

Zeitschrift: Asiatische Studien : Zeitschrift der Schweizerischen Asiengesellschaft = Études asiatiques : revue de la Société Suisse-Asie

Herausgeber: Schweizerische Asiengesellschaft

Band: 75 (2021)

Heft: 2

Artikel: The tongues of stones : diversity of interlocutions in Arabic alchemical writings

Autor: Ziegler, Vicky

DOI: <https://doi.org/10.5169/seals-956724>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 27.08.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Vicky Ziegler*

The tongues of stones: diversity of interlocutions in Arabic alchemical writings

<https://doi.org/10.1515/asia-2020-0034>

Received September 4, 2020; accepted June 7, 2021; published online August 5, 2021

Abstract: Dialogues and interlocutions in Arabic alchemical writings have already attracted the attention of several researchers. These previous studies mainly focused on dialogues composed in the classical form of alchemical writings, which are interlocutions between a master of alchemy and his disciple. The teaching dialogue between Zosimos and his disciple Theosebeia in the *Muṣḥaf al-ṣuwar* (“The Book of Pictures”) can be regarded as one of the most influential examples. This paper focuses instead on the diversity of interlocutions that appear in alchemical writings with regard to their literary construction as well as their characters and what they represent. For this research, extracts from different alchemical writings will serve as examples: *Mufākharat al-aḥjār* (“The Boasting of Stones”) and an excerpt from *Kitāb al-Rawḍa* (“The Book of the Garden”), both attributed in the manuscripts to the Andalusian mathematician Maslama al-Majrīṭī, in addition to an excerpt from *Kitāb al-Aqālīm al-sab‘a* (“The Book of the Seven Climes”) ascribed to al-Sīmāwī, and a poem of seventy verses – *al-Qaṣīda al-sab‘īniyya* – by an unknown author. This paper aims to explore how Arabic-writing alchemists made use of a versatile repertoire of literary and didactic methods to transfer their knowledge of alchemy to the subsequent generations.

Keywords: alchemical interlocutions, anthropomorphic characters, Arabic literary debate, Maslama b. Qāsim al-Qurṭubī, philosopher’s stone

1 Introduction

And you, o lead, exceeded your limit and exaggerated what you were saying. You are not as you praise yourself and dispraise others. Don’t you know yourself? You are black in your appearance, cold and dry in the nature of death; as soon as fire catches you, it burns

*Corresponding author: Vicky Ziegler, University of Bonn – IOA, Brühler Str. 7, 53119 Bonn, Germany, E-mail: vziegler@hotmail.de

your body so that you become yellow earth and decay enters you and it alters your nature. The vinegar too, which is not as warm as the heat of fire, burns your body and crumbles it.¹

This is the response of copper to hearing lead praise itself and claiming to be the noblest of all stones. The quote is extracted from the book *Mufākharat al-aḥjār* (The Boasting of Stones), which is an alchemical treatise written in the form of the Arabic prose dispute (*munāẓara*). The author introduces his views on minerals and the philosopher's stone by writing: "I will express this [knowledge about chemical matter] in the tongues of all stones themselves; [...] that it may be closer to the understanding of the listener ..."² He uses the method of a verbal dispute between multiple personified chemical substances and allegories of different stages in the process of synthesising gold to transmit his knowledge about minerals and alchemy. Through this didactic method, the author offers the students of alchemy an alternative and emotive way to learn and remember alchemical facts.

Until now, very few studies have focused on dialogues appearing in Arabic alchemical writings, the most important of which was written by Regula Forster.³ Forster points out the inaccuracy of the popular view that dialogues had an insignificant role in classical Islamic writings.⁴ She proved with her study, *Wissensvermittlung im Gespräch (Knowledge transfer through dialogue)*, that interlocutions are not only used in religious treatises of the Islamicate world to transfer knowledge, but also in scientific works, and especially in alchemical writings. In another study, *The Transmission of Secret Knowledge*, Forster demonstrates that dialogues were considered useful literary instruments in classical Arabic alchemical writings and were often utilised by alchemists to present their theories.⁵ Furthermore, Forster states that the interlocution between master and pupil was regarded as the ideal way to transmit alchemical knowledge and to understand the enigmatic books of alchemists. This is likely the reason alchemists often used dialogues in their writings.⁶

In this paper I aim to contribute to the research of interlocutions in Arabic alchemical writings by focusing on the diversity of alchemical dialogues. To this

1 Istanbul, Süleymaniye, Vehbi 2237, fol. 11a:

وأنت أيها الأسرب قد تجاوزت حدك وطلت كلامك وما أنت كما مدحت به نفسك وذممت غيرك. أما تعرف نفسك وأنت أسود الظاهر بارد يابس في طبيعة الموت. تسرع إليك النار فتحرق جسمك حتى تصير تراباً أصفر ويدخل عليك الفساد وتحول عن طبيعتك. وأيضاً الخل الذي هو أقل حرارة النار يحرق جسمك ويفتته.

2 Istanbul, Süleymaniye, Vehbi 2237, fol. 5b:

وأجعله على لسان الأحجار بنفسها كلها [...] ليكون ذلك أقرب إلى فهم السامع...

3 Forster 2016b; Forster 2017. Another study on dialogues in Arabic alchemical writings was conducted by Müller 2012.

4 Forster 2017: 1.

5 Forster 2016b: 400.

6 Forster 2016b: 401.

end I will closely examine four separate interlocutions that differ in regard to their characters and literary constructions. This will shed light on the text types, the literary framing of the dialogues, the interlocutors and their relationships to one another, as well as their alchemical meanings.

The first dialogue of this analysis occurs in the previously mentioned book, *Mufākharat al-aḥjār*, which belongs to the genre of Arabic literary debate. It contains a dialogic combat between multiple anthropomorphic characters who represent different alchemical substances. The second interlocution, written in prose, is extracted from a chapter of *Kitāb al-Rawḍa* which I should call *The Tale of the Sage in the Cave of the Jinn*. This interlocution takes place between a sage and several characters who represent different components of the philosopher's stone and stages of its transmutation. According to manuscripts and testimonials of both books, *Mufākhara* and *Kitāb al-Rawḍa* were written by the famous Andalusian mathematician and astronomer Maslama al-Majrīṭī, who died around the year 398/1007.⁷ The other two interlocutions are extracted from alchemical manuscripts preserved at the Gotha Research Library. The first dialogue from those manuscripts considered in this analysis is from *Kitāb al-Aqālīm al-sab'a* ("The Book of the Seven Climes") – a compilation attributed to Abū l-Qāsim al-'Irāqī, usually referred to as al-Sīmāwī, which is written in rhymed prose (*saj'*). The second dialogue is from a poem, *al-Qaṣīda al-sab'īniyya* ("Poem of Seventy Verses") by an anonymous author, which contains a dialogue between a master of alchemy and what appears to be a gazelle (*ḡabya*).

2 The boasting of stones

The only extant manuscript of *Mufākharat al-aḥjār*⁸ is preserved at the Süleymaniye Library.⁹ It had previously been donated to a library in Baghdad by 'Abd al-Wahhāb b. 'Abd al-Ma'bad al-Dūrī, according to a note on the reverse side of the flyleaf from 10th Rajab 1322/19th September 1904. The folios on which the text itself is written are older than the flyleaf. The copyist attributed *Mufākhara* to Maslama al-Majrīṭī. This mathematician and astronomer has been credited for many other occult works, such as *Rutbat al-ḥakīm* ("The Rank of the Sage") or *Ghāyat al-ḥakīm*

7 Istanbul, Süleymaniye, Vehbi 2237; Istanbul, Süleymaniye, Hacı Beşir Ağa 505; Cairo, Dār al-Kutub, 45727; Yazd, Vaziri Yazd Library, 154 (g 8 s).

8 Fuat Sezgin refers to the book under the title of *Mufākharāt al-aḥjār*, Sezgin 1971: 298, but the most accurate title is *Mufākharat al-aḥjār*, as mentioned in the *codex unicum*, Istanbul, Süleymaniye, Vehbi 2237, fol. 1b.

9 Istanbul, Süleymaniye, Vehbi 2237.

(“The Aim of the Sage”),¹⁰ but since Maribel Fierro published her study *Bāṭinism in al-Andalus*,¹¹ the traditionalist Maslama b. Qāsim al-Qurṭubī (d. 353/964) has generally been considered the author of these important works.¹² However, it is not clear whether *Mufākhara* was penned by the same author as *Rutba* and *Ghāya*. This is because *Mufākhara* contains a quote from the famous late ‘Abbāsid poet and prose author Abū l-‘Alā’ Aḥmad b. ‘Abd Allāh b. Sulaymān al-Ma‘arrī (d. 449/1058), who is mentioned by the author of *Mufākhara* as Abū l-‘Alā’ b. Sulaymān.¹³ Al-Ma‘arrī is the author of the fairly influential work *Risālat al-Ghufrān* (“The Epistle of Forgiveness”), and was born after the death of Maslama b. Qāsim al-Qurṭubī in 363/973.¹⁴ If this is not an interpolation, then *Mufākhara* was written after the end of the 4th/10th century. The flyleaf also contains a note, according to which the alchemist ‘Alī b. Sa‘ad al-Anṣārī (fl. 8th/14th century)¹⁵ attributed *Mufākhara* in his book, *Faṭḥ al-waṣīd fī taṭhīr al-ḥadīd* (“Opening of the Barrier on Cleansing Iron”), to Maslama al-Majrīṭī.¹⁶ Therefore, *Mufākhara* must have been composed before the end of the 8th/14th century.

A second attestation of a section of *Mufākhara* is found in *Nihāyat al-ṭalab fī sharḥ al-Mukṭasab* (“The Ultimate Pursuit in the Commentary on the Acquired”) by Aydamir al-Jildakī (fl. 8th/14th century).¹⁷ This testimonial provides us with further insights on *Mufākhara*. Al-Jildakī mentions that he took an extract from *Kitāb al-Aḥjār* (“The Book of Stones”) by Maslama al-Majrīṭī. This extract contains the same alchemical knowledge as the corresponding section of *Mufākhara*,¹⁸ but unlike the latter, it does not impart this through a dialogue of multiple characters. Therefore, it remains unclear whether *Mufākhara* is a rewriting of *Kitāb al-Aḥjār* in the form of an Arabic literary (*munāẓara*) debate by a later author. A further reason for dating *Mufākhara* later than the 4th/10th century is that *munāẓarāt* –

10 Sezgin 1971: 298.

11 Fierro 1996: 97–102.

12 See, for example, Madelung 2017: 119. This theory is especially supported by Godefroid de Callataÿ and Sebastien Moureau, Callataÿ 2013: 315–316; Callataÿ/Moureau 2015: 392–394; Callataÿ/Moureau 2016: 330–336, whereas Richard Todd considers Fierro’s argument less convincing, Todd 2016: 127, fn. 55.

13 Istanbul, Süleymaniye, Vehbi 2237, fol. 36a: “O, how bizarre it is, that the good is often regarded as something inferior; o, what a pity it is that the inferior often seems to be something good.” فووا عجبى [صخ: عجباً] كم يدعى الفضل – ناقص ووا أسفاً كم يظهر النقص فاضل.

14 Smoor 1986: 927, 933.

15 Kaḥḥāla 1957: 98b.

16 Unfortunately, I was unable to verify this note in the book of ‘Alī b. Sa‘ad al-Anṣārī myself.

17 Berlin, Staatsbibliothek zu Berlin, Landberg 350 (Ahlwardt 4184), fol. 127a–129b.

18 Istanbul, Süleymaniye, Vehbi 2237, fol. 12a, 15b, 16a, 20b, 21a.

the literary genre to which it belongs – with didactic function¹⁹ and minerals as participants are more typical of writings post-dating the 6th/12th century.²⁰

With regard to other books with the title *Kitāb al-ahjār* attributed to Maslama al-Majrīfī, Manfred Ullmann mentions that the Bodleian Library preserves a five-page fragment of a *Kitāb al-Ahjār*,²¹ but this fragment²² does not correspond to the section which al-Jildakī quoted. This *Kitāb al-Ahjār* is not an alchemical work, but rather a book on stones in a classical sense, as it describes different kinds of stones and their sympathetic qualities. The section quoted by al-Jildakī and *Mufākhara* as a whole, however, are clearly linked to alchemy. Fuat Sezgin mentioned a third manuscript entitled *Kitāb fī ‘ilm al-ahjār wa-tadbīrihā* (“The Book of the Science of the Stones and their Process”)²³ and raised the question of whether the fragment from the Bodleian Library is from *Mufākhara* or from *Kitāb fī ‘ilm al-ahjār*.²⁴ However, it seems that the fragment does not correspond to *Kitāb fī ‘ilm al-ahjār* either, as it contains recipes for transforming common stones into gemstones. Only after the discovery of more testimonials of these books will more clarity be given about the links between *Mufākharat al-ahjār*, *Kitāb al-Ahjār*, and *Kitāb fī ‘ilm al-ahjār*.

