Jeremias et al., “Ages of the World,” 199.

\footnote{113} Gombrich, Ancient Indian Cosmology, 119–120.
One can therefore conclude from the preceding discussion that, according to the belief held in ancient cultures, the universe changes perpetually and goes through cycles of gradual creation and destruction. In this plan, floods, earthquakes, droughts and other phenomena play a crucial role, and some authors of the Mamlûk period, especially those who valued the findings of the Greek philosophers and their own observations, regarded natural disasters as indispensable for this process. In their ʿajāʾib wa-gharāʾib works, they observed catastrophic events from the perspective of nature and its laws—which caused changes on the earth—indepedent of their damaging effects on human beings. For this reason these authors did not treat them as disasters but instead classified them under the category of “marvellous oddities” or “marvels of God’s creation,” which can be understood through minute observation.\footnote{al-Qazwînî, ʿAjāʾib al-makhlûqāt, 5–11.}

Another remarkable aspect is that the theory about the periodical changes of the earth has existed in various forms in different cultures,\footnote{See footnotes 101–113, p. 183.} which emphasises both its “commonness” and its
“transculturality.” However, in the Arab–Mamlūk sources, “marvellous oddities” which are responsible for the change of the world had no universal consequences, as is the case, for example, in the Buddhist or Hindu doctrines. Moreover, in the ‘ajāʿib wa-gharāʾīb works the catastrophes do not annihilate the entire world, ensuring an essentially new creation. Instead, the change happens gradually at regional levels, without any implication to religious doctrines. This approach partially resembles Aristotle’s view, which also rejects the universal implication of such catastrophes. Though for him the universe is eternal: there is no coming into existence or perishing.116

2.4. Physical Explanations of Earthquakes Based on the Knowledge of Greek Philosophers and Early Muslim Savants of the Ninth–Eleventh Centuries A.D.

Apart from the transformation theory to elucidate the causes of natural disasters, early Mamlūk authors like al-Ṭīfāshī (d. 651/1253),117 al-Qazwīnī (d. 682/1283),118 al-Dimashqī (d. 116 Aristotle, Meteorology, Book I, 20.

117 al-Ṭīfāshī, Surūr al-nafs, 326. See about al-Ṭīfāshī footnote 62, p. 43.
727/1327), Ibn Qayyim al-Jawziyyah (d. 751/1350), (d. 911/1505), and Ibn Iyās (d. ca. 930/1524) discussed the physical causes of specific phenomena, like earthquakes or floods in ‘ajā‘ib wa-gharā‘ib works. By treating physical explanations of earthquakes, primarily based on Aristotle’s Meteorology, some of them wished to

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119 al-Dimashqī, Kitāb nukhbat al-dahr, 84. See about al-Dimashqī footnote 64, p. 44.
120 Ibn Qayyim al-Jawziyyah, Miftāḥ dār al-saʿādah, vol. 1, 229. See about Ibn Qayyim al-Jawziyyah footnote 65, p. 44.
123 See the perception and interpretation of Nile floods in ‘ajā‘ib wa-gharā‘ib genre in Chapter 5.3. The Nature of the Nile, p. 424.
124 Aristotle, Meteorology, 36–42. See also references to ancient theories on the causes of earthquake in Guidoboni and Ebel, Earthquakes and Tsunamis, 147f. G. Waldherr, Erdbeben: das außergewöhnliche Normale; zur Rezeption
show their familiarity with Greek philosophy, stemming from the works of early Muslim savants of the ninth–eleventh centuries A.D. Some of the authors, such as for example, al-Suyūṭī (d. 911/1505), included these interpretations as a form of critique and a means of disagreeing with non-Islamic theories. The choice of explanation thus depended much on the authors’ interest and educational and social background.

According to the widely spread view among these Mamlūk scholars, earthquakes happened either because of vapours or winds, circulating under the surface of the earth and striving to break through. Here is how Ibn Iyās (d. ca. 930/1524) presents this process in the

\[seismischer\ Aktivitäten\ in\ literarischen\ Quellen\ vom\ 4.\ Jahrhundert\ v.\ Chr.\ bis\ zum\ 4.\ Jahrhundert\ n.\ Chr.,\ Stuttgart:\ Steiner\ 1997,\ 47f.\]

125 Ibn Qayyim al-Jawziyyah, Miftāḥ dār al-saʿādah, vol. 1, 229. See about Ibn Qayyim al-Jawziyyah footnote 65, p. 44.

126 See footnotes 36–42, p. 159f.


128 See about this Mamlūk author in footnote 215, p. 132.
unpublished manuscript Nashq al-azhār fi ʿajāʾib al-aqṭār (Smell of the Flowers in the Wonders of Lands), which emphasises the function of vapour:

“In the Greek books, the earthquake (al-zalzalah) and the sinking (al-khasf)¹²⁹ happen because of the vapour which accumulates under the earth and is not exposed to coldness so that it can turn into water. This substance is in huge amount and is not dissolvable with the heat. The surface of the earth is hard, does not have holes, and pores. And when the vapour strives to rise and does not find holes and pores, areas of the earth shake because of it. It [the earth] shivers like a feverish body suffering high temperature because of moisture and rottenness of the earth detained in the limbs of the body.¹³⁰ It does not stop trembling until this rottenness comes out of it.

¹²⁹ See also p. 364.

And this is what Greek philosophers reported [...]. But God knows better the truthfulness of this.”131

This passage seems to be the shortened version, probably adopted from al-Qazwinī’s ʿAjāʾib al-makhlūqāt.132 However, in contrast to al-Qazwinī (d. 682/1283), who often presented longer explanations accompanied by tales, Ibn Iyās (d. ca. 930/1524) sticks to the basic information, in order to keep his ʿajāʾib wa-gharāʾib encyclopaedic work short. We also find a similar explanation in al-Tīfāshī’s book, compiled in the form of qaṣīdah (poetic verse), in which vapour (bukhārī) is the element that causes an earthquake.133

Concerning the approach, which holds winds responsible for earthquakes, two reports stand out. One is Ibn Qayyim al-Jawziyāh’s description, which links the occurrence of winds (rīyāḥ) as causes of earthquakes to God’s wrath sent to frighten people and make them

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131 Ibn Iyās, Nashq al-azhār, fols. 462–463.

132 Cf. al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 149ff.

133 al-Tīfāshī, Surūr al-nafs, 326.
repent their sins.\textsuperscript{134} This theological expansion of the physical explanation derives from the latter’s specific interest and motivation as a theologian of the Ḥanbalī religious school.\textsuperscript{135}

The other report, relating the causes of earthquakes to winds, is the previously mentioned anonymous \textit{Book of Curiosities},\textsuperscript{136} copied by an Egyptian or Syrian scribe in the thirteenth or fourteenth century A.D. Emilie Savage-Smith’s translated version of this passage goes as follows:

“When the disruptive winds over time grow very strong inside the earth, and they break out from their [trapped] position and tremble and move about, they shake the earth above them. When these winds are abundant and forceful, and they leave their place so that all of them rise at the same time, then they are [called] \textit{al-rajīyah}. May God protect us from His wrath.”\textsuperscript{137}

\textsuperscript{134} Ibn Qayyim al-Jawziyah, \textit{Miḥṭāḥ dār al-sa‘ādah}, vol. 1, 229.

\textsuperscript{135} See biographic data on Ibn Qayyim al-Jawziyah in footnote 65, p. 44.

\textsuperscript{136} See p. 125.

\textsuperscript{137} Anonymous, \textit{Kitāb gharāʾib}, Bodleian Library, Ms. Arab. c. 90, fol. 21b.
Emilie Savage-Smith draws attention in her translation to a probable spelling error of the term *al-rajīyah*. In fact, it may refer to the specific type of earthquake which Ibn Sīnā (d. 428/1037)\textsuperscript{138} called *al-rajfiyah*. From the latter’s classification, we learn that earthquakes differ depending on the motion of the enclosed wind which he describes in detail. Accordingly, some earthquakes are like a throb called a *rajfiyah*, or like a tremor *ikhtilājīyah ʿaraḍīyah riʿshīyah*, while others are known as *qitqit* and *sullamiyah*.\textsuperscript{139}

\textsuperscript{138} See about Ibn Sīnā footnote 34, p. 29.

\textsuperscript{139} Ibn Sīnā, *al-Shifāʾ*, vol. 5, 19. Lettinck, Aritstotle’s Meteorology, 220. Ibn Sīnā also adopted the Aristotelian vapour and exhalation theory. However, he emphasised that an earthquake may also be caused by flowing water or collapsing earth, air, or fire (Ibn Sīnā, *al-Shifāʾ*, vol. 5, 15f.), which are essential elements, mentioned in Aristotle’s *Meteorology* with regard to the theories of Anaximenes of Miletus, Anaxagoras of Clazomenae and Democritus of Abdera. Aristotle himself points out that “the true cause [of earthquakes] is the wind,” while water and collapsing earth, which have been known to cause earthquake, are only “material causes (being patients, not agents).” Aristotle, Meteorology, 36, 40.
As both Ibn Iyās (d. 930/1524) and the anonymous Egyptian author mention, these interpretations indeed reflect classical Greek theories of earthquakes. They are presented not only in Aristotle’s *Meteorology*,\(^\text{140}\) which has a chapter about the causes of earthquakes and the signs preceding them, but also in Arabic excerpts from Theophrast’s\(^\text{141}\) meteorological work\(^\text{142}\) and in Qusṭā Ibn Lūqā’s (d. ca. 300/912–3)\(^\text{143}\) Arabic translation of the *Placita Philosophorum*

\(^{140}\) Aristotle, Meteorology, 36–42. Lettinck, Aritstotle’s Meteorology, 209.

\(^{141}\) Theophrast/Theophrastus (d. ca. 282 B.C.) was a Greek scholar, who was Plato’s and Aristotle’s student. H. Baltussen, “Theophrastus,” *Encyclopedia of Philosophy*, vol. 9, Detroit: Thomson Gale 2006, 411–412.


(Opinions of the Philosophers).\textsuperscript{144} The latter was attributed to Plutarch, the Greek scholar of the second century A.D., but was most probably compiled by Aetius Arabus (ca. 150 B.C.).\textsuperscript{145} It includes Aristotle’s recast theory of the causes of earthquakes and other opinions about them not specifically mentioned in Aristotle’s \textit{Meteorology},\textsuperscript{146} such as the views of the Greek philosophers Thales of Miletus (d. ca. 546 B.C.), Metrodoros,\textsuperscript{147} Parmenides (fifth century B.C.), Plato (d. ca. 347 B.C.), and Epicurus (d. ca. 270 B.C.).

\textsuperscript{144} See more about this compendium in H. Daiber, \textit{Aetius Arabus. Die Vorsokratiker in arabischer Überlieferung}, Wiesbaden: Franz Steiner Verlag 1980, 1–2.


\textsuperscript{146} According to Aristotle, “the theories [of earthquakes] that have been put forward up to the present date are three, and their authors three men, Anaxagoras of Clazomenae, and before him Anaximenes of Miletus, and later Democritus of Abdera.” Aristotle, Meteorology, Book I, 36.

\textsuperscript{147} Several Greek historical figures had the name Metrodoros. Here it is not clear, which one the author of the \textit{Placita Philosoporum} means.
These purely physical observations, like the theory about the transformation of the earth, also found their way into Mamlūk ʿajāʾib wa-gharāʾib works through Yaḥyā Ibn al-Biṭrq (d. 214/830), Ḥunayn Ibn Ishāq (d. 260/873),148 al-Maqdisī (al-Muqaddasī) (d. ca. 390/1000 century),149 and Ibn Sinā (Avicenna) (d. 428/1037).150 All of them adopted the Aristotelian vapour and exhalation theories,151 in which the latter emphasises that “not water nor earth is the cause of earthquakes but wind—that is the inrush of the external evaporation into the earth,” and the strongest driving force capable to shake it.152 al-Tīfāshī (d. 651/1253), al-Qazwīnī (d. 682/1283) and Ibn Iyās (d. 930/1524), who mention only vapours as the driving force, either miss this point or imply it. al-Dimashqī (d. 727/1327), Ibn Qayyīm al-

148 See Yaḥyā Ibn al-Biṭrq’s and Ḥunayn Ibn Ishāq’s physical explanations about the cause of earthquakes connected with the Aristotelian exhalation theory in Lettinck, Aristotle’s Meteorology, 183, 212.

149 al-Maqdisī, al-Bad’ wa-al-taʾrīkh, 36.

150 Ibn Sinā, al-Shifā’, 15f.

151 Aristotle, Meteorology, 36–42.

152 Aristotle, Meteorology, 36.
Jawzīyah (d. 751/1350) and the anonymous Egyptian author, mainly focus on the theory of winds when describing the causes of earthquakes. The anonymous Egyptian author even includes a diagram of winds\textsuperscript{153} in his work with their Greek names spelled out in Arabic, thus showing the importance of Greek sources in the interpretation of natural phenomena. This diagram of winds is remarkable as it implies the direct influence of Greek theories until the Mamlūk period when the manuscript was copied.

Nonetheless, regardless of the ʿajāʾib wa-gharāʾib books which presented these views, physical explanations of earthquakes did not enjoy wide acceptance especially among the Mamlūk theologians (ʿulamāʾ). These interpretations even aroused hostile attitudes as we can see from al-Suyūṭī’s treatise on earthquakes and from the treatise of his follower Ibn al-Jazzār (d. after 984/1576). Both of them were arduous opponents of Greek theories, calling them corrupt and reprehensible,\textsuperscript{154} an attitude which derived from their own personal

\textsuperscript{153} See Anonymous, \textit{Kitāb gharāʾib}, Bodleian Library, MS. Arab. c. 90, fol. 21b.

\textsuperscript{154} al-Suyūṭī, Kashf al-ṣalālah, 136. Ṭāhir, Taḥṣīn al-manāzil, 143.
interests and social backgrounds, as they were more interested in interpretations in which God was the only force mentioned. More neutral positioning can be seen in the works of Mamlūk encyclopaedists, who completely eschewed making references to this theory in their chapters on ʿajāʾib wa-gharāʾib. This restraint from mentioning any of these well-known physical interpretations was because the evident acquisition of ancient Greek knowledge was regarded as disputable.

This attitude may also be the reason why it is generally claimed that the scientific approach declined during the Mamlūk period. In view of all these texts, however, we should refine this argument by stating that in comparison to the earlier periods of Islam, when books on natural phenomena flourished, we can find no outstanding treatise


156 See footnote 32, p. 158.

that focuses on a physical view of earthquakes produced in the Mamlūk period, let alone new observations or extensions of Aristotelian theories. However there is a definitive innovation that Mamlūk sources do convey: namely, that physical explanations seeped into the most thriving genre of the time, the Mamlūk chronicles. The best examples of this are found in the previously mentioned chronicle of Ibn al-Dawādārī (d. after 736/1336)\textsuperscript{158} and the work of the Coptic historian Mufaḍḍal Ibn Abī al-Faḍāʾīl (d. ca. 759/1358).\textsuperscript{159} Their depictions of the disastrous earthquake of


702/1303 in Egypt, an event which was treated in much detail in most of the Mamlūk chronicles, consist not just of a straightforward account of what happened—a typical form of narration in this genre—but are accompanied by a physical explanation of an event in which they connect their description of an earthquake with the exhalation theory, probably adapted from al-Qazwini’s ʿajāʾīb wa-gharāʾīb work.

The inclusion of topics from the ʿajāʾīb wa-gharāʾīb genre, which do not only cover purely physical observations of natural phenomena, was an attempt to slacken the factual narrative frame of the Qalqashandi (d. 821/1418), and al-Maqrizi (d. 845/1442). (Ibn Abī al-Faḍāʾil, Ägypten und Syrien zwischen 1317 und 1341, 7–8.) See more on some characteristic features of his chronicle in Haarmann, Quellenstudien, 142f.

160 See the detailed discussion of this disastrous earthquake in Chapter 4.4. The Disastrous Earthquake of 702/1303: A Comprehensive Account of Effects and Attitudes, p. 323f.

161 See p. 147 and Chapter 2.5. Interpretation of Earthquakes in “Marvellous” Stories of ʿAjāʾīb wa-Gharāʾīb Genre, p. 204f.
historiographical genre thus making it more attractive to a wider audience.\textsuperscript{162} This becomes evident from the title of Ibn al-Dawādārī’s explanatory section on physical causes of earthquakes: \textit{Min kitāb ʿajāʾib al-makhlūqāt wa-badāʾīc al-mawjūdāt} (The Wonders of Creation and the Marvels of Existent Things).\textsuperscript{163} Unsurprisingly, this title does not contain any explicit reference to Greek philosophers and their theories.

We can thus conclude that those authors who found physical explanations worth including in their works wished to stimulate their readers to look at the alternatives, which entailed the desire to investigate. Such an approach left room for reasoning (\textit{fikr al-\textit{maʿqūlāt}) which, as al-Qazwīnī (d. 682/1283) states in his book, “is given only to someone who has thorough knowledge of sciences and mathematics along with the refinement of character and cultivation of the spirit. This opens one’s eye of mental perception, and one sees

\textsuperscript{162} Little, Data on Earthquakes, 137–138.

\textsuperscript{163} Ibn al-Dawādārī, Kanz al-durar, vol. 9, 108.
in every object something wonderful.”164 However, to avoid the criticism of the ‘ulamā’, who could be affronted by the inclusion of physical explanations, most of these authors relativised them by referring, usually at the end of the message, to almighty God as the Master of all sciences. After all, God was for them the only one who could discern the truthfulness of any knowledge.165 Aristotle’s reasoning, however, did not exclude God’s evidence, as his following thoughts underline: “(1) God is thought to be among them causes of all things and to be a first principle, and (2) such a science either God alone can have, or God above all others.”166 The references by Mamlūk authors to God harmonised and brought knowledge which

164 al-Qazwīnī, ‘Ajā’ib al-makhlūqāt, 4. Cf. the citation of the Italian astronomer, doctor and clock-maker Giovanni Dondi (d. 1388 A.D.) in Daston and Park, Wonders, 135. According to him, Aristotle also expressed the view that in “every natural phenomenon there is something wonderful—rather, many wonders.” See the references to Aristotle in Daston and Park, Wonders, 135.

165 von Hees, The Astonishing, 106.

evidently had foreign roots into conformity with Islamic traditions and thought.

This point suggests that the genre of ʿajāʾib wa-gharāʾib definitely treated subjects of philosophical lore, as opposed to the widely spread opinion of the western scholars. The latter thought that ʿajāʾib, as the word itself implies, covered only unreal and fictional themes, an aspect which encouraged them to regard the whole genre as unscientific.\(^{167}\) However, the examples provided above and the Aristotelian words cited from his *Metaphysics*, best refute this perception “for it is owing to their wonder that men both now begin and at first began to philosophize.”\(^{168}\)

Indeed, the awareness of the wonders of creation was the first step towards the acquisition of universal knowledge about natural phenomena. Since the ʿajāʾib wa-gharāʾib topics were of global

\(^{167}\) von Hees, al-Qazwīni’s ʿajāʾib al-makhlūqāt, 104–106.

common interest, the authors of the Mamlūk period could not dispense with them. Yet they treated them selectively. The choice of whether to include physical explanations or not depended much on the authors’ personal and professional interests, as presented above. This fact underpins Ansgar Nünning’s theory in which the narratology of any event “is a product of selection, abstraction and distinction,” dependent not only on the observer’s (narrator’s) temporal and spacial perception but also on his/her “ideological perspective” i.e. values and norms.170

2.5. Interpretation of Earthquakes in “Marvellous” Stories of ʿAjāʾib wa-Gharāʾib Genre

As I mentioned at the beginning of this chapter, the majority of Mamlūk authors of the ʿajāʾib wa-gharāʾib genre included stories of marvels alongside physical interpretations of natural disasters. These

169 Nünning, Krise als Erzählung und Metapher, 121. See also footnote 71, p. 48.

170 Nünning, Krise als Erzählung und Metapher, 130.
stories have a fictional core and are based on beliefs rather than on physical observations of natural phenomena. Such an approach has been known since the dawn of humankind: in the process of making sense of catastrophic events, different civilisations have looked for answers in ancient tales. Accordingly, this subchapter explores fictional interpretations as to why certain events, in particular earthquakes, occur. What is noticeable here is that these explanations not only appear in the ‘ajāʾib wa-gharāʾib genre but also in the stories of the prophets, in hadith, tafsīr (qurʾānic commentaries), history and mysticism.

In most cases marvellous stories about earthquake causes are taken from the myths of creation or the so-called “cosmological myths” popular among the Muslim qaṣṣāṣ, reciters of stories (qiṣaṣ) of


marvels for entertainment. As traditional narratives of “collective significance,” they explain the creation of the world and its order using a purely fictional narrative, as opposed to the accounts presented in the previous chapters. These stories of marvels—

wa-al-ta’rīkh, 47. D. Macdonald, Job and Muslim Cosmography, *The American Journal of Semitic Languages and Literatures* 15/3 (1899 April), 168.


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mediating “between self and world,” and evoking order and meaning\textsuperscript{176}—usually show how human beings perceive natural phenomena and the world in which they live in a symbolic and picturesque way.

To better understand these stories, we first need to delineate the general Islamic perception of the universe, which took a great variety of forms and interpretations. Then we will delve into the backgrounds of these stories and detect the symbolic features conveyed in them by exploring their interrelations with early Islamic traditions and the traditions of other cultures. In order to understand the place these stories had in the Mamlūk ʿajāʾib wa-gharāʾib genre, such as the works of al-Qazwini (d. 682/1283),\textsuperscript{177} al-Nuwayrī (d. 733/1333),\textsuperscript{178} al-

\textsuperscript{176} Hinchman and Hinchman, Memory, Identity, Community, xvi.

\textsuperscript{177} See about al-Qazwini footnote 63, p. 43.

ʿUmarī (d. 749/1349),\textsuperscript{179} al-Nuwayrī al-Iskandarānī (d. after 775/1372),\textsuperscript{180} al-Qalqashandī (d. 821/1418),\textsuperscript{181} Ibn al-Wardi (d.

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861/1457),\textsuperscript{182} al-Suyūṭī (d. 911/1505),\textsuperscript{183} and Ibn Iyās (d. 930/1524),\textsuperscript{184} I will go back to the compilations of ancient myths about the world creation. By looking at these we can recognise the common ideas and transcultural elements on which these stories build their plots. Only in this way can one understand why Mamlūk authors chose a particular set of symbols to describe natural phenomena, excluding other possibilities, as “storytelling inevitably involves

\textsuperscript{181} al-Qalqashandī was a legal scholar and secretary in the Mamlūk chancery. He was an author of several books dealing with matters of law, literature, and secretarial art. His encyclopedic work Kitāb ṣubḥ al-aʿshā also treats, among other themes, topics of ʿajāʿib wa-gharāʾib genre. C. Bosworth, “al-Kalkashandī,” The Encyclopaedia of Islam, vol. 4, Leiden: Brill 1973, 509–511.


\textsuperscript{183} See about al-Suyūṭī footnote 66, p. 45.

\textsuperscript{184} See about Ibn Iyās footnote 215, p. 132.
selectivity, rearrangement of elements, redescription, and simplification.”\textsuperscript{185}

2.5.1. The Picture of the Universe according to Mamlūk Authors and their Predecessors

Throughout history fictional descriptions of the universe and natural phenomena have been products of human imagination in which speculations about the creation of the universe varied. The symbols used to interpret and understand nature depended upon the form of revelation or beliefs that were dominant in a particular society as these sanctified a particular set of symbols as being distinct from the general symbols inherent in the nature of things.\textsuperscript{186}

In order to shed light on the causes of earthquakes in the stories of marvels, it is useful to start with a general Islamic perception of the

\textsuperscript{185} Hinchman and Hinchman, Memory, Identity, Community, xvi. Cf. Nünning, Krise als Erzählung und Metapher, 117–145. See p. 204.

\textsuperscript{186} Nasr, An Introduction to Islamic Cosmological Doctrines, 3.
universe, which is inseparable from the revelation of the Qurʾān.\textsuperscript{187} Broadly speaking the Qurʾān does not contain a systematic description of the universe\textsuperscript{188} but we can obtain a holistic picture about its essence through the descriptions in numerous scattered Qurʾānic sūrahs. There, heaven and earth are originally one solid mass which God separated (the Qurʾān 21:30), creating heaven and the earth in six days (the Qurʾān 11:7). Other passages tell us of seven heavens and seven earths (the Qurʾān 65:12; 78:12), which Muslim cosmographers associated with the seven traditional climatic zones.\textsuperscript{189} Above the heavens God’s footstool (\textit{kursī}) (Qurʾān 2:255) and the throne (\textit{ʿarsh}) are situated, which rest on the water (Qurʾān 11:7). We also learn that God spread out the earth and placed the mountains on it as a support (the Qurʾān 13:3, 78:6–7), “lest it sway with you” (the


\textsuperscript{189} W. Lane, Arabian Society in the Middle Ages. Studies from the Thousand and one Nights, ed. by S. Lane-Pool, London: Curzon Press 1987, 97–98. See about the origin of the concept of climatic zones, p. 432.
Qurʾān 16:15; 31:10). He holds the celestial bodies so that they do not fall on the earth (the Qurʾān 22:64), and directs all affairs and natural phenomena (the Qurʾān 13:12).190

These qurʾānic sūrahs as a whole convey the impression that the structure of the universe is composed of horizontal levels: the throne being the uppermost level, followed by the footstool, then the seven heavens and the seven earths.191 This was the core idea,192 which


191 Heinen, Islamic Cosmology, 78.

192 In fact, the idea that the earth or its inseparable elements rest on a series of different things, each coming stage-wise before the other, is far from being limited to Muslim perceptions of the world. (Macdonald, Job and Muslim Cosmography, 168. C. Blacker and M. Loewe (ed.), Ancient Cosmologies, London: George Allen & Unwin Ltd 1975. L. Gray, A. Sayce et al., “Cosmogony and Cosmology,” Encyclopædia of Religion and Ethics, vol. 4, Edinburgh: T. & T. Clark 1911.) There is a huge amount of literature on parallel views in the traditions of other cultures. See, for example, about the structure of universe in Hindu and Buddhist mythology in J. Charpentier, A
schools of cosmological thought further elaborated in a variety of theories. Mamlūk authors used this vision of the universe in the chapters about the creation of the world, which made up an integral part of any ʿajāʾib wa-gharāʾib work. Relying on the achievements of their predecessors, they expanded the Qurʾānic perception of the universe with ideas compiled from different sources. In this way they ensured the maintenance and continuity of these old stories of marvels.

2.5.2. Nature as a Book of Marvellous Symbols

The first example of the expanded qur’ānic vision of the universe to be presented here was widely circulating in most of the ʿajāʾib wa-gharāʾib books of the Mamlūk period. It is taken from Ibn al-Wardī’s chapter about the peculiarities of the earth and its divisions (Faṣl fi ṣifat al-ard wa-taqsimihā [...]). In this he gives the following extra-qur’ānic basic perception of the universe and what it rests on. The earth (seven earths) was originally unstable, swaying like a ship (safīnah) on the water. Therefore God sent an angel (malak) to hold it on his shoulders. With hands outstretched to the east and west, the angel clutched the seven earths. But as he did not stand on solid ground, God sent a bull (thawr) from paradise to stabilise his feet.

194 See the names of the earths and their qualities in Ibn al-Wardī, Kharīdat al-ʿajāʾib, 240. Heinen, Islamic Cosmology, 143.
This giant bull had forty thousand horns and the same number of feet. But his feet still did not reach the bull’s hump. Thereupon, on its hump God placed a green hyacinth (yāqūtah khaḍrā’) from paradise stretching over a distance of a “thousand years.” The bull’s horns protruded from the regions of the earth to God’s throne (‘arsh). Its nostrils—two holes in that green hyacinth—were in the sea, and it breathed twice every day. When it exhaled, the sea rose; when it

Verbesserungen des Herrn Prof. Dr. Fleischer, Leipzig: Fues’s Verlag 1868, 298.

inhaled, it ebbed. However, there was still no support for the bull, so
God created a sandhill, a rock, (*kathib*). But as it was not stable
enough, God created a whale/a big fish (*ḥūt*) called *Bahamūt*
(Behemoth) which held it.

The narrator of this story, Wahb Ibn Munabbih (d. seventh
century A.D.), claimed that the bull and the whale swallowed the

197 Ibn al-Wardi, Kharidat al-ʿajāʾib, 16. In the encyclopedic works of early
Arab scholars, such as al-Maqdisī (d. ca. 390/1000 century) and Yāqūt (d.
626/1229), this sandhill is called *Kumkum*. al-Maqdisī, al-Badʾ wa-al-taʾrīkh,

198 Ibn al-Wardi, Kharidat al-ʿajāʾib, 16, 15. al-Maqdisī (d. ca. 390/1000
century) and Yāqūt (d. 626/1229) call it *Balhūt*, whereas al-Qazwīnī (d.
682/1283) refers to it as *Bahamūt*. al-Maqdisī, al-Badʾ wa-al-taʾrīkh, 48.
Yāqūt al-Ḥamawī, Kitāb muʿjam al-buldān, vol. 4, 23. al-Qazwīnī, ʿAjāʾib al-
makhlūqāt, 145. See the image of Behemoth and Leviathan in Illustrations
to the Book of Job by William Blake, the Butts Set, object 15 (Butlin

199 al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 145. See about the Yemenite narrator
Wahb Ibn Munabbih (d. ca. 114/732), who is often mentioned as the
narrator of this marvellous story, footnote 60, p 81.
waters of the earth rising in the seas, in a way regulating its amount. When their bellies were full of water they became agitated. According to another storyteller Ka‘b al-Aḥbār, Iblīs (the Devil) tempted the whale to rebel, but God made it obey by sending bugs into its eyes which troubled it. Furthermore, from the hyacinth God created Mount Qāf, which is made of green emerald (*zumurrudah khaḍrā’*). All mountains arise from its roots.

Ibn al-Wardī (d. 861/1457) sums up that the earth is upon water; the water—upon the rock; the rock—on the back of the bull; the bull—on a sandhill; the sandhill—on the whale/fish; the fish—upon a futile wind; the wind—on a veil of darkness and the darkness—on the

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200 Ibn al-Wardī, Kharidat al-‘ajā‘īb, 15.


humid ground. As to what is beneath the darkness, the knowledge of humankind fails. “Nobody knows it but God, who is the creator of heavens and earths.”

Ibn al-Wardī’s passage represents a basic picture of the universe inherited from the earliest period of Islamic history, and it is of interest here because some of the symbols such as the image of the giant bull, the whale and the Mount Qāf, played a significant role in the fictional interpretations of earthquakes. They appear in numerous books, with some variations related to the sequence of the levels, on which the universe rests. For example, we find these symbolic images in al-Suyūṭī’s *Kashf al-ṣalṣalah ‘an wasf al-zalzalah,*205 in which he presents the whole scope of earthquake interpretations.206 Here he tries to furnish these fictional stories with the chain of authoritative Muslim narrators of tradition—a method typical for the legitimisation


205 al-Suyūṭī, Kashf al-ṣalṣalah, 133–135. See more about al-Suyūṭī in footnote 66, p. 45 and about this treatise, p. 280.

206 al-Suyūṭī, Kashf al-ṣalṣalah, 137–156.
of hadith. What is also remarkable is that he lists traditional views without being concerned about apparent contradictions.

(a) The Bull and the Whale/Fish

From a tradition presented in al-Suyūṭī’s *Kashf al-ṣalṣalah ‘an wasf al-zalzalah* (The Examination of the Rattle Describing the Earthquake), we learn that one of the supports of the earth, the rock, rests on the horns of the bull. The extended version of this view appears in the treatise of al-Suyūṭī’s follower, al-Jazzār (d. after 984/1576). There he writes that different rumours were circulating among the population about the cause of the 984/1576 earthquake. In looking for the causes of this earthquake, some people revived their memories of an ancient story according to which the bull carrying the earth on one of its horns causes an earthquake whenever it shifted the earth from one horn to the other. Similarly, al-Suyūṭī (d. 911/1505) and

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al-Jazzār (d. after 984/1576) further elaborated the account of the whale/fish, which caused an earthquake when it moved. In their stories, Iblīs (the Devil), by telling the whale/fish how great and powerful it is, makes it feel so proud of itself that it shakes causing an earthquake. As a response to its behaviour, God sends a small fish to calm it down.

In contrast to Ibn al-Wardī’s report, which is not charged with any religious implications, both al-Suyūṭī (d. 911/1505) and al-Jazzār (d. after 984/1576) stress through their narratives the magnitude of almighty God. According to them he is the one who sends earthquakes as a punishment for different “immoral” behaviour or as a sign of the approaching “Judgement Day.” Moreover, they present these fictional stories as an alternative to the physical explanations of the Greek philosophers, which they regarded as corrupt (fasād).  

(b) Mount Qāf

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Concerning Mount Qāf, which owes its name to an angel in charge of it,\(^\text{211}\) it not only supports the earth—an idea comparable with the role of mountains in the Qurʾān (13:3; 16:15; 31:10) and tradition\(^\text{212}\)—but it also causes earthquakes. Ibn al-Wardī (d. 861/1457), al-Suyūṭī (d. 911/1505), Ibn Iyās (d. 930/1524) and others cite numerous traditions about this mountain, which is the “mother” of all mountains encircling the lower earth. Its roots are connected with the rock on which the earth is situated. If God wishes to shake a part of the earth, he orders the mountain to move those parts of it which border that specific place.\(^\text{213}\)

\(^{211}\) Ibn Iyās (d. 930/1524) mentions that an angel named Qāf serves as an intermediary between God and the mountain. It stirs the mountain whenever God wishes it. Ibn Iyās, Nashq al-azhār, fol. 463.

\(^{212}\) The Mount Qāf surrounding the earth is the basis for the pegs (awtād) of the earth. (Ibn al-Wardī, Kharīdat al-ʿajāʾīb, 239.) According to ʿAbdallāh Ibn ʿAbbās (d. 68/687–8), scholar of the first generation of Muslims, (L. Vaglieri, “ʿAbd Allāh b. al-ʿAbbās,” The Encyclopaedia of Islam, vol. 1, Leiden: Brill 1960, 40–41) “the mountains are quite proud on earth because it is firmly established through them.” Heinen, Islamic Cosmology, 171.

In comparison to the story about the whale, which stirs and causes an earthquake in general, the story about Qāf distinguishes between the region affected by the earthquake and the rest of the world.\textsuperscript{214} This explanation probably sounded more plausible to the narrators and readers, which is why it established itself in Islamic tradition and literature. However, there are two more reasons for the wide acceptance and popularity of this story. The first reason relates to the legacy of its narrator, ʿAbdallāh Ibn ʿAbbās,\textsuperscript{215} the prophet’s cousin and the greatest authority, “father of Qur’anic exegesis.”\textsuperscript{216} The ʿulamāʾ regarded traditions derived from him as trustworthy.\textsuperscript{217} The other reason relates to the symbolic association of Mount Qāf with

\begin{thebibliography}{99}
\bibitem{214} Heinen, Islamic Cosmology, 119.
\bibitem{216} Vaglieri, “ʿAbd Allāh b. al-ʿAbbās,” 40.
\bibitem{217} Vaglieri, “ʿAbd Allāh b. al-ʿAbbās,” 40–41.
\end{thebibliography}
the name of the Qurʾān sūrah 50, appearing in the form of the Arabic letter-symbol (۷), which is pronounced Qāf. Some Qurʾān exegetes interpreted the name of this sūrah as referring to Mount Qāf. This connection to the revelation elevated this marvellous mountain to the level of a purely Islamic symbol, which further increased the importance of its role and interest in it.

Thus, numerous descriptions circulated about this primeval mountain. Since it has no fixed form we find various descriptions of it in different texts. For example, the material which it is composed of occupies a special place in many descriptions. Like Yāqūt (d. 626/1229), al-Qazwīnī (d. 682/1283) and Ibn al-Wardī (d.

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218 This sūrah is about death and resurrection. Muḥammad, the Qurʾān, 1017f.


220 Yāqūt al-Rūmī, was a geographer of non-Arab origin, who was enslaved at the age of six years and was taken from Byzantium to Baghdad where he was later emancipated and became a scholar. (Cl. Gilliot, “Yaḵūt,” The
861/1457) depict it as composed of green chrysolite (za'barjada' khaḍrā'). Other scholars, such as al-Maqdisi (d. ca. 390/1000 century), al-Nuwayri (d. 733/1333) and al-Suyūṭi (d. 911/1505) describe it as made of green emerald (za'murrudah khaḍrā') of which the sky and, accordingly, the sea reflect their colour. Unsurprisingly, the colour of the mountain in all the reports is green, which symbolically represents the colour of Islam and thus also ascribes an Islamic value to it.

Apart from this, Mount Qāf plays a special role in fictional literature as the mountain appears in several stories in Thousand and One Nights.


For example, in the Adventures of Bulūqiyyah (the 495th and 496th nights)\textsuperscript{223} the angel in charge of this mountain explains the function of Mount Qāf and here we learn that it is not only responsible for earthquakes on earth—as is commonly agreed—but also for other disastrous and non-disastrous events such as famines, prosperity and killing. In this context, the fictional stories about the bull and the whale are also narrated.\textsuperscript{224}

Furthermore, we learn that Mount Qāf, which is located in the east and the west\textsuperscript{225} and whose peak reaches almost into the heavens,\textsuperscript{226} borders the limit of the inhabited world.\textsuperscript{227} Some scholars claim that

\begin{itemize}
\item \textsuperscript{223}Kitāb alf laylah, 612f. See also the adventures of Bulūqiyyah in Chapter \textit{Dhikr khabar Bulūqiyyah wa-mā shāhada min ‘ajā‘ib} in al-Nuwayrī, Nihāyat al-arab, vol. 14, 182–194.
\item \textsuperscript{225}Ibn al-Wardī, Kharīdat al-‘ajā‘ib, 14.
\item \textsuperscript{226}Yāqūt al-Ḥamawī, Kitāb mu‘jam al-buldān, vol. 4, 298.
\item \textsuperscript{227}Ibn al-Wardī, Kharīdat al-‘ajā‘ib, 154.
\end{itemize}
the sun sets and rises from it. On and beyond Mount Qāf there are fantastic places inhabited by angels and jinn. It is the abode where the fabulous bird Simurgh has retired from the world. One can reach it only with the help of magic creatures such as huge birds, a magic carpet or jinn, who manage to traverse enormous distances in a flash. In a number of accounts of Alexander’s journeys, Alexander is said to have reached Mount Qāf at the borders of the Earth and talked to it about the causes of earthquakes. Sometimes, in a geographic

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228 Ibn al-Wardī, Kharīdat al-ʿajāʾib, 14.

229 Shahrazad describes this mountain in detail during the 496th night in Kitāb alf laylah, 612f. The Book of the Thousand Nights, 270f. Lane, Arabian Society, 104.

230 This marvellous bird, existing since the beginning of the world, is said to live at the Mount Qāf in complete solitude and to be consulted as wise by kings and heroes. M. Streck and A. Miquel, “Ḳāf,” The Encyclopaedia of Islam, vol. 4, Leiden: Brill 1978.


context, Qāf denotes the part of the high Asiatic chain of mountains, known as the Caucasus, and bordering the Muslim world to the north and the mountains of northern Persia.

Mamlūk encyclopaedists and chroniclers such as al-ʿUmarī (d. 749/1349), al-Nuwayrī al-Iskandarānī (d. after 775/1372) and al-Qalqashandī (d. 821/1418) have also integrated this marvellous story about Mount Qāf into the sections of their compendia dealing with ʿajāʾib in nature. Their works represent contemporary tendencies regarding views of the universe and the processes occurring in it. The most striking inclusion appears in al-Nuwayrī al-Iskandarānī’s work, written after the catastrophe which befell Alexandria in 767/1365 during the crusade of Peter I Lusignan—king of Cyprus, Jerusalem—,

233 The Caucasus has various pronunciations in different Indo-European languages. We can discern the root Qāf in particular in the Russian word for Caucasus (Кавказ), which is pronounced as “Кafkaz.”


and his allies from Europe.\textsuperscript{236} Although the author's original aim in writing this book was to record his memories and observations of the Crusaders’ brief conquest of Alexandria, he was carried away by the citations of diverse fictional material on different subjects.\textsuperscript{237}

In the chapter \textit{Earthquakes, Pest, Winds, Floods and Famine}, he reports on the memorable earthquake of 702/1302 in Egypt.\textsuperscript{238} After briefly describing the effects of this disastrous event, al-Nuwayrī al-Iskandarānī (d. after 775/1372),\textsuperscript{239} unlike his fellow chroniclers Ibn al-Dawādārī (d. 736/1336),\textsuperscript{240} and the Coptic historian al-Mufaḍḍal

\textsuperscript{236} See more on this historical event in van Steenbergen (ed.), The Alexandrian Crusade, 123–137.


\textsuperscript{239} See about this author footnote 180, p. 208.

\textsuperscript{240} See about this author footnote 76, p. 173.
Ibn Abī al-Faḍā’il (d. after 759/1357), 241 continues with the explanation of the cause of earthquakes, which he relates to the marvellous story about Mount Qāf. 242 This example, like the one, presented in the previous subchapter on physical explanations of earthquakes, 243 demonstrates that the repertoire of ʿajāʾib wa-gharāʾib had here moved out of its specialised niche during the Mamlūk period and became incorporated in the usual curriculum of kuttāb (scribes). Moreover, it shows the appearance of a tendency towards the “literalization” 244 of the most thriving genre of the time, the chronicles. However, Mamlūk authors did not make new discoveries while interpreting natural phenomena. They simply revived the attested and traditional views of their ancestors.

On closer examination, we can find these marvellous stories on earthquakes, with slight linguistic variations, in earlier sources such

241 See about this author footnote 159, p. 199.


243 See p. 173, 199.

244 Haarmann, Quellenstudien, 161–200.
as al-Qazwīnī’s Kitāb ʿajāʾib al-makhlūqāt,\textsuperscript{245} al-Thaʿlabī’s (d. 427/1035)\textsuperscript{246} Lives of the Prophets,\textsuperscript{247} in Yāqūt’s geographical dictionary\textsuperscript{248} and in al-Maqdīsī’s The Book of Creation and History.\textsuperscript{249} The content of these stories of marvels is essentially the same. However, in contrast to Yāqūt (d. 626/1229) and al-Maqdīsī (d. ca. 390/1000 century), who find the stories of the qaṣṣāṣ ridiculous,\textsuperscript{250} Ibn al-Wardī (d. 861/1457) regards them as allegorical representations and as such not detestable. According to him, such stories appeal to people’s imagination and increase the mental perception of religion, the estimation of the power of the lord and

\textsuperscript{245} al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 144–145, 170.


\textsuperscript{248} Yāqūt al-Ḥamawī, Kitāb muʿjam al-buldān, vol. 4, 23–24.

\textsuperscript{249} al-Maqdīsī, al-Badʾ wa-al-taʾrīkh, 47–49.

\textsuperscript{250} Yāqūt al-Ḥamawī, Kitāb muʿjam al-buldān, vol. 4, 2324. al-Maqdīsī, al-Badʾ wa-al-taʾrīkh, 47.
bewilderment at the wonders of his creation. They are an invention of
“followers of the book” (ahl al-kitāb), who are non-Muslims, i.e. the
Jews, Christians and Sabians. They were the first to reflect on the
wonders of creation and to give explanations of natural phenomena,
especially in the earliest Qurʾān commentaries and ḥadīth collections.
Foremost among them are the above-mentioned Wahb Ibn Munabbih
(d. seventh century A.D.) and Kaʿb al-Aḥbār (d. seventh
century A.D.), who transmitted the stories about the whale and the
bull.

At the beginning of Islam, there was no consistent system relating to
the creation of the world and natural disasters based on Muḥammad’s
revelations. These authors gleaned information from different sources,
adopting them to fill the gaps in their understanding of the Qurʾān.

251 Ibn al-Wardī, Kharidat al-ʿajāʿib, 16.

1960, 264–266.

253 See about Wahb Ibn Munabbih footnote 60, p. 81 and footnote 199, p.
216.

254 See about Kaʿb al-Aḥbār footnote 201, p. 217.
Their diverse, often contradictory explanations of natural phenomena, make their narrative tradition a storehouse of ideas derived from non-Muslim traditions and the following pages will examine possible sources for the inspiration behind these marvellous stories.

2.5.3. Transculturality of Symbolic Elements in the Stories of Marvels

When tracing the roots of fictional interpretations of earthquakes in ʿajāʾib wa-gharāʾib works, one notices on closer analysis that they contain a number of references to pre-Islamic beliefs. In fact, certain explanations in them had ancient roots and existed long before the emergence of Islam in the Middle East and probably constituted a part of the biblical and Indo-Persian tradition.255 For a better understanding of these marvellous stories we can look at the symbols of the bull, the whale and Mount Qāf from a transcultural perspective, comparing the stories around them with the revelations contained in non-Muslim sources.

255 Akasoy, Islamic Attitudes to Disasters, 391.
2.5.3.1. The Bull and the Whale/Fish versus the Biblical Behemoth and Leviathan

The bull and the whale/fish are remarkable creatures in ancient views of the universe and we find a number of myths about them representing a cluster of images in older beliefs. But the first explicit indication that these elements in the stories of marvels

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stemmed from pre-Islamic tradition is given in Ibn al-Wardi’s record itself. As previously mentioned, the stories about the bull and the whale/fish were an “invention” (iḥtirāʾ) of “followers of the book” (ahl al-kitāb) and an elaborate embellishment by the storytellers (qāṣṣāṣ).257 Some of the sources mention their names. In the first place, it is the previously mentioned Wahb Ibn Munabbih,258 who inherited his knowledge of the biblical tradition from two Jewish converts, Kaʿb al-Aḥbār (d. seventh century A.D.) and ʿAbd Allāh Ibn Salām (d. 43/663–4). All of them were recognised as great authorities in the study of biblical traditions259 and through them biblical elements found their way into Islamic thought.260

Another indication also arises from the text itself. We learn from the tradition narrated by Wahb Ibn Munabbih that the name of the

257 Ibn al-Wardi, Kharidat al-ʿajāʾib, 16.

258 See footnote 199, p. 216.


260 Macdonald, Job and Muslim Cosmography, 169.
whale/fish, on which the earth rests is Bahamūt. The confusion about the spelling of this word presented in footnote 198, p. 216 underlines its foreign origin. This confusion could have occurred during the process of copying when names were written without diacritical points. However, we find another explanation for the diverse spellings in al-Tha‘labī’s book, when he clarifies that “God created a large fish (nūn) which is a huge whale whose name (ism) is Lutiyā, by-name (kunyah) Balhūt, and nickname (laqab) Bahamūt.”

In the same book of al-Tha‘labī, the symbols of the bull and whale/fish appear in the story of Ayyūb (Job) and again transmitted by Wahb Ibn Munabbih with occasional references to Ka‘b al-Aḥbār. There, in God’s speech, the following passage occurs:

264 See about Wahb Ibn Munabbih footnote 199, p. 216.
265 See about Ka‘b al-Aḥbār footnote 201, p. 217.
“Where were you on the day I created the behemoth, whose place is at the end of the Earth, and the leviathan—both of whom bear the mountains and the villages and cultivated lands, their tusks like the tall pine trees and their heads like mountains, the veins of their thighs like brass pillars?”

This story is evidently based, though with curious variations, on the Book of Job (40:15), from which the whale Bahamūt and bull Kīyūbān/Kibūthān (cf. Leviathan) have been derived. We can claim


268 The word Leviathan has a Hebrew origin deriving from the root l-w-y and means “one that twists/curls up.” It denotes a serpentine marine creature mentioned in the Old Testament. B. Rebiger, “Leviathan,” Religion Past and Present, Brill Online 2013.
that the concepts behind these animal-monsters, which accompany us throughout the Mamlūk ʿajāʾīb wa-gharāʾīb works, stemmed from the Jewish-Christian tradition. They were silently integrated into Islamic thought probably by way of oral transmission. It is also obvious that these biblical animal-monsters belong to a common reservoir of great antiquity, going back to the Babylonian tradition of the creation myth *Enûma Eliš*.\(^{269}\) In this tradition, Marduk (the chief god of Babylon) kills his mother Tiamat—the divine female sea monster embodying the original chaos—, splitting her lengthwise into two halves. From the lower half he creates the earth, from the upper half the firmament of the heavens, setting up the order of the existing world.\(^{270}\) This mixture of symbolic elements and ideas stemming from Babylonian and Jewish-Christian traditions ascribed the *bull* and the *whale* in the Mamlūk ʿajāʾīb wa-gharāʾīb a hybrid form.


However, in none of these ancient texts is *Behemoth* a fish\textsuperscript{271} or *Leviathan* a bull and nor do they cause earthquakes. Muslim storytellers, who added new elements to the well-known ones carefully adapting them to Muslim taste, disseminated these tales.\textsuperscript{272} Therefore, we can assume that the story about earthquakes linked to this transcultural symbols in ʿajāʾib wa-gharāʾib works was a product of the early Islamic period. This belief was widespread all across the Islamic world. Especially in the Iranian tradition, the *bull* not only shifts the earth from one horn to the other when it is tired but also when the injustice in the world increases.\textsuperscript{273}

\textsuperscript{271} Heinen, Islamic Cosmology, 235.

\textsuperscript{272} Macdonald, Job and Muslim Cosmography, 169.

In much the same way, the inhabitants of the regions round the Red Sea believed that the earth rested on the back of gigantic bulls, and even one of the words denoting an earthquake was known as thirān al-dunīyah (“bulls of the Earth”). We also come across the theme of the bull in Indian tales. Father Fenicio, who compiled one of the first western works on Hindu mythology during the seventeenth century A.D., reports in a biased way that the Brahmins “are most firmly convinced that the earth is supported on the top of a bull’s horn, and when he grows tired he moves the earth from one horn to another. This movement causes earthquakes.”

2.5.3.2. Mount Qāf versus al-Burz

Mount Qāf seems to embody a wide range of symbolism and we find a crucial hint about its origin in Yāqūt’s and al-Maqdīsī’s works in

which they mention that the ancients called it Mount *al-Burz*. This is an important reference which Mamlūk authors of *ʿajāʾib wa-gharāʾib* genre do not mention because it implies that the notion of *Qāf* as a mountain range surrounding the terrestrial world was derived from an ancient Iranian tradition, which had a great influence on the early Islamic literature.

In fact, from an ancient Iranian creation myth we learn that the Evil Spirit, Angra Mainyu, plunged down onto the earth, entering straight into its centre. When it crashed down, the earth shook and the mountains arose. First, Mount *al-Burz* (Alborz) (*Av. Harā bərəzaitī*, Mid. Pers. *Harborz*) with its peak Taēra in the middle was created.

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279 Marzolph, “Qāf,” 682.

280 See about the influence of Iranian tradition on Arab literature in Rypka, Iranische Literaturgeschichte, 80–81, 475f.

281 The earliest form of the name means in the Avesta and in Zoroastrian writings probably “high watch/guard,” a common designation for mountains and high places. *Av. Harā* “watch, guard, defence” is from the
The roots of this cosmic mountain spread under the earth, holding it together, and from them grew all the other mountains. This view of the world consisting of a surrounding chain of mountains is similar to the image of Mount Qāf surrounding the world. The only difference is that the Mamlūk ‘ajā‘ib wa-gharā‘āb sources do not depict it as having grown from a mountain located in the centre of the world.

OIr. har- “to pay attention to, watch over, protect” which is equivalent to NPers. barz/borz, “mound,” German Berg, Burg, Burgund (IE. Bheregh-). The name also refers to real mountains which extend between the mountains of Armenia in the west and those of the Hindu Kush in the east. There are also allusions that Elbrus, the highest peak of the Caucasus, has derived its name from this mountain. M. Bazin, E. Ehlers et al., “Alborz (Elborz, Elbors),” Encyclopædia Iranica, vol. 1, London: Routledge 1985, 810–811, 813. See the drawing of the Mount al-Burz in the centre of the world and a mountain chain grown from it as surrounding the world in J. Hinnels, Persian Mythology, p. 22.

We gain this information about Mount Alburz from the Bundahishn (“Original Creation”), which is a collection of Pahlavi translations on the creation of the world, mythology and legendary history based on the Zoroastrian scriptures. According to this the chief mountain took eight hundred years to grow: two hundred years to reach the star station, two hundred—to the moon station, two hundred—to the sun station and for the final two hundred it grew to the endless light. Furthermore, a number of stories concerning the mountain al-Burz (Alborz) are preserved in literary sources such as in al-Firdawsī’s Shāh-nāma and other works. However, I will not discuss them here


284 Bundahis, Chapter 12, 34. Hinnells, Persian Mythology, 22.

further but will instead restrict myself to a short outline of the parallel ideas in ancient Indian and Mesopotamian sources.

(a) The Cosmic Mountain in the Ancient Indian Sources

The Iranian view of the great central mountain has close links with that of ancient India. This is conveyed mainly in classical Hindu, Buddhist and Jain texts. Despite the differences between their doctrines, all agree that there is a world mountain running through the middle. Its centre is at our level but its top and bottom reach at least one heaven and hell. This world mountain is called Mount Shāh-nāma, known in English as Book of Kings, is a heroic epic written by the great Persian poet Firdawsī, who died about 1025 A.D. al-Firdawsī connects in Shāh-nāma folk elements with the historical tradition. Rypka, Iranische Literaturgeschichte, 156f.


288 See the major differences between the doctrines in Blacker and Loewe (ed.), Ancient Cosmologies, 13–14.
Mēru\textsuperscript{289} in Sanskrit, Sineru or Sumeru in Pali. They also agree that the earth is ringed by a fabled mountain chain,\textsuperscript{290} which is called Lokāloka in the Purāṇas\textsuperscript{291} and Chakra-vāda or Chakra-vāla in the Buddhist texts.\textsuperscript{292} This mountain range encompasses all the continents.


\textsuperscript{290} Gombrich, Ancient Indian Cosmology, 119.

\textsuperscript{291} The \textit{Purāṇas} contain the authoritative sacred texts of Hindu myth and worship, and they were mostly composed in the first millennium A.D. Gombrich, Ancient Indian Cosmology, 111. Keith, Indian Mythology, 13.

of the earth, separates the visible from the invisible world and rises above utter darkness.\textsuperscript{293}

Moreover, it is said “that it is the supporting pillar of the earth which prevents her from wobbling from one side to the other or to get into disorder, the subterrestrial part of it being bulkier at the bottom. On the top of this mountain, so they say, is the paradise.”\textsuperscript{294}

Mount \textit{Mēru} played an immense role in people’s imagination a fact attested to by its constant appearance in the literature of the Hindu-Buddhist world resulting in innumerable stories and legends about it.\textsuperscript{295} Finally yet importantly, the Hindu scriptures describe the mountains of the Himalaya bounding the Hindu world to the north as

\begin{flushleft}
\textsuperscript{293} Streck and Miquel, “Ḳāf,” 401.  


