

# Treasures of Knowledge

## An Inventory of the Ottoman Palace Library (1502/3–1503/4)

VOLUME I: ESSAYS

Edited by

Gülru Necipoğlu, Cemal Kafadar,  
and Cornell H. Fleischer



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## BOOKS ON OCCULT SCIENCES

The 129 codices recorded in this section (*tafṣīl*) of the palace library inventory include more than 200 copies of texts on a diverse range of topics: oneiromancy (*‘ilm al-ta‘bīr*), physiognomy (*‘ilm al-firāsa*), alchemy (*‘ilm al-kīmiyā’*), the occult properties of stones (*‘ilm al-ahjār*), the divinatory method known as geomancy (*‘ilm al-raml*), omens or bibliomancy (*al-fāl*),<sup>1</sup> the interrelated “magical” arts of talismans (*al-ṭilsimāt*), *nīranj*,<sup>2</sup> and *sīmīyā’*,<sup>3</sup> the adjuration of spirits (*‘azā’im*), the political-eschatological divinatory discourse known as *jafr*; the manufacture of wondrous automata and related devices (*ṣinā‘at al-‘ajā’ib*, *al-ḥiyal*), and *sihr*, another term usually glossed as “magic” or “sorcery.” A final category of works on “wondrous matters” (*al-umūr al-‘ajība*) is found as well, though the heading is noted only in the margin and not in the table of contents at the head of the inventory. The subjects of this section thus roughly fit within the rubric of what modern scholarship calls “occult sciences,” a term for which various cognates are found in Arabic and Persian: “the strange sciences” (*al-‘ulūm al-gharība*), “the hidden sciences” (*al-‘ulūm al-khafīyya*), “the sciences of the concealed” (*‘ulūm al-ghayba*), etc. ‘Atufi employs none of these phrases, however, giving the section no overarching title.

Learned discourses on the occult sciences have a lengthy history in Islamicate thought.<sup>4</sup> They comprised a significant portion of the texts brought into Arabic during the Abbasid translation movement of the eighth to tenth centuries and were cultivated thereafter in various milieux. Astrology—notably absent from this section, as discussed below—enjoyed a prominent place at many Muslim courts from early on,<sup>5</sup> while the others survived mostly as minor sciences for the first several centuries of Islamicate history, often in

“associat[ion] with unsavoury doctrinal, confessional, and social spaces,” as Aziz al-Azmeh has put it.<sup>6</sup> This state of affairs changed considerably over the first few centuries of the “post-classical” or mature period, roughly from the twelfth century onward, during which the occult sciences gained a new prominence and coherence. This is because they were integral to a new cosmological imaginary that rose to prominence during that time, which was emanationist, analogist,<sup>7</sup> and often millenarian in outlook. In this newly regnant vision of the cosmos, the stars, planets, plants, minerals, bodily humors, colors, scents, letters of the alphabet, numbers, nations, and countless other entities and accidents of creation were enmeshed in a web of sympathetic or antipathetic relationships that vibrated along the “great chain of being” between the godhead and the manifest world.<sup>8</sup> The occult sciences “made sense” within this collective apprehension of the nature of reality, as they represented much of the operational knowledge of the powers and meanings of things within this web of hidden—that is, “occult”—connections that ordered the cosmos. Furthermore, knowledge of these secrets was often seen as crucial to preparing for the trials of the impending end times. This is not to say that no Muslim thinkers of the period objected to the occult sciences on religio-moral or scientific grounds, but those who did were swimming against the tide.<sup>9</sup>

This new cosmological imaginary of the mature period has been variously described in modern scholarship: by Fazlur Rahman, for example, as “philosophic religion,” and more recently by Shahab Ahmed as “the Sufi-philosophical amalgam.”<sup>10</sup> Matthew Melvin-Koushki’s account of the rising “neopythagoreanism” of this period also captures crucial elements of these developments.<sup>11</sup>

This emerging *Weltbild* drew heavily on the late antique Platonic and Hermetic inheritances brought into Arabic in the Abbasid period, but was also shaped considerably by the bold claims of Muslim philosophers and mystics regarding their abilities to penetrate the unseen. Rahman and Ahmed both identify Ibn Sina (d. 1037), Shihab al-Din al-Suhrawardi (d. 1191), and Muhyi al-Din Ibn al-'Arabi (d. 1240) as central contributors to this intellectual current. Their conjoined impact stems from the fact that, however disparate their systems of thought in certain respects, a basic isomorphism prevails in their visions of the cosmos as emanational and complexly shot through with hierarchies of being(s) and powers, sympathies and antipathies—a similarity seized upon by later commentators who worked to synthesize and reconcile their ideas. Such cosmological concepts had long been cultivated among various Islamicate philosophical, sectarian, and mystical communities, but the upheavals to the status quo of religious and political authority wrought by such civilizational cataclysms as the Crusades, the *Reconquista*, the Mongol invasions, and the Black Death helped clear the ground to expose these concepts to a much larger audience, while also bringing to the fore their potential eschatological significance. The Sufi orders, which rose to fill many gaps in the post-Mongol religio-political landscape and whose systems of graded spiritual authority were seen to embody notions of cosmic hierarchy, played a major role in the spread and popularization of this worldview beyond the small literate circles in which it formerly had been cultivated.<sup>12</sup> The ensuing embrace by many rulers of millenarian narratives and various titles and symbols of sacred kingship was at least equally important in establishing these ideas in the collective consciousness, as well as in encouraging through patronage their ongoing elaboration by intellectuals and cultural producers of various stripes.<sup>13</sup> The occult sciences were prominent among the applied disciplines of this new vision of the cosmos and were increasingly “sanctified” within it, which is to say that they were linked to prophetic and saintly modes of supernatural power. The public cultivation of these disciplines, both through mastery of the older strata of literature and production of original works, thus became a largely respectable calling in the late medieval and early modern periods. In sum, it

would be strange not to find a significant collection of works on the occult sciences in the inventory of a Muslim ruler’s library at the turn of the sixteenth century.

A key element of the rise of this cosmology was a shift in views about pre-Islamic knowledge that permitted the idea of the ancient sages having tasted some degree of divine inspiration. John Walbridge has discussed this development under the heading of “Platonic Orientalism”: the search by Muslim thinkers for the *prisca theologia* concealed in the symbols and writings of the ancients—or, more accurately, in the large body of Platonic, Pythagorean, Hermetic, and Aristotelian pseudepigrapha that survived from late antiquity.<sup>14</sup> Walbridge’s focus is on the aforementioned Shihab al-Din al-Suhrawardi, though earlier and later examples of other such thinkers can be enumerated, from the writings of the Basran collective that referred to itself as the “Brethren of Purity” (*ikhwān al-ṣafāʾ*) to early Ottoman figures such as the Antiochene Sufi and occultist ‘Abd al-Rahman al-Bistami (d. 1454)—himself much influenced by both the Brethren and al-Suhrawardi—and numerous of his contemporaries.<sup>15</sup> While classical-era Sunni thinkers had tended to draw sharp distinctions between Islamic and non-Islamic knowledge, relegating the latter to legitimacy only with reference to this-worldly concerns, the “Platonic Orientalists” saw flashes or patterns of divine truth in various aspects of pagan metaphysics and religious doctrines. In doing so, they recognized the ancient sages as anticipating the supreme truth of the teachings of the Qur’an and the Prophet Muhammad while conversely drawing on the wisdom of the ancients to discern a body of secret knowledge encoded in Islamic scriptures but concealed from the *vulgus* of common Muslims. Thus, they posited an esoteric tradition within Islam that was directly descended from one extending into the ancient, and pagan, past. This trend, which arguably first arose in the context of Shi’i *bāṭin*-ism (the notion of hidden levels of meaning in the Qur’an and, for some thinkers, other aspects of religious thought and practice), was thence taken up within the “philosophical mysticism” of later Sufism, the strong “Neoplatonic” (*viz.* emanationist and analogist) coloring of which is well known to modern scholarship.<sup>16</sup>

Part and parcel of this reframing of pre-Islamic knowledge was a shift from the classical trend of considering

the occult sciences as belonging strictly to the natural sciences (*al-ʿulūm al-ṭabīʿiyya*) to a new tendency of associating them with sacral power (*walāya*), as Liana Saif, Melvin-Koushki, and the present author have discussed elsewhere.<sup>17</sup> The (somewhat rare) classical-era defenders of the occult sciences had posed them as bodies of knowledge about the created world drawn by the ancients and their Muslim imitators through inference from experience, an epistemic mode quite distinct from prophetic revelation and bereft of any significant religio-moral authority. Later proponents of occultism, however, blurred this distinction, often linking the occult sciences to prophecy or lesser forms of divine inspiration (*kashf*, *ilhām*, *maʿrifa*, etc.). Perhaps the greatest beneficiary of this transition was the Kabbalah-like “science of letters and names” (*ʿilm al-ḥurūf wa-al-asmāʾ*), which recent scholarship shorthands as “lettrism,” that was introduced to the central Islamic lands by thinkers such as Ibn al-ʿArabi and the Ifriqiyan-cum-Egyptian Sufi Ahmad al-Buni (d. 1225 or 1232–33). This is a mystico-magical discourse on the relationship between divine speech and manifest reality which in certain renderings, most famously al-Buni’s, includes methods of devising talismanic figures involving the names of God, mathematical “magic squares” (*awfāq*, sing. *wafq*), and astrological timing to achieve various ends—techniques vouchsafed by the practitioner’s high spiritual state. While initially an esoteric praxis restricted to certain Sufi cliques, it became widely popularized in the fourteenth and fifteenth centuries, and eventually was widely recognized as a licit, indeed sanctified body of knowledge on the workings of God’s creation and the occult manipulation thereof.<sup>18</sup> The special status afforded to lettrism is demonstrated by that fact that ʿAtufi lists several of al-Buni’s works near the beginning of the inventory, mostly in a section on prayers, invocations, the occult qualities (*khawāṣṣ*) of the Qurʾan, and “magic” squares (*awfāq*) that is included among sections on the most cherished religious sciences (25 {9}, 48 {2, 10, 12, 15, 16, 17, 18}, 49 {10, 15}, 50 {5, 7, 8, 17}).<sup>19</sup> Such a move would have shocked some Muslim thinkers of previous periods. Indeed, in a well-known critique of lettrism written a little more than a century before ʿAtufi compiled his inventory, the historian Ibn Khaldun argued in his *al-Muqaddima* that, contrary to its proponents’

claims that lettrism was a divinely-approved “science of the saints,”<sup>20</sup> it was inescapably tainted by pagan astral-magical techniques (of the sort discussed explicitly in some of the works listed in this section) and therefore was an execrable form of sorcery according to Islamic law.<sup>21</sup> This argument, which relies on a stark distinction between Islamic and pagan knowledge, was already outmoded among the largely occultophilic learned elites of Mamluk Cairo. The aforementioned ʿAbd al-Rahman al-Bistami, for example, a near-contemporary of Ibn Khaldun and denizen of both Cairo and Bursa, some of whose writings are included in the inventory (48 {3}, 50 {12}, 303 {12–13}), heralded lettrism not only as a science possessed by the greatest Sufi saints, but as the secret teachings of a line of initiates that included Plato, Pythagoras, Hermes-Idris, Abraham, et alia, all of whom had been afforded their knowledge by divine dispensation.<sup>22</sup> For al-Bistami and many of his contemporaries, it was no accident of history that the reconciliation of ancient and Islamic learning through revelation of the formerly secret tradition of lettrism was occurring in their own period, but rather this constituted proof of the approaching end of time.<sup>23</sup>

This is not to say that al-Bistami and his ilk considered all the teachings of the ancients or all the occult sciences to be of the same vaunted status as lettrism—else we would not expect to see these topics relegated to their own section in ʿAtufi’s inventory, quite apart from the religious sciences among which lettrism is nestled. As Melvin-Koushki discusses in his detailed study of the occult sciences in the Islamicate discourse on the “classification of the sciences” (*taṣnīf al-ʿulūm*), the epistemic position of the individual occult sciences was quite fluid throughout the late medieval and early modern periods.<sup>24</sup> Timurid and Safavid classificatory thinkers operating within the rising “neoplatonic-neopythagorean” trend of the new cosmology tended to promote astrology, lettrism, and geomancy to the status of mathematical sciences. This category, to their way of thinking, was at once more philosophical and more divine than that of the inductive “natural sciences” to which Ibn Sina and others had relegated most occult discourses. Ottoman thinkers, on the other hand, typically stuck closer to Ibn Sina’s view. In this regard, ʿAtufi’s scheme seems something of a mixed bag: lettrism as a religious science,

astrology as a mathematical science (thus its exclusion from this section of the inventory), and the remainder of the occult sciences in another category that can perhaps be taken as consonant with Ibn Sina's position that they are inductive natural sciences. It is also conceivable that 'Atufi was influenced by al-Bistami's thinking on the division of the sciences,<sup>25</sup> which seems to have been strongly influenced by the aforementioned *Epistles of the Brethren of Purity*, also featured in the palace library inventory (319 {9–14}, 324 {2–5}). Al-Bistami designates several occult discourses, including *sihr* (which, following the Brethren, he probably saw as inclusive of the art of talismanry), the exorcism/evocation of spirits (*azā'im*), bibliomancy (*al-fa'l*), alchemy, and the engineering of wondrous devices (*al-ḥiyal*) as *riyādī*, which is to say “propaedeutic” or “practical,” sciences. He also includes in this category such non-occult disciplines as lexicology (*al-lughā*) and grammar (*al-naḥw*), biography (*ṣiyar*) and history (*ta'rīkh*), and the chancery arts (*ilm al-kitāba*), among others. He seems to consider all of these to be “outer” sciences and applied knowledge discourses that are of practical use, but that are also propaedeutic in the sense that they contain evidentiary glimpses of the higher truths of revelation and genuine philosophy.