The term *mufākhara*, which appears in the title of the book, *Mufākharat al-ahjār*, is the verbal noun of the verb *fākhara* which has a reflexive as well as an active meaning: to praise oneself or to contest for precedence and glory.²⁵ The term *mufākhara* as self-praise appears in the earliest Arabic poetry and was practiced by warriors in battle to impress or frighten their opponents by presenting their strengths and power. Later, *mufākhara* became an important part of the majority of the classical Arabic *qaṣā’id*.²⁶ *Mufākhara* as a contest for precedence and glory was performed by Arabs in the periods prior to Islam and was a combat for glory between groups, tribes, clans, etc. Within a *mufākhara*, the poet or spokesman of a party boasted everything that confirmed the power and honour of his people while defaming their opponents.²⁷ After the spread of Islam, the Arabs continued to

¹⁹ Wagner 1962: 456. For more information on the didactic function of *Mufākhara*, see page 460 of the present work. Van Gelder names an earlier *munāẓara* – *Salwat al-ḥarīf bi-munāẓarat al-rabī‘ wa-l-kharīf* (The Friend’s Comfort: On the Disputation of Spring and Autumn) – as an example for the didactic function of this genre, but this *munāẓara* was also composed after the 4th/10th century, van Gelder 2020a. See also van Gelder 2020b: 180.

²⁰ Wagner 1962: 454–456.

²¹ Ullmann 1972: 122.

²² Oxford, Bodleian Library, Marsh 452, fol. 60b–63a.

²³ Istanbul, Süleymaniye, Vehbi 2272, fol. 36a–42a.

²⁴ Sezgin 1971: 298.

²⁵ Wagner/Farès 1993: 308b.

²⁶ Wagner/Farès 1993: 309a.

²⁷ Wagner/Farès 1993: 309b.

practice *mufākharāt*, even in front of caliphs, but in general the *mufākhara* lost its importance.²⁸

In the book *Mufākharat al-ahjār*, a verbal dispute between several stones or alchemical substances takes place, just like the *mufākharāt* between the Arabs in the days prior to Islam. It should be noted that the word *mufākhara* is also a term for *munāẓara* or *muḥāwara*, the Arabic literary debate or dispute poem.²⁹ The *munāẓara* is a literary genre that includes humans, anthropomorphs, or animals competing verbally for glory by presenting their own strengths and exposing the weaknesses of others.³⁰ It is highly likely that this genre of Arabic texts existed since the mid to late 3rd/9th century, becoming fully developed by the 4th/10th century.³¹ Despite the existence of literary debates in other and previous cultures and languages like Sumerian and Akkadian,³² Ewald Wagner holds the view that the *munāẓara* developed autochthonously in the Arab world. One reason for his point of view is that self-praise, which is an essential part of all *munāẓarāt*, had been performed in Arabic poetry since its earliest times,³³ as demonstrated above. Geert Jan van Gelder, however, points to the improbability that the literary debate of previous cultures of the Middle East did not have any impact on the development of the Arabic *munāẓara*.³⁴

Mufākharat al-ahjār also belongs to the Arabic *munāẓara*, and encompasses a dispute between 27 anthropomorphic characters. These include metals, stones, animals, and organic matter, each of which claims to be the philosopher's stone. This discordance is a result of Hellenistic alchemists claiming different types of matter to be the philosopher's stone.³⁵ The author mentions in the prologue that each of the previous alchemists spoke about a different substance when referring to the philosopher's stone to obscure the content of alchemy from dishonourable

²⁸ Wagner/Farès 1993: 310a.

²⁹ Wagner 1962: 442. The term *munāẓara* is also used for theological disputation, which is why Regula Forster suggests the use of the term *mufākhara* for Arabic literary debate instead of *munāẓara* in order to differentiate it from the former, Forster 2017: 13.

³⁰ Wagner 1962: 437.

³¹ Van Gelder 1987: 330; Mattock 1991: 156.

³² See for example, Jiménez/Mittermayer 2020, especially the contributions from pages 11–159; Jiménez 2017; Reinink/Vanstiphout 1991, especially the contributions from pages 7–152.

³³ Wagner 1962: 442, 468.

³⁴ Van Gelder 1987: 329–335.

³⁵ Istanbul, Süleymaniye, Vehbi 2237, fol. 5a–5b.

persons.³⁶ To find a solution to their quarrel, the stones ask the corundum – a ruby³⁷ – to assume the office of judge, and to rule on which of them is the philosopher's stone. After begrudgingly accepting this position, the corundum invites all stones and substances to present their opinions in four trials within a *majlis* – an assembly hall or a court. Firstly, the corundum allows the seven stones to speak, which are assigned to the seven planets. These are the metals lead (Saturn), tin (Jupiter), iron (Mars), copper (Venus), gold (Sun) and silver (Moon) as well as mercury (Mercury),³⁸ which, according to the predominant alchemical classification of minerals, is a spirit³⁹ rather than a metal.⁴⁰

Aside from gold and silver, each of the seven stones or metals presents its own benefits and the negative characteristics of its opponents.⁴¹ This is demonstrated in the dispute between lead and copper:

I [lead] am the first of the stones and their master, because I am attributed to Saturn. It is the first of the planets, the smallest in substance, the largest in body, and the highest in sphere. I am the ruler over all that is beneath me. Even the Sun, chief of the planets, is afraid of me. When I approach it, fear takes hold of it. Likewise, gold – Lord and King of the Stones, and they desire of being like it – if it smells my odour it moulders, becomes dry, busts and breaks. [...] I am the brother of gold. If my outside appearance is cold and dry, my inside is warm and moist.⁴²

Through the exchange of blows between lead and copper, the author conveys alchemical information: lead is attributed to Saturn and has the qualities of dryness and coldness in its external appearance, but internal moisture and warmth. Lead's assertion that it crushes gold might be alluding to the fact that it pollutes gold, whereas the description of lead being the brother of gold refers to the similarities between gold and lead, such as their softness. Furthermore, lead is cold and dry whereas gold is warm and moist. According to the theories of Arabic-writing alchemists, each metal displays two exterior qualities that contradict its interior

36 Istanbul, Süleymaniye, Vehbi 2237, fol. 5a–5b.

37 A ruby is a variety of the mineral corundum. Encyclopaedia Britannica 2020: Ruby.

38 Istanbul, Süleymaniye, Vehbi 2237, fol. 5b–7b.

39 The spirits are, according to the Jābirian corpus, those substances which volatilise completely in fire. Kraus 1942: 18.

40 See for example the alchemical classification of minerals by al-Rāzī, Al-Rāzī's *Buch Geheimnisse der Geheimnisse* [i.e. *Kitāb al-asrār*, not *Sirr al-asrār*]: 84–85 or Jābir b. Ḥayyān, *Kitāb Ikhrāj*: 61.

41 Istanbul, Süleymaniye, Vehbi 2237, fol. 7b–24b.

42 Istanbul, Süleymaniye, Vehbi 2237, fol. 10a:

وأنا فأول الأحجار وسيدّها لأنّي منسوب إلى زحل وهو أول ما يكون من الكواكب وهو أصغرّها جوهرًا وأكبرّها جرمًا وأعلاّها فلکًا. ولي السلطان على جميع ما تحتي حتى أنّ الشمس التي هي رأس الكواكب تزفع [صح: تفرع] مني. وأنا إذا قربتها تولد فيها الخوف مني. كذلك إذا شم رائحتي الذهب الذي هو سيدّ الأحجار وملکها، وانّها تشتهي أن تكون مثله، تفتّت ويبس وتلف وتكسر [...]. أنا أخو الذهب وإن كان ظاهره [صح: ظاهري] البارد واليبس فباطني حار رطب.

qualities.⁴³ Therefore, lead is gold on the inside. The answer of copper, which is quoted in the introduction of this paper, gives further information about lead. The yellow earth, for example, stands for massicot / lead(II) oxide, which results from the burning of lead. Moreover, lead chemically reacts to vinegar, creating lead acetate.

Information about chemical substances is not the only type of knowledge conveyed through the competition between the metals. The work also contains the author's cosmological and cosmogonic beliefs. The corundum passes a judgement after all of the metals and mercury have spoken their opinions, concluding that gold, silver and lead are the most important stones,⁴⁴ but it also concedes the important roles of the other participants in the first trial for the alchemical operation.⁴⁵

The second part of the competition takes place between the spirits (*arwāh*) such as sulphur, arsenic, ammonium chloride / sal ammoniac and some bodies (*ajsām*) like magnesia, soda and talcum. The spirits are the dyeing substances, according to Hellenistic alchemy.⁴⁶ While the first competition paid particular attention to metals and cosmology, the second is dedicated to the sins of man and his torture in hellfire.⁴⁷ Focus on sins and redemption in an alchemical treatise is not a rarity: according to Sheppard, the redemption theme can be traced back to Hellenistic alchemy and is most probably a result of the influence of Gnosticism during the its formation.⁴⁸ Be that as it may, the corundum decides that sulphur and arsenic are more honourable than the other participants of the second trial.⁴⁹

The third dispute takes place between hair and four bodily fluids: blood, sperm, urine and bile. However, in this case, the corundum judges that none of them are relevant to the formation of the philosopher's stone. In justifying this judgement, it explains among other reasons that a human must conduct religious cleansing⁵⁰ after the fluids leave the body. This shows that the author does not regard organic matter as important for the generation of the philosopher's stone.⁵¹

⁴³ Jābir b. Ḥayyān, *Kitāb al-Sab'īn*: 465–470.

⁴⁴ Istanbul, Süleymaniye, Vehbi 2237, fol. 24b.

⁴⁵ Istanbul, Süleymaniye, Vehbi 2237, fol. 22b–23a.

⁴⁶ Zosimos, *The Keys of the Work*: 75.

⁴⁷ Istanbul, Süleymaniye, Vehbi 2237, fol. 24b–33a.

⁴⁸ Sheppard 1959: 42.

⁴⁹ Istanbul, Süleymaniye, Vehbi 2237, fol. 33a.

⁵⁰ Depending on the bodily fluid, a Muslim must conduct a ritual cleansing in order to be able to perform his/her religious rituals – Bousquet 1991: 1104; Bosworth 2002: 218–219.

⁵¹ Istanbul, Süleymaniye, Vehbi 2237, fol. 33a–36b.

In the fourth trial, which can be considered the most occult, a fight between an egg, a camel, a hen, a slug and a red cock takes place. All of the characters are allegories of the different stages of the generation of the philosopher's stone. For instance, the hen says to the camel that it resembles the dissolution of strengths and parts.⁵² Apart from the whitening, the dissolution is one of the most important processes during the transmutation, a fact which is in accordance with *Kitāb al-Rawḍa*,⁵³ and is mentioned in the Jābirian corpus as well.⁵⁴

The outcome of the dispute is not clear due to the confusing and obscure description of events in the last part of the debate, as well as the messy script of the copyist. In addition, the last folio of the only extant manuscript is missing. A newer hand has pencilled the explicit of the book in the margin of the penultimate folio. Nevertheless, the ruby seems to accord every participant of the trials a part in the process of synthesising gold – even organic matter and animals are used as pseudonyms for alchemical substances and principles.⁵⁵

Curiously, the author refers to all the substances mentioned as stones, including the minerals, animals and bodily fluids. The Arabic term for stone, *ḥajar*, has been used as a hypernym for minerals in general,⁵⁶ and yet it appears that through the usage of the word *stone* to refer to different minerals and organic substances, the author is in fact hinting that the philosopher's stone is not actually a stone. This has been mentioned long before the composition of *Mufākhara*, in the third alchemical book on the making of precious stones by Pseudo-Democritus.⁵⁷ The real nature of the philosopher's stone must never be revealed, and in accordance with this tradition, the alchemists spoke about different types of matter, minerals, plants, and organic substances when referring to the philosopher's stone. For this reason, all characters are described as stones in the narrative.