\textsuperscript{295} Mabbett, The Symbolism of Mount Meru, 70–71.  
\end{flushleft}
stemming from Mount Mēru,\textsuperscript{296} as was sometimes the case with Mount Qāf, which is referred to as the Caucasian mountain chain.\textsuperscript{297}

(b) The Cosmic Mountain in the Mesopotamian Vision of the Universe

The idea of a central mountain supporting the earth as appears in the Indo-Iranian tradition and other ancient cultures\textsuperscript{298} was also widespread among the peoples of the ancient Orient. In the final analysis we find this view in the Babylonian vision of the universe.\textsuperscript{299}


\textsuperscript{297} See footnotes 281, p. 240 and 233, p. 227.


Although there are few allusions to the cosmic mountain in Babylonian sources, the concept of Mount Mēru is believed to have parallels with the ziggurats of Babylon, whose seven stories represented the seven heavenly spheres.

Besides the perception of the ziggurats as equivalents of sacred mountains, we can find a vision of a cosmic mountain, called Mount Mashu, in the Acadian Epic of Gilgamesh. The ninth and the tenth


303 According to Wayne Horriwitz, Mount Mashu is probably to be translated as “Twin mountains,” through the peaks of which the sun rises. W.
tablets describe it as a mountain of sunrise and sunset, with its peak in the sky and base in the underworld. Interestingly, we learn from Stephanie Dalley’s article, in which she compares the *Epic of Gilgamesh* with that of *Bulūqiyah* in the Arabian Nights, that both protagonists travelled to the cosmic mountain: Gilgamesh to the Mount *Mashu*, and Bulūqiyah to the Mount *Qāf*.

The discussion presented above leads us to the conclusion that the concept of the central cosmic world mountain, from which all the mountains of the earth stem, was deeply embedded in people’s imagination. It was based on a common idea, which acquired different frames in the traditions of different cultures. The Muslim

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notion of the mountain Qāf was probably shaped under the influence of the Indo-Iranian tradition. However, the story framework is a product of the early Arab storytellers with a Jewish background. Its legacies stem from the traditions of Islam as they are presented in the Qur’ân and Ḥadīth.\footnote{Streck and Miquel, “Ḳāf,” 401.} We can conclude that the bull, whale/fish and Mount Qāf in the ʿajāʾib wa-gharāʾib works, which are fictional agents of earthquakes, each have transcultural symbolic value since they bear a rich load of aspiration and accumulated myths adopted from cultural entanglements. The Mamlûk authors of ʿajāʾib wa-gharāʾib genre reframed and shaped the fictional stories around them under the influence of the Jewish-Christian, the ancient Indo-Iranian and Babylonian traditions.

### 2.6. The Continuity and Transculturality of Reinterpreted Beliefs, Ideas, and Motifs

These chapters have demonstrated, first, that Mamlûk authors, while explaining the causes of natural disasters, integrated both physical and fictional interpretations into the ʿajāʾib wa-gharāʾib works. However, towards the end of the Mamlûk period the physical
perception of natural disasters inherited from the Greek philosophers and the early Muslim savants gave way to more popular fictional interpretations which evoked astonishment about natural disasters. These interpretations were often reinforced by religious views that aimed either to keep people afraid of God’s wrath or to discredit disseminators of physical interpretations. At the same time certain Mamlūk authors began to include the fictional stories of marvels into strictly scholarly works, like encyclopaedias and chronicles, a tendency which made their works more unconstrained and appealing to readers and thus in a way popularising them.307

Second, Mamlūk authors drew upon the motifs and stories found in the books of their Arab ancestors who made intensive use of ancient sources. This underpins the transculturality and continuity of their views. However, it was not a haphazard, thorough borrowing of ideas. On the contrary, the authors linked their stories with widespread motifs, prominent arguments and symbolic elements, which they picked up intentionally from renowned sources.

Finally, a close comparative analysis of the interpretations, conveyed in the ʿajāʾib wa-gharāʾib works, has shown that these symbolic elements were a syncretistic inheritance from biblical and Indo-Iranian traditions. Despite the contextual differences between the plots and narratives of the sources, they reveal a common universal interest towards understanding the secrets of nature, which they presented in symbolic form. Because of their universality, these symbols travelled across space and time and as such they acquired a composite nature. Their origin, similar to the description of disastrous events in the astro-meteorological malḥamah, cannot therefore be reduced to one single source. The “commonness” of symbols and interpretations in Wolfgang Welsch’s sense enforced their transcultural perception. However, the narration of marvellous stories around them was open to contextual changes which in turn was subject to local demands. Mamlūk authors adopted these basic concepts and introduced new elements into the established narratives. This mixture of cultural elements created its own unique vision of the

308 Cf. Blumenberg, Die Lesbarkeit der Welt.

309 See the definition of transculturality, p. 41.
natural phenomena, contextualised in conformity with the requirements of Islamic traditions.
PART II

NATURAL DISASTERS IN MAMLÜK EGYPT RECONSTRUCTED FROM THE HISTORICAL PERSPECTIVE

CHAPTER 3

REVIEW OF THE MAIN ISSUES

3.1. Introduction

In what follows the focus shifts from interpretations of natural hazards that had different narrative bases, which, depending on various causes—be they astro-meteorological, physical or fictional—saw them treated as “oddities” of creation rather than disasters. Instead Part II of this thesis will examine their perception and interpretation narrated as disastrous events in the historical context of Mamlūk Egypt. It will also show in what way the historiographic genre, which provides the basic source for the analysis in this part, reflected the transcultural interpretations presented in the preceding chapters.
Mamlūk chroniclers recorded occurrences of different extreme events (earthquakes, droughts, floods, extreme cold weather, torrential rains, windstorms, epidemics, epizootics, locust invasions, and fires)\(^1\) with

\(^1\) According to the categorisation of disasters, presented in footnote 15, p. 24, fires are classified to the category of social disasters. Indeed, most of the fires happened in Mamlūk Egypt as a result of human carelessness or malicious arson. The following historical records of fires in the chronicles attest this assumption: (663/1263, 691/1291, 721/1321, 740/1339, 744/1343, 751/1350, 769/1368, 778/1376, 780/1376, 800/1397, 816/1413, 828/1424, 836/1433, 862/1458, 877/1472, 881/1476, 887/1482, 888/1483, 895/1490, 898/1493, 911/1505 and 915/1509). However, as some of the fires were caused by natural phenomenon like lightning, thunderbolts and winds, leading to a lot of destruction and human losses, we can also classify fires as climatic disasters. See Syrinx von Hees’ paper which positions fires in the intersection of nature and society S. von Hees, “The Great Fire in Cairo of 1321”—Interactions between Nature and Society, in *A Comparative and Transcultural Survey between Asia and Europe*, ed. G. Schenk, Heidelberg: Springer forthcoming, and the records of fires, having natural core in: 774/1372: al-Maqrizī, *Kitāb al-sulūk li-ma‘rifat duwal al-mulūk*, ed. by M. Ziyādah, vol. 1,3, al-Qāhirah: Maṭbaʿat lajnat al-ta‘līf wa-al-tarjamah wa-al-nashr 1970, 205. al-Suyūṭī, Ḥusn al-muḥāḍarah, 254
varying intensity and frequency in Egypt during the Mamlūk reign (648–922/1250–1517). As presented in the introductory part of the thesis, the focus in this study is on the most destructive environmental threats. These are, on the one hand, geophysical hazards like earthquakes, or, on the other hand, climatic extreme events like excessive floods and droughts, caused specifically by the irregularities in the rise of the Nile’s level during the period of inundation. The purpose is to show their frequency, social impact, short and long-term consequences and ways of coping with them. One


2 The frequency of these natural disasters is presented chronologically with the references to the major primary and secondary sources in the appendix, p. 643f.
of the specific questions to be answered in the final discussion is whether discernible cultural interpretations and strategies existed for dealing with these historical disastrous events.

Accordingly, Part II of the thesis treats these issues in the following three chapters: Chapter 3 Review of the Main Issues begins with the general introduction of common primary sources and methods of research,\(^3\) which I will further specify in Chapter 4 Earthquakes and Chapter 5 Excessive Floods and Disastrous Droughts.

Chapter 4 Earthquakes examines minor and major earthquakes, which struck Egypt during more than two centuries of Mamluk rule. First, it gives a critical review of earthquakes listed in the secondary sources, like non-contemporary chronicles and modern catalogues. The aim is to highlight the validity of “doubtful” earthquakes, recorded as historical events in the secondary sources. Then it provides a detailed analysis of those earthquakes which the chroniclers perceived and interpreted as disastrous in the primary historical sources, in

*Western Europe since the German Invasions. Vol. 1: From the Breaking up of the Roman Empire to the Protestant Revolt*, Boston: Ginn and Company 1906, 1–13. See also the discourse on the narratology in White, The Content of the Form.

4 See the references, p. 26 and p. 286.

5 See the definition of “doubtful” on p. 258 and in Chapter 4.2. *Critical Review of “Doubtful” Earthquakes*, p. 288f.

6 The historical sources, also called documentary evidence, include all kinds of manmade sources which convey direct or indirect data about earthquakes, excessive floods and droughts. These are written narrative sources, like annals and chronicles, accounts of journeys, visual daily weather records, parish registers, personal correspondence, special prints,
particular in chronicles and annals. Finally, it summarises and explains the structure of earthquake narratology and its constituent elements.


Historical seismology, as a recently established discipline, “is the branch of seismology that uses historical data in order to assess long-term seismic activity.” The research uses “accumulation and interpretation of qualitative data, that is, descriptions of the effects of the earthquakes that occurred in recent times as well as in the distant past.” Guidoboni and Ebel, Earthquakes and Tsunamis, 6–7.

Guidoboni and Ebel, Earthquakes and Tsunamis, 39.
evidence, (2) location error, (3) probable contextual misinterpretation and language problems, (4) subjective implications of earthquakes related to the destruction of certain structures, and (5) the duplication of earthquakes. This categorisation, which I will further explain,\(^9\) partially stems from Emanuela Guidoboni’s basic study of historical seismology. There she calls these earthquakes “false”\(^ {10} \) due to problems in their interpretation. However, I deliberately avoid the use of the word “false,” as we deal here with the events far back in history; and with the appearance of new primary sources and new evidence such a categorisation can become obsolete.

*Chapter 5 Excessive Floods and Disastrous Droughts* examines the population’s dependence on the rise and decline of the Nile. Here, significant periods of excessive flooding and drought, which entailed environmental devastations and massive food shortages, caused by the river’s extreme fluctuations, take centre stage. Thus, this chapter,

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\(^9\) See the detailed explanation of this categorisation in *Chapter 4.2. Critical Review of “Doubtful” Earthquakes*, p. 288f.

\(^{10}\) See more on the distinction of “false earthquakes” in Guidoboni and Ebel, *Earthquakes and Tsunamis*, 247–251.
partially using\textsuperscript{11} methods of historical hydrology,\textsuperscript{12} shows people's attitudes to disasters which caused a great deal of suffering. Furthermore, it explores strategies employed by people to survive the catastrophe or prevent future occurrences of them. In its final discussion, it turns to the question of whether we can call Mamlūk

\textsuperscript{11} Other methods will be presented in Chapter 5.6.2. “Excessive” and “Low” Floods from the Perspective of the Nile’s Specific Hydrological History, p. 497.

\textsuperscript{12} Historical hydrology is a new interdisciplinary research field of natural and social sciences which links research methods of hydrology—“the science of the water cycle”—and environmental history. It reconstructs and investigates the vulnerability of past societies to extreme water events mainly “for the period prior to the creation of national hydrological networks.” See more on methods of data collection and their analysis, referring to the flood risk in Europe, as well as the sources, which are similar to those presented in footnote 6, p. 257, in Brázdil, Kundzewicz et al., Flood Risk in Europe, 739, 741f. R. Brázdil and Z. Kundzewicz, Historical Hydrology—Editorial, \textit{Hydrological Sciences Journal} 51/5 (2006), 733–735. D. Gutknecht (ed.), Extreme Abflussereignisse. Dokumentation—Bedeutung—Bestimmungsmethoden, in \textit{Wiener Mitteilungen. Wasser. Abwasser. Gewässer}, vol. 206, Wien: Institut für Wasserbau und Ingenieurhydrologie, Technische Universität Wien 2007.
Egypt a “culture of disaster” in the sense offered by Greg Bankoff’s work.13

3.2. Common Primary Sources and Methods of Research

As the extent of the historiographic literature genre (akhbār/taʾrīkh)14 from the Mamlūk period is huge, I restrict myself to the major primary sources,15 chronicles, annals and treatises with historical

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13 See p. 52.


15 According to Steffen Vogt et al., “universal and town chronicles, accounts of journeys, and occasional diaries” are the potential documentary Arab sources on environmental issues. Vogt, Glaser et al., Assessing the Medieval Climate Anomaly, 28.
content,\textsuperscript{16} which treat natural disasters marginally or specifically. The principal method used to study these records is a comparative analysis of disasters reported by contemporaries, who were anxious to preserve the details of memorable events for the next generations and thus produced the main material, containing sometimes precise, sometimes brief, references to these disastrous events.

The comparative study and the study of the narrative forms\textsuperscript{17} of disastrous events are essential because the evidence in the chronicles may contain errors in dating or have been wrongly interpreted, depending on the author’s presuppositions. As previously mentioned, the author’s “ideological perspective” i.e. values, norms and intentions, which influence the narration,\textsuperscript{18} must be viewed critically. This method not only minimises the complete fabrication of historical events but also enables the evaluation of their effects described by

\begin{itemize}
\item \textsuperscript{16} See the list of these sources in Chapter 3.2.1. Overview of Historical Sources on Natural Disasters, p. 269.
\item \textsuperscript{17} See Nünning, Krise als Erzählung und Metapher, 117–145.
\item \textsuperscript{18} Nünning, Krise als Erzählung und Metapher, 130. See p. 204.
\end{itemize}
several authors and their points of view.\textsuperscript{19} Moreover, as the famous Mamlûk chronicler al-Maqrîzî (d. 845/1442)\textsuperscript{20} notes “what is heard from the past will never—and in no way—affect us as deeply as what exists at present,”\textsuperscript{21} which underpins the idea that personal experience of events, as the best case, leaves a more lasting impression than any lengthy accounts of past events by non-contemporaries.

The comparative study is an ideal method of historical research which is nevertheless not always possible to employ especially when there is information gap due to a lack of contemporary local sources or the sparseness of contemporary reports.\textsuperscript{22} This refers, in particular, to the study of earthquakes, excessive floods and droughts before

\begin{itemize}
\item \textsuperscript{19} Guidoboni and Ebel, Earthquakes and Tsunamis, 227. Brázdil, Kundzewicz et al., Flood Risk in Europe, 741.
\item \textsuperscript{20} See about al-Maqrîzî footnote 84, p. 88.
\item \textsuperscript{21} al-Maqrîzî, Mamluk Economics. A Study and Translation of al-Maqrizi’s Ighāthah, tr. by A. Allouche, Salt Lake City: University of Utah Press 1994, 26.
\item \textsuperscript{22} Guidoboni and Ebel, Earthquakes and Tsunamis, 221–222.
\end{itemize}

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654/1256–7 and roughly the period between 738/1337\(^{23}\) and 770/1368.\(^{24}\)

Although there are contemporary Egyptian and Syrian historians, like Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir (620–692/1233–1293),\(^{25}\) al-Yūnīnī

\(^{23}\) This year marks the last contemporary records for the period before 738/1337, found in al-Yūsufis’ chronicle (676–759/1277–1358) \textit{Nuzhat al-nāẓir fī sīrat al-Malik al-Nāṣir}, which covers the years 733–738/1332–1337. See information about this chronicler in footnote 33, p. 267.

\(^{24}\) This year marks approximately the beginning of the contemporary reports recorded in al-ʿAynī’s (762–855/1361–1451) and al-Maqrızī’s (766–845/1364–1442) chronicles, who were eight and four years old by this time. See about al-ʿAynī footnote 31, p. 267 and about al-Maqrızī footnote 84, p. 88.

and Baybars al-Manṣūrī (ca. 644–725/1246–1325), who could provide information for the period before


654/1256–7, their published historiographic sources either do not treat the events of this period or provide only sparse information about disastrous events. Regarding the period between 738/1337 and 770/1368, Ibn al-Furāt (735–807/1335–1405)\(^\text{28}\) and Ibn Duqmāq (745–809/1349–1407)\(^\text{29}\) are theoretically reliable contemporary historians. However, as I could not find published editions of their chronicles covering the events of this period, I have consulted the records of the contemporary Syrian chronicler Ibn Kathīr (700–774/1300–1373)\(^\text{30}\) and later authoritative Egyptian historians al-ʿAynī


\(^{30}\) Ibn Kathīr, the student of Ibn Taymiyah (d. 728/1328) (see footnote 65, p. 44), was one of the best-known historians and traditionists of Syria under
They report on these years retrospectively, ensuring the survival of records not found elsewhere, due to the loss of the earlier sources. It is known that al-ʿAynī (d. 855/1451), al-Maqrizi’s contemporary, recast records of the missing years, using al-Yūsufi’s (676–759/1277–1358) \textit{Nuzhat al-nāẓir fī sīrat al-Malik al-Nāṣir}, which covered the Mamlūks of the \textit{Bahri} (Turkish) period. H. Laoust, “Ibn Kathīr,” \textit{The Encyclopaedia of Islam}, Leiden: Brill 1965, 817–818.


\footnote{32} See about al-Maqrizi in footnote 84, p. 88.

\footnote{33} Mūsā Ibn Muḥammad Ibn al-Shaykh Yaḥyā al-Yūsufi had close connections to Mamlūk authorities as he served in numerous war campaigns. In his chronicle, he recorded private and public events which he
period between 678–755/1279–1355. According to Donald Little, al-
Yūsufī’s chronicle was “the fullest, best documented contemporary
source for the reign of al-Malik al-Nāṣir Muḥammad.”

However, as he further notes in his article Historiography of the Ayyūbid and
Mamlūk Epochs, in particular al-ʿAynī’s chronicle retrieves Yūsufī’s
records of Nuzhah, which have survived only in a fragment covering
the years 733–738/1332–1338. Providing the continuity of
historical events, al-ʿAynī’s chronicle thus acquired and retained
additional reliability. However, with the appearance of contemporary evidence we should reassess the information for the
above-mentioned periods.

experienced as an eyewitness. D. Little, Historiography of the Ayyūbid and
Mamlūk Epochs, in The Cambridge History of Egypt (640–1517), ed. Carl F.

34 See about al-Malik al-Nāṣir’s reign (r. 693–694/1293–1294; 698–

35 Little, Historiography, 426. D. Little, An Analysis of the Relationship
between Four Mamluk Chronicles for 734–45, Journal of Semitic Studies 19/2

36 Guidoboni and Ebel, Earthquakes and Tsunamis, 226.
3.2.1. Overview of Historical Sources on Natural Disasters

3.2.1.1. Annals and Local Chronicles

The most important historical sources for the reconstruction and analysis of earthquakes and water-related disasters are annals and chronicles. Following a strict chronological framework, their authors preserved the memory of many historical events. They recorded meticulously occurrences of different “extraordinary” (gharīb) occurrences such as earthquakes, floods, droughts, famines, torrential rains, eclipses, meteorite falls, epidemics, epizootics, locust invasions and monstrous births. One of the drawbacks of this uniform material is that we can only look at the events through the eyes of the wealthier and better-educated strata of society.


38 See al-Qazwīnī’s categorisation of gharīb, p. 155, 151.
In this thesis, for the early Mamlūk, the so-called Baḥrī (Turkish)\textsuperscript{39} period (658–784/1260–1382), I consulted the following Egyptian and Syrian chroniclers. I give their names in the order of their date of birth, followed by short titles of their books, and the years their chronicles cover as relevant only to the study of the Mamlūk period.

\textsuperscript{39} According to Robert Irwin, the history of the Mamlūk reign is roughly divided into two consecutive periods: the Baḥrī (Turkish) (658–784/1260–1382) and the Burjī (Circassian) period (784–922/1382–1517). (Irwin, The Middle East in the Middle Ages, 157. Qāsim, ṬAṣr salāṭīn al-mamālīk, 8–21.) Unlike the Sultans of the Burjī period, the early Baḥrī Sultans were generally praised in the sources as they had consolidated the military position of the state, bringing victory against the Mongols and the Crusaders. (Allouche, al-Maqrizi’s Ighāthah, 1.) See more about the origin and history of the early Mamlūk period and further periodisation in Northrup, The Baḥrī Mamlūk Sultanate, 242–288. Irwin, The Middle East in the Middle Ages, 3f. Levanoni, The Mamluks’ Ascent to Power in Egypt, 121–144. D. Little, An Introduction to Mamlūk Historiography. An Analysis of Arabic Annalistic and Biographical Sources for the Reign of al-Malik an-Nāṣir Muḥammad Ibn Qalāʾūn, Wiesbaden: Steiner 1970.


40 See about this author footnote 25, p. 264.

41 See about this author footnote 26, p. 265.

42 See about this author footnote 27, p. 265.


In the following, I have similarly listed those local Egyptian historians whose works are invaluable for any study of the late Mamlūk, the so-called Burjī (Circassian) period (784–922/1382–1517).⁴⁸

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⁴⁴ See about this author footnote 178, p. 207.
⁴⁵ See about this author footnote 76, p. 173.
⁴⁶ See about this author footnote 33, p. 267.
⁴⁷ See about this author footnote 159, p. 199.


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49 See about this author footnote 28, p. 266.

50 See about this author footnote 29, p. 266.


52 See about this author footnote 31, p. 267.

53 See about this author footnote 84, p. 88.

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⁵⁴ See about this author footnote 82, p. 87.


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58 ‘Abd al-Bāsīṭ was also a representative of awlād al-nās. See about this chronicler in footnote 86, p. 89. Much of his historiographic work Nayl al-amal was copied from al-Maqrīzī’s Sulūk. What is noteworthy is that the akhbār (news, reports) in his chronicle are very short, and bear titles, which makes a search of entries easy.

59 See about this author footnote 215, p. 132.
Most of the above-listed chroniclers of the late Mamlūk Burjī period were representatives of the *awlād al-nās* ("sons of the people" or "sons of the noble"), meaning literally sons of those who mattered, that is the Mamlūks. They were freeborn of Turkish-Circassian origin who integrated into Egyptian society through intermarriages. Many of them spoke both Arabic and Turkish, acting as cultural intermediaries between the Mamlūk elite and their Turkish subjects.

All of these chronicles are invaluable sources for the reconstruction of natural disasters in Mamlūk Egypt. Due to the repetitive character of chronicles as a genre and the extent to which their authors borrowed from each other, we can find much of the information about the early Mamlūk period in the works of late Mamlūk historians. The

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61 Irwin, Mamluk Literature, 7.

62 Bacharach, Circassian Mamluk Historians, 82. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 7–8.
latter drew the information predating their lifetime from their predecessors, conflating different narrative elements. Nevertheless, the late Mamlūk historians also provide invaluable information about natural disasters which they witnessed during their lifetime as contemporaries.

3.2.1.2. Other Historical and Non-Historical Sources

Apart from the above-listed chronicles, there are sources, (1) which either include chapters, presenting a chronological history of catastrophes in general or, (2) cover a special treatment of earthquakes and water-induced disasters in separate treatises. These are the earliest attempts at cataloguing natural disasters, isolated from other historical events reported in the chronicles. These

63 Those who are interested in the purely textual interdependencies of the Mamlūk chroniclers can consult for the early Mamlūk Bahri period: Little, An Introduction to Mamlūk Historiography; Haarmann, Quellenstudien; Samira Kortantamer’s Ibn Abī al-Faḍā’il, Ägypten und Syrien zwischen 1317 und 1341. Sami Massoud’s The Chronicles and Annalistic Sources and Jere Bacharach’s Circassian Mamluk Historians provide respectively information on the late Mamlūk Burji period.
attempts show the interest that existed in the collation and cataloguing of disastrous events and the analysis of their causes. Although many of the records contained in them are a reproduction of events predating their authors’ lifetimes—which turns them into a secondary historical material, irrespective of their validity,—they are valuable sources from a socio-cultural perspective, as they also provide interpretations of, and attitudes to, earthquakes and Nile-induced disasters in Mamlūk Egypt.

(1) al-Suyūṭī’s (849–911/1445–1505) Ḥusn al-muḥāḍarah fī ta’rīkh Miṣr wa-al-Qāhirah belongs to the first category of books. Its second volume, covering different topics, has a chapter on natural disasters which occurred in Egypt and other regions after the advent of Islam until 841/1437–8. The events appear in chronological order under the title Dhikr al-ḥawādith al-gharībah al-kāʾinah bi-Miṣr fī millat al-islām min ghalā’ wa-wabā’ wa-zalāzil wa-āyāt wa-ghayr dhālika, which explicitly refers to famines, epidemics earthquakes and other “signs”

64 See about this author footnote 66, p. 45.


(āyāt) of “extraordinary events” (ḥawādith al-gharībah). This reference thus reflects al-Qazwīnī’s definition of natural phenomena as gharīb (“marvellous oddity”). It is interesting to note that, in the historical context, al-Suyūṭī does not call these events disasters but “oddities” and “signs” of God’s power, which play a significant role in al-Suyūṭī’s works in general.

Apart from al-Suyūṭī’s Ḥusn, al-Nuwayrī al-Iskandarānī’s (d. after 775/1372) Kitāb al-ilmām gives a similarly structured list of catastrophes in the chapter titled al-Zalāzil wa-al-tā’ūn wa-al-ahwīyah wa-al-fayḍān wa-al-ghalā’ (Earthquakes, plagues, winds, flooding of the Nile and famines). It covers historical disasters, which took place in different regions from the advent of Islam until 775/1373. Although the information on Egypt is sparse, this work is worth mentioning as it also marks early isolated attempts at cataloguing disastrous events.

67 See Chapter 2.2. The Arabic Literary Genre of ʿAjāʾib wa-Gharāʾib: Disasters as “Marvellous Oddities” p. 149f, 155.

68 See about this author footnote 180, p. 208.

(2) In addition to the above mentioned material which treats disasters in general, there are also specific books about earthquakes and the Nile-induced disasters. In this group is al-Suyūṭī’s treatise on earthquakes *Kashf al-ṣaḥṣalah ‘an waṣf al-zalzalah.* This handbook not only records earthquakes that occurred in Mamlūk Egypt and other regions before the advent of Islam until 905/1499–1500, but also presents the whole scope of interpretations and Islamic attitudes to earthquakes. It inspired at least three other authors—al-Suyūṭī’s two students: al-Dā’wūdī (d. 945/1539) and ʿAbdulqādir al-Shādhīlī (d. ca. 935/1528), as well as Ibn al-Jazzār (d. after 984/1576)—to

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70 See the discussion of this treatise and the forerunners of this genre in Hirschler, Erdbebenberichte, 114f. Schulze, Islamische Deutungen von Erdbeben, 104f. Akasoy, Interpreting Earthquakes, 192f.


continue cataloguing and analysing earthquakes during the post-Mamlūk, Ottoman period (1517–1798 A.D.).

Second, al-Suyūṭī’s another book Kawkab\textsuperscript{77} al-
rawḍah fī ta‘rīkh al-Nīl wa-Jazīrat al-
Rawḍah is devoted to the description of Nile-related issues. Among other topics, al-Suyūṭī (d. 911/1505) included a chapter in his book entitled Dhikr tasjīr ʿiwaj ʿalā al-
Nīl which provided chronological data of the Nile’s abnormal rise from the advent of Islam until 822/1419–20.\textsuperscript{78} Some of the mentioned irregularities induced droughts and excessive floods, which caused destructions and famines in Mamlūk Egypt.

\textsuperscript{75} Ṭāhir, Taḥṣīn al-
manāzil, 131–159.


\textsuperscript{77} According to W. Lanes’ \textit{An Arabic-English Lexicon}, vol. 7, Beirut: Librairie du Liban 1968, 2623, the word \textit{kawkab}, which primarily means star, has a number of other meanings such as water, source, flowers, and whiteness in the eye etc. In this context, I think it means the “source.”

\textsuperscript{78} al-Suyūṭī, \textit{Kawkab al-
rawḏah}, 217–266.
Third, in this category I also classify al-Maqrizi’s \textsuperscript{79} treatise on famines \textit{Ighāthat al-ummah bi-kashf al-ghummah},\textsuperscript{80} which has an analytical character: al-Maqrizi’s periodical occupation as a muḥtasib (market instructor) gave him deep insights into the economic matters of Egypt. He wrote this book, which criticises the economic and monetary policy of the \textit{Burjī} (Circassian) administration, in 808/1405 as a reaction to the increase in the number of famines in Egypt. This book not only provides invaluable information about droughts and famines caused by insufficient Nile floods,\textsuperscript{81} and their effects but also proposes pragmatic solutions to the problems.\textsuperscript{82} al-Asadi’s\textsuperscript{83} \textit{al-Taysīr wa-al-iʿtibār wa-al-taḥrīr wa-al-ikhtibār fīmā yajibu min ḥusn al-tadbīr}

\textsuperscript{79} See about this author footnote \textsuperscript{84}, p. 88.

\textsuperscript{80} al-Maqrizi, \textit{Ighāthat al-ummah}. Allouche, al-Maqrizi’s \textit{Ighāthah}.

\textsuperscript{81} Broadbridge, \textit{Royal Authority}, 235–236.


wa-al-taşarruf wa-al-ikhtiyār,\textsuperscript{84} written in analogy to al-Maqrīzī’s treatise in 855/1451, complements our understanding of disasters caused by the insufficient rise of the Nile.

Finally, in this category I also group a manuscript of the ‘ajā‘īb wa-gharā‘īb genre\textsuperscript{85} entitled Nashq al-azhār fi ‘ajā‘īb al-aqṭār.\textsuperscript{86} Its author is Ibn Iyās (d. 930/1524), prominent chronicler of the late Mamlūk period.\textsuperscript{87} Among other topics at the cosmographic core, this work includes a historiographic chapter Dhikr nubdhah latifah min akhār al-Nīl al-mubārak wa-lam nadhkur min akhār illsa mà waqa‘a min al-gharā‘īb fi amr ziyādatihi wa-nuqṣānihi on the chronology of

\textsuperscript{84} al-Asadi, al-Taysir.

\textsuperscript{85} The major characteristics of this genre were discussed in detail in Chapter 2 Natural Disasters in Cosmographic Works: Arabic Literary Genre of ‘Ajā‘īb wa-Gharā‘īb, p. 146f.

\textsuperscript{86} Ibn Iyās, Nashq al-azhār, fols. 400–428. There are other copies of the same manuscript. However, not all of them include all of the chapters. Cf. Ibn Iyās, Nashq al-azhār fi ‘ajā‘īb al-aqṭār wa-fīmā qil shiruhi, Staatsbibliothek zu Berlin, Ms. or. oct. 2966, fols. 229a-248b. Ibn Iyās, Kitāb nashq al-azhār fi ‘ajā‘īb al-aqtār, Staatsbibliothek zu Berlin, Ms. or. oct. 3940.

\textsuperscript{87} See about this author footnote 215, p. 132.
“extraordinary” fluctuations of the Nile recorded between 23/742 and 922/1516. Further complimentary literary sources for the study of the Nile-induced disasters will be introduced in Chapter 5 Excessive Floods and Disastrous Droughts.

88 L. Langlès translated this chapter into French on the basis of the manuscripts from the National Library of France. (Ibn Iyās, Nubdhah min nashq al-azhār fī ʿajāʿib al-aqtār. Extraits de l’odeur des fleurs dans les merveilles de l’univers, (Cosmographie) de Mohhammed ben-Ahhmed ben-Ayâs, tr. by Louis Langlès, Paris De l’imprimerie impériale 1810, 45–74.) However, L. Langlès omitted some parts of it, particularly poems and short verses composed on the occasion of excessive floods and droughts.
CHAPTER 4

EARTHQUAKES

4.1. Data on Historical Earthquakes in Mamlûk Egypt: Physical Aspects and Frequency

Whilst Egypt is an area of low seismic hazard, parts of it are exposed to the threat of earthquakes\(^1\) which are mainly generated because Egypt borders on several tectonic plates: the African, Arabian, Aegean and Turkish sub-plates of southern Europe.\(^2\) Situated along these zones,\(^3\) Egypt has experienced numerous minor local shocks and effects of several disastrous earthquakes during its history.\(^4\)


\(^{3}\) More about the earthquake hazard assessment of Egypt see Degg and Doornkamp, Earthquake Hazard, 395.

\(^{4}\) Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 19f.
The material collected from all the published sources, both primary and secondary, has revealed a rough estimate of forty-six⁵ seismic activities in Mamlūk Egypt during the period of more than two centuries. However, analysis of the data shows that the majority of earthquakes were minor shocks which either caused no damage or only inflicted minor structural damage.⁶ Moreover, some records of shocks stemming mainly from non-contemporary chronicles and secondary sources such as catalogues⁷ should be viewed critically.

The main secondary sources include Nicholas Ambraseys’ and Charles Melville’s catalogue on the seismicity of Egypt, Arabia and the Red Sea, spanning the period between 184 B.C. and 1922 A.D.⁸ and Emanuela Guidoboni’s catalogue on earthquakes and tsunamis in the

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⁵ See the list of earthquakes in the appendix.
⁶ See the occurrences of the minor shocks, which are not analysed in this thesis, in the appendix, where they are described as “light.”
⁷ See more on earthquake catalogues and their history in Guidoboni and Ebel, Earthquakes and Tsunamis, 26–35.
⁸ Ambraseys, Melville et al. (ed.), The Seismicity of Egypt.
medieval Mediterranean area (eleventh–fifteenth century A.D.). Apart from these European scholars, Arab researchers like ʿAbdallāh al-Ghunaym—whose catalogue covers the period between the seventh and nineteenth century A.D.10—and Muṣṭafā Anwār Ṭāhir—who treated earthquakes from the sixth to the eighteenth century A.D.11—have made a significant contribution to this field. ʿAbdallāh al-Ghunaym’s and Muṣṭafā Anwār Ṭāhir’s catalogues include the corpus of texts drawn from Arabic primary and secondary sources, whereas Emanuela Guidoboni’s catalogue, in addition, provides their English translations.

Taken together all of these catalogues give a picture of the frequency of seismic activities in the Middle East and provide the basis for the chronological reconstruction of earthquakes in Mamlūk Egypt. However, while these catalogues aimed to show every available record of earthquakes the authors of the European catalogues found it necessary to doubt the validity of some of these records.

9 Guidoboni and Comastri, Catalogue of Earthquakes.
10 al-Ghunaym, Sijill al-zalāzil.
4.2. Critical Review of “Doubtful” Earthquakes

In the following, I present “doubtful” earthquakes diachronically, conceived in a long-term frame, and elucidate this categorisation by means of examples. To the category of “doubtful,” which Emanuela Guidoboni calls “false and lost earthquakes”\textsuperscript{12}—I classify earthquakes:

(1) which were narrated only by non-contemporary chroniclers, irrespective of their reliability
(2) which were mistakenly recorded due to a location error
(3) which had a double meaning from the linguistic point of view and from the narratological perspective, as their cultural and linguistic contexts were subject to misinterpretations, especially for the authors writing in later centuries

\textsuperscript{12} See also footnote 10, p. 259. Here I use only those categories, which are relevant to the study of earthquakes in this thesis. The above-mentioned list, except for the first point, stems from Emanuela Guidoboni’s categorisation of “false and lost earthquakes” with a slightly different order. Guidoboni and Ebel, Earthquakes and Tsunamis, 247.
(4) which were assessed as such because of the collapse of certain buildings caused by some structural failure rather than due to a real earthquake

(5) which were mistakenly duplicated.

4.2.1. Doubtful Earthquakes due to the Lack of Contemporary Evidence

According to this classification, the following earthquakes¹³ from the first group should be considered “doubtful” due to the lack of contemporary evidence:

660/25 November 1261–13 November 1262¹⁴

¹³ I would like to draw attention to the dates of earthquakes: there is a discrepancy of one day between Nicholas Ambraseys’ and Emanuela Guidoboni’s presentation of Gregorian dates and the dates I converted electronically. Cf. for example, the Hijri date 748 4 Ramadān, which is presented according to the electronical computation as 7 December 1347 and as 8 December 1347, according to Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 45 and Guidoboni and Comastri, Catalogue of Earthquakes, 403.
al-Qalqashandī (d. 821/1418),\textsuperscript{15} who is the only source for this information, did not mention exactly when this alleged “strong earthquake” (zalzalah shadīdah) in 660/1261–1262 happened, even though it struck Egypt, Syria (Damascus, Şafad, al-Karak, al-Shawbak), the rural area of Iraq and many other places. He stated that buildings collapsed, mountains chapped and rocks split giving way to springs. People ran out of their dwellings to the open areas. They felt the effects of this earthquake along the Nile Delta. The sea [the Mediterranean] overan its shores destroying boats and ships, walls, the minarets of mosques and a great part of the lighthouse in Alexandria.\textsuperscript{16}

Nicholas Ambraseys et al. call the record of this earthquake “dubious.”\textsuperscript{17} However, referring to the catalogue of the Byzantine

\textsuperscript{14} al-Ghunaym, Sijill al-zalāzil, 180–181. Ṭāhir, Nuṣūṣ ʿarabīyah, 116. Ṭāhir, Les grandes zones sismiques, 94.

\textsuperscript{15} See about this Mamlūk author footnote 181, p. 209.


\textsuperscript{17} Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 41.
scholar Grumel, Emanuela Guidoboni registered an earthquake as having occurred in Syria some time between October 1261 and September 1262.\textsuperscript{18}

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\textbf{693/1 December 1293–19 November 1294}\textsuperscript{19}

The earthquake of 693/1293–4 remains similarly unidentified. According to al-Suyūṭī (d. 911/1505)\textsuperscript{20}, who relied on the record of Egyptian historian Ibn Mutawwaj (d. 639–730/1241–1329),\textsuperscript{21} there was a strong earthquake throughout the city of Miṣr (Old Cairo).\textsuperscript{22} As

\textsuperscript{18} Guidoboni and Comastri, Catalogue of Earthquakes, 273.


\textsuperscript{20} See about this Mamlūk author in footnote 66, p. 45.


\textsuperscript{22} Miṣr can mean Egypt in general or simply Fustāṭ (Old Cairo). (C. Bosworth, A. Wensinck et al., “Miṣr,” \textit{The Encyclopaedia of Islam}, vol. 7, Leiden: Brill 1997, 146–186.) See also about the foundation of Fustāṭ, which was replaced during the Mamlūk period by the name Miṣr, the administrative capital of Upper Egypt, in al-Maqrīzī, \textit{al-Mawāʾīz wa-al-ʿitibār}
a result, some columns in the mosque of ‘Amr Ibn al-ʿĀṣ seceded. However, the effects were slighter than those that occurred in the mosque of al-Qāhirah (New Cairo). Nicholas Ambraseys et al. do not


give a separate entry for this earthquake but mention, with a reference to the same source, that it might be the earthquake which occurred in Palestine in 692 Ṣafar/January 1293.25

741 Dhū al-ḥijjah/17 May–15 June 134126

The information about the earthquake in 741/1341 is even more doubtful and vague. The seventeenth century A.D. author Ibn al-ʿImād (d. 1089/1678–9)27 as mentioned in ʿAbdallāh al-Ghunaym’s and


25 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 41–42.


Muṣṭafā Ṭāhir’s catalogue recorded that there was a “violent earthquake” (zalzalah ʿaẓīmah) some day during Dhū al-Ḥijjah/Mai–June in Old Cairo, Syria and Alexandria. 28 Innumerable people died under the ruins, countless mosques and minarets were destroyed, and numerous ships sank. 29 From the description of this event, one could imply that it was a tsunami. 30

Nicholas Ambraseys and Emanuela Guidoboni, who occasionally cited Ibn al-ʿImād’s chronicle in their entries, 31 do not include this event in their catalogues, probably because they doubted the validity of the information. However, Emanuela Guidoboni mentioned the occurrence of a destructive tsunami in the autumn of “1343 or 1342” A.D. in the region of Marmara Sea and a series of earthquakes

28 Ṭāhir, Nuṣūṣ ʿarabīyah, 134. Ṭāhir, Les grandes zones sismiques, 95.
30 “Tsunamis are another secondary phenomenon triggered by some earthquakes and by large submarine sediment slides.” Guidoboni and Ebel, Earthquakes and Tsunamis, 16.
in Constantinople. It is probable that Ibn al-ʿImād either mistakenly recorded this event or confused it with the record of the 744/1343 earthquake in Egypt.

748 4 Ramaḍān/7 December 1347

We also learn about the earthquake in 748/1347 from the late Mamlūk sources. al-Maqrīzī (d. 845/1442), al-Suyūṭī (d. 911/1505), and ‘Abd al-Bāsiṭ (d. 920/1514) gave a brief record of two shocks which occurred within an hour on 4 Ramaḍān/7 December in New Cairo. Emanuela Guidoboni mentioned in her catalogue that the principal source for this earthquake was al-Maqrīzī,

32 See, for example, Guidoboni and Comastri, Catalogue of Earthquakes, 387–393.
33 See footnote 119, p. 318.
36 al-Suyūṭī, Kashf al-ṣalṣalah, 206.
“a contemporary writer from Cairo,” which is a mistake, as al-Maqrizi was born in 766/1364 and could not have witnessed it. Although he is a reliable chronicler, who, however, does not mention his source for this record, this earthquake remains “doubtful” until contemporary references are found.

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753 Ramaḍān/10 October–8 November 1352

We find another vague record of an earthquake in al-Maqrizi’s (d. 845/1442) chronicle. His dating is incomplete as he simply mentions that an earthquake happened in 753/1352 during Ramaḍān when people were at the last evening prayer. Referring to the same record, Nicholas Ambraseys and Emanuela Guidoboni suggest that it

38 Guidoboni and Comastri, Catalogue of Earthquakes, 403.


41 Emanuela Guidoboni mistakenly notices that this information derives from the records of the “contemporary” chronicler al-Maqrizi (766–845/1364–1442).
took place in Cairo, whereas ‘Abdallāh al-Ghunaym mentions in parenthesis Miṣr\(^{42}\) (Egypt or Old Cairo). As al-Maqrīzī (d. 845/1442) does not mention the location implicitly, we should treat this information as a supposition.

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760 13 Dhū al-ḥijjah/4 November 1359\(^{43}\)

The 760/1359 earthquake is not recorded in any of the catalogues but is reported in the anonymous Arabic manuscript.\(^{44}\) Its author reported that there was a series of strong earthquakes (\textit{zalāzil qawīyah jiddan}) in Syria and Egypt, which destroyed many buildings and killed numerous people. He drew this information from certain \textit{Khiṭaṭ al-}

\footnote{See footnote 22, p. 291.}

\footnote{Anonymous, \textit{al-Barākīn wa-al-zalāzil}, Egyptian National Library, Ms. Ṭ 114, fols. 111–112.}

\footnote{This unpublished manuscript, most probably compiled in the nineteenth century A.D. and copied with amendments in the twentieth century A.D., treats volcanoes and earthquakes which happened in different regions of the world from 900 B.C. until the beginning of the twentieth century A.D.}
tawfiqiyah. Its author relied in his turn on al-Maqrizi’s Sulūk, which recorded, according to this anonymous author, how a violent earthquake (zalzalah ʿazīmah), lasting for five darajah, shocked people so that they thought the Resurrection Day (al-qiyyāmah) had come. It destroyed a lot of houses, minarets, schools in Old and New Cairo, and a part of the lighthouse in Alexandria. This earthquake was followed by the flooding of the Nile and a strong hot wind (samūm), lasting for days. Besides this, he mentioned that people left their dwellings and camped between Būlāq and al-Rawḍah. Given this


46 See the defenition of this time unit on page 396.


situation thieves plundered the empty houses. However, it must be mentioned here that neither al-Maqrīzī’s Sulūk, nor the chronicles of Ibn Iyās (d. ca. 930/1524) and Abū al-Maḥāsin, to whom the anonymous author refers in the end, recorded this earthquake. Most of the described details suggest that the author created an earthquake by conflating his record with the events of a disastrous earthquake which happened on 23 Dhū al-hijjah 702/7 August 1303.

Summing up the list of doubtful earthquakes due to the lack of contemporary evidence, I would like to emphasise again that contemporary authors did not record any of these earthquakes to as


50 Ibn Taghri Bardī (d. 874/1470) is meant here.


52 See the discussion of this disastrous earthquake in Chapter 4.4. The Disastrous Earthquake of 702/1303: A Comprehensive Account of Effects and Attitudes, p. 323.
having happened in Egypt, which means that we need further evidence for their validity.

4.2.2. Doubtful Earthquakes due to Location Error

The following earthquake belong to the second group of “doubtful” earthquakes due to location error:

791 after 17 Dhū al-ḥijjah/after 6 December 1389

Before passing to the necrology of the year 791/1388–9, Ibn Iyās (d. 930/1524) recorded, without mentioning the location, that there was a “terrible earthquake” (zalzalah ʿaẓīmah) during that year. His khabar (news), which is very brief for such an event, reveals that it happened after 17 Dhū al-ḥijjah/6 December. We find the reference to this record in Donald Little’s list of earthquakes drawn from Ibn Iyās’ chronicle. There, Donald Little implies from the style of Ibn Iyās’

54 Ibn Iyās, Badāʾiʿ, vol. 1,2, 423.
other records of earthquakes that it occurred in New Cairo in November 1389 A.D.\textsuperscript{55}

Interestingly, a Syrian chronicler Ibn Qāḍī Shuhbah (779–851/1377–1448),\textsuperscript{56} who was twelve years old at the time of this event, also recorded a violent earthquake (\textit{zalzalah ʿażīmah}), which happened during Ṣafar 791/January 1389. This date is somehow close to the date mentioned by Ibn Iyās (d. 930/1524). But, according to Ibn Qāḍī Shuhbah and al-Maqrīzī (d. 845/1442), this great disaster (\textit{ḥādithah ʿażīmah}), which shook the earth for three further days, destroying many places and depopulating the whole region, happened in Chorasan.\textsuperscript{57} This substantiates the suspicion that Ibn Iyās (d. 930/1524) might have been referring to the event in Chorasan, which

\textsuperscript{55} Little, Data on Earthquakes, 143.

\textsuperscript{56} Ibn Qāḍī Shuhbah was a judge in Damascus. See about his life and career in Massoud, The Chronicles and Annalistic Sources, 81–85.

is recorded in ʿAbdallāh al-Ghunaym’s\textsuperscript{58} and Muṣṭafā Ṭāhir’s\textsuperscript{59} catalogues.

4.2.3. Doubtful Earthquakes due to Misinterpretations

The following earthquakes belong to the third group of doubtful earthquakes due to the probable misinterpretation of historical and linguistic contexts. This applies to the cases when non-contemporaries interpreted the word “earthquake” (zalzalah) or a semantically synonymous term as a historical earthquake without critical consideration of the context. This also refers to cases in which they included the occurrence of an earthquake symbolically to ascribe importance to the narrative. While discussing the potential problems in historical records of seismic events, Emanuela Guidoboni drew attention to this kind of problem and noticed that the figurative meaning of an earthquake posed problems of verification especially if there was just one source available. “Even experienced scholars have

\textsuperscript{58} al-Ghunaym, Sijill al-zalāzil, 206.

\textsuperscript{59} Ṭāhir, Nuṣūṣ ʿarabiyah, 140.
fallen into this trap and created earthquakes that had never actually
occurred in the first place.”

657 probably before 12 Jumādā II/5 June 1259

The “terrible earthquake” (zalzalah ʿaẓīmah/zalzalah ʿaẓīmah jiddan)
of 657/1258–9 in Egypt, reported by several non-contemporary
chroniclers, can be classified both in the first group, as no
contemporary author recorded it, and to the third group, as the later
authors probably misinterpreted the historical context of the earlier
sources. For example, al-Maqrīzī (d. 845/1442), whose report allows

60 Guidoboni and Ebel, Earthquakes and Tsunamis, 232f.
61 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 40–41.
Guidoboni and Comastri, Catalogue of Earthquakes, 271–272. al-Ghunaym,
by S. Ṭabbārah, Bayrūt: al-Maktabah al-ʿaṣriyah 1420/1999, 254. al-ʿAynī,
ʿIQD al-jumān fi taʿrīkh ahl al-zamān (648–664/1250–1265), vol. 1, al-
Qāhirah: al-Hay’ah al-miṣriyah al-ʿāmmah lil-kitāb 1407/1987, 224. al-
Maqrīzī, Kitāb al-sulūk li-maʿrifat duwal al-mulūk, ed. by M. Ziyādah, vol. 1,2,

303
for a dating of the event before 12 Jumādā II/5 June, briefly noticed that “earthquakes became numerous in Egypt” (*kuthirat al-zalāzil bi-ard Miṣr*).63 However, these “earthquakes” might refer figuratively to the “shaky” situation in the Mamlūk realm due to the “rumours” (*arājif* sing. *irjāf*)64 about the advance of the Mongols to Syria.65 This news, which spread fear both in Syria and Egypt, was omnipresent and repeatedly reported in all of the sources, the earliest being Baybars al-Manṣūrī’s (ca. 644–725/1246–1325)66 and Ibn al-Dawādārī’s (687–736/1288–1336) chronicles.67

Nicholas Ambraseys rightly noticed that some of the sources only reported rumours (*arājif*), meaning literary “false”68 or “disquieting

63 al-Maqrīzī, Kitāb al-sulūk, vol. 1,2, 420.

64 In Emanuela Guidoboni’s catalogue, the word *arājif* (rumours) is translated as “shocks.” Guidoboni and Comastri, Catalogue of Earthquakes, 272–273.


66 Baybars al-Manṣūrī, Kitāb al-tuḥfah, 42.

67 Ibn al-Dawādārī, Kanz al-durar, vol. 8, 44.

68 Wehr, Dictionary, 329.
rumours,” which were “flying around” at that time.69 The cursory analysis of the context in which this term (arājīf “rumours”) appeared in Mamlūk texts revealed that it usually referred to rumours (arājīf) about political events like death or demise of the Sultan,70 social unrest,71 spreading of the plague,72 and in particular, the approach of foreign troops.73

69 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 40.


Another interesting aspect worth mentioning is that the word *irjāf* stems from the root *r-j-f*, whose first verbal form *rajafa*\(^1\) bears the meaning of “to be shaken”, “tremble” or “quake.”\(^2\) The respective noun forms—*rajfah* or *rājifah* “earthquake”—are used synonymously for *zalzalah* “earthquake”.\(^3\) They also appear in punishment stories and apocalyptic passages of the *Qurʾān*.\(^4\) Taking into consideration these meanings, we can conclude that the semantic field of the word *irjāf*, appearing in all of the contemporary sources in relation to the coming of the Mongols, might have unconsciously awakened the

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association of rumours about socio-political “quakes” with the occurrence of seismic “quakes.”

Moreover, according to the contemporary Syrian chronicler al-Yūnīnī (640–726/1242–1326),78 the rumour (al-irjāf) of the advancing of the Mongols to Syria continued into 658/1259–1260.79 In contrast to this report, we learn from the later author al-Maqrīzī (d. 845/1442) that there was an earthquake in Syria at night on 6 Rabī‘ II 658/20 March 1260. A strong wind, lightning and thunder, which “God sent on the day when the Mongols surrounded the Citadel of Damascus (Qal‘at Dimashq), accompanied the shock.” al-Maqrīzī probably included these natural phenomena to intensify the gravity of the situation, in which people, as he says, were literally caught between the “fear of heaven and earth” (bayna khawf arḍī wa-khawf samā‘ī).80

78 See about this author footnote 26, p. 265.
80 al-Maqrīzī, Kitāb al-sulūk, vol. 1,2, 426.
The inclusion of natural phenomena such as earthquakes, thunder, lightning or winds in the narratives of certain significant events was common in the narratology of disasters. To recap, this narrative linkage appeared in the content of the astro-meteorological *malḥamah* texts, where earthquakes along with other natural phenomena heralded wars and other disastrous events. These natural phenomena were probably included metaphorically. As Ansgar Nünning mentions, metaphors are constructive parts in the narratology of disasters and one of their functions is to convey tension and evoke emotional reactions to the reported event.

Relying on the *Qurʾān* commentators, al-Suyūṭī (d. 911/1505) also drew attention to the occurrence of different natural phenomena as accompanying certain significant events. For example, the first earthquake in the world is said to have occurred when Qābīl (Cain)

81 Nünning, Krise als Erzählung und Metapher, 131–135.
82 Nünning, Krise als Erzählung und Metapher, 138.
83 See about al-Suyūṭī footnote 66, p. 45.
84 See also Chapter 4.4.3.1. Earthquakes from the Religious Perspective, (e) The Herald of Significant Events, p. 377f.
killed Hābīl (Abel)\textsuperscript{85} or when Ibrāhīm (Abraham) wanted to sacrifice his son.\textsuperscript{86} Such views were not unanimously accepted and were even criticised. For instance, discussing the function of eclipses, earthquakes, strong winds, droughts and torrential rains, Ḥanbalī theologian and jurisconsult Ibn Taymiyah (d. 728/1328),\textsuperscript{87} who was most obviously familiar with the content of astro-meteorological malḥamah texts and Qurʾān commentaries, made reference to the prophet’s words “that the wisdom of such [events] consists in frightening the servants [of God]. [...] God tormented likewise [various] communities by the wind, the roaring blast and the deluge.”\textsuperscript{88}

In both of the above mentioned cases—the earthquake of 657/1258–9 and 658/1260—the evidence shows that the available contemporary sources speak only about rumours of approaching Mongols, whereas

\textsuperscript{85} al-Suyūṭī, Kashf al-ṣalṣalah, 137.

\textsuperscript{86} Read more cases of the earthquake-linkage with specific days in al-Suyūṭī, Kashf al-ṣalṣalah, 157.

\textsuperscript{87} See about this scholar footnote 65, p. 44.

\textsuperscript{88} Michot, Ibn Taymiyya, 157.
the later authors add the occurrence of a seismic shock to this information, which is to be understood as a rhetorical device.

758 26 Dhū al-qaʿdah/9 November 1357

We can see similar problems of misinterpretation in the case of the 758/1357 earthquake in New Cairo. This earthquake is not recorded in any of the catalogues, except for Donald Little’s data on earthquakes, where he mistakenly dates it as 9 August 1357 A.D. In fact, the later Mamlūk chronicler Ibn Iyās (d. 930/1524), whom Donald Little mentioned as his source, reported the occurrence of an earthquake in a long passage devoted to a story about an attack on a certain prominent emir al-Atābekī Shaykhū al-ʿUmarī. On 21 Shaʿbān/8 August, which is probably the date Donald Little meant, a mamlūk named Qaṭlū Qujāh made an attempt on the emir’s life. The latter died shortly afterwards on 26 Dhū al-qaʿdah/9 November. People marvelled (ʿajiba) that his death coincided with a light

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90 Little, Data on Earthquakes, 141.