Ultimately, of course, 'Atufi was acting as a librarian in compiling the inventory, attempting to lend some order to the rich variety of inherited knowledge that was the imperial library collection. As such, his goal was not the striking of a manifesto on *taṣnīf al-ʿulūm*, but rather an inventory, the ordering of which would have been intuitively sensible to the readers he served. That sensibility, I would argue, was fully immersed in what was by then the well-established cosmological imaginary of the mature period. In this framework, the wisdom of the ancients on the secrets of the forces and sympathies that structured the cosmos blended—if somewhat fitfully—with that of the Abrahamic prophets, the Qur'an and Sunna, the Sufis, and many other learned Muslims of the distant and recent past. In what follows, each of the subcategories of works catalogued in the “occult sciences” section (*tafṣīl*) by 'Atufi is explored, with an eye toward their relationship to this vision of the cosmos. The discussion largely tracks the order in which the subjects are

given in that section, though subjects not contiguous in the inventory are discussed together in a few instances.

#### ONEIROMANCY AND PHYSIOGNOMY

The works on dream interpretation and physiognomy at the head of the section exemplify the complexities of the evolving position of the occult sciences relative to “Islamic” knowledge, including both the assimilation of pagan discourses with prophetic ones and the impact of later Sufi discourses on the understanding of occult praxes. The oneiromantic works listed by 'Atufi represent a mix of popular older Arabic and Persian works on the topic, and some that were much more recent—including a treatise by 'Atufi himself (303 {17–18}). The best-represented text is the *K. Kāmil al-ta'bir* (The Complete Book of Dream Interpretation, 302 {16–19} of Husayn Hubaysh bin Ibrahim al-Tiflisi (d. 1231), six copies of which are recorded.<sup>26</sup> A classic of the genre originally composed for the Seljuq Sultan of Rum, Qilij Arslan II (r. 1173–92), it combines elements from the Qur'an and Sunna; reports from figures such as the prophet Daniel (*Dāniyāl*), the sixth Shi'i Imam Ja'far al-Sadiq (d. 765), and the early *muḥaddith* and authority on dreams Ibn Sirin (d. 728)<sup>27</sup>; and numerous elements drawn from the *Oneirocritica* of the second-century CE pagan writer Artemidorus of Ephesus,<sup>28</sup> which was translated during the Abbasid era by the famous Hunayn bin Ishaq (d. 873). A copy of al-Dinawari's (d. after 1010) popular *K. al-Qādirī fī al-ta'bir* (The Book for al-Qadir on Dream Interpretation, 303 {11}) is found here as well,<sup>29</sup> as are three copies of *K. al-Mu'allam 'alā ḥurūf al-mu'jam* ([The Book of Dream Interpretation] Arranged according to the Alphabet, 303 {7–9}) by Ibn Ghannam al-Hanbali al-Maqdisi (d. 1294). The latter draws on many of the same authorities as *K. Kāmil al-ta'bir*, but it was innovative in having cast off the shambolic system of classifying dreams enshrined in Artemidorus in favor of an alphabetized discussion of figures and things that might appear to the dreamer, such as angels, all manner of animals and objects, the letters of the alphabet, etc. Among the more recent works in the palace library collection are two copies of a dream manual (302 {13})



by the scholar and Sufi Qutb al-Din Zada (d. 1480), a one-time student of Molla Fenari (d. 1431) and contemporary of Sultan Bayezid II and ‘Atufi, who also authored important commentaries on the works of Ibn al-‘Arabi and his disciple Sadr al-Din al-Qunawi (d. 1274).<sup>30</sup> ‘Atufi’s own contribution to the discipline is a work entitled *R. Ramz al-daqa’iq fi ‘ilm al-daqa’iq* (The Symbol of the Intricacies regarding the Knowledge of the Intricacies, that is, Knowledge of the Veridical Bodily Dream-Vision, 303 {17–18}).

Taken together, these works represent the main dynamics of the centuries-long maturation of Muslim thought on dream interpretation as a dialogue between prophetic (biblical, Qur’anic, and hadith-based) sources and pagan ones (especially Artemidorus), with the later addition of new Sufi discourses.<sup>31</sup> This dialogue was based initially on the general concordance between prophetic and pagan sources that dreams could serve as channels of communication from the divine, whether delivered directly to the dreamer by sanctified figures of the past, or as coded messages that require interpretation in order to be understood. While manuals by Muslim authors emphasized the superior nature of the former type—especially dreams in which the Prophet appeared, which were considered unimpeachable—it was the latter type that constituted the focus of *‘ilm al-ta’bir*. As set forth by Artemidorus and largely followed by Muslim authors, this science was explicitly analogist, deriving the meanings of oneiric phenomena on the basis of “the juxtaposition of similarities,” and thus allowing for the classification of those phenomena into different categories of prognostications in relation to different dreamers and waking situations.<sup>32</sup> Dream interpretation thus is conceived in these manuals as of a piece with the logic of other occult disciplines of the period, and with other diagnostic discourses derived largely from Hellenistic sources, such as humoral medicine. Later mystical discourses then added a new dimension to discourses on dreaming, with theorists such as al-Suhrawardi and Ibn al-‘Arabi positing concepts of a mesocosmic plane of reality in which oneiric-cum-visionary phenomena were primary. Such cosmological concepts were integral to the sorts of visionary claims to

knowledge that helped constitute Sufism’s religious and epistemic authority in the period.

The works on physiognomy (*‘ilm al-firāsa*) in the palace library collection trace an arc similar to that of oneirism. The science is concerned with drawing conclusions about the moral and spiritual qualities of a person on the basis of observable physical characteristics.<sup>33</sup> It has a lengthy pre-Islamic provenance, as demonstrated by the numerous volumes listed by ‘Atufi translating works attributed to Aristotle and the physician Polemon of Laodicea (d. 144),<sup>34</sup> and it was closely tied to Hellenistic and Avicennan medical-diagnostic discourses.<sup>35</sup> Sufi thought and practice later contributed new formulations of *firāsa*, portraying it as a form of mystical clairvoyance that enabled Sufi shaykhs to read the inner character of their disciples, and thus as something beyond mere rational induction. An important example of later Sufi contributions to the science is the treatise (304 {18}) listed in the inventory by the Sufi shaykh Muhammad Nurbakhsh (d. 1464), eponym of the Nurbakhshiyya order that was a Shi‘i offshoot of the Kubrawiyya.<sup>36</sup> In addition to arguing for the reliability and religious lawfulness of physiognomy, Nurbakhsh ties the practice to Sufi discourses of refining and improving the self in the path toward union with the divine. He posits that, as Shahzad Bashir puts it, “[negative] properties associated with bodily organs,” and thus detectable through the science of physiognomy, “can be overcome through deliberate effort and the company of the religious elect.”<sup>37</sup>

Musings on the body and its relationship to one’s spiritual state were central to Nurbakhsh’s thought. Possessed of the sort of messianic aspirations sometimes found among Sufis of the period, he theorized that bodies could in fact become vessels for numerous spirits, and claimed that his own body was host to the spirits of Jesus, the Prophet Muhammad, and the Mahdi.<sup>38</sup> It has been argued that his thinking along these lines helped pave the way for Safavid ideology.<sup>39</sup> As with the discourse on dream interpretation, we thus see that Sufi articulations of occult praxes could be of central importance to the extraordinary, often messianic claims to authority that Sufis sometimes made in this period—

claims that political actors were concerned with harnessing to their own ends.

#### ALCHEMY AND THE SCIENCE OF STONES

Alchemy (*al-kīmiyā'*), another discourse with ancient roots, is first and foremost the science of the transmutation of metals, particularly non-precious metals into precious ones. It also intersected with fields such as metallurgy, minting, pharmacology, and dye making.<sup>40</sup> Alchemy was a topic of perennial interest at ruling courts due to its potential as a source of wealth, though it could be a source of royal anxiety as well, due to concerns about counterfeiting. At a theoretical level, it was an important site for philosophical and theological debates about the constitution of physical matter, its relationship to the divine, and the limits of man's ability to understand and manipulate nature. Writings on alchemy are commonly shrouded in pseudonymity, obscurantism, allegories, and the use of elaborate sets of symbols and code names (*Decknamen*) for processes, substances, and laboratory equipment. The resultant ambiguities of alchemical discourse, combined with its themes of transformation and purification, made it an irresistible ground for metaphors for writers of a mystical and esoteric bent. Allusions to alchemy in Sufi writings are common, for example, even to the extent that great Sufi masters such as Dhu al-Nun al-Misri, Sahl al-Tustari, and Jalal al-Din Rumi garnered posthumous reputations as master alchemists.<sup>41</sup>

The majority of the books catalogued by 'Atufi under the heading of alchemy contain well-known Arabic texts on the topic. Best represented are works from the large corpus of writings attributed to Jabir bin Hayyan (d. 815?), a figure remembered as having been part of the retinue of the great 'Alid Ja'far al-Sadiq (d. 765), though in historical fact they likely were authored by coteries of anonymous thinkers of the ninth and tenth centuries.<sup>42</sup> These include *K. Uṣṭuqus al-uss* (The Book of the Elements of the Foundation, 304 {13–14}),<sup>43</sup> *K. al-Jumal [al-'ishrīn]* (The Book of Twenty Maxims, 305 {14}), *K. al-'Ahd* (The Book of the Pact, 306 {4–5}),<sup>44</sup> and *K. al-Rahma* (The Book of Mercy, 306 {6–7}).<sup>45</sup> A copy of *K. Mawāzīn al-ahjār* (The Book of the Balances of the

Stones, 306 {7}) also listed here could be any one of a number of works from the corpus with similar titles.<sup>46</sup> Also found are texts attributed to two pre-Islamic sages regarded as primordial authorities on alchemy, Hermes (Hermus) and Zosimos (Rismus, fl. early fourth century),<sup>47</sup> as well as two well-known works from medieval al-Andalus: the lengthy alchemical poem *Shudhūr al-dhahab* (Nuggets of Gold, 306 {4}) by Ibn Arfa' Ra's (d. 1197) and the *Rutbat al-ḥakīm* (The Rank of the Wise, 305 {12}) of Maslama b. Qasim al-Qurtubi (d. 964).<sup>48</sup> Other volumes include two compilations of treatises attributed to Ibn Sina, each of which contains a treatise on alchemy,<sup>49</sup> and a gathering of works by the great theologian and mystic al-Ghazali (d. 1111).<sup>50</sup> The latter volume seems to have been included under this heading because it contains what is listed as an Arabic translation of his famous *Kīmiyā'-i sa'ādat* (The Alchemy of Happiness, 305 {19}).<sup>51</sup>

The works from the Jabirian corpus are largely theoretically oriented, and are deeply concerned with the occult properties of material substances and their places in the cosmic web of sympathetic relationships. Starkly divergent from discourses on cosmology and physic that emerged from early *kalām* and traditionalist movements, it is perhaps unsurprising that they were cultivated in esotericist sectarian circles. By 'Atufi's period, however, such ideas about the nature of matter were largely given. Something similar can be said of al-Qurtubi's *Rutbat al-ḥakīm*, a companion text to the same author's famous grimoire of astral magic, *Ghāyat al-ḥakīm* (The Goal of the Wise, known in Europe as *Picatrix*). Both works were composed under the strong influence of the aforementioned quasi-Neoplatonic *Rasā'il Ikhwān al-ṣafā'*, another product of an early coterie of sectarian intellectuals that eventually helped to shape post-classical cosmological speculation.<sup>52</sup> That these works significantly contributed to the Western Islamic intellectual milieu that birthed Sufi lettrists such as Ibn al-'Arabi and al-Buni no doubt contributed to the wider acceptance of such texts that once might have been considered quite outré. The presence here of treatises on alchemy attributed to Ibn Sina is something of a historical curiosity, as, at least in his early writings, he was a severe critic of the science.<sup>53</sup> It is entirely plausible, however, that a reader such as 'Atufi would have

found Avicennan thought, as it had reached him through the commentarial tradition, to be thoroughly compatible conceptually with that of Jabir and the others in the collection. ‘Atufi’s inclusion of the al-Ghazali volume in this part of the inventory is more puzzling, as the alchemy referred to in the great theologian’s popular treatise is strictly a metaphor for spiritual transformation. Like the revered Sufis mentioned above, however, al-Ghazali was often regarded as a master of the occult sciences, with various treatises on alchemy, lettrism, etc. circulating under his name. ‘Atufi and other readers at the Ottoman court thus may have credited his work with genuine insights into the art of transmutation.