With respect to the literary construction, *Mufākhara* is composed in prose and rhymed prose (*sajʿ*) and contains some poetry verses by other authors, such as al-Maʿarri.⁵⁸ The dispute is recounted by a neutral third person narrator, who relays the occurrences of the trials chronologically. Therefore, the narration is based on a linear plot wherein the narrating time almost coincides with the narrated time. Only some of the reflections of the ruby and the substances are

52 Istanbul, Süleymaniye, Vehbi 2237, fol. 36b–39b.

53 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 82b–84b.

54 Jābir b. Ḥayyān, *Kitāb al-Ḥabīb*: 394.

55 Istanbul, Süleymaniye, Vehbi 2237, fol. 39b.

56 Ullmann 1972: 95.

57 Martelli 2017: 249.

58 Istanbul, Süleymaniye, Vehbi 2237, fol. 36a.

narrated in time lapses.⁵⁹ The direct speech between the interlocutors predominates the narrative. Therefore, the narrator has a minor part of the speech in the *munāẓara*, mainly used to indicate a changeover from one interlocutor to another through “it said”.⁶⁰ Only the physical combat between the cock and the slug is described in more detail by the narrator.⁶¹ The same applies to information on time and spacing. The quarrel between the stones occurs because the ancient alchemists praised different substances as their philosopher’s stone. From this information it can be assumed that the dispute takes place after the flourishing of Hellenistic alchemy, but there is no further clear reference to a certain time or place in the book. The *majlis* – an assembly hall – is the only location named for the competition.

With regard to the descriptions of the 27 participating interlocutors, the narrator provides the reader with very limited information of their outward appearance, the non- and paraverbal communication between them, as well as their emotions. Besides the fact that the stones speak, there are some further indicators that lead one to assume that the characters are human in appearance. This applies to the following descriptions: “Iron rose on its feet and in its hand was a sword”⁶² and “It [sulphur] kissed the hand of gold ...”⁶³ However, there are no further details on their clothing, facial features or physique. It is also not possible to clearly depict the characters of hair and the bodily fluids, as well as the animals. Do the latter appear as humans or animals in the *munāẓara*? This question can be raised because of certain descriptions by the narrator, such as: “They embark on the ruby carrying the cock in a coffin.”⁶⁴

Furthermore, facial descriptions are absolutely absent, with one exception: “Mercury said in rage, angrily and with an evil face ...”⁶⁵ In addition, some non- and paraverbal descriptions are given, like: “Then, it [iron] turned to copper with tremendous anger and said ...”⁶⁶ and “It [silver] yelled ...”⁶⁷ Information transferred through the narrator that deals with emotion concerns the reactions of the participants, such as: “...it became cheerful ... (*tābat nafsuhu*)”⁶⁸ and “Then, copper stood up straight and was angry because of what it heard from lead

59 Istanbul, Süleymaniye, Vehbi 2237, e.g. fol. 6a, 33a.

60 Istanbul, Süleymaniye, Vehbi 2237, e.g. fol. 7b, 14a, 12b: قال.

61 Istanbul, Süleymaniye, Vehbi 2237, fol. 38b–39b.

62 Istanbul, Süleymaniye, Vehbi 2237, fol. 12b: ... ثم أن الحديد قام على قدميه وبيده سيف.

63 Istanbul, Süleymaniye, Vehbi 2237, fol. 32b: ... فقبل يد الذهب.

64 Istanbul, Süleymaniye, Vehbi 2237, fol. 39a: فحملوا إلى الباقوت والديك محمول في تابوت.

65 Istanbul, Süleymaniye, Vehbi 2237, fol. 22a: فقال الزئبق حنقاً مغضباً مقطب الوجه ...

66 Istanbul, Süleymaniye, Vehbi 2237, fol. 12b: ... ثم اللتفت [صخ: التفت] بحرد عظيم إلى النحاس قال له ...

67 Istanbul, Süleymaniye, Vehbi 2237, fol. 15b: ... زعقت.

68 Istanbul, Süleymaniye, Vehbi 2237, fol. 7b: ... طابت نفسه ...

regarding its self-praise and its ostentation about itself and its blame for the others ...”⁶⁹

As shown through the latter example, the emotions which are depicted most prominently in *Mufākhara* are anger and rage because of the exchange of insults between the interlocutors, as well as the exaggerations and hubris of many stones. This can be observed in examples of verbal combat like: “Shut up! You do not belong to the praiseworthy. Your tongue has indulged itself in defaming the stones and in praising yourself.”⁷⁰

The 27 characters represent, as previously mentioned, chemical substances, allegories, pseudonyms and alchemical principles. Not all of the characters participate in the debate, like the ruby, whose assignment it is to judge between the other substances. Some of the other characters also have an advisory function, like gold and silver, who do not participate in the combat because the aim of all other substances is, without any question, to become gold or silver.

The interlocutions between the combatants are structured in such a way that each participant presents its benefits in front of the judge. The following participant dissents the previously mentioned benefits of its opponent and presents the weaknesses of his adversary, as well as his own virtues, to the judge. In some cases, multiple exchanges of speech can appear between two characters, as between lead and copper.⁷¹ It can also be observed that some characters defend others, as when iron defends lead from the insults of copper.⁷²

The relations between individual participants in the competition are asymmetric. In general, the more precious a substance, the more respectable its behaviour. Gold is the most valuable substance and acts as an omniscient teacher and advisor to the judge. It does not insult others and shows moral character, unlike other interlocutors.

The arguments cited by the interlocutors are logical from an alchemical perspective. This becomes clear, for example, through the above-mentioned reaction of copper after hearing the self-praise of lead. It insults lead by describing it as cold and dry in the nature of death, which is an allusion to an alchemistic theory, or by saying that it becomes damaged by vinegar, which is a chemical fact.⁷³ In some cases, Qur’ān or poetry verses like those of the mystic and alchemist Dhū

69 Istanbul, Süleymaniye, Vehbi 2237, fol. 10b:

ثم قام النحاس منتصباً وهو مغضباً مما سمع من الأسرب من افتخاره ومدحه لنفسه وذمه غيره...

70 Istanbul, Süleymaniye, Vehbi 2237, fol. 15b:

أسكت! فما أنت من أهل المدح. انبسط لسانك في ذم الأحجار ومدح نفسك.

71 Istanbul, Süleymaniye, Vehbi 2237, fol. 10b–12b.

72 Istanbul, Süleymaniye, Vehbi 2237, fol. 13b.

73 Istanbul, Süleymaniye, Vehbi 2237, fol. 11a.

al-Nūn are used by the characters to underline their superiority or to verify a statement.⁷⁴ However, in *Mufākhara* some arguments mentioned are less convincing, including from the alchemical perspective. For example, the hair underlines its superiority by saying that humans, who are the noblest of all animals, have hair. The blood contradicts the hair by replying that a human can live without hair when becoming older and bald.⁷⁵ However, the last trial, in which hair and blood appear, is the most occult and enigmatic part of *Mufākharat al-ahjār*.

As indicated through the verbal sparring between lead and copper, *Mufākharat al-ahjār* has a clear didactic function. Information is provided on the assignment of metals to the planets, alloys and chemical properties (according to the ancient alchemistic theories). The author of *Mufākhara* himself states in the introduction that he introduces alchemical knowledge by letting the substances speak for themselves to make it easier for the listener (*sāmi*) to absorb alchemical knowledge.⁷⁶ The didactic function is not atypical for the literary genre of the *munāẓara*.⁷⁷ Van Gelder points, for example, to the didactic function of *munāẓarāt*, especially in the *munāẓara Salwat al-ḥarīf*, wrongly attributed to al-Jāḥiẓ (d. December 868 or January 869), through which knowledge about the Galenic humours and temperaments as well as diseases are transferred.⁷⁸

Other features of *Mufākharat al-ahjār* also belong to the typical characteristics of a *munāẓara*. This is demonstrated by the mixed use of prose and rhymed prose in the book,⁷⁹ the structure of the plot, and the constellation of its characters. Multiple characters can take part in a *munāẓara*, which can also include an arbiter,⁸⁰ like the ruby in *Mufākhara*. The inanimate and humanised objects of a *munāẓara* may present their arguments by turns or declare their superiority in successive monologs.⁸¹ A *munāẓara* can end in different ways: it may be concluded with an open ending, the declaration of a winner, the reconciliation between the rivals, or with the arbiter's ascertainment of equivalence between the adversaries.⁸² The latter applies to *Mufākhara*, where the ruby declares the supremacy of some substances like silver, gold, lead, and sulphur, but also admits to the significance of the other participants in the alchemical operation.

⁷⁴ Istanbul, Süleymaniye, Vehbi 2237, fol. 13b, 33b, 38b.

⁷⁵ Istanbul, Süleymaniye, Vehbi 2237, fol. 34a–34b.

⁷⁶ See page 450 of the present article.

⁷⁷ Wagner 1962: 456.

⁷⁸ Van Gelder 2020a.

⁷⁹ Wagner 1993: 566.

⁸⁰ Wagner 1962: 439, 441.

⁸¹ Wagner 1962: 441–442.

⁸² Wagner 1962: 441; van Gelder 1987: 330.

Lastly, *Mufākhara* contains some similarities with the famous animal fable of the Ikhwān al-Ṣafā' commonly known as *The Case of the Animals versus Man before the King of the Jinn*.⁸³ This fable also features a trial, but in this case the animals ask the king of the jinn to judge whether mankind has the right to rule over and mistreat them.⁸⁴ Previous investigations on occult books attributed to Maslama al-Majrīṭī by Hellmut Ritter,⁸⁵ Godefroid de Callataÿ⁸⁶ and others demonstrate that they depend to a large degree on the *Epistles of the Brethren of Purity* with regard to style and content. The same applies to *Kitāb al-Rawḍa*.

3 The tale of the sage in the cave of the jinn

Kitāb al-Rawḍa ("The Book of the Garden") is another alchemical work attributed to Maslama al-Majrīṭī. The author states that he gives the disciples of alchemy an overview of the most important alchemical theories and concepts through *Kitāb al-Rawḍa*:

The reader should know that I entitled my book 'The Garden' because in it the disciple explores the science from its beginning until its end, contemplating it and the meanings it contains, just like the onlooker strolls in a garden.⁸⁷

Kitāb al-Rawḍa is preserved in six manuscripts,⁸⁸ with the oldest of them having been dated by Fuat Sezgin to the year 756/1355–6.⁸⁹ Various authors are mentioned in the manuscripts, such as Maslama al-Majrīṭī, Jābir b. Ḥayyān, or the author or owner (*ṣaḥīb*) of *Rasā'il Ikhwān al-Ṣafā'*, as well as differing titles such as *Kitāb al-Rawḍa*, *Kitāb Rawḍat al-ḥadā'iq wa-riyāḍ al-ḥaqā'iq fī l-ṣinā'a* or *Kitāb Rawḍat al-khalā'iq wa-riyāḍat al-ḥaqā'iq fī l-ṣan'a al-ilāhiyya wa-l-asrār al-rabbāniyya*, which is not unusual for alchemical writings.⁹⁰ Fuat Sezgin attributed *Kitāb al-Rawḍa* to

⁸³ Ikhwān al-Ṣafā', *The Case of the Animals versus Man before the King of the Jinn*.

⁸⁴ Callataÿ 2018: 357.

⁸⁵ Pseudo-Majrīṭī, *Das Ziel des Weisen. German version*.

⁸⁶ Callataÿ/Moureau 2016.

⁸⁷ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 85b:

فليعلم القارئ له إنما سميت كتابي هذا الروضة لأن المتعلم يرتاض فيه من أول العلم إلى آخره، ويتفرج فيه وفي معانيه الواردة فيه، كما يتنزه المتفرج في الروضة.

⁸⁸ Alexandria, Maktabat al-Iskandariyya, 1313 b, fol. 23a–25a; Alexandria, Maktabat al-Iskandariyya, 18626, fol. 1a–30a; Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 60a–85b, Kairo, Dār al-Kutub, 45727; Rabat, al-Khizāna al-Ḥasaniyya, 6250; Yazd, Vaziri Yazd Library, 154 (g 8 s).

⁸⁹ Sezgin 1971: 298 (Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 60a–85b).