91 Ibn Iyās, Badāʾiʿ, vol. 1,1, 562.
earthquake (zalzalah khafīfah), which was followed by heavy out of season rain. As the emir enjoyed great popularity among the population, not only did people lament his death, but as some poets expressd it in verse—even the “heaven cried” for such a human loss.92

As I mentioned above, the coincidental occurrence of an earthquake or other natural phenomena with some significant day, like the death of prominent people, was not foreign to the authors and readers.93 This link—that we can also find in the malḥamah astro-meteorological predictions94—was controversially debated. Ibn Taymīyah (d. 728/1328)95 found such a connection to be dubious.96 Relying on a specific tradition,97 al-Suyūṭī (d. 911/1505) expressed a similar

92 Ibn Iyās, Badāʾiʿ, vol. 1,1, 563.
93 See p. 308f.
94 Ibn Zunbul, al-Kitāb naql min kitāb al-qānūn, fols. 40a, 41b, 45b, 47b, 54b, 55a etc.
95 See about this scholar footnote 65, p. 44.
96 Michot, Ibn Taymiyya, 156–157.
attitude by citing that solar and lunar eclipses, among God’s other signs\(^98\) (like earthquakes),\(^99\) did not happen because someone died or is born, but because God frightens his servants and shows them his existence.\(^100\)

It seems that Ibn Iyās (d. 930/1524) intentionally recorded the occurrence of a light earthquake and heavy rain as metaphors to intensify the significance of this person whom he praised for his “best” qualities and lamented for the evil done to him. Therefore, it is highly doubtful that a real seismic event took place in 758/1357.

Ibn Iyās’ other records attest that he used metaphorical language on similar occasions. When reporting the death of a prominent person in 922/1517, he mentioned that upon announcing the news the earth


\(^{99}\) See earthquakes as belonging to the group of God’s “signs” (al-āyāt) in al-Bukhārī, Ṣaḥīḥ al-Bukhārī, vol. 2, 41. See also Chapter 4.4.3.1. Earthquakes from the Religious Perspective, (e) The Herald of Significant Events, p. 377f.

\(^{100}\) al-Suyūṭī, Kashf al-ṣalṣalah, 146. al-Bukhārī, Ṣaḥīḥ al-Bukhārī, vol. 2, 42f.
quaked. Furthermore, when reporting the death of Mamlûk chronicler and prominent sheikh of Islam Ibn Ḥajar al-Asqalānî (d. 852/1449), Ibn Iyās (d. 930/1524) recorded that when he died it drizzled to revive him from the dead. All this makes me conclude that it was typical for Ibn Iyās (d. 930/1524) to embellish occurrences of natural phenomena with metaphorical implications, an approach which also reflects the form of the narrative and specific socio-cultural perceptions.

4.2.4. Doubtful Earthquakes due to Subjective Implications

The following earthquake is doubtful due to subjective implications related to the destruction of a certain structure.


We find the record of the 762/1360–1 earthquake in Nicholas Ambraseys’ catalogue, which draws attention to the problem of the interpretation of this earthquake, which was recorded in the Ottoman source. In addition to the fact that no contemporary Egyptian source explicitly mentioned an earthquake during that year, the context also raised certain doubts. We learn from the chronicle of the contemporary Damascene scholar Ibn Kathîr (700–774/1300–1373) that news was received of the collapse of the minaret of the Sultanic school in Old Cairo on 6 Rabîʿ II/12 February. In this accident, about three hundred people, mainly young students, died. Interestingly, Ibn Kathîr (d. 774/1373) added that the new minaret was of unusual design (ṣifah ghariba) as it had two minarets based on one support. This descriptive inclusion may either suggest that the collapse happened due to some construction failure or was a criticism of the

104 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 45–46. al-Ghunaym, Sijill al-zalāzil, 204.

105 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 46.

106 See about this chronicler footnote 30, p. 266.

innovative form of the structure. According to al-Maqrizi (d. 845/1442), it was an incident, regarded as a bad omen for the Sultan [al-Nāṣir Ḥasan], who passed away soon afterwards on 9 Jumādā I/16 March 1361.108

4.2.5. Doubtful Earthquakes due to Duplication

The final fifth group of doubtful earthquakes was created due to their duplication:

918 20 Muḥarram/6 April 1512109

A quick glance at the list of earthquakes in the appendix110 reveals a certain frequency of earthquakes in the beginning of the sixteenth century A.D. Specifically it shows the occurrence of several consecutive earthquakes between 914/1508–9 and 919/1513–4. Among them two earthquakes show similarities. The first earthquake


110 See p. 643f.
happened on Monday, 20 Muḥarram 918/6 April 1512, as recorded in al-Dāʾudī’s (d. 945/1539) catalogue of earthquakes (the continuation of al-Suyūṭī’s Kāshf al-ṣalṣalah).\textsuperscript{111} The second earthquake also occurred on Monday, 20 Muḥarram but in 919/27 March 1513, as recorded in Ibn Iyās’ chronicle.\textsuperscript{112}

It is most likely that one of these records was mistakenly duplicated. al-Dāʾudī’s report raises especial doubts as his record mentions the occurrence of a light earthquake on Monday,\textsuperscript{113} which was actually Tuesday, according to the electronic date converter. It is probable that al-Dāʾudī confused this event with the earthquake which happened on the same day a year later in 919/1513, as recorded in Ibn Iyās’ chronicle\textsuperscript{114} and in Nicholas Ambraseys’ catalogue.\textsuperscript{115} This means that al-Dāʾudī mistakenly created an earthquake in another year.

\textsuperscript{111} al-Ḥāfiz, Nuṣūṣ, 261.
\textsuperscript{112} Ibn Iyās, Badāʾī, vol. 4, 297.
\textsuperscript{113} al-Ḥāfiz, Nuṣūṣ, 261.
\textsuperscript{114} Ibn Iyās, Badāʾī, vol. 4, 297.
\textsuperscript{115} Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 54.
4.3. Overview of “Violent” Earthquakes

According to contemporary sources, eight earthquakes were perceived as “violent.” They happened in 662/1264,\(^\text{116}\) 698/1298–9,\(^\text{117}\) 

\(^{116}\) The only contemporary source for this earthquake is the Syrian chronicler al-Yūnīnī (640–726/1242–1326). He recorded that during that year (662) on 20 Rabīʿ II/19 February 1264 there was a violent earthquake. From the text, it is not clear whether it was in Egypt. (al-Yūnīnī, Dhayl, vol. 1, 553.) However, in an alternative reading of the same source as well as in the records of al-Maqrizī (d. 845/1442) and al-Suyūṭī (d. 911/1505), New Cairo was precisely mentioned. See al-Yūnīnī, Dhayl mirʾāt al-zamān, 275, http://www.islamicbook.ws/tarekh/dil-mrat-alzman-.pdf. al-Maqrizī, Kitāb al-sulūk, vol. 1,2, 508. al-Suyūṭī, Kashf al-ṣalṣalah, 200. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 41. al-Ghunaym, Sijill al-zalāzil, 181. Ţāhir, Nuṣūṣ ‘arabiyah, 117.

\(^{117}\) Two earthquakes were recorded to have occurred during 698/1298–9. According to the Syrian chronicler al-Jazārī (658–739/1260–1338), one of them was strong. (al-Jazārī, Taʾrīkh ḥawādith al-zamān wa-anbāʾihi wa-wafayāt al-akābir wa-al-aʿayān min abnāʾihi: al-maʿrūf bi-taʾrīkh Ibn al-Jazārī (689–699), ed. by ʿU. Tadmurī, vol. 1, Şaydā: al-Maktabat al-ʿaṣriyah
Apart from these earthquakes, further earthquakes and 886/1481. As the chroniclers unanimously considered this earthquake disastrous, I discuss it in detail in Chapter 4.4. The Disastrous Earthquake of 702/1303: A Comprehensive Account of Effects and Attitudes, p. 323.

There is some confusion about the 744/1344 earthquake. According to contemporary Syrian chronicler Ibn Kathîr (700–773/1300–1373), there was an earthquake on 15 Shaʿbān 744/1 January 1344, which was slightly felt in Damascus. In Aleppo, it must have been stronger because buildings were damaged. As a result, many people died in Manbij, a town in Aleppo. (Ibn Kathîr, al-Bidâyah, vol. 2, 2204.) According to another contemporary Syrian historian Ibn Ḥabīb (710–779/1310–1377) as well as later Egyptian scholars, al-ʿAynî (d. 855/1451) and al-Suyūṭî (d. 911/1505), this “terrible” earthquake also affected Egypt. (Ibn Ḥabīb, Tadhkirat al-nabīh fi ayyām al-Mansûr wa-banîh (741–770/1340–1368), vol. 3, al-Qâhirah: al-Hayʾah al-misriyyah al-ʿammah lil-kitāb Markaz taḥqîq al-turāṭh 1986, 58. al-Suyūṭî, Kashf al-ṣalṭalâh, 205–206.) See al-ʿAynî’s text in the unpublished manuscript of ʿIqd al-jumān in (Ṭâhir, Nuṣūṣ ʿarabīyah, 137. Ṭâhir, Les grandes zones sismiques, 95. al-Ghunaym, Sijill al-zalāzil, 200f. Guidoboni
Referring to al-ʿAynī’s unpublished manuscript Taʾrīkh al-Badr, Ms. BL Or Add. 22,360, fol. 88vo, Nicholas Ambraseys cited that there was a strong earthquake in New Cairo in 775 1 Jumādā I/18 October 1373 (19 October, according to the electronic converter). In contrast, later authors like al-ʿAsqalānī (d. 852/1449), al-Suyūṭī (d. 911/1505), ʿAbd al-Bāsiṭ (d. 920/1514), and the anonymous author of al-Barākīn reported that the shock was light. al-ʿAsqalānī, Inbāʿ al-ghumr bi-anbāʿ al-ʿumr, ed. by Ḥ. Ḥabashī, vol. 1, al-Qāhirah: al-Majlis al-aʿlā lil-shuʾūn al-islāmiyah, lajnat iḥyāʾ al-turāth al-Islāmī 1418/1998, 60. al-Suyūṭī, Kashf al-ṣalṣalah, 206. al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 304. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 64. Anonymous, al-Barākīn, fol. 112. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 46. Guidoboni and Comastri, Catalogue of Earthquakes, 519–520.

There is a discrepancy about the date of this earthquake: al-Maqrīzī (d. 845/1442) reported that there were several shocks 6 Shaʿbān 828/22 June 1425, whereas al-ʿAsqalānī (d. 852/1449) dated it to 17 Shaʿbān/3 July. Despite this difference, both of them described it as a strong earthquake lasting for two degrees (darajatayn) or, as al-Maqrīzī said, “a period required to read Surat al-Ikhlāṣ (Sura 112). al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 690–
occurred in 825/1422, 891/1486, and 896/1491, which I do not consider here because they were not unanimously perceived as


122 According to ʿAbd al-Bāṣīṭ (d. 920/1514) and Ibn Iyās (d. 930/1524), during one of the nights of Rajab 881/19 October–17 November 1476, there was a terrible earthquake in New Cairo. (ʿAbd al-Bāṣīṭ, Nayl al-amal, vol. 2,7, 164. Ibn Iyās, Badāʾiʿ, vol. 3, 121.) However, referring to the same earthquake in Old Cairo, al-Suyūṭī (d. 911/1505), in contrast, estimated it as light. al-Suyūṭī, Kashf al-ṣalṣalah, 209. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 50. Guidoboni and Comastri, Catalogue of Earthquakes, 760. al-Ghunaym, Sijill al-zalāzil, 225. Ṭāhir, Nuṣūṣ ʿarabīyah, 149.

123 As this earthquake was unanimously perceived as violent, I will discuss it in detail in Chapter 4.5. The Disastrous Earthquake of 886/1481: Comprehensive Account of Effects and Attitudes, p. 383.

124 al-ʿAsqalānī (d. 852/1449), al-Suyūṭī (d. 911/1505) and the anonymous author of al-Barākīn labelled the earthquake of 825/1422 in New Cairo as minor. (al-ʿAsqalānī, Inbāʿ al-ghumr, vol. 3, 273. al-Suyūṭī, Ḫusn al-

125 al-Sakhāwī (d. 902/1497) reported that there was a terrible earthquake in 12 Shawwāl 891/10 October 1486. In contrast, ʿAbd al-Bāsiṭ (d. 920/1514) told that the earthquake, which shook twice, was light. However, none of them mentioned precisely the place of the seismic shock. Though, quoting from al-Sakhawī’s manuscript, Nicholas Ambraseys mentioned that it happened in Cairo. al-Sakhāwī, al-Dhayl al-tām ʿalā duwal al-islām lil-Dhahabī, ed. by Ḥ. Marwah, vol. 2, al-Kuwayt: Maktabat dār al-ʿurūbah 1418/1997, 406. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,8, 42. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 51.

strong, at least in Egypt. Out of the above-mentioned eight earthquakes, commonly labelled strong or terrible, only two were perceived as disastrous because of their intensity and repercussions. I refer here to the much-discussed earthquake of 702/1303,\(^{127}\) which

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remained in the collective memory for centuries, and the 886/1481 earthquake.\textsuperscript{128}

In order to understand why historians perceived and interpreted them as disastrous, it is necessary to analyse the forms of their narratives. Here the narration of these earthquakes’ impact on the environment and people takes centre stage. The examination aims, first, to reveal people’s attitudes to these earthquakes during their occurrence and their aftermath. Second, it shows how different generations of authors eternalised these events through the specific method of narration.

4.4. The Disastrous Earthquake of 702/1303: A Comprehensive Account of Effects and Attitudes

During the third period of al-Malik al-Nāṣir Muḥammad Ibn Qalāwūn’s reign (709–741/1310–1341),\textsuperscript{129} the earth shook violently

\textsuperscript{128} See the discussion of this earthquake in Chapter 4.5. The Disastrous Earthquake of 886/1481: Comprehensive Account of Effects and Attitudes, p. 383f.

\textsuperscript{129} See about al-Malik al-Nāṣir Muḥammad Ibn Qalāwūn footnote 127, p. 100.
(zulzilat/zalzalat al-arḍ zilzālan) in New and Old Cairo at dawn on 23 Dhū al-ḥijjah/7 August 1303. We have several contemporary reports, such as those of Baybars al-Manṣūrī (ca. 644–725/1246–1325),\(^\text{130}\) al-Nuwayrī (677–733/1279–1333),\(^\text{131}\) Ibn al-Dawādārī (687–736/1288–1336),\(^\text{132}\) and Mufaḍḍal Ibn Abī al-Faḍā’il (d. after 759/1357),\(^\text{133}\) as well as a number of non-contemporary Mamlūk sources, which confirm this event.

The impact of the earthquake was massive, so large that the chroniclers described it as unprecedented and “never before experienced.”\(^\text{134}\) This metaphorical comparison was a realistic assessment, for at least two similar earthquakes are known to have happened in Egypt several centuries before: in 365 A.D. and

\(^\text{130}\) See about this chronicler footnote 27, p. 265.

\(^\text{131}\) See about this chronicler footnote 178, p. 207.

\(^\text{132}\) See about this chronicler footnote 76, p. 173.

\(^\text{133}\) See about this chronicler footnote 159, p. 199.

553 A.D. In contrast to other earthquakes which occurred during the Mamlūk period, the 702/1303 earthquake, due to its intensity and destructiveness, was very well documented in the contemporary sources.

This devastating earthquake originated in region of the Hellenic Arc—as most of the stronger shocks experienced in the history of Egypt—and struck the whole of Egypt and Syria. The most

135 Degg and Doornkamp, Earthquake Hazard, 404. Guidoboni and Ebel, Earthquakes and Tsunamis, 404–413.


strongly effected places included the town of Abyār in Manūfiyah\textsuperscript{139} (in the western province of Egypt), al-Jazīrah,\textsuperscript{140} Damanhūr al-Waḥsh (a city in the province of al-Buḥayrah),\textsuperscript{141} Qūs\textsuperscript{142} (a town in the Upper

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\textsuperscript{139} al-Nuwayrī, Nihāyat al-arab, vol. 32, 58.


Egypt)\textsuperscript{143} and especially Alexandria. The severity of the impact was due to the seismic sea wave triggered by a tsunami\textsuperscript{144} in the Mediterranean Sea. The sea swelled into a massive and fast moving wall of seawater that crashed down on the shore, destroying crops, a lighthouse, and a great number of towers and shops along the shore. The tidal wave submerged half of Alexandria and left “numerous people” under the ruins.\textsuperscript{145}

Irrespective of the earthquake’s intensity, though, contemporary sources do not provide any specific details about the consequences for the population. The chroniclers do not even give an estimated number of victims. This is odd given that a significant amount of attention was paid to the enumeration of deaths, especially when it


\textsuperscript{143} See footnote 109, p. 96.

\textsuperscript{144} See the definition of a tsunami in footnote 30, p. 294.

came to cases of fatalities caused by the plague or other epidemics.\textsuperscript{146}

We learn from Abû al-Fidä’ (d. 732/1331),\textsuperscript{147} al-Nuwayrî (d. 733/1333)\textsuperscript{148} and Ibn al-Dawâdârî (d. 736/1336)\textsuperscript{149} simply that a large number of people died under the ruins,\textsuperscript{150} whereas Baybars al-Manşûrî (d. 725/1325) only mentioned that if the earthquake had continued longer than an hour no trace of many of the buildings and people would have remained.\textsuperscript{151} In contrast, the later author al-ʿAynî (d. 855/1451) played down the number of casualties in Alexandria

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\textsuperscript{148} al-Nuwayrî, Nihâyat al-arab, vol. 32, 57.

\textsuperscript{149} Ibn al-Dawâdârî, Kanz al-durar, vol. 9, 102.

\textsuperscript{150} Cf. al-Maqrîzî, Kitâb al-sulûk, vol. 1,3, 944. al-Suyûṭî, Kawkab al-Rawdah, 96.

\textsuperscript{151} Baybars al-Manşûrî, Kitâb al-tuḥfah, 173.
\end{flushright}
and in New and Old Cairo, saying that despite the enormous damage few people died\textsuperscript{152} as God was graceful towards his servants by decreasing the extent of the catastrophe (āfah).\textsuperscript{153}

The earthquake was also felt in a number of other regions including Barqah,\textsuperscript{154} Tunis, Sicily, Qābis, Marrakech, Antioch, Antalya and Sīs. News was reached saying that it caused damage as far away as Constantinople and on the shores of Cyprus where many churches were destroyed.\textsuperscript{155} The earthquake was so strong that its aftershocks continued for twenty\textsuperscript{156} to forty days.\textsuperscript{157}

According to Ibn al-Dawādārī (d. 736/1336), the earthquake in Egypt lasted for about a quarter of an astronomical hour (rabʿ sāʿat


\textsuperscript{153} al-ʿAynī, \textit{Iqd al-jumān}, vol. 4, 261.

\textsuperscript{154} al-Qalqashandi, \textit{Kitāb ʿubūb}, vol. 3, 395.

\textsuperscript{155} Ibn al-Dawādārī, \textit{Kanz al-durar}, vol. 9, 102.


\textsuperscript{157} al-Nuwayrī al-Iskandarānī, \textit{Kitāb al-ilmām}, vol. 4, 125.
falakiyah\textsuperscript{158} and was accompanied by a rumble similar to thunder.\textsuperscript{159} Although there is a lack of information about the people who suffered, the sources do provide a detailed description of the material damage. Numerous minarets of mosques were destroyed, including the minaret of al-Ḥākimī mosque, the mosque of al-Ṣāliḥī, the minaret of al-Manṣūrīyah madrasah in New Cairo\textsuperscript{160} and the mosque al-

\textsuperscript{158} Ibn al-Dawādārī, Kanz al-durar, vol. 9, 101. The duration of the earthquake varies in the sources: al-Nuwayrī (d. 733/1333) mentioned that it lasted five darajah (i.e. short period of time or twenty minutes, see more, p. 396), whereas Baybars al-Manṣūrī (d. 725/1325) said if it lasted longer than an hour (baʿdu sāʿah), there would be more damage. Mufaḍḍal Ibn Abī al-Faḍāʾil (d. after 759/1357) estimated it as a quarter of an hour (rubʿ sāʿah). Baybars al-Manṣūrī, Kitāb al-tuḥfah, 173. al-Nuwayrī, Nihāyat al-arab, vol. 32, 57. Mufaḍḍal Ibn Abī al-Faḍāʾil, al-Nahj, vol. 3, 592. al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 944.


Fākihāniyīn\textsuperscript{161}—which is the same as the al-Ẓafirī mosque mentioned in al-Nuwayrī’s record.\textsuperscript{162} The walls of the mosque ʿAmr Ibn al-ʿĀṣ in Old Cairo fell down and many buildings crumbled.\textsuperscript{163}

\textsuperscript{161} Relying on Ibn al-Dawādārī’s record, this mosque was founded by al-Ẓāhir, the son of al-Ḥākim al-Fāṭimi, who ruled in Egypt from 411 to 427/1021–1036. (Ibn al-Dawādārī, Kanz al-durar, vol. 9, 101.) However, from al-Maqrızī’s \textit{Khiṭat} and Mufaddal Ibn al-Faḍā’il’s chronicle we learn that it was founded by the Caliph al-Ẓāfir. The latter was also Fāṭimid Caliph in Egypt from 544 to 549/1149–1154. al-Maqrızī (d. 845/1442) added that this mosque was once called the mosque of al-Afkhar and during his lifetime it was known as the mosque of Fākkihīn. (al-Maqrızī, \textit{al-Mawāʾiẓ wa-al-iʿtibār fī dhikr al-khiṭat wa-al-āthār}, ed. by A. Sayyid, vol. 4/1, Landan: Muʿassasat al-furqān lil-turāth al-islāmī 1424/2003, 164–166. Mufaddal Ibn Abī al-Faḍā’il, al-Nahj, vol. 3, 593. al-Suyūṭī, \textit{Ḥusn al-muḥāḍarah}, vol. 2, 254.) Thus, it is probable that Ibn al-Dawādārī (d. 736/1288–1336) confused two names which could be easily misspelled in Arabic. Cf. al-Ẓāfir (الظهار), who was really the son of al-Ḥākim al-Fāṭimi, and al-Ṭāhir (الطاهر), who came to power a century later.

\textsuperscript{162} al-Nuwayrī, Nihāyat al-arab, vol. 32, 59.
In addition, later authors, such as al-ʿAynī (d. 855/1451), al-Maqrīzī (d. 845/1442) and al-Suyūṭī (d. 911/1505), recorded the destruction of the al-Azhar mosque in New Cairo. They mentioned details such as the effects that the earthquake had on the environment. A strong wind, which affected the Nile and the (Mediterranean) Sea, together called the “two seas” (al-bahrāyn), accompanied the earthquake. The Nile overflowed its banks inflicting a lot of damage and throwing boats on to the land. al-Maqrīzī (d. 845/1442) also reported that a dark wind blew in Upper Egypt, and immediately afterwards the ground swayed and split open, letting forth white sand in some places and red sand in others.

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The significance of winds, mentioned by al-Maqrizi (d. 845/1442) as causal agents of earthquakes, was highlighted in Chapter 2.4. *Physical Explanations of Earthquakes Based on the Knowledge of Greek Philosophers and Early Muslim Savants of the Ninth–Eleventh Centuries.*\(^{168}\) This common Aristotelian explanation might be the first reason why the incorporation of winds as a metaphorical device belonged to the general narratology of earthquakes, as was the case in the previously discussed “doubtful” earthquake of 658/1260.\(^{169}\)

Secondly, descriptions of different natural phenomena, like winds or lunar eclipses—which are also mentioned in Aristotle’s *Meteorology*\(^{170}\) as forerunners of earthquakes—and other significant events (e.g. deaths of prominent people) accompanying earthquakes were common in the chronicles of the late Mamlûk period. For example, during a light shock felt at night on the 27 Dhū al-ḥijjah 905/23 July

\(^{168}\) Aristotle, Meteorology, 36, 40. See also p. 189f.

\(^{169}\) See al-Maqrizi’s description, p. 307.

\(^{170}\) According to Aristotle, winds, specific clouds, occasional eclipses of the moon happen before or during earthquakes. Aristotle, Meteorology, Book I, 38–39.
1500 in Old\textsuperscript{171} and New Cairo,\textsuperscript{172} people observed several stars strewed about in the sky.\textsuperscript{173} In another case, Ibn Iyās (d. 930/1524) reported that the earthquake of 904/1498 in New Cairo was interpreted as a bad omen for the Sultan\textsuperscript{174} (al-Malik al-Nāṣir Ibn al-Ashraf Qāytbāy), who died shortly afterwards on 15 Rabī‘ I/30 October of that year.\textsuperscript{175}

Furthermore, after a “light” earthquake in 919/1513, Ibn Iyās (d. 930/1524) mentioned that it was a sign of the increase in the plague (\textit{wa-kāna hādhihi kullu hū dalā‘īl ‘alā tazāyud al-ṭā‘ūn}).\textsuperscript{176} On this occasion, he told an odd story (\textit{nādirah}):\textsuperscript{177} when \textit{al-Khamāsīn}\textsuperscript{178} began

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\textsuperscript{171} al-Suyūṭī, Kashf al-ṣalṣalah, 210.
\textsuperscript{172} Ibn Iyās, Badā‘i‘, vol. 3, 433–434.
\textsuperscript{173} Ibn Iyās, Badā‘i‘, vol. 3, 434.
\textsuperscript{174} Ibn Iyās, Badā‘i‘, vol. 3, 389.
\textsuperscript{175} Ibn Iyās, Badā‘i‘, vol. 3, 392.
\textsuperscript{176} Ibn Iyās, Badā‘i‘, vol. 4, 297.
\textsuperscript{177} \textit{Nādirah} pl. \textit{nawādir} (literally “rarity”) denotes in its original meaning a pleasing anecdote, containing a wit. Ch. Pellat, “Nādira,” \textit{The Encyclopaedia}
the plague increased, sweeping through people. To prevent its spread some of the wise (ḥukamā’) advised the Sultan to wear ruby rings on his fingers. They thought the rings would help prevent the plague. Consequently, the Sultan took two octagonal ruby ring stones from the treasury, put them on two gold rings and wore them on all occasions.179

This story carries two messages: the interconnection between one natural phenomenon with the other, i.e. earthquakes and epidemics;180 second, it shows a certain attitude to epidemics. The first message is common. Indeed, earthquakes were perceived as signs of the spread of epidemics.181 Relying on an Arab-Jewish author of the sixteenth A.D. century, Anna Akasoy mentions in her article on attitudes to earthquakes and plagues that, according to this particular


178 See about al-Khamāsīn footnote 217, p. 133.

179 Ibn Iyās, Badā’i’, vol. 4, 297.

180 Watson, Gayer et al., Epidemics after Natural Disasters, 1–5.

181 Watson, Gayer et al., Epidemics after Natural Disasters, 1–5.
author whose treatise was based on the medical texts of Hippocrates, Galen, Ishâq Isrâ‘îlî and other medical Islamic texts, earthquakes were seen as precursors of epidemics because they set miasmas free.\textsuperscript{182} This motive was also common in the astro-meteorological \textit{malḥamah}. Ibn Zunbul’s text reads:

\begin{quote}
If it [earthquake] happens in Ḥazîrān (June), epidemics will spread among the horses, and people will suffer from soar-throat Diyar Bakr and Palestine. [...] If it happens in Kânûn al-awwal (December), diseases, smallpox and fever [...] will increase among people. If it happens in Kânûn al-thânî (January), [...] epidemics (\textit{wabâ‘}) will spread [...].\textsuperscript{183}
\end{quote}

There is a simple pragmatic reason behind this interconnection. As John Watson et al. and Lutfallah Gari note, epidemics usually follow natural disasters because of the dead bodies which are not buried.

\textsuperscript{182} Akasoy, Islamic Attitudes to Disasters, 405–406. See more on the causes of epidemics and plague in Ibn Khaldûn, \textit{Muqaddimah}, vol. 2, 136–137, 244–245.

\textsuperscript{183} Ibn Zunbul, al-\textit{Kitâb} naqîl min kitâb al-qânûn, fols. 49b–50a.
immediately, the degree of crowding, the lack of safe water and sanitation facilities which disrupt the maintenance of environmental and human health.\textsuperscript{184} It is most probable that the direct interrelation of a geophysical phenomenon (earthquakes) with a biological one (epidemics) in the chronicles became a constituent of earthquake narratology, as other cases in this study will attest, because people generally feared conditions after an earthquake due to the common outbreak of epidemics, especially in a hot region like Egypt.

The second message of this \textit{nādirah}, an amusing witty anecdote, has ambivalent meanings. By telling a \textit{nādirah},\textsuperscript{185} authors of the early period of Islam usually intended to distract the reader and awaken attention and so \textit{nādirah} was an element used to enliven the narration.\textsuperscript{186} On the one hand, Ibn Iyās’ insertion of \textit{nādirah}, which appears often in his chronicle, may have aimed to show in this context the ridiculousness and the absurdity of the Sultan’s belief in

\begin{footnotes}
\item[184] Watson, Gayer et al., Epidemics after Natural Disasters, 1. Gari, Knowledge versus Natural Disasters.

\item[185] See the definition of \textit{nādirah} in footnote 177, p. 334.

\item[186] Pellat, “Nādira,” 856–858.
\end{footnotes}
the advice of the wise (ḥukamā’). On the other hand, Ibn Iyās might have intended to reveal the second motive of a nādirah, i.e. “that misfortune (al-shidda) is not necessarily lasting and that relief (al-faradj) can always be expected,”¹⁸⁷ if one believes or does something to achieve it.

In particular, for the ḥukamā’—to whom the wise, philosophers, physicians, and astrologers belong—nādirah was never a witty anecdote, but a “curiosity, a rarity.”¹⁸⁸ In this sense, nādirah is synonymous with the term gharīb, under which al-Qazwīnī (d. 682/1283) classifies not only earthquakes, droughts, floods, pestilence, and other rare natural phenomena, but also the predictions of the soothsayers.¹⁸⁹ Furthermore, we should not


¹⁸⁸ Pellat, “Nādira,” 858. Nādirah in the sense of “oddity” is especially omnipresent in the stories about the irregularities of the Nile’s flooding, which will be presented in Chapter 5.4. “Oddities of the Nile” as Constituent Parts of the Narration in the Khabar, p. 456f.

¹⁸⁹ See p. 155.
underestimate the belief in the power of magic against epidemics. It played a significant role in Arab and other cultures of Europe especially after the coming of the Black Death in 749/1348, which

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190 See footnote 238, p. 142.

191 During times of epidemics, along with prayers, fasting and recitations from the Qurʾān, which were commonly recommended, people resorted to other methods of protection against the plague, like the use of charms, amulets, talismans, incantations, magical squares and symbols, and magical-medical bowls with engravings of Qurʾānic verses. (N. Varlik, “Islamic Disease Theory and Medicine,” Encyclopedia of Pestilence, Pandemics, and Plagues, vol. 1, The United States of America: Greenwood Press 2008, 332. Dols, The Black Death, 121–142.) See more about the origins, effects of and reactions to the plague in footnote 250, p. 354 and footnote 315, p. 504.


broke out periodically up until Ibn Iyās’ lifetime.\textsuperscript{194} This background intensifies the supposition that Ibn Iyās’ \textit{nādirah} aimed to show the common belief in this kind of practice, rather than to present the Sultan in a ridiculous light.

4.4.1. Reaction of Authorities

Concerning the events of the 702/1303 earthquake, we learn from the sources that all of the above mentioned structures were so severely damaged that they had to be demolished and rebuilt.\textsuperscript{195} However, only the damage wrought to buildings such as mosques, religious schools, shops and fortifications were recorded. Faced with this disaster, the authorities’ main concern was to rebuild the religious centres first, which was probably important for the stability and legitimisation of the Mamlūk rulers as a whole. The sources describe in detail who exactly undertook the reconstruction work and how much money was allocated from the funds of pious foundations

\textsuperscript{194} See about the occurrences of plague during the Mamlūk period in footnote 317, p. 505.

\textsuperscript{195} Mufaḍḍal Ibn Abī al-Faḍā‘īl, al-Nahj, vol. 3, 593.
(waqf),\textsuperscript{196} public treasury,\textsuperscript{197} and private resources.\textsuperscript{198} For example, Sayf al-Dīn Sallār, the Sultan’s deputy (nāʾib), was responsible for the restoration of the ‘Amr Ibn al-‘Āṣ mosque in Old Cairo, while Rukn al-Dīn Baybars al-Jāshankīr, the “master of the household” attendant (Ustādh al-Dār,\textsuperscript{199}) renovated al-Ḥākim mosque in New Cairo,

\textsuperscript{196} al-Nuwayrī, Nihāyat al-arab, vol. 32, 58. Waqf is a religious endowment, whose property (building or plot of land) is unalienable. It is a pious deed to found a waqf, designating persons or public utilities as beneficiaries of its yields. See about waqf (R. Peters, D. Behrens-Abouseif et al., “Wakf,” The Encyclopaedia of Islam, Leiden: Brill 2002, 59–99), and its role in cases of earthquake (St. Knost, Living with Disaster: Aleppo and the Earthquake of 1822, in A Comparative and Transcultural Survey between Asia and Europe, ed. G. Schenk, Heidelberg: Springer forthcoming), and famines (A. Sabra, Poverty and Charity in Medieval Islam. Mamluk Egypt, 1250–1517, Cambridge: Cambridge University Press 2000, 94–95).

\textsuperscript{197} al-ʻAynī, ʻIqd al-jumān, vol. 4, 265.

\textsuperscript{198} Ibn al-Dawādārī, Kanz al-durar, vol. 9, 101.

\textsuperscript{199} During the Mamlūk reign, the Ustādār (the title given to the head of Diwān al-ustādāriyah) took over the management of the Sultanate’s treasury. He was responsible for managing expenditure on the Sultan’s household supplies and various other needs. A. Levanoni, “Ustādār,” The
founding a waqf and ascribing numerous functions to it. The minaret of the Manṣūrīyah madrasah was restored under the guidance of the emir Sayf al-Dīn Kahradāsh al-Nāṣirī with the funds from the waqf bequeathed to the madrasah.\textsuperscript{200} al-Nuwayrī (d. 733/1333) reported that the reconstruction of the damaged half of the minaret cost about 90,000 dirham. Damage to the mosque, to which the madrasah was attached, on the other hand, was repaired under the direction of the emir Shams al-Dīn Sunqūr al-Aʿsar. The Sāliḥī mosque, outside Bāb Zuwaylah (Gate of Zuwaylah),\textsuperscript{201} and al-Ẓāfirī mosque, outside the Sultan’s gates, were also restored.\textsuperscript{202}

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\textsuperscript{201} See the sketch map of key sites in pre-modern Cairo in Warner, The Monuments of Historic Cairo, p. 24 and in Kennedy, An Historical Atlas of Islam, p. 31.

We can treat these politically and religiously motivated acts both as obligations imposed by the Sultan in order to restore stability in the capital of the Mamlûk Sultantate and as an act of piety, through which these emirs acquired respect in the population’s eyes.

We learn from the later chronicler al-ʻAynī (d. 855/1451) that the emir Sayf al-Dīn Sallār and Shams al-Dīn Sunqūr undertook the rebuilding and restoration of al-Azhar mosque, which was not listed among the damaged buildings in the contemporary sources. He also added that the emir ʻAlam al-Dīn Sinjar rebuilt the mosque of Șālīḥ at public expense financed from the public treasury (bayt al-māl). al-ʻAynī’s last inclusion must be an inadvertent mistake. According to the contemporary chronicler al-Nuwayrī (d. 733/1333), the emir ʻAlam al-Dīn Sinjar Arjawāsh al-Manṣūrī, the Sultan’s deputy (nāʾib) in the Citadel of Damascus (Qalʿat Dimashq), was not alive during the 702/1303 earthquake, as he died on the night of 22 Dhū al-ḥijjah 701/17 August 1302.


204 al-ʻAynī, ʻIqd al-jumān, vol. 4, 265.

If buildings of religious importance such as mosques and madrasas, which were usually better constructed than any other structures, suffered complete damage, we can suppose that other buildings, not necessarily of religious value, were destroyed and restored. Baybars al-Manṣūrī’s (d. 725/1325) report in the annals of 711/1311–2 presents one such case which reveals that al-Malik al-Nāṣir [Muḥammad Ibn Qalāwūn] ordered the demolition and reconstruction of the Great Īwān of Cairo (Īwān al-Kabīr)—where the latter usually held public judicial hearings of people’s appeals every Monday, at least until 725/1325. Baybars al-Manṣūrī (d.

206 See footnote 127, p. 100.


725/1325) continues that the Sultan disliked the darkness of the old hall (iwan) and the additional pillars (arkān), which were erected after the 702/1303 earthquake.\footnote{Baybars al-Manṣūrī, Kitāb al-tuḥfah, 232. See more about the possible further motives for the reconstruction of Īwān al-Kābir in Rabbat, The Citadel of Cairo, 191f.}

For the restorations in Alexandria, Baybars al-Manṣūrī (d. 725/1325) mentions that the Sultan sent officials to supervise the reconstruction of walls and ditches on-site. People approved of his order yet they thought that two years’ work and much cash would not suffice to reconstruct it all. But “God made it easy, and they finished the work with the Sultan’s support in a short time and with low expenditure.”\footnote{Baybars al-Manṣūrī, Kitāb al-tuḥfah, 173.} Baybars al-Manṣūrī’s narrative shows here both his belief in God’s power of destruction and reconstruction and his strong bias towards al-Malik al-Nāṣir Muḥammad, who supported the project.\footnote{Ashtor, “Baybars al-Manṣūrī,” 1127–1128.}
It should be mentioned here that the chroniclers often praised Sultan al-Malik al-Nāṣir for his deeds, especially for his public achievements. In particular, Baybars al-Manṣūrī’s “Sultan-friendly” comments stem from his personal ambitions and his gratefulness to the Sultan and the latter’s father, who helped him to rise in his career from military slave to an emir of high position. Baybars al-Manṣūrī vividly expressed his biased attitude to the Sultan in a long poem which followed the khabar about the reconstruction of the Great Īwān of Cairo.

From al-ʿAynī’s (d. 855/1451) non-contemporary record we learn other narrative particulars not mentioned in the contemporary sources. He says that the Sultan received a letter from his deputy (nāʾib) in Alexandria describing the extent of the damage. Thereafter, he ordered Rukn al-Dīn Baybars to go to Alexandria to assess the

213 See footnote 127, p. 100 and al-Nuwayrī al-Iskandarānī, Kitāb al-ilmām, vol. 4, 144f.


damage himself and restore all of the collapsed buildings at the Sultan’s expense.\textsuperscript{216} This may imply that the Sultan did not fully trust the assessment of the damage suggested by his representative in Alexandria. Under the supervision of Rukn al-Dīn Baybars, all the structures in Old and New Cairo and Alexandria were restored soon afterwards.\textsuperscript{217} In all cases, the chroniclers reported that the mosques looked even better than before.\textsuperscript{218}

### 4.4.2. Reaction of People

Although contemporary authors paid only slight attention to the population’s attitude to the catastrophe, they all remarked on the population’s fear of the earthquake and the havoc it entailed. Baybars al-Manṣūrī (d. 725/1325) reported that people in [Alexandria], scared of the destruction, immediately went out of the Bāb Sidrah (the Gate of the “Lotus tree”), one of the main city gates on the south

\begin{footnotesize}
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\item [\textsuperscript{216}] al-ʿAynī, Ḥaqd al-jumān, vol. 4, 265.
\end{itemize}
\end{footnotesize}
According to al-Nuwayrí al-Iskandarānī (d. after 759/1357), great fear overcame the lands because of the earthquake until most of the people left New and Old Cairo for al-Qarāfah220 (“City of the Dead,” a cemetery lying east and south Cairo, below the Muqaṭṭam Hills).221 Some of them put up tents outside and dwelled there, fearing the recurrence of the earthquake.222 The flight, which belongs to the narratology of earthquakes, is a typical pragmatic reaction in emergencies such as these.223

Authors in later centuries, however, were inclined to include in their narration information not found in the contemporary sources. For example, al-ʿAynī (d. 855/1451) and al-Maqrīzī (d. 845/1442)

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220 See the map of Medieval Cairo environs, depicting the Citadel, al-Qarāfah, and the Muqaṭṭam Hills in Petry (ed.), The Cambridge History of Egypt, p. xix.

221 Petry (ed.), The Cambridge History of Egypt, 535.

222 al-Nuwayrí al-Iskandarānī, Kitāb al-ilmām, vol. 4, 125.

223 Akasoy, Islamic Attitudes to Disasters, 404.
recorded that when the earth violently shook, young women came out with their heads uncovered. The same was true of young girls and children. Beggars rushed out of the mosques and zawāyā (sing. zāwiyyah), and many women gave birth prematurely. These metaphoric elements in the narration of earthquakes, with particular focus on the “weak” members of society, were used to describe the intensity of the fear.

al-ʿAynī (d. 855/1451) went further by specifying that many emirs erected tents in open spaces, bringing the women of the families out with them, which is also a pragmatic reaction in the aftermath of an earthquake. This narrative aspect specifically highlighted the women’s dependence on the male members of their family. Many


people went to Būlāq, the island of Rawdah, and other islands,\footnote{al-ʿAynī, ʿIqd al-jumān, vol. 4, 263. al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 943.} probably because of the vicinity of these locations to the river Nile, which opened the possibility of gathering on ships to escape the effects of the aftershocks.

al-Maqrīzī (d. 845/1442) also reported that people lost a great deal of property. While fleeing in panic, they left everything in their homes except what they remembered to take. The “immoral people” (ahl al-diʿārah) took advantage of this and looted the empty houses.\footnote{al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 943.} This shows that some people used the chaotic situation to profit from the disaster. However, there were also those who, fearing the aftershocks, devoted themselves to prayers in the local mosques, staying in them throughout the Friday night and pleading God for mercy.\footnote{al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 943.} This was
also a typical human reaction in response to fear\textsuperscript{229} as people usually believed that earthquakes were a punishment for their misdeeds.\textsuperscript{230}

While prayer (\textit{ṣalāh}) at any time\textsuperscript{231} was commonly believed to be necessary during times of disaster (\textit{al-awqāt al-makrūhah}),\textsuperscript{232} there were other religious prescriptions evoked in case of an earthquake. al-Suyūṭī (d. 911/1505), arduous opponent of physical explanations of earthquakes,\textsuperscript{233} in his treatise put together religious opinions about the “recommended” (\textit{mustaḥabb})\textsuperscript{234} acts during and after earthquakes, which he collated from \textit{ḥadīth} and \textit{tafsīr}. We can summarise that

\begin{itemize}
  \item Tucker, Natural Disasters, 222.
  \item Akasoy, Islamic Attitudes to Disasters, 392. More about religious attitudes to earthquakes see Chapter 4.4.3.1. Earthquakes from the Religious Perspective, 363f.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 148, 153.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 153.
  \item See p. 197.
  \item The “recommended” (\textit{mustahabb}) act is one of the following five juridical qualifications (\textit{al-aḥkām khamsah}) of human acts: obligatory, recommended, indifferent, reprehensible and forbidden. J. Schacht, “Aḥkām,” The Encyclopaedia of Islam, vol. 1, Leiden: Brill 1960, 257.
\end{itemize}
echoing the prayer of the eclipse (ṣalāt al-kusūf)\textsuperscript{235} and prayer for the rain (ṣalāt al-istisqā’),\textsuperscript{236} canonised in the tradition (ḥadīth),\textsuperscript{237} people were also advised to seek refuge in God,\textsuperscript{238} go to the mosque,\textsuperscript{239} say the prayer of the eclipse (ṣalāt al-kusūf),\textsuperscript{240} call God’s name (dhikr allāh),\textsuperscript{241} invoke \textit{tasbīḥ}\textsuperscript{242} and \textit{takbīr},\textsuperscript{243} and pray \textit{duʿāʾ} and \textit{taḍarruʿ} (appeals addressed to God) in repentance.\textsuperscript{244} It was also recommended to set free a slave, give voluntary alms (\textit{taṣadduq})\textsuperscript{245} and give 

\begin{itemize}
  \item See examplary al-Bukhārī, Ṣaḥīḥ al-Bukhārī, vol. 2, 42f.
  \item See footnote 589, p. 580.
  \item See examplary al-Bukhārī, Ṣaḥīḥ al-Bukhārī, vol. 2, 32f.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 148.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 150.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 148.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 151.
  \item \textit{Tasbīḥ} is the glorification of God by exclaiming \textit{Subḥān allāh}. al-Suyūṭī, Kashf al-ṣalṣalah, 154.
  \item \textit{Takbīr} is the pronunciation of \textit{Allāhu akbar}. al-Suyūṭī, Kashf al-ṣalṣalah, 154.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 154.
  \item al-Suyūṭī, Kashf al-ṣalṣalah, 153.
\end{itemize}
(obligatory alms tax).\footnote{al-Suyūṭī, Kashf al-ṣalṣalah, 151. The zakāh is “the obligatory payment by Muslims of a determinate portion of specified categories of their lawful property for the benefit of the poor and other enumerated classes or, as generally in Qur'ānic usage, the portion of property so paid.” A. Zysow, “Zakāt,” The Encyclopaedia of Islam, vol. 11, Leiden: Brill 2002, 406–407.} Furthermore, al-Suyūṭī (d. 911/1505) discussed the amount of bending (rak‘āt) and prostrations (sajadāt) one should carry out during the prayer\footnote{al-Suyūṭī, Kashf al-ṣalṣalah, 148–149.} in a group or alone.\footnote{al-Suyūṭī, Kashf al-ṣalṣalah, 152.} All of these acts were intended to remind believers about God’s existence and power, and people’s responsibility to remember the principal religious acts, which could soothe him and restore the normal life.

Citing the legal opinions (fatāwā) of a Ḥanafī judge, al-Suyūṭī (d. 911/1505) addressed the question of whether it was recommended to flee or accept the events as personal fate.\footnote{al-Suyūṭī, Kashf al-ṣalṣalah, 154–155.} According to the judge, running out into the open, contrary to what some people said, was not reprehensible. On the contrary, he recommended fleeing as it
accorded to tradition. Moreover, he remarked that the prophet had experienced an earthquake and fled: “[...] the prophet hurried up while passing by the wall when someone asked him: ‘Are you fleeing from God’s decision?’ His answer was: ‘The flight is also God’s decision’.”

To sum up the list of prescriptions, fasting on Monday and Thursday was recommended to calm the earth, especially if there

250 al-Suyūṭī, Kashf al-ṣalṣalah, 154–155. Cf. the attitude of flight during epidemics. In contrast to the recommendation of flight during earthquakes, there is a certain fatalism in the case of epidemics. The flight from the epidemic was not recommended as it was a moral obligation of a Muslim to face with patience what has been sent by God. However it was not recommended to travel to the afflicted regions either. A. Kremer, Ueber die grossen Seuchen des Orients nach arabischen Quellen, in Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, 1880, 93f. Akasoy, Islamic Attitudes to Disasters, 404. Varlik, “Islamic Disease Theory,” 332. Dols, The Black Death, 109–121.

251 Apart from the obligatory fasting during Ramaḍān, there are specific dates according to the tradition when fasting is recommended. These are, (1) three days fasting during Dhū al-Hijjah (the twelfth month of the
were several shocks. Finally, referring explicitly to the earthquake of 702/1303, al-Suyūṭī (d. 911/1505) said that praising God and reciting the shahādah (creed)\(^{253}\) may rescue people from the perils.\(^{254}\)

### 4.4.3. Narration of Causes of Earthquake as a Commemoration of the Disaster

Muslim calendar), (2) seven days afterwards as a substitution for going to Hajj, (3) fasting before and after ‘Ashūrā’ day, (4) fasting on the Yawm al-mi‘rāj (27 Rajab) (5) and fasting on the specific days: Monday and Thursday, “when actions are offered to God.” C. Berg, “Ṣawm,” *The Encyclopaedia of Islam*, vol. 9, Leiden: Brill, Online 1997, 94–95.


Besides the immediate pragmatic reaction to the disaster and religious attitudes, in the long term the 702/1303 earthquake inspired some contemporary poets to compose verses in memory of its disastrous effects. Baybars al-Manṣūrī (d. 725/1325) and Mufaḍḍal Ibn al-Faḍā’il (d. after 759/1357) included such a verse in their chronicle. Recalling this earthquake, they wrote:

“Why is it that your stretching land shook with an earthquake at daylight, what is the matter with it?
All of its lofty constructions collapsed, and anyone who saw its terrors (ahwālahā) is frightened.255
We came out escaping the destruction, and it was said about it [the land] that it brings forth its burdens256
It is nothing else but our Lord who ordered the zawājir257 to inspire it among the humankind


256 See the Qurʾān 99:2.
The mosques (al-masājid) were submissive to his power prostrating (sujjadan), and just like the minarets knelt down sloping,

The earth split for the power of his order, and the trembling (al-rajif) overcame the mountains and sands

If not the advocacy of the most praiseworthy, best of the mankind [the prophet], God would cut our ties in it.”

The treatment of historical events expressed through poetic forms full of metaphorical language was common in the chronicles as it was a literary device that enlivened the monotonous historical reports of the

257 According to William Lane, al-zājirāt must be angels, “the drivers of clouds” in the Qurʾān 37:2. (W. Lane, An Arabic-English Lexicon, vol. 3, Beirut: Librairie du Liban 1968, 1217. Muḥammad, the Qurʾān.) Although Muhammad Asad, whose translation of the Qurʾān I use in this thesis, mentions that most of the classical commentators assume that verses 37:1–3 refer to angels, he translates it in the given context as “restraining [from evil] by a call to restraint.” See other views about this term in Muḥammad, the Qurʾān, 866–867.

258 Baybars al-Manṣūri, Kitāb al-tuḥfah, 173.
earthquake and its aftermath, making the description of the situation dynamic and appealing to a wider audience. It brought factual news to the human level, to a discourse of emotion that was at the heart of the population’s experience with the devastations wrought by the earthquake.

In these verses, some authors like Baybars al-Manṣūrī (d. 725/1325) and Mufaḍḍal Ibn Abī al-Faḍā‘īl (d. after 759/1357) inquired rhetorically about the causes of the earthquakes, others responded with answers to these questions. For example, Ibn al-Dawādārī (d. 736/1336) is one of the chroniclers who not only gave the most detailed account of this disaster, but also included general views about why earthquakes occur. After describing the effects of the 702/1303 earthquake, he deviated from the usual way of reporting them and devoted a separate chapter to the physical interpretation of earthquakes. As I mentioned,259 he cited the Aristotelian theory of

\[ \text{259 See Chapter 2.4, Physical Explanations of Earthquakes Based on the Knowledge of Greek Philosophers and Early Muslim Savants of the Ninth–Eleventh Centuries A.D., p. 173f.} \]
vapour\textsuperscript{260} as well as the transformation theory\textsuperscript{261} probably drawn from al-Qazwīnī’s ʿAjāʿib al-makhlūqāt.

Furthermore, Ibn al-Dawādārī (d. 736/1336) expanded the Aristotelian-Qazwinīan explanation in another chapter entitled “\textit{Min kitāb ʿajāʿib al-makhlūqāt wa-badāʾīʾ al-mawjūdāt},”\textsuperscript{262} where he emphasised the role of mountains on earth. Referring to the Qurʾānic sūrah, he listed the benefits of mountains as “stabilizers of the earth,” lest it shakes (\textit{Qurʾān} 16:15), and as regulators of the water flow, which avert the flooding of the earth.\textsuperscript{263}

The inclusion of the physical and other explanations of earthquakes in the chronicles was an innovative mode of writing, but it was not

\textsuperscript{260} See p. 199f.

\textsuperscript{261} Ibn al-Dawādārī, Kanz al-durar, vol. 9, 104–106.

\textsuperscript{262} Interestingly, Ibn al-Dawādārī (d. 736/1336) substituted in his title the word \textit{gharāʾib} with \textit{badāʾīʾ}, also denoting “marvels” in compliance to the title of al-Qazwīnī’s \textit{Cosmography}. Ibn al-Dawādārī, Kanz al-durar, vol. 9, 107–109.

unique. In his report on this earthquake, Mufaḍḍal Ibn Abī al-Faḍāʾil (d. after 759/1357), for instance, also included the Aristotelian physical explanation of earthquake causes. While inquiring about the cause of earthquakes, another chronicler, al-Nuwayrī al-Iskandarānī (d. after 775/1372) related it, in contrast, to the fictional story of Mount Qāf. This shows that different chroniclers treated and included earthquake interpretations selectively. Furthermore, we can conclude that prominent elements of earthquake interpretations stemming from ʿajāʾib wa-gharāʾib works found their way into the historiographic genre. However, the chroniclers did not restrict themselves to these interpretations. For example, Ibn al-Dawādārī (d. 736/1336) went as far as to present a khūṭbah (sermon) just after


266 In the Islamic tradition khūṭbah is held at particular occasions: (1) during the Friday prayer, (2) during the celebration of the two canonical festivals—the ʿīd al-aḍḥā (sacrificial festival) and the ʿīd al-fiṭr (festival of breaking the fast)—as well as (3) during an eclipse and (4) an excessive drought. (A.
the *khabar*, in which he called on people to repent. On the one hand, he described the earthquake as a test, a calamity, sent by God for people’s sins (*al-maʿāṣī*); on the other hand, he also considered it as a reminder of the Day of Resurrection (*yawm ḥashriḥah*). He reinforced this combination of religious and moral causes with the *qur’ānic sūrahs*, in particular *Sūrah 99*, called *al-Zalzalah* “The Earthquake,” which emphasised these two aspects. *Sūrah 99*

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Wensinck, “*Khuṭba,*” *The Encyclopaedia of Islam*, vol. 5, Leiden: Brill 1986, 74–75. E. Mittwoch, “*Īd,*” *The Encyclopaedia of Islam*, vol. 3, Leiden: Brill 1971, 1007.) Whereas we see from Ibn al-Dawādārī’s text that a *khutbah* was performed, probably in analogy to the occurrence of the eclipse and drought, al-Suyūṭī’s list of recommendations shows that it was not necessary to hold a *khutbah* in case of an earthquake. al-Suyūṭī, *Kashf al-ṣalṣalah*, 153.