It must be said that the works collected here hardly seem to constitute the library of a practicing alchemist. The strongest indicator of this is the absence of works by the Mamluk alchemist ‘Izz al-Din Aydamir al-Jildaki (fl. fourteenth century), whose writings were fundamental to alchemical practice in the period.<sup>54</sup> If the palace library collection thus suggests a readership with more of a philosophical interest in the science than a practical one, it is nonetheless remarkable for being early relative to the golden age of Ottoman alchemy, which would commence only in the later sixteenth century, thanks in large part to the writings of Ali Çelebi, known in alchemical circles as *al-mu‘allif al-jadīd* (“the new author”).<sup>55</sup> The anonymous Turkish work *Bustan al-ḥikma* (The Garden of Wisdom, 305 {15}) listed here is thus of interest as an early example of alchemical poetry in Turkish. As Tuna Artun has noted based on surviving fragments, it likely was a commentary or synthesis of an older Arabic text, but it stands in any case as one of the earliest traces of alchemical writing in the Turkish vernacular.<sup>56</sup>

Closely related to alchemy is the science of stones (*‘ilm al-ahjār*), a discourse centered on the occult properties of stones (*khawāṣṣ al-ahjār*), though also dealing with issues of pharmacology, mineralogy, mining, etc.<sup>57</sup> Numerous works on this science were attributed to the usual ancient authors—Aristotle, Hermes, Dioscorides, et alia—though the identifiable works catalogued here belong entirely to Muslim writers who synthesized and expanded the teachings of the ancients. These include many of the best-known Arabic and Persian works on the topic: at least one copy of Abu Rayhan al-Biruni’s (d. 1050) *K. al-Jamāhir fi al-jawāhir* (The Comprehensive

Book on Stones, 307 {3}),<sup>58</sup> the physician and littérateur al-Tifashi’s (d. 1253) *K. Azhār al-afkār fi jawāhir al-ahjār* (The Blossoms of Contemplation on the Natures of Stones, 307 {1–2}), and Nasir al-Din Tusi’s (d. 1274) *Tansukhnāmah-i ilkhānī* (Book on Precious Stones for the Ilkhan, 307 {7}),<sup>59</sup> Also listed here is a title given as *‘Uyūn al-ḥaqā’iq fi ṣanā’i‘ al-ḥiyal al-‘ajība* (The Sources of Truths on the Manufacture of Wondrous Devices, 307 {3–4}). This is most likely *‘Uyūn al-ḥaqā’iq wa-iḍāh al-ṭara’iq* (The Sources of Truths and the Explanations of Paths) by Abu al-Qasim al-Iraqi al-Simawī (fl. early thirteenth century), a work—discussed in greater detail below—on various “magical” operations and artificial wonders that includes a section on gems and minerals and their sympathetic relationships to the planets.<sup>60</sup> The science of stones was a major site for discussions of the occult properties (*khawāṣṣ*, sing. *khaṣṣa*) of things, a concept that was also an indispensable element of discourses on alchemy, astrology and astral magic, medicine, etc. That it earns a heading in ‘Atufi’s inventory testifies to the importance in the period of the discourse on occult properties and its analogist approach to comprehending the concrete things of the terrestrial world, as interlaced with the movements of the heavens and the hidden workings of the divine.

#### GEOMANCY, BIBLIOMANCY, AND JAFR

While astrology and oneiromancy were time-honored methods of prognostication across the Mediterranean and Near East, Islamic civilization gave rise to three relatively unique divinatory discourses that were popular enough by the turn of the sixteenth century to merit their own subheadings in this section of the inventory: geomancy (*al-raml*), omens (*fa’l*) based on rhapsodomantic procedures, and the complex of political-eschatological texts and lettrist divinatory practices known as *jafr*. Each claimed roots in prophetic knowledge and in the earliest period of Islam, but by the late medieval period had been elaborated as highly technical divinatory praxes fully enmeshed in the new cosmological imaginary.

The art of geomancy, which became wildly popular across Arab and Persianate milieux from the thirteenth

century onward, had noteworthy advantages over astrology, which it in some ways resembles.<sup>61</sup> Requiring almost no equipment or mathematical skills, it was highly practicable by almost anyone. Furthermore, through references to the Qur'an and certain hadiths, its Muslim practitioners could make credible-enough claims of divine/prophetic approval of the art, though the survival of an extensive Judeo-Arabic literature on the topic makes clear that its appeal was hardly limited to Muslims.<sup>62</sup> Often compared to Chinese I Ching divination, the art consists of drawing sixteen series of lines (in sand or on a piece of paper) while concentrating on a query; totaling the number of lines in each series for an odd or even number; and then, according to a relatively simple set of rules, extrapolating from that data a series of figures, each consisting of four rows with either one or two dots in each row (for a total of sixteen possible figures). A typical reading produces fifteen of these figures in a set arrangement, the interpretation of which could then lead to anything from simple yes or no answers as to the advisability of a given action to intricately detailed forecasts of future events.

While the literature on geomancy often locates the genesis of the science with the prophet Idris (who learned it from the angel Jibril), and thence with figures such as the ancient Indian sage Tumtum al-Hindi and a contemporary of the Prophet Muhammad named Khalaf al-Barbari, the name most strongly associated with the late medieval flourishing of the science is an early thirteenth-century Berber by the name of Abu 'Abd Allah Muhammad al-Zanati (d. before 1230), to whom various treatises on the topic are attributed.<sup>63</sup> An extensive literature on geomancy developed across Arab and Persianate milieux in ensuing centuries, including translations and commentaries on al-Zanati, as well as numerous original works. This growing body of literature saw the sixteen geomantic figures and the fifteen "houses" in which they are arranged as having various correspondences (astrological, numerological, elemental, humoral, etc.), putting the science in dialogue with astrology, alchemy, lettrism, medicine, and other discourses. One work in 'Atufi's list is directly attributed to al-Zanati, *Fathḥ al-aqfāl fī 'ilm al-ashkāl* (Opening the Locks on Knowledge of the Figures, 307 {14}), a title not attested elsewhere to the best of my

knowledge. In addition, the work listed here as *Kitāb Ashkāl al-raml* (The Geomantic Figures, 308 {3}) is perhaps a copy of *Ḥulūl al-ashkāl* (Explanation of the Figures), a popular Turkish translation of al-Zanati's *al-Faṣl fī uṣūl al-raml* (Section on the Sources of Geomancy). The rest of the works listed are anonymous. Of these, the two described as *taqwīm al-raml* (Geomantic Almanac) are of interest. The *taqwīm* is best known in Ottoman contexts as a kind of astrological almanac prepared for rulers each year by court astrologers as part of their normal duties.<sup>64</sup> These presumably are similar products, based on geomantic castings rather than astrological ones. At least in slightly later periods, it was not uncommon for a court astrologer to also be a geomancer (*rammāl*), so these anonymous almanacs may have been produced by the court astrologers of Bayezid II or an earlier sultan. Whatever the case, they suggest an "official" practice of geomancy at the Ottoman court prior to the sixteenth century, a measure of the status the science had achieved by that time.

The subheading 'Atufi gives as *kutub al-fāl* contains works on various types of prognostication through omens, many dealing with some form of rhapsodomancy, which is to say, divination from written texts. This was sometimes done by opening a text to a random page and then taking the first word or verse on which one's eyes lit as the basis for a prognostication, though more complex operations were often called for.<sup>65</sup> The first treatise mentioned deals with Qur'anic rhapsodomancy, a practice known since the Umayyad period. The work listed here (308 {12–13}) as having been set down for the Abbasid caliph Harun al-Rashid (r. 786–809) may be an original, self-contained rhapsodomantic text similar to *al-Qur'a al-Mā'mūniyya* (Prognosticon of al-Ma'mun) discussed by Toufic Fahd. The latter was supposedly composed for Harun's son al-Ma'mun by the famous philosopher al-Kindi (d. 873); it contained, as Fahd describes it, "in the form of tables, 144 questions, followed by 144 chapters, each comprising 12 answers." The work listed by 'Atufi as *K. Dāniyāl al-nabī* (The Book of the Prophet Daniel, 308 {8}) might be the widely circulated *Malḥamat Dāniyāl* (Destinies of Daniel), a book of astro-meteorological prediction,<sup>66</sup> or perhaps the work discussed by Fahd under the title *Qur'at Dāniyāl* (Prognosticon of Daniel), which is similar to that com-

posed for al-Ma'mun.<sup>67</sup> In a related but distinct vein is the work listed in the inventory on the *zā'iraja* (308 {9}).<sup>68</sup> This was a divinatory device and method that seems to have emerged in the late medieval Islamic West, which uses complex circular tables and a combination of astrology and mathematical operations to direct the diviner to various parts of a long and thoroughly opaque poem, from which answers to the query are derived.<sup>69</sup> Ibn Khaldun writes on the *zā'iraja* at great length in *al-Muqaddima*. He describes it in detail, though predictably rejects the notion that it offers any insights into the world of the unseen (*al-ghayb*).<sup>70</sup> The *Jām-i sukhan-gūy* (Oracle Cup, 308 {9–10}), listed in two copies by 'Atufi just after the work on the *zā'iraja*, is apparently a similar kind of prognosticative device.<sup>71</sup>

The final category of divinatory texts 'Atufi notes is the science of *jafr*—a term rooted in early Shi'i reports of a special text or collection of texts (*al-jafr*) in the possession of the Prophet's cousin and son-in-law, 'Ali bin Abi Talib (d. 661), and his descendants. It contained various bodies of otherwise secret prophetic knowledge, such as the names of all earthly rulers until the end of time and the events that would lead to the day of reckoning.<sup>72</sup> These reports of special political-eschatological knowledge in the hands of the Shi'i Imams belong to a wider body of apocalyptic literature from the early Islamic period, known as *malāḥim* (destinies). The genre seems to have undergone a resurgence in the late medieval period, when numerous texts of end-time predictions were produced by Muslim visionaries of various stripes.<sup>73</sup> By the latter period, the notion had arisen of a "science of *jafr*" (*ilm al-jafr*) that encompassed various methods of prognostication, particularly by means of the letters of the Arabic alphabet and their numerical and astrological properties. Analyses of the names of rulers in order to determine the nature of their reigns or the outcomes of battles were among the most prevalent techniques. Like the early sources that inspired it, this later *jafr* literature tended toward matters of political and eschatological prognostication, and from at least the fifteenth century forward, courtly practitioners of the science often analyzed the letters of rulers' names to cast them in roles of eschatological significance. The science was thus an important contributor to the millenarian tenor of the period. The collection of works on this

genre in the palace library is small, though it contains two known titles. One is *K. al-Washy al-maṣūn fī ma'rifat 'ilm al-khaṭṭ alladhī bayn al-kāf wa-al-nūn* (The Book of the Hidden Ornaments of Knowledge of the Line between the *Kāf* and the *Nūn*, 309 {18–19}) by a thirteenth-century author known only as Abu al-'Abbas Ahmad bin Muhammad. It is said by Hajji Khalifa to be a large work on the science of *jafr*, with chapters on 623 methods pertaining to it.<sup>74</sup> The other is *K. Ṣayḥat al-būm fī ḥawādith al-Rūm* (The Book of the Cry of the Owl regarding the Events of Rome, 309 {17}), a book of apocalyptic predictions popularly attributed to Ibn al-'Arabi. It belongs securely to the category of late medieval *malāḥim* and *'ilm al-jafr* literature and, though almost certainly not actually written by Ibn al-'Arabi, is reflective of Sufi millenarianism in the period. It plays a role in the apocalyptic writings of 'Abd al-Rahman al-Bistami, who may in fact have authored it, and whose writings certainly helped popularize it among Ottoman intellectuals.<sup>75</sup>

#### ARTS OF "MAGIC"

Interspersed among the subsections on divinatory arts are those on various "magical" disciplines, which is to say, practices for actively causing change in the world through occult means.<sup>76</sup> These are grouped under five headings: talismans (*al-ṭilsimāt*), *nīranj*, *sīmiyā'*, the adjuration of spirits (*'azā'im*), and *siḥr*, another word for magic that often, though not always, carries a negative religio-moral valence. There is a good deal of fluidity and overlap between these categories, as suggested by the multiple titles/descriptions of works dealing with two or more of them. Indeed, the lexical meanings of terms such as *nīranj*, *sīmiyā'*, and *siḥr* are unstable even among contemporaneous authors, much less across time and space. A brief survey of the contents of the works 'Atufi has assigned to each category helps illuminate these categories somewhat, or at least his understanding of them. 'Atufi makes no effort by way of *mise-en-page* to distinguish works on *nīranj* from those on talismans, perhaps because the terms are sometimes interchangeable. *Ṭilsam* (talisman) is a relatively straightforward signifier for a manufactured object "charged" with occult forces, often of an astral nature.