⁹⁰ See, for example, Carusi 2016.

the same author as *Rutba* and *Ghāya*.⁹¹ Indeed, this alchemical work does not contain any references or other evidence to indicate another authorship. Therefore, if Maslama b. Qāsim al-Qurṭubī is indeed the author of *Rutba* and *Ghāya*, as Fierro suggests, then it is most likely that the book was penned in the 4th/10th century.

Kitāb al-Rawḍa is divided into twelve chapters, some of which deal with the different stages of the generation of the philosopher's stone, such as the chapter on blackening. This chapter contains a narrative about a sage searching for wisdom and knowledge in a wasteland. During his search, he encounters three brothers in a cave: a boy, a middle-aged man, and an old man.⁹² After the old man gives glad tidings and announces that the sage has reached his goal, all of the brothers claim to be the oldest and the best of the three, speaking in riddles to the sage, as in the following example:

Know I am a man of a few years, a child among my brothers! I am the youngest of them, I am the oldest of them and I am the strongest of them. I remain when my brothers die away. I do not perish and do not change. I am their lord, their protector and I hold them together. I am their father and they are my children. I foster them and I hold them together. If I did not exist, they would become separated.⁹³

The sage tries to understand and starts to think intensively about the brother's riddles.⁹⁴ During the interaction, the three brothers go through a metamorphosis: at first, they become five people, then a four-faced monster with the face of a lion, the head of a bird and two heads in the form of a sun and a moon. The monster's lion head informs the astonished sage that they are the children of Sarajīl, a king of the jinn, and that they are able to transform themselves into anything they wish. Thereafter they mutate into a marine animal, a Roman woman and a black dog. All of them mediate alchemical knowledge in enigmatic language to the sage, whereby the Roman woman represents the stage of the whitening and the black dog the stage of blackening.⁹⁵ The black dog brings a goblet in which serpents and dragons swim. The serpents and dragons start eating each other until one dragon remains, biting its own tail. It informs the sage that it will remain with the dead unless a certain substance is added to it. Thereupon, it becomes a high yellow mountain and a king appears – a symbol for the elaborated philosopher's stone.

⁹¹ Sezgin 1971: 298.

⁹² Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 79b.

⁹³ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 79b–80a:

اعلم أني أنا رجل صغير السن، طفل دون إخوتي، وأنا أصغرهم وأنا أكبرهم، وأنا أشد منهم قوة. أنا الباقي بعد فناء إخوتي. أنا لا أتلف ولا أتغير. وأنا سيدهم وحافظهم وجامع شملهم. وأنا أبوهم الكبير وهما أولادي. أنا أربيهم وأجمع شملهم، ولولا ي تفرقت جماعتهم.

⁹⁴ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 79b–82b.

⁹⁵ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 80b–81b.

While the sage looks in astonishment at the great and perfect king, the king enters his nose causing him to sneeze, and thus the sage awakens from his dream. Then, he demands from a dream reader that his dream be interpreted, but this dream reader only reveals that the adept made extensive use of a kind of snuff.⁹⁶

Dreams were considered a medium through which God or other higher powers would reveal the secrets of alchemy and enlighten honest and worthy disciples who dedicated their lives to the search for wisdom.⁹⁷ It is therefore not unusual that the author of *Kitāb al-Rawḍa*, an alchemist, finishes his tale with this nonetheless unexpected turn.

This tale is clearly an allegorical reflection of the alchemical *magnum opus*. Apart from the sage, all of the characters which appear in the narrative represent a principle of the philosopher's stone, or a certain step in the process of its generation. The first three brothers are symbols for the three components of the philosopher's stone: soul, spirit and body. From other explanations in *Kitāb al-Rawḍa*, one can draw the conclusion that the boy stands for the soul, the old man for the spirit, and the middle-aged man for the body. According to the speculations of the author, the philosopher's stone is one, but consists of three components,⁹⁸ a notion somewhat reminiscent of the Holy Trinity. The brothers, who serve as symbols for the past, present and future, may also represent a certain notion of wisdom; a wise person must remember the past in order to understand the present and to have foresight.⁹⁹ Besides the three brothers, additional figures appear that stand for the raw materials from which the *materia prima*,¹⁰⁰ represented in the tale by the four-faced monster, is generated. The black marine animal is a symbol for the stage of the first blackening, whereas the Roman woman represents the whitening. After the whitening, the alchemical substance becomes black again; this is the ultimate stage before the completion of the philosopher's stone and is represented by the black dog. The author dedicated the chapter on *al-sawād* (the blackening) to this second blackening because most alchemists thought that their procedure failed when the beautiful white substance, symbolized by the Roman woman, became black. The author clarifies that the black colour appears because the substance has not been perfectly cleaned. It is merely an accident and should disappear after the right treatment. Therefore, the author admonishes the adepts of alchemy not to despair at

⁹⁶ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 81b–82b.

⁹⁷ Lippmann 1919: vol. I, 77.

⁹⁸ The trinity of the philosopher's stone is transmitted in many alchemical treatises. See, for example, Jābir b. Ḥayyān, *Kitāb al-Ḥajar*: 89; Dufault 2015: 233; and Browne 1946: 131.

⁹⁹ For example, see the meaning of boy, middle-aged man and old man in the painting *Allegory of Prudence* by Titian, Panofsky 1955: 149–150.

¹⁰⁰ Olivier Dufault considers the use of the term *materia prima* by modern historians to describe the alchemical product of the blackening critically. Dufault 2015: 222.

the black colour or to behave as the sage in the tale, who becomes afraid of the black dog.¹⁰¹ The serpent eating its own tail, which appears after the black dog, is named *ouroboros* in the ancient Hellenistic writings and is a symbol for the unity of matter. The symbol can be traced back to ancient primitive religious cults and was therefore not a symbol restricted to alchemy.¹⁰² The earliest references to the *ouroboros* can be found in Egypt and date back to the period around 2300 B.C. However, it is highly possible that it was influenced by other cultures surrounding ancient Egypt. In Hellenistic alchemical writings, the symbol is often followed by the inscription ἕν τὸ πᾶν – *hen to pān* – the One is the All. It represents the cycle of nature and the dualistic theory that the separation of All is out of the One and that the All will finally return to the One.¹⁰³ In *Kitāb al-Rawḍa*, its primary function is to elucidate that the dead return to life. This corresponds to the Hellenistic idea that all regeneration ends in a reversion to the primary state.¹⁰⁴ The *ouroboros* instructs the sage to return his soul to it so it can be resurrected. The spirit and the soul must both be extracted from the philosopher's stone in order for each of them to undergo a special purification. Without being cleansed, the spirit and the soul cannot resurrect the dead body.

The *Tale of the Sage in the Cave of the Jinn* has a more typical character of an alchemical dialogue than *Mufākharat al-aḥjār* due to its construction as a conversation between an adept of alchemy seeking knowledge and wisdom and the jinn, who function as transmitters of alchemical secrets. It is based, for the most part, on a question-answer structure and is reminiscent of the dialogue between Zosimos and Theosebeia in *Muṣḥaf al-ṣuwar*. Other examples of this kind of alchemical interlocution appear in several alchemical treatises attributed to Khālīd b. Yazīd.¹⁰⁵ Furthermore, the interlocution is interrupted by a longer explanation on the second blackening by the author of the book.¹⁰⁶

The tale is narrated in prose and is based on a linear plot, like *Mufākharat*, where the narrating time of the tale corresponds with the narrated time. It does not contain specific information about the time and place of the interlocution between the sage and the jinn apart from a wasteland and a cave on a mountain, yet the tale provides some hints alluding to certain locations. The boy reveals to the sage that his father built a temple in Anṣina for him and his brothers, in which he depicted the symbols of the brothers, the sciences and the secrets. The word *barbā* (temple), derived from the Coptic *p'erpe*, refers specifically to the temples of the ancient Egyptians.¹⁰⁷ It can

101 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 81b–82a.

102 Sheppard 1962: 83.

103 Sheppard 1962: 91–94; see also Van der Sluijs/Peratt 2009.

104 Sheppard 1962: 94.

105 For example, see *Masā'il Khālīd li-Maryānus al-rāhib*, Forster 2016b.

106 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 81b–82a.

107 Siggel 1951: 19.

also be found in the *Ghāyat al-ḥakīm* which is attributed to Maslama al-Majrīṭī, too.¹⁰⁸ The old city of Anṣina or Antinopolis was built in Roman times on the site of an ancient Egyptian village. Zosimos of Panopolis suggested in his alchemical writings that the hieroglyphs found at historical sites of the ancient Egyptians contain alchemical knowledge and secrets;¹⁰⁹ the chapter on the blackening clearly demonstrates that its author presumes this as well.

Finally, the father mentioned by the brothers is most probably Hermes, who was considered the founder of alchemy.¹¹⁰

The tale is narrated by a neutral third-person who provides more detailed information about the appearance of the interlocuters and their actions than the recounter of *Mufākharat al-aḥjār*, even though direct speech predominates here as well. The narrator transfers clear descriptions of the characters, such as the four-faced monster: "... the five [persons] became a black, glossy one of a disfigured shape with four faces: the faces of a lion and a bird, an image of a sun and an image of a moon."¹¹¹ However, the narrator does not mention any non- or paraverbal communication between the participants of the dialogue.

Nine characters take part in the dialogue, but several of them are different incarnations of the jinn. Other characters, like the king or the dream reader are mentioned in the tale but are not granted with direct speech. The jinn know the secrets of alchemy but transfer them to the sage in riddles; this can also be observed in other alchemical interlocutions, such as *Muṣḥaf al-ṣuwar*, for example. Within the answers of the jinn there appears only one reference to an authority in an expression attributed to Socrates.¹¹² The function of the interlocution in *Kitāb al-Rawḍa* is to create a thought-provoking impulse in the reader to solve the enigmatic language of alchemical treatises. Furthermore, several pseudonyms are mentioned within the answers of the jinn. One of the jinn in the form of a middle-aged man informs the sage that he received pseudonyms from previous alchemists, such as water of the white rose and sea of sciences.¹¹³ Since the characters, apart from the sage and the dream reader, are representations of different steps in the alchemical operation or alchemical principles, the reader is able to classify those pseudonyms.

With regard to the emotions displayed throughout the tale, it can be noted that they are different from those in *Mufākhara*, where multiple anthropomorphic

108 Pseudo-Majrīṭī, *Das Ziel des Weisen. Arabic text*: 2.

109 Lippmann 1919: vol. I, 76.

110 Lippmann 1919: vol. I, 56.

111 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 80b:

... إذ صاروا الخمسة شيئاً واحداً أسود براقاً مشوه الخلقة، له أربعة وجوه. وجه أسد ورأس طائر وصورة شمس وصورة قمر.

112 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 81a.

113 Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 80b.

characters compete with each other, inciting emotions of rage and fury. The dialogue of the *Tale of the Sage*, on the other hand, is a conversation between a sage seeking wisdom from the inhabitants of the cave, and the cave dwellers themselves. As such, the speech of the cave dwellers is longer than that of the sage, who is mostly asking for more information and explanations. The inhabitants do not reveal their secrets in a straightforward manner to the sage, but rather make use of riddles, as mentioned previously. Accordingly, the emotions displayed by the sage are astonishment and desperation. The interlocutors of the *Tale of the Sage* treat each other politely, but the interlocution grows somewhat harsher when the four-faced monster urinates on the sage. The sage tries to defend himself by throwing something at the monster, who then calls him ignorant. The sage responds to this allegation by saying: “O Sir, I am searching for the secrets of knowledge and I do not know them. If I knew them then I would not search for them.”¹¹⁴ According to *Rutbat al-ḥakīm*, urine is a codename for the first substance that is separated from the philosopher’s stone,¹¹⁵ and could represent the *maghnīsiyā’*, the *materia prima* of the philosopher’s stone, as mentioned by Ibn Umayl (fl. 4th/10th century).¹¹⁶ Another important emotion depicted in the tale is fear. Fear certainly arises after the sage comes to know that the inhabitants of the cave are jinn and they transform into a four-faced monster. Fear resurfaces when the Roman woman transforms herself into a black dog.

This black dog, who holds the goblet in which serpents and dragons swim, is presented in a drawing in *Kitāb al-Aqālīm al-sab‘a* (The Book of Seven Climes), ascribed to al-Sīmāwī. The same applies to the many-faced monster and the *ouroboros*.