See references to other *qur’ānic* verses in Ibn al-Dawādārī, *Kanz al-durar*, vol. 9, 102–103.
traditionally refers to the Day of Judgment,\textsuperscript{269} also known as “the Day of the Earthquake” (\textit{al-yawm al-zalzalah} or \textit{al-yawm al-rājīfah}).\textsuperscript{270}

The whole Sūrah 99 (\textit{al-Zalzalah}) reads as follows:

“In the name of God, the Most Gracious, the Dispenser of Grace:

(1) When the earth quakes with her [last] mighty quaking,
(2) and [when] the earth yields up her burdens,
(3) and man cries out, “What has happened to her?”—
(4) on that Day will she recount all her tidings,
(5) as thy Sustainer will have inspired her to do!
(6) On that Day will all men come forward, cut off from one another, to be shown their [past] deeds.


And so, he who shall have done an atom’s weight of good, shall behold it;

and he who shall have done an atom’s weight of evil, shall behold it.”

The view of an earthquake as an eschatological event and as a reflection of people’s behaviour is present in other sources. Referring to the 702/1303 earthquake, al-Suyūṭī (d. 911/1505), who gave the most dramatic account of the event, mentioned that it was a warning and a test of God’s servants and a sign of the Resurrection Day. al-Suyūṭī’s record, Ibn al-Dawādārī’s religious khutbah and similar views expressed in other Mamlūk sources necessitate an introduction to the prevailing religious interpretations of earthquakes circulating in the relevant texts of the time.

4.4.3.1. Earthquakes from the Religious Perspective

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271 Muḥammad, the Qurʾān, 1231.


273 al-Suyūṭī, Kashf al-ṣalṣalah, 204.
al-Suyūṭī (d. 911/1505) gives the most systematic presentation of earthquake causes from a religious perspective in his *Kashf al-ṣalṣalah ʿan waṣf al-zalzalah*. Apart from giving the chronology of historical earthquakes in different regions of the world, he also presented general interpretations of earthquakes. Except for one tradition, in which Iblīs (the Devil) played a central role, he emphasised that God was the only agent of the earthquake. He wrote: “It is He alone who has the power to let loose upon you suffering from above you”—like a cry, stones and the wind “or from beneath your feet”—like trembling (*al-rajfah*) and sinking (*al-khasf*) which are both punishments for people who deny God (*ahl al-takdhīb*). Thus, the following words of the prophet Muḥammad, mentioned in al-Suyūṭī’s *Kashf al-ṣalṣalah ʿan waṣf al-zalzalah*, summarise the causes of earthquakes from the religious perspective:

“There was an earthquake (*rajfah*) in my community, ten thousands of them or more died. With that God warned the

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pious (lil-muttaqiyyīn), showed mercy to the believers (lil-
muʾminīn) and punished the infidels (lil-kāfirīn).”

With this view the prophet classifies those people to whom God sends an earthquake in three categories: the pious, the believers and the unbelievers. That God makes even the pious and the believers suffer through earthquakes, at first sight brings the theodicy debate (Greek: –theos– God, and –dike– justice) to the fore in the minds of European readers, which is defined, particularly within Christianity and Judaism, “as any attempt to reconcile notions of a loving and just God with the reality of human suffering.” Although Gottfried Wilhelm Leibniz first introduced this term into philosophical

276 al-Suyūṭī, Kashf al-ṣalṣalah, 142.

discourse in 1710 A.D., attempts to enquire into and give reasons why the innocent suffer are “notable features not only of the major monotheistic religions of Judaism, Christianity and Islam, but also of polytheistic faiths which include Animism, Buddhism, Hinduism, Jainism, Manichaeism and Zoroastrianism.”

On second sight, the “prophetic” words show that despite the suffering of the pious, the believers and the infidels from the effects of an earthquake, God does not treat them equally. We can further expand this notion according to the existing religious interpretations. The following distinction specifies the above-mentioned categories of people—to whom God sends a message with earthquakes—and discerns earthquake causes from the religious perspective.

Accordingly, earthquakes are:

(a) a divine punishment of unbelieving communities in the generations before Muḥammad
(b) a blessing and a severe reprimand to the believers

278 Chester and Duncan, Responding to Disasters, 85.
(c) a warning to the believers and punishment for non-believers
(d) portents foreshadowing the Day of Judgment
(e) the herald of significant events

(a) Divine Punishment of Unbelieving Communities in the Generations before Muḥammad

Divine punishment is a widely accepted interpretation of earthquakes and natural disasters in general in the major monotheistic religions.279 This religious motive in al-Suyūṭī’s Kashf al-ṣalṣalah ʿan wasf al-zalzalah refers to the people who denied God. It shares a cultural background in particular with Jewish-Christian tradition.280 “The unbelieving communities” in the Qurʾān were—in an allusion to the


280 See, for example, D. Grandjean, A. Rendu et al., The Wrath of the Gods: Appraising the Meaning of Disaster, Social Science Information 47/2 (2008), 187–204. Chester and Duncan, Responding to Disasters, 85–95.
biblical punishment stories of Lot’s community\textsuperscript{281} and the people in Noah’s deluge-story\textsuperscript{282}—the Arab peoples of 'Ād, who rejected the prophet Hūd,\textsuperscript{283} the people of Thamūd, who rejected the prophet Ṣāliḥ,\textsuperscript{284} the people who rejected the prophet Shu‘ayb,\textsuperscript{285} and those who did not heed Mūsā’s (Moses’) warnings.\textsuperscript{286} These punishment stories may generally be referred to as analogies to those who disbelieve Muḥammad’s revelation.\textsuperscript{287}

(b) Blessing and a Severe Reprimand to the Believers

\textsuperscript{281} See the Qurʾān 11:77–82, 22:42. Cf. the Bible, Genesis 19:1–19:30.

\textsuperscript{282} See the Qurʾān 11:89–91 and Sūrah 7. Cf. the Bible, Genesis 7. See the Qurʾān 14:19, 11:25–28.

\textsuperscript{283} See the Qurʾān 29:37–38, 11:89, 14:19 and al-Thaʿlabī, Lives of the Prophets, 105–113.

\textsuperscript{284} See the Qurʾān 29:37–38, 11:89, 14:19 and al-Thaʿlabī, Lives of the Prophets, 114–123.


\textsuperscript{286} See the Qurʾān 7:155 and al-Suyūṭī, Kashf al-ṣalṣalah, 160.

\textsuperscript{287} Akasoy, Islamic Attitudes to Disasters, 393.
There are controversial opinions about the interpretation of an earthquake as a blessing (barakah). In one of the traditions, ʿĀʾishah (the prophet’s third and favourite wife) gives a list of prohibited actions which are punished with an earthquake. She explains that an earthquake, on the one hand, is sent to the believers as a sign of mercy (raḥmah), blessing (barakah) and severe reprimand (mawʿīzah), on the other hand, it is a punishment (nakāl), wrath (sukḥṭah) and torture (ʿadhāb) for unbelievers. However, al-Suyūṭī (d. 911/1505) devoted a special chapter to the refutation of the view that an earthquake was a blessing. He did it by relying on the tradition of the prophet’s famous companion Ibn Masʿūd (d. after 30/650–1)

According to him, the context in which an earthquake happened and the signs that people saw as blessings were misinterpreted. However, his arguments against the interpretation of earthquakes as a

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288 The interpretation of earthquakes as a punishment and a sign of God’s wrath is also common for the Jewish-Christian tradition. See the references to the Bible in Arieh, “Earthquake,” 83.

289 al-Suyūṭī, Kashf al-ṣalṣalah, 138.

“blessing” were contradictory and confusing rather than enlightening.

Finding no satisfactory answer in al-Suyūṭi’s attempt to refute this interpretation, we can imply that the association of an earthquake with a blessing developed probably as an analogy to the well-known perception of the plague as a “mercy” and a “blessing,” which saw the status of martyr (ṣahīd) ascribed to its victims. Some

291 al-Suyūṭi, Kashf al-ṣalsalah, 144.
293 Akasoy, Islamic Attitudes to Disasters, 398f.
294 Shahīd pl. shuhadāʾ (literary: “witness”) is a word often used in the sense of “martyr.” The following types of martyrs can be distinguished: (1) the “battlefield martyrs,” who undergo the special burial rites in this and in the next world and (2) the “martyrs in the next world only,” who are not accorded distinctive burial rites. To the latter are classified: (a) warriors who died due to other reasons than that of the first group; (b) ordinary persons who died violently or prematurely: murdered in service of God, killed for their beliefs, died through disease (plague, diarrhea or colic) or accident (drowning, fire, falling house or wall, women who die in
authors might have extended this view to the interpretation of earthquakes as a “blessing” and the perception of their victims as martyrs. This implication finds ground in Anna Akasoy’s article, which points out that originally martyrs were not only those killed on the battlefield, but also people who died in other incidents, like the plague, fire, and the collapse of a house or a wall, irrespective of the cause of the collapse.

(c) Warning to the Believers and Punishment for the Non-Believers

Earthquakes were interpreted as warnings to believers and punishment for non-believers for deeds that did not conform to the rules conveyed in the divine revelation and in tradition. al-Suyūṭī (d. childbirth, the “martyrs of love”); (c) persons who died a natural death: while engaged in a meritorious act such as a pilgrimage, a journey in search of knowledge, or after leading a virtuous life. For further details see E. Kohlberg, “Shahīd,” *The Encyclopaedia of Islam*, vol. 9, Leiden: Brill, Online 1997, 205–207.

911/1505) provided a detailed description of these deeds which people were warned against or punished for. They included fornication, alcohol consumption, playing on musical instruments, not wearing the ḥijāb (head, face or body covering), women perfuming themselves to please men other than their husbands, and usury.\textsuperscript{296} He supplemented the list of evil deeds by quoting al-Tirmidhī (d. 279/892)\textsuperscript{297} who narrated from Abū Hurayrah (d. ca. 58/678)\textsuperscript{298} and the prophet:

\textsuperscript{296} al-Suyūṭī, Kashf al-ṣalṣalah, 138–139.


\textsuperscript{298} Abū Hurayrah, one of the most prolific narrators of traditions from the prophet, was Muḥammad’s companion. J. Robson, “Abū Hurayra,” The Encyclopaedia of Islam, vol. 1, Leiden: Brill, Online 1960, 129.
“If the booty (*al-fayʾ*)\textsuperscript{299} becomes the thing taken by turns (*dawlan*),\textsuperscript{300} imamate is a matter of profit (*maghnaman*), the *zakāh* (obligatory alms tax) is a burden, one learns not for the sake of religion, a man obeys his wife and disobeys his mother, he approaches his friend and sends his father far away, it is spoken loudly in the mosques, a sinful person rules over his tribe, the vilest of them is the leader of the people, a man is respected for fear of his evil deeds, female singers and music instruments appear, and the last of this community curses the first, THEY must await red wind (*riḥan ḥamrāʾ*), earthquake (*zalzalah*), engulfment (*khaṣf*),\textsuperscript{301} metamorphosis (*maskh*),\textsuperscript{302}

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\textsuperscript{299} See the detailed explanation of the term *fayʾ* and cf. *ghanīmah* in W. Lane, *An Arabic-English Lexicon*, vol. 6, Beirut: Librairie du Liban 1968, 2468, 2301.
\end{flushright}

\begin{flushright}
\textsuperscript{300} This expression here means the transition of something (probably wealth) from one to another. Lane, An Arabic-English Lexicon, vol. 3, 934–935.
\end{flushright}

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\textsuperscript{301} See, for example, the use of this term when describing the engulfment (*khaṣf*) of Sodom and Gomorrah. Ch. Pellat, “Maskh,” *The Encyclopaedia of Islam*, vol. 6, Leiden: Brill 1991, 736–738.
\end{flushright}
and defamation (qadhf). These signs will follow up like a broken chain of pearls. And if it is cut, they will follow each other.”

Another tradition, stemming from Abū Nuʿaym (d. 430/1038–9) extends al-Suyūṭī’s list of immoral deeds that were punishable by disastrous events. What has rarely been noted is that its linguistic style shows similarities with that of the malhamah structure:

302 Maskh (metamorphosis) is “transformation of an exterior form (ṣūra) into a more ugly form” as a result of “supernatural intervention—divine punishment in the majority of cases.” According to this belief, the humans have been transformed into statues, stars or animals, like monkeys and pigs. Pellat, “Maskh,” 736–738.


304 Abū Nuʿaym was an early Muslim authority on fiqh (Islamic jurisprudence) and taṣawwuf (the Islamic science of spirituality, i.e. Šūfism) J. Pedersen, “Abū Nuʿaym al-Iṣfahānī,” The Encyclopaedia of Islam, vol. 1, Leiden: Brill, Online 1954, 142–143.
“If the five [things] happen, then the five [are expected]:
If one enriches on usurious interests, there will be an engulfment and earthquake.
If the governors oppress, there will be dearth (qaḥṭ al-maṭar).
If fornication appears, deaths will increase.
If the zakāh (obligatory alms tax) is refused, cattle will perish.
If aggression is committed against non-Muslim wards (ahl al-dhimmah), the state will become theirs.305

According to al-Suyūṭī (d. 911/1505), a similar tradition of the prophet narrated by his companion Ibn ʿAdī (d. ca 660 A.D.) continues: “If vile deeds flourish, there will be an earthquake (al-rajfah) [...]. If non-Muslim wards are betrayed, enemy will appear.”306

(d) Portents Foreshadowing the Day of Judgment


306 al-Suyūṭī, Kashf al-ṣalṣalah, 139.
When the prophet was asked about Resurrection Day, he said: “the hour [of Resurrection] will not come, until the knowledge is taken away, earthquakes become numerous, the time approaches, civil strives arise, and chaos (harj) prevails.” Thus the conditions of the final hour (ashrāṭ al-sāʿah) are cataclysmic events, which are similar to those described in the bible. On that day, when the trumpet signals the approaching resurrection, “the earth and the mountains shall be lifted up and crushed with a single stroke” and everything will perish. On that day God will also judge the deeds of every


309 This interpretation shows similarities with the apocalyptic events depicted in the Bible, Old Testament, Ezekiel, Chapter 38:19–20 and in the final Book of the New Testament, the Revelation, Chapters 6:12–17; 8, 9, 11:19, 12, and Chapter 22, which ends with the vision of the reassurance and coming of Jesus Christ.

310 See the Qurʾān 69:14.
individual\textsuperscript{311} and the non-believers and the evildoers will receive their punishments in hell.\textsuperscript{312}

(e) The Herald of Significant Events

It is evident that earthquakes had numerous connotations, especially in religiously minded circles. They were associated with the occurrence of certain events which carried a symbolic meaning related to significant days. For example, al-Suyūṭī (d. 911/1505) opened his chronological report of historical earthquakes with the description of earthquakes of a legendary character. These legends told about earthquakes which occurred when Qābīl (Cain) killed Hābīl (Abel),\textsuperscript{313} when Ibrāhīm (Abraham) wanted to sacrifice his son,\textsuperscript{314} and when Īsā (Jesus) was born.\textsuperscript{315} Similarly, an earthquake that lasted for three days allegedly heralded the birth of the prophet

\begin{itemize}
\item \textsuperscript{311} Smith, “Eschatology,” 47–48, 51.
\item \textsuperscript{312} Leemhuis, “Apocalypse,” 112–113.
\item \textsuperscript{313} al-Suyūṭī, Kashf al-ṣalṣalah, 137.
\item \textsuperscript{314} al-Suyūṭī, Kashf al-ṣalṣalah, 157.
\item \textsuperscript{315} al-Suyūṭī, Kashf al-ṣalṣalah 161. al-Nuwayrī, Nihāyat al-arab, vol. 14, 276.
\end{itemize}
Muḥammad. As mentioned previously, these interpretations of earthquakes were subject to controversial debates.

4.4.3.2. Evolution of the Narrative by the Later Chroniclers

Returning to the events of the 702/1303 earthquake: in contrast to the contemporary sources, the authors of later centuries who provided additional details not found in the contemporary sources explained the cause of the earthquake from a religious perspective. The general Qur’ānic warning that was mentioned in khutbah by the contemporary chronicler Ibn al-Dawādārī (d. 736/1336) as a reminder of Resurrection Day turned into reality in a later source, like in al-Suyūṭī’s treatise. There he described the 702/1303 earthquake as a catastrophe (dāḥiyah) preceding Resurrection Day. According to him for a moment people thought that Isrāfīl, the archangel, had announced the coming of the earthquake by blowing his trumpet.

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316 This list is not complete. See more about earthquakes heralding other significant days in al-Suyūṭī, Kashf al-ṣalṣalah, 162f, 213. Hirschler, Erdbebenberichte, 122.

317 See p. 309, 311.

318 al-Suyūṭī, Kashf al-ṣalṣalah, 204.
al-ʿAynī (d. 855/1451) also mentioned that people thought that living beings were going to die and that the dead were going to be resurrected.319

al-Maqrīzī (d. 845/1442), al-ʿAynī (d. 855/1451) and al-Suyūṭī (d. 911/1505) furthermore associated the cause of the earthquake with the moral corruption of social life in Mamlūk Egypt. They viewed it as a punishment for the poor moral state of the society and the lack of fear of God, which prevailed among people during the months preceding the “terrible” earthquake. Relying on the author of al-

Nuzhah,320 al-ʿAynī (d. 855/1451) criticised the care and pride with


320 Here, Nuzhat al-nāẓir fī sirat al-Malik al-Nāṣir, compiled by Mūsā Ibn Muḥammad Ibn Yaḥyā al-Yūsufī al-Miṣrī (676–759/1277–1358), is meant. However, the published version of his chronicle does not give these details as it only treats the years 733–738/1332–1337. See more about the author in al-Yūsufī, Nuzhat al-nāẓir fī sirat al-Malik al-Nāṣir, ed. by Ḥuṭayṭ, Bayrūt: ʿĀlam al-kutub 1406/1986, 42 and footnote 33, p. 267f.
which a number of fortresses were built.\textsuperscript{321} Their construction and excessive decoration were accompanied by on-going festivities, during which people consumed wine.\textsuperscript{322} Therefore, in their view, God sent the earthquake to punish them for their deeds that consisted of a luxurious way of life, women’s lax behaviour, and the emirs’ and other well-to-do-people’s immoral conduct.\textsuperscript{323} al-Suyūṭī (d. 911/1505) expresses a similar attitude when reporting the earthquake, saying:

“We spent time with multiplying [things], and then a catastrophe (qārijah) befell us making the forelock grey. The misdeeds were the basis for it, therefore it shook everyone.”\textsuperscript{324}

Both al-Maqrīzī (d. 845/1442) and al-ʿAynī (d. 855/1451) expanded their narration by presenting two strange stories. In the first one, the

\textsuperscript{321} al-ʿAynī, ʿIqd al-jumān, vol. 4, 262–263. More details about the historical background related with the building of these fortresses see Hirschler, Erdbebenberichte, 135 and Little, Data on Earthquakes, 138.

\textsuperscript{322} al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 942.

\textsuperscript{323} al-ʿAynī, ʿIqd al-jumān, vol. 4, 262–263.

\textsuperscript{324} al-Suyūṭī, Kashf al-ṣalṣalah, 204.
emir Baybars Jāshankīr (d. 709/1310), a Mamlūk officer who later became Sultan, found the palm of a human hand with its forearm wrapped in cotton in the corner of the minaret during repairs to al-Ḥākimī mosque. It was “astonishing” (al-amr al-ʿajīb) to find this because the palm was “soft” and had an inscription which nobody could read and understand. It is difficult to understand and interpret the meaning of this story. But as it follows and, in al-Maqrizī’s version, complements his dissatisfaction with the political and moral condition of society, we may see it as a criticism, as al-Maqrizī’s story about the Mamlūk officer’s inability to understand the inscription alluded metaphorically to the latter’s inability to see his own immoral deeds and the behaviour of the Mamlūk officials in general.


In contrast, in al-ʿAynī’s version, those who found the palm are not identified. From the biographical data about these chroniclers, we know that al-Maqrīzī (d. 845/1442) did not have close contact with governmental circles, especially after al-ʿAynī (d. 855/1451)—who, in contrast, had close relations to a number of Sultans—replaced al-Maqrīzī as muḥtasib of Cairo. This replacement even created a permanent animosity between the two chroniclers, which shows why al-Maqrīzī disliked many of the rulers, although he tried to win their favour. It also explains why al-Maqrīzī mentions the emir Baybars Jāshankīr in his report and al-ʿAynī does not.

Both of these chroniclers finished their story with another one in which an ordinary milk seller is trapped in his shop after it collapsed during the earthquake. Generally, the sources do not mention anything about rescuing survivors. But in this anecdote, we learn that the milk seller was rescued from under the ruins several days after the earthquake. He survived thanks to the wooden structure that


329 Bacharach, Circassian Mamluk Historians, 77–78.
formed a lattice above him. In the days that followed he subsisted on milk from his shop.\textsuperscript{330} In contrast to the first story, the second one highlighted, as part of earthquake narratology, the wondrous survival of an ordinary person.\textsuperscript{331} By including it, al-Maqrīzī (d. 845/1442) and al-ʿAynī (d. 855/1451) probably wanted to show their optimism, emphasising that eventually God is merciful towards ordinary people.

4.5. The Disastrous Earthquake of 886/1481: Comprehensive Account of Effects and Attitudes

Another earthquake struck Old and New Cairo in 886 17 Muharram/18 March 1481.\textsuperscript{332} It was probably the most terrifying earthquake (\textit{zalzalah hāʾilah/zalzalah muhawwilah}) to have struck

\begin{itemize}
\item \textsuperscript{330} al-Maqrīzī, \textit{Kitāb al-sulūk}, vol. 1,3, 945. al-ʿAynī, \textit{ʿIqd al-jumān}, vol. 4, 262.
\item \textsuperscript{331} Hirschler, \textit{Erdbebenberichte}, 136–137.
\end{itemize}

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these and nearby regions\textsuperscript{333} since the earthquake of 702/1303. Among the contemporaries who chronicled the event were al-Sakhāwī (831–902/1428–1497), ʿAbd al-Bāsiṭ (844–920/1440–1514), al-Suyūṭī (849–911/1445–1505) and Ibn Iyās (852–930/1448–1524).

This shock, similar to the 702/1303 earthquake, was accompanied by other natural phenomena, which shows that it was not only part of the narratology, but it attests a probable physical interconnection between one phenomena and another. As the chroniclers mentioned, the earthquake was accompanied by a strong wind, which blew from afternoon until midnight.\textsuperscript{334} Lasting from two\textsuperscript{335} to three degrees (\textit{darajah}),\textsuperscript{336} this earthquake moved structures so strongly that the minarets and high buildings were seen to sway and undulate, producing droning sounds like that of the wind.\textsuperscript{337} al-Sakhāwī—using

\textsuperscript{333} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 281.


\textsuperscript{335} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 281.

\textsuperscript{336} Ibn Iyās, Badāʾiʿ, vol. 3, 173. See the discussion of this term in \textit{Chapter 4.6.1.2. Duration}, p. 396.

metaphorical language, typical of the narratology of disastrous events— noted that the earthquake was so strong that “buildings shook like trees under the wind” (ṣārat al-amākin tahtazzu ka-al-shajar). The chroniclers report that the shock also hit Alexandria, Byzantium (al-Rūm) and Rhodes. This earthquake must have been part of the strong aftershocks of the earthquake which were also recorded as having affected the Mediterranean area in February 1481 A.D.

Apart from this earthquake, which is the focus of this chapter, we also learn that during Ramaḍān/October–November of the same year,  

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338 Nünning, Krise als Erzählung und Metapher, 117–145.


342 See more about the seismic activities in other regions in Guidoboni and Comastri, Catalogue of Earthquakes, 766f. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 50–51.
strong wind, thunder and lightning followed by a heavy rain destroyed several places, uprooting numerous trees in Damietta.\footnote{343 ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 296–297. Ibn Iyās, Badāʾīʿ, vol. 3, 182.} The effects of the wind were much stronger there as it destroyed houses and sank numerous ships belonging to the Franks. Soon news came that a number of regions (al-aqālim) and lands (al-bilād) were also afflicted.\footnote{344 ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 296–297. Ibn Iyās, Badāʾīʿ, vol. 3, 182.} In fact, Emanuela Guidoboni’s catalogue attests to a strong tsunami recorded on 3 May, 3 October and 17–19 December at Rhodes\footnote{345 Guidoboni and Comastri, Catalogue of Earthquakes, 777f.} and an earthquake in “November 1481 or 1482” at Erznka (Eastern Turkey).\footnote{346 Guidoboni and Comastri, Catalogue of Earthquakes, 788f.}

4.5.1. Human Response to the Earthquake

Similar to the 702/1303 earthquake, the effects of this earthquake were thought to be “unprecedented” (lam yu‘had bi-Miṣr mithlahā min qablu), which was a common metaphoric expression, used to show the seriousness of the event. And, like the previous earthquake, we have details of the material damage it caused.

We know that the earthquake destroyed houses and buildings, but beyond that we have only implicit references to several restorations undertaken by the authorities. For example, the reports state that in the same year Sultan al-Malik al-Ashraf Abū al-Naṣr Qāytbāy al-

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350 Ibn al-Dawādārī, Kanz al-durar, vol. 9, 100.

Jarkasī (r. 872–901/1468–1496) ordered the restoration of buildings, most likely of those damaged by the earthquake. One of the structures mentioned is the Mosque of al-Maqṣī in al-Rawḍah, known in earlier times as the Mosque of al-Fakhr, and as the Mosque of the Sultan after its restoration. Sultan Qāytbāy controlled the restoration work of the mosque until it was rebuilt in 888/1483–4. The restoration and the improvement of the Nilometer’s basement and certain parts of it are other indirect references to damage caused by the earthquake.

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352 See about Sultan Qāytbāy, who, like Sultan al-Nāṣir Muḥammad, was widely acknowledged as the greatest patron of art and architecture. Behrens-Abouseif, an-Nāṣir Muḥammad and al-Ašraf Qāytbāy, 267, 274–279 and footnote 65, p. 83.

353 al-Fakhr must have been an army controller (nāṣir al-jaysh) during the reign of al-Nāṣir Muḥammad Ibn Qalāwūn. Ibn Iyās, Badāʾiʿ, vol. 3, 177.


Concerning people’s reaction we have general information that the earthquake terrified men and women, causing them to run out of buildings in panic: women rushed out with their faces uncovered, and some people ran out naked from bathhouses. Some even thought that the Resurrection Day (qiyyām al-sāʿah) had come.\textsuperscript{357} This observations and metaphorical descriptions show the earthquake’s intense effects on people and their psychological condition when facing a disaster.\textsuperscript{358}

There is relatively little information about casualties, except for the death of the prominent supreme Ḣanafī judge, an expert of jurisprudence, Shar(a)f al-Dīn Mūsā Ibn ʿAyyd al-Dimashqī al-Ḥanafī, born in 830/1426–7. A segment of rock that plunged down on him from the top of al-Ṣāliḥiyah madrasah during the earthquake killed him.\textsuperscript{359} Four other people were recorded to have died as well.\textsuperscript{360} The

\textsuperscript{357} al-Sakhāwī, al-Dhayl al-tām, vol. 2, 341.

\textsuperscript{358} See more on the psychological impact of natural disasters on people in Tucker, Natural Disasters, 215–224.


\textsuperscript{360} Ibn Ṭūlūn, Taʾrīkh Miṣr wa-al-Shām, vol. 1, 34.
chroniclers mentioned that the Sultan was present at the judge’s funeral, which included many attendees. The judge was then carried to the Sultan’s graveyard (turbah) and buried there.

The chroniclers all lamented the short duration of his appointment as judge, which had lasted only fifty-eight days.361 An “odd story” about him (min nawādirih) told that on the day of his death he wore new clothes which he had put on before the earthquake. While dressing, he appealed to God with a prayer: “O God, just as you have dressed me in new clothes, let me die as a martyr” (allāhum kamā albasatnī jadīdan fa-amitni shahīdan).362 In this specific incident, the judge was ranked as a martyr (ustushhida)363 who died due to the collapse of the building.364


364 See the categorisation of martyrs in footnote 294, p. 370 and the interpretation of earthquakes as blessing for the people who died in incidents, for example, due to the collapse of a structure in Chapter 4.4.3.1.
On this occasion, al-Sakhāwī (d. 902/1497) and al-Suyūṭī (d. 911/1505) quoted al-Shihāb al-Manṣūrī’s (d. 887/1482–3) verse written in *al-munsariḥ* (a metric form in Arabic poetry):³⁶⁵

“On the day when the earthquake shook Old Cairo, the supreme judge of the Ḥanafī school died.

His life passed in honour (*sharaf*) until it was taken away by the merlons (*shuraf*).”³⁶⁶

Here the poet creates a wordplay involving the judge’s name Shar(a)f al-Dīn, his personal quality of being honourable (*sharaf*)—which additionally justified the acquired status of martyr—and the portions of the building (*shuraf*) which killed him. Reporting on the 886/1481 earthquake, al-Sakhāwī (d. 902/1497) tried to show that nothing was

Footnotes:


safe in the face of a disaster, and that it was better to live a modest life, and so included another verse written in al-mutaqārib (a metric form in Arabic poetry)\textsuperscript{367} on the occasion of the 702/1303 earthquake:

“The way is its reality, pass and set no great store by it, take it easy and it will be easy,

The beauty of the decorated house is worth nothing: should the earthquake shake it, nothing will remain of it.”\textsuperscript{368}

Ibn Iyās (d. 930/1524) also reported that another prominent person, a generous and intelligent army official called al-Zaynī Abū Bakr Ibn al-Qādī ʿAbd al-Bāsiṭ died of shock when his house shook.\textsuperscript{369} In conclusion, all of the chroniclers focused on the death of these prominent personalities, whom they wished to eternalise in a positive light. Their deaths inspired poets to compose verses in commemoration of them as through them they wanted to show the

\textsuperscript{367} Wright, A Grammar of the Arabic Language, 363.


\textsuperscript{369} Ibn Iyās, Badāʾiʿ, vol. 3, 174.
vulnerability of a human being in the face of disaster. Through this narration, the chronicles also tried to overcome the fear of death. Presenting their deaths as those of martyrs compensated for the pain, made sense of the loss and helped people cope with the effects of the disaster.

4.6. Summary: The Narrative of an Earthquake and its Constituent Elements

The reports of minor earthquakes and their effects were laconic. Only the unanimously perceived disastrous earthquakes of 702/1303 and 886/1481 were treated in more detail, as previously mentioned. These and other minor records of earthquakes had a highly standardised form of narration. Events of each year (ḥawādith) appeared chronologically in the records of the respective year, usually continuing the report with the expression wa-fīha (and during it [the year]).

Some of the authors, for example, Ibn Iyās (d. 930/1524) additionally gave the evaluation of the year at the end of the report. If disastrous events had prevailed during that year, it was generally described as
being difficult or full of extreme events (al-ḥawādīth wa-al-waqāʾiʿ ṣaʿbah shadīdah). The narrative, in this case, was of a general character noting, for example, that people had experienced a lot of misery such as decay (fanāʾ), rising of prices (ghalāʾ), corruption (fasād), kharāb (destruction), rebels (fitan) and wars (ḥurūb/malāḥim), calamities (shurūr/makārih), mishaps (khutūb), and other terrible events (ḥawādīth muzʿijah).  

4.6.1. Khabar

Concerning the content, the entry of the earthquake consisted, in the first place, of the khabar (news) as the main part of the information. It included, if known, the earthquake’s date, time, duration, location, and intensity.

4.6.1.1. Date and Time


The events in the chronicles were generally arranged according to the Muslim year, month and day, which is a helpful device for us to date the earthquakes. However, sometimes the sources mention different days, which makes the precise dating difficult, as was the case of the 828/1425 earthquake. Additionally, the time of the day was usually recorded, for example, early in the morning, at dawn, at night or during one of the canonical prayer times. This information can be a useful tool for deducing whether people were at home or outside during the earthquake, suggesting roughly the extent of the effects on the people.

372 About the term “year,” its connotations in the Arabic sources and Islamic chronological computation see Popper, The Cairo Nilometer, 123. Guidoboni and Ebel, Earthquakes and Tsunamis, 277–278.

373 Guidoboni and Ebel, Earthquakes and Tsunamis, 263f.

374 See footnote 121, p. 319.

375 See Arabic names of the hours in Guidoboni and Ebel, Earthquakes and Tsunamis, 292.

376 See, for example, the earthquake of 841/1438 in al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 1029.
4.6.1.2. Duration

The duration of the earthquake and the number of aftershocks also belonged to the narrative part of the *khabar*. The former was usually given in degrees (*darajāt* sing. *darajah*), which was both a time unit and a geographic unit. Its origin goes back to the astronomical measurements of the Babylonian era (the eighth century B.C.). Arab scholars subsequently evolved it further into a system of its own in which the twenty-four hours—consisting of 14,440 minutes in today’s measurement of time—were equivalent to 360 degrees, arranged in the arc of a circle. Accordingly, one degree was equivalent to four minutes of our time measurement, or simply meant a short period, lasting from a minute to five minutes.\(^{377}\)

In some cases, authors estimated the duration of the earthquake by mentioning the time needed to recite certain *qur’ānic sūrahs* or

verses. For example, Syrian chronicler al-Jazari (d. 739/1338) reported that there was an earthquake in Egypt on 24 Ṣafar 698/30 November 1298, lasting as long as it would take to recite five verses of the Qurʾān. In the report of the 828/1425 earthquake, al-Maqrizi (d. 845/1442) also mentioned that the earthquake lasted a period required to read the qurʾanic sūrah al-Ikhlāṣ (Sūrah 112), considered to be the third shortest in the Qurʾān.


379 See about this author footnote 43, p. 271.

380 According to Nicholas Ambraseys, the author mistakenly wrote that this day corresponded to 5 December (Kānūn al-awwal) which was actually 1 December. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 42. al-Jazari, Taʾrīkh ḥawādith al-zamān, vol. 1, 440. Guidoboni and Comastri, Catalogue of Earthquakes, 331–332.


382 al-Maqrizi, Kitāb al-sulūk, vol. 4.2, 690–691.

383 Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 47.
4.6.1.3. Location

Location was one of the most important constituents in the narrative of the *khabar*. Seismic activities in Egypt were generally reported happening in urban areas, as they were centres of public life where the damage was greater due to the density of buildings. It is also probable that the chroniclers had more information about the damage in the cities than rural areas because of their own place of residence. The chroniclers usually mentioned big cities like Old and New Cairo and Alexandria. However, if the earthquake was generated from a larger shock, as was the case with the 702/1303 earthquake, the authors received information about its effects on villages and cities beyond the borders of the Mamlūk realm.

4.6.1.4. Intensity

Another important constituent in the narrative of the *khabar* was the description of the earthquake’s strength. As there were no technical scientific tools to measure the magnitude of the seismic wave in

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384 The magnitude is a parameter used to describe the strength of earthquakes. It refers to the amount of energy released by an earthquake

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pre-modern times, the description of the shock was an important tool to estimate and approximately reconstruct its intensity. This is achieved through (a) the terms used to describe the intensity of the earthquake, (b) words or situations portraying people’s emotional and determined by instrumental scientific observations. For instance, the Richter scale, devised in 1935 by Charles Richter, shows the magnitude of the earthquake. See details in Guidoboni and Ebel, Earthquakes and Tsunamis, 16. A. Robinson, Earth Shock. Climate, Complexity and the Forces of Nature, London: Thames and Hudson 1989, 52–53, 56. Degg and Doornkamp, Earthquake Hazard, 394–395.

Before the twentieth century A.D., the records on seismicity were based on descriptive reports about the intensity. Robinson, Earth Shock, 52-53.

condition, and (c) depiction of material damage. All of these parameters, although subjective, help us define the earthquake’s intensity.387

(a) Terms Describing Earthquake Intensity

The knowledge of terms used to describe earthquakes can be helpful when estimating an earthquake’s intensity. These are mainly words picturing the “size of an event.”388 Mamlūk chroniclers described light earthquakes with no damage as khafīfah jiddan (very light), maḥsūsah (tangible), khafīfah (light), laṭīfah (light), qalīlah (small) (e.g. ḥadathat bi-al-Qāhira zalzalah [...] kānat khafīfah jiddan;389 zulzilat al-Qāhirah zalzalatan maḥsūsan;390 zalzalat al-ard [...] wa-kānat khafīfah;391 ḥaṣalat

387 See different types of earthquake and tsunami intensity scales in Guidoboni and Ebel, Earthquakes and Tsunamis, 480f. Grünthal (ed.), EMS 1998.

388 See the theoretical discussion of role of terms and expressions describing earthquakes and people’s emotional condition in Guidoboni and Ebel, Earthquakes and Tsunamis, 338f.


Strong earthquakes, whose destructiveness was attested unanimously, were described as ṣaʿbah (strong), shadīdah (strong), ʿaẓīmah (great), kubrā (large), shadīdah ṣaʿbah (very strong), muhawwilah (terrible), hāʾilah (terrifying) (e.g. zulzilat Miṣr zalzalatan ṣaʿbatan; ḥadathat/kānat zalzalah ʿaẓīmah; ḥaṣalat al-zalzalah al-kubrā, kānat zalzalah shadīdah ṣaʿbah; zulzilat Miṣr zalzalatan muhawwilatan; zalzalat al-arḍ zilzālan; kanāt zalzalah hāʾilah).

395 886/1481, Old and New Cairo: al-Suyūṭī, Kashf al-ṣalṣalah, 209.
399 828/1425, Egypt: al-Suyūṭī, Kashf al-ṣalṣalah, 208.

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In addition, earthquake intensity can be also deduced through the descriptions of the noise. In particular, strong earthquakes were reported to be accompanied by loud noise. However, this way of measuring the intensity has a subjective character because people could perceive and define the same event differently. As was mentioned earlier in this chapter, 'Abd al-Bāsiṭ (d. 920/1514) estimated the earthquake of 891/1486 to be light (zalzalah laṭīfah), whereas al-Sakhāwī (d. 902/1497) called it terrible (zalzalah hāʾilah). These accounts are not necessarily incompatible, but reflect different perceptions of the same event. Among other reasons,


403 Guidoboni and Ebel, Earthquakes and Tsunamis, 339.


different perceptions may depend on whether the author was close or far away from the location of the seismic wave and its effects.

(b) Words or Situations Portraying People’s Emotional Condition

Our knowledge about the people’s emotional condition is very limited. Only in the case of strong earthquakes do authors describe them as disturbing (muz‘ijah) or embarrassing (muhrijah)\textsuperscript{406} to express fear, shock, panic and surprise. In addition to these expressions, situations, picturing women running out uncovered, men rushing out naked from bathrooms, and people expectant of the coming of Resurrection Day, also indicate the intensity of earthquakes.\textsuperscript{407} However, such information also depends on the eloquence of the author. Mamlūk chroniclers used these rhetorical devices to depict people’s attitudes, especially during disastrous earthquakes. They were rarely implied but they were not exaggerations and they showed the prevalent emotional state of great fear on facing a violent earthquake.


\textsuperscript{407} Cf. similar descriptions in Schenk, Ein Unstern bedroht Europa, 67f.
(c) Depiction of the Material Damage

The narration about the extent of the material damage to the environment or on the surroundings because of the seismic wave or a tsunami (e.g. flooding of the coastal and river areas) took a central position in the narrative of the *khabar* of both the earlier and later chroniclers. This refers especially to the description of the damage to buildings with a religious function (e.g. mosques, minarets and schools) or other places of importance (e.g. a lighthouse, markets, city walls and citadels), which were of significance for social and religious life and political stability.

4.6.2. Narrative Complementation of the *Khabar*

Early Mamlūk scholars like Baybars al-Manṣūrī (d. 725/1325), al-Nuwayrī (d. 733/1333), Ibn al-Dawādārī (d. 736/1336) and Mufaḍḍal Ibn Abī al-Faḍā’īl (d. after 759/1357) meticulously recorded occurrences of earthquakes as a reminder to future generations. Occasionally, when the earthquake left a strong impact on the people, as was the case of the unanimously perceived disastrous earthquakes, the narrative of the *khabar* was complemented by interpretative views (*anẓār*) about the causes of earthquakes and people’s reactions.
Particularly in connection to the 702/1303 earthquake, the above mentioned chroniclers offered their readers a spectrum of interpretations (in particular, physical and fictional) discussed in detail in Part I of this thesis, to complement the historical khabar. With this inclusion, the chroniclers emphasised the plurality of perceptions and interpretations, and at the same time, left space for individual reflections and re-interpretations. Moreover, this approach shows that their references to the earthquake interpretations belonged to the narratology of disastrous earthquakes in the historiographic genre.

Although they did not give any specific details about the behaviour of the people involved in the disaster—except for general descriptions of the prevailing terror among them and their attitudes—their stories and poems honed in on the effects of the earthquake on a certain fictional or historical persona who metaphorically represented the whole. They thus complemented the pure facts of the khabar through literary devices, which were important elements of the narration.

In particular, the retrospective reports of later chroniclers included extraordinary stories or anecdotes (nawādir), poetic and prose forms.
(naẓm wa-nathr), 408 in which people and their environment took centre stage. 409 Such treatment of earthquakes was differentiated completely from the discussion of earthquakes as outlined in Part I. The focus on nature and natural phenomena as normal “marvellous oddities” which were omnipresent in the narrative there, shifted in the historiographic context of Part II to the people involved in and facing the catastrophe.

Apart from these devices, which elucidated interpretations of earthquakes, the narrative complement of the khabar made it possible to discern the chroniclers’ personal views and attitudes to it. The comparative analysis of their reports and that of the contemporaries showed a further evolution of the narrative, in particular by the chroniclers, who reported these events retrospectively. The authors of the later period usually linked the cause of the earthquake to the divine source. The supporters of this perspective, such as the early

408 See the theoretical discussion of these terms in al-Qalqashandi, Kitāb ṣubḥ al-aʿshā, vol. 1, al-Qāhirah: Dār al-kutub al-miṣriyah 1340/1922, 58f.

409 See more on earthquakes as motives in the poems of Arab poets in Ṭāhir, Nuṣūṣ ʿarabiyah, 75f.
Mamlûk chronicler al-Yûsufî (d. 759/1358) and those who shared his view during the later centuries, like al-ʿAynî (d. 855/1451) and al-Maqrızî (d. 845/1442), saw the disaster, in the first place, as a punishment of the rulers and their followers for their misdeeds. In the second place, it was also a warning of the need to repent. In very specific contexts, as in the case of the 886/1481 earthquake, the death of the prominent judge was equated with the death of the martyr, which is equal to the blessing of God’s pious servant. Finally, the destructiveness of these earthquakes evoked associations of the coming Resurrection and Judgment Day. In the case of an earthquake, one of the general recommendations was to pray and follow other prescribed regulations which would prevent the recurrence of similar earthquakes in the future. The logical outcome of this normative attitude was to lead a life conforming to the rules of divine revelation and tradition.

Pragmatic reactions like fleeing, spending nights outside, putting up tents were also reported in the narrative complement to the *khabar*. This kind of attitude in the face of a disaster is common to people fearing for their lives, regardless of their culture. The authors also
included in the narrative complement details about the reconstruction process. They emphasised in particular the authorities’ readiness to restore the structures of religious importance, which implied the concern of the ruling elites about stability and their legitimisation. For this purpose, government sent representatives to the destroyed cities to assess the situation on the spot. Their task was to evaluate how many buildings were damaged and how much money was necessary for repairs which was a simple pragmatic calculation. Except for the funding of big projects, like the restoration of mosques and schools, the available historiographic sources do not give information about how the homeless lived in the aftermath of the catastrophe and how they restored their houses, which is the main drawback of their material.

We can conclude that the experience of the disastrous earthquakes by contemporaries and non-contemporaries and their narration in the khabar and its complementary part reveal the cultural way of perceiving and coping with the disaster. Through the narrative, the chroniclers saved the memoria of the catastrophe—at least from the view of those who eternalised them in the history. In this way, the experience and
knowledge of the disaster from those in the distant past were narrated to the next generations, making them a part of the common cultural thought. Therefore, as Bernd Radtke has defined it:

“Der Welthistoriker schöpft seine Kenntnis über die zu beschreibende Welt und Weltgeschichte aus zwei Erkenntnisquellen: aus der literarischen Tradition und aus der persönlichen Erfahrung.”

Thus, the narrative was not only of practical use as it transported knowledge about how previous generations coped with disasters but it allowed the later authors to reflect those past events from their individual perspective and the perspective of their time.

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Chapter 5
EXCESSIVE FLOODS AND DISASTROUS DROUGHTS

5.1. Introduction

This chapter examines excessive floods and disastrous droughts in Mamlūk Egypt caused by the extreme fluctuations in the level of the Nile. As not every irregularity in the Nile’s rise with its benign effects and benefits for irrigation led to a catastrophe, it focuses only on those “water-related extremes: floods and droughts”¹ which had a disastrous impact on Mamlūk society. Due to the lack of systematic studies of these disasters²—as opposed to the earthquake research—

¹ Brázdil and Kundzewicz, Historical Hydrology, 733.

this chapter also offers a long-term analysis of their frequency and severity based on the historical hydrological evidence. ³

The purpose is to show the nature and impact of the Nile floods in Mamlūk Egypt, to address the consequences, both direct and indirect, and to assess their role in society. The analysis of the hydrological extremes (excessive floods and hydrological droughts)⁴ in Mamlūk history and various aspects of preparedness and responses to them will lead to a general assumption about how Mamlūk authorities and

³ See the definition and demarcation of historical hydrology, research methods and sources presented earlier in footnotes 12, p. 260, footnote 7, p. 413, Chapter 3.2. Common Primary Sources and Methods of Research, 261f. and Chapter 5.2. Methods and Sources of Research, p. 413f. Cf. footnote 6, p. 257.

⁴ Brázdil and Kundzewicz, Historical Hydrology, 735.
ordinary people dealt with them on a daily basis. This chapter will also provide an answer to the question of whether we can consider Mamlūk Egypt to be a culture of Nile-induced disasters\(^5\) that is, a culture that learned from the experience of disasters triggered by the Nile and which developed strategies to survive and adapt to these reoccurring anomalies or “oddities,” as the sources call them.\(^6\)

Thus, to answer these questions, the analysis of excessive floods and droughts alone is not enough. In this respect, after introducing the specific methods and sources of research, I will present the traditional background knowledge about the Nile’s nature and its role and significance in Mamlūk society. This thematic correlation of different aspects of culture, tradition and history about the Nile blends insights from cosmography, astro-meteorology and history, and presents it all from a socio-cultural perspective.

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\(^5\) I have coined this term in analogy to Greg Bankoff’s concept of “cultures of disaster.” See p. 52.

\(^6\) See more in Chapter 5.4. “Oddities of the Nile” as Constituent Parts of the Narration in the Khabar, p. 456f.
5.2. Methods and Sources of Research

5.2.1. Hydrological Documentary Evidence

Similar to the research on earthquakes, the basic sources which help to reconstruct the history of disastrous floods and droughts in Mamlûk Egypt are essentially the same. As presented in Chapter 3.2. Common Primary Sources and Methods of Research, this is, in the first place, the historical documentary evidence recorded in Mamlûk

\[7\] In contrast to paleohydrological—that is physical, not human evidence stemming from “natural archives”—(see more on paleohydrology in V. Baker, Paleoflood Hydrology: Origin, Progress, Prospects, Geomorphology 101 /1 (2008). Brázdil, Kundzewicz et al., Flood Risk in Europe, 742)—historical documentary evidence includes all kinds of manmade sources which convey direct or indirect data about floods. These are narrative written sources, presented earlier in footnote 6, p. 257, like annals and chronicles, visual daily weather records, parish registers, personal correspondence, special prints, official economic records, newspapers, pictorial documentation, stall-keepers’ and market songs, scientific papers, epigraphic sources and early instrumental records. Brázdil, Kundzewicz et al., Flood Risk in Europe, 742–747.
annals and chronicles. In addition to the annals and chronicles treating disasters in general, there are also specific books about Nile-induced disasters, which were presented in Chapter 3.2.1.2. Other Historical and Non-Historical Sources. The principal method in the study of these records is also the comparative analysis of disasters reported mainly by contemporaries.

5.2.2. Instrumental Evidence

Apart from the historical narratives in the chronicles, “instrumental data,” provided by the measurements using the Nilometer (Miqyās al-Nīl)—which are useful statistic tools for ascertaining the level of the

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8 Similar to the research on earthquakes during the Mamlūk period, annals and chronicles are the major source for the analysis of excessive floods and disastrous droughts. See the list of chroniclers and their works in Chapter 3.2.1.1. Annals and Local Chronicles, p. 271f.

9 See p. 277f. and additional primary sources about the Nile’s nature in Chapter 5.2.3. Other Literary Sources, p. 422f.

10 See the details of common research methods, p. 261f.

11 Miqyās al-Nīl refers both to the gauge, which measured the Nile’s rise, and to the whole structure (dār al-miqyās) where it was positioned in the island
Nile in a specific year—render additional information about anomalous Nile floods. Despite some minor problems of inaccuracy,\textsuperscript{12} the existence of this method in the history of Egypt\textsuperscript{13} slightly distinguishes the study of the Nile from the European methods of

\begin{quote}
\end{quote}

\textsuperscript{12} Hurst, The Nile, 258. See the discussion of this issue, p. 421f.

hydrological research, which generally classifies the period before the nineteenth and twentieth century A.D. as the pre-instrumental period.¹⁴


¹⁴ Brázdil and Kundzewicz, Historical Hydrology, 734.

¹⁵ See about this historian footnote 25, p. 264. Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir integrated the instrumental data into the chronology of monthly events.

¹⁶ Ibn al-Dawādārī was one of the early Mamlūk chroniclers who collated and presented the Nile’s minimum and maximum height systematically in the beginning of each annual report. His statistical data covered the period between 649/1251 and 735/1334, with the exception of some years (622/1225, 694–720/1294–1320, 731/1330 and 733/1332), which were missing for unknown reasons.

¹⁷ al-Maqrīzī, like Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir, included the information on instrumental data into the chronology of monthly events. This method is not practical for the readers interested in the data, as they have to read the whole report in order to find it in the text. However, al-Maqrīzī’s records are
1470), 18 ‘Abd al-Bāsiṭ (844–920/1440–1514), 19 and Ibn Iyās (ca. 852–930/1448–1524) 20 included in the narrative of the khabar complete or partial evidence of the Nile’s lowest level—the so-called “old water” (al-māʾ al-qadīm), 21 termed also “the bottom” (al-qāʾ) 22 or “the more precise because he also gave the Coptic and corresponding Muslim dates, on which the minimum and the maximum levels were measured.

18 Ibn Taghri Bardī’s statistics of the Nile for the period 641–871/1243–1467 can be taken from his chronicle al-Nujūm al-zāhirah fī mulūk Miṣr wa-al-Qāhirah, and from his other chronicle Ḥawādith al-duhūr, in which he gives the annual minimum and maximum levels of the river without specifying the dates in the end of the annual report.

19 ‘Abd al-Bāsiṭ followed al-Maqrīzī’s pattern of documenting, though he did not record the measures systematically.

20 Ibn Iyās also followed al-Maqrīzī’s pattern of documenting, without recording the measures systematically.

21 See, for example, the chronicle of Ibn al-Dawādārī who usually opens his annual reports by introducing the lowest and the maximum levels for that year as “al-māʾ al-qadīm” and “mablagh al-ziyādah.” Ibn al-Dawādārī, Kanz al-durar, vol. 8, 94.
basis” (*al-qā‘idah*)—and the highest “limit of the rise” (*mablāgh al-ziyādah/nihāyat al-fayḍān/nihāyat al-Nīl/intihā’ ziyādat al-Nīl)—hereafter called the minimum and the maximum. The gauge of the Nilometer, which had lines indicating the height in cubits (*dhīrā‘* pl.

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24 See the sketch of the Nilometer gauge in Popper, *The Cairo Nilometer*, p. 48.
and fingers īṣbāʾ pl. aṣābiʿ measured these levels. Other historians like the early Mamlūk chroniclers Baybars al-Manṣūrī (d.

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26 Respectively, one finger equalled in the above-described composite scale to 0,0192m. Popper, The Cairo Nilometer, 102.
725/1325) and al-Nuwayrī (d. 733/1333) either did not mention this information at all or recorded it unsystematically.

Among the listed historians, Ibn Taghrī Bardī’s records give the fullest picture of the Nile’s minimum and maximum phases. He collated this information systematically at the end of the annual records, i.e. after the necrology of important people, under the heading “Nile-related Affairs of this Year” (Amr al-Nīl fī hādhihi al-sanah).27 Ibn Taghrī Bardī’s data served as a basis for several studies on the Nile’s annual rise28 which offer reviews of the instrumental data covering the period from the advent of Islam until the twentieth century A.D.


However, in some cases we should treat these statistic instrumental data with caution. A comparative analysis of them shows that the chroniclers did not always provide identical figures for the year’s statistics. Occasional discrepancies were due to errors in dating and the misreading of certain Arabic number names, which might have occurred in the process of copying.

In isolation the instrumental evidence reveals only qualitative information, which cannot show the impact of the floods on society. As I stated previously, disasters are social constructs, and not every environmental hazard, in this case the Nile’s excessive rise or extreme shortage, had a disastrous impact. This means that instrumental data is a complementary evidence for the reconstruction of the irregularities of the Nile: the knowledge of levels alone cannot provide a full picture of the Nile’s impact during a specific year.

29 William Popper explains main reasons for the existing variations, like for example, the confusion and misspelling of the Arabic written forms of figures “seven” and “nine,” when carelessly written. Popper, The Cairo Nilometer, 154–155, 164.

30 Popper, The Cairo Nilometer, 92.
These pure statistical figures acquire sense only alongside the records of narrative sources. Furthermore, as I will show later, the instrumental data is not absolute because the same level of the Nile had different meanings throughout the centuries due to various reasons.

5.2.3. Other Literary Sources

For a better understanding of the Nile’s nature, I consulted a number of other Mamlūk literary sources such as astro-meteorological malḥamah,\textsuperscript{31} ‘ajāʿib wa-gharāʾib genre,\textsuperscript{32} and topographic works.

These literary sources are:

1. Shihāb al-Dīn Ibn al-ʿImād al-Aqfahī’s (d. 808/1406)\textsuperscript{33} Kitāb akhbār Nil Miṣr\textsuperscript{34}

\textsuperscript{31} See the discussion of this genre in Chapter 1 Natural Disasters in Astro-meteorological Malḥamah Handbooks, p. 53f.

\textsuperscript{32} See the details on the major characteristics of this genre in Chapter 2 Natural Disasters in Cosmographic Works: Arabic Literary Genre of ʿAjāʿib wa-Gharāʾib, p. 146f.
2. al-Maqrīzī’s (d. 845/1442) *Khīṭaṭ*\(^{35}\)

3. Jalāl al-Dīn al-Maḥallī’s (d. 864/1459)\(^{36}\) unpublished manuscript *Mabdāʾ al-Nīl ʿalā al-taḥrīr*\(^{37}\)

4. Badr al-Dīn al-Buqlīnī’s (probably after d. 868/1464)\(^{38}\) unpublished manuscript *al-Nīl al-rāʾid fī al-Nīl al-zāʾid*\(^{39}\) and

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33 Ibn al-ʿĪmād al-Aqfahsī was a prominent Shāfiʿī jurist of the Mamlūk period. al-Aqfahsī, Kitāb akhbār Nil Miṣr, 15.