The meaning of *nīranj* (pl. *nīranjāt* or *nayranjāt*, from the Persian *nayrang*), however, is less precise. Sometimes glossed as “enchantment,” it can denote talismans or other charged objects as well as operations ranging from tricks of prestidigitation and mechanical wonders to potions and poisons, verbal spells, etc. Of the texts in this group, the best represented is *K. al-Sirr al-Maktūm fī mukhāṭabāt al-nujūm* (The Book of the Hidden Secret of Conversing with the Stars) by the philosopher and Ash‘ari theologian Fakhr al-Din al-Razi (d. 1209–10), six copies or fragments of which are recorded bearing various secondary titles (308 {15–18} and 309 {1–3}).<sup>77</sup> Al-Razi is best known for his idiosyncratic fusion of Ash‘arism and Avicennism, his monumental Qur‘an commentary, and his writings on medicine. *Al-Sirr al-maktūm* is a major work of Muslim theological engagement with pagan thought, particularly the talismanic arts that allegedly were cultivated by the Sabeans of Harran, and is ultimately an attempt to reconcile Islamic concepts of prophethood and salvation with Hermetic notions of noesis.<sup>78</sup> It became widely popular as a theoretical and practical guide to talismanry as the art of astral magic par excellence, reaching audiences far beyond the elite readership in theological and philosophical matters for which al-Razi probably intended it. Also listed here is one of al-Razi’s main sources, the text on talismans/*nayranjāt* attributed to Hermes Trismegistus (Hermus) by way of Apollonius of Tyana (Balinas): *K. Hurmus alladhī tarjamahū Balīnās min qibal al-nayranjāt* (The Book of Hermes Translated by Apollonius, regarding Nayranjat, 308 {19}). Another work on talismans drawing heavily on Hellenistic precedents is *Dhakhīrat al-Iskandar* (The Treasure of Alexander, 309 {5}), which purports to be a treatise written by Aristotle for Alexander the Great. Ullmann notes that a copy held in Paris contains numerous illustrations of images to be inscribed on talismans intended to treat various ailments, such as one to remedy sciatica, which includes the image of a naked queen being swallowed up to her hips by the mouth of a fish.<sup>79</sup> As for the two entries marked *K. al-Shāmil* (The Comprehensive, 308 {14} and 309 {1}), these are most likely copies of *al-Shāmil fī baḥr al-kāmil* (The Comprehensive Book of Perfect Knowledge) by Abu Fadl Muhammad al-Tabasi (d. 1089).<sup>80</sup> This is a large grimoire that deals extensively with astral

talismans as well as numerous other types of operations, ranging from “Solomonic” techniques for summoning jinn and demons (*‘azā‘im*, see below) to love spells and curses. Ullmann notes that *Kitāb al-Shāmil* is unusual for the genre in that it makes little mention of the Hellenistic authorities whom al-Razi and many others cite, but instead adduces only the prophets and saints of Islamic/Abrahamic tradition. For all this apparent piety, it includes such transgressive procedures as direct calls to Iblis (Satan) to curse one’s enemies.<sup>81</sup> Also worthy of note is *K. Tuḥfat al-gharā‘ib* (The Book of the Precious Gift of Prodigies, 309 {3–4}), which according to ‘Atufi addresses *nīranj* and wonders (*‘ajā‘ib*).<sup>82</sup> Largely concerned with fantastical geography, it is best known as one of the major sources for the famous cosmographical work *‘Ajā‘ib al-makhlūqāt wa-gharā‘ib al-mawjūdāt* (The Wonders of Creation and Prodigies of Existence) by Abu Yahya Zakariyya al-Qazwini (d. 1283),<sup>83</sup> though its inclusion under this heading suggests that it also contains some practical magical material.

‘Atufi lists three volumes (containing a total of four texts) under the subheading of *sīmīyā’*, a term that, like *nīranj*, is quite flexible in its meaning, and indeed can denote much the same range of occult operations as *nīranj*. The word is from the Greek *semeia*, by way of Syriac, and some premodern authorities—Ibn Khaldun being the best-known example—associate it especially with letter magic and the Sufi science of letters. However, this limited sense of the term is not borne out by other sources, such as those recorded by ‘Atufi in this subsection.<sup>84</sup> Three of the four texts ‘Atufi lists are closely interrelated: the *K. al-Nawāmīs* (The Book of Sacred Secrets, 309 {7}) of (pseudo-)Plato, the *‘Uyūn al-ḥaqā‘iq wa-īdāh al-ṭarā‘iq* (The Sources of Truths and the Explanations of Paths, 307 {3–4} and 309 {8}) of Abu al-Qasim al-Iraqi al-Simawi (d. ca. 1260), and an abridgement (*mukhtaṣar*) of the latter (309 {9}). The first, which is well attested in Arabic sources but now survives as an independent work only in a Latin version (*Liber Vaccae*), details, as Liana Saif puts it, “experiments which involve the gruesome slaughter and mutilation of a cow to magically produce a rational animal or bees... [and] other recipes or experiments for causing extraordinary transformations, such as splitting the moon in half and causing the appearance of incredible giants.”<sup>85</sup> The second

work, by al-Simawi (i.e., one who does *sīmiyā'*), is derived in part from *K. al-Nawāmīs* and probably includes extensive excerpts from it. However, it also contains a range of other materials, such as invisibility spells, fire spells, tricks for avoiding hunger and fatigue, mind-reading techniques, various potions, and information on the occult properties of minerals, plants, and animals. Because many of the operations proceed wholly through the manipulation of material and organic substances, modern scholars have sometimes glossed *sīmiyā'*—and *nīranj*, for that matter—as “natural” or “white magic,” as opposed to demonic or “black” magic. However, as Saif argues, this ignores the fact that works such as *Uyūn al-ḥaqā'iq* also include procedures involving supplications to spirits and other supernatural beings, implying that authors like al-Simawi seem not to have been concerned with these distinctions.<sup>86</sup> The natural/demonic magic distinction arises quite specifically out of Christian-European discourses in any case, and, in the opinion of the present author, causes more problems than it solves when ported to Islamic contexts.

The next category is works of *'azā'im*, which deals with the adjuration of jinn or other spirits. This can be exorcism, i.e., driving spirits out of a possessed person, or the evocation of spirits to cause them to do one's bidding. Notions of jinn adjuration have a lengthy history in Islamicate thought, deriving from both Bedouin and Hellenistic precedents.<sup>87</sup> Writing in the tenth century, the Baghdadi bookseller Ibn al-Nadīm delineates licit and illicit strains of the practice, and links it to the story of Solomon imprisoning a legion of jinn in the vessel of brass.<sup>88</sup> Much of the aforementioned *Kitāb al-Shāmil* is concerned with these arts, as are parts of many of the other works discussed previously, again demonstrating the fluidity of these categories. 'Atufi mentions three other titles in the section of works on *'azā'im*. The *Sirr al-asrār* listed here may be the well-known pseudo-Aristotelian work by that title, though it seems odd to list this work under the heading of *'azā'im*. The *Sifr al-asrār fī 'ajā'ib al-umūr wa-al-'azā'im* (The Secret Scroll on Wondrous Matters and Adjuration [of spirits], 309 {11}) and *Risāla fī da'awāt al-ra's wa-l-dhanab* (Treatise on Invocations of the Head and Tail, 309 {12–13}) cannot be identified at this time. The title of the latter suggests that it contained invocations of the lunar nodes (the head

and tail of the dragon), perhaps in the style of *Ghayāt al-ḥakīm* (The Goal of the Wise), which to some extent personifies the astral emanations (*rūḥāniyyāt*) as spirit-beings.<sup>89</sup>

The final category of magical arts, *sihr* (magic, sorcery), is at first glance the most eyebrow raising, as this term frequently connotes categorically illicit magical practices in the hadith literature and in classical theological and legal discourses. Nonetheless, *sihr* is sometimes used without disapprobation, as in the *Rasā'il ikhwān al-ṣafā'*, for example, where it is represented as the ultimate science of the secrets of nature.<sup>90</sup> The relevance of any of those considerations to 'Atufi is highly questionable, however, as the works he lists here are mostly concerned with the procedure known as *al-ghālib wa-al-maghlūb* (the victor and the vanquished). This is a complicated method for divining the outcomes of battles based on the numerical values of the names of the rulers involved, and could be seen as a branch of the science of *jafr*. The *K. fī ma'rifat al-ghālib wa-al-maghlūb min al-mutaḥāribayn* (The Book on Knowledge of the Victor and the Vanquished among the Combatants, 311 {1–2} and 311 {4}) listed here in three places is a known work on the topic.<sup>91</sup> The method also finds detailed treatments in the pseudo-Aristotelian *Sirr al-asrār* (Secret of Secrets, probably 309 {11}),<sup>92</sup> the *Rāḥat al-ṣudūr* (Repose of Hearts, 185 {19}) of the Seljuq historian Muhammad bin 'Ali al-Rawandi (d. early thirteenth century),<sup>93</sup> and other sources.<sup>94</sup> Another title listed here, *R. Jihād al-mulūk 'alā ṭarīqat aḥkām al-nujūm* (The Treatise on the Holy War of Kings by Way of Astrology, 311 {6–7}) would seem to confirm the martial-divinatory nature of the works gathered in this subsection. It is clear why this sort of divination would have been of great interest at the Ottoman imperial court, but it is a mystery (at least to the present author) as to why works on this topic should predominate under the heading of *sihr*.

#### WONDROUS AUTOMATA AND WONDROUS MATTERS

Two final categories rounding out this section of the inventory contain works on “wondrous mechanical arts” and related “devices” (*ṣinā'āt al-'ajība, al-ḥiyāl*), as

well as on “wondrous matters” (*al-umūr al-‘ajība*). The former two appear after the section on *jafr* and before the one on *sihr*. The third is the last category in the section; as noted above, its heading is not mentioned in the inventory’s table of contents but rather as a marginal note.