Dog and Ouroboros, Ouroboros, many-faced monster, Gotha Research Library of the University of Erfurt, Ms. orient. A 1261, fol. 8b, 6a, 19b.

¹¹⁴ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 81a.

¹¹⁵ Al-Qurtubī, *The Book of the Rank of the Sage*: 55.

¹¹⁶ Siggel 1951: 27.

Al-Sīmāwī lived after the occult works attributed to Maslama al-Majrīṭī had already been composed, but he relied on similar sources. As Marcel Marée and Bink Hallum have stated, many of the drawings in *Kitāb al-Aqālīm* are strongly connected to those in *Muṣḥaf al-ṣuwar*, which is attributed to Zosimos.¹¹⁷ In regard to their content, *Kitāb al-Rawḍa* and *Rutbat al-ḥakīm* and *Ghāyat al-ḥakīm* are also heavily derived from *Muṣḥaf al-ṣuwar*.¹¹⁸

4 The Narrative of the sage hunter and the teacher

Al-Sīmāwī (someone who practices *sīmiyā'* – white magic or natural magic)¹¹⁹ is the designation of Abū l-Qāsim Aḥmad ibn Muḥammad al-ʿIrāqī, who flourished in the 7th/13th century. His masterpiece is *Kitāb al-ʿIlm al-muktasab fī zirāʿat al-dhahab* (“The Book of Knowledge Acquired Concerning the Cultivation of Gold”).¹²⁰ His *Kitāb al-Aqālīm al-sabʿa* (“The Book of the Seven Climes”) is also considered an immensely significant book, but as to whether the book was actually penned by al-Sīmāwī remains quite a controversial topic.¹²¹ It contains copies of ancient Egyptian illustrations through which authentic hieroglyphic texts are delivered to the present time.¹²² At the present day, the book is preserved in several manuscripts,¹²³ of which the manuscript of the Gotha Research Library has been used for the following analysis. In the prologue of *Kitāb al-Aqālīm al-sabʿa*, al-Sīmāwī writes that earlier alchemists did not mention in their books or didactic writings the specific knowledge a beginner needs to access alchemy. To address this, he presents pictures through which the disciple can understand the hidden meanings of the alchemists’ symbols and analogies.¹²⁴ In regard to one of his drawings of the *ouroboros*, al-Sīmāwī mentions that this symbol can be found on a golden table at the head of a mummy in the pyramids.¹²⁵ This is but one example of

¹¹⁷ Marée/Hallum 2016.

¹¹⁸ Abt 2016: 18–19.

¹¹⁹ For more information on *sīmiyā'* and its signification, see Coullaut Cordero 2010 and Pielow 2019, especially the chapter *ʿIlm as-sīmiyā' und die Bedeutung der Gottesnamen*, pages 348–356.

¹²⁰ Ullmann 1972: 235.

¹²¹ Ullmann 1972: 237.

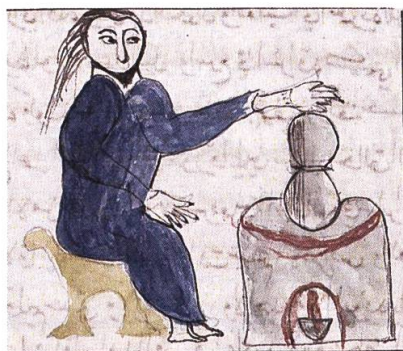
¹²² Marée/Hallum 2016. For further information on the importance of ancient Egypt for the occult sciences, see Toral-Niehoff/Sundermeyer 2018.

¹²³ See, for example, Cairo, Sultaniyya Library, V. 276; London, British Library, Add. 25,724 (Holmyard 1926: 403) or Gotha, Research Library, Ms. orient. A 1261, fol. 3b–39a.

¹²⁴ Gotha, Research Library, Ms. orient. A 1261, fol. 5a.

¹²⁵ Gotha, Research Library, Ms. orient. A 1261, fol. 25a.

the many images that were inspired by ancient Egyptian hieroglyphs. As an introduction to the enigmatic allegories and analogies of alchemy, he transmits pseudepigraphic quotes and lore from Hellenistic alchemists and Greek philosophers, such as Hermes,¹²⁶ Maria the Copt,¹²⁷ Plato¹²⁸ and Aristotle.¹²⁹ The pictures are often followed by explanatory, yet enigmatic tales and parables. For example, folio 30a depicts an alchemical procedure.



The alchemist, Gotha Research Library of the University of Erfurt, Ms. orient. A 1261, fol. 30b.

It is explained in the following dialogue:¹³⁰

قال المفيد: فبينما أنا كذلك من الرعب لما
رأيت لأمثالك، وإذا أبصرت قد ظهر من
وسط الجب المغلق، وقد تعالى حسنه للسمع.
ولتعرف، يا أيها الصائد الحكيم المفتخر على
الصيادين بتوليد العقيم، تعلم ما سؤد هذا¹³¹
الإقليم؟ ومن جعله كالليل البهيم؟

The instructor said: “Whilst I was terrorised by your similes, I watched as it appeared from the middle of the closed cistern and became audible. Do you know, O sage hunter, you whose propagation of sterility raises you proudly above the other hunters, what has turned this climate black? And who has made it dark as night?”

فقلت: لا أعلم.

I said: “I don’t know”.

¹²⁶ Gotha, Research Library, Ms. orient. A 1261, fol. 8b.

¹²⁷ Gotha, Research Library, Ms. orient. A 1261, fol. 15a.

¹²⁸ Gotha, Research Library, Ms. orient. A 1261, fol. 15b.

¹²⁹ Gotha, Research Library, Ms. orient. A 1261, fol. 23b.

¹³⁰ Gotha, Research Library, Ms. orient. A 1261, fol. 29b.

¹³¹ In MS Gotha, Research Library, Ms. orient. A 1261, fol. 29b: *hādhihi*.

فقال: اعلم أن الأعلى مدبر لما في الأسفل
والسافل مفعول والعالي فيه يفعل. وإنما
حصلت الظلمة في هذا¹³² الإقليم خاصة لأن
القمر كسف الشمس، فانقلب طبع أهلها
ومواليدهم لكون الكسوف في الطبع واللمس.
وهذه الكسوف عن قليل زائل لأنه سريع
الاستحالة حائل.

فقلت: يا أيها الهاتف، إنني من هذا¹³³ الكسوف
خائف. وقد ظننت أن القيامة ستقوم وأن
الآخرة قد حان فيها القدوم وذلك بقدرة الحي
القيوم. فقلت: أخبرني! هل عن أمر قريب
يزول أم هو عرض لا يحول؟

فقال لي: مدة زواله كمدة ظهوره واخر <؟>
فتجمد أموره ويكشف زحل بالقمر ويسير.
وينقلب إقليم زحل كله إلى البياض ويزول
العله ويبظهر الأعراض.

فقلت له: أفتدخل آخر يزول أذاك أم منك وبك
يكون شفاك؟

فقال: شفاي مني وبني إن علمت طبعي
ومطلبي، ولكنني بمواصله الحاكم أعني
القاضي الغير ظالم.

فلما سمع القاضي زاد في طربه بحدّ الحسام.

He said: "Know that the superlunar directs the sublunar! The sublunar gets affected and the superlunar affects it. Darkness has come to this clime only because the moon overshadows the sun. So, the nature of its peoples and their descendants was changed because the eclipse is in the nature and the touch. This eclipse will shortly perish because it alters rapidly."

I said: "O voice, I am afraid of the eclipse. I thought that the resurrection is near and that the time has come to cross over to the afterlife, and this through the power of the Subsisting and the Living¹³⁴." I said: "Tell me! Will it perish quickly or is it an accident that does not alter?"

He said to me: "The time for its perishing is as long as the time of its appearance. <?> therefore, its actions congeal, and Saturn is uncovered by the Moon and leaves. The whole clime of Saturn turns white as the cause perishes, and the accidents¹³⁵ appear."

I said to him: "Is something else necessary for your treatment or is your healing from yourself and through yourself?"

He said: "My recovery is from myself and through myself if you know my nature and my requirements, yet, only in cooperation with the righteous judge."

When the judge heard this, he became more ecstatic due to the sword's blade.

¹³² In MS Gotha, Research Library, Ms. orient. A 1261, fol. 29b: *hādhihi*.

¹³³ In MS Gotha, Research Library, Ms. orient. A 1261, fol. 29b: *hādhihi*.

¹³⁴ Two of the so-called most beautiful names of God (*asmā' Allāh al-ḥusnā*).

¹³⁵ The accidents according to Greek philosophy are meant here.

فقام لذلك فحوّلني قمريه فظهر القمر وغاب
بحسن الفلك أعني زحل ولم يظهر وأشرق
الإقليم وظهر واضاءً وذهب عرض السواد
ومضى.

فقال الهاتف: صورة رجل لونه أزرق وبين
يديه القرعة العمياء الأولى، والمركب قد
ابيض بعد السواد. وقد مدّ يده ويحبس رأس
القرعة خوفاً من شدة الحرارة. وتحت نار
الفتيلة وخلف الصورة هذه الأحرف: هذا إقليم
القمر من وسط إقليم زحل. قد ظهر لكن إقليم
القمر هو الغالب لكون ملكه إلى الأرض
متقارب ...

Therefore, he rose and transformed me into
his two moons. The moon appeared and it set
by the superiority of sphere; I refer to Saturn,
it did not appear, and the clime shone and
illuminated. The accidental blackness van-
ished and passed.

The voice said: “A picture of a man whose
colour is blue, in his hands is the first blind
flask. The compound became white after the
blackness. He reached out his hand and
restrained the head of the flask, frightened by
the intensity of the heat.¹³⁶ Under it is the fire
of a candle and behind this image [the
following] letters: This is the clime of the Moon
from the middle of the clime of Saturn. It
appeared, but the Moon’s clime is dominant
because his dominion is near to the
earth ...”¹³⁷

This dialogue is dedicated to the appearance of the clime of Saturn. The Arabic word *iqḷīm* for *clime*, is derived from the Greek κλίμα (*klima*) and usually describes a terrestrial belt in classical Arabic texts. Arabic-writing scientists relied on Claudius Ptolemy and divided the world from the North Pole to the equator into seven climes.¹³⁸ The names of the planets were used by alchemists to refer to metals.¹³⁹ Saturn represented, according to this nomenclature, lead – a dark-coloured base metal. However, the appearance of the clime of Saturn signals to the reader the blackening process of the alchemical substance. This blackening is also an important theme of the *Tale of the Sage in the Cave of the Jinn*, treated in the previous section. Al-Simāwī compares the blackness of the clime or alchemical substance with the solar eclipse and describes it as an accidental quality, just like the author does in *Kitāb al-Rawḍa*.¹⁴⁰ This characteristic of the blackness is the reason for its rapid disappearance.

¹³⁶ Gotha, Research Library, Ms. orient. A 1261, fol. 29b.

¹³⁷ Gotha, Research Library, Ms. orient. A 1261, fol. 30a.

¹³⁸ Miquel 1986: 1076–1078.

¹³⁹ Ullmann 1972: 267.

¹⁴⁰ Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 82a.

In general, the rise of the clime of Saturn is described by al-Simāwī in an obscure manner, and it is therefore not evident whom or what the characters of this narrative represent. Three characters appear in the narrative: an instructor or teacher (*al-mufīd*), addressed also with *al-hātif* (voice); a character who is cynically called *sage hunter* by the teacher (*al-ṣā'id al-ḥakīm*) and by whom the dialogue is narrated in a first-person perspective; and finally, an impartial judge who does not participate in the dialogue. The interlocution is therefore a bilateral dialogue. Based on his statement that he recovers through himself and by himself, the teacher seems to be an anthropomorphic representation of the philosopher's stone. This principle of the unity of the philosopher's stone is a crucial principle in alchemy.¹⁴¹ It signifies that the philosopher's stone can be led to completion only through itself and by itself, without the addition of any external ingredients. The sage hunter, or first-person narrator, seems to be an alchemist or a student of alchemy, but his identity cannot be clearly determined, as he goes on to say that the judge transformed him into his two moons. Similarly, the character of the judge is rather obscure, and his identity is also unknown.

When the teacher mentions the eclipse that takes place during the dialogue, the sage hunter is prompted to confess his fear that it is an indication of death approaching. In addition to the principle of the unity of the philosopher's stone, the theme of resurrection appears often in alchemical writings like *Kitāb al-Rawḍa*¹⁴² and is generally a medium through which the spiritual aspect of alchemy is reflected.¹⁴³ Before reaching completion, the philosopher's stone must be purified from its sins and has to suffer a metaphorical death. Afterwards, the stone is resurrected by its cleansed components.