34 al-Aqfahsī, Kitāb akhbār Nil Miṣr.


38 We have little information about the identity of Badr al-Dīn al-Buqlīnī. We find this name in al-Suyūṭī’s Ḥusn among the names of judges who ruled during his lifetime. He is probably the son of the chief judge [in Damascus] Sheikh Jalāl al-Dīn al-Buqlīnī (d. 868/1464). (al-Suyūṭī, Ḥusn al-
5. al-Manūfī’s (d. 931/1525)\textsuperscript{40} unpublished manuscript al-Fayḍ al-madīd fī akhbār al-Nīl al-sāʿīd.\textsuperscript{41}

5.3. The Nature of the Nile

Before passing to the analysis of the Nile’s disastrous impact on Mamlūk society, I will present background knowledge about the Nile’s nature, role and significance, as the population of Egypt has been uniquely dependent on it. The Nile—one of the “wonders of Egypt”\textsuperscript{42}—brought huge amounts of water enriched with silt,\textsuperscript{43} which

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\textsuperscript{40} al-Manūfī was judge in Cairo. Brockelmann, Geschichte, vol. 2, 295.


\textsuperscript{42} al-Qazwīnī, ʿAjāʾib al-makhlūqāt, 175.
was necessary, firstly, for crop cultivation and people’s survival, and secondly, for Egypt’s prosperity (*tharwah*) and welfare (*maṣlaḥah*). This fact completely justifies the attribute of “the Blessed” (*al-Nīl al-mubārak*), so often given to the river. The Nile was also called in

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the Arabic sources “the Sea” (al-Baḥr) because of its “wideness” (istibḥār),47 “the Flood” (al-Fayḍ),48 and the “Believer” (al-muʾmin).49


48 The Nile was called al-Fayḍ (“the Flood”) as an allusion to the annual inundation. Kramers, “Nil,” 37–43.

49 The term al-muʾmin refers both to the “believer(s)” and to one of the names of God in the Qurʾān 59:23, which implies “someone who protects, gives safety.” (J. Jansen, “Muʾmin,” The Encyclopaedia of Islam, vol. 7, Leiden: Brill 1993, 554–555.) In association with the positive role of “believers” as grateful members of the Islamic society and God’s function as all protecting, Ibn al-Qutaybah (d. 276/889), Arab theologian, judge and writer of adab during the ʿAbbāsid period, mentioned that the Nile and the Euphrates were associated with the “believers” (al-muʾminūn) for their usefulness. In contrast, the Tigris and the river of Balkh were associated metaphorically with the negative connotation of useless “infidel” (al-kāfirūn) because these rivers, according to him, could not irrigate the lands as well
Because Egypt depended on the Nile, it has been a source of interest since prerecorded times. Its history has a long tradition beginning in ancient Egypt and reflected later in Greek, Hellenistic, Roman and Arab cultures. Mamlūk authors were well acquainted with ancient knowledge about the Nile, which they copied almost verbatim from the works of their predecessors.

The spectrum of topics which occupied the Mamlūk authors’ attention involved, as briefly summarised in al-Maqrīzī’s Khiṭaṭ, the exaggerated “glorification” (madḥ) of the remoteness of its source (buʿd manbaʿiḥi) and the all-engulfing power of its floods (ghumūratīḥi). These are, indeed, the main topics with which Mamlūk writers aimed to

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emphasise in numerous accounts the uniqueness of the Nile.\textsuperscript{52} In particular, mythical speculations about its source and the cause of its periodic rise and decline ascribed an almost an enigmatic character to it through the centuries.

5.3.1. Speculations about the Source of the Nile

Similar to the explanations of earthquakes’ causes, the ideas about the source of the Nile and the reasons for its periodical flooding have transcultural roots. Following early Arab geographers, like al-Masʿūdī

\textsuperscript{52} Arab authors repeated in their works the assertion that the Nile is the longest river coming from behind the equator, passing a month through the land of Islam, two months in Nubia, and four in the desert (al-kharāb). They also claimed that it is the only river which runs from south to north (\textit{min al-janūb īlā al-shamāl}) and rises every summer when all other rivers on earth dry up. (al-Masʿūdī, Murūj, vol. 2, 66–67. al-Qazwīnī, ‘Ajāʾīb al-makhlūqāt, 175. al-Aqfahāsī, Kitāb akhbār Nīl Miṣr, 45, 46. al-Maqrīzī, al-Khiṭaṭ, vol. 1, 142, 159. al-Suyūṭī, Kawkab al-Rawḍah, 127, 151.) Furthermore, some of the authors tried to explain the reason for its rise in summer. (Nazmi, The Nile River, 34f.) See also poetic verses about the nature of the Nile in al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 358–363. al-Suyūṭī, Kawkab al-Rawḍah, 152–158, 164–165.
(d. ca. 345/956), Ibn Ḥawqal (d. ca. 378/988), al-Idrisī (d. ca. 561/1165), Mamlūk authors recorded that the source of the Nile was in the legendary “Mount of the Moon” (Jabal al-Qamar) as reflected in al-Khwārizmī’s (d. ca. 233/847) Ṣūrat al-ard. Adding

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56 All of the Mamlūk sources record this information about the Nile. See, for example, al-Aqfahsī, Kitāb akhbār Nil Miṣr, 57. al-ʿUmarī, Masālik, vol. 1, 99.
57 al-Khwārizmī was a Persian mathematician, astronomer and geographer of the ʿAbbāsid period, who was scholar in the “House of Wisdom” in
some new descriptive information,\textsuperscript{59} the latter adopted this image from Ptolemy’s \textit{Geography},\textsuperscript{60} who in his turn compiled knowledge of early Greek philosophers and information from travellers.

As the real source of the Nile\textsuperscript{61} remained unknown up until the nineteenth century A.D.,\textsuperscript{62} the Mamlūk authors contended this

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The European travellers were the first to discover the large Nile lakes in the heart of Africa and identified the Ruwenzori mountain range with Ptolemy’s “Mountains of the Moon” (Lunae montes), associated by the explorer Speke with Unyamwezi country, the “country of the moon.” Kramers, “Nil,” 37–43. J. Feeney, The Last Nile Flood, Saudi Aramco World 57/3 (May/June 2006), 24–33. Arbel, Renaissance Geographical Literature, 106–107. D. Young (ed.), The Search for the Source of the Nile:
imaginary picture of the Nile’s origin, which they mixed with the observed geographical descriptions of the river. According to one of the versions in the Mamlūk tradition, ten rivers emerge from this legendary “Mount of the Moon” (Jabal al-Qamar). The first five rivers and the second five respectively pour into two lakes called baṭīḥah in “the first climate” (al-iqlīm al-ūlā). The latter is a transcultural


concept adopted from Ptolemy, who making use of earlier Greek ideas, divided the earth into seven zones, *klimata*, i.e. the space between the lines of latitude.\textsuperscript{66} From each of these two lakes, four rivers, that is, eight overall, are reported to flow into the third small lake (*al-baṭīḥah al-ṣaghīrah*)\textsuperscript{67} to the north, where the Nile’s flow begins.\textsuperscript{68} There are different map-like pictorials\textsuperscript{69} schematically

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illustrating this description, which do not fully correspond to Ptolemy’s image of the Nile’s source.\textsuperscript{70}

Another widely spread association of the Nile with one of the four\textsuperscript{71} rivers of Paradise on earth\textsuperscript{72}—the Sayḥān,\textsuperscript{73} Jayḥān\textsuperscript{74} and Euphrates—

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also has transcultural roots. Derived from Jewish and Christian traditions which traced the Nile from Paradise, this notion further evolved in the Arab tradition. The basis for its development is the

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72 Cf. the Book of Genesis, Chapter 2:11–14 in which the Gihon (associated with the river Nile), like the Pison, the Hiddekel, and the Euphrates were believed to be the four rivers of Paradise which ran underground before emerging at a different place. See also Arbel, Renaissance Geographical Literature, 106–107.

73 According to the Arab geographer al-Yāqūt (d. 626/1229), the river Sayḥān (the Oxus River, see Nazmi, The Nile River, 29), also spelled as Sayḥūn, is the river Sārus, in the port near al-Maṣīṣah. It flows between Anṭākīyah and al-Rūm. (Yāqūt al-Ḥamawi, Mu‘jam al-buldān, vol. 3, Bayrūt: Dār Śādir 1984, 293.) In another version, Sayḥūn is a river of the Hindus. al-Aqfahsī, Kitāb akhbār Nīl Miṣr, 75. Jalāl al-Dīn al-Maḥallī, Mabdā’ al-Nīl, fol. 4r.

74 Jayḥān (the Jaxartes River, see Nazmi, The Nile River, 29), also spelled as Jayḥūn, is a river in Balkh, a famous city in Chorasan. Jalāl al-Dīn al-Maḥallī, Mabdā’ al-Nīl, fol. 4r. al-Aqfahsī, Kitāb akhbār Nīl Miṣr, 74.

Qurʾān sūrah 47:15, which speaks of rivers of water, milk, wine, and honey in Paradise. Although it does not name the rivers directly, the traditions and Qurʾān commentators in the Mamlūk sources mention under the rubric of the Nile that the Nile is one of the rivers which God located on earth. Different traditions, mainly going back to the Jewish convert Kaʾb al-Aḥbār (d. seventh century A.D.), who also transmitted the fictional explanation of earthquake causes, associated the Nile either with the river of honey or wine in

76 “[And can] the parable of the paradise which the God-conscious are promised—[a paradise] wherein there are rivers of water which time does not corrupt, and rivers of milk the taste whereof never alters, and rivers of wine delightful to those who drink it, and rivers of honey if all impurity cleansed [...]” Muḥammad, the Qurʾān, 995. See more Qurʾānic references to the rivers and their role on earth in Nazmi, The Nile River, 29.

77 See about Kaʾb al-Aḥbār footnote 201, p. 217.

78 See 231f.


80 al-Aqfahsī, Kitāb akhbār Nīl Miṣr, 37.
Paradise. This again confirms the Jewish input in the making of “marvellous stories” about the creation of the world.

5.3.2. Explanations about the Causes of Periodical Flooding

Apart from the accounts around the origin of the Nile, Mamlūk authors discussed in length different views about the causes of the Nile’s periodical rise and fall. Among the explanations offered, the authors presented widely accepted transcultural views that fluctuations in the flow of the Nile were due to meteorological phenomena. Accordingly, the flow of the Nile depended on the melting snow in the legendary Mount Qāf\(^81\)—which as we have seen played a significant role in fictional explanations of the causes of earthquakes—rains,\(^82\) springs on the banks of the Nile,\(^83\) and different

\(^{81}\) al-Suyūṭī, Kawkab al-Rawḍah, 120–121. Jalāl al-Dīn al-Maḥallī, Mabdā’ al-Nīl, fol. 11r. Cf. According to Aristotle, “headwaters of rivers are found to flow from mountains, and from the greatest mountains there flow the most numerous and greatest rivers.” Aristotle, Meteorology, Book I, 17.

\(^{82}\) The Mamlūk authors ascribed the opinion about the rise and decline of the Nile due to rains to the Hindus. al-Maqrīzī, al-Khiṭṭat, vol. 1, 157, 166.
types of winds.\textsuperscript{84} Mamlûk authors ascribed these opinions explicitly to Copts, Byzantines and Hindus.\textsuperscript{85}

al-Maqrîzī (d. 845/1442) further specified that in particular the so-called \textit{“mullathin”} winds moving the clouds of rain in Sudan, Abyssinia (al-Ḥabshah) and Nubia, caused the river’s levels to rise and fall.\textsuperscript{86} This view best reflects the modern explanation of the Nile’s periodic rise,\textsuperscript{87} which, according to the Mamlûk authors, occurred due

\textsuperscript{83} The Mamlûk authors ascribed to the Byzantines and Copts the view that the springs on the banks of the Nile cause the periodic rise of the Nile. al-Maqrîzī, al-Khiṭaṭ, vol. 1, 157. al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 350. al-Suyūṭī, Kawkab al-Rawḍah, 123. al-Aqfahsī, Kitāb akhbār Nīl Miṣr, 69.


\textsuperscript{87} The modern exploration of the Nile assumed that the direct cause for the rise of the Nile from June to September was the summer monsoon rainfall


90 al-Qazwini, ʿAjāʿib al-makhlūqāt, 187.

91 See Aristotle’s general explanation of the nature of rivers in Aristotle, Meteorology, Book I, 16–18. Lettinck, Aristotile’s Meteorology, 120.
(d. ca. 79 A.D.),\textsuperscript{92} to which the Mamlûk authors do not refer explicitly.

The meteorological explanation of the Nile’s periodical rise was also reflected in the methods of predictions derived from the observation of clouds, \textit{al-anwā’},\textsuperscript{93} and the amount of rain.\textsuperscript{94} For example, according to a habit (‘\textit{ādah}), heavy rains during the inundation period\textsuperscript{95} were believed to cause a shortage of water in the Nile. We even have a reference to the predictions related to the amount of rain in the historiographic genre: due to heavy rains in 837/1437, the Gnostics (\textit{ahl al-ma’rifah}) feared that the Nile would not rise


\textsuperscript{93} See about \textit{anwā’} footnote 1, p. 53.


\textsuperscript{95} See the details about the inundation period in \textit{Chapter 5.5. “The Rule of the Nile” (Qānūn al-Nil)}, p. 460f.
sufficiently because it rained heavily during the inundation period. As these rumours spread, the Nile began to decline. Consequently, the lands of Egypt dried and the dykes (jusūr) and small canals (turaʿ) decayed due to negligence. As a result, famine spread.96

Other explanations attribute the Nile’s periodical rise and fall to the influence of different celestial bodies, like for example, the moon97—which generates tide and ebb (madd wa-jazr) in the sea—the sun,98 and the stars.99 In these explanations, the Nile’s rise and decline are described as being caused by the motion of these celestial bodies in


the zodiac,\textsuperscript{100} the intensity of their rays,\textsuperscript{101} the pace of their movement and distance from different zodiacal signs.\textsuperscript{102} This connection to the astral phenomena had its basis in the astro-meteorological \textit{malḥamah} predictions, which foretold, along with other events, the height of the Nile during the year. I presented examples of this genre with the relevance of predictions about the Nile’s rise in \textit{Chapter 1 Natural Disasters in Astro-meteorological \textit{Malḥamah} Handbooks}.\textsuperscript{103}

\textsuperscript{100} al-Maqrizī, \textit{al-Khiṭaṭ}, vol. 1, 142–143.

\textsuperscript{101} See the detailed description of this process in al-Maqrizī, \textit{al-Khiṭaṭ}, vol. 1, 147, 145. According to a Coptic tradition, one could predict the height of the Nile each year from the measure indicated by the sun’s rays as they fell on a gauge in Upper Egypt on 26 Baʿūnah/ca. 3 July. Popper, \textit{The Cairo Nilometer}, 66.

\textsuperscript{102} al-Maqrizī, \textit{al-Khiṭaṭ}, vol. 1, 181.

In addition to the astro-meteorological methods of prediction, other beliefs were widespread as means for foretelling the Nile’s maximum level. The Egyptians (Copts and Muslims) made calculations related to the changes of weather (e.g. wind and rain) and performed practices on particular days of the Coptic calendar, using various formulas foretelling the Nile’s height during that year. In these predictions certain Coptic feasts like “St. Michael’s Feast” (ʿAyd Mīkāʾil), and “the Feast of the Martyr” (ʿAyd al-Shahīd), which

104 Mamlūk authors drew these methods from the books of prominent Arab astrologers like Ibn Yūnus al-Munajjim (d. 399/1009), Abū Maʿshar (d. 272/886) and al-Bīrūnī (d. 440/1048), who made predictions using Ptolemy’s knowledge of astral phenomena. al-Maqrīzī, al-Khiṭaṭ, vol. 1, 180–181.


107 See about this feast footnotes 207–211, p. 130f.
were of socio-cultural significance, played an important role. In particular, “the Feast of the Martyr” was of great significance.

According to the Coptic belief, the Nile would not rise without the celebration of “the Feast of the Martyr” (‘Ayd al-Shahīd) on 8 Bashans/16 May), which marked the end of the Nile’s low period. The focal point of this festival\textsuperscript{109} was the ritual connected with a finger of a martyr, kept during the year in the Shubrā (Shabrā)\textsuperscript{110} church in Cairo. On this day, after the immersion of the box with the finger into


the river, the Copts would celebrate believing that this ritual would induce the annual flood and prevent famine in Egypt.  

William Popper notices that this habit might be reminiscent of the ancient tradition when, on 12 Baʿūnah/ca. 19 June (on “St. Michael’s Feast”), the Copts “threw a virgin into the Nile” as a sacrifice to obtain a plentiful inundation. Mamlūk authors report that after the invasion of Egypt by the Muslims, Muḥammad’s contemporary ʿAmr Ibn al-ʿAṣ (d. ca. 43/664), abolished this habit (al-sunnah). However, to pacify the Copts who feared the lowering of the levels of the Nile, the latter instead symbolically threw a piece of paper with


112 See footnotes 207–211, p. 130f.

113 Popper, The Cairo Nilometer, 69.

the note of the second caliph ʿUmar Ibn al-Khaṭṭāb (r. 13–23/634–644), requiring the river to rise if God wished it.116

Similarly, we learn that “the Feast of the Martyr"117 was also abolished twice in 702/1303 and 755/1354118 because the Mamlūk

118 al-Maqrizī (d. 845/1442) and al-Suyūṭī (d. 911/1505) recorded that emir Rakn al-Dīn Baybars al-Jāshankīr, one of the two powers behind the Mamlūk throne, forbade the Copts their annual Nile feast in 702/1302, which was established again thirty-six years later in 738/1337 and persisted until 755/1354, when the Mamlūk regime finally abolished it. al-Maqrizī,
officials wished to avoid the crime and disorder which accompanied the celebrations where much alcohol was consumed. They might also have wished to prove that it was God and not a martyr’s finger that induced the flooding of the Nile. According to unanimously agreed Muslim opinion, it is God who knows the reason for the Nile’s rise and fall, just as he has absolute power over everything. He commands all rivers from east to west to contribute their waters to


120 Little, Coptic Conversion to Islam, 558.

the Nile, “the lord of the rivers;” and he orders every river to subside when God wishes it.  

The series of harsh steps which the Mamlūk authorities took against the Christians during the fourteenth century A.D. also suggest a simple reason: the discontent of the Muslims towards the increasing Coptic presence during the festivals of the Nile, which was also the source of worship for the Muslims, especially during the inundation


123 A contemporary Damascene chronicler Ibn Kathīr (d. 774/1373) reports that the authorities reorganised the regulations concerning the clothes of the Christians, Jews and Samaritans in 755/1354–5: the Christians had to wear blue izār, the Jews—yellow (Ibn Kathīr, al-Bidāyah, vol. 2, 2221) and the Samaritans—red. (al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 303.) This was probably done to differentiate non-Muslims from Muslims, which made the former more vulnerable to the attacks. See also T. Wilfong, The Non-Muslim Communities, 184, 196.
festival (Yawm al-Wafā’). As Terje Oestigaard notes in his article *Christianity and Islam as Nile Religions in Egypt: Syncretism and Continuity*: “[t]he Coptic Nile festivals in Egypt [...] mobilised collective social and religious reaction by the Muslims, and hence it was seen as a threat to the Mamlūk leaders who had to recast it to accommodate dominant Muslim structures.”

Although the information about the years 702/1303 and 755/1354 stems from non-contemporary sources, it is trustworthy in the light of contemporary records of the attacks against the churches and synagogues both in Egypt and in Damascus at the beginning of the fourteenth century A.D. al-Nuwayrī (d. 733/1333) reports that the

124 Lutfi, Coptic Festivals of the Nile, 270. See also Chapter 5.5.2. *The Inundation Day (Yawm al-Wafā’)*, p. 474.


violent actions against the minorities in Egypt allegedly reflected Egypt’s relations with neighbouring Abyssinia (al-Ḥabashah). The latter’s king threatened the Sultan via an envoy in 726/1325–6 to destroy all the mosques in his kingdom and to dam the Nile—which would bring drought and famine to Egypt—if the Muslims did not improve their policy towards the Christians. The Sultan reacted to this message with laughter\textsuperscript{127} probably because he did not believe in the realisation of this venture.

The view that the Abyssinians could block the flow of the Nile was not completely new. During the Fāṭimid caliphate of al-Mustanṣir (r. 427–486/1036–1094), people believed that the Abyssinians diverted the flood of the Nile, causing the great famine in 451/1059.\textsuperscript{128}

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\begin{itemize}
    \item \textsuperscript{128} al-Suyūṭī, Kawkab al-Rawḍah, 213. Pankhurst, Ethiopia’s Alleged Control of the Nile, 26. Kramers, “Nil,” 37–43. Oestigaard, Water, Culture and Identity, 152. See the historical background and the discussion of a series of disastrous droughts due to the shortage of the Nile in the tenth and
\end{itemize}
Numerous Christian sources also mention rumours about the Abyssinians’ wish to block the Nile’s flow to Egypt. Though groundless, this story even became part of the popular literature of Ethiopia, much welcomed in the fifteenth and sixteenth century A.D. in the western Christian world.129

In particular, the last prohibition of the “the Feast of the Martyr” (ʿAyd al-Shahid) in 755/1354 inflamed a confessional conflict between the Copts and the Muslims. Mamlûk authorities initiated many confiscations and demolished numerous churches, among which was the church in Shubrâ (Shabrâ), where the martyr’s finger was kept. al-Maqrîzî (d. 845/1442) reports that the box with the finger was brought to Sultan Ṣâliḥ Ibn Muḥammad Ibn Qalâwûn (r. 752–755/1351–1354) and burnt in front of him. Its ashes were thrown

into the Nile (baḥr) so that the Christians could not perform the ritual any more.\textsuperscript{130} al-Maqrīzī’s narrative of the Christian–Muslim tensions marginalised the Copts as an ethnic minority. This historical episode, and other similar prohibitions of Coptic Nile-related festivals,\textsuperscript{131} as well as the general undermining of the Nilometer’s original control by the Copts\textsuperscript{132} in the Islamic history of Egypt makes me conclude that during the Mamlūk history all parties instrumentalised the Nile in the confessional conflicts and used it as a means of political and religious manipulation.

Finally, according to another opinion which probably has Coptic roots, an angel was believed to make the Nile rise when he puts his foot into the water, and makes it fall when he takes the foot out of it.\textsuperscript{133} As I have previously mentioned, the Copts believed that the Nile rises through the intercession of the archangel Michael and the


\textsuperscript{131} Oestigaard, Water, Culture and Identity, 154f.

\textsuperscript{132} See footnote 166, p. 461.

\textsuperscript{133} al-Maqrīzī, al-Khiṭṭāt, vol. 1, 145.
saints. However, the Mamlūk sources presenting this view did not mention any relation to the archangel Michael.

In the historical context, Ibn Iyās (d. 930/1524) offers the illustration of this explanation in the record of the year 916/1510 when people were waiting with anxiety for the Nile’s annual rise. During that time, a story began to circulate in Cairo that told how a woman dreamed of two angels descending from heaven and leading her to the Nile. One of these angels put his foot into the water, thereafter its level sank. The other angel reminded her that God was almighty and ordered the Nile to reach the level of twenty cubits.137

137 During Ibn Iyās’ lifetime the maximum of twenty cubits measured in the Nilometer was a normal level of water, whereas eighteen cubits mentioned
But when injustice prevailed in Egypt, God permitted it to recede to the level of eighteen cubits. Waking up the next morning, the woman saw that the Nile had indeed declined suddenly by the foretold measure.\textsuperscript{138} This story shows the practical sides of this belief and people’s attempt to give reasons for the low level of the Nile, which they related, in this case, to injustice in Egypt.\textsuperscript{139}

The role of angels in the process of the Nile’s rise also features in a belief that the most feared levels of thirteen and fourteen cubits were associated with “\textit{munkar wa-nakîr},”\textsuperscript{140} the two angels who examined later in this dream, was considered little. See more about the unit of cubit used for the measurement of the Nile’s rise and decline in footnote 25, p. 419 and meanings of levels during different epochs in \textit{Chapter 5.6.2. \textquotedblleft Excessive” and \textquotedblright Low” Floods from the Perspective of the Nile’s Specific Hydrological History}, p. 497f.

\textsuperscript{138} Ibn Iyās, Badā’ī’, vol. 4, 194.

\textsuperscript{139} Cf. the fictional story about the bull causing earthquake because of the increase of injustice on earth, p. 238.

“the dead in their graves as to their faith”\textsuperscript{141} and if necessary punished them in their tombs.\textsuperscript{142} However, the levels of thirteen and fourteen were of no practical importance during the Mamlūk period, as we have no evidence that the Nile ever stopped at this height.\textsuperscript{143}

The Egyptians knew the periods when the Nile would start to rise and decline,\textsuperscript{144} but they never knew how much water it would bring to irrigate their fields.\textsuperscript{145} Therefore, speculations about the causes of the Nile’s annual inundation and predictions about its height were a part of a commonly accepted cultural tradition. As the level of the Nile influenced the price of grain—Egypt’s most important product—and other commodities,\textsuperscript{146} people were prone to speculate and to foretell

\textsuperscript{141} Wehr, Dictionary, 999.


\textsuperscript{143} See the catalogues of Sāmī, Taqwīm al-Nīl, vol. 2 and Ṭusūn, Mémoire sur l’histoire du Nil, which are based on historical evidence.

\textsuperscript{144} See Chapter 5.5. “The Rule of the Nile” (Qānūn al-Nīl), p. 460f.

\textsuperscript{145} Feeney, The Last Nile Flood, 24–33.

\textsuperscript{146} See footnote 512, p. 557.
its maximum height. These predictions prepared the population psychologically for the year, which, depending on the Nile’s level, promised either fertility (khiṣb) and profit (rakhā’) or drought (qaḥṭ) and high prices (ghalā’), and which could end in calamities (nuḥūs).

5.4. “Oddities of the Nile” as Constituent Parts of the Narration in the Khabar of the Chronicles

The flooding (ghumūrah) of the Nile mentioned by al-Maqrīzī (d. 845/1442), especially the fluctuations in its rise—which were the subject of speculations and predictions—made up the major part of the khabar about the Nile in the chronicles. Mamlūk historians usually referred to reports about it as to the “oddities of the Nile” (min al-nawādir, min al-gharāʾib, min nāwādir al-ziyādāt, min al-gharāʾib al-nawādir, nādirah gharībah, al-ḥawādith al-gharībah, al-nawādir al-

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147 See the discussion of these terms in footnote in 512, p. 557 and Chapter 5.8. Case Studies of Disastrous Droughts: Causes, Effects, and Cultural Responses, p. 555f.
gharībah min nawādir al-Nīl). In this list of expressions, the words nādirah ("rarity") and gharīb in al-Qazwīnī's sense of "strange" and "odd," appear frequently. When they are used in combination they intensify the meaning of the "oddity," which changed its rank to the status of an anomalous event. Considered from the scientific perspective, these "oddities" referred to the irregularities of the Nile's hydrological circle, which occurred when

(1) the Nile’s minimum measured before the inundation during Baʿūnah/8 June–7 July was extremely high

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149 See the discussion of this term in footnote 177, p. 334 and p. 337f.

150 See Chapter 2.2. The Arabic Literary Genre of ʿAjāʾib wa-Gharāʾib: Disasters as “Marvellous Oddities” p. 151, 155.


152 See Chapter 5.7.2. Extremely High Minimum of the Nile before the Inundation Day, p. 519f.
(2) the Nile inundated out of season, i.e. in Abīb (8 July–6 August),\textsuperscript{153} before the traditionally expected month in Misrā (7 August–5 September)\textsuperscript{154}

(3) the Nile rose high in series before or after reaching the “plenitude” (i.e. sixteen cubits)\textsuperscript{155}

(4) the Nile rose excessively and did not recede, preventing people from cultivating

(5) the Nile did not reach the level of “plenitude” at all\textsuperscript{156}

(6) the Nile halted or after rising receded quickly so that the lands could not be irrigated.\textsuperscript{157}

\textsuperscript{153} Abīb is the eleventh month of the Coptic calendar. Wassef, “Coptic Calendar,” vol. 2, 439. See the discussion of this “oddity” in Chapter 5.7.3. \textit{Inundation in Abīb (8 July–6 August)}, p. 533f.

\textsuperscript{154} Misrā is the twelve month of the Coptic calendar. Wassef, “Coptic Calendar,” vol.2, 439.


\textsuperscript{156} See \textit{Chapter 5.8.1. “Years without Plenitude”}, p. 562.

\textsuperscript{157} See \textit{Chapter 5.8.2. Review of Cultural Responses to Disastrous Droughts}, p. 607f.
People perceived these irregularities as “odd” and sometimes troublesome because they deviated from the culturally shaped knowledge about “the rule of the Nile” (qānūn al-Nīl), which comprised the habitually known natural sequence of events during the Nile’s annual inundation. In certain cases these irregularities could lead to environmental damage because of the extreme rise or low levels of the water. If the situation got out of control, the spread of diseases and epidemics was almost inevitable.

Before turning to the discussion of these “odd” events, which usually ended up either in an excessive flood or a disastrous drought, I will first introduce what the people considered to be normal, i.e. in conformity with the “rule of the Nile,” and what was seen as a deviation from this rule. Then I will analyse the impact of these “oddities” on Mamlūk society and their responses to them.

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159 See references to the interrelation of water-related disasters and epidemics in footnote 47, p. 35; footnote 298, p. 499 and examples from history on p. 527, 540 and 546.
5.5. “The Rule of the Nile” (*Qānūn al-Nīl*)

5.5.1. “The Good News” (*al-Bishārah*)

“The rule of the Nile” emerged like an “unwritten law” from the Nile-related habits recorded in the chronicles, ‘*ajāʾib wa-gharāʾib* literature, topographic and encyclopaedic works. This rule was comprised of knowledge about the normal course of events in the Nile’s hydrological circle, whose rise and decline occurred in a certain succession (*yazīd bi-tartīb wa-yanquṣ bi-tartīb*).\(^{160}\) After the Nile reached its lowest level (*māʾ al-qadīm/al-qāʾ/al-qāʿidah*)\(^{161}\) in Cairo around 5 Baʿūnah/ca. 12 June,\(^{162}\) it began to rise slowly until the end of the Coptic month Abīb/6 August.\(^{163}\) This knowledge was reflected


\(^{161}\) See footnotes 21–23, p. 417f.


\(^{163}\) The normal daily rise until the end of Abīb/6 August ranged from two to ten fingers. al-Qalqashandi, *Kitāb ṣubḥ*, vol. 3, 294.
in the ancient saying: “in Abīb, the water crawls” (fi Abīb yadibb al-māʾ dabīb).\footnote{al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 616. al-Suyūṭi, Kawkab al-Rawḍah, 149.}

As the Nile’s height affected life in Egypt profoundly, “the guardian of the Nilometer” (ṣāḥib al-miqyās)\footnote{The “guardian of the Nilometer” was also called ṣāḥib, mutawalli, sheikh, amīn, qāḍī al-bahr, qayyās or munādī. Popper, The Cairo Nilometer, 58.}—which was a hereditary position hold by Abū al-Raddād’s\footnote{In Ancient Egypt, priests were responsible for all matters connected with the Nilometer. (Popper, The Cairo Nilometer, 2.) Before the reign of the ʿAbbāsid Caliph al-Mutawakkil (r. 232–247/847–861), the Copts held this position. (al-Maqrīzī, al-Khiṭaṭ, vol. 1, 151–152. al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 299.) In 247/861 Caliph al-Muntaṣir (r. 247–248/861–862) deprived them from this duty, appointing Abū al-Raddād to this position. After the latter’s death in 266/879–880, the office remained hereditary in Abū al-Raddād’s family (al-Suyūṭi, Kawkab al-Rawḍah, 147, 148. al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 299) up until the Ottoman period. See the footnote in al-Maqrīzī, al-Khiṭaṭ, vol. 2, 541.} family—measured and recorded its daily
rise (ziyādat al-Nil) in al-Ḥāshimi Nilometer. \textsuperscript{167} It was one of the Egypt’s “wonders” (min ʿajāʾib), \textsuperscript{168} situated in the island of al-Rawḍah opposite Fustāṭ (Old Cairo). \textsuperscript{169} This Nilometer, which exists in contemporary Egypt, consisted of a square well into which the water flowed through three conduits during the Nile’s rise. The gauge on a


\textbf{\textsuperscript{168} al-Suyūṭī, Kawkab al-Rawḍah, 157.}

\textbf{\textsuperscript{169} According to al-Suyūṭī (d. 911/1505), it was the last Nilometer built in Egypt. (al-Suyūṭī, Kawkab al-Rawḍah, 146.) The first definitely known Arab Nilometer was built in 97/715–6 on the island of al-Rawḍah, which was rebuilt in 247/861–2 and 259/872–3. (al-Maqrīzī, al-Khiṭaṭ, vol. 1, 151–152.) The statistics of the Nile measured during the Mamlūk period derive from this Nilometer. The scale used for measuring the levels of the Nile during the Mamlūk period did not change until 1523 A.D. Popper, The Cairo Nilometer, 91, 106f, 113f. Hurst, The Nile, 258–263. See also footnote 309, p. 502.}
stone basis was a column of white marble\textsuperscript{170} with lines on it, indicating the height\textsuperscript{171} in fingers (\textit{iṣbāʿ} pl. \textit{aṣābiʿ}) and cubits (\textit{dhirāʿ} pl. \textit{adhruʿ}).\textsuperscript{172} As presented earlier, the gauge of the Nilometer during the Mamlūk period consisted of composite scales.\textsuperscript{173} A cubit until the height of twelve cubits was divided into twenty-eight fingers (\textit{iṣbāʿ} pl. \textit{aṣābiʿ}),\textsuperscript{174} which equalled $0.539\text{m} \approx 54\text{cm}$. A cubit above the height of


\textsuperscript{171} The conventionally agreed zero point, which is assumed to be the bed of the Nilometer, equalled to the level of the Mediterranean Sea. al-Aqfahsī, \textit{Kitāb akhbār Nīl Miṣr}, 67 and Popper, The Cairo Nilometer, 112.

\textsuperscript{172} Cubits and fingers of varying number and size for measurement were used in different regions and periods. See their names and definitions in Popper, The Cairo Nilometer, 102–103, 113.

\textsuperscript{173} See footnote 25, p. 419.

twelve cubits consisted of twenty-four fingers,\textsuperscript{175} which equalled 0.462m $\approx$ 46cm.\textsuperscript{176}

The first “good news” (\textit{bishārat al-Nīl}),\textsuperscript{177} which proclaimed the much awaited rise of the Nile, was the announcement (\textit{munādāh}) of the river’s lowest level on 27 Baʿūnah/ca. 4 July.\textsuperscript{178} To measure it, Ibn


\textsuperscript{176} Popper, The Cairo Nilometer, 102.

\textsuperscript{177} See, for example, Ibn Iyās, Badāʾiʿ, vol. 4, 94, 115, 220, 265, 312, 378–379, 457.


There are slight discrepancies about the exact day of the measurement. During the Fāṭimid and Mamlūk period, Ibn Abī al-Raddād usually measured the lowest level on 25 or 26 Baʿūnah/ca. 2 or 3 July. (al-Maqrīzī, al-Khiṭāṭ, vol. 2, 551. al-ʿAsqalānī, Inbāʿ al-ghumr, vol. 3, 552. al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 293.) In earlier times, it was a habit to measure it on 12 Baʿūnah/ca. 19 June, on the day of “St. Michael’s Feast.” Popper, The Cairo Nilometer, 68, 66. al-ʿAsqalānī, Inbāʿ al-ghumr, vol. 3, 551.
Abī al-Raddād (“the son of Abū al-Raddād”) had to reach the bottom of the well through a staircase.\textsuperscript{179} The public announcement was an innovation not performed during the Fāṭimid period (the ruling dynasty before the Mamlūk reign). During that time, Ibn Abī al-Raddād measured the lowest level, recorded it on a sheet of paper (ruq‘ah) and sent it to the Caliph, the vizier, the diwān of letters and the diwān al-inshā’/diwān al-mukāttabāt (chancery). He kept this information secret from the public until the Nile reached sixteen cubits, the so-called level of “plenitude,”\textsuperscript{180} as the authorities feared that people would worry ahead of time\textsuperscript{181} and would buy crops,

\textsuperscript{179} Popper, The Cairo Nilometer, 37.

\textsuperscript{180} al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 516. al-Maqrizī, al-Khiṭaṭ, vol. 2, 551–552. See the discussion about the importance of sixteen cubits, p. 466f. and Chapter 5.5.2. The Inundation Day (Yawm al-Wafā’), p. 474f.

\textsuperscript{181} al-Suyūṭī (d. 911/1505) mentioned that the public announcement was prohibited in 362/972–3. al-Suyūṭī, Kawkab al-Rawḍah, 152. Popper, The Cairo Nilometer, 59.

The guardian of the Nilometer continued to measure the height, noting the Coptic and Muslim dates in terms of the solar and lunar monthly calendars,\footnote{al-Maqrīzī, al-Khiṭat, vol. 2, 551–552.} until the water reached “plenitude”\footnote{Popper, The Cairo Nilometer, 69f.} \((awfāʿ al-Nīl)\), sometimes also called “the Sultan’s water” \((māʾ al-sulṭān)\).\footnote{al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 368.} The “plenitude” \((awfāʿ al-Nīl)\) and the alternative verbal phrase \(al-Nīl awfā\) “the Nile reached fulfilment” or “inundated” referred to the height of sixteen cubits, which the Nile habitually reached during the twelve 
Coptic month Misrā/7 August–5 September.\(^{186}\) People associated this month in the ancient saying with the “wedding of the Nile” (‘urs al-Nīl), anticipated with its “fulfilment” (wafā’ al-Nīl), and they chanted: “if it did not inundate in Misrā, expect it the next year!” (lam yūfi fī Misrā fa-intaẓirhu fī al-sanah al-ukhrā).\(^{187}\)

On this day, Ibn Abī al-Raddād also sent “good news” (bishārah) about the inundation of the Nile (wafā’ al-Nīl) to all the regions of the Sultanate.\(^{188}\) This was habitually thought to pacify “people’s hearts.”\(^{189}\) Thereafter the town crier (al-munādī) made his rounds every day, announcing the Nile’s daily rise in long elaborately worded


\(^{187}\) al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 616.

\(^{188}\) Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir, Tashrif al-ayyām, 74. al-Qalqashandī, Kitāb ṣubh, vol. 3, 294, 516. The formal announcement of plenitude to the provinces was a lengthy, elaborately worded letter. See an example of a bishārah-letter in al-Maqrīzī’s description of this habit during the Fāṭimid rule. al-Maqrīzī, al-Khiṭaṭ, vol. 2, 560.

Occasionally the public announcement ceased after the river had reached a very high level, possibly because it could not be measured in the well.191

William Lane, who described the ceremony in the nineteenth century A.D., noticed that the government wanted to make the people believe as early as possible that the Nile had attained sixteen cubits. Therefore, people were sometimes deceived about the real height, for there was “an old law” that the land tax could not be levied unless the Nile reached sixteen cubits.192 But as William Popper mentioned there was no evidence about the existence of a specific law, which abolished the land tax193 when the Nile did not reach plenitude.194

190 See the verbal form of the town crier’s announcement performed in the nineteenth century A.D. in Lane, The Manners and Customs, 496–505.

191 al-Maqrīzī, Kitāb al-sulūk, vol. 3, 1, 53–54, 195. See, for example, the discussion of the 761/1359 flood, p. 524f.

192 Lane, The Manners and Customs, 498–499.

193 See about the Egyptian land-tax system in operation in Popper, The Cairo Nilometer, 73–81.
sources only mention that if the water did not reach sixteen cubits, the water failed to cover some of the lands because of which the complete *kharāj* (tax)\textsuperscript{195} was reduced.\textsuperscript{196}

This explains why sixteen cubits was called the “Sultan’s water.” The period when the Nile reached sixteen cubits approximately marked the end of one and the beginning of the next tax year and originally saw the collection of full taxes for the Sultan.\textsuperscript{197} However, if the water rose above sixteen cubits for a cubit, the *kharāj* of Egypt reached 100,000 dinār because the water reached the highest lands and

\textsuperscript{194} William Popper mentions that the sources distinguish between the complete and a deficient amount of the land tax collected, not of its total abolition. Popper, The Cairo Nilometer, 79.


ensured their irrigation.\textsuperscript{198} If the water rose so much that it drowned \textit{(istabḥara)} the land, 100,000 dinār was waived.\textsuperscript{199} Despite the relevance of these figures for the Mamlūk period,\textsuperscript{200} this evidence shows that in case of agricultural damage the authorities habitually were not to burden the farmers with excessive taxes due to the probable losses.

When the Nile reached sixteen cubits, which were originally favourable for the irrigation of Egypt, people rejoiced \textit{(farāḥ ʿazīm)}.\textsuperscript{201} However, al-Masʿūdī (d. ca. 345/956)\textsuperscript{202} mentioned that despite the positive effects of sixteen cubits—given the canals and dykes were in

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\textsuperscript{198} al-Aqfahsī, Kitāb akhbār Nil Miṣr, 47. al-Maqrīzī, al-Khiṭaṭ, vol. 1, 159.  \\
\textsuperscript{199} al-Aqfahsī, Kitāb akhbār Nil Miṣr, 47.  \\
\textsuperscript{200} Mamlūk authors copied this information from earlier sources, without emphasising whether these sums of money were also levied during their epoch. al-Aqfahsī, Kitāb akhbār Nil Miṣr, 47. al-Maqrīzī, al-Khiṭaṭ, vol. 1, 159.  \\
\textsuperscript{201} al-Maqrīzī, al-Khiṭaṭ, vol. 1, 161.  \\
\textsuperscript{202} See about al-Masʿūdī footnote 37, p. 160.
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proper condition\textsuperscript{203}—the water could not irrigate a quarter of the land, which resulted in a lack of necessary pasture for cattle.\textsuperscript{204} Although sixteen cubits ceased to be favourable in later centuries, traditionally this level remained the eagerly awaited height, which was then the occasion for the celebrations of Inundation Day (\textit{Yawm al-Wafā'})\textsuperscript{205} and the Canal Opening (\textit{Kasr al-Nil}),\textsuperscript{206} to be described later.

After the inundation in Misrā (7 August–5 September)—and during five or six extra days of Naṣī\textsuperscript{207}—the daily rise of the Nile increased

\textsuperscript{203} al-Masʿūdi, Murūj, vol. 2, 71.

\textsuperscript{204} al-Masʿūdi, Murūj, vol. 2, 68. al-Aqfahsi, Kitāb akhbār Nil Miṣr, 47–48.

\textsuperscript{205} See Chapter 5.5.2. The Inundation Day (\textit{Yawm al-Wafā'}), p. 474f.

\textsuperscript{206} See Chapter 5.5.3. The Opening of the Canal (\textit{Kasr al-Nil}), p. 479f.

\textsuperscript{207} The Coptic year consists of twelve months with thirty days each. A period of five days in three successive years and six days in the fourth year is added to the twelve month Misrā. (Popper, The Cairo Nilometer, 124. A. Moberg, “Naṣī’,” \textit{The Encyclopaedia of Islam}, vol. 7, Leiden: Brill 1993, 977.) These additional intercalary days are also called in Arabic \textit{ayyām al-naṣī’} “delayed days” or \textit{al-shahr al-saghīr} “little month.” Wassef, “Coptic Calendar,” vol. 2, 439.
to ten fingers, reaching the maximum level (*nihāyat al-fayḍān*) during the first Coptic month of Tūt/11 September–10 October, sometimes rising until 20 Bābih/ca. 30 October. The increased flow of the Nile during these months induced the transportation connecting Upper and Lower Egypt. This also made the canal of Alexandria navigable and boats began sailing toward Cairo with grain and other agricultural products, which was of economic importance.

We can conclude that the “rule of the Nile” comprised of the regular sequence of the Nile’s rise in Abīb, Mīsrā, Tūt and twenty days of Bābih (from July until October), after which the water remained

213 See also Benedick, The High Dam, 120–121.
stationary for twelve days and began to fall steadily.\textsuperscript{214} During these months of rise, the wise (\textit{al-ḥukamā’}) metaphorically associated the lands of Egypt with “polished pearls” (\textit{al-lu’lu’ah al-bayḍā’}), so called probably because “the barren land” (\textit{al-duniyah bayḍā’) when covered with water\textsuperscript{215} gleamed like polished pearls. During the subsequent months, the water from the fields drained back into the river. The officials divided the land,\textsuperscript{216} and the farmers began to cultivate the lands with similar regularity,\textsuperscript{217} which were associated during these

\begin{footnotesize}
\begin{enumerate}
\item[\textsuperscript{214}] al-Maqrizi, al-Khiṭaṭ, vol. 1, 159. al-Aqfahsi, Kitāb akhbār Nīl Miṣr, 47.
\end{enumerate}
\end{footnotesize}
months with the “black musk” (al-miskah al-sawdāʾ) because of its look and smell.218

5.5.2. The Inundation Day (Yawm al-Wafāʾ)

The “rule of the Nile,” which has a long history, also implied ceremonial habits accompanying the events around the annual inundation in Misrā (7 August–5 September). The Mamlūks219 adopted this ceremony from the Fātimids220 without any essential

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220 Popper, The Cairo Nilometer, 72. See how the Fātimids celebrated this ceremony, which belonged to the six major occasions when public processions (mawākib) were organised, in al-Maqrīzī, al-Khiṭaṭ, vol. 2, 599. al-Qalqashandī, Kitāb ʿubh, vol. 3, 516–521. al-Suyūṭī, Kawkab al-Rawḍah, 158f. H. Halm, Die Zeremonien der Salbung des Nilometers und der Kanalöffnung in Fatimidischer Zeit, in Egypt and Syria in the Fatimid, Ayyubid
innovations. The inundation period coincided closely with the helical rise of Sirius,\textsuperscript{221} which played an important role in the astro-meteorological malḥamah predictions, as presented in \textit{Chapter 1 Natural Disasters in Astro-meteorological Malhamah Handbooks}.\textsuperscript{222} The inundation of the Nile was the most important event up until the nineteenth century A.D.,\textsuperscript{223} as it marked the beginning of the flood, which allowed intensive cultivation of the lands on its banks and brought wealth to the Egyptians.\textsuperscript{224} On this day, the people of Cairo held splendid festivals in gratitude for the rewarding of the annual plenitude.\textsuperscript{225}

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\textsuperscript{221} Brosch, Sirius Matters, 9–10.

\textsuperscript{222} See p. 68–70, 105–110.

\textsuperscript{223} Feeney, The Last Nile Flood, 33.

\textsuperscript{224} Brosch, Sirius Matters, 10.

\textsuperscript{225} Feeney, The Last Nile Flood, 24–33. Tsugitaka, State and Rural Society, 118. Lutfi, Coptic Festivals of the Nile, 269–273.
The ceremonies themselves consisted of two parts. The first part of the celebration took place on Inundation Day (Yawm al-Wafā’), when the Mamlūk Sultan or his representative rode from the Citadel (al-Qal‘ah)\(^\text{226}\) to the shore of the Nile in a procession.

From there a splendidly adorned “war ship” (ḥarraqah)\(^\text{227}\) known in the Fāṭimid period as “al-ʿushārī,”\(^\text{228}\) brought the Sultan and the escorting emirs and mamlūks to the Nilometer in the island of al-Rawḍah, where a festive meal spread on a tablet (simāṭā) awaited them.\(^\text{229}\) After the meal, Ibn Abī al-Raddād\(^\text{230}\) dissolved saffron and


\(^\text{227}\) al-Qalqashandi, Kitāb ṣubḥ, vol. 4, 47.


\(^\text{230}\) See about the “guardian of the Nilometer” in footnote 166, p. 461.
musk\textsuperscript{231} in a vessel, dived with the mixture into the water, and perfumed \emph{(khallaqa)}\textsuperscript{232} the gauge (\textit{‘amūd}) and the walls of the well (\emph{fasqīyah}).\textsuperscript{233}

Apart from this, on that day Ibn Abī al-Raddād opened the window of the Nilometer looking to al-Fusţāṭ (Old Cairo) and hung a curtain on it.\textsuperscript{234} This practice, probably adapted from the Fāṭimid period,\textsuperscript{235} was

\begin{itemize}
\item[\textsuperscript{231}] al-Maqrizī, al-Khiṭaṭ, vol. 2, 553.
\item[\textsuperscript{234}] al-Qalqashandī, Kitāb ṣubḥ, vol. 4, 47. Not every chronicler mentions the performance of this habit. See, for example, al-Maqrizī, Kitāb al-sulūk, vol. 2,1–2,3, 171.
\end{itemize}
a visual symbol of the public announcement. Ibn Iyās (d. 930/1524) gives the most detailed description of the ceremony, mentioning this habit in his chronicle.\textsuperscript{236} It seems that this habit was completely integrated into the celebration rites with the appearance of the new pavilion (\textit{al-qaṣr}),\textsuperscript{237} which Sultan Qānṣawh al-Ghawrī (r. 906–922/1501–1516) ordered to be erected on the platform of the Nilometer.\textsuperscript{238} Moreover, the whole location turned into a leisure area for the Sultan and his entourage, to which he retreated on different occasions.\textsuperscript{239}

\textsuperscript{235} al-Suyūṭī (d. 911/1505) mentioned that when the Nile reached sixteen cubits, the black Caliphate curtain was hung on the Nilometer's window. al-Suyūṭī, Kawkab al-Rawḍah, 146.

\textsuperscript{236} Ibn Iyās' records show that this practice was an integral part of the ceremony from 917/1511 onwards. Ibn Iyās, Badāʾiʿ, vol. 4, 232, 389.

\textsuperscript{237} Ibn Iyās, Badāʾiʿ, vol. 4, 232. See different designations of \textit{qaṣr} in Rabbat, The Citadel of Cairo, 217f.

\textsuperscript{238} Ibn Iyās, Badāʾiʿ, vol. 4, 232. See also the record of this habit in 717/1317 in al-Maqrīzī, Kitāb al-sulūk, vol. 2,1–2,3, 171.

\textsuperscript{239} Ibn Iyās, Badāʾiʿ, vol. 4, 271, 273, 275–278, 372, 384. Gatherings at the Nilometer were also common during the Fāṭimid time. al-Qalqashandī, Kitāb ṣubḥ, vol. 3, 516–517.
5.5.3. The Opening of the Canal (*Kasr al-Nil*)

The next day\(^{240}\) after the ceremonies at the Nilometer, the Sultan’s ḥarraqah, usually followed by other ships, moved to the Cairo Canal (Khalīj al-Qāhirah),\(^{241}\) where the second part of the ceremony, the opening of the dam (*kasr al-Nil/kasr al-khalīj/fath al-sadd*) took place.

\(^{240}\) The exact day of the canal opening depended on the official decree. According to al-Qalqashandī (d. 821/1418), during the Fāṭimid period, people opened the canal on the third or fourth day after the ceremonies at the Nilometer, whereas during his lifetime, this happened on the same day. (al-Qalqashandī, *Kitāb ṣubḥ*, vol. 3, 518.) Yet, the records in the chronicles show that people usually broke the dam the next day after the ceremony. See, for example, Ibn Iyās, *Badāʾiʿ*, vol. 3, 277. al-ʿAsqalānī, *Inbāʾ al-ghumr*, vol. 3, 510.

People cut the dam of the Cairo Canal with picks and shovels, which was annually constructed across it\(^{242}\) to prevent the Nile’s flooding before it reached the desired level of sixteen cubits.\(^{243}\) Afterwards the Nile flowed through the \textit{khalij}\(^{244}\) into artificial canals (\textit{tura‘}) leading water to the valleys of Egypt,\(^{245}\) and to places, remote from the stream of the Nile.\(^{246}\)

\(^{242}\) Tsugitaka, State and Rural Society, 118. Popper, The Cairo Nilometer, 82. 
\(^{243}\) Popper, The Cairo Nilometer, 82. 
\(^{245}\) al-Suyūṭi, Kawkab al-Rawḍah, 149. 
\(^{246}\) al-Maqrizi, al-Khiṭaṭ, vol. 1, 186. al-Maqrizi notices in \textit{al-Khiṭaṭ} that the lands of Egypt differ in their height and lowness. There are lands which are irrigated quickly, those which are irrigated after days and those which are not irrigated because of their height. This means that the water cannot reach the high lands in Upper Egypt (\textit{Bilād al-Ṣaʿīd}) except when the Nile rises much and small canals (\textit{tura‘}) are in proper condition. The low lands (\textit{asfal al-arḍ}), on the contrary, can suffer damage from the flood, which necessitates constant shoring up of dykes and dams to trap the water in the basins. (al-Maqrizi, al-Khiṭaṭ, vol. 1, 148.) See more about the division of
The water flowed through these canals, controlled by dykes (*jisr*, pl. *jusūr*), into large basins where the water stayed for some weeks, drenching the land. The remaining water flowed back into the Nile. The Delta (Lower Egypt) in A. Guest, XXV. The Delta in the Middle Ages: a Note on the Branches of the Nile and the Kurahs of Lower Egypt, with Map, *Journal of the Royal Asiatic Society* 44/04 (October 1912), 945.

Prior to the construction of the first Aswān Low Dam in 1898–1902 A.D. (see footnote 57, p. 39), there were two types of dikes, which were indispensable for Egypt’s irrigation system: *al-jusūr al-baladiyah* (community dams) and *al-jusūr al-sulṭāniyah* (government dams). *al-Jusūr al-baladiyah* was a local network of dikes and men-made canals, which peasants and cultivators maintained locally, within the borders of villages. *al-Jusūr al-sulṭāniyah* was a regional network of dykes and canals, linking the system outside the boundaries of villages. As the function of the latter was of public importance, the Sultan and prominent emirs were responsible for its control. (al-Maqrizí, al-Khiṭaṭ, vol. 1, 272. Tsugitaka, State and Rural Society, 119, 226, 235–238. S. Borsch, The Black Death and Human Impact on the Environment, in *A Comparative and Transcultural Survey between Asia and Europe*, ed. G. Schenk, Heidelberg: Springer forthcoming.) This theoretic distinction of the complex irrigation system shows that its management was
not purely centralised, but was instead “self-governed.” (Cf. the theory of the “self-governing irrigation system,” in which a “segment of society governs itself for itself,” in E. Ostrom, *Crafting Institutions for Self-Governing Irrigation Systems*, California Institute for Contemporary Studies San Francisco 1992, vii.) This point contradicts Karl Wittfogel’s theory on “Oriental Despotism” of “hydraulic societies,” like China, India, Mesopotamia and Egypt, which, relying on large-scale government-managed works of irrigation, gave rise to despotic bureaucratic centralised states. (Hassan, *The Dynamics of a Riverine Civilization*, 52. K. Wittfogel, *Oriental Despotism: A Comparative Study of Total Power*, New Haven: Yale University Press 1957.) As Fekri Hassan rightly remarked “Egypt probably survived for so long because production did not depend on a centralized state” that “was more concerned with collecting taxes and attending to the monumental display of royal power and religious institutions than with irrigation.” (Hassan, *The Dynamics of a Riverine Civilization*, 52, 69.