The category of “wondrous mechanical arts and tricks” is largely concerned with automata, i.e., human-made objects that move or otherwise perform without visible outside action.<sup>95</sup> Such objects were important luxury goods at Islamicate courts. Mechanical clocks, often decorated with elaborate figures and vignettes and installed in public spaces, were a particularly important subcategory. More prosaic mechanical devices for use in agriculture, medicine, and industry can also fall under this heading. The best-known work regarding automata is the often lavishly illustrated *al-Jāmi‘ bayn al-‘ilm wa-al-‘amal al-nāfi‘ fī šinā‘at al-ḥiyal* (Comprehensive Book of Knowledge and Beneficial Practice in the Manufacture of Devices) by Isma‘il bin Razzaz al-Jazari (fl. twelfth century),<sup>96</sup> two copies of which are included in ‘Atufi’s inventory (310 {11–12} and 201 {16}). These mechanical arts had a much older background, of course, and Hellenistic works make up the bulk of the inventory’s entries. *K. Ayrān fī ḥiyal raf‘ al-ashyā’ al-thaqīlah* (The Book of Hero on Devices for Raising Heavy Things, 310 {4}) is by the mathematician and engineer Hero of Alexandria (d. ca. 70 CE).<sup>97</sup> Two copies of a work by Pappus on moving heavy objects and other mechanical feats are mentioned as well, *Madkhal Babūs fī al-ḥiyal ka-jarr al-athqāl* (Pappus’s Introduction on Mechanical Devices for Lifting Weights, 310 {5}),<sup>98</sup> as are various treatises by Philo of Byzantium on perpetual motion machines and an automated weapon, *R. al-Dawā‘ir al-mutaḥarrika min dhawātihā* (On Wheels that Move by Themselves, 310 {8}) and *R. ‘Amal al-sā‘āt allatī tarmī bi-al-banādiq* (The Treatise on the Working of a [Water-]Clock that Throws Slingstones, 310 {8–9}).<sup>99</sup> Also listed is a copy of the three treatises of Ctesibius of Alexandria, fl. third century BCE) on air-powered musical instruments (310 {16}).<sup>100</sup>

It may strike the modern reader as odd that these works on the construction of mechanical devices—an art typically conceived of as a branch of applied mathematics in the *taṣnīf al-‘ulūm* literature—are included by ‘Atufi alongside texts on matters we would tend to cate-

gorize as “supernatural.” It must be understood, however, that though these mechanical arts seem from our perspective to be of a fundamentally different nature than the others in this section, all the sciences included here share some crucially important characteristics from the “emic” point of view. They are all *thaumatopetic*, as one early modern European thinker put it,<sup>101</sup> which is to say, productive of wonder in those who consider or witness them. This was the proper emotional reaction to “interruptions of the customary” (*ikhṭirāq al-‘āda*), that is, of the ordinary order of manifest reality. They are also all concerned with the intricate “inner” workings of things in relation to the “outer” world of everyday experience, whether the gears of an ornate mechanical clock whose statuettes move as if alive, the talisman in which subtle astral forces are invested through images and suffumigations in order to concretely influence worldly events, the complex recipes and subtle material transformations of alchemical operations meant to produce the most tangible of precious metals, or the symbol-cloaked language of dreams that reveals the secrets of waking life. Finally, these arts, though difficult to attain, are susceptible to human mastery through some combination of study and sanctity. In being mastered they are, as al-Bistami would have it, propaedeutic to a true understanding of the hidden principles that structure the whole of God’s creation.

As for the texts gathered under the heading of “wondrous matters,” they are a small and motley bunch. The marginal addition of the heading suggests that ‘Atufi inserted them late in the process of writing the inventory. There is a work on the various sects (*madhāhib*) of Christians, which perhaps is included here for lack of a better place: *K. al-Mu‘lam fī bayān madhāhib al-naṣārā* (The Book of the Informed on Explicating the Schools of Christians, 311 {12}). There is also a copy of *K. al-Mukhtār fī kashf al-asrār wa-hatk al-astār* (The Book of Selection in the Unveiling of the Secrets and the Rending of the Veils, 310 {16}) by ‘Abd al-Rahim (or al-Rahman) al-Jawbari (fl. thirteenth century), an exposé of the deceptive methods of all manner of unscrupulous tricksters, from fraudulent jewelers to sham alchemists and pretenders to sainthood.<sup>102</sup> Himself a Sufi and alchemist, al-Jawbari’s determination to expose swindlers and debunk false claims to the extraordinary and miraculous is driven not by occultophobia, but rather by a



wish to protect the integrity of God's saints and of true practitioners of the occult sciences. The work's inclusion here suggests that skepticism regarding these matters was not entirely unknown at the Ottoman court.

Finally, there are two codices with translations of a work by Yamistus "the pagan" (*al-wathanī*) on idol worship and the various sects associated with it. This author is George Gemistus Plethon (d. 1450, 1452, or 1454), an idiosyncratic Neoplatonic philosopher of the late Byzantine period who has aroused a good deal of interest in modern scholarship for his alleged crypto-paganism, his possibly having been influenced by al-Suhrawardi, and his significant impact on Renaissance humanism.<sup>103</sup> As discussed by Maria Mavroudi, the work described in the inventory as *Tarjamat al-bāqīyya min kitāb Yamistūs al-wathanī* (A Translation of the Remains of the Book of Yamistus the Pagan, 311 {12–13}) is an Arabic translation, likely commissioned during the reign of Sultan Mehmed II, of what is said to be a portion of one of his books that was pulled from the fire during a church-decreed public immolation of his works in Constantinople/Istanbul sometime between 1454 and 1462.<sup>104</sup> It contains excerpts from three of his works, including his rendering of the *Chaldean Oracles*—attributed by him to Zoroaster—that deeply influenced Marsilio Ficino and helped inject a powerful strain of occultophilism and Suhrawardi-esque "Platonic Orientalism" into Renaissance humanism. As Mavroudi argues, though some Ottoman intellectuals were hostile to Plethon's pagan inclinations—including the translator of the volume in question, who writes a scathing introduction to it—others perceived the theurgic nature of his writings to be concordant with Suhrawardian thought and various Neoplatonic strands of Muslim philosophy.<sup>105</sup> This is to say that his writings were quite at home within the new cosmological imaginary of the period.

## NOTES

1. *Fāl* is given throughout the inventory. *Fa'l* is a common variant.
2. This is vocalized as *nayranj* in the manuscript, which would seem to be a hybrid of the Arabic *nīranj* and its Persian source-word, *nayrang*. See *El2*, s.v. "Nīrandj," by Toufic Fahd.

3. *Nīranj* and *sīmiyā'* are terms that evade straightforward translation. They are both often rendered as "natural magic" or "white magic"; however, neither gloss stands up to close scrutiny, as discussed below.
4. For overviews of the occult sciences in Islam, see Toufic Fahd, *La divination arabe: Études religieuses, sociologiques et folkloriques sur le milieu natif de l'islam* (Leiden: Brill, 1966); Manfred Ullmann, *Die Natur- und Geheimwissenschaften im Islam* (Leiden: Brill, 1972); Richard Lemay, "L'islam historique et les sciences occultes," *Bulletin d'études orientales* 44 (1993): 19–32; Emilie Savage-Smith, "Introduction," in *Magic and Divination in Early Islam*, ed. Emilie Savage-Smith (Aldershot: Ashgate Variorum, 2004), xiii–li; Travis Zadeh, "Magic, Marvel, and Miracle in Early Islamic Thought," in *The Cambridge History of Magic and Witchcraft in the West*, ed. S. J. Collins (Cambridge: Cambridge University Press, 2015), 235–67; Edgar Francis, "Magic and Divination in the Medieval Islamic Middle East," *History Compass* 9, no. 8 (2011): 622–33; Jean-Charles Coulon, *La magie en terre d'Islam au Moyen Âge* (Paris: Éditions du comité des travaux historiques et scientifiques, 2017); Matthew Melvin-Koushki, "Introduction: De-Orienting the Study of Islamicate Occultism," in *Islamicate Occultism: New Perspectives*, ed. Matthew Melvin-Koushki and Noah Gardiner, special issue *Arabica* 64, no. 3-4 (2017): 287–95.
5. Covered in this volume by the essay of Cornell H. Fleischer and Tunç Şen. See Dimitri Gutas, *Greek Thought, Arabic Culture: The Graeco-Arabic Translation Movement in Baghdad and Early Abbasid Society (2nd-4th/8th-10th Centuries)* (London: Routledge, 1998), 108–10; George Saliba, "The Role of the Astrologer in Medieval Islamic Society," in *Magic and Divination in Early Islam*, 347ff; Sonja Brentjes, "Courtly Patronage of the Ancient Sciences in Post-Classical Islamic Societies," *Al-Qanṭara: Revista de Estudios Árabes* 29 (2008): 403–36.
6. Aziz al-Azmeh, *Ibn Khaldun: An Essay in Reinterpretation* (London: Cass, 1982), 112. It should be noted that, while al-Azmeh's generalization has considerable validity for the classical period, it is far less accurate vis-à-vis the period in which Ibn Khaldun wrote; see Matthew Melvin-Koushki, "In Defense of Geomancy: Sharaf Al-Dīn Yazdī Rebuts Ibn Khaldūn's Critique of the Occult Science," in *Islamicate Occultism: New Perspectives*, 346–403; Noah Gardiner, *Ibn Khaldūn versus the Occultists at Barqūq's Court: The Critique of Lettrism in al-Muqaddimah* (Berlin: EB-Verlag, forthcoming).
7. "Analogist" is intended here in the sense used by the anthropologist Philippe Descola: "a mode of identification that divides up the whole collection of existing beings into a multiplicity of essences, forms, and substances separated by small distinctions and sometimes arranged on a graduated scale so that it becomes possible to recompose the system of initial contrasts into a dense network of analogies that link together the intrinsic properties of the entities that are distinguished in it" (Philippe Descola, *Beyond*

- Nature and Culture*, trans. Janet Lloyd [Chicago: The University of Chicago Press, 2013], 201).
8. For the classic treatment of closely related modes of thought in European intellectual history, see Arthur Lovejoy, *The Great Chain of Being: A Study of the History of an Idea* (Cambridge, MA: Harvard University Press, 1964).
  9. Among the more noteworthy postclassical occultophobes were Ibn Taymiyya, Ibn Qayyim al-Jawziyya, and Ibn Khaldun. On these thinkers and contemporary responses to them, see John Livingston, "Ibn Qayyim Al-Jawziyyah: A Fourteenth-Century Defense against Astrological Divination and Alchemical Transmutation," *Journal of the American Oriental Society* 91 (1971): 96–103; Mushegh Asatrian, "Ibn Khaldun on Magic and the Occult," *Iran and the Caucasus: Research Papers from the Caucasian Centre for Iranian Studies, Yerevan* 7 (2003): 73–123; Robert Irwin, "Al-Maqrīzī and Ibn Khaldūn: Historians of the Unseen," *Mamluk Studies Review* 7 (2003): 217–30; Yahya Michot, "Ibn Taymiyya on Astrology: Annotated Translations of Three Fatwas," in *Magic and Divination in Early Islam*, 277–340; cf. Melvin-Koushki, "In Defense of Geomancy"; Gardiner, *Ibn Khaldūn versus the Occultists*.
  10. Fazlur Rahman, *Islam*, 2nd ed. (Chicago: University of Chicago Press, 1979), 123–26; Shahab Ahmed, *What Is Islam? The Importance of Being Islamic* (Princeton, NJ: Princeton University Press, 2016), 26–31 and passim. Rahman considers this development to have been a disaster for Islamic thought, while Ahmed considers it evidence of the religio-intellectual vitality of the post-classical period. For a Perennialist viewpoint, see Seyyed Hossein Nasr, *Three Muslim Sages: Avicenna, Suhrawardī, Ibn 'Arabī* (Delmar, NY: Caravan Books, 1976).
  11. Matthew Melvin-Koushki, "Powers of One: The Mathematization of the Occult Sciences in the High Persianate Tradition," *Intellectual History of the Islamic World* 5, no. 1 (2017): 179 and passim.
  12. For an overview of the hegemonic nature of Sufism in this period, see Nile Green, *Sufism: A Global History* (Chichester: Wiley-Blackwell, 2012), 71–176.
  13. On the embrace of millenarianism and notions of sacred kingship by post-Mongol rulers, see Cornell Fleischer, "Mahdi and Millennium: Messianic Dimensions in the Development of Ottoman Imperial Ideology," in *The Great Ottoman-Turkish Civilization, Vol. 3: Philosophy, Science, and Institutions*, ed. Kemal Çiçek (Istanbul: Isis, 2000), 42–54; Cornell Fleischer, "Shadow of Shadows: Prophecy in Politics in 1530s Istanbul," *International Journal of Turkish Studies* 13 (2007): 51–62; Cornell Fleischer, "Ancient Wisdom and New Sciences: Prophecies at the Ottoman Court in the Fifteenth and Early Sixteenth Centuries," in *Fatnama: The Book of Omens*, ed. M. Farhad and S. Bağcı (Washington, DC: Smithsonian Institution Press, 2009), 231–44; Cornell Fleischer, "A Mediterranean Apocalypse: Prophecies of Empire in the Fifteenth and Sixteenth Centuries," *Journal of the Economic and Social History of the Orient* 61, no. 1–2 (2018): 18–90; Azfar Moin, *The Millennial Sovereign: Sacred Kingship and Sainthood in Islam* (New York: Columbia University Press, 2012); İlker Evrim Binbaş, *Intellectual Networks in Timurid Iran: Sharaf Al-Dīn 'Alī Yazdī and the Islamic Republic of Letters* (Cambridge: Cambridge University Press, 2016); Matthew Melvin-Koushki, "Early Modern Islamic Empire: New Forms of Religiopolitical Legitimacy," in *The Wiley-Blackwell History of Islam*, ed. Armando Salvatore and Babak Rahimi (Malden, MA: Wiley-Blackwell, 2017), 353–75; Matthew Melvin-Koushki, "Astrology, Lettrism, Geomancy: The Occult-Scientific Methods of Post-Mongol Islamic Imperialism," *The Medieval History Journal* 19, no. 1 (2016): 142–50. See also Hüseyin Yılmaz's contribution to this volume.
  14. John Walbridge, *The Wisdom of the Mystic East: Suhrawardi and Platonic Orientalism*, SUNY Series in Islam (Albany: State University of New York Press, 2001), 5ff.
  15. On al-Bistami, see İhsan Fazlıoğlu, "İlk Dönem Osmanlı İlim ve Kültür Hayatında İhvanu's Safâ ve Abdurrahman Bîstâmî," *Dîvân İlmî Araştırmalar Dergisi* (1996), 229–40; Denis Gril, "Ésotérisme contre hérésie: 'Abd al-Rahmān al-Bîstāmî, un représentant de la science des lettres à Bursa dans la première moitié du XVe siècle," in *Syncretismes et hérésies dans l'Orient seldjoukide et ottoman (XIV<sup>e</sup>-XVIII<sup>e</sup> siècle): Actes du Colloque du Collège de France, octobre 2001*, ed. Gilles Veinstein (Paris: Peeters, 2005), 183–95; Fleischer, "Shadow of Shadows," 51–62; Fleischer, "Ancient Wisdom and New Sciences," 231–44; Fleischer, "A Mediterranean Apocalypse," passim; Binbaş, *Intellectual Networks*, 104–14; Matthew Melvin-Koushki, "The Quest for a Universal Science: The Occult Philosophy of Şā' in Al-Dīn Turka İsfahānī (1369-1432) and Intellectual Millenarianism in Early Timurid Iran" (PhD diss., Yale University, 2012), 240–47; Jean-Charles Coulon, "Building al-Būnī's Legend: The Figure of al-Būnī through 'Abd al-Rahmān al-Bîstāmī's *Shams al-āfāq*," *Journal of Sufi Studies* 5, no. 1 (2016): 1–26; Noah Gardiner, "Forbidden Knowledge? Notes on the Production, Transmission, and Reception of the Major Works of Aḥmad Al-Būnī," *Journal of Arabic and Islamic Studies* 12 (2012): 114ff; Noah Gardiner, "The Occultist Encyclopedism of 'Abd Al-Rahmān Al-Bîstāmī," *Mamluk Studies Review* 20 (2017): 3–38.
  16. For recent research on the transfer of these ideas from Shi'ī thought to Sufism, see Michael Ebsen, *Mysticism and Philosophy in Al-Andalus: Ibn Masarra, Ibn al-'Arabī and Ismā'īlī Tradition* (Leiden: Brill, 2014); Yousef Casewit, *The Mystics of Al-Andalus: Ibn Barrājān and Islamic Thought in the Twelfth Century* (Cambridge: Cambridge University Press, 2017), 57–90. On the phenomena of "philosophical mysticism," see also Anna Akasoy, "What Is Philosophical Sufism?" in *In the Age of Averroes: Arabic Philosophy in the Sixth/Twelfth Century*, ed. Peter Adamson (London: The Warburg Institute and Nino Aragno Editore, 2011), 229–49.
  17. Liana Saif, "From *Gāyat al-ḥakīm* to *Šams al-ma'ārif*: Ways of Knowing and Paths of Power in Medieval Islam," in *Islamicate Occultism: New Perspectives*, 297–345; Melvin-Koushki, "Powers of One"; Noah Gardiner, "Stars and Saints:

- The Esotericist Astrology of the Sufi Occultist Ahmad Al-Buni," *Journal of Magic, Ritual, and Witchcraft* 12, no. 1 (2017): 39–65.
18. The literature on lettrism is rapidly expanding of late. Some major studies are Denis Gril, "The Science of Lettters," in *The Meccan Revelations*, ed. Michel Chodkiewicz, 2 vols. (New York: Pir Press, 2004), 2:103–219; Pierre Lory, *La science des lettres en islam* (Paris: Editions Dervy, 2004); Ebstein, *Mysticism and Philosophy*; Jean-Charles Coulon, "La magie islamique et le « corpus bunianum » au Moyen Âge" (PhD diss., Paris IV - Sorbonne, 2013); Jean-Charles Coulon, *La magie en terre d'Islam*; Noah Gardiner, "Esotericism in a Manuscript Culture: Ahmad al-Būni and His Readers through the Mamlūk Period" (PhD diss., University of Michigan, 2014); Gardiner, "Stars and Saints"; Matthew Melvin-Koushki, "The Occult Challenge to Philosophy and Messianism in Early Timurid Iran: Ibn Turka's Lettrism as a New Metaphysics," in *Unity in Diversity: Mysticism, Messianism and the Construction of Religious Authority in Islam*, ed. Orkhan Mir-Kasimov (Leiden: Brill, 2014), 247–76; Matthew Melvin-Koushki, "Of Islamic Grammatology: Ibn Turka's Lettrist Metaphysics of Light," *Al-'Uṣūr Al-Wuṣṭā* 24 (2016): 42–113.
  19. On which see Guy Burak's contribution to this volume.
  20. Gril, "The Science of Letters," 123.
  21. Ibn Khaldūn, *The Muqaddimah: An Introduction to History*, trans. Franz Rosenthal, 3 vols. (New York: Pantheon, 1958), 3:171–82; Gardiner, "Ibn Khaldūn versus the Occultists." Notably, the multivolume copy of *Kitāb al-'Ibar*—the work to which *al-Muqaddima* is the introduction—that Ibn Khaldun had prepared for the Mamluk sultan al-Zahir Barquq (r. 1382–99, with a brief interruption in 1389) found its way into Bayezid II's library. Six volumes (renamed in the Mamluk sultan's honor as *Al-Zāhiri fī al-'ibar bi-akhbār al-'arab wa-al-'ajam wa-al-barbar*) are catalogued as TSMK 2924/3–6 and 13–14. The corresponding volume that contains the text of *al-Muqaddima* is catalogued as Süleymaniye MS Damad Ibrahim 863. All seven volumes are listed in the inventory at 186 {13}.
  22. Al-Bistami's writings remain almost entirely in manuscript. For his thinking regarding the ancients and lettrism, see, for example, his *Naẓm al-sulūk fī musāmarat al-mulūk*, TSMK, A. 1597. See also Fleischer, "Ancient Knowledge and New Sciences"; Fleischer, "A Mediterranean Apocalypse."
  23. Regarding al-Bistami's millenarianism, see Fleischer, "A Mediterranean Apocalypse," passim; Gardiner, "Occultist Encyclopedism," 14–15.
  24. Melvin-Koushki, "Powers of One."
  25. Al-Bistami's thinking on *taṣnīf al-'ulūm* is gestured at in a diagram of "the arts of knowledge" (*funūn al-'ilm*) that he includes in more than one of his works. See, for example, *Naẓm al-sulūk fī musāmarat al-mulūk*, TSMK, A. 1597, fol. 53a.
  26. An edition of the Persian text with an English introduction is Hubaysh ibn Ibrāhīm Tiflīsī, *Kāmil al-ta'bīr: aṣarī jāmi' bi-zabān-i Fārsī dar khvābguzārī va ta'bīr-i ru'yā = Kāmil al-Ta'bīr: The Complete Persian Book of Dreams and Dream Interpretation*, ed. Mukhtār Kumaylī, 2 vols. (Tehran: Markaz-i Pizhūhishī-i Mīrās-i Maktūb, 2015).
  27. On whom see *El2*, s.v. "Ibn Sirīn," by Toufic Fahd.
  28. For a translation of the Greek, see Artemidorus, *The Interpretation of Dreams = Oneirocritica*, trans. Robert White (Park Ridge, NJ: Noyes Press, 1975). On the work's influence on Islamicate oneiromancy, see Fahd, *La divination arabe*, passim.
  29. Published as Naṣr bin Ya'qūb al-Dīnawarī, Fahmī Sa'd, ed., *Kitāb al-Ta'bīr fī al-ru'yā, aw, al-Qādirī fī al-ta'bīr* (Beirut: 'Ālam al-Kutub, 1997).
  30. See Ed., *El2*, "Ḳuṭb al-Dīn Zāde."
  31. Some overviews of Muslim dream interpretation are Fahd, *La divination arabe*, 247–367; John Lamoreaux, *The Early Muslim Tradition of Dream Interpretation*, SUNY Series in Islam (Albany: State University of New York Press, 2002); Pierre Lory, *Le rêve et ses interprétations en Islam* (Paris: Michel, 2003); Nile Green, "The Religious and Cultural Roles of Dreams and Visions in Islam," *Journal of the Royal Asiatic Society* 13, no. 3 (2003): 287–313; Elizabeth Sirriyeh, *Dreams and Visions in the World of Islam: A History of Muslim Dreaming and Foreknowing* (London: I. B. Tauris, 2015). Numerous valuable essays are also to be found in Louise Marlow, ed., *Dreaming across Boundaries: The Interpretation of Dreams in Islamic Lands* (Cambridge, MA: Harvard University Press, 2008), and Özgen Felek and Alexander Knysch, eds., *Dreams and Visions in Islamic Societies* (Albany: State University of New York Press, 2012).
  32. Artemidorus, *Oneirocritica*, 2.25.
  33. Some of the relevant scholarship on Islamicate physiognomy is Fahd, *La divination arabe*, 369–429; Robert Hoyland, "Physiognomy in Islam," *Jerusalem Studies in Arabic and Islam* 30 (2005): 361–402; Antonella Ghersetti, "A Science for Kings and Masters: *Firāsa* at the Crossroad between Natural Sciences and Power Relationships in Arabic Sources," in *The Occult Sciences in Pre-modern Islamic Cultures*, ed. Nader El-Bizri and Eva Orthmann (Würzburg: Ergon Verlag, 2018), 83–104; Emin Lelić, "Physiognomy ('ilm al-Firāsat) and Ottoman Statecraft: Discerning Morality and Justice," in *Islamicate Occultism: New Perspectives*, 609–46. Numerous insights on physiognomy in later Sufi thought are to be found in Shahzad Bashir, *Sufi Bodies: Religion and Society in Medieval Islam* (New York: Columbia University Press, 2011). See also the Swain volume on Polemon in the note following.
  34. Aristotle, 304 {9} and 304 {18}; Polemon, 304 {11–13} and 304 {15}.
  35. On Polemon and his influence on Islamicate thought, see the essays by Robert Hoyland and Antonella Ghersetti in *Seeing the Face, Seeing the Soul: Polemon's Physiognomy from Classical Antiquity to Medieval Islam*, ed. Simon Swain (Oxford: Oxford University Press, 2007).
  36. *El2*, s.v. "Nūrbakhshīyya," by Hamid Algar.
  37. Bashir, *Sufi Bodies*, 47.
  38. *Ibid.*, 40.