With regard to the literary construction of the dialogue, it is written in rhymed prose (*saj'*) and does not contain specific information on the setting of the tale. As in the previous extracts from alchemical writings, the narrating time coincides with the narrated time, and direct speech predominates.

The first-person narrator, the hunter, mostly indicates the changeover between the interlocutors and only describes the actions of the judge. Descriptions of the characters, their non- and paraverbal communication, their facial expressions and their emotions are completely absent. From the direct speech very little information about emotions can be extracted, such as the hunter's fear of death, or the ecstasy of the judge upon hearing the conversation between the teacher and the hunter.

The dialogue between the teacher and the hunter is structured as a typical question-answer interlocution, but begins with the teacher asking the hunter as to

¹⁴¹ Lippmann 1919: vol. I, 343.

¹⁴² Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 82a.

¹⁴³ Lippmann 1919: vol. I, 287.

whether or not he knows what turned the climate black. All arguments mentioned in the answers of the teacher are logical from an alchemical perspective but are also very obscure. Due to this obscurity, a specific function of the dialogue, apart from being an explanation for the picture illustrated on *folio* 30a, cannot be identified.

The bilateral dialogue ends with a description of the image illustrated above and is followed by the explanation which, according to *Kitāb al-Aqālīm*, was written in the background of the original image and was copied by al-Simāwī. This short extract from the *Kitāb al-Aqālīm* clearly shows the extent of the occult and enigmatic character of Arabic alchemy. This is further demonstrated in the following poem.

5 The poem of seventy verses

The alchemical poem *al-Qaṣīda al-sabʿīniyya*, can be found in a collection of alchemical texts preserved at the Gotha Research Library.¹⁴⁴ The poem must have been composed after the 12th century, as it references *Sharḥ al-Shudhūr* – a commentary on *Shudhūr al-dhahab* (“Shards of Gold”) of Ibn Arfaʿ Raʿs (fl. 6th/12th century).¹⁴⁵ There exist various commentaries with the same title on *Shudhūr al-dhahab*, the earliest of them composed by Ibn Arfaʿ Raʿs himself in the 12th century.¹⁴⁶ Since the anonymous author of the poem does not provide further information on the mentioned commentary, it is not possible to establish a more accurate date for the composition of the poem than the period after the 12th century. The dialogue of the poem takes place between a master of alchemy – who refers to himself as *ḵabīr dhukūr* (“an expert among men”) and a sharp minded *ḡabya* – a gazelle.

The *qaṣīda* is divided into five parts: a prologue and four chapters about alchemical techniques: (1) “The First Sympathetic Composition” (*al-Tarkīb al-awwal al-mushārik*); (2) “Loss and Separation” (*al-Naqs wa-l-tafṣīl*); (3) “The Second Composition, Which Is the First” (*al-Tarkīb al-thānī wa-huwa al-awwal*); and (4) “The Reanimation of the Dead, Which Is the Solidification” (*Iḥyāʾ al-mawtā wa-huwa al-tajmīd*). The last part also forms the epilogue of the poem. The narrator provides some recommendations in the prologue. For example, he advises adepts who have studied the books of Jābir b. Ḥayyān, Ibn Waḥshiyya (called *Najl Waḥshiyya* in the poem, *najl* being a synonym of *ibn*, son) and other important

¹⁴⁴ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75a–76b.

¹⁴⁵ For more information see Todd 2016.

¹⁴⁶ Ullmann 1972: 232; see also Forster/Müller 2020, especially the chapter “Ḥall mushkilāt al-Shudhūr”, pages 376–379.

Arabic-writing alchemists, to also consider the older books of alchemy, so that they might understand the enigmatic language of the alchemists:

يا طالب العلم عليه يدور من كتب الرّازي وشرح الشذور
O seeker after knowledge, encircled by the books of al-Rāzī, by the commen-
tary to the *Shudhūr*
وَجَابِرٌ مَعَ نَجْلٍ وَحْشِيَّةٍ وَخَالِدُ الْأَوَّلِ ذَاكَ الْجَدُورِ
by those of Jābir b. Ḥayyān, Ibn Waḥshiyya, and that of Khālīd I.¹⁴⁷
عَلَيْكَ بِالْكَتَبِ الَّتِي أَلْفَتْ فِي سَالِفِ الدَّهْرِ تَنَالُ الْجَبُورِ ...
You have to consider the books which were composed in ancient times so that
you obtain magnificence ...¹⁴⁸

The ancient books mentioned here are a reference to the Hellenistic alchemists, whose important writings provided the only true information on the transmutation of base metals into gold and silver.

Thereafter, in the part of *The First Contributing Composition*, the narrator reports that a *ḡabya* came to him asking well-considered questions:

... وَظَبِيَّةٌ تَسْأَلُ عَنْ عِلْمِنَا سَوَالًا ذَا الْفُطْنَةِ جَمَالَ الْحُضُورِ
A gazelle asks about our science, a question of sharpness, charmingly phrased
وَقَدْ أَبَانَ السَّرَّ فِي وَجْهِهَا بِشَاشَةِ الْفَهْمِ وَبِشَرِّ الشَّعُورِ
The secret became clear in her face with a cheerful understanding and well-
meaning awareness
قُلْتُ سَلَى وَاقْتَصَدِي وَالتَّمْسِي فَقَدْ ظَفَرْتِي بِخَبِيرِ ذُكُورِ ...
I said: Ask, be parsimonious with your questions and request, you gained an
expert among men ...¹⁴⁹

It seems that the poem is a classical interlocution between a master of alchemy and his disciple. With regard to the disciple – the gazelle – some commentary is in order. Edward William Lane noted in his Arabic-English lexicon that the word *ḡabya* was used in classical Arabic poetry to refer to beautiful women.¹⁵⁰ Yet it is possible that this character is a personified gazelle, as personified animals are not a rarity in

¹⁴⁷ According to the Arabic alchemical tradition, the Umayyad prince Khālīd b. Yazīd was the first Arab alchemist. Forster 2016a: 15–16. For his works, see the contribution by Marion Dapsens in the present volume.

¹⁴⁸ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75a.

¹⁴⁹ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75a.

¹⁵⁰ Lane 1968: vol. V, 1908–1909.

alchemical treatises.¹⁵¹ On the other hand, the gazelle may represent the substance that reanimates the earth – a symbol for the body of the philosopher's stone:

... قالت فأبني الذي تحيا به الأرض ومنه تنور
... She said: I am that through which the Earth comes to life and through which
it illuminates.¹⁵²

The gazelle asks the master several questions about chemicals and the equipment used by alchemists. The direct speech of the gazelle is introduced by *qālat* ("she said") and the direct speech of the master by *qultu* ("I said"). Both are applied throughout the whole poem, as in the following verses:

قالت الملح به ما عنوه فقلت ملح البحر بحر الصخور
She said: What did they mean with the salt? I said: The salt of the sea, the sea of
the rocks.
قالت وما الصخر وما بحره فقلت ملح صاعد في القدور
She said: And what is the rock and its sea? I said: The climbing salt in the
cauldrons.¹⁵³

In the third part, *Loss and Separation*, the gazelle asks about the eternal water, the sublimation of sulphur and liquids:

قالت فهل يصعد كبريتهم فبه بنار لحضان الطيور
She said: Must their sulphur, to be sublimated, must it happen by fire of the
bird's breeding?
فقلت نعم قالت فبينه لي قلت بخار ودخان تنور
I said: Yes. She said: Explain it to me! I said: The vapour and fume of the oven.¹⁵⁴

The separation in alchemical writings usually refers to the division of the philosopher's stone into its constituent parts, which must be cleansed through alchemical procedures. The fire of the bird's breeding also appears frequently in alchemical writing and refers to the creation of a living thing. The eternal water, which is also mentioned by the gazelle in this part, is a substance which reanimates the philosopher's stone at the end of the process. It has been discussed in

¹⁵¹ See, for example, the chapter on the *Tale of the Sage in the Cave of the Jinn* in the present article.

¹⁵² Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75b.

¹⁵³ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75b.

¹⁵⁴ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75b.

alchemical works in Greek as well as in Arabic under several names: the water of life (*mā' ḥayāt*), divine water (*mā' ilāhī*), eternal water (*mā' khālīd*), sulphur water (*mā' kibritī*), and pure water (*mā' khālīṣ*).¹⁵⁵

As it becomes clear from the verses mentioned above, *al-Qaṣīda al-sab'īniyya* is a typical alchemical poem written in symbolic allusions and enigmatic formulations, which is why the gazelle complains:

قالت معاذ الله ماذا وفا شرح وإلهام في حق الزبور
She said: God forbid. What did he complete? An explanation and inspiration
by the psalm?

فقلت ذا العلم عزيز وما كنت بمختال عليكى فخور
I said: This knowledge is noble, and I am not being vainglorious towards you.¹⁵⁶

Hence, the gazelle continues to ask the master about the secrets of alchemy in the fourth part, *The Second Composition, Which Is the First*. She aspires to know how to solidify the spirits and souls, and how to bring the dye into the body of the philosopher's stone, which should turn white:

قالت فهل تصبر [النفوس والأرواح] بعد الحمى في النار إذ يسبكها تنور
She said: Will they [the souls and the spirits] bear up after the heat in the fire if
the oven melts them?

فقلت بل تنفذ أرواحها وثبتت الأجسام وهي القشور
I said: No indeed! Their spirits shall come to an end and their bodies will
become fixed and those are the shells.

قالت هل الحرق فسادها قلت نعم ذا القول ما فيه زور
She said: Will the burning corrupt them? I said: Yes. This saying is without
falsehood.¹⁵⁷

This part deals with the recompositing and dyeing of the philosopher's stone and contains, among other topics, a reference to the mystical milk of virgins (*albān al-'adhānī*).¹⁵⁸ Traditionally, in the phase of the second composition the artificial elements (*arkān*) produced through the remixture of extracted and isolated natures (warmth, coldness, moisture, dryness) are united in order to produce the elixir.¹⁵⁹

¹⁵⁵ For more information on the eternal water, see Martelli 2009.

¹⁵⁶ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 76a.

¹⁵⁷ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 76a.

¹⁵⁸ Lippmann 1919: vol. I, 320–321.

¹⁵⁹ Todd 2016: 125.

The poem ends in the fifth part, *The Reanimation of the Dead, Which Is the Solidification*, with the enlightenment of the gazelle – who puts a crown on her head – and the reanimation of the dead substance. The poem is concluded by the following verse:

الحمد لله على فضله من أول البدء ليوم النشور

Thank God for his benefaction from the first beginning until the Day of Resurrection.¹⁶⁰

The dead substance is reanimated through the return of the purified components of the philosopher's stone, a procedure also referred to as the solidification of the stone. Upon completion, the gold rises, which is alluded to in the poem through a reference to sunlight.¹⁶¹ In the last verse, the resurrection theme returns in the final purification of the stone from its sins; consequently, the stone is transmuted into eternal gold. Furthermore, the coronation of the gazelle is reminiscent of the king who appears at the end of the *Tale of the Sage in the Cave of the Jinn*. This royal element can be found in various Arabic alchemical writings.¹⁶²

Al-Qaṣīda al-sabʿīniyya can be categorized as an allegorical poem of alchemy¹⁶³ and within the genre of Arabic didactic poetry, which flourished especially after the decline of the 'Abbāsid empire.¹⁶⁴ There does not exist an Arabic term for this genre in classical Arabic literature,¹⁶⁵ most likely due to a lack of interest by literary theorists and critics in medieval times.¹⁶⁶ The function of didactic poetry is to transfer knowledge of a specific science or field in an easier, memorisable way. Van Gelder suggests this genre be termed *didactic verse* rather than *didactic poetry* because it generally does not aim to fulfil poetic or aesthetic pretensions.¹⁶⁷ He points to the existence of poems that are stringently didactic, those that are didactic and literary, and those that are primarily literary and only to some extent didactic, and holds that there are no clear dividing-lines between

¹⁶⁰ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 76b.

¹⁶¹ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 76b.

¹⁶² See, for example, Von Lippmann 1919: vol. I, 8; Sezgin 1971: 51, Vereno 1992: 185; or Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 82a–83b.