To fill the basins in Egypt, different big canals (*khuljān*) and artificial canals (*tura‘*) were opened on different days. See the details on the irrigation system in al-Maqrīzī, *al-Khiṭaṭ*, vol. 1, 148–149. al-Qalqashandī, *Kitāb ʿubḥ*, vol. 3, 294.
Mamlūk chroniclers made brief reports about the celebrations on these days in their annual entries. Although the inundation of the Nile was an important public event in the life of Egyptians, their records show that only a few Sultans attended it personally, and this on an irregular basis. From the *Baḥrī* (Turkish)²⁴⁹ rulers, prominent Sultans Baybars (r. 658–676/1260–1277)²⁵⁰ and Qalāwūn (r. 678–689/1279–1290)²⁵¹ deemed it necessary to preside over the ceremonies. Years

²⁴⁹ See about this period footnote 39, p. 270.


²⁵¹ All of the chroniclers mentioned in footnote 250, p. 483 recorded that after Sultan Baybars (r. 658–676/1260–1277) *Burjī* Sultan Barqūq (r. 784–791/1382–1389) visited the celebration for the first time in 785/1383. However, a contemporary author, Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir (d. 692/1293) mentioned that Sultan Qalāwūn (r. 678–689/1279–1290), who reigned before Barqūq, also headed the ceremony in 679/1280. Muḥyī al-Dīn Ibn ʿAbd al-Ẓāhir, *Tashrif al-ayyām*, 74.
had to pass until the first *Burji* (Circassian)\(^{252}\) Sultan Barqūq (r. 784–791/1382–1389)\(^{253}\) would revive this habit (*ʿādah*) in 785/1383,\(^{254}\) probably wishing to mark the start of a new era with his coming to power. He may also have wanted to be compared with the *Bahṣrī* Sultan Baybars (r. 658–676/1260–1277), who adopted this habit after coming to power and whom the Muslim world honoured greatly for his heroic achievements.\(^{255}\) Only few *Burji* Sultans followed Barqūq’s

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\(^{252}\) See about this period footnote 39, p. 270.


\(^{254}\) al-Maqrīzī, *al-Sulūk*, vol. 5, 150.

\(^{255}\) The Muslim world considered Baybars (r. 658–676/1260–1277) a hero as he defeated the crusaders and fought against the Mongols. He was also considered a successful Mamlūk ruler with a number of achievements in different spheres. C. Wiet, “Baybars I,” *The Encyclopaedia of Islam*, vol. 1,
example: his son Faraj (r. 808–815/1399–1412),\textsuperscript{256} al-Mu’ayyad (r. 815–824/1412–1421),\textsuperscript{257} Barsbay (r. 825–841/1422–1438),\textsuperscript{258} Khushqadam (r. 865–872/1461–1467),\textsuperscript{259} and Qānṣawh al-Ghawrī (906–922/1501–1516).\textsuperscript{260}

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\textsuperscript{256} Sultan Faraj lost his position for three months in 808/1405, returning to the office the same year. (Sāmī, Taqwīm al-Nīl, vol. 2, 199f.) The records show that he participated at the ceremonies several times. al-Maqrīzī, Kitāb al-sulūk, vol. 3, 1130. al-Maqrīzī, Kitāb al-sulūk, vol. 4, 68, 180.

\textsuperscript{257} Sultan al-Mu’ayyad followed this habit every year until his death. al-Suyūṭī, Kawkab al-Rawḍah, 169. al-Maqrīzī, Kitāb al-sulūk, vol. 4, 1, 263, 318, 360, 452. \textsuperscript{2}Abd al-Bāṣīt, Nayl al-amal, vol. 1, 4, 42.

\textsuperscript{258} al-Maqrīzī, Kitāb al-sulūk, vol. 4, 2, 834. al-Suyūṭī, Kawkab al-Rawḍah, 169.

\textsuperscript{259} Since 868/1464 Sultan Khushqadam attended the ceremony periodically until his death in 872/1467. \textsuperscript{2}Abd al-Bāṣīt, Nayl al-amal, vol. 2, 6, 194, 218, 272.

\textsuperscript{260} Sultan Qānṣawh al-Ghawrī attended the ceremony occasionally. Ibn Iyās, Badā’ī’, vol. 4, 238.
Mamlūk Sultans, who performed this duty, probably hoped that with their presence God would bless the Nile with an adequate rise and secure a peaceful and productive year without price turbulences,\textsuperscript{261} which the shortage of the Nile usually entailed.\textsuperscript{262} Their presence would also strengthen the people's belief in their sovereign, especially during years of hardship. This was the case in 833/1430,\textsuperscript{263} when—after consecutive years of disastrous water shortages in 829–833/1425–1430\textsuperscript{264}—Sultan Barsbay (r. 825–841/1422–1438) decided to lead the celebrations for the first time. The same year Barsbay's son died, which was another personal setback for the Sultan.\textsuperscript{265} All these

\textsuperscript{261} This notion was typical in the history of Egypt. Ancient kings were also portrayed as mediators, who intervened with the gods to ensure order and prosperity. Hassan, A River Runs through Egypt, 69.

\textsuperscript{262} See about the interrelation between the Nile's rise and prices for commodities in footnote 512, p. 557.

\textsuperscript{263} According to the chronicles, the decay of the dikes (\textit{fasād al-jusūr}) led to water shortage. al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 834. ‘Abd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 286. al-Suyūṭi, Kawkab al-Rawḍah, 169.

\textsuperscript{264} al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 709–710, 748f, 764f, 805f. See also footnote 753, p. 622.

\textsuperscript{265} al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 844.
events moved him to preside over the ceremony. In the light of dramatic events that took place that year—like the spread of the terrifying plague, which swept away the lives of thousands of people and animals—through his presence Sultan Barsbay (r. 825–841/1422–1438) probably wished to show his integrity and

266 al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 824f. The chroniclers described the year 833/1430 as full of calamities (balāyā), like epidemics (wabāʾ, tāʿūn), battles (malāḥīm), strifes (fitan) in “the lands of Islam” and other regions of the world. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 289. al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 836. See also Dols, The Black Death, 204f.


268 al-Maqrizī (d. 845/1442) reports that dead fish and crocodiles were floating on the surface of the Nile between Old and New Cairo. al-Maqrizī, Kitāb al-sulūk, vol. 4,2, 825. al-Suyūṭī, Kawkab al-Rawḍah, 259.
ability to cope with the crisis. He may also have hoped to secure the much-awaited flow of the Nile, averting additional disasters. The event of the year offered him a chance to reaffirm and consolidate his authority in the people’s eyes.

Nevertheless, the participation at the celebrations sometimes proved to be a risky venture for the rulers. Some of them wished to lead the ceremony but restrained from doing so or did it secretly, depriving the population of a public celebration. This happened when the Sultan’s security was at stake, especially during periods of social unrest.


270 The unprecedented way of the canal opening happened in 904/1498, when al-Malik al-Nasir Muhammad Ibn Qaytbay (r. 901–904/1496–1498) broke the dam at night, fearing attacks. When people found the canals full of water the following morning, they wondered, as that had never happened before. (Ibn Iyas, Badai‘i, vol. 3, 387.) See the historical background, describing the turbulent short reign of Ibn Qaytbay, which was marked by rebellions of emirs, insecurity, Bedouin attacks as well as a return of plague, in Garcin, The Regime of the Circassian Mamluks, 296–297.
In all other years, the Sultan usually sent a representative—his son,\(^{271}\) an emir of high rank, like the Atābek (the Sultan’s commander in chief),\(^ {272}\) the senior chamberlain (ḥājib al-ḥujjāb)\(^ {273}\) or the grand chancellor (al-dawādār)\(^ {274}\)—to perform this duty. The same person used to lead the ceremony for years so that people were accustomed to see him at the celebration. The repetitive character of ceremonies, which was a demonstration of “normality,” fortified the habit even more.\(^ {275}\) In return, the Sultan bestowed upon him a “robe of honour”

\(^ {271}\) Ibn Taghrī Bardī, Ḥawadith al-duhūr, vol. 1, 106, 121, 134, 154, 213.

\(^ {272}\) Abū al-Bāsīt, Nayl al-amal, vol. 2,6, 21, 43, 64, 87.


\(^ {275}\) Ibn Iyās, Badāʾiʿ, vol. 3, 436.

Almost in all of the akhbār, the following wording appears: “(He) went down, the Nilometer was perfumed and the canal was opened at his presence as usually” (nazala [...] fa-khallaqa al-miyyās wa-fataḥa al-khalīj bayna yadayyhi ʿalā al-ʿādah). See an example in Abū al-Bāsīt, Nayl al-amal, vol. 2,5, 289.
(khilʿah) in the Citadel, to which the emir rode in a splendid procession,\textsuperscript{276} to the sound of trumpets and drums. This occasion was also a great chance for the Sultan’s representative to present himself glamorously in public,\textsuperscript{277} showing acts of generosity.\textsuperscript{278}

Only occasionally, under exceptional circumstances, was the performance of these rites disturbed. This happened when the Nile did not reach plenitude. “Years without plenitude”\textsuperscript{279} were extremely rare and usually led to disastrous droughts. In this case, Ibn Abī al-Raddād did not perfume the gauge of the Nilometer, and the Sultan’s representative opened the dam without celebrations.

Mamlūk chroniclers, especially in later centuries, like Ibn al-Taghrī Bardī (d. 874/1470) and Ibn Iyās (d. 930/1524), usually finalised this

\textsuperscript{276} Ibn Iyās, Badāʾiʿ, vol. 3, 315–316.

\textsuperscript{277} Ibn Iyās, Badāʾiʿ, vol. 4, 325.

\textsuperscript{278} Ibn Iyās, Badāʾiʿ, vol. 3, 436–437.

\textsuperscript{279} See Chapter 5.8.1. “Years without Plenitude” p. 562f.
information in the khabar with short verses, describing the current mood during the celebrations:  

“The Cairo Canal (al-Khalij) was broken, and it was a blessing (ni‘mah).
The hearts of people (qulūb al-‘ālāmīn) were delighted at its announcement.
It was a “marvellous oddity” (min ‘ajā‘ib wa-gharā‘īb) that the hearts of the Muslims were fully acquainted with its breaking (li-kasrihī).”

As previously mentioned, the inclusion of such elements in the chronicles was typical for the narrative of special events, such as feasts, deaths of prominent people, disastrous events like


\[281\text{ Ibn Iyās, Badā‘ī, vol. 4, 389.} \]
earthquakes,\textsuperscript{282} fires\textsuperscript{283} and spread of plague.\textsuperscript{284} All of these habits and “rules of the Nile” became “cultural” in the sense that they were part of the people’s everyday normal life and consciousness, shaping their perception of Egypt and the Nile.

5.6. Deviations from the Habitually Known “Rule of the Nile”

We can now we can turn to a discussion of excessive floods and extreme water shortages, which the Egyptians considered troublesome because they deviated from the known “rule of the Nile.” In comparison to earthquakes, which were sudden events, bringing deaths during its occurrence and hardships afterwards, the excessive rise of the Nile or its extreme shortage were usually foreseeable, as people knew the system of its gradual rise.

\textsuperscript{282} See Chapter 4 Earthquakes, p. 285f.


Thus in Mamlūk Egypt excessive floods happened when the sequence of natural events known as the “rule of the Nile” was disturbed. This referred to the previously mentioned cases of “extraordinary oddities,” (min nawādir al-ziyādat)\textsuperscript{285} when

(1) the Nile’s minimum measurement before the inundation during Baʿūnah/8 June–7 July was extremely high\textsuperscript{286}

(2) the Nile inundated out of season, i.e. in Abīb (8 July–6 August), before the traditionally expected month in Misrā (7 August–5 September)\textsuperscript{287}

(3) rose high in succession before reaching “plenitude” (i.e. sixteen cubits)\textsuperscript{288} and

(4) rose excessively and did not recede so that people could cultivate.

\textsuperscript{285} See p. 457.

\textsuperscript{286} See Chapter 5.7.2. Extremely High Minimum of the Nile before the Inundation Day, p. 519.

\textsuperscript{287} See Chapter 5.7.3. Inundation in Abīb (8 July–6 August), p. 533f.

\textsuperscript{288} See general information about the “plenitude” and its significance in Chapter 5.5.1. “The Good News” (al-Bishārah), p. 466 and the discussion of this “oddity” in Chapter 5.7.4. High Rises in Succession, p. 541.
In all of these cases people feared an excessive height being reached afterwards. But what the “excessive” height (ziyādah mufriṭah/ziyādah kabīrah) might mean necessitates clarification both from the hydrological perspective and from the specific perspective of the Nile’s hydrological history.

5.6.1. Classification of Floods from the Hydrological Perspective

As with the intensity scales of earthquakes, there are different flood intensity scales used in the field of hydrology for floods in the pre-instrumental period. Katrin Sturm and her colleagues proposed one of the intensity scales,289 which helps to classify historical floods of the pre-instrumental period based on human observation. Briefly summarised, the indices in this scale range from level 1 to 3:290

289 See more references to other intensity scales in K. Sturm, R. Glaser et al., Hochwasser in Mitteleuropa seit 1500 und ihre Beziehung zur atmosphärischen Zirkulation, Petermanns Geographische Mitteilungen 145/6 (2001), 15. Brázdil, Kundzewicz et al., Flood Risk in Europe, 749.

290 K. Sturm, R. Glaser et al., Hochwasser in Mitteleuropa, 15.
<table>
<thead>
<tr>
<th>Index</th>
<th>Classification</th>
<th>Primary and Secondary Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>short flood</td>
<td>little damage</td>
</tr>
<tr>
<td>2</td>
<td>above average or supra-regional flood</td>
<td>damage of structures with loss of animals and sometimes human lives</td>
</tr>
<tr>
<td>3</td>
<td>above average or supra-regional flood on disastrous scale</td>
<td>severe material damage and extensive loss of animals and human lives</td>
</tr>
</tbody>
</table>

Index of Excessive Floods

However, this scale is not fully applicable to Egypt as it only classifies excessive floods, leaving aside short floods, which could also lead to environmental damage and human losses. However, we can complement the missing information, adapting it to the specifics of the Nile. To illustrate the types of insufficient low floods and their impact on the surroundings and society, we can similarly append indices from –1 to –3:
<table>
<thead>
<tr>
<th>Index</th>
<th>Classification</th>
<th>Primary and Secondary Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>−1</td>
<td>delayed flood</td>
<td>little damage</td>
</tr>
<tr>
<td>−2</td>
<td>quick decline of water</td>
<td>drought with loss of animals and sometimes human lives</td>
</tr>
<tr>
<td>−3</td>
<td>extreme shortage of water</td>
<td>disastrous drought with extensive material damage and loss of animal and human lives</td>
</tr>
</tbody>
</table>

Index of Short Floods

This categorisation, while an oversimplified classification of floods, is still a useful tool for research into the pre-instrumental period. However, as I mentioned at the beginning of the chapter on the Nile, in the case of the Nile’s hydrological history, we have both documentary and instrumental data, which distinguishes the research on the Nile from research on other rivers.

\[291\] See p. 415.
5.6.2. “Excessive” and “Low” Floods from the Perspective of the Nile’s Specific Hydrological History

The instrumental data provided by the measurements in the Nilometer make it possible to retrieve information about when the Nile rose excessively or little. However, what people considered excessive or insufficient also varied during different epochs due to different reasons. Moreover, not every irregularity ended up being

292 “[In Ancient Egypt], Nilometers were positioned along the river, and the measurements were calibrated to predict poor, good and excessive flood heights. Although current evidence does not indicate that the Egyptians transformed the Nilometer readings into useful measures for predicting crop yields, they most certainly understood the implications of a normal, low or high flood and prepared accordingly.” (D. Brewer, The Archaeology of Ancient Egypt: Beyond Pharaohs, Cambridge: Cambridge University Press 2012, 132.) Discussing the irrigation system during the Ayyūbid and Mamlūk period, Sato Tsugitaka also mentioned that “the Nilometer always precisely forecast what kind of harvest might be expected.” Tsugitaka, State and Rural Society, 220.

a disaster, if we consider that the level necessary for the operations of irrigation varied in different regions of Egypt. These factors necessitate the presentation of levels and their meanings, which are useful tools for better understanding water-related disasters and their impact on the population and environment. Methodologically speaking, this knowledge also helps us to carry out targeted research in the chronicles.

While writing about the levels of the Nile and their meanings, most of the Mamlûk authors cited, with small amendments, the prominent Arab historian and geographer al-Maṣʿūdî (d. 346/957). According to him, the most adequate level during his time was seventeen cubits, which were sufficient for the whole land to meet its needs during the year. This explains why several Qurʾānic verses (50:9; 22:5; 22:62; 2000, 132f. See also the explanations for the different meanings of levels, p. 503.

294 See footnote 37, p. 160.

42:27), emphasising the greatness of God, who sends water to earth to enliven it, adorned the walls of the Nilometer at this level.

Levels above seventeen cubits, called al-lujjah al-kubrā ("great fathomless sea") because of its destructive effect, led to the flooding (istabhara) of a quarter of the lands. When the water surpassed eighteen cubits—considered the highest during al-Masʿūdi’s lifetime—epidemics (wabā') ensued in Egypt, and the kharāj decreased, as the water flooded the lowest lands.

296 Popper, The Cairo Nilometer, 49.
299 al-Maqrīzī, al-Khiṭaṭ, vol. 1, 158. Similarly to the interrelation between earthquakes and spread of epidemics (see page 335), the outbreak of epidemics following excessive floods was almost a normal consequence. See also footnote 47, p. 35; footnote 159, p. 459 and practical cases on p. 527, 540, 546.
Mamlūk authors like al-Maqrīzī (d. 845/1442) and al-Qalqashandi (d. 821/1418) updated al-Masʿūdī’s (d. 346/957) records by providing observations from their epoch, which told another story. Writing about the Mamlūk period, they emphasised that, as opposed to earlier times,\(^\text{300}\) levels above seventeen cubits were considered average (mutawassiṭah),\(^\text{301}\) and they sometimes even led to an extreme famine (ghalāʾ ʿaẓīm), especially because of the decay of dykes and canals.\(^\text{302}\)

In addition, al-Maqrīzī (d. 845/1442) made an important observation concerning the originally disastrous level above nineteen cubits, the impact of which was conveyed in a popular saying “God save us from


\(^{301}\) al-Qalqashandi, Kitāb šubḥ, vol. 3, 300.

a finger from twenty” (naʿudh bi-allāh min isbaʿ min ʿishrīn),\textsuperscript{303} i.e. more than nineteen.\textsuperscript{304} According to him, this height failed to cover the whole land from 806/1403\textsuperscript{305} onwards because the dykes were in decay.\textsuperscript{306} As a result, the water plunged rapidly and the peasants could not fill the basins with water, necessary for the irrigation of fields. In fact, we have numerous reports about the increase of the short duration of the Nile’s flooding from the fifteenth century A.D.\textsuperscript{307} In the early sixteenth A.D. century, Ibn Iyās’ records show that the high level of twenty cubits, previously considered as disastrous, meant extreme profit.\textsuperscript{308} In an anonymous manuscript on predictions

\textsuperscript{303} al-Maqrīzī, al-Khiṭaṭ, vol. 4/2, 159.

\textsuperscript{304} There were two different ways of writing the levels. The chroniclers either named, first—cubits, then—fingers, like, for example, “nineteen cubits and one finger” or wrote the same measure as “one finger from twenty cubits,” which also meant nineteen cubits and one finger.


\textsuperscript{306} al-Maqrīzī, al-Khiṭaṭ, vol. 4/2, 159.

\textsuperscript{307} See Borsch, The Black Death, footnotes 706, p. 608 and footnote 716, p. 611.

about the Nile’s rise—probably stemming from the mid-sixteenth century A.D.—the level of twenty cubits is even described as a “blessing” for the year.309

In fact, during the fourteenth century A.D., the maximum levels shifted, and their meanings and effects changed. al-Qalqashandī (d. 821/1418) explained that this change was due to two main reasons:

309 Anonymous, Risālah fī ma‘rufat zīyādat al-Nīl, fol. 2v. Although the perception of twenty cubits as a “blessing” by the anonymous author shows similarities with Ibn Iyās’ description, we should treat this information with caution because we do not know exactly when this manuscript was compiled, and whether the measurements mentioned in it referred to the Nilometer scale of the Mamlūk time or the period after 1523 A.D. According to Willima Popper, after the Ottoman conquest of Egypt, new measurement value of the cubit was introduced. See scale differences in Popper, The Cairo Nilometer, 102f. Cf. Mahmoud Bey, Le système métrique actuel d’Égypte, 1–45. J. Ardagh, Nilometers, in The Cairo Nilometer: Texts and Studies, ed. F. Sezgin, Frankfurt am Main: Institute for the History of Arabic-Islamic Science 2001, 62–72. Reiss, Der Nilometer bei Cairo, 73–79. Richards, Nilometer on Roda Island, 80–88. See the drawing of the Nilometer gauge in Popper, The Cairo Nilometer, p. 48.
on the one hand, the land became high because of the silt (ṭīn), which the water stream brought year by year and deposited as sediment on the bed of the Nile; on the other hand, the dykes (al-jusūr) became neglected.\textsuperscript{310} al-Maqrīzī (d. 845/1442) also emphasised that the extensive decay of the irrigation system was the cause of the water shortage.\textsuperscript{311}

In his treatise \textit{Ighāthat al-ummah bi-kashf al-ghummah}, al-Maqrīzī (d. 845/1442) wrote about the causes of the decay of the irrigation system, which he ascribed to the predominating injustice, corruption, and financial crisis in Egypt.\textsuperscript{312} Furthermore, he named the miserable demographic situation as another reason for the bad conditions of the irrigation system. Summarising the existing segments of the Mamlūk

\begin{footnotesize}
\begin{enumerate}
\item al-Qalqashandī, Kitāb ṣubḥ, vol. 3, 300. See the analysis of the average increase in the rise of the the Nile’s bed between 1260–1517 A.D. in Popper, The Cairo Nilometer, 243. Hassan, Extreme Nile Floods, 102. Borsch, Nile Floods, 132–133.
\end{enumerate}
\end{footnotesize}
society, he mentioned that most of the land cultivators, intellectuals (legists, students of theology, legal witnesses, the Sultan’s cavalrymen), and craftsmen perished or were afflicted by poverty due to the calamities of the recent years (shiddat al-sinīn) and the successive ordeals caused by the lack of cultivated land.313

The massive depopulation occurred in the first place, as discussed in Stuart Borsch’ article,314 because of the plague315 of 749/1348,316 which reoccurred on regular cycles until the early sixteenth


316 See references in footnote 193, p. 339.
century A.D. In 749/1348 alone the plague took the lives of numerous people, forcing many to flee from the infected areas. 


318 According to al-Maqrî (d. 845/1442), about 15,000 people died daily because of the plague. (al-Maqrî, Kitâb al-sulûk, vol. 2,1–2,3, 772.) ʿAbd al-Bâsiṭ recorded that the number of dead reached 900,000 people in Ramaḍân 749/1348. (ʿAbd al-Bâsiṭ, Nayl al-amal, vol. 1,1, 174.) Stuart Borsch argues that the Black Death eliminated half of the urban population by the mid-fifteenth century. Borsch, Environment and Population, 461. See
The aftermath of the arrival of the plague brought massive social and economic changes in Mamlūk society, leading to the rapid transmission of *iqṭāʿāt* (granted lands),\(^{320}\) from one tenant to another,\(^{321}\) which additionally influenced the proper maintenance of the irrigation system. According to Stuart Borsch, Egypt’s agrarian output fell by some 70 percent.\(^{322}\)

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\(^{320}\) *Iqṭāʿ/iqṭāʿāt* “apportionment,” “a revocable allotment of revenue yield from a tract of agrarian land to provide an officer with resources to support his troop contingent and personal expenses.” (Petry (ed.), The Cambridge History of Egypt, 529.) See more about *iqṭāʿ*-system in Tsugitaka, State and Rural Society.

\(^{321}\) Irwin, The Middle East in the Middle Ages, 138.

\(^{322}\) See the complex scenarios of this calculation and references to the surveys in Borsch, Environment and Population, 461. It is difficult to say how far this estimation is reliable, but it is evident that Egypt suffered a significant drop in population. See also the discussion of this issue related to Cairo in Raymond, Cairo’s Area and Population, 21–31 and chapter *The*
Other factors such as destructive activities on the part of the Bedouins at the beginning of the fifteenth century A.D.\textsuperscript{323} had also a negative impact on the irrigation system. The Bedouins who “had a relative immunity” to the plague because they lived in thinly populated areas—made profit during the hard times.\textsuperscript{324} They routinely cut the dykes to turn grain fields into wasteland (\textit{al-khars})\textsuperscript{325} for their sheep and goats.\textsuperscript{326} Other segments of society whose skills were in great


\textsuperscript{324} Borsch, Nile Floods, 138–139. Garcin, The Regime of the Circassian Mamlūks, 308.

\textsuperscript{325} See the main types of lands and divisions of agriculture in Egypt in al-Maqrīzī, al-Khiṭaṭ, vol. 1, 270–278.

demand, for example, physicians and druggists, or farmers, whose lands were irrigated during the years of drought, made a profit. “From cultivating them, they gained large sums of money with which they have been able to support themselves [during] these times. Some of them have accumulated extensive wealth and enjoyed a life of great affluence.”

All this explains why, despite high floods above nineteen cubits, the lands often remained dry in the fourteenth and fifteenth century A.D. The Nile failed to irrigate agricultural fields as the basins, due to the decayed dykes, could not retain the water, which flowed straight down to Cairo and Lower Egypt, living the valleys and remote lands waterless. The water uncontrolled by the mismanaged irrigation

328 Allouche, al-Maqrizi’s Ighāthah, 45.
329 Allouche, al-Maqrizi’s Ighāthah, 75.
330 Borsch, Nile Floods, 139.
system could also drown certain regions as happened in 750/1349,\textsuperscript{331} the year following the massive depopulation due to the plague, and in 835/1432\textsuperscript{332} in the course of heavy rains.\textsuperscript{333}

With this knowledge about the levels of the Nile and their impact, as well as the major reasons for their shift during the fourteenth and fifteenth centuries A.D., we can turn to the discussion of the causes and effects of excessive floods and disastrous droughts.

5.7. Case Studies of Excessive Floods: Causes, Effects and Cultural Responses

5.7.1. General Overview of Major Destructive Floods

\begin{thebibliography}{99}


\bibitem{332} al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 874, 875. 'Abd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 315. See also footnote 425, p. 534.


\end{thebibliography}

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Although Mamlūk Egypt experienced a number of excessive floods, it is quite likely that some of the floods passed unremarked due to the adequate preventive measures that were in place. As mentioned at the beginning of this chapter, one of the strategies was the constant measuring of the Nile’s level in the Nilometer and its public announcement which served as an early-warning system against the sudden flooding that informed Egyptians about the expected height of the water.

Another important preventive measure was the control of the irrigation system, consisting of a complex network of canals and dykes[334] which regulated the approaching floodwaters and their distribution in the land up to the end of the nineteenth century A.D.[335] When in adequate working condition—which required constant dredging of canals and shoring up of dykes and dams—these measures offered protection from the annual high water.[336] Failure to

[336] These preventive measures were regulated mainly on the local level by muqṭa‘ (an iqṭā‘ holder) and fallāḥūn (farmers, cultivators, tenants), who
do so would mean that the floodwaters would rush in unimpeded, washing in and out of the basins without providing enough moisture or fertilizer.\textsuperscript{337}

Despite these preventive measures, the chroniclers recorded, at a rough estimate, twenty-eight cases of excessive floods (suyūl) during the period of two and a half centuries.\textsuperscript{338} This could mean that the preventive measures often failed because the human and technical intervention was helpless against the power of the water.

Although the chroniclers do not explicitly blame anyone for the occurrence of these floods, the records reveal that during most of these years internal conflicts prevailed which might have contributed

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\textsuperscript{337} Borsch, Nile Floods, 132.

\textsuperscript{338} See \textit{The Catalogue of Excessive Nile Floods} in the appendix, p. 661f.
to the disrepair of canals.\textsuperscript{339} As most of these floods have much in common, I will first give a general review of their causes, effects and human responses and then separately treat those excessive floods which occurred implicitly due to the “oddities” connected with the deviation from the natural course of the Nile’s rise, i.e. “rule of the Nile”\textsuperscript{340} or due to human intervention.\textsuperscript{341}

Most of these floods, which the chroniclers described in much detail, resulted from sudden breach of dykes build to block the flow of the river. The powerful stream of water not only caused immediate environmental damage to the flora and fauna, but also brought about


\textsuperscript{340} See Chapters 5.7.1–5.7.4., p. 509f.

\textsuperscript{341} See Chapter 5.7.5. Man-Made Floods in 778/1376 and 912/1506, p. 551f.
a long-term agricultural crisis, with significant material and economic losses. The water invaded cultivated farmlands,\textsuperscript{342} sweeping away the seeds sown shortly before their onset, and destroying gardens, sugar cane fields, and granaries.\textsuperscript{343} In some cases, the crisis further evolved because the waters remained in the fields for a long time impeding the cultivation process\textsuperscript{344} or receded too quickly for the water to be trapped to irrigate the land.\textsuperscript{345}

From the number of destroyed regions mentioned in the descriptions we can imply that the water submerged hundreds of square
kilometres of land.\textsuperscript{346} This led to the destruction of the canal system, dams and dykes, holding the water back.\textsuperscript{347} In some of the cases, we learn that the water flooded (\textit{gharaqa/fāḍa/ṭaghā}) houses,\textsuperscript{348} demolishing people’s properties.\textsuperscript{349} Flooded roads,\textsuperscript{350} damaged bridges

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\textsuperscript{349} 883/1478: Ibn Iyās, Badāʾiʿ, vol. 3, 142.

and river harbours\textsuperscript{351} meant a disruption of the infrastructure, which impeded the movement of travellers and the transportation of goods to market. The evidence shows that the effects of the flood (both excessive and short) often intensified other crises such as the lack of available products and a rise in prices\textsuperscript{352}, as people usually rushed to buy grain.\textsuperscript{353} Although the chronicles do not give much information about the effect on the fauna, it is clear that animals were also afflicted, as flooding of the fields might have reduced grazing land important for their sustenance.

In most of these cases, the attitude of the Mamlūk authorities to the effects of the flood was of a practical-technical character, which they


\textsuperscript{352} See about the interrelation between the Nile's rise and prices for commodities in footnote 512, p. 557.

implemented with a certain routine. We learn that the district governors, their representatives, emirs and other functionaries like the “watchers of the dykes” (kāshīf al-jusūr) went to the afflicted areas to mitigate the effects of the floods.\(^{354}\) Sometimes they had to stay on site for days trying to repair damaged dykes under emergency conditions.\(^{355}\) To stop the water flow, they usually plugged the breaches in the dykes with wooden boards, trees, and stones.\(^{356}\)

The attitude of the Mamlūk authorities to the flood was not restricted to practical-technical methods of coping. Their emergency procedures were sometimes accompanied by prayers in the mosques or at the


Nilometer, held on the Sultan’s order for the reduction of the water.\textsuperscript{357} Some floods—including the floods of 773/1371 and 915/1509—inspired “men of letters” to compose verses in memory of these events. Although the contemporary chroniclers drew attention to their authors, they did not include them in the \textit{khabar}.\textsuperscript{358} We can find some of them in Ibn Iyās’ chronicle\textsuperscript{359} and his manuscript of \textit{Nashq}.\textsuperscript{360}

Apart from these destructive local events, which the chroniclers report without naming any specific cause for the high rise of the Nile,


\textsuperscript{359} See an example in Ibn Iyās, \textit{Badāʾiʿ}, vol. 4, 159.

\textsuperscript{360} Ibn Iyās, \textit{Nashq al-azhār}, fol. 405f. See about this manuscript, p. 283.
excessive floods also resulted, first, from heavy rainfall, an aspect not treated in this study; second, from other natural causes like the

previously mentioned deviations from “the rule of the Nile”: (1) the extreme out of season high minimum, (2) the early inundation in Abīb (8 July–6 August) and (3) a series of high rises. And finally, some floods were man-made, occurring as a result of human interaction which led to either the accidental or intentional breaking of dykes. The following pages are devoted to a discussion of these cases.

5.7.2. Extremely High Minimum of the Nile before the Inundation Day

Some Arab authors drew attention to the probable correlation between the Nile’s minimum (“old water”) measured on 27 Baʿūnah/ca. 4 July and the maximum level (nihāyat al-fayḍān), which the Nile reached during the first Coptic month of Tūt/11 September–10 October. They responded by providing opinions refuting or supporting the possible correlation between these extremes.

362 See p. 493f.

363 See footnote 178, p. 464.

364 See footnote 152, p. 109.
In discussing this issue, al-Qalqashandī (d. 821/1418) pointed out that there was no connection between the maximum and the average minimum level, which, according to the “rule of the Nile,” normally ranged from three\textsuperscript{365} to eight cubits.\textsuperscript{366} He argued that “although in 379/989–990 the minimum stopped at the level of nine cubits, the Nile failed to reach plenitude and stopped at fifteen cubits and five fingers, which was “marvellous” (\textit{mīn al-ʿajīb}), in the sense of strange.\textsuperscript{367} Similarly, there were years when the minimum did not even reach two cubits,\textsuperscript{368} which was below the average minimum,\textsuperscript{369}


\textsuperscript{366} See the statistical data in Sāmī, Taqwīm al-Nīl, vol. 2. Ṭusūn, Mémoire sur l’histoire du Nil.

\textsuperscript{367} al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 296–297. This information does not correspond to the statistical evidence conveyed in Amīn Sāmī’s and ‘Umar Ṭusūn’s catalogues, whose data is based mainly on Ibn Taghrī Bardī’s and other chroniclers’ records (see footnote 28, p. 420). This means that al-Qalqashandī (d. 821/1418) either copied this information with a mistake or fabricated it to support his argument.

\textsuperscript{368} al-Qalqashandi, Kitāb ṣubḥ, vol. 3, 296–297.
but the Nile reached the level of eighteen cubits afterwards.\textsuperscript{370} He made these arguments in order to contradict al-Masʿūdi’s (d. 345/956) view—writing several centuries before—who had stated that the low minimum of less than three cubits as had been the case in the above mentioned year, could lead to a low maximum, i.e. shortage.\textsuperscript{371}

Both of these contradictory opinions stem from personal observations, each of which has certain logic. At first glance, the comparative analysis of the data for the Mamlūk period\textsuperscript{372} reveals that variations from the normal average minimum (three to eight cubits) did not necessarily influence the course of events during the Nile’s rising season. In the light of this data, al-Qalqashandi’s statement sounds plausible. For example, despite the extreme low minimum of one

\begin{footnotesize}
\begin{enumerate}
\item al-Aqfahsī, Kitāb akhbār Nīl Miṣr, 48.
\item al-Qalqashandī, Kitāb ṣubḥ, vol. 3, 296–297.
\item Sāmī, Taqwīm al-Nil, vol. 2. Ṭusūn, Mémoire sur l’histoire du Nil.
\end{enumerate}
\end{footnotesize}
cubit and ten fingers measured in the end of the Hijrī year 806/1404, the water reached nineteen cubits and three fingers in 807/1404, flooding the fields in Upper Egypt (al-Ṣaʿīd).

Yet, at a second look, the table of the Nile's minimum and maximum levels shows a certain correlation. This refers in particular to cases when the minimum exceeded the level of ten cubits. This height, which deviated from the normal average minimum (three to eight cubits), was, indeed, “odd” and troublesome because people feared an excessive rise of the water out of season, as occurred in

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373 The Nile's minimum was unprecedentedly low so that people could wade into the water from New Cairo to the shore of al-Jīzah. al-Maqrızī, Kitāb al-sulūk, vol. 3,3, 1127. al-Suyūṭī, Kawkab al-Rawdah, 255.


375 al-Maqrızī, Kitāb al-sulūk, vol. 3,3, 1135. More of the similar examples can be extracted from statistical data conveyed in Amin Sāmī’s and ʿUmar Ṭūsūn’s catalogues.

376 Ibn Iyās, Nubdhah min nashq, 119–120.
838/1435,\textsuperscript{377} 845/1441\textsuperscript{378} and 851/1447.\textsuperscript{379} During these years, the minimum measured during Baʿūnah/8 June–7 July was above ten cubits. In the first two cases, the water caused local damage as it rose before the proper time. The highest peak of twelve cubits recorded in 761/1359, and 922/1516\textsuperscript{380} led, in particular, to an excessive maximum.

5.7.2.1. Floods of 761/1359 and 922/1516

As 761/1359 falls inside the period for which I could not consult local contemporary sources, the discussion of events of 761/1359 is based on later records by al-Maqrizi (766–845/1364–1442), Ibn

\begin{footnotesize}
\begin{itemize}
\item[379] Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 1, 153, 158.
\item[380] See the discussion of these floods below in Chapter 5.7.2.1. Floods of 761/1359 and 922/1516, p. 523f.
\end{itemize}
\end{footnotesize}
Taghrī Bardī (812–874/1410–1470), ʿAbd al-Bāsiṭ (844–920/1440–1514), and Ibn Iyās (852–930/1448–1524). They reported that during Sultan Ḥasan Ibn Muḥammad Ibn Qalāwūn’s reign (r. 755–762/1354–1361) people “wondered” at the excessive high minimum of about twelve cubits, which was also referred to as an “extraordinary oddity” (min al-nawādir al-gharībah). When the Nile then reached nineteen cubits and nine fingers, the Sultan cancelled the public announcement. William Popper suggested that this was because it was not possible to measure this height in the Nilometer. However, he also noticed that despite the Sultan’s order, chroniclers like Ibn Furāt (735–807/1335–1405) continued to record the rise until the height of twenty cubits and some fingers. We even learn that until the middle of Bābih/ca. 25 October the Nile reached an

382 Ibn Iyās, Badāʾiʿ, vol. 1,1, 569.
unprecedented twenty-four cubits, destroying “numerous places.”

Although this unprecedented height poses problems, as the Nilometer gauge of Mamlûk period shows only the maximum of twenty cubits, we can suggest that the Sultan prohibited the announcement because he feared public unrest, which irregularities in the Nile’s level usually provoked.

Extending al-Maqrîzî’s records, whose report served as a basis for other chroniclers, Ibn Iyäs (d. 930/1524) described in detail the effects of the flood, which he called “terrifying” (amran muhawwilan). He reported that roads were flooded so that people and travellers were impeded. The water tore apart the dyke of al-Fayyûm, flooded roads and gardens of the island al-Fîl, and

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386 See Popper, The Cairo Nilometer.

387 Ibn Iyäs, Badâʾiʿ, vol. 1,1, 570.

388 See the map in Petry, (ed.), The Cambridge History of Egypt, p. xvii.
reached the first houses of al-Ḥusaynīyah,\textsuperscript{390} floating wells. The water sprang from the \textit{mīḍaʾah} (basin for the ritual ablution) of al-Ḥākim mosque. It also flooded some places in al-Rawḍah, tearing apart the road of Būlāq and destroying numerous houses.\textsuperscript{391} Relying on these non-contemporary sources, we can suppose that infrastructure was badly damaged.

In contrast to al-Maqrīzī’s report, which simply mentioned that people prayed to God and the water receded to four fingers,\textsuperscript{392} Ibn Iyās (d. 930/1524) wrote that Sheikh Siraj al-Dīn ʿUmar al-Bulqīnī personally prayed to God in al-Azhār mosque,\textsuperscript{393} after which the water “reduced by four fingers within a night.”\textsuperscript{394} He found it important to include


\textsuperscript{390} See the map in Warner, The Monuments of Historic Cairo, p. 1.


\textsuperscript{393} See the map in Warner, The Monuments of Historic Cairo, p. 24.

\textsuperscript{394} Ibn Iyās, \textit{Badāʾiʿ}, vol. 1,1, 570.
the name of the prominent sheikh as a mediator between God, people and the occurrences on earth. Moreover, in commemoration of an event, he concluded that Sheikh Shihāb al-Dīn Ibn Abī Ḥajalah (d. 776/ 1375) composed a “marvellous” verse (maqāmah ʿajibah/maqāmah latīfah) from a poetic and prose form (naṣm wa-nathr) in memory of this disaster. According to Ibn Iyās (d. 930/1524), the effect of the flood was dramatic because of the spread of epidemics (wabāʾ) afterwards, which “overwhelmed everything like a deluge” (ṭamma wa-ʿammat).}

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397 Ibn Iyās, Badāʾiʿ, vol. 1,1, 570. In the edited version of Ibn Iyās’ chronicle, the verse is missing, but we can find it in his unpublished manuscript of Nashq. Ibn Iyās, Nashq al-azhār, fols. 404–405. See details about this manuscript, p. 283.

398 See the discussion of this term in Conrad, Ṭāʿūn and Wabāʾ, 268–307.

The appearance of epidemics and diseases following natural disasters was almost a normal consequence. In this specific case, reports about the spread of diseases continued into 762/1360–1. According to the contemporary Damascene chronicler Ibn Kathîr (d. 774/1373), Egypt was in decay (fanāʾ) due to the stagnation of the Nile. As a result, more than 2,000 people died daily. Diseases spread further with the onset of cold weather in Muḥarram/November. The prices for water, sugar, fruits and other commodities rose excessively because of the lack of workers. The Sultan moved to the countryside and he was also muddled (tashwîsh), probably through fear of falling ill.

400 Cf. the interrelation of natural disasters and epidemics, p. 335, 459.

401 See the discussion of the concept of fanāʾ in Büssow-Schmitz, Fanāʾ and Fasād.


The records of the destructive flood in 761/1359 show that, similar to the reports of earthquakes, later chroniclers were inclined to extend the narrative of the khabar about the destructiveness of disasters. They thus depicted the past events in a more dramatic way, embellishing them with poetic verses. In particular, Ibn Iyās (d. 930/1524), relying on the records of the credible chronicler al-Maqrīzī (d. 845/1442), tried to reconstruct the damage as if he had witnessed the events, making them somehow comparable to destructive floods Ibn Iyās (d. 930/1524) experienced as a contemporary.405 Personal experience might have influenced his dramatic description of 761/1359. But this might also have been intentional. He probably wished to compare the disastrous outcome of the out of season flood in 761/1359 with the similar case of the extremely high minimum of twelve cubits, recorded during his lifetime in 922/1516, which did not end in disaster.

405 See, for example, Ibn Iyās’ records of the destructive flood in 882/1477, presented in Chapter 5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477 and in 912/1506, which is discussed in Chapter 5.7.5. Man-Made Floods in 778/1376 and 912/1506, p. 553f.
In the case of 922/1516, Ibn Iyās (d. 930/1524) reported that two “oddities” (min al-nawādir al-gharibah)\textsuperscript{406} happened that year. The first “oddity” referred to the extraordinary high minimum level of twelve cubits, resulting from heavy rains in Upper Egypt (al-Ṣaʿīd).\textsuperscript{407} He noted that it was the second time in Mamlūk history when the minimum had reached the highest peak, aside from a similar occurrence in 761/1359 during Sultan Ḥasan Ibn Muḥammad Ibn Qalāwūn’s reign (r. 755–762/1354–1361).\textsuperscript{408} He also mentioned that people feared the minimum level of twelve cubits because the water could rise out of season and would remain on the fields, impeding cultivation.\textsuperscript{409} However, Ibn Iyās (d. 930/1524) emphasised that the Sultan’s chancellor immediately organised intensive damming at the critical points of the flow.\textsuperscript{410} A number of ships were broken up and

\begin{flushright}
\textsuperscript{406} Ibn Iyās, Badāʾiʿ, vol. 5, 52.
\textsuperscript{407} Ibn Iyās, Badāʾiʿ, vol. 5, 21.
\textsuperscript{408} Ibn Iyās, Badāʾiʿ, vol. 5, 52. Ibn Iyās, Nubdhah min nashq, 119–120. See the discussion of this flood above, p. 523f.
\textsuperscript{409} Ibn Iyās, Badāʾiʿ, vol. 5, 52.
\textsuperscript{410} Ibn Iyās, Badāʾiʿ, vol. 5, 48–49.
\end{flushright}
positioned on the basis of the al-Fayḍ (unidentified) and Abū al-Munajjā\textsuperscript{411} dykes as a barrier to prevent flooding.\textsuperscript{412}

With this quite realistic description of how governmental preventative measures averted the disaster, Ibn Iyās (d. 930/1524) highlighted the Sultan’s positive involvement, which contrasted vividly with the passivity of the authorities in the previously described excessive flood of 761/1359,\textsuperscript{413} where the reports did not mention any coping measures.

This “extraordinarily odd” height of twelve cubits in 922/1516 led to the inundation of the Nile on 27 Abīb/End of July,\textsuperscript{414} which was the

\begin{footnotesize}
\textsuperscript{411} According to Stuart Borsch, “the Abū al-Munajjā Canal was developed for the purpose of extending the irrigation network in the eastern province of al-Sharqīya. This canal extended north-east from the Nile to the metropolis of Bilbays because the Sardūs Canal did not provide enough water.” Borsch, The Black Death. See also Guest, The Delta in the Middle Ages, 943f.

\textsuperscript{412} Ibn Iyās, Badāʾīʾ, vol. 5, 48–49.

\textsuperscript{413} See p. 523f.

\textsuperscript{414} Ibn Iyās, Badāʾīʾ, vol. 5, 56.
\end{footnotesize}
second “oddity,”415 Ibn Iyās (d. 930/1524) had in mind. This was one of the other anomalies416 when people wondered at an early rise, and chanted “the Nile inundated in Abīb, enter, oh the beloved”! (al-Nīl awfā fī Abīb khushsh yā ḥabīb).417 But as nothing extraordinary happened in 922/1516, Ibn Iyās (d. 930/1524) continued this proverb: “and we remained in happiness, what a joy for us”! (Qad baqīnā fī hanāʾ jā faraḥnā).418 He even mentioned that despite the people’s fears the year ended well419 with the maximum of twenty cubits.420 This is comprehensible given that the height of twenty cubits, considered dangerous during the early Mamlūk period, posed

415 Ibn Iyās, Nubdhah min nashq, 119–120.

416 See the analysis of excessive floods due to the out of season rise of water in Chapter 5.7.3. Inundation in Abīb (8 July–6 August), p. 533.


418 Ibn Iyās, Badāʾiʿ, vol. 5, 56.

419 Ibn Iyās, Badāʾiʿ, vol. 5, 52. Ibn Iyās, Nubdhah min nashq, 119–120.

420 Ibn Iyās, Badāʾiʿ, vol. 5, 81.
no risk in the early sixteenth century A.D.\textsuperscript{421} We can conclude that the high flood in 922/1516 did not result in a disaster, which supports the idea that not every excessive flood had a destructive impact. Moreover, with these changes in the meaning and the effects of the Nile’s maximum levels, people would not fear the minimum of twelve cubits during the subsequent centuries as this height of the Nile’s lowest level would probably lose the cultural perception of it being associated with danger.

5.7.3. Inundation in Abīb (8 July–6 August)

The inundation in Abīb (8 July–6 August), i.e. before the twelfth Coptic month Misrā (7 August–5 September), also deviated from the habitually known “rule of the Nile” and was perceived as “odd” (\textit{min al-gharā’ib})\textsuperscript{422} and troublesome. As the flood reached sixteen cubits out of season, people feared that the water would fill the fields before the proper time and would hinder the normal cultivation process.

\textsuperscript{421} See the discussion of this issue in Chapter 5.6.2. “Excessive” and “Low” Floods from the Perspective of the Nile’s Specific Hydrological History, in particular p. 501f.

\textsuperscript{422} al-Nuwayrī, Nihāyat al-arab, vol. 32, 252.
The records in the chronicles show that during the Mamlūk period the Nile reached sixteen cubits ahead of time in a number of years: 717/1317, 825/1422, 834/1431, 845/1441, 882/1477.

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425 On 12 Dhū al-qaʿdah of 834/21 July 1431, which corresponded to 29 Abīb of the Coptic calendar, the Nile, similar to the previous cases, inundated out of season. However, al-Maqrīzī (d. 845/1442) did not report any accidents after the Nile stopped at twenty cubits and twelve fingers in the beginning of 835/1431. (al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 859, 863. ‘Abd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 300–301.) Only when the Nile inundated in Misrā, at the end of the Muslim year 835/1431, did the water flood numerous locations due to the breackage (*taqāṭtuʿ*) of dykes. (al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 874.)
884/1479,\textsuperscript{428} and 922/1516.\textsuperscript{429} In all of these cases, the Nile reached a high maximum level afterwards. With the exception of the floods in


\textsuperscript{427} Ibn Iyās, Badāʾiʿ, vol. 3, 129. According to ‘Abd al-Bāsiṭ (d. 920/1514), the Nile inundated on 1 Misrā/ca. 3 August. (‘Abd al-Bāsiṭ, Nayl al-amal, vol. 2, 7, 191.) See the discussion of this destructive flood in Chapter 5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477, p. 540f.

\textsuperscript{428} Despite the fact that the Nile inundated out of season and reached the maximum of nineteen cubits and twenty fingers in 884/1479, the contemporary chroniclers did not mention any extraordinary outcome. ‘Abd al-Bāsiṭ, Nayl al-amal, vol. 2, 7, 233, 235. Ibn Iyās, Badāʾiʿ, vol. 3, 150, 152–153.
834/1431, 845/1441, 884/1479 and the previously discussed flood of 922/1516, the water flooded the lands in all other cases, causing material and environmental damage.

5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477

al-Nuwayrí (d. 733/1333) provided the earliest record of a destructive flood in 717/1317, when the Nile, after inundating on 29 Abīb/ca. 31 July, reached the maximum of eighteen cubits and six fingers. As the water crossed the border of eighteen cubits, which was an excessive height during al-Nuwayrí’s lifetime, it flooded the banks of Old Cairo and al-Rawḍah, gardens and fields of sugar cane. In a number of places, the water cut the roads between Old and New Cairo.\footnote{al-Nuwayrí, Nihāyat al-arab, vol. 32, 252–253. Ibn Iyās, Nubdhah min nashq, 84–85.} \footnote{Ibn Iyās, Badāʾiʿ, vol. 5, 56. Ibn Iyās, Nubdhah min nashq, 119–120. See the discussion of this “oddity” in Chapter 5.7.2.1. Floods of 761/1359 and 922/1516, p. 530f.}
al-Nuwayrī (d. 733/1333) continued that the Sultan [al-Nāṣir Muḥammad Ibn Qalāwūn] immediately ordered the opening of a number of canals,\footnote{al-Nuwayrī (d. 733/1333) mentioned the canals of Baḥr Abī al-Munajjā (misspelled in the text as ﺑﺣﺭ ﺃﺑﻰ ﺍﻟﺭّﺟﺎ) and al-Kaynūna (unidentified). al-Nuwayrī, Nihāyat al-arab, vol. 32, 253.} which were habitually opened during “the Feast of the Cross” (ʿAyd al-Ṣalīb).\footnote{The exact day of this feast and the breaking of the dam across the canal of Baḥr Abī al-Munajjā differed slightly during different epochs. During Fāṭimid period, it fell on 14 Tūt/ca. 24 September (Halm, Die Zeremonien, 117, 122.) According to al-Maqrīzī (d. 845/1442), it fell on 17 Tūt/ca. 27 September. (al-Maqrīzī, al-Khiṭaṭ, vol. 1, 721, 730.) See also about “the Feast of the Cross” (ʿAyd al-Ṣalīb) in Oestigaard, Water, Culture and Identity, 148. Lane, The Manners and Customs, 504. Tsugitaka, State and Rural Society, 189. St. Paul Brotherhood, The Feast of the Cross, Southern California: Coptic Orthodox Diocese of Los Angeles 2010. Lutfi, Coptic Festivals of the Nile, 280–282.} In other situations, the opening of these canals or its breaking by the power of the flood\footnote{See about the dyke of Baḥr Abī al-Munajjā in footnote 411, p. 531. Cf. the effect of the breakage of the dike Baḥr Abī al-Munajjā in the years 859/1455: Ibn Taghrī Bardī, Ḥawādith al-duḥūr, vol. 2, 541–542. ʿAbd al-} led to the
decrease of the Nile’s height for about a third of the cubit. But this time the water did not decline. Nevertheless, al-Nuwayrī (d. 733/1333) mentioned that without “these great canals” (ḥādhihi al-khuljān al-ʿaẓīmah), there would be a total “decay” (fasād). In fact, the intentional breaking of dykes and deliberate flooding of farmlands was a strategy used as a last resort to prevent greater damage. But we can interpret al-Nuwayrī’s comment as his appreciation of the Sultan’s decisive actions, which averted a disaster.