39. Algar, "Nūrbakhshiyya."
40. Some overviews of Islamicate alchemy include Fuat Sezgin, *Geschichte des arabischen Schrifttums, Band IV* (Leiden: Brill, 1971), 1–318. Ullmann, *Die Natur- und Geheimwissenschaften*, 145–270; Donald Hill, "The Literature of Arabic Alchemy," in *Religion, Learning and Science in the 'Abbasid Period*, ed. M. J. L. Young, J. D. Latham, and R. B. Serjeant (Cambridge: Cambridge University Press, 1990); Georges Anawati, "Arabic Alchemy," in *Encyclopedia of the History of Arabic Science*, ed. Roshdi Rashed, 3 vols. (London: Routledge, 1996), 3:853–85; Regula Forster, "Arabic Alchemy: Texts and Contexts," *Al-Qantara* 37, no. 2 (2016): 269–378. Of particular relevance to the Ottoman milieu is Tuna Artun, "Hearts of Gold and Silver: The Production of Alchemical Knowledge in the Early Modern Ottoman World" (PhD diss., Princeton University, 2013).
41. On this topic generally, see Pierre Lory, *Alchimie et mystique en terre d'islam* (Paris: Verdier, 1989).
42. This is according to the widely accepted hypothesis of Paul Kraus, though the notion of relatively late, multiple authorship has been challenged by Nomanul Haq. See Paul Kraus, *Contributions à l'histoire des idées scientifiques dans l'Islam: Volume I, Le corpus d'écrits jâbiriens* (Cairo: Imprimerie de l'Institut Français d'archéologie orientale, 1943), xvii–lxv; Nomanul Haq, *Names, Natures, and Things: The Alchemist Jabir Ibn Hayyan and His Kitāb Al-Aḥjar* (Dordrecht: Kluwer Academic Publishers, 1994), 8–29.
43. On which see Peter Zirniss, "The *Kitāb Ustuquṣ al-Uss* of Jabir ibn Hayyan" (PhD diss., New York University, 1979).
44. Published in Pierre Lory, *L'élaboration de l'élixir supreme: Quatorze traités de Gabir Ibn Hayyan sur le grand oeuvre alchimique* (Damascus: Institut français de Damas, 1988).
45. It is conceivable that the *Kitāb al-Raḥma* listed here is *Kitāb al-Raḥma al-ṣaghīr*; both can be found in Marcellin Berthelot and Octave Houdas, *La chimie au moyen âge, Tome III, L'alchimie arabe* (Paris: Imprimerie nationale, 1893).
46. A Jabirian work entitled *Kitāb Mawāzīn al-aḥjār* is unknown, but it could represent *Kitāb al-Mīzān al-Kabīr*, *Kitāb al-Mīzān al-Ṣaghīr*, the *Kutub al-Mawāzīn*, or the *Kitāb al-Aḥjār 'alā ra'y Balīnās*, all of which belong to the corpus. Special thanks to Nicholas Harris for his help with these alchemical references.
47. 306 {5} and 306 {6}, respectively. On Zosimos, see Benjamin Hallum, "Zosimos Arabus: The Reception of Zosimos of Panopolis in the Arabic/Islamic World" (PhD diss., Warburg Institute, 2008).
48. On the identification of al-Qurtubi as the author, see M. Fierro, "Bāṭinism in al-Andalus: Maslama b. Qāsim al-Qurṭubī (d. 353/964), Author of the *Rutbat al-Ḥakīm* and the *Ghāyat al-Ḥakīm* (*Picatrix*)," *Studia Islamica* 84 (1996): 87–112. See also the references in note 52.
49. 306 {8–9} and 306 {10–12}.
50. 305 {18}–306 {2}.
51. The most recent translation of which is Abū-Ḥāmid al-Ġazzālī, *The Alchemy of Happiness*, ed. Elton L. Daniel, trans. Claud Field (Armonk: Sharpe, 1991).
52. On *Rutbat al-ḥakīm*, see Godefroid De Callatay, "Magia en Al-Andalus: *Rasā'il Iḥwān al-ṣafā'*, *Rutbat al-ḥakīm* y *Gāyat al-ḥakīm* (*Picatrix*)," *Al-Qantara* 34, no. 2 (2014): 297–344; Godefroid de Callatay and Sébastien Moureau, "Towards the Critical Edition of the *Rutbat al-Ḥakīm*: A Few Preliminary Observations," *Arabica* 62, no. 2-3 (2015): 385–94; Wilferd Madelung, "Maslama Al-Qurṭubī's *Kitāb Rutbat al-ḥakīm* and the History of Chemistry," *Intellectual History of the Islamicate World* 5, no. 1-2 (January 1, 2017): 118–26.
53. On the views of Ibn Sina among Ottoman alchemists, see Artun, "Hearts of Gold and Silver," 20–21.
54. On whom see Nicholas Harris, "In Search of 'Izz al-Dīn Aḍ-Ḍamir al-Ġildakī, Mamlūk Alchemist," in *Islamicate Occultism: New Perspectives*, 531–56.
55. On whom see Artun, "Hearts of Gold and Silver," passim.
56. Personal correspondence with Tuna Artun.
57. Ullmann, *Die Natur- und Geheimwissenschaften*, 95–144.
58. Abū al-Rayḥān al-Bīrūnī, *Kitāb al-Jamāhir fī Ma'rīfat al-Jawāhir: Texts and Studies*, ed. Fuat Sezgin and Mazen Amawi (Frankfurt am Main: Institute for the History of Arabic-Islamic Science at the Johann Wolfgang Goethe University, 2001).
59. Naṣīr al-Dīn Ṭūsī, *Tansūkh-nāma-i Īlkhānī*, ed. Muḥammad Razavī (Tehran: Intishārāt-i Bunyād-i Farhang-i Īrān, 1970).
60. Ullmann, *Die Natur- und Geheimwissenschaften*, 125.
61. On Islamicate geomancy, see Fahd, *La divination arabe*, 196–204; Emilie Savage-Smith, "Geomancy in the Islamic World," in *Encyclopedia of the History of Science, Technology and Medicine in Non-Western Cultures*, ed. Helaine Selin (Dordrecht: Kluwer, 1997), 361–63; Emilie Savage-Smith and Marion Smith, "Islamic Geomancy and a Thirteenth-Century Divinatory Device: Another Look," in *Magic and Divination in Early Islam*, 211–77. Matthew Melvin-Koushki, "Persianate Geomancy from Ṭūsī to the Millennium: A Preliminary Survey," in *Occult Sciences in Premodern Islamic Culture*, ed. Nader El-Bizri and Eva Orthmann (Beirut: Orient-Institut Beirut, 2018), 161–99; Melvin-Koushki, "In Defense of Geomancy."
62. Blanca Villuendas Sabaté, *La geomancia en los manuscritos judeo-árabes de la Gueniza de El Cairo* (Córdoba, Spain: CNERU-CSIC, Universidad de Córdoba, 2015).
63. Savage-Smith and Smith, "Islamic Geomancy," 212ff.
64. Ahmet Tunç Şen, "Reading the Stars at the Ottoman Court: Bāyezīd II (r. 886/1481–918/1512) and His Celestial Interests," in *Islamicate Occultism: New Perspectives*, 571ff.
65. Fahd, *La divination arabe*, 214–19; *El2*, s.v. "Fa'1" and "Ḳur'a," by Toufic Fahd.
66. Alexander Fodor, "Malḥamat Dāniyāl," in *The Muslim East: Studies in Honour of Julius Germanus*, ed. Gy. Káldy-Nagy (Budapest: Loránd Eötvös University, 1974), 85–133.
67. Fahd, *La divination arabe*, 218.
68. The word *za'iraja* seems to have no translation, i.e., it is effectively a proper name for the device. Franz Rosenthal speculates that it may be a portmanteau of a Persian word for "horoscope, astronomical table" (*zā'icha*) and the Arabic "circle" (*dā'ira*). Rosenthal, *The Muqaddimah*, 1:238n64.

69. Fahd, *La divination arabe*, 243–45; David Link, “Scrambling T-R-U-T-H: Rotating Letters as a Material Form of Thought,” *Variatology* 4 (2010): 215–66.
70. Ibn Khaldūn, *The Muqaddimah*, 3:182–227.
71. Živa Vesel, “Occult Sciences: Compilers and Authority,” in *Texts of Power, the Power of the Text: Readings in Textual Authority across History and Cultures*, ed. Cezary Galewicz (Cracow: Wydawnictwo, 2006), 120. Vesel’s source is the modern Iraqi occultist Shaykh Ḥabīb ibn Mūsā al-Riḍā ibn Shaykh ‘Alī Afshārī Urūmiyyā’ī Najafī’s self-published work, *Kashkūl fī ‘ulūm al-ghariba wa funūn al-latīfa* (1981), 48–61.
72. For the main bodies of early Shi‘i reports on *jafr*, see al-Kulaynī, *al-Kāfī*, 1:238 (*Bāb fīhi dhikr al-ṣaḥīfa wa-l-jafr wa-l-jāmi‘a wa-muṣḥaf Fāṭima ‘alayhā al-salām*); al-Qummī, *Baṣā’ir al-darajāt* (Qom: AH 1404), 1:170–89 (*Bāb fī al-a‘imma ‘alayhi al-salām annahum u‘tū al-jafr wa-l-jāmi‘a wa-muṣḥaf Fāṭima ‘alayhā al-salām* and the following two *bābs*). An in-depth treatment of these and related sources is Etan Kohlberg, “Authoritative Scriptures in Early Imami Shi‘ism,” in *Les retours aux écritures: Fondamentalismes présent et passés*, ed. Évelyne Patlagean and Alain Le Boulluec (Louvain: Peeters, 1993), 295–312.
73. *EL*2, s.v. “Djafr,” “Malḥāma,” by Toufic Fahd; *EL*3, s.v. “Apocalypse,” by David Cook; *EL*3, s.v. “Jafr,” by Noah Gardiner (forthcoming).
74. Hajji Khalifa, *Kashf al-zunūn ‘an asāmī al-kutub wa-al-funūn* (Istanbul: Maarif Matbaası, 1941), 2:2012. He gives the title as *K. al-Waṣḥy al-maṣūn wa-al-lu‘lu‘ al-maknūn fī ma‘rifat ‘ilm al-khaṭṭ alladhī bayna al-kāf wa-al-nūn*.
75. On al-Bistamī’s possible authorship of the work, see Fleischer, “A Mediterranean Apocalypse,” 45.
76. As it has been used in modern scholarship, the term “magic” is fraught with problems. It has been made to serve as a foil to both “religion” and “science,” and to perform all manner of racist, misogynist, heteronormative, and colonial labor in the process. For a detailed discussion of these issues, see Randall Styers, *Making Magic: Religion, Magic, and Science in the Modern World* (Oxford: Oxford University Press, 2004). The word is nevertheless inescapable, and it has been used often in scholarship on Islamicate thought. For some general discussions of the topic—the earlier of which tend most to exemplify the aforementioned problems—see Edmond Doutté, *Magie et religion dans l’Afrique du Nord* (Paris: La société musulmane du Maghrib, 1984); Toufic Fahd, “Le monde du sorcier En Islam,” in *Le monde du sorcier* (Paris: Editions du Seuil, 1966), 155–204; *EL*2, s.v. “Siḥr,” by Toufic Fahd; Ullmann, *Die Natur- und Geheimpwissenschaften*, 359–426; Savage-Smith, “Introduction” (to her *Magic and Divination in Early Islam*); Coulon, *La magie en terre d’Islam*.
77. E.g., *al-Sirr al-maktūm fī al-ṭilsimāt wa-al-nayranjāt* (The Hidden Secret of Talismans and Nayranjāt); *al-Sirr al-maktūm fī al-ṭilsimāt wa-al-siḥriyyāt wa-al-‘azā‘im* (The Hidden Secret, on Talismans, Magical Acts, and Adjuration [of Spirits]); etc.
78. Michael Noble, “The Perfection of the Soul in Fakhr al-Dīn al-Rāzī’s *Al-Sirr al-maktūm*” (PhD diss., The Warburg Institute, University of London, 2017).
79. Ullmann, *Die Natur- und Geheimpwissenschaften*, 419–20.
80. There is a minor chance that one of the entries represents another work on magic, Sirāj al-Dīn al-Sakkākī’s (d. 1228–29) *al-Kitāb al-Shāmil* (The Complete Book). On this work, see Emily Selove, “Literature as Magic, Magic as Literature: Sirāj al-Dīn al-Sakkākī’s Book of the Complete and a Fragment of Spells” (forthcoming). Another work of al-Sakkākī’s, *Miftāḥ al-‘ulūm* (Key to the Sciences), is found in a manuscript bearing Bayezid II’s seal: TSMK A. 1722 (Karatay: A 8028).
81. Ullmann, *Die Natur- und Geheimpwissenschaften*, 386. On this work and al-Tabasi, see also Zadeh, “Magic, Marvel, and Miracle in Early Islamic Thought,” 251–55.
82. On which see Maria Kowalska, “Remarks on the Unidentified Cosmography *Tuḥfat Al-Ġarā‘ib*,” *Folia Orientalia* 9 (1968): 11–18.
83. Two copies of which are listed elsewhere in the inventory, 202 {12–14}.
84. On the word’s derivation, see *EL*2, s.v. “Sīmiyā,” by D. B. MacDonald and Toufic Fahd. For Ibn Khaldūn’s rather tentative linking of the term to letrism, see Ibn Khaldūn, *The Muqaddimah*, 3:171; Gardiner, *Ibn Khaldūn versus the Occultists*. In the opinion of the present author, the “semitic” element of the term likely originates in the use of cipher alphabets, mysterious *charaktères*, etc. in various areas of magical practice. On such figures in Islamicate talismans, see Tewfik Canaan, “The Decipherment of Arabic Talismans,” in *Magic and Divination in Early Islam*, 167ff.
85. Liana Saif, “The Cows and the Bees: Arabic Sources and Parallels for Pseudo-Plato’s *Liber Vaccae* (*Kitāb al-Nawāmis*),” *Journal of the Warburg and Courtauld Institutes* 79 (2016): 1.
86. *Ibid.*, 10ff.
87. On the former see Joseph Henninger, “Belief in Spirits among the Pre-Islamic Arabs,” in *Magic and Divination in Early Islam*, 1–53.
88. Ibn al-Nadīm, *The Fihrist of Al-Nadīm: A Tenth-Century Survey of Muslim Culture*, trans. Bayard Dodge (New York: Columbia University Press, 1970), 725ff.
89. Saif, “From *Gāyat al-ḥakīm* to *Šams al-ma‘ārif*,” 306ff.
90. On the Ikhwan’s views on *siḥr*, see Pierre Lory, “La magie chez les Iḥwān al-Ṣafā’,” *Bulletin d’études orientales* 44 (1993): 147–59; Ikhwān al-Ṣafā’, *On Magic: An Arabic Critical Edition and English Translation of Epistle 52a*, ed. and trans. Godefroid de Callatay and Bruno Halflants (Oxford: Oxford University Press, 2011), 1–67.
91. Ullmann, *Die Natur- und Geheimpwissenschaften*, 366.
92. ‘Abd al-Raḥmān Badawī, ed., *Al-Uṣūl al-yūnāniya li-naẓariyyāt al-siyāsīya fī al-Islām* (Cairo: Maṭba‘at Dār al-Kutub al-Miṣriyyah, 1954), 152–55.
93. Rāwandī, Muḥammad bin ‘Alī, *Rāḥat al-ṣudur wa-āyāt al-surūr*, ed. Muḥammad Iqbal (Leiden: Brill, 1921), 447–56. See also A. C. S. Peacock and Sarah Nur Yıldız, *The Seljuks*