¹⁶³ Not all alchemical texts are allegorical, as shown by Syed Nomanul Haq, who provides a classification of alchemical writings, Nomanul Haq 2007: 653.

¹⁶⁴ Van Gelder 2011. For more information on Arabic didactic poetry, see Ulmann 1966 and Endress 1987.

¹⁶⁵ Van Gelder 1995: 104.

¹⁶⁶ Van Gelder 1995: 111.

¹⁶⁷ Van Gelder 2011.

these different modes.¹⁶⁸ The aforementioned *dīwān* of alchemical verse, *Shudhūr al-dhahab* of Ibn Arfaʿ Raʿs, is actually appreciated for its poetic quality and can even be enjoyed by those who are not able to extract the alchemical information from it.¹⁶⁹

Though it does not have the typical shape of the strictly didactic verse¹⁷⁰ due to its composition as a dialogue and its enigmatic character, it still retains a clear didactic function. The *qaṣīda* consists of seventy verses, all ending with the rhyme letter *rāʾ*. As can be observed in the other three examples of alchemical writings, the *qaṣīda* does not contain specific information about space or time. Like the previous dialogue, the interlocution appearing in the poem is bilateral and the occurrences of it are based on a linear plot recounted by a first-person narrator. The narrating time coincides with the narrated time and direct speech predominates. The narrator does not provide any information concerning the outward appearance of the characters or their facial expressions except for the sentence, “The secret became clear in her face ...”¹⁷¹ The same is true for the non- and paraverbal communication between the interlocutors. The relationship between the characters is asymmetric with regard to the alchemical knowledge. The *khābīr dhukūr* (the expert among men) transmits the secrets of alchemy to the wisdom-seeking gazelle, which is why her desperation in not understanding the obscure answers of her teacher is the only emotion portrayed in the poem. Besides the prologue and epilogue, the interlocution is structured in questions and answers, the latter based on logical, yet enigmatic arguments.

6 Conclusion

The four interlocutions presented in this paper, taken from different books and written by different authors, demonstrate the diversity of dialogues appearing in alchemical writings of the Islamicate world. This diversity is especially related to the text type, the literary construction, and the characters: *Mufākharat al-aḥjār* belongs to the literary genre *munāẓara* and is written in prose and rhymed prose; the dialogue extracted from a chapter of *Kitāb al-Rawḍa* appears within an ordinary alchemical scientific text and is written in prose; the interlocution extracted from *Kitāb al-Aqālim al-sabʿa*, which is a collocation of allegorical descriptions for perceived pictures of the alchemical operation, is composed in rhymed prose; and

¹⁶⁸ Van Gelder 1995: 111.

¹⁶⁹ Todd 2016: 118, 121.

¹⁷⁰ For example, see the *Alfiyya* of Ibn Mālik, van Gelder 1995: 109.

¹⁷¹ Gotha, Gotha Research Library, Ms. orient. A 1257, fol. 75a.

al-Qaṣīda al-sabʿīniyya should be considered a poem belonging to the genre of didactic verse. The interlocutions of the *Narrative of the Sage Hunter and the Teacher* and *al-Qaṣīda al-sabʿīniyya* are bilateral, whereas multiple characters participate in the interlocutions of the other two texts.

Since the dialogues of these examples – apart from *Mufākhara* – occur between an adept of alchemy and a teacher, or several characters who have the function of a teacher, they are mostly structured in questions and answers. The answers given by the teachers are enigmatic and obscure but based on logical reasoning from an alchemical perspective. *Mufākhara* is structured in theses and antitheses that are also mostly based on logical reasoning, but the characters use some verses of the Qurʾān and statements by authorities to justify their statements.

The dialogues are also narrated through different perspectives: *Mufākhara al-aḥjār* and the *Tale of the Sage in the Cave of the Jinn* are narrated by neutral third-person narrators, whereas the extract from *Kitāb al-Aqālīm al-sabʿa* and *al-Qaṣīda al-sabʿīniyya* are moderated by first-person narrators. Despite this diversity, there are similarities in the literary constitution of these dialogues. The plotline of all dialogues is linear, the narrating time mostly corresponds to the narrated time, time and place do not seem to be significant, and direct speech predominates in all examples; only the most important events and actions are mentioned by the narrators. Symptomatically, non- and paraverbal communication, facial expressions, and the outward appearance of characters are described only rarely. The function of the narrator is in many cases limited to the announcement of changeovers of speech from one character to another, with the exception of the *Tale of the Sage in the Cave of the Jinn*, where the narrator provides comparatively more descriptions of the actions and physical traits of the characters.

While emotions are rarely described by the narrator, these details can be gleaned from the direct speech. The prevailing emotions in these texts are anger, fear, desperation and disillusion. Irritation and anger are certainly relevant for *Mufākhara*, whereas fear, disillusion and desperation are more important for the typical tutorial dialogue between a disciple and his teacher in the *Tale of the Sage*, the *Narrative of the Sage Hunter* and the alchemical poem. These emotions represent the desperation of adepts who are struggling to gain access to the hidden meanings of alchemical treatises.

The characters that act and participate in the dialogues also vary. All of the characters in *Mufākhara* are anthropomorphic representations of minerals, organic matter and animals, as well as different stages in the transmutation of base metals into gold or silver. The characters of the *Tale of the Sage* – excluding the sage himself and the dream reader – are also anthropomorphic, but represent stages in the alchemical process and the three components of the philosopher's stone. The dialogue appearing in *Kitāb al-Aqālīm* is rather obscure, making it

impossible to determine with any certainty whether or not the interlocutors are a disciple of alchemy and an allegorical representation of the stage of the blackening. The same applies to the alchemical poem, which contains a dialogue between a teacher and a gazelle (*ḡabya*). Apart from *Mufākhara*, all of the interlocations share the motif of a disciple thirsty for knowledge. In the *Tale of the Sage* and the dialogue taken from *Kitāb al-Aḡālīm*, these teachers are allegorical representations of different steps of the alchemical operation, while the teacher in the alchemical poem seems rather to be a human. This constellation of characters is typical for alchemical dialogues. A similar situation is found in *Muṣḡhaf al-ṣuwar*, in which Zosimos is instructing his disciple Theosebeia in alchemy. Certainly, the behaviour of the *ḡabya* in the poem reminds one of the complaints Theosebeia directs towards her teacher Zosimos, who speaks in riddles.¹⁷² In the case of *Mufākhara*, the interlocutors do not search for knowledge, but compete with each other. Therefore, it does not feature a disciple, but an advisor embodied by an omniscient representation of gold. In general, the relations between the interlocutors in all the dialogues are asymmetric regarding their alchemical knowledge.

It is important to note that the concerns and functions of the interlocations are different. Besides *Mufākhara*, which focuses on transferring factual knowledge about minerals, all of the dialogues aim to provide a resource through which the disciples can decipher symbols, allegories, and analogies used by earlier alchemists, and to encourage the reader to attempt to unravel riddles.

These examples demonstrate that Arabic-writing alchemists did not eschew using literary methods in many different ways to transmit their knowledge to inquisitively-minded adepts.

References

Manuscripts

- Alexandria, Maktabat al-Iskandariyya, 1313 b (Sāḡib Rasā'il Ikhwān al-Ṣafā', *Kitāb Rawḡat al-ḡadā'iḡ wa-riyāḡ al-ḡaqā'iḡ fī l-ṣinā'a*).
- Alexandria, Maktabat al-Iskandariyya, 18626 (Abū l-Jūd, *Rawḡat al-khalā'iḡ wa-riyāḡat al-ḡaqā'iḡ fī l-ṣan'a al-ilāhiyya wa-l-asrār al-rabbāniyya*).
- Berlin, Staatsbibliothek zu Berlin, Orientabteilung, Landberg 350, fol. 127a–129b (al-Jildakī, *Nihāyat al-ṡalab fī sharḡ al-muktasab*).
- Cairo, Dār al-Kutub, 45727 (Maslama ibn Aḡmad al-Majrīṡī, *Kitāb al-Rawḡa*).

¹⁷² Zosimos, *The Book of Pictures*.

- Istanbul, Süleymaniye, Hacı Beşir Ağa 505, fol. 60a–85b (Maslama ibn Aḥmad al-Majrīṭī, *Kitāb al-Rawḍa fī l-ṣanʿa al-ilāhiyya al-karīma al-maktūma*).
- Istanbul, Süleymaniye, Vehbi 2237 (Maslama ibn Aḥmad al-Majrīṭī, *Mufākharat al-aḥjār*).
- Istanbul, Süleymaniye, Vehbi 2272, fol. 36a–42a (Maslama ibn Aḥmad al-Majrīṭī, *Kitāb fī ʿilm al-aḥjār wa-tadbīrihā*).
- Oxford, Bodleian Library, Marsh 452, fol. 60b–63a (Maslama ibn Aḥmad al-Majrīṭī, *Kitāb al-Aḥjār*).
- Rabat, al-Khizāna al-Ḥasaniyya, 6250 (Jābir ibn Ḥayyān, *Kitāb al-Rawḍa*).
- Yazd, Vaziri Yazd Library, 154 (g 8 s) (Maslama ibn Aḥmad al-Majrīṭī, *Kitāb al-Rawḍa*).

Sources

- Ikhwān al-Ṣafāʾ (2009): *The Case of the Animals versus Man before the King of the Jinn. An Arabic Critical Edition and English Translation of Epistle 22*. (Epistles of the Brethren of Purity). Oxford: Oxford University Press, Edited and translated by Lenn E. Goodman and Richard McGregor.
- Jābir b. Ḥayyān (1935): “Kitāb Ikhrāj mā fī l-quwwa ilā l-fiʿl”. In: *Mukhtār rasāʾil Jābir ibn Ḥayyān*. Edited by Paul Kraus. Paris/Cairo: Librairie Orientale et Américaine/Librairie El-Khandgi, 1–95.
- Jābir b. Ḥayyān (1935): “Nakḥb min Kitāb al-Sabʿīn”. In: *Mukhtār rasāʾil Jābir ibn Ḥayyān*. Edited by Paul Kraus. Paris/Cairo: Librairie Orientale et Américaine / Librairie El-Khandgi, 460–488.
- Jābir b. Ḥayyān (2006): “Kitāb al-Ḥabīb”. In: *Rasāʾil Jābir ibn Ḥayyān. Thalāṭūn kitāban wa-risālatan fī l-kīmīyāʾ wa-l-iksīr wa-l-falak wa-ṭ-ṭabʾa wa-l-ḥaʾa wa-l-falsafa wa-l-manṭiq wa-l-siyāsa*. Edited by Aḥmad Farīd al-Mazyadī. Beirut: Dār al-Kutub al-ʿIlmiyya, 394–424.
- Jābir b. Ḥayyān (2006): “Kitāb al-Ḥajar”. In: *Rasāʾil Jābir ibn Ḥayyān. Thalāṭūn kitāban wa-risālatan fī l-kīmīyāʾ wa-l-iksīr wa-l-falak wa-ṭ-ṭabʾa wa-l-ḥaʾa wa-l-falsafa wa-l-manṭiq wa-l-siyāsa*. Edited by Aḥmad Farīd al-Mazyadī. Beirut: Dār al-Kutub al-ʿIlmiyya, 87–102.
- Pseudo-Majrīṭī (1933): *Das Ziel des Weisen. Arabic text*. Edited by David Edwin Pringree und Hellmut Ritter. (Studies of the Warburg Institute; 12). London: The Warburg Institute.
- Pseudo-Majrīṭī (1962): *Das Ziel des Weisen. German version*. Translated by Hellmut Ritter and Martin Plessner. (Studies of the Warburg Institute; 27). London: The Warburg Institute.
- Al-Qurṭubī, Maslama b. Qāsim (2016): *The Book of the Rank of the Sage*. Edited by Wilferd Madelung. (Corpus Alchemicum Arabicum; 4). Zurich: Living Human Heritage Publications.
- Al-Rāzī, Abū Bakr (1937): *Al-Rāzī's Buch Geheimnis der Geheimnisse*. [I.e. *Kitāb al-asrār*, not *Sirr al-asrār*]. Translated by Julius Ruska. (Quellen und Studien zur Geschichte der Naturwissenschaften und der Medizin; 6). Berlin: Julius Springer.
- Zosimos of Panopolis (2007): *The Book of Pictures*. Edited by Theodor Abt. (Corpus Alchemicum Arabicum; 2.1) Zurich: Living Human Heritage.
- Zosimos of Panopolis (2016): *The Book of the Keys of the Work*. Edited and translated by Theodor Abt and Salwa Fuad. (Corpus Alchemicum Arabicum; 3). Zurich: Living Human Heritage.