In contrast to the record of this contemporary chronicler, al-Maqrizī (d. 845/1442), writing at the end of the same century, did not report these preventive measures. Moreover, he mentioned that a number of places were destroyed because of the poor conditions of the dykes. This explanation might be a realistic assessment or a mere reflection

of al-Maqrīzī’s own experience of water-related problems, which had increased due to the decay of the irrigation system during his lifetime in the fifteenth century A.D.\textsuperscript{438}

During the flood of 825/1422, the Nile, first, reached plenitude on 29 Abīb/ca. 5 August, and then suddenly rose fifty fingers, which was also considered “odd” (\textit{min al-nawādir}/\textit{ajab ‘alā ‘ajab}).\textsuperscript{440} When on 1 Tūt/11–12 September (the first day of the Coptic new year called Nawrūz)\textsuperscript{441} the Nile reached nineteen cubits and six fingers,\textsuperscript{442}

\textsuperscript{438} Cf. p. 501.
\textsuperscript{439} al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 616.
\textsuperscript{441} al-Maqrīzī, al-Khiṭaṭ, vol. 1, 724. See also footnote 152, p. 109.
\textsuperscript{442} al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 618. In Shawwāl/September, the water reached the maximum of twenty cubits and a half finger. al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 620.
referred to as “marvellous” (ʿajab)⁴⁴³ for that specific day, the water broke through and spoiled the summer crops such as sesame, melon and other plants. al-Maqrizi (d. 845/1442) noticed that this height would bring profit had the dykes not been in bad condition. As a result, the price for grain⁴⁴⁴ and sesame oil rose extremely that year.⁴⁴⁵ When the water subsided, diseases spread in New Cairo and Lower Egypt (al-Wajh al-Baḥri).⁴⁴⁶

In 882/1477, the Nile similarly inundated at the end of Abīb/ca. 6 August,⁴⁴⁷ reaching the maximum of twenty cubits and twenty

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⁴⁴³ al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 618.
⁴⁴⁴ al-Maqrizi, Kitāb al-sulūk, vol. 4,2, 618. See the wheat prices, currency exchange rates for some of the years (Allouche, al-Maqrizi’s Ighāthah, 95f.) and salaries of waqf servants in Cairo in Sabra, Poverty and Charity.
fingers. The water flooded roads\textsuperscript{448} in al-Munīyah, Shubrā, al-Rawḍah, Old Cairo, Būlāq, the island of al-Fīl and Kūm al-Rīsh, broke dykes, and made the wells stingy.\textsuperscript{449} The same year the Sultan ordered the repair of the dykes, taking their organisation under his own control.\textsuperscript{450}

These reports show that early flooding in Abīb/8 July–6 August, perceived as strange, could lead to excessive flooding. In the described cases, these floods caused environmental and material damage which the authorities could probably have averted if the dykes had been in proper condition. The decisive intervention on the side of some rulers to fortify the dykes afterwards only mitigated the impact of the floods.

5.7.4. High Rises in Succession


\textsuperscript{449} Ibn Iyās, Nubdhah min nashq, 108.

People also wondered and worried when the Nile rose more than ten fingers in a swoop (*dufʿah wāḥidah*) per day. The reason for their fear was similar to the previously described cases: a quick increase of water deviated from the usually known average rise per day, normally ranging from two to ten fingers,\(^{451}\) which could lead to an excessive height. The contemporary reports confirm that the Nile rose a number of times quickly in succession: in 785/1383,\(^{452}\) 797/1395,\(^{453}\) 825/1422,\(^{454}\) 848/1444,\(^{455}\) 891/1486,\(^{456}\) 904/1499,\(^{457}\) 908/1502,\(^{458}\)


912/1506, 913/1507, 914/1508, 917/1511 and 920/1514. In particular, Ibn Iyās’ data for the early sixteenth

83. See the discussion of this flood in Chapter 5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477, p. 539f.


458 Ibn Iyās, Badāʾiʿ, vol. 4, 36. Ibn Iyās (d. 930/1524) recorded the same information in the records of the year 907/1501. Ibn Iyās, Nubdhah min nashq, 114.

459 Ibn Iyās, Nubdhah min nashq, 115–116. Ibn Iyās (d. 930/1524) does not mention about the quick rise of the Nile in his chronicler Badāʾiʿ al-zuhūr, where he mentioned, instead, the occurrence of a destructive flood in al-Sharqiyyah due to the intentional breaking of dykes by the Bedouins. Ibn Iyās, Badāʾiʿ, vol. 4, 96–97. See more about this incident in Chapter 5.7.5. Man-Made Floods in 778/1376 and 912/1506, p. 551f.


461 Ibn Iyās, Badāʾiʿ, vol. 4, 133–134, 137.
century A.D. shows a certain frequency of the excessive height due to the quick rise, which people regarded, for known reasons, as more profitable than dangerous.\textsuperscript{464} However, from the above-mentioned cases of quick “odd” rises of water in succession, the chroniclers only reported the destructive effect of the floods in three cases: in 785/1383, 797/1395\textsuperscript{465} and the previously discussed flood of 825/1422.\textsuperscript{466}

5.7.4.1. Floods of 785/1383 and 797/1395

\textsuperscript{462} Ibn Iyās, Nubdhah min nashq, 118. The information in Ibn Iyās’ \textit{Nashq} differs from the one given in his chronicle \textit{Badāʾiʿ}, vol. 4, 230, 234, 238, 241.

\textsuperscript{463} Ibn Iyās, \textit{Badāʾiʿ}, vol. 4, 389–390.

\textsuperscript{464} See, for example, the year 906/1500: Ibn Iyās, \textit{Badāʾiʿ}, vol. 3, 437. 920/1514: Ibn Iyās, \textit{Badāʾiʿ}, vol. 4, 396. We should treat Ibn Iyās’ instrumental data for the early sixteenth century A.D. with caution because he sometimes gives inconsistent information in his different works.

\textsuperscript{465} See the discussion of these destructive floods in \textit{Chapter 5.7.4.1. Floods of 785/1383 and 797/1395}, p. 545f and 549f.

\textsuperscript{466} See \textit{Chapter 5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477}, p. 539f.
The early record of an excessive flood (\textit{zāda al-Nīl zīyādatan ʿażīmatan}),\textsuperscript{467} which happened due to the high successive rises, relates to 785/1383,\textsuperscript{468} when the Nile rose above twenty cubits, destroying numerous houses.\textsuperscript{469} When the water gushed through the rupture (\textit{maqṭaʿ} pl. \textit{maqāṭiʿ})\textsuperscript{470} in the dyke of al-Zuraybah (unidentified), emirs mobilised efforts to dam it with ships and wood. Several days had to pass before they could bring the situation under control. Afterwards, the Sultan ordered a number of emirs and mamlūks to stay by the banks of the Nile and observe the maintenance of dams across the canals.\textsuperscript{471} This particular example shows the employment of both regional and centralised coping strategies in combating the effects of the flood.

\textsuperscript{467} al-ʿAsqalānī, \textit{Inbāʾ al-ghumr}, vol.1, 276.


\textsuperscript{470} \textit{Maqāṭiʿ} were the spots in the dykes which blocked or allowed water to enter the fields when it was necessary.

\textsuperscript{471} al-ʿAsqalānī, \textit{Inbāʾ al-ghumr}, vol.1, 276.
It is noteworthy that the chroniclers also recorded excessive floods during the preceding years in 783/1381 and 784/1382. Despite the predictions of a certain foreigner (‘ajamī) about the shortage of the Nile in 783/1381, the water rose\(^{472}\) and reached the maximum of nineteen cubits and twelve fingers. According to the non-contemporary chronicler, ʿAbd al-Bāṣīṭ (d. 920/1514), this flood in Rajab/September 1381 flooded a number of gardens.\(^{473}\) The contemporaries reported that the same year in Ramaḍān/November 1381 heavy rains resulted in extreme flooding of streets and fields.\(^{474}\) Apart from these events, the chroniclers recorded the spread of the plague at the beginning of the Muslim year 784/1382.\(^{475}\)


\(^{473}\) ʿAbd al-Bāṣīṭ, Nayl al-amal, vol. 1,2, 178.


Especially striking is the reference by chroniclers to the flood of above nineteen cubits⁴⁷⁶ in 784/1382 as the “deluge” (ṭūfān)⁴⁷⁷ of Noah (Nūḥ),⁴⁷⁸ and as a “universal deluge” (jumlat al-ṭūfān).⁴⁷⁹ This was one of the rare cases when the chroniclers used this concept, charged with manifold cultural meanings,⁴⁸⁰ instead of the general Arabic word for “flood” (sayl pl. suyūl).


⁴⁷⁹ Ibn Iyās, Nubdhah min nashq, 90.

⁴⁸⁰ See references to the secondary literature on deluge in footnote 100, p. 182.
At first glance the metaphoric use of the word “deluge” seems to be unjustified for the flood of this particular year, as the chroniclers did not report any damage.\textsuperscript{481} But in the political context, this flood, which happened during the first year under the Circassian Sultan Barqūq (r. 784–791/1382–1389),\textsuperscript{482} marked the change of power from the \textit{Baḥrī} (Turkish) to the \textit{Burjī} (Circassian) rule.\textsuperscript{483} The chroniclers, who referred to this local flood as the “deluge,” probably wanted to emphasise that this environmental event, accompanied by internal and external conflicts, coincided with the shift in the social, economic, and political structures of the Mamlūk empire.\textsuperscript{484} In fact, as

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{481} Ibn Iyās (d. 930/1524) only mentioned that people gathered in the mosque to pray to God for the reduction of water, which happened soon afterwards. Ibn Iyās, Nubdhah min nashq, 90.
  
  \item \textsuperscript{482} See footnote 253, p. 484.
  
  \item \textsuperscript{483} See about the periodisation footnote 39, p. 270.
  
  \item \textsuperscript{484} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 166. See more about this period Garcin, The Regime of the Circassian Mamlūks, 290–317.
\end{itemize}
\end{footnotesize}
Claus Wilcke noted in his paper *Weltuntergang als Anfang*, the “deluge” is a standard metaphor for disastrous wars.\(^{485}\)

Another time when the chroniclers called a flood a “deluge” (*ṭūfān*) was during Sultan Barqūq’s reign (r. 784–791/1382–1389),\(^{486}\) when the Nile, after the high rise in succession that was considered “odd” (*amr gharīb*),\(^{487}\) stopped in Dhū al-qā’dah 797/August 1395 at the maximum height of nineteen cubits and eight fingers.\(^{488}\) The records do not give any further information about the damage except for price turbulences during these years.\(^{489}\)

\(^{485}\) Wilcke, Weltuntergang als Anfang, 66.

\(^{486}\) See about Sultan Barqūq footnote 253, p. 484.

\(^{487}\) al-Maqrīzī, al-Sulūk, vol. 5, 375.


Extreme food shortages followed, in particular the 797/1395 “deluge,” which ended in chaotic conditions in 798/1395–6. To keep the masses under control, the Sultan ordered the distribution every day of bread, meals and cash to the poor and prisoners in New and Old Cairo and the inhabitants of al-Qarāfah. Some people even made profits from the reselling of alms bread. But, according to al-Maqrizī (d. 845/1442), nobody died of hunger (jūʿ) during this crisis which ended with the arrival of bread from al-Ḥijāz and ships with grain in 798/1396.

In light of these turbulent years full of socio-political changes, the use of the word “deluge” seems to be justified in both cases. The cultural significance of the deluge story reveals here, on the one hand, the collapse of the social and political order and conditions of chaos after

\[\text{Sources:}\]

\[\text{490} \quad \text{al-ʿAsqalānī, } \text{Inbāʿ al-ghumr, 507–508.}\]
\[\text{al-Sakhāwī, } \text{al-Dhayl al-tām, vol. 1, 385.}\]

\[\text{491} \quad \text{al-Maqrīzī, } \text{al-Sulūk, vol. 5, 384–385.}\]
\[\text{al-ʿAsqalānī, } \text{Inbāʿ al-ghumr, vol. 1, 507–508.}\]
the Circassian Sultan Barqūq began his rule. On the other hand, in the eyes of contemporaries it shows a moral appeal for a new beginning and a wish for a better future.

5.7.5. Man-Made Floods in 778/1376 and 912/1506

As part of the final discussion of destructive floods due to anomalous rises in the Nile, I will briefly turn to two cases of man-made floods, one of which happened accidentally due to human error, while the Bedouins provoked the other as part of a plot.

Shihāb al-Din Ibn Aḥmad Ibn Qāymāz—household master (ustādār) of Ibn Āqbughā Āṣ, who was senior controller of the chancery (shadd al-dawāwin)—made a pool (birkah) for private fishing in 778/1376,494

492 ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 166.

493 See footnote 199, p. 341.

494 There is some confusion about the exact date of this flood. Some chroniclers say that it happened on 1 Rabīʿ I/18 July (al-Maqrizi, Kitāb al-sulūk, vol. 3,1, 265. al-ʿAsqalānī, Inbāʾ al-ghumr, vol. 1, 128), others mention either Rabīʿ II or Shaʿbān/August or December. Ibn Qāḍī Shuhbah,
by letting the water of the Nile from the Khalij al-Ḥākimī⁴⁹⁵ flow into it.⁴⁹⁶ As a result the maqta⁴⁹⁷ of the canal broke near the bridge of al-Iwazz⁴⁹⁸ and water flooded a number of neighbouring quarters including about 1,000 houses⁴⁹⁹ and caused massive property damage. When the water reached the mosque of Ibn Sharaf al-Dīn, the governor, emir Ḥusayn Ibn al-Kūrānī, fearing the flooding of al-Ḥusaynīyah,⁵⁰⁰ spent much effort and more than three thousand dirham to repair the dam, to try to avoid the flooding of the entire neighbourhood. al-Maqrīzī (d. 845/1442) reports that the destroyed

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⁴⁹⁵ Cairo Canal is meant here. See different names of this canal in footnote 241, p. 479.


⁴⁹⁷ See footnote 470, p. 545.

⁴⁹⁸ See information about this bridge in al-Maqrīzī, al-Khiṭat, vol. 3, 495.

⁴⁹⁹ The editor of al-Maqrīzī’s al-Sulūk notes in the footnotes that in another manuscript instead of 1,000 houses 1,000 dinār related to the material damage are mentioned. al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 265.

houses remained in ruins up to his lifetime: some of the places were turned into gardens, while others stood in expanses of water.\footnote{al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 265. al-ʿAsqalānī, Inbāʾ al-ghumr, 128. Ibn Qāḍī Shuhbah, Taʿrīkh, vol. 3, 506. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 110. See also Massoud, The Chronicles and Annalistic Sources, 38, 83, 262.}

In the second case, the Bedouins, who gained more power and destabilised the situation in the provinces from the 885s/1480s,\footnote{Garcin, The Regime of the Circassian Mamlūks, 290–291, 296.} provoked an excessive flood in 912/1506, by breaking the dykes in al-Sharqīyah. Ibn Iyās (d. 930/1524) briefly reported that the destruction of the dykes caused extreme damage as the water flooded the neighbourhood. This also led to the delay of the inundation.\footnote{Ibn Iyās, Badāʾiʿ, vol. 4, 96–97.} However, this was not the only case when the Bedouins destroyed dykes deliberately to sabotage the authorities.\footnote{Garcin, The Regime of the Circassian Mamlūks, 290–291, 296.} Despite increased attacks and destructive actions by the Bedouins in al-Sharqīyah and
al-Gharbīyah, that year the Nile reached an average height (mutawassīṭ) of nineteen cubits and two fingers, securing a “blessed” year of welfare and rakḥāʾ (cheapness).

In summary, excessive floods in Mamlūk Egypt had both natural and social cores. They were sometimes triggered by natural factors like the extreme high minimum of the river in Baʿūnah/8 June–7 July, out of season inundation in Abīb/8 July–6 August and successive high rises. However, in most of the cases the destructive floods happened because of a mismanaged irrigation system and a failure of proper technical intervention. In these cases, it was not nature alone but humans who were responsible for this destruction, and which the authorities tried to keep within manageable bounds. By implementing practical-technological measures, society evolved and adapted a specific cultural approach to managing floods that repeatedly destroyed their environment and infrastructure. Despite the

507 Ibn Iyās, Badāʾiʿ, vol. 4, 111.
destructiveness of these floods, which entailed material damage, the consequences were usually of a short-term nature, except for a few cases when after the reduction of the water diseases spread. As the sources do not provide mortality statistics caused directly by these floods—which is strange in light of the devastation described—we can classify all of the described cases to the hydrological intensity grade of 2, which categorises them as floods of regional character without causing significant human loss.  

5.8. Case Studies of Disastrous Droughts: Causes, Effects, and Cultural Responses

Mamlūk Egypt has known periods of prosperity, but also a long series of socio-economic disasters, which frequently befell Egypt, particularly from the end of the fourteenth century A.D. These disasters resulted from the extreme low levels of the Nile, which led to droughts (qaḥt/jadb), followed by crop failures and economic stagnation.

508 See the Index of Excessive Floods.
Unlike other extreme events, like earthquakes and excessive floods, drought is a concept not easy to delimit and define in terms of duration and spread of onset. It is a natural hazard in process, covering a certain span of time rather than a sudden event.\textsuperscript{509} This entails problems of its definition in the records. Furthermore, like earthquakes and floods, droughts cannot be considered a disaster by themselves. Their disastrous impact—which is usually interwoven with and difficult to distinguish from the famine and malnutrition in the chronicles—takes effect slowly.\textsuperscript{510}


Terminology is another problem for the analysis of droughts. Although there is a specific word for drought (qahṭ) in Arabic, seldom do the chronicles use it.511 We instead find it in descriptions of the Nile’s water shortage (qaṣr/naqṣ) which caused the subsequent drying of lands (sharraqa al-bilād) and rise of prices called ghalā’, as an opposition to low prices and prosperity (rakhā’), which usually secured a good year.512 Since an increase of prices (ghalā’) caused


511 See, for example, Ibn al-Dawādārī, Kanz al-durar, vol. 8, 363.

512 The chroniclers use the terms ghalā’ and rakhā’ frequently in connection with the inundation of the Nile and its impact on the prices of basic commodities, in particular grain. The following scenarios show the interconnection of these economic terms with the inundation of the Nile: if the Nile reached sixteen cubits on time, grain prices remained stable or even went down causing (rakhā’). If the inundation halted, this caused almost automatically a sharp rise of prices (ghalā’) of grain and other products. The prices usually sank shortly after the Nile had reached sixteen cubits. But if
famines—that is, massive scarcity of food, usually accompanied by malnutrition and starvation (majāʾ)\textsuperscript{513}—the ghalāʾ was associated with “famine” or “dearth.” However, it should be noted here, that unlike droughts, which usually happen as a result of water scarcity, famines\textsuperscript{514} are more complex because their occurrences also depend on other compound factors like economic, financial and political instability. One can think about intentional hoarding by merchants or Mamlūk officials who made profits from creation of artificial

the Nile-level was either too high or too low, a deficient crop was anticipated, which resulted in a sharp increase in grain prices lasting until the maturity of the next abundant crop. See more on the notion of ghalāʾ and its antonym rakāh in Allouche, al-Maqrīzī’s Ighāthah, 11–12, 27. al-Maqrīzī, Ighāθat al-ummah, 16.


\textsuperscript{514} See the typology of famines in Egypt in Lev, The Regime, 149.
shortages. As this study only treats Nile-related disasters, I will not look at those famines which mainly occurred in Mamlūk Egypt for other reasons.

In the context of Mamlūk history, apart from the lack of rain, and hot \((\text{sumūm})\) winds, which will not be treated here, droughts

\footnote{Tucker, Natural Disasters, 218.}

\footnote{We can find a practical example of a famine in Egypt which happened in 736/1336 not because of the shortage of water in the Nile \(\text{al-}\text{-Yūsufī, Nuzhat al-nāẓir, 294–301. al-Jazari, Ta‘rīkh ḥawādith al-zamān, vol. 2, 864–865. Allouche, al-Maqrīzī's Ighāthah, 48–49), but as Adam Sabra suggests, due to the emirs’ intentional withholding of grain. (Sabra, Poverty and Charity, 144–146.) In another case, the crisis of 818–822/1415–1419 happened due to economic, monitory and political instability and the lack of rain in many regions. (al-Maqrīzī, Kitāb al-sulūk, vol. 4,1, 304, 306, 310, 312, 318, 320, 330–338, 342, 343, 344, 347, 348, 349, 351, 354, 355, 357, 388, 397, 431, 436, 440, 460, 470, 471, 483, 492, 498, 500, 503, 510.) See also references of the last disastrous famine in the Mamlūk Sultanate, which induced numerous deaths in 892–893/1487–1488. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,8, 55, 56, 58, 59, 60, 61, 64, 65, 68, 71, 75, 78, 90, 97.}
occurred in Egypt mainly as a result of the Nile’s shortage in terms of quantity and duration. This means that the Nile either rose too little or having reached a certain height receded quickly so that the fields could not be irrigated. Fekri Hassan emphasised the relationship between the Nile floods, climate change and causes of droughts in his paper entitled *Nile Flood Discharge during the Medieval Climate Anomaly*. He indicated that “the Nile flood discharge in the Main Nile is influenced by multiple variables associated with the differential effects of global climatic mechanisms, such as NAO [North Atlantic Oscillation] and

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517 See, for example, about the effects of the rain shortage in the disastrous crises of 818–822/1415–1419 in Sabra, Poverty and Charity, 155–158.

518 See, for example, the destructive effects of hot winds in 707/1307: Baybars al-Manṣūrī, Kitāb al-tuḥfah, 182–183 and in 748/1347: ‘Abd al-Bāṣīt, Nayl al-amal, vol. 1,1, 161.

519 See the discussion of these cases below in Chapter 5.8.1. “Years without Plenitude”, p. 562f and Chapter 5.8.2. Review of Cultural Responses to Disastrous Droughts, p. 607f.

520 F. Hassan, Nile flood Discharge during the Medieval Climate Anomaly, *Science Highlights: Medieval Climate* 19/1 (March 2011), 30.
ENSO [El Niño/Southern Oscillation], on the catchment areas in Equatorial Africa and the Ethiopian Highlands”.\textsuperscript{521}

The shortage of water in the Nile in combination with insufficient human interaction,\textsuperscript{522} and economic, monitory and political

instability, usually led to great food shortages followed by the outbreaks of epidemics. The records in the chronicles reveal that particularly in the fourteenth and fifteenth centuries A.D. the floods were too short or receded quickly. In particular, clusters of years of low floods caused the worst known droughts and famines, an aspect typical to water-dependent cultures like Egypt. In the following I will examine their causes, effects and the cultural responses to them.

5.8.1. “Years without Plenitude”

According to an old saying, which found different manifestations in the sources (Kharāb Miṣr min jafāf al-Nil/ kharāb Miṣr min al-inqiṭāʿ)

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522 See, for example, the drought in 826/1423 due to the poor condition of dykes. al-Maqrīzī, Kitāb al-sulūk, vol. 4,2, 646.

523 See also Hassan, Extreme Nile Floods, 109. Borsch, Nile Floods, 137.


al-Nīl/tahalluk Miṣr gharqan aw ḥarqan),\textsuperscript{526} the destruction of Egypt comes from the shortage of water in the Nile. In fact, disastrous droughts happened in Egypt when the Nile failed to reach sixteen cubits,\textsuperscript{527} the level symbolising the border between the “good” and “bad” effect of the Nile.

Whereas the meanings of levels above sixteen cubits, as presented in Chapter 5.6.2. “Excessive” and “Low” Floods from the Perspective of the Nile’s Specific Hydrological History were complex and had different impacts on society levels below sixteen cubits were unanimously considered to be insufficient, at least from the advent of Islam.\textsuperscript{528} The records and the statistical data in the chronicles reveal that during the Mamlūk period the water never stopped at the levels below fifteen cubits. But there were years when the Nile did not reach plenitude


\textsuperscript{527} See about the cultural meaning of sixteen cubits in Chapter 5.5.1. “The Good News” (al-Bishārah), p. 465f.

\textsuperscript{528} al-Suyūṭī, Kawkab al-Rawḍah, 124. See also about the most feared low levels of the Nile, p. 454.
(qaṣara al-Nīl wa-lam yūfir), that is, the water failed to reach the level of sixteen cubits in the Nilometer.

People were extremely fearful of the consequences of “years without plenitude,” which they called an “extraordinary oddity” just like the previously discussed deviations from the “rule of the Nile.” They perceived their occurrence automatically as a sign of drought, crop failure, famine, starvation, social unrests, chaos, and the spread of epidemics. Indeed, “years without plenitude” had a long-term effect because the failure of the Nile to reach the plenitude in a particular year determined the price and the availability of grain supplies for the next year. As people used to make provisions by hoarding for an impending shortage, this process disturbed the normal workings of the market mechanism and led to famine.
Mamlūk Egypt experienced “years without plenitude” several times. All of these cases induced a cluster of disastrous droughts and famines followed by cycles of epidemics, which led to considerable mortality among the affected population. As I will show in the following chapters, droughts ushering in horrific famines became increasingly common by the end of the fourteenth and the beginning of the fifteenth centuries A.D. According to al-Maqrīzī (d. 845/1442), during these years, more than a third of Egypt's population perished and most of the villages were ruined. The reasons and effects were manifold. Solid evidence exists for the disastrous crisis of 693–695/1294–1296, 775–776/1373–1375, 806–807/1403–1404, and 854–856/1450–1452, which I will discuss in the following subchapters.


534 There are also references to “years without plenitude” in 704/1304–5 and 709/1309, though the evidence is ambiguous. al-ʿAynī (d. 855/1451) mentioned in his chronicle that there was drought in Syria and Egypt due to the lack of rain in 704/1304–5. (al-ʿAynī, ʿIqd al-jumān, vol. 4, 359.) According to him, it did not happen due to the lack of plenitude, as the Nile stopped that year at seventeen cubits and eighteen fingers. (al-ʿAynī, ʿIqd al-
5.8.1.1. Drought of 693–695/1294–1296

According to the contemporary chronicler al-Nuwayrī (d. 733/1333), the first series of disastrous years occurred in Mamlūk Egypt during jumān, vol. 4, 367.) This information contradicts Ibn Iyās’ (d. 930/1524) record, which mentioned that the Nile did not reach plenitude, stopping at the level of fifteen cubits and seventeen fingers (Ibn Iyās, Nubdhah min nashq, 83.) A totally different level, sixteen cubits and sixteen fingers, is given in Ibn Taghrī Bardī’s (d. 874/1470) record (Ibn Taghrī Bardī, al-Nujūm al-zāhirah fī mulūk Miṣr wa-al-Qāhirah, vol. 8, Bayrūt: Dār al-kutub al-ʿilmīyah 1413/1992, 168.) We have similar problems of inconsistency concerning the records of 709/1309. Although contemporary chroniclers reported an extreme shortage of the Nile, the water rose from fourteen cubits and a half finger to sixteen cubits and two fingers after the opening of the canal without inundation so that people could cultivate their lands. (Baybars al-Manṣūrī, Kitāb al-tuḥfah, 192. al-Nuwayrī, Nihāyat al-arab, vol. 32, 143. Ibn Taghrī Bardī, al-Nujūm, 168, 193, 226. al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 300.) As the evidence for 704/1304–5 is insubstantial and ambiguous, and the extreme shortage of the Nile in 709/1309 did not lead to a disaster, except for a rise of prices for a certain period, I do not treat them here.
the short reign of Kitbughā (r. 694–696/1294–1296) due to the lack of inundation in 693/1294 and 694/1295, which induced a prolonged rise of prices (ghalāʾ) and food shortages. As a result, the Cairo Canal was broken ahead of time without celebration, which depressed the people because they saw it as an evil omen (mashʿūm).

535 See more about the period of Sultan Kitbughā’s reign in Ibn al-Dawādārī, Kanz al-durar, vol. 8, 357.


and a misfortune (*maḥdhūr*).\(^{539}\) As Baybars al-Manṣūrī (d. 725/1325) noted, in fact, evil (*shurūr*) was indeed suffered by people consistently during these years.\(^{540}\)

The distress (*balāʾ*) increased in Egypt as famine (*ghalāʾ*) intensified.\(^{541}\) The price of grain per irdabb (dry measure = 198 l)\(^{542}\) reached 150 dirham.\(^{543}\) Drought and famine, pertaining in 695/1295–6,\(^{544}\) were also recorded in Damascus, in Barqah and its provinces, lands of al-Maghrib, and other kingdoms.\(^{545}\)

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\(^{539}\) Baybars al-Manṣūrī, Kitāb al-tuḥfah, 144.

\(^{540}\) Baybars al-Manṣūrī, Kitāb al-tuḥfah, 145.


\(^{542}\) Wehr, Dictionary, 13.

\(^{543}\) According to Baybars al-Manṣūrī (d. 725/1325), who was at that time in Alexandria, the irdabb of grain reached 160 dirham. (Baybars al-Manṣūrī, Kitāb al-tuḥfah, 145.) The discrepancy in prices is normal in the chronicles, given that the prices could vary throughout Egypt.

al-Nuwayrī (d. 733/1333) mentioned in the reports of the year 695/1296 that apart from water scarcity there was another major reason which worsened the situation before the Nile levels fell short. The Sultan’s granaries (ahrā’i) were empty of crops due to the extravagant spending of the Sultan al-Ashraf Khalil (r. 689–693/1290–1293). Furthermore, after his vizier had bought crops for the Sultan’s houses and horses, the prices rose sharply:546 the irdabb of grain reached 90 dirham,547 which, according to al-Suyūṭī (d. 911/1505), at the beginning of the year cost 13 dirham.548 Analysing the causes of this disaster retrospectively, the later chroniclers also noticed other factors that precipitated the famine. Among them was


547 al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 808–809.

548 al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 297. According to al-Suyūṭī’s report, the price per irdabb of grain rose from 13 to 60 dirham.
inflation due to the abundance of copper coinage,\textsuperscript{549} diminishing incomes,\textsuperscript{550} and increasing injustice (jawr) in different spheres.\textsuperscript{551}

The situation was exacerbated in 695/1296 during Kitbughā’s reign (r. 694–696/1294–1296), shaped by considerable political instability and conflicts among the ruling elite.\textsuperscript{552} Contemporaries report sustained drought (qaḥt), terrible epidemics (wabāʾ ʿazīm) and decay (fanāʾ ʿazīm) in many regions.\textsuperscript{553} In Damascus, people gathered in the mosque to listen to readings from al-Bukhārī’s Șaḥīh.\textsuperscript{554} al-Nuwayrī (d. 

\begin{flushright}
\textsuperscript{550} al-Suyūṭī, Ḥusn al-muḥāḍarah, vol. 2, 297.
\textsuperscript{551} al-Maqrizī, Ighāthat al-ummah, 95. Allouche, al-Maqrizī’s Ighāṭah, 47.
\textsuperscript{552} See about this period characterised by incessant warfare in Northrup, The Baḥri Mamlūk Sultanate, 251.
\textsuperscript{553} al-Maqrizī, al-Maqrizī’s Ighāṭah, 47. Sabra, Poverty and Charity, 141.
\textsuperscript{554} Șaḥīḥ is the shortened title of Jāmiʿ al-șaḥīḥ, canonical collection of the traditions of the Prophet and his companions compiled by al-Bukhārī (d. 256/870). (M. Carter, “Șaḥīḥ,” The Encyclopaedia of Islam, vol. 8, Leiden:
\end{flushright}
733/1333) mentioned that, to the people’s joy, after the readings God sent abundant rain followed by snow [probably in Damascus], whereas numerous people in Egypt continued to perish from hunger, thirst and diseases.

The chroniclers give further details of the disaster, which led to massive depopulation and loss of livestock in Egypt. Corpses littered the streets of New and Old Cairo. Mass burials became common, as

Brill 1995, 835–836.) Readings from al-Bukhārī’s Ṣaḥīḥ were held during the Mamlūk period at time of rejoicing or at times of distress like the shortage of the waters of the Nile or spread of epidemics. Dols, The Black Death, 247.


According to Baybars al-Manṣūrī (d. 725/1325), 1,000 people died per day. (Baybars al-Manṣūrī, Kitāb al-tuḥfah, 144–145.) al-Nuwayrī (d. 733/1333) recorded about 700 people per day. (al-Nuwayrī, Nihāyat al-arab, vol. 31, 293.) al-Jazarī (d. 739/1260–1338) mentioned that the number of those registered as dead reached 17,500 in Dhū al-hijjah/September. al-Jazarī, Ta’ríkh ḥawādith al-zaman, vol. 1, 256–257. al-Maqrızī, Kitāb al-sulūk, vol. 1,3, 810.

people could not properly bury the dead. The contemporaries report that people dug a big hole and filled it with dead men and women, putting children between their feet, and filling the hole up with earth. Dogs tore to pieces the corpses of those who remained without graves. Because of the extreme hunger, those, who survived, ate everything: cats, dogs, donkeys, corpses and cadavers. This disaster (balāʾ/fanāʾ/ṭāmāʾ) evolved and afflicted both ordinary and prominent people alike.

Writing about this disaster retrospectively, al-Maqrīzī (d. 845/1442) mentioned that in the beginning people washed the corpses in the basins for the ritual ablution (mīḍaʾah) in compliance with Islamic


However, as the number of dead increased, people buried them without washing and dressing them for the grave or threw them into the Nile.\textsuperscript{561}

Unlike the contemporary chroniclers, al-Maqrīzī (845/1442) provides descriptions of relief actions on the side of the authorities. According to him, as the crisis continued, Sultan Kitbughā (r. 694–696/1294–1296)\textsuperscript{562} had the poor assemble in Alexandria, New and Old Cairo and assigned emirs to them who had to feed them. Each emir received a number of paupers equivalent to the number of mamlūks they commanded, i.e. “an emir of 100” was responsible for 100 paupers, “an emir of 50” for 50, and “an emir of 10” for 10 paupers. This


\textsuperscript{561} al-Maqrīzī, Kitāb al-sulūk, vol. 1,3, 814–815.

\textsuperscript{562} See footnote 535, p. 563.
relieved the hunger of the population, but people continued to die of diseases.\footnote{al-Maqrızī, Ighāthat al-ummah, 51. Allouche, al-Maqrızī’s Ighāthah, 45. Sabra, Poverty and Charity, 143.}

al-Maqrızī (d. 845/1442) also records another case of a relief measure. Emir Fakhr al-Dīn al-Ṭunbughā al-Misāḥī, who possessed one hundred faddāns of beans among his cultivated lands, did not restrain the poor from eating unripe beans straight from the field.\footnote{al-Maqrızī, Ighāthat al-ummah, 52. Allouche, al-Maqrızī’s Ighāthah, 46.} However, it seems that these measures were a drop in the ocean when compared with the extent of the catastrophe.\footnote{Sabra, Poverty and Charity, 143–144.}

But as Baybars al-Manṣūrī (d. 725/1325) noted, “God was graceful”\footnote{Baybars al-Manṣūrī, Kitāb al-tuḥfah, 145.} and the people’s despair came to end after great quantities of crops arrived in 695/1296 in Alexandria from Syria,\footnote{Baybars al-Manṣūrī, Kitāb al-tuḥfah, 145. al-Jazārī, Ta’rīkh ḥawādith al-zamān, vol. 1, 285.} and the lands of the Franks: a
big part of it arrived from Sicilia. Soon afterwards the prices began to drop swiftly.

Ibn al-Dawādārī (d. 736/1336), who was six years old at that time, gives the most dramatic account of the disaster, which he wished “God would not repeat again.” Despite his young age, he remembers having witnessed people’s ferocity, when behind the Bāb al-Barqiyah (the Gate of Barqiyah) outside New Cairo in the trench (khandaq), a group of people, “resembling savage beasts, which had lost any signs of human features,” were waiting for and fighting over the corpses, which people threw out of al-Barqiyah. “They cooked and ate whatever they found: dogs, cats, and even each other.” Eating corpses and cadavars might be a narrative topos, however the

568 Baybars al-Manṣūrī, Kitāb al-tuḥfah, 145. Sabra, Poverty and Charity, 143.


571 See the map in Kennedy, An Historical Atlas of Islam, 31.

number of contemporary reports attesting to it does not exclude this kind of action in times of crisis.

For the first time one chronicler tells stories about the “oddities of the calamity” (min gharāʾib al-balāyā),\(^{573}\) mentioning not only the numbers of nameless deaths but focusing on the fate of individuals who suffered hunger and diseases or who fellow men slaughtered because of hunger. In one of the stories, which he heard from a trustful person (ʿadl),\(^ {574}\) probably when he was already an adult, he emphasised that the emirs caught a group of people who were responsible for a man’s slaughter and whom they ordered to be hanged at Bāb Zuwaylah.\(^ {575}\) The misery of the situation culminated in his story, which continued that the corpses of those who were punished for the man’s slaughter did not hang long as others ate them over night (fa-kamā akalū ukilū).\(^ {576}\) “These were the odd sides of the calamities” (Wa-hadhā min gharāʾib al-balāyā).

\(^{573}\) Ibn al-Dawādārī, Kanz al-durar, vol. 8, 364.

\(^{574}\) Ibn al-Dawādārī, Kanz al-durar, vol. 8, 364.

\(^{575}\) See the map in Kennedy, An Historical Atlas of Islam, 31.

This retrospective narration of the anthropophagy, which may or may not have occurred, is intentional. By including specific cases into the narrative of the disaster, Ibn al-Dawādārī (d. 736/1336) aimed to show how the nature of human beings could change in times of crisis, becoming brutal and transgressing all moral boundaries. By naming the involved people and giving other details, Ibn al-Dawādārī’s form of narration brought the misery of the situation closer to the readers arising their emotional reactions.⁵⁷⁷ The later chronicler al-Maqrīzī (d. 845/1442), who described the people’s moral decay while facing this disaster, also mentioned that anthropophagy, “especially the eating of youngsters was widespread” (kathara akl luḥūm bani Ādam khuṣūsān al-ʿatfāl).⁵⁷⁸ He added that looting bread from bakeries increased, and there were segments of the society such as physicians (aṭibbāʾ) and druggists (ʿaṭṭār) who made profits from the situation, as medicines were in great demand.⁵⁷⁹ All of these factors and the effect of this

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⁵⁷⁷ See about the functions of the narratology of crisis in Nünning, Krise als Erzählung und Metapher, 138f.

⁵⁷⁸ al-Maqrīzī, al-Maqrīzī’s Ighāthah, 45.

⁵⁷⁹ al-Maqrīzī, al-Maqrīzī’s Ighāthah, 45–46.
disaster contributed to Sultan Kitbughā’s unpopularity and led to his forced abdication in 696/1296 and the coming of Ḥisām al-Dīn Lājīn (r. 696–698/1296–1299) to power.\textsuperscript{580} This example shows vividly how a natural disaster, which enormously destabilised the socio-economic conditions, entailed political consequences.

5.8.1.2. Drought of 775–776/1373–1375

About eighty years would pass before Egypt again suffered a disastrous drought and famine during the reign of Sultan al-Ashraf Shaʿbān (r. 764–778/1363–1377). The chroniclers report that the crisis\textsuperscript{581} of 775–776/1373–1375 began when the Nile did not inundate in Rabī‘ I 775/August 1373, stopping at fifteen cubits and twenty-two fingers. As the water started to decline after Nawrūz (the first day of the Coptic new year),\textsuperscript{582} the canal was opened without

\begin{footnotesize}
\textsuperscript{580} Irwin, The Middle East in the Middle Ages, 94.
\textsuperscript{581} See more about the distinctions and similarities between the narratology of crisis and catastrophe in Nünning, Krise als Erzählung und Metapher.
\textsuperscript{582} See footnote 151 and 152, p. 109.
\end{footnotesize}
reaching plenitude and people became worried (qalaqa). These events also found a reflection in several poetic verses.

The judges, jurists and other functionaries first gathered in the mosque of ʿAmr Ibn al-ʿĀṣ in Old Cairo and then at the prophetic shrine (Ribāṭ al-āthār al-nabawiyah) outside Old Cairo where they

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prayed to God to send the flood from the Nile. People also held prayers and recitations from the Qurʾān at the Nilometer. But the water continued to decline and the canals dried out (jaffat).\textsuperscript{586} Desperation overcame people, who rushed to make food provisions. This resulted in a rise in prices, while the authorities called on people to repent and abstain from sins and fast for three days.\textsuperscript{587}

In the course of the same month, prominent emirs and ordinary people with their children went barefoot (ḥufāḥ)\textsuperscript{588} to the memorial shrine Qubbat al-Naṣr outside New Cairo. There the khaṭīb (preacher) of al-ʿAmr Ibn al-ʿĀṣ mosque, Ibn al-Qaṣṭīlānī, held the khutbah and prayer for the rain (istisqāʾ).\textsuperscript{589} al-Maqrīzī (d. 845/1442) reported that

\begin{itemize}
\item \textsuperscript{586} al-Maqrīzī, Kitāb al-sulūk, vol. 3, 1, 218.
\item \textsuperscript{588} al-Maqrīzī, Kitāb al-sulūk, vol. 3, 1, 219.
\item \textsuperscript{589} See more about the canonised prayer for rain (istisqāʾ), which is usually performed in times of drought in al-Bukhārī, Şāḥiḥ al-Bukhārī, vol. 2, 32f. A. Reidegeld, Handbuch Islam, 455. Lutfi, Coptic Festivals of the Nile, 273–277. See also p. 620.
\end{itemize}
afterwards people were in despair, as the water continued to decline and the shortage of crops intensified.\textsuperscript{590}

The prices sank lightly for a short period after an abundant rain in 775 Rabīʿ II/September 1373, and then they rose again.\textsuperscript{591} Because of the continuing \textit{ghalāʾ}, the Sultan ordered readings from al-Bukhārī’s \textit{Ṣāḥīḥ} to be held in the Citadel\textsuperscript{592} in the presence of judges and sheikhs every day during Ramaḍān/February 1374.\textsuperscript{593} The resorting to prayers and fasting and the appeal to lead a moral life were joint


\textsuperscript{592} Readings from al-Bukhārī’s \textit{Ṣāḥīḥ} every day during Ramaḍān in the Citadel was an innovation, which was habitually performed down to the time of ʿAbd al-Bāsiṭ (d. 920/1514). ʿAbd al-Bāsiṭ, \textit{Nayl al-amal}, vol. 1,2, 64.

\textsuperscript{593} al-Maqrizī, Kitāb al-sulūk, vol. 3,1, 223.
religious coping measures,594 which were believed to ward off calamities.595

At the end of the Muslim year, epidemics broke out in Alexandria and Lower Egypt.596 Former muḥtasib, al-Maqrīzī (d. 845/1442), followed the change of prices and listed them meticulously. According to him, the prices for foodstuffs, medicine and other commodities continued to rise throughout the autumn of 776/1374,597 although the Nile reached plenitude in Rabīʿ I/August and stopped afterwards at seventeen cubits and five fingers.598 The epidemic continued to spread among the people in New and Old Cairo probably because of

594 See the discussion of the function of these emotion-focused socio-religious coping measures, p. 619f.
widespread malnutrition and unsanitary conditions.\footnote{See about the interrelation of natural disasters and epidemics footnote 47, p. 35.} It was the first great outbreak of an epidemic since the plague of 749/1348.\footnote{Irwin, The Middle East in the Middle Ages, 148. See more about the plague of 749/1348 in Raymond, Cairo, 138–149 and p. 504.}

al-Maqrīzī (766–845/1364–1442), who was an eyewitness to the events, reported that “a beggar would ask for bread just to smell it, then he would cry out and die.”\footnote{al-Maqrīzī, al-Maqrīzī’s Ighāthah, 49.} Numerous people, whose wages did not suffice, died from hunger, and their bodies filled the streets.\footnote{al-Maqrīzī, Ighāthat al-ummah, 58–59. Allouche, al-Maqrīzī’s Ighāthah, 49. al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 233–234. ‘Abd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 77.} The number of victims among the poor doubled because of extreme \textit{ghalāʾ} and cold weather during Rajab and Sha‘bān/December and January. Animals also perished. Because of extreme hunger prisoners
ate the clay which had been moved into the prison for the building of a wall there.  

On 24 Sha‘bān 776/27 January 1375, the Sultan’s deputy, emir Manjak, ordered the poor to be gathered and had the emirs, merchants and other wealthy people feed and house them. Each emir with power over thousands was responsible for 100 people in need. The Sultan prohibited giving alms to the paupers who were wandering and begging in the streets. Meanwhile, the epidemic continued to ravage the population which died in large numbers. al-Maqrīzī (d. 845/1442) mentioned that more than 500 people died every day and more than 200 were registered in the dīwān al-mawārith (the Treasury’s Bureau of Estates). As the dogs began to

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eat corpses in the streets, several emirs organised the washing and burial of corpses. The plague now afflicted the wealthy segments of society.\(^{605}\)

Desperation and hopelessness prevailed during these two disastrous years, which ended\(^{606}\) with the arrival of the “new” grain. The prices declined immediately so that an irdabb of grain was sold for 60 dirham, having cost 130 dirham.\(^{607}\) However, al-Maqrīzī (d. 845/1442) reports that the relief process did not go smoothly. Although the muḥtasib al-Damīrī tried to fix the prices in Dhū al-hijjah/May, the millers and traders of the imported crops abstained

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\(^{605}\) al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 236.


from selling the wheat for the fixed price. As a result, the bread in the markets was scarce for a number of days.\(^{608}\)

al-Maqrīzī (d. 845/1442) finishes his report saying that these were harsh times for the Egyptians, but “prosperity returned” with the Nile’s flow which was attributed to God, because “it is He who sends down rain after [men] have lost all hope, and unfolds his Grace [thereby]: for he alone is [their] Protector, the One to whom all praise is due” (\textit{Qurʾān} 42:28).\(^{609}\)

The insufficient flood from the Nile in 775/1373–4 together with the demographic crisis and poor economic condition of Egypt after the plague of 749/1348 and its reoccurrence in 760/1358–9, 764/1362–3 and 769/1367–8,\(^{610}\) made it difficult for the population to cope with the disaster. The long duration of the crisis impeded the relief effort as the granaries were empty and it was difficult to feed the

\(^{608}\) al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 239.

\(^{609}\) Allouche, al-Maqrīzī’s Ighāthah, 49. Muḥammad, \textit{the Qurʾān}, 949.

\(^{610}\) al-Suyūṭī, Kawkab al-Rawḍah, 238. al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 81, 162.
population for a whole year. Except for a few relief projects launched by certain officials either on the Sultan’s order or by their own wishes, the chroniclers do not give any further information about coping measures. However, the fact that the arrival of the crops at the end of the year ameliorated the situation shows that handling it earlier would probably have prevented a worsening of the situation. This suggests that the disaster further evolved due to the lack of proper management and leadership.

5.8.1.3. Drought of 806–807/1403–1404

The crisis of 806–807/1403–1404 during the reign of al-Nāṣir Faraj (r. 801–808/1399–1405) started when the rise of the Nile first halted (tawaqqafa al-Nīl min al-zīyādah) in 806/1403 and, soon after the water reached sixteen cubits and two fingers, it abated (naqaṣa māʾ al-Nīl) so that the Cairo Canal was opened without habitual

611 See the historical background of the events in Garcin, The Regime of the Circassian Mamlūks, 292f.


celebrations.\footnote{614} As people became worried, the sheikh of Islam, the chief judge Jalāl al-Dīn ʿAbd al-Raḥman Ibn al-Bulqīnī, called for prayers for rain \(\text{(istisqāʾ)}\)\footnote{615} in all of the mosques. He held prayers in the Mosque of al-Azhar for several days and when the Nile continued to decline, he went to the Ribāṭ al-āthār al-nabawīyah,\footnote{616} carrying prophetic relics, where he also prayed for rain.\footnote{617} The shortage of water from the Nile immediately caused an increase of prices.\footnote{618} During the year, the price for an irdabb of wheat rose to three times its nominal value.\footnote{619} at the beginning of the Hijrī year it reached 120

\footnote{614} ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,3, 96. al-Suyūṭī, Kawkab al-Rawḍah, 255.

\footnote{615} See about the prayer for rain footnote 236, p. 352; footnote 589, p. 580 and p. 620.

\footnote{616} See about Ribāṭ al-āthār al-nabawīyah footnote 585, p. 579.


dirham,\textsuperscript{620} in Jumādā I/December 260 dirham,\textsuperscript{621} and the absolute peak of 400 dirham in Shawwāl/April 1404.\textsuperscript{622} Barley was also scarce as the Sultan’s horses got it as fodder.\textsuperscript{623} al-Maqrīzī (d. 845/1442) called this development the most “marvellous” thing he had ever experienced during his lifetime (\textit{hādhā min a’jab mā waq’a fī zamaninā}).\textsuperscript{624}

Furthermore, al-Maqrīzī (d. 845/1442) and al-ʿAsqalānī (d. 852/1449) reported that when the southern cold winds intensified, diseases increased in New and Old Cairo. With the onset of the cold weather in Jumādā II 806/December 1403, the number of deaths from hunger and cold increased. Several emirs organised the burial of the victims, whose number at the end of Shawwāl 806/April 1404

\begin{footnotes}
\footnotetext[620]{al-Maqrīzī, Kitāb al-sulūk, vol. 3,3, 1113.}
\footnotetext[621]{al-Maqrīzī, Kitāb al-sulūk, vol. 3,3, 1119.}
\footnotetext[623]{al-Maqrīzī, Kitāb al-sulūk, vol. 3,3, 1116.}
\footnotetext[624]{al-Maqrīzī, Kitāb al-sulūk, vol. 3,3, 1126.}
\end{footnotes}
reached 12,700. The situation in Egypt worsened, when marīṣīyah and sumūm hot winds followed the cold weather in Shawwāl and Dhū al-qaʿdah 806/April and May 1404. Medicine, which was in great demand, became very expensive.

The population of Upper Egypt (al-Ṣaʿīd) was particularly badly afflicted because of extreme drought and the outbreak of diseases, which interrupted agricultural labour. The combination of high prices, cold weather, and diseases took the lives of many people every day. al-Maqrīzī (d. 845/1442) estimates mortality figures registered for Upper Egypt as follows: Qūṣ—17,000; Asyūṭ—11,000; and


626 al-Marīṣīyah winds are hot southern winds which usually blow in spring and are also referred in today’s Egypt as to al-khamāsīn. (See the footnote in al-Maqrīzī, Kitāb al-sulūk, vol. 3, 3, 1124.) See about al-khamāsīn and their connection to the spread of epidemics in footnote 217, p. 133 and p. 334.


628 See the map in Petry, (ed.), The Cambridge History of Egypt, p. xvii.
Hiwu (unidentified)—15,000.  

However, there were those who made profits during these hard times, especially the farmers who could irrigate the fields in al-Sharqīyah and al-Gharbīyah.  

When Ibn Abī al-Raddād “the guardian of the Nilometer” announced on 27 Baʿūnah/ca. 4 July that the minimum was one cubit and ten fingers, it was possible to wade from Old Cairo to al-Jīzah shore. Such a drying of the Nile (iḥtirāq) was “unprecedented.” al-Maqrīzī (d. 845/1442) reported that because of these “misfortunate” events Egypt and its provinces were in a state of “destruction.” But the conditions improved slightly after the Nile reached plenitude in

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631 See p. 461f.


807/1404. Sultan Faraj (r. 808–815/1399–1412), probably fearing a reoccurrence of the 806/1403 events, decided to participate at the celebration of the Inundation Day. When it later reached the maximum of nineteen cubits and three fingers, the water even flooded some fields in Upper Egypt (al-Ṣa‘īd).

As mentioned before, Faraj (r. 808–815/1399–1412) was the second Burjī (Circassian) Sultan who followed this tradition during some of the years of his reign. When the Nile stopped at nineteen cubits and three fingers, and the “new wheat” arrived, prices began

638 See p. 485.
to fall, although the Sultan’s campaign in Syria led to a shortage of bread. But the farmers were still in need of seed. In some of the lands, such as in Upper Egypt, the high rise of the Nile impeded the cultivation process. Many people continued to die from hunger and cold weather. These conditions forced people to sell their children to slavery in New Cairo and as far as Syria.

Another impact of the *ghalāʾ* was massive emigration from the afflicted regions. al-Maqrizi (d. 845/1442) and al-ʿAsqalâni (d. 852/1449) reported that five ships full of emigrants sank while departing from Alexandria. This probably happened because the ships were overcrowded. The number of dead among the poor

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641 Sabra, Poverty and Charity, 153.


continued to rise and people became extremely cruel due to hunger. It occasionally led people to “unbelievable” deeds. A person was told to have eaten “the heart and lever”\(^{645}\) of a hung criminal outside the city of Bilbays. When he was brought to the commissioner in charge of war (mutawallī al-ḥarb), he confessed that he “did it because of hunger” (\(al-jūʿ ḥamalnī alā hādhā\)).\(^{646}\)

When the year ended Egypt was on the verge of “complete destruction” (\(lam tansalikh hādhihi al-sanah hattā shamila al-kharāb iqlīm Miṣr\)).\(^{647}\) A number of cities and villages were wiped out. The great part of the lands remained without irrigation.\(^{648}\) According to al-Maqrīzī (d. 845/1442), “more than one-half of the population” (\(niṣf\)

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\(^{646}\) al-Maqrīzī, Kitāb al-sulūk, vol. 3,3, 1145.


al-nās\(^4\) of Egypt died of hunger and coldness. “Death was so prevalent that even the animals perished” during these harsh years.\(^5\)

For these years, there is almost no evidence of relief measures sponsored by the authorities. Only in Dhū al-hijjah 807/May 1405, did some relief begin to be in sight when emir Yalbughā al-Sālimī succeeded in stabilising the price of gold.\(^6\) However, the outbreak of plague in 808–810/1405–1407, 816/1413, 820–823/1417–1420, 841–842/1437–1438, 847–849/1443–1445\(^7\) would only add to the misery experienced by the Egyptians.

Apart from the shortage of the waters of the Nile and famine, al-Maqrīzī (d. 845/1442), who analysed the causes of this disaster, in


\(^5\) Allouche, al-Maqrīzī’s Ighāthah, 51.


particular blamed the political and economic corruption and instability that followed the death of the Burjī (Circassian) Sultan Barqūq in 801/1399.653 We have records of revolts of mamlūks because of delayed payments, conflicts among the Sultan’s kin and between emirs and Bedouins.654 “The lack of harmony in the government and the frequent change of officials in the provinces”655 led to their disaffection as officials knew that they would not retain their positions for a long time due to the instability. This demotivated them from dealing with events when necessary. Moreover, the managers of iqṭāʾ (granted land)656 burdened the population with a


656 Allouche, al-Maqrizi’s Ighāthah, 15, 52–53. See about iqṭāʾ footnote 320, p. 506.
multitude of taxes for the land as the revenues decreased because of diminishing agriculture, depopulation, and emigration.657

This explains the lack of evidence for the state-sponsored relief measures as the corrupt transactions of influential officials and military commanders actually led to the lack of bread.658 They kept quantities of grain out of the reach of people unless they agreed to pay the prices set by them. This led to the extreme increase in grain prices, “unparalleled in living memory.”659 The landowners could not sow their lands because of the high price of seed and the decreased numbers of peasants. These conditions ruined most of the villages, and the majority of the lands remained uncultivated.660

Furthermore, al-Maqrizī (d. 845/1442) briefly mentioned in Khiṭat that the crisis of 806–807/1403–1404 led to reforms of the tax system because the officials squandered the collected taxes, meant for the

657 Allouche, al-Maqrizī’s Ighāthah, 15, 52–53.
658 Allouche, al-Maqrizī’s Ighāthah, 54.
659 Allouche, al-Maqrizī’s Ighāthah, 51.
660 Allouche, al-Maqrizī’s Ighāthah, 54.
maintenance of canals and dykes, especially those of the sulṭāni.\textsuperscript{661} This implies that the irrigation system was in poor condition, and that in particular the management of the centrally regulated irrigation network failed. The debasing of the currency in 805/1402 also saw a deterioration in financial affairs. In particular, the use of different currencies and the widespread circulation of copper coins (\textit{fulūs}), following the cessation of silver minting in Egypt in 807/1403, resulted in massive inflation.\textsuperscript{662} In conclusion, the crises of 806–807/1403–1404, which led to the deaths of numerous people and caused emigration, weakened Egypt’s agricultural productivity in the fifteenth century A.D.\textsuperscript{663}

5.8.1.4. Drought of 854–856/1450–1452


\textsuperscript{663} Sabra, \textit{Poverty and Charity}, 154.
The crisis of 854–856/1450–1452 had already begun to evolve in 852/1449 and 853/1449 with the outbreak of plague in New Cairo, which took the lives of more than 1,000 people. Among the victims of the plague were Sultan al-Ẓāhir Jaqmaq’s (r. 842–857/1438–1453) four children and numerous mamlūks. The situation worsened in 854/1450 when the Nile did not reach plenitude. As the water continued to decline and people became greatly worried (ʿẓuma qalaq al-nās), the Sultan sent a message to Caliph al-Mustakfī II (r. 1441–1451 A.D.), requesting him to go to the prophetic shrine of Makkah.