Secondary Literature

- Abt, Theodor (2016): "Maslama b. Qāsim al-Qurṭubī al-Zayyāt's *Rutbat al-ḥakīm* and Zosimos' Texts in Arabic". In: Zosimos of Panopolis: *The Book of the Keys of the Work*. Edited and translated by Theodor Abt and Salwa Fuad. (Corpus Alchemicum Arabicum; 3). Zurich: Living Human Heritage: 18–19.
- Bosworth, Clifford E. (2002): "Wudū". In: *The Encyclopaedia of Islam*. New Edition. Edited by P. J. Bearman et al. Vol. XI. Leiden: Brill: 218–219.
- Bousquet, Georges H. (1991): "Ghusul". In: *The Encyclopaedia of Islam*. New Edition. Edited by B. Lewis et al. Vol. II. Leiden: Brill: 1104.
- Browne, C. A. (1946): "Rhetorical and Religious Aspects of Greek Alchemy. Part I". *Ambix* 2.3–4: 129–37.
- Callataÿ, Godefroid de (2013): "Magic in al-Andalus. *Rasā'il Ikhwān al-Ṣafā'*, *Rutbat al-ḥakīm* and *Ghāyat al-ḥakīm*". *Al-Qanṭara* 34.2: 297–344.
- Callataÿ, Godefroid de (2018): "'For Those with Eyes to See'. On the Hidden Meaning of the Animal Fable in the *Rasā'il Ikhwān al-Ṣafā'*". *Journal of Islamic Studies* 29.3: 357–391.
- Callataÿ, Godefroid de/Moureau, Sébastien (2015): "Towards the Critical Edition of the *Rutbat al-ḥakīm*. A Few Preliminary Observations". *Arabica* 62: 385–394.
- Callataÿ, Godefroid de/Moureau, Sébastien (2016): "Again on Maslama ibn Qāsim al-Qurṭubī, the *Ikhwān al-Ṣafā'* and Ibn Khaldūn. New Evidence from Two Manuscripts of *Rutbat al-ḥakīm*". *Al-Qanṭara* 37.2: 329–372.
- Carusi, Paola (2016): "Iznīqī and Jābir, Sirr and Miftāḥ: Two Authors, Four Titles, One Alchemical Treatise". *Al-Qanṭara* 37.2: 299–327.
- Coullaut Cordero, Jaime (2010): "La Sīmiyā' en al-Andalus". *El Futuro del Pasado* 1: 451–463.
- Dufault, Olivier (2015): "Transmutation Theory in the Greek Alchemical Corpus". *Ambix* 62.3: 215–44.
- Endress, Gerhard (1987): "Das Lehrgedicht". In: *Grundriss der Arabischen Philologie*. Vol. II. Edited by Helmut Gätje. Wiesbaden: Dr. Ludwig Reichert, 471–473.
- Fierro, Maribel (1996): "Bāṭinism in al-Andalus. Maslama b. Qāsim al-Qurṭubī (d. 353/964), Author of the *Rutbat al-Ḥakīm* and *Ghāyat al-Ḥakīm* (Picatrix)". *Studia Islamica* 84: 87–112.
- Forster, Regula/Müller, Juliane (2020): "The Identity, Life and Works of the Alchemist Ibn Arfa' Ra's". *Al-Qanṭara* 41.2: 373–408.
- Forster, Regula (2016a) "Alchemy". In: *The Encyclopaedia of Islam*. Three. Leiden/Boston: Brill: 15–28.
- Forster, Regula (2016b): "The Transmission of Secret Knowledge. Three Arabic Dialogues on Alchemy". *Al-Qanṭara* 37.2: 399–422.
- Forster, Regula (2017): *Wissensvermittlung im Gespräch. Eine Studie zu klassisch-arabischen Dialogen*. (Islamic history and civilization; 149). Leiden/Boston: Brill.
- Holmyard, Eric John (1926): "Abu' l-Qāsim al-'Irāqī". *Isis* 8.3: 403–426.
- Jiménez, Enrique/Mittermayer, Catherine (eds.) (2020): *Disputation Literature in the Near East and Beyond*. (Studies in Ancient Near Eastern Records; 25). Berlin/Boston: De Gruyter.
- Jiménez, Enrique (ed.) (2017): *The Babylonian Disputation Poems. With Editions of the Series of the Polar, Palm and Vine, the Series of the Spider, and the Story of the Poor, Forlorn Wren*. (Culture and History of the Ancient Near East; 87). Leiden/Boston: Brill.
- Kaḥḥāla, 'Umar Riḍā (1957): *Muḥjam al-mu'allafin. Tarājim musannaḥ al-kutub al-'arabiyya*. Vol. VII. Beirut: Dār Iḥyā' al-Turāth.

- Kraus, Paul (1942): *Jābir ibn Ḥayyān. Contribution à l'histoire des idées scientifiques dans l'Islam*. Vol. 2: *Jābir et la science grecque*. Cairo: Institut français d'archéologie orientale.
- Lane, Edward William (1968): *An Arabic-English Lexicon*. Vol. V. Riad/Beirut: Librairie du Liban.
- Lippmann, Edmund O. von (1919): *Entstehung und Ausbreitung der Alchemie. Ein Beitrag zur Kulturgeschichte*. Vol. I. Berlin: Julius Springer.
- Madelung, Wilferd (2017): "Maslama al-Qurṭubī's *Kitāb Rutbat al-ḥakīm* and the History of Chemistry". *Intellectual History of the Islamicate World* 5: 118–126.
- Martelli, Matteo (2009): "'Divine Water' in the Alchemical Writings of Pseudo-Democritus". *Ambix* 56.1: 5–22.
- Martelli, Matteo (2017): "Hippocrates in Two Syriac Alchemical Collections". *Aramaic Studies*: 230–251.
- Mattock, John N. (1991): "The Arabic Tradition: Origin and Developments". In: *Dispute Poems and Dialogues in the Ancient and Mediaeval Near East. Forms and Types of Literary Debates in Semitic and Related Literatures*. Edited by G. J. Reinink and H. J. J. Vanstiphout. Leuven: Departement Oriëntalistiek, 153–163.
- Miquel, André (1986): "Iklim". In: *The Encyclopaedia of Islam*. Second Edition. Edited by B. Lewis et al. Vol. III. Leiden: Brill: 1076–1078.
- Müller, Juliane (2012): *Zwei arabische Dialoge zur Alchemie*. (Islamkundliche Untersuchungen; 310). Berlin: Klaus Schwarz.
- Nomanul Haq, Syed (2007): Occult Sciences and Medicine. In: *New Cambridge History of Islam*. Vol. IV. Edited by Robert Irwin. Cambridge: Cambridge University Press, 640–667.
- Panofsky, Erwin (1955): "Titian's Allegory of Prudence. A Postscript". In: *Meaning in the Visual Arts. Papers in and on Art History*. Edited by Erwin Panofsky. New York: Anchor Books.
- Pielow, Dorothee (2019): Buchstaben, Gottesnamen und die Magie der Mystik. In: *Die Geheimnisse der oberen und der unteren Welt. Magie im Islam zwischen Glaube und Wissenschaft*. Edited by Sebastian Günther and Dorothee Pielow. Leiden/Boston: Brill, 347–366.
- Reinink, G. J./Vanstiphout, H. J. J. (eds.) (1991): *Dispute Poems and Dialogues in the Ancient and Mediaeval Near East. Forms and Types of Literary Debates in Semitic and Related Literatures*. Leuven: Departement Oriëntalistiek.
- Sezgin, Fuat (1971): *Geschichte des arabischen Schrifttums*. Vol. IV: *Alchimie, Chemie, Botanik, Agrikultur bis ca. 430 H.* Leiden: Brill.
- Sheppard, H. J. (1959): "The Redemption Theme and Hellenistic Alchemy". *Ambix* 7.1: 42–46.
- Sheppard, H. J. (1962): "The Ouroboros and the Unity of Matter in Alchemy: A Study in Origins". *Ambix* 10.2: 83–96.
- Siggel, Alfred (1951): *Decknamen in der arabischen alchemistischen Literatur*. (Veröffentlichung, Deutsche Akademie der Wissenschaften zu Berlin, Institut für Orientforschung; 5). Berlin: Akademie Verlag.
- Smoor, Pieter (1986): "Al-Ma'arrī". In: *The Encyclopaedia of Islam*. New Edition. Edited by C. E. Bosworth et al. Vol. V. Leiden: Brill: 927–935.
- Todd, Richard (2016): "Alchemical Poetry in Almohad Morocco: The Shudhūr al-dhahab of Ibn Arfa' Ra's". *Oriens* 44: 116–144.
- Toral-Niehoff, Isabel/Sundermeyer, Annette (2018): "Going Egyptian in Medieval Arabic Culture. The Long-Desired Fulfilled Knowledge of Occult Alphabets by Pseudo-Ibn Waḥshiyya". In: *The Occult Sciences in Pre-modern Islamic Cultures*. Edited by Nader El-Bizri and Eva Orthmann. Beirut: Ergon: 249–264.
- Ullmann, Manfred (1966): *Untersuchungen zur Ragazpoesie*. Wiesbaden: Harrassowitz.

- Ullmann, Manfred (1972): *Die Natur- und Geheimwissenschaften im Islam*. (Handbuch der Orientalistik, 1. Abt.; Ergänzungsbd. 6, 2). Leiden: Brill.
- Van der Sluijs, Marinus Anthony/Peratt, Anthony L. (2009): "The *Ourobóros* as an Auroral Phenomenon". *Journal of Folklore Research* 46.1: 3–41.
- Van Gelder, Geert Jan (1987): "The Conceit of Pen and Sword. On an Arabic Literary Debate". *Journal of Semetic Studies* 32.2: 329–360.
- Van Gelder, Geert Jan (1995): "Arabic Didactic Verse". In: *Centres of Learning. Learning and Location in pre-modern Europe and the Near East*. Edited by Jan Willem Drijvers and Alasdair A. MacDonald. Leiden: Brill, 103–117.
- Van Gelder, Geert Jan (2020b): "The Debate of Spring and Autumn in Arabic Literature". In: *Disputation Literature in the Near East and Beyond*. Edited by Enrique Jiménez and Catherine Mittermayer. (Studies in Ancient Near Eastern Records; 25). Berlin/Boston: De Gruyter, 175–192.
- Vereno, Ingolf (1992): *Studien zum ältesten alchemistischen Schrifttum. Auf der Grundlage zweier erstmals edierter arabischer Hermetica*. (Islamkundliche Untersuchungen; 155) Berlin: Schwarz.
- Wagner, Ewald (1962): *Die arabische Rangstreitdichtung und ihre Einordnung in die allgemeine Literaturgeschichte*. (Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, Akademie der Wissenschaften und der Literatur; Jg. 1962, Nr. 8). Wiesbaden: Franz Steiner Verlag.
- Wagner, Ewald (1993): "Munāẓara". In: *The Encyclopaedia of Islam*. Second Edition. Edited by C. E. Bosworth et al. Vol. VII. Leiden: Brill: 566–568.
- Wagner, Ewald/Far`es, Bichr (1993): "Mufākhara". In: *The Encyclopaedia of Islam*. Second Edition. Edited by C. E. Bosworth et al. Vol. VII. Leiden: Brill: 308–310.

Online Sources

- Encyclopaedia Britannica (2020): *Encyclopaedia Britannica: Ruby*. <https://www.britannica.com/topic/ruby> (08/26/2020).
- Van Gelder, Geert Jan (2011): "Didactic poetry, Arabic". In: *The Encyclopaedia of Islam. Three*. Brill. https://doi.org/10.1163/1573-3912_ei3_COM_26014 (04/05/2021).
- Van Gelder, Geert Jan (2020a): "Debate literature, Arabic". In: *The Encyclopaedia of Islam. Three*. Brill. https://doi.org/10.1163/1573-3912_ei3_COM_41056 (04/05/2021).
- Marée, Marcel / Hallum, Bink (2016): *A medieval alchemical book reveals new secrets*. <https://blog.britishmuseum.org/a-medieval-alchemical-book-reveals-new-secrets/> (1/7/2020).