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669 Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 1, 286f. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,5, 315. See short poetic verses that describe the occurrence of
(Ribāṭ al-āthār al-nabawīyah),670 give alms, and pray to God to send the usual flow. The Sultan also commissioned Sheikh ʿAlī al-ʿAjami, muḥtasib of New Cairo, to give a good meal to the poor at the shrine and at the Nilometer where people gathered for the prayer.671 On the Sultan’s order, prayers for the rain (īstīsqāʾ)672 were also organised outside New Cairo and in the mosques during the subsequent days. People of all faiths followed the chief judge Sharaf al-Dīn Yahyā al-Manāwī al-Shāfiʿī who stopped in the open space between the mausoleum of al-Malik al-Ẓāhir Barqūq673 and Qubbat al-ʿNaṣr674 (the Nile’s shortage in Ibn Iyās, Nashq al-azhār, fols. 414–415. al-Suyūṭī, Kawkab al-Rawḍah, 259–260.

670 See footnote 585, p. 579.


672 See about īstīsqāʾ footnotes 236, p. 352 and footnote 589, p. 580.

673 See about the first Circassian Sultan Barqūq in footnote 253, p. 484 and the location of this complex in N. Warner, The Monuments of Historic Cairo, p. 121.

674 I could not identify the position of this shrine. Most probably it was situated in the vicinity of Bāb al-ʿNaṣr (Gate of Victory). See the map in Kennedy, (ed.), An Historical Atlas of Islam, p. 31.
Memorial Shrine of Victory) where he held a *khutbah* and prayer for the rain in the open air (in the desert).\(^{675}\)

Despite their efforts, the Nile declined further. People rushed to buy bread which was scarce. The mamlūks began to take the crops from the ships and those who possessed it abstained from selling it. The Sultan called for people to refrain from sins and to fast. Then he ordered the canal to be opened without celebrations as the situation was disastrous (*al-muṣībah al-ʿuzmā*).\(^{676}\) It was a terrible day for people (*kāna yawman muhawwilan muzʿijan*),\(^{677}\) who cried when they witnessed the scarcity of water flowing into the canals. The water receded more and more, leading to extreme drought in Upper and Lower Egypt.\(^{678}\)

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\(^{676}\) Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 1, 292.


\(^{678}\) Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 1, 294. See short poetic verses that describe this “unprecedented” (ʿAbd al-Bāṣīṭ, Nayl al-amal, vol. 2,5,
The lack of inundation automatically induced a rise in prices for all commodities.\textsuperscript{679} The chroniclers recorded the development of these prices, which fluctuated during the whole the year. The price for the grain per irdabb at the beginning of the year was 800 dirham.\textsuperscript{680} In Shawwāl 854/November 1450, news came from Alexandria that the Franks captured four Muslim ships with grain after they had reached the port of al-Rashid (Rosetta).\textsuperscript{681} They appropriated all the crops and flour exceeding the value of 100,000 dinār brought from Turkey

\textsuperscript{318) shortage of the Nile in Ibn Iyās, Nashq al-azhār, fols. 414–415. al-Suyūṭī, Kawkab al-Rawḍah, 259–260.}


\textsuperscript{681} See the map in Petry, (ed.), The Cambridge History of Egypt, p. xvii.
(Bilād al-Turkiyah) and other places. As a result, the price of grain reached the absolute peak of 1,500 dirham in 855/1451.

The disastrous drought (qaḥt), famine (ghalāʾ), and spread of diseases, which took the lives of numerous people, continued down to Rabīʾ I

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682 Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 1, 298. This refers most probably to the situation when the Catalan piracy, directed against Muslim shipping visiting Alexandria, and Catalan raids against Egyptian and Syrian harbour towns in the 1440s and 1450s A.D. increased. This put under strain the relationship between the Mamlūk Sultans and the Catalans, who were granted preferential terms as regarded the loading of merchandise in the port of Alexandria since the treaty of 1430 A.D. concluded between King Alfonso V of Aragon (r. 1416–1458) and the Mamlūk Sultan Barsbay (r. 1422–1438). N. Coureas, Commerce between Mamluk Egypt and Hospitaler Rhodes in the Mid-Fifteenth Century: The Case of Sidi Galip Ripolli, in Egypt and Syria in the Fatimid, Ayyubid and Mamluk Eras, ed. U. Vermeulen, Leuven: Peeters 2010, 207–208.


855/April 1451. The Nile’s minimum was so low (iḥtaraqa ihtirāqan zā’idan) that wading became possible from Būlāq to Manbābah (unidentified). Egypt was on the verge of destruction (kharāb), and deaths and poverty increased so that innumerable people migrated to Syria. When the Nile inundated and the canal was opened at the proper time in 855/1451 people were so happy that they perfumed each other with saffron (za’farān). The prices declined slightly, but relief did not come with the rise of the Nile, which stopped at eighteen cubits and nine fingers. The chroniclers reported the lack of cows necessary for ploughing and sawing seeds. Due to the scarcity

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of meat, people sold dog meat and dead animals.\textsuperscript{690} In addition, in Shawwāl 855/October 1451 worms spoiled the cultivated \textit{qurt} (plant).\textsuperscript{691} During this famine, which lasted almost four years, indescribable and “extraordinary odd” things happened (\textit{wa-waqaʾa fī hādhā al-ghalāʾ min al-gharāʾib wa-al-nawādir mā lā yuʿabbar ʿanhu bi-wasf}).\textsuperscript{692} Diseases and deaths continued at the beginning of 856/1452\textsuperscript{693} and only after \textit{al-khamāsīn},\textsuperscript{694} did the number of dead decline and prices fall.\textsuperscript{695}

\textsuperscript{693} ‘Abd al-Bāsiṭ, Nayl al-amal, vol. 2,5, 344.
\textsuperscript{694} See about \textit{al-khamāsīn} footnote 217, p. 133 and p. 334.
\textsuperscript{695} Ibn Taghrī Bardī, Ḥawādith al-duhūr, vol. 2, 360.
After the rise of the Nile in 856/1452, the water halted again and declined. People were worried, and to de-escalate the situation, the Sultan ordered Sheikh muḥtasib ʿAlī to distribute food to the poor.

When the Nile, rising high all of a sudden, in Rajab 856/July 1452 reached sixteen cubits, people happily celebrated Inundation Day and the Opening of the Canal. However, in Shaʿbān 856/August 1452, a terrible incident (amr muzʿij) during the opening of the dam of Bahr al-Munajjā tarnished that happiness. While breaking the dam, the water stream hit and flooded the dyke where people stood watching. More than twenty people fell into the water and drowned.

700 See about this dam footnote 411, p. 531; footnote 432, p. 537 and footnote 433, p. 537.
Matters improved in Ramadān 856/September 1452 when the Nile finally reached nineteen cubits and twelve fingers. As the farmers then could trap the water until the end of Bābih/9–10 November and start to irrigate the lands, the prices of every commodity automatically declined. ʿAbd al-Bāsiṭ (d. 920/1514) finished his record saying that the year was full of unprecedented hardships.\(^{702}\)

5.8.2. Review of Cultural Responses to Disastrous Droughts

In all of the cases described here, natural and social factors such as the lack of inundation, the debasement of the currency, corruption and the Sultan’s ineffectiveness except for occasional relief measures, led to a long-term disaster which weakened Egypt. Taking into consideration the extent of human suffering and the enormous loss of animals and human lives, we can grade all of these droughts, caused primarily by the lack of inundation, to the index of −3 from the

\(^{702}\) Ibn Taghri Bardī, Ḥawādīth al-duhūr, vol. 2, 373.


hydrological perspective. This level refers to disastrous droughts with extensive material damage and loss of animal and human lives.\footnote{See the Index of Short Floods, p. 496.}

The catastrophic impact of these years explains why people were extremely worried when the rise of the Nile halted. While reading the reports in the chronicles, one has the impression that the delay caused more trouble among the population than the actual rising afterwards and the final height. There are numerous contemporary records about the delay of the Nile's rise, especially in the fourteenth and fifteenth century A.D.\footnote{See, for example, records of the following Hijri years in the chronicles: 709, 740, 748, 764, 787, 789, 796, 802, 819, 823, 824, 827, 830, 832, 833, 837, 853, 856, 866, 867, 870, 871, 872, 873, 876, 879, 885, 889, 890, 892, 897, 899, 902, 909, 910, 914 and 916. See also Borsch, The Black Death.} These records usually opened with the typical sentence: “the rise of the Nile delayed for days, people worried because of it, and prices rose” (\textit{fi-hi tawaqqafat zīyādat al-Nīl ayyāman wa-qalaqa al-nās bi-sabab dhālika wa-irtafaʿat al-asʿār})
To ascribe importance to this occurrence, later chroniclers usually finished their report with a short verse.\(^{708}\)

The inundation of the Nile during Misrā/7 August–5 September and its connection with the psychological condition of people and financial and economic affairs was incredible. Once, in 866/1461–2, when the rise of the Nile was delayed and prices rose,\(^{709}\) Sultan Khushqadam (r. 865–872/1461–1467) expressed a wish to destroy the Nilometer so that the public might not know of the delay.\(^{710}\) However, this was a mere wish. If he had destroyed the Nilometer it would have deprived the people of psychological security and the feeling of having the Nile under control. Moreover, people would perceive it as a rejection of Egyptian culture and tradition, which would provoke their anger even more.


\(^{709}\) See footnote 182, p. 466.

But what was meant by “delayed”? As previously described, the Nile habitually reached plenitude in Misrā/7 August–5 September. In the thirteenth and the beginning of the fourteenth century A.D., during al-Nuwayrí’s lifetime, the inundation was usually expected in the middle or the end of this Coptic month, sometimes even later,

whereas from the end of the fourteenth A.D. century onwards—during al-Maqrīzī’s and Ibn Iyas’s lifetime—the natural course of events changed. The water usually began to reach plenitude earlier, i.e. in the beginning of Misrā. Later than that was thus considered


\[712\] According to late Mamlûk chroniclers, the average date at which the Nile reached sixteen cubits changed in the course of the centuries. (al-Maqrīzī, al-Khiṭaṭ, vol. 1, 161. al-Suyūṭī, Kawkab al-Rawḍah, 151. Ibn Iyās, Nuzhat al-umam, 89. Popper, The Cairo Nilometer, 209.) That the Nile normally reached plenitude during their epoch in the beginning of Misrā might be a subjective assumption, as the evidence for the end of the fourteenth and fifteenth A.D. centuries shows that the inundation also occurred in the second half of Misrā (see the records in the chronicles and Sāmī, Taqwīm al-Nil, vol. 2). However, if we take for granted their assumption, we should be able to explain the reason for this change. Most probably we can link it to
to be a delay. As we have seen, it caused disturbances among the population, leading to the spread of rumours that the Nile had not reached plenitude, which immediately caused price manipulations in the market and the increase of prices for the main agricultural products, especially for grain. But as soon as the water rose prices declined.

The sudden recession of water (hubūt/inḥīṭāt/naqṣ), which happened quite frequently from the end of the fourteenth century A.D., was also potentially dangerous for the year ahead as most of the lands

the problem of sediment, which, as the chroniclers noticed, rose in the bed of the Nile (see p. 502). And with the rise of the bed, as a logical consequence, the same amount of water seemed to arrive earlier than before.


716 See the records of the following Hijri years in the chronicles: 764, 782, 796, 822, 827, 829, 830, 831, 832, 833, 836, 837, 873, 889, 892, 897 and 902.
remained without water, and drought was to be expected. Its impact was similar to that of a delayed inundation. When the water quickly declined, merchants and brokers withheld supplies pushing up the prices of grain, which aroused anxiety and chaotic conditions among the population. There are numerous descriptions of crowds at the mills and bakeries, struggling to obtain grain or bread.\(^7\) The Bedouins sometimes intercepted the grain destined for Cairo and Delta regions, looted it from barns\(^7\) or burnt it intentionally,\(^7\) which also made the situation worse during the years of drought.\(^7\)

al-Maqrīzī (d. 845/1442) explained in *al-Khīṭāṭ* that the interrelation

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\(^7\) ʿAbd al-Bāsiṭ, *Nayl al-amal*, vol. 1, 144, 218–219.

\(^7\) Ibn Iyās, *Badāʾiʿ*, vol. 3, 360.

\(^7\) Ibn Taghrī Bardī, al-Nujūm, vol. 10, 183.
of the Nile’s rise and the prices was a characteristic of Egypt.\textsuperscript{721} This makes me conclude that the Nile was a barometer for Egypt’s socio-economic stability.

The increase of disastrous droughts from the fourteenth century A.D. also brings me to the following conclusion. The early Mamlūk period, especially the periods of Sultan al-Manṣūr Qalāwūn’s (r. 678–689/1279–1290) and al-Nāṣir Muḥammad Ibn Qalāwūn’s long reign (r. 693–694/1293–1294; 698–708/1299–1309; 709–741/1310–1341)\textsuperscript{722} were relatively stable\textsuperscript{723} as both of them attached great importance to the irrigation works.\textsuperscript{724}

Essential evidence published by Sato Tsugitaka in State and Rural Society in Medieval Islam supports this supposition. This evidence

\textsuperscript{721} al-Maqrīzī, al-Khiṭaṭ, vol. 1, 162. See also footnote 512, p. 557 and p. 455.

\textsuperscript{722} See footnote 127, p. 100 and p. 537.

\textsuperscript{723} Cf. the data in The Catalogue of Nile-Induced Droughts and Famines in the appendix, p. 668 during the period of their reign.

\textsuperscript{724} See also Borsch, The Black Death.
refers to Sultan al-Manṣūr Qalāwūn’s Memorandum (Tadhkirah), which strictly regulated control of the irrigation system in Egypt and state affairs in general. The Sultan issued this edict in 679/1280–1 for the vice-Sultan emir Kitbughā—who later became Sultan (r. 694–696/1294–1296)—as a legal basis regulating different matters in the public sphere. Articles 13, 14, and 15 of this Memorandum were specifically devoted to the management of the water control system. They prescribed the construction of canals and cleaning of dykes, repairs of bridges and watergates to protect them from decay (fasād). They also determined who the officials in charge of these matters would be, promising punishment if they did not follow the rules. This singular evidence shows the ideal way the state regulated a “top-
“Top-down” means “controlled, directed, or instituted from the top level” as opposed to “bottom-up,” i.e. “controlled or directed from the lower levels.” Merriam-Webster Online Dictionary, www.merriam-webster.com/dictionary.

Willcocks, Egyptian Irrigation.

Tsugitaka, State and Rural Society, 115. al-Maqrizi, Ighāthat al-ummah, 12.
respectively. This development shows that the normative character of this “top-down” memorandum was the ideal case, which was not always possible to implement in reality given that late Mamlûk Egypt in particular experienced a frequent change of Sultans who possessed different leadership qualities. Apart from this, the increase of epidemics and disastrous famines, which also had a negative impact on the management and administration, weakened their power.

Further evidence supporting the supposition that the irrigation system was in better condition during the early Mamlûk period stems from Sultan al-Nāṣir Muḥammad Ibn Qalāwūn’s long reign. The latter also attached great importance to controlling the network of dykes and canals. Among other things, he initiated epochal water-related projects, like the construction and innovation of dykes and

732 See about this Sultan footnote 127, p. 100.


734 During his long reign, Sultan Nāṣir headed big projects like the creation of gardens along the Nile and renovation of squares and other important public structures. al-Maqrîzî, Kitâb al-sulûk, vol. 2,1–2,3, 541–542. See also Behrens-Abouseif, an-Nâṣir Muḥammad and al-Aṣraf Qâytbây, 266–274.
dams, bridges and the digging of small and big canals, like al-Nāṣirī Canal and the Alexandria Canal.\textsuperscript{735}

In fact, there is no evidence of outstanding floods during Sultan Nāṣir’s reign,\textsuperscript{736} except for the flood of 724/1324\textsuperscript{737} and the excessive out of season flood in 717/1317, when the Sultan’s decisive measures averted a disaster.\textsuperscript{738} The preventive farseeing measures implemented by the Sultan and his representatives seem to have functioned well during the early Mamlūk period.

There is also no evidence of extreme droughts and famines during the early Mamlūk period, except for the disastrous famine of 662/1263–


\textsuperscript{736} See \textit{The Catalogue of Excessive Nile Floods} in the appendix, p. 661.


\textsuperscript{738} See the discussion of this out of season excessive flood in \textit{Chapter 5.7.3.1. Floods of 717/1317, 825/1422, and 882/1477}, p. 536f.
4, not discussed here for two reasons. First, the chroniclers did not name the Nile as the cause of the crisis. Second, Sultan Baybars’ (r. 658–676/1260–1277)\(^{739}\) effective policy of price regulation, especially the organisation of food distribution by the military and civilian elites, prevented the escalation of the famine which lasted only several months.\(^{740}\) Thus as the sources did not mention any deaths from hunger or outbreaks of diseases it suggests that the disaster was successfully averted.\(^{741}\) However, Baybar’s “successful” effort at coping was an exception. The increase of disastrous droughts from the fourteenth century A.D. reveals that, despite the Sultans’ intervention, the response to the disasters was usually late or insufficient in terms of prevention. The major reason for the

\(^{739}\) See about Baybars footnote 255, p. 484 and Northrup, The Baḥri Mamlūk Sultanate, 251f.


\(^{741}\) See more details about the implemented measures in Sabra, Poverty and Charity, 138–140. Lev, The Regime, 156.
inefficiency of their measures was the poor condition of canals and dykes, neglected due to the corruption of officials and the extreme depopulation because of hunger, frequent outbreaks of epidemics and emigration.

To pacify the population during the occurrence of critical situations, like the delayed rise of the Nile or its failure to reach sixteen cubits, the authorities took specific measures to avert the “unpreventable.” We can categorise the most important patterns of coping measures undertaken by the Mamlûk Sultans and the population as (a) emotion-focused socio-religious coping, and (b) practical problem-focused coping.

a) One of the important emotion-focused socio-religious coping measures during droughts was the call to prayers. The importance of prayer as a mechanism in propitiating an environment and society has been noted in many cultures. The recitation of certain verses

742 Bankoff, Cultures of Disaster, 168.
from the Qurʾān, readings from al-Bukhārī’s Ṣaḥīḥ during Ramaḍān or holding khutbah (sermon) usually accompanied the prayers. In particular, during droughts the Sultan immediately ordered the four judges, chaired by the Supreme judge, the muḥtasib, the ‘ulamā’, Qurʾān reciters, and prominent emirs to summon the people and held “prayers for rain” (istisqā’) as long as the delay of the Nile’s waters persisted.

In Muslim culture the prayer for rain (istisqā’) had a long tradition and was canonised similarly to the prayer of the eclipse, which was performed during earthquakes. The chroniclers reported that the prayers for rain were delivered in the desert outside the city, at the Nilometer, in the mosques and other import places of worship like the


744 Ibn Iyās, Badāʾiʿ, vol. 1,2, 64. al-Maqrizi, Kitāb al-sulūk, vol. 4,1, 367. al-Suyūṭi, Kawkab al-Rawḍah, 256. See also footnote 554, p 571.


746 See p. 351 and 407.
prophetic shrine (Ribāṭ al-āthār al-nabawīyah). Writing about the “istiṣqāʾ ritual,” Huda Lutfi noticed that the prayer for rain in the desert, “a space of purity where the Almighty might be more receptive to human supplication,” constructed a spatial opposition to the city as “a contaminated space conducive only to sin.” These rituals, usually narrated in a dramatic way to play on the pious emotions of the reader, expressed “a collective desire” to bring about divine forgiveness and a reversal of the drought through abstinence from sins or by repenting them. She also drew attention to the chroniclers’ silence about the presence of women during this ritual. According to her, this must have been a metaphorical rejection of

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749 Lutfi, Coptic Festivals of the Nile, 275.

750 Lutfi, Coptic Festivals of the Nile, 273.
female presence, unwished for in the sacred place, to make it devoid of temptation.\textsuperscript{751}

In most of the cases of a delayed inundation, listed in footnote 706 (p. 608), the chroniclers reported that usually God heard people’s prayers, eventually favouring plenitude. Thereupon, the prices and people’s condition returned to their previous state.\textsuperscript{752} However, in numerous other cases,\textsuperscript{753} a delayed inundation in combination with a

\footnotesize
\textsuperscript{751} Lutfi, Coptic Festivals of the Nile, 276–277.
quick decline before or after plenitude resulted in famines and the spread of epidemics. During some of these years the lands dried as the basins remained without water, necessary for irrigation and cultivation. The food shortage with occasional loss of animals and human lives due to hunger followed the same pattern as discussed in Chapter 5.8.1. “Years without Plenitude”.\textsuperscript{754}

Apart from prayers, believed to ward off calamities (excessive floods,\textsuperscript{755} famines and epidemics),\textsuperscript{756} the Sultan occasionally called for

\textsuperscript{754} See p. 562f.

a fast of three days.\textsuperscript{757} Since “heavenly disasters” (\textdaggerdbl fāt samāwīyah\textdaggerdbl)\textsuperscript{758} were “the Almighty’s customary treatment of His creatures” whenever “they disobey Him and violate His divine law [...],”\textsuperscript{759} during certain years the Sultan also called for people to abstain from sins (\textdaggerdbl thām/ma\textacute{a}s\textdaggerdbl n/fisq\textdaggerdbl) in repentance.\textsuperscript{760} These acts of “purification” reminded the people of divine punishment, admonishing them to repent their sins and return to virtue, after which God might bring back the flow of the Nile. The frequent public announcements were

\textsuperscript{756} See, for example, the records of the year 822/1419: al-Maqrizī, Kitāb al-sulūk, vol. 4,1, 487. Tucker, Environmental Hazards, 126–127.


\textsuperscript{758} al-Maqrizī, Ighāthat al-ummah, 59.

\textsuperscript{759} Allouche, al-Maqrizī’s Ighāthah, 50.

also strategies to calm down and control masses of troubled people who were in a state of panic.\footnote{Lutfi, Coptic Festivals of the Nile, 275.}

However, the Sultans sometimes used violent measures, especially against those whom they blamed for the delay. This aggression was directed against those “corruptive people” (ahl al-fasād)\footnote{ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,6, 145.} who usually gathered on the Nile’s banks waiting for the celebration of the Inundation Day. They were accused of “abominable” deeds (munkar)\footnote{ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 101.} like merrymaking, wine drinking and sexual promiscuity, which were told to accompany their festivities.\footnote{ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,6, 145. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 2,7, 101. Ibn Iyās, Badāʾiʿ, vol. 4, 230–231. Shoshan, “Nile,” 562.} Thus, in such cases, the government imposed restraints on all forms of popular celebrations. Besides the previously discussed repeated abolition of the Coptic festivals of the Nile,\footnote{See p. 444.} we have references to officially organised intentional burning of tents pitched in the island of al-
Rawḍah. There were also occasional Sultanic attempts to ban congregations on the Nile in anticipation of the water’s rise and splendid preparations for the inundation. Finding scapegoats was the easiest way to divert the attention of the population’s aggravated mood from Egypt’s poor state of affairs.

b) Among the practical problem-focused measures to prevent or alleviate the disastrous effects of drought, the following attitudes on the side of the authorities can be summarised:

(1) The authorities tried to fix or bring down the price of foodstuffs, principally of grain, as quickly as possible, to avoid mass disturbances and social disruptions. This was accomplished by large-scale


767 See, for example, 830/1427: ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,4, 218. 810/1407–8: Lutfi, Coptic Festivals of the Nile, 274.

768 See, for example, the abolishment of Coptic festivals, p. 446.
purchases of food from unaffected areas or abroad, underselling the market price, and applying political pressure on hoarders and grain merchants to follow suit. Though it should be mentioned that at times, as we have seen, the emirs and the Sultan themselves—the largest grain suppliers in the Sultanate—were responsible for the hoarding which intensified or even brought on food crises.

(2) The Sultan usually ordered the allocation of poor segments of society to rich emirs who were told to supply them with food, goods

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and sometimes cash.\textsuperscript{771} However, it appears that after the disastrous drought and food shortage of 775–776/1373–1374, we have no evidence of emirs’ being mobilised to combat the crisis probably because the Sultans’ authority over them weakened gradually\textsuperscript{772} due “to the lack of harmony in the government.”\textsuperscript{773} Private alms giving certainly played a role during the years of crisis, but the records of disasters occasionally show the greed of the rich who were reluctant to help the poor.\textsuperscript{774}

(3) During some disastrous years, powerful high-ranked emirs organised the washing and the burial of the dead in accordance to


\textsuperscript{772} Sabra, Poverty and Charity, 166.

\textsuperscript{773} See footnote 655, p. 596.

\textsuperscript{774} See, for example, 776/1374: al-Maqrīzī, Kitāb al-sulūk, vol. 3,1, 233, 234. ʿAbd al-Bāsiṭ, Nayl al-amal, vol. 1,2, 77. Sabra, Poverty and Charity, 164, 166.
Islamic Law.\textsuperscript{775} It was an important relief measure implemented by certain rulers and emirs. This was done on the one hand to provide a dignified burial of the disaster victims, and, on the other hand, to avoid unsanitary conditions in the streets, which were described as being littered with corpses during some famines.\textsuperscript{776}

When faced with disastrous droughts and famines, the population, especially the poor, also developed practical coping measures to survive the disasters. Among the first measures was people's attempt to attract the authorities' attention, either in a peaceful way, like begging for food, or by creating social disturbances, like scavenging or looting.\textsuperscript{777} Such conditions motivated the ruling elites to look for solutions.

Other measures were emigration\textsuperscript{778} from the affected areas, exceptional cases of parents' selling of their children to slavery,\textsuperscript{779} the

\textsuperscript{775} See references in footnote 560, p. 573.

\textsuperscript{776} Sabra, Poverty and Charity, 94–95.

\textsuperscript{777} Sabra, Poverty and Charity, 166–167.

\textsuperscript{778} Cf. Bankoff, Cultures of Disaster, 166.
common tendency towards the consumption of items which were normally considered to be inedible, like unripe crops out of the fields, the carcasses of cats, dogs, and even human corpses. The explicit contemporary references to such occurrences lead me to conclude that these responses to disastrous droughts and famines were not a mere literary device but plausible behavioural deviations in the light of the catastrophe, which disrupted normal social life. These measures were destructive, but they were generated from people’s hopelessness and wish to overcome the impasse.

779 See p. 593.
CONCLUSION

Drawing the final conclusion, the critical evaluation of the primary sources, including unpublished manuscripts, and secondary literature suggests that the authors of the Mamlūk period paid considerable attention to natural disasters, their perception, interpretation and human response, treated them both as isolated “marvellous oddities” and as disasters in the socio-political and economic contexts. The chapters in Part I of this thesis have demonstrated that Mamlūk authors, while explaining causes of natural hazards, integrated into the narrative of their works different interpretations, which signifies their plurality.

Catastrophic events, perceived as God’s signs, were embedded in various astro-meteorological, cosmological, and theological discourses. Hence, the most striking feature in the discussion of the causes and effects of natural disasters is the mixing of astro-meteorological and physical explanations with a wealth of religious and fictional knowledge. This strict division is not the most effective because it separates interpretations that are often overlapping. But
this distinction is inherent in the structural, textual and functional differences of the genres, where these interpretations appear.

With regard to the astro-meteorological interpretations of natural disasters in form of *malhamah*-predictions, which has preserved the pre-Islamic heritage of Assyrian-Babylonian and the Hermetic tradition of Late Antiquity, we can conclude that the common human desire to predict and avert future disastrous events made it possible for this ancient tradition to survive and develop further in Mamlūk culture. Equally important is the fact that, by going through various modifications, the astro-meteorological perception of disasters adapted to cultural flows and beliefs dominant during the Mamlūk period.

We can make a similar conclusion about the physical and fictional interpretations of natural disasters found in the *ʿajāʾib wa-gharāʾib* cosmographic genre. Regarding the physical interpretations of natural disasters, we can assume that ancient Greek theories and Islamic revelation shaped knowledge about natural phenomena in Mamlūk *ʿajāʾib wa-gharāʾib* cosmographic works, elaborating it into a system of
its own. Early Arab scholars, who were inclined towards classical Greek heritage, encouraged Mamlūk authors to cite Greek theories about the causes of natural disasters, in particular those of Aristotle. The direct and indirect transmission of classical Greek thought about natural disasters attests to the fact that their reception did not come to end during the Mamlūk period, as generally accepted.\(^1\) Moreover, reviving the attested traditional views of Arab ancestors, Mamlūk authors legitimised the ancient physical interpretations, connecting them to the message of the Qurʾān, which emphasises the marvels of God's creation in the governing of the physical cycles of creation and destruction.

Furthermore, relying on the achievements of their predecessors, Mamlūk authors expanded the Qurʾānic perception of the universe with fictional interpretations of natural disasters as “marvellous oddities,” which evoked astonishment. They borrowed, reframed and shaped basic metaphoric symbols in these interpretations under the influence of Jewish-Christian, Indo-Iranian, and Babylonian traditions. By adopting them to local demands, they also introduced

\(^1\) See footnote 32.
widespread motifs, popular arguments and new symbolic elements into the established narratives.

Irrespective of the contextual differences between the Mamlūk plots and those of Pre-Islamic sources, the “commonness” of the natural phenomena in Wolfgang Welsch’ sense of transculturality, as well as the universal interest towards the understanding of the secrets of nature, presented in a symbolic way, made these fictional interpretations timeless. The entanglement and mixture of cultural narrative elements in them created its own unique hybrid vision of natural phenomena, contextualised in conformity with the requirements of Islamic traditions. In particular, the religious views often reinforced fictional interpretations. With this inclusion of a normative character, Mamlūk authors aimed either to maintain people’s fear of God’s wrath and so follow his rules or discredit disseminators of physical interpretations, which had pre-Islamic and foreign roots.

2 See p. 41.
All this confirms the first hypothesis: Mamlūk authors viewed multiple interpretations of disasters from various angles. They reflected and modified these interpretations drawn from pre-Islamic cultures, by adding new understandings that they gleaned in the process of transcultural flows, entanglements and textual interactions. Thus the evidence marks not only the plurality and transculturality of interpretations but also the continuity of knowledge transfer as Mamlūk authors ensured the maintenance and continuity of the ancient knowledge.

Interestingly, the interpretations which Mamlūk authors presented in the astro-meteorological and ‘ajā‘ib wa-gharā‘ib genre isolated from the discourse of their impact on the society, found their way into the narratives of natural disasters in the historical genre discussed in Part II of this thesis. The analysis of the historiographic primary sources in Part II has revealed that the inclusion of causes of earthquakes, floods and droughts, as well the interrelation between disasters, belonged to the constructive elements in the narratology of exceptionally disastrous events, such as, for example, the 702/1303 earthquake.
The critical analysis in Part II of the thesis has also shown that of about thirty-five earthquakes\(^3\) which occurred during the Mamlûk period (648–922/1250–1517), excluding those with a doubtful status, only eight earthquakes were described as being violent. In particular the earthquakes of 702/1303\(^4\) and 886/1481\(^5\) were perceived and interpreted as disastrous. Furthermore, the analysis discerned twenty-eight cases of destructive floods,\(^6\) not counting excessive floods due to heavy rainfall. In six cases, in 717/1317, 761/1359, 785/1383, 797/1395, 825/1422, 882/1477, the excessive floods were induced by natural causes, such as an “extraordinary odd,” i.e. anomalous, out of season increase of water. Two other cases, the flood of 778/1376 and 912/1506, were provoked by human interactions.\(^7\) Although the

\(^3\) See The Catalogue of Earthquakes in the appendix, p. 643f.


\(^5\) See Chapter 4.5. The Disastrous Earthquake of 886/1481: Comprehensive Account of Effects and Attitudes, p. 383f.

\(^6\) See The Catalogue of Excessive Nile Floods in the appendix, p. 661.

\(^7\) See the discussion of these floods in Chapter 5.7. Case Studies of Excessive Floods: Causes, Effects and Cultural Responses, p. 509.
quantitative presentation of Nile-induced droughts may pose problems, as droughts, like a crisis,\(^8\) are processes rather than events, we can discern six major clusters of disastrous years: 693–695/1294–1296, 775–776/1373–1375, 806–807/1403–1404, 854–856/1450–1452\(^9\) due to the “extraordinary odd” shortage of the Nile in rapid succession and in 829–833/1425–1420 and 836–837/1432–1434 due to the delayed rise and quick decline of the water.\(^{10}\) Apart from these major episodes of Nile-induced droughts, there are numerous cases of the extreme shortage of water in the Nile,\(^{11}\) which led to socio-political instability from resulting famines and the spread of epidemics.

On the basis of the preceding case studies of disastrous earthquakes, floods and droughts, all of which have natural and social roots, one can come to a number of conclusions. Compared with earthquakes

\(^8\) Nünning, Krise als Erzählung und Metapher, 124f.


\(^{10}\) See footnote 753, p. 622.

\(^{11}\) See the Catalogue of Nile-Induced Droughts and Famines in the appendix, p. 668 and footnote 753, p. 622.
and excessive “odd” floods, which were more frequent, the shortage of the water in the Nile during the six major periods had the most destructive long-term impact as it induced clusters of disastrous droughts and the worst famines in Egypt. These droughts and famines afflicted all segments and spheres of society, prompting economic instability, political turmoil, and social and health scares because of the spread of disease. This suggests a causal interrelation between a disaster, be it natural or social, and the onset of another. Their effect was especially devastating because the recovery period between the events was too short.

Looking at the years of their occurrence shows that almost every generation of Egyptians, especially those who lived during the late fourteenth and fifteenth centuries A.D., faced the threat of hunger and experienced the continuous decrease of the population due to the plague. The latter, the most dangerous of all disasters, along with the effects of drought was responsible for the largest number of fatalities as compared to the effects of earthquakes and excessive floods, for which we do not have any explicit evidence about the loss of human lives, or at least no death toll.
Coming to the second hypothesis: although the Nile was a “blessing” for the Egyptians because it secured life, we can call Mamlūk Egypt in compliance with Greg Bankoff’s theory a culture of Nile-induced disasters, as its erratic fluctuations constantly confronted people with the fear of abnormal flooding and its consequences. On the one hand, living in the flood-prone environment, the Egyptians adapted to the dangers emanating from it as they knew the risks. On the other hand, they had to face those disasters and repeatedly negotiate them, which stimulated the development of a sophisticated “culture of coping,” and a “culture of adapting.”

The Nile, indeed, shaped cultural attitudes as people incorporated its flooding into their way of life. In this process, the perpetuation of the established institutional warning system, provided by the measurements in the Nilometer, and procedures in the control of the complex centralised and community irrigation system played a significant role. This refutes the effectiveness of the mere “top-down” irrigation policy, as evident in Karl Wittfogel’s theory of centralised

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12 See p. 52.
“hydraulic societies” such as Egypt, and postulates the inadequacy of this one-sided system in practice, at least during the Mamlûk period.

The important emotion-focused, socio-religious coping measures together with practical problem-focused coping strategies in dealing with water-related risks became a cultural routine. However, the sorrow and the tragedy described by the chroniclers, who often refer to these disasters as “unprecedented,” makes me conclude that the disasters caused by the Nile and other factors were not accepted as “normal” and “routine,” as they caused irreparable consequences for society. With regards to this point, I take a different view of the controversial theoretical basis of Greg Bankoff’s concept of a “culture of disaster”—introduced in the opening part of this study—which further suggests that “hazard and disaster are simply just accepted [normal] aspects of daily life” in hazard-prone areas.  

13 See more about this theory in footnote 247, p. 481.
14 Bankoff, Cultures of Disaster, 3. See also G. Bankoff, Cultures of Disaster, Cultures of Coping. Hazard as a Frequent Life Experience in the Philippines, in Natural Disasters, Cultural Responses. Case Studies toward a Global
However with regards to a different point, I fully agree with Greg Bankoff’s view that “the resultant cultures also change over time.”

This is, indeed, the case with Egyptian culture. The adaptive strategies and the collective technological and social efforts to combat and reduce the repetitive negative impact of the Nile’s flooding finally bore fruit. Today, notions of threat and even the memory of the seasonal rhythm of the Nile, which was embedded in the area’s cultural traditions, have been lost following the construction of the High Aswān Dam in the twentieth century A.D. People adapted in the course of technological development in so far as they reached “permanent accommodation.”


15 Bankoff, Cultures of Disaster, 277. See also 7, p. 20 and Hassan, Environmental Perception, 121–140.

16 See footnote 57–58, p. 39f., footnote 247, p. 481 and more on the ambivalent effect of this dam in Benedick, The High Dam, 119–144.

17 Bankoff, Cultures of Disaster, 159.
Indeed, “the environment shapes human society.”18 This point opens up other research questions about how the Egyptians in modern times perceive and incorporate the Nile’s floods into their daily lives. What cultural role does it play in the modern tradition, which has been disconnected from the old traditions by technological advances?19


19 A good starting point for this and further research questions may be Richard Benedick’s paper The High Dam and the Transformation of the Nile, Middle East Journal 33/2 (1979), 119–144 as well as the references mentioned in Chapter 2. State of Research, footnote 42, p. 32.
APPENDIX

Note: In the following catalogues contemporary sources are presented in *Italics*.

CATALOGUE OF EARTHQUAKES

657 before 12 Jumādā II/5 June 1259

**Location:** Egypt

**Intensity:** strong

**Status:** doubtful due to the lack of contemporary evidence and due to misinterpretations


**Catalogues:** Ambraseys, 40–41; Guidoboni, 271–272; Ṭāhir, Nuṣūṣ, 115–116; al-Ghunaym, 179.

660/25 November 1261–13 November 1262

**Location:** Egypt, Syria, Iraq

**Intensity:** strong

**Status:** doubtful due to the lack of contemporary evidence


662 20 Rabīʿ II, Tuesday/19 February 1264

Location: New Cairo?

Intensity: strong


Catalogues: Ambraseys, 41; Ṭāhir, Nuṣūṣ, 117; al-Ghunaym, 181.

693/1 December 1293–19 November 1294

Location: Old Cairo, New Cairo

Intensity: strong in Old Cairo, light in New Cairo

Status: doubtful due to the lack of contemporary evidence


Catalogues: Guidoboni, 319–320; al-Ghunaym, 185; Ṭāhir, Nuṣūṣ, 121.

698 24 Ṣafar/30 November 1298

698 3 Rabīʿ II/7 January 1299

Location: Egypt
Intensity: strong

Sources: al-Jазaًري, Ta‘rikh, vol. 1, 440.

Catalogues: Ambraseys, 41; Guidoboni, 331–332; al-Ghunaym, 185.

702 23 Dhū al-ḥijjah/9 August 1303

Location: Egypt, Syria, Barqah, Tunis, Sicily, Qābis, Marrakech, Antioch, Antalya, Sis, Cyprus, Constantinople

Intensity: strong


707 9 Ṣafar/9 August 1307

Location: Egypt
Intensity: light


Catalogues: Ambraseys, 44; Guidoboni, 366, al-Ghunaym, 198.

712 29 Shawwāl/26 February 1313

Location: Egypt

Intensity: light


Catalogues: Ambraseys, 44; Guidoboni, 370, al-Ghunaym, 198.

735 5 Shawwāl/28 May 1335

Location: New Cairo

Intensity: -


Catalogues: Ambraseys, 44–45; al-Ghunaym, 199.

736 5 Shawwāl/17 Mai 1336

Location: New Cairo

Intensity: -

Catalogues: Ambraseys, 45.¹

740 after Ṣafar/after 7 August 1339

Location: Egypt

Intensity: -

Status: doubtful due to misinterpretations

Sources: al-Maqrizi, Sulūk, vol. 2,2, 475.

Catalogues: -----²

741 Dhū al-ḥijjah/17 Mai–15 June 1341

Location: Old Cairo, Syria and Alexandria

Intensity: strong

Status: doubtful due to the lack of contemporary evidence

Sources: Ibn al-ʿImād, Shadharāt, vol. 6, 127.

Catalogues: Ṭāhir, Nuṣūṣ, 134; Ṭāhir, Les grandes, 95; al-Ghunaym, 200.

744 15–16 Shaʿbān/1–2 January 1344

Location: Syria, Egypt?

Intensity: strong

¹ According to Nicholas Ambraseys et al., this and the previous earthquake could be the same event.

² This earthquake is not included in any of the catalogues.

Catalogues: Ambraseys, 45; Guidoboni, 394; Ṭâhir, Nuṣūṣ, 134–137; Ṭâhir, Les grandes, 95; al-Ghunaym, 200.

748 4 Ramaḍān/7 December 1347

Location: New Cairo

Intensity: -

Status: doubtful due to the lack of contemporary evidence

Sources: al-Maqrîzî, Sulûk, vol. 2,3, 741; al-Suyûṭî, Kashf, 206;
ʿAbd al-Bâsiṭ, Nayl, vol. 1,1, 153.

Catalogues: Ambraseys, 45; Guidoboni, 403; Ṭâhir, Nuṣūṣ, 138; al-Ghunaym, 203.

753 Ramaḍān/10 October–8 November 1352

Location: Cairo/Egypt?

Intensity: -

Status: doubtful due to the lack of contemporary evidence

Sources: al-Maqrîzî, Sulûk, vol. 2,3, 876.

Catalogues: Ambraseys, 45; Guidoboni, 479; Ṭâhir, Nuṣūṣ, 138; al-Ghunaym, 203.
758 26 Dhū al-qaʿdah/9 November 1357

Location: New Cairo

Intensity: light

Status: doubtful due to the lack of contemporary evidence and due to misinterpretations

Sources: Ibn Iyās, Badāʾiʿ, vol. 1,1, 563.

Catalogues: -----

760 13 Dhū al-ḥijjah/4 November, 1359

Location: Syria and Egypt

Intensity: strong

Status: doubtful due to the lack of contemporary evidence

Sources: Anonymous, al-Barākīn, 111–112.

Catalogues: -----

762/10 November 1360–29 October 1361

Location: Old Cairo

Intensity: -

Status: doubtful due to subjective implications


Catalogues: Ambraseys, 45–46; al-Ghunaym, 204.
775 1 Jumādā I/18 October 1373

Location: New Cairo

Intensity: strong or light

Sources: al-ʿAynī, Taʿrīkh al-Badr, Ms. BL Or Add. 22,360, fol. 88vo; al-ʿAsqalānī, Inbāʿ, vol. 1, 60; ‘Abd al-Bāsiṭ, Nayl, 1,2, 64; al-Ṣuyūṭī, Kashf, 206; al-Suyūṭī, Ḩusn, vol. 2, 304; Anonymous, al-Barākin, 112.

Catalogues: Ambraseys, 46; Guidoboni, 519–520; Ṭāhir, Nuṣūṣ, 139.

787 13 Shaʿbān/18 September 1385

Location: Old and New Cairo

Intensity: light


Catalogues: Ambraseys, 46; Guidoboni, 523; Ṭāhir, Nuṣūṣ 139.

788 18 Jumādā II/16 July 1386

Location: New and Old Cairo

Intensity: light

Catalogues: Ambraseys, 46; Guidoboni, 524; Ṭāhir, Nuṣūṣ, 139.

791 after 17 Dhū al-ḥijjah/after 6 December 1389

Location: New Cairo?

Intensity: strong

Status: doubtful due to the lack of contemporary evidence and due to the location error


Catalogues: Guidoboni, 526–534; Ṭāhir, Nuṣūṣ, 140; al-Ghunaym, 206.

825 8 Rajab/27 June 1422

Location: New Cairo

Intensity: light or strong

Catalogues: Ambraseys, 47; Guidoboni, 577; Ṭāhir, Nuṣūṣ, 144, al-Ghunaym, 214.

826 16, 17 Dhū al-Ḥijjah/20, 21 November 1423

Location: New Cairo?

Intensity: -


Catalogues: al-Ghunaym, 214.

828 6, 17 Shaʿbān/22 June, 3 July 1425

Location: New and Old Cairo

Intensity: strong


Catalogues: Ambraseys, 46; Guidoboni, 578–579; Ṭāhir, Nuṣūṣ, 144.

837 1 Jumādā I/13 December 1433

Location: New Cairo?

Intensity: -
Sources: “The continuator of Ibn Duqmāq,” Paris Ms. Ar. 5762, fol. 15o.\textsuperscript{3}

Catalogues: Ambraseys, 48; al-Ghunaym, 221.

838 3 Rabi‘ II/5 November 1434

Location: New Cairo

Intensity: light


Catalogues: Ambraseys, 49; Guidoboni, 597–598; al-Ghunaym, 222, Ṭāhir, Nuṣūṣ, 148.

841 17 Sha‘bān/12 February 1438\textsuperscript{4}

Location: New Cairo, Old Cairo?

Intensity: light


\textsuperscript{3} See Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 48.

\textsuperscript{4} Nicholas Ambraseys mistakenly wrote that 17 Sha‘bān corresponded to 25 February. Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 49.
Catalogues: Ambraseys, 49; Guidoboni, 600–601; Ṭāhir, Kashf, 148; al-Ghunaym, 222.

859 16 Rabīʿ I/5 March 1455

Location: New Cairo

Intensity: light


Catalogues: Ambraseys, 49; Guidoboni, 617; al-Ghunaym, 223.

863 1 or 9 Muḥarram/7 or 15 November 1458

Location: Syria, Karak, Jerusalem, Ramala, New Cairo

Intensity: strong in Karak, Ramala, Jerusalem and light in New Cairo


872 17 Jumādā I/13 December 1467

Location: New Cairo

Intensity: light


Catalogue: Ambraseys, 50; Guidoboni, 752–753; Ṭāhir, Nuṣūṣ, 149; al-Ghunaym, 225.

881 Rajab/19 October–17 November 1476

Location: New and Old Cairo

Intensity: strong or light


Catalogues: Ambraseys, 50; Guidoboni, 760; Ṭāhir, Nuṣūṣ, 149; al-Ghunaym, 225.

886 17 Muḥarram/18 March 1481

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As I have mentioned earlier, there is one day discrepancy between the Gregorian days calculated by Nicholas Ambraseys et al. and the electronic computation. (See footnote 13, p. 289) In this case, we have a two-day difference (15 December: Ambraseys, 50).
Location: Old and New Cairo

Intensity: strong


888 Rabīʿ II/8 May–5 June 1483

888 9 Jumāda I/14 June 1483

Location: New Cairo

Intensity: light


891 12 Shawwāl/10 October 1486

Location: New Cairo

Intensity: light or strong

Catalogues: Ambraseys, 51.

892 Jumādā I/24 April–23 May 1487

Location: New Cairo

Intensity: light


Catalogues: -----

896 Jumādā I/11 March–9 April 1491

896 16 Jumādā II/25 April 1491

896 22 Jumādā II/1 May 1491

Location: New and Old Cairo, Damascus, the Mediterranean

Intensity: strong or light


Catalogues: Ambraseys, 51–52; Guidoboni, 805; Ṭāhir, Nuṣūṣ, 152; al-Ghunaym, 228.

904 Ṣafar/17 September–15 October 1498
Location: New Cairo

Intensity: light


Catalogues: Ambraseys, 52; Guidoboni, 826; al-Ghunaym, 230.

905 27 Dhū al-ḥijjah/23 July 1500

Location: Old and New Cairo

Intensity: light


Catalogues: Ambraseys, 52; Ṭāhir, Nuṣūṣ, 152; al-Ghunaym, 230.

908 15 Jumādā I/15 November 1502

Location: New Cairo

Intensity: -

Sources: Ibn al-Ḥimsī, Ḥawādith, CUL, Ms. Dd.11.2., fol. 89vo.

There is a two days discrepancy between the Gregorian day calculated by Nicholas Ambraseys et al. (17 November, see Ambraseys, 52) and the electronic computation.
Catalogues: Ambraseys, 52; al-Ghunaym, 231.

914 30 Muḥarram/30 May 1508

Location: Egypt

Intensity: light

Sources: al-Dāʾudī, in Ḥāfiẓ, 261; Ibn Iyās, Badāʾiʿ, vol. 4, 132.

Catalogues: Ambraseys, 53; Ṭaḥīr, Nuṣūṣ, 153; al-Ghunaym, 232.

914 Dhū al-ḥijjah/22 March–19 April 1509

Location: Egypt?

Intensity: light


Catalogues: Ambraseys, 53; al-Ghunaym, 232.

915 Jumādā I/16 August–14 September 1509

Location: Egypt?

Intensity: light


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7 See this reference in Ambraseys, Melville et al. (ed.), The Seismicity of Egypt, 52.

8 In Nicholas Ambraseys’ and ‘Abdallāh Yusuf al-Ghunaym’s records, this date corresponded to 29 May.
Catalogues: Ambraseys, 53; al-Ghunaym, 233.

916 7 Dhū al-ḥijjah/7 March 1511

Location: Egypt

Intensity: light


Catalogues: Ambraseys, 53; Ṭāhir, Nuṣūṣ, 153; al-Ghunaym, 233.

918 20 Muḥarram/6 April 1512

Location: Old Cairo

Intensity: light

Status: doubtful due to duplication

Sources: al-Dāʾūdī, in Ḥāfīz, 261.

Catalogues: Ambraseys, 54; Ṭāhir, Nuṣūṣ, 154; al-Ghunaym, 235.

919 20 Muḥarram/27 March 1513

Location: Egypt?

Intensity: light

Sources: Ibn Iyās, Badāʾiʿ, vol. 4, 297.

Catalogues: Ambraseys, 54; al-Ghunaym, 235.
CATALOGUE OF EXCESSIVE NILE FLOODS

664 7 Dhū al-ḥijjah/ September 1266

Location: Egypt, al-Jazīrah (al-Rawḍah)

Sources: al-Suyūṭī, Kawkab, 219–220.

717/1317

Location: the Nile banks of Egypt, al-Rawḍah, New and Old Cairo


724/1324

Location: banks of Upper Egypt, al-Fayyūm, al-Buḥayrah


744/1343

Location: some regions of Upper and Lower Egypt


750/1349

Location: some regions of Lower Egypt

755/1354

**Location:** Lower Egypt (al-Maṭarīyah, al-Minyāh, al-Amīriyah, Shubrā)

**Sources:** al-Maqrīzī, Sulūk, vol. 3,1, 12–13; ʿAbd al-Bāsiṭ, Nayl, vol. 1,1, 276; Ibn Iyās, Badāʾiʿ, vol. 1,1, 555.

761/1359–1360

**Location:** al-Fayyūm, Jazīrat al-Fīl, Shubrā, al-Rawḍah, Būlāq


773/1371

**Location:** not specified


778/1376

**Location:** al-Ḥusaynīyah

781/1379

**Location:** Lower Egypt (Munīyat al-Shīrj, al-Munākh, Kūm al-Rīsh, Shubrā)

**Sources:** al-‘Asqalānī, *Inbā’, vol. 1, 193; ‘Abd al-Bāsiṭ, Nayl, 1,2, 156.

783/1381

**Location:** not specified

**Sources:** ‘Abd al-Bāsiṭ, Nayl, vol. 1,2, 181.9

784/1382

**Location:** -

**Sources:** al-Maqrīzī, *Sulūk*, vol. 5, 139; al-‘Asqalānī, *Inbā’, vol. 1, 261; al-Suyūṭī, Kawkab, 242; Ibn Iyās, Nubdhah, 90.

785/1383

**Location:** not specified

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795/1393

Location: not specified


797/1395

Location: not specified


807/1404

Location: Upper Egypt

Sources: al-Maqrīzī, Sulūk, vol. 3, 1135.

812/1409

Location: Jazīrat al-Fīl

Sources: Ibn Iyās, Nubdhah, 93; Ibn Iyās, Nashq, Petersburg, Ms. B 1033, fols. 408–409; Ibn Iyās, Badāʾiʿ, vol. 1,2, 800–801.10

10 Contemporary chroniclers did not report anything about the destructiveness of this high flood.
825/1422

Location: not specified


835/1432

Location: not specified


838/1435

Location: not specified


845/1441

Location: not specified


856/1452

Location: not specified

859/1455

**Location:** not specified


882/1477

**Location:** al-Rawḍah, Būlāq, Jazīrat al-Fīl


883/1478

**Location:** not specified

**Sources:** ‘Abd al-Bāsīṭ, *Nayl*, vol. 2, 210; *Ibn Iyās, Badāʾīʾ*, vol. 3, 142.

912/1506

**Location:** al-Sharqīyah

**Sources:** *Ibn Iyās, Badāʾīʾ*, vol. 3, 96–97.

914/1508

**Location:** al-Rawḍah

**Sources:** *Ibn Iyās, Badāʾīʾ*, vol. 4, 137.

915/1509

**Location:** al-Jīzah

666
Sources: *Ibn Iyās, Badāʾiʿ*, vol. 4, 159, 172.
CATALOGUE OF NILE-INDUCED DROUGHTS AND FAMINES

693–695/1294–1296

**Location:** Egypt, (also in Barqah, Damascus, Maghrīb, Ḥijāz)


704/1304–5

**Location:** Egypt (also in Syria)

**Sources:** al-ʿAynī, ʿIqd, vol. 4, 359; Ibn Iyās, Nubdhah, 83.

709/1309

**Location:** not specified


668
764/1363

Location: not specified


775–776/1373–1375

Location: Egypt


782/1380

Location: not specified


795/1392–3

Location: not specified


806–807/1403–1404
Location: Egypt


826/1423

Location: Upper and Lower Egypt, al-Jīzah

Sources: *al-Maqrīzī, Sulūk*, vol. 4,2, 646.

827/1424

Location: not specified

Sources: *al-Maqrīzī, Sulūk*, vol. 4,2, 669, 672.

829–833/1425–1420

Location: Egypt


836–837/1432–1434

Location: Upper Egypt, al-Jīzah

854–856/1450–1452

Location: Egypt


873/1468–9

Location: Egypt, (also Syria)


889/1484

Location: Egypt


897/1491–2

Location: not specified

Sources: al-Suyūṭī, Kawkab, 266.

902/1496–7

Location: not specified

Sources: Ibn Iyās, Nubdhah, 111–112.
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