- of *Anatolia: Court and Society in the Medieval Middle East* (London: I. B. Tauris, 2013), 96–97.
94. Ullmann, *Die Natur- und Geheimwissenschaften*, 366.
95. *El3*, s.v. “Automata,” by Constantin Canavas.
96. Translated by Donald Hill as *The Book of Knowledge of Ingenious Mechanical Devices* (Dordrecht: Reidel, 1974).
97. In Arabic manuscripts, Hero is often rendered as Hayrūn rather than Ayran. For an edition and translation, see Carra de Vaux, *Les Mécaniques, ou l’élévateur de Héron d’Alexandrie* (1893, repr. Paris: Les Belles Lettres, 1988).
98. Sezgin, *GAS*, 5:174–76.
99. *Ibid.*, 5:148–49.
100. *El2*, s.v. “Mūriṣṭus,” by H. G. Farmer.
101. The term was coined by the Flemish mathematician Adrianus Romanus (d. 1615) with regard to automata; see Anthony Grafton, *Magic and Technology in Early Modern Literature, Dibner Library Lecture 15 October, 2002* (Washington, DC: Smithsonian Institution Libraries, 2005), 40.
102. The most recent edition and study is ‘Abd-ar-Raḥīm bin-‘Umar al-Ġaubarī, *Al-Ġawbarī und sein Kašf al-asrār: ein Sittenbild des Gauners im arabisch-islamischen Mittelalter (7./13. Jahrhundert)*, ed. and trans. Manuela Höglmeier (Berlin: Schwarz, 2006). See also Stefan Wild, “Jugglers and Fraudulent Sufis,” in *Proceedings of the VIth Congress of Arabic and Islamic Studies, Visby 13-16 August, Stockholm 17-19 August, 1972*, ed. Frithiof Rundgren (Stockholm: Almqvist and Iskell International, 1975), 58–63.
103. For two recent summaries of the scholarship on Plethon and his impact, see Wouter Hanegraaff, *Esotericism and the Academy: Rejected Knowledge in Western Culture* (Cambridge: Cambridge University Press, 2012), 28–41; Maria Mavroudi, “Pletho as Subversive and His Reception in the Islamic World,” in *Power and Subversion in Byzantium*, ed. Dimiter Angelov and Michael Saxby (Farnham: Ashgate, 2013), 177–203.
104. Mavroudi, “Pletho as Subversive,” 183ff.
105. *Ibid.*, 188ff.

## LIST OF ENTRIES

## SECTION ON BOOKS OF OCCULT SCIENCES:

The Science of Dream Interpretation or Oneiromancy, the Science of Physiognomy, the Science of Alchemy, the Science of Stones, Geomancy, Omens, the Science of *Nayranjāt*, Talismans, *Sīmiyā'*, the Adjuration of Spirits, the Science of *Jafr*, Wondrous Mechanical Arts/Automata, Engineering Feats, and Sorcery

(*Tafṣīlu kutubi 'ilmi al-ta'bīri wa-kutubi 'ilmi al-firāsati wa-kutubi al-'ilmi al-kīmiyā'i wa-kutubi 'ilmi al-aḥjāri wa-kutubi al-ramli wa-kutubi al-fāli wa-kutubi 'ilmi al-nayrinjāti wa-kutubi al-ṭilsimāti wa-kutubi al-sīmiyā'i wa-kutubi al-'azā'imi wa-kutubi 'ilmi al-jafri wa-kutubi al-ṣinā'āti al-'ajibati wa-kutubi al-ḥiyali wa-kutubi al-siḥri*)

Because the study of the Islamic occult sciences is a yet underdeveloped field, and because knowledge of the conditions under which manuscripts on these subjects circulated is invaluable to ongoing efforts to improve this state of affairs, the list of entries has been prepared so as to preserve a sense of the individual codices, variant titles, etc. The original order of the titles in the inventory is thus reproduced here, and the names of authors and “authority” titles for works are given only after noting the title given in the inventory (along with the language of composition and line number). For codices containing more than one work, the titles are given in an indented list numbered a through x. A complete list of authors keyed to the entry numbers is given at the end. N.B. Pseudepigraphy is not uncommon in the realm of the occult sciences, and no claims are being made here as to the authenticity of these attributions. Anonymous titles from the inventory are given in quotation marks. Translated titles are given in lowercase (following the first word) when the original appears to be a description rather than a title proper.

A note on translation: The words *nīranj* (pl. *nayranjāt*, sometimes *nīranjāt* or *nayrinjāt*), *sīmiyā'*, and *jafr* are left untranslated. *Nīranj* is variously translated elsewhere as “tricks,” “illusions,” “spells,” or “enchantments”; *sīmiyā'* is often translated as “natural magic” or “letter magic”; and *jafr* is sometimes rendered as “onomancy” (i.e., divination from names). However, it is the present author’s considered opinion that such translations are in some cases simply inaccurate (e.g., “natural magic”) and in others too limiting, given the fluidity of meaning with which premodern authors strategically imbued them in light of controversies about occultism.

Abbreviations: *El2* = *Encyclopaedia of Islam, Second Edition*, ed. P. J. Bearman, Th. Bianquis, C. E. Bosworth, E. van Donzel, and W. P. Heinrichs (Leiden: E. J. Brill, 1960–2007). *GAS* = Fuat Sezgin, *Geschichte des arabischen Schrifttums*, 13 vols. (Leiden: E. J. Brill, 1967–2007). K. and R. have been used to abbreviate *Kitāb* and *Risāla*, respectively.

## I. DREAM INTERPRETATION

1. *K. al-Shaykh Quṭb al-Dīn zāda fī 'ilm al-ta'bīr* (The Book of Shaykh Quṭb al-Dīn Zāda on Dream Interpretation), Persian, 302 {13}. Quṭb al-Dīn Zāda, Muḥammad bin Quṭb al-Dīn Iznīqī (d. 1480).
2. Same as no. 1, 302 {13–14}.
3. “*R. Mushtamila 'alā taḥqīq al-ru'yā fī 'ilm al-ta'bīr*” (A treatise covering the verification of the vision in dream interpretation), 302 {16}.

4. *K. Kāmil al-ta'bir* (The Complete Book of Dream Interpretation), Persian, 302 {16–17}. Al-Tiflīsī, Ḥusayn Ḥubaysh bin Ibrāhīm (d. 1231). MANUSCRIPT: TSMK A. 3169 (Karatay: F 287). EDITION: *Kāmil Al-Ta'bir: The Complete Persian Book of Dreams and Dream Interpretation*, ed. Mukhtār Kumaylī, 2 vols. (Tehran: Markaz-i Pizhūhishī-i Mīrās-i Maktūb, 2015).
5. Same as no. 4, 302 {17}.
6. Same as no. 4, 302 {18}.
7. Same as no. 4, 302 {18}.
8. Same as no. 4, 302 {19}.
9. Same as no. 4, 302 {19}.
10. *K. Ta'bir-i sulṭāniyyin* (The Sultans' Dream Book), Persian, 303 {4}. Ismā'īl bin Nizām al-Dīn (fl. 1362), *K. Ta'bir-i sulṭānī* (The Sultan's Dream Book).<sup>1</sup>
11. *K. Ta'bir-i sulṭānī* (The Sultan's Dream Book), 303 {4–5}. Same text as no. 10.
12. Same as no. 10, 303 {5}.
13. *K. al-Mu'lam 'alā hurūf al-mu'jam*, Arabic, 303 {7}. Ibn Ghannām al-Maqdisī (d. 1294). *K. al-Mu'allam 'alā hurūf al-mu'jam* ([The Book of Dream Interpretation] Arranged according to the Alphabet).<sup>2</sup> MANUSCRIPT: TSMK 3172 (Karatay: A 7437) and 3173 (Karatay: A 7438).
14. Same as no. 13, 303 {8}.
15. Same as no. 13, 303 {8–9}.
16. *K. al-Qādirī fī al-ta'bir* (The Book for al-Qādir on Dream Interpretation), Arabic, 303 {11}. Al-Dīnawarī, Naṣr b. Ya'qūb (d. after 1010). MANUSCRIPT: TSMK A. 3171 (Karatay: A 7434). EDITION: *Kitāb al-Ta'bir fī al-ru'yā, aw, al-Qādirī fī al-ta'bir*, ed. Fahmī Sa'd (Beirut: 'Ālam al-Kutub, 1997).
17. *K. Al-Nāṣirī fī tarjamat K. al-Qādirī fī al-ta'bir* (The Book for al-Nāṣir, a translation of the Book for al-Qādir on Dream Interpretation), 303 {11–12}.
18. *K. Durrat al-funūn fī ru'yat qurraṭ al-'uyūn fī al-ta'bir* (The Book of the Pearl of the Arts on Beholding That Which Delights the Eyes on Dream Interpretation), 303 {12–13}. Al-Biṣṭāmī, 'Abd al-Raḥmān (d. 1454). MANUSCRIPT: TSMK A. 3167 (Karatay: A 7443).
19. *K. Rawḍat al-misk wa-al-'abīr fī minhāj 'ilm al-ta'bir* (The Book of the Garden of Musk and Fragrance regarding the Method of the Science of Dream Interpretation), 303 {13–14}.
20. "*K. nafīs bi-al-'arabiyya al-manzūma fī 'ilm al-ta'bir*" (A precious book in versified Arabic on dream interpretation), Arabic, 303 {14}.
21. a. "*K. al-ta'bir al-manzūm bi-al-fārisiyya*" (A book on dream interpretation in Persian verse), Persian, 303 {15}.  
b. "*R. al-ikhtilāj al-manzūma bi-al-fārisiyya*" (A treatise in Persian verse on [interpreting] bodily twitching), Persian, 303 {15–16}. See section VI below for a similar work.
22. "*K. Mushkil-kushā'ī fī al-ta'bir*" (The Book of the Problem-Solver on Dream Interpretation), Turkish, 303 {16}.
23. *R. Ramz al-daqqā'iq fī 'ilm al-daqqā'iq wa-huwa al-'ilm bi-al-ru'yā al-ṣādiqa al-badanīyya* (The Treatise on the Symbol of the Intricacies regarding the Science of the Intricacies, that is, the Science of the Veridical Bodily Dream-Vision), 303 {17–18}. 'Atūfī, Khayr al-Dīn Khidr b. Maḥmūd b. 'Umar (d. 1541).
24. a. "*K. muntakhab fārisi fī al-ta'bir*" (A book in Persian on dream interpretation), Persian, 303 {18–19}.  
b. "*R. fārisiyya fī al-fiqh*" (A treatise in Persian on jurisprudence), Persian, 303 {19}.
25. *Al-Juz' al-awwal min al-Muntakhab fī ta'bir al-ru'yā* (The First Part of the Anthology on Dream Interpretation), 303 {19}–304 {1}. Probably Ibn Sīrīn's (d. 728) *Muntakhab al-kalām fī tafsīr al-aḥlām* (Anthology of the Discourse on the Explication of Dreams). EDITION: *Tafsīr al-aḥlām*



*al-kabīr al-musammā bi-muntakhab al-kalām fī tafsīr al-aḥlām* (Cairo: Maktabat wa-Maṭba‘at Muḥammad ‘Alī Ṣubayḥ wa-Awlāduh, 1963).

## II. PHYSIOGNOMY

26. *Tarjamat K. Aristāṭālīs li-Ḥunayn bin Ishāq fī ‘ilm al-firāsa* (Translation by Ḥunayn bin Ishāq of the Book of Aristotle on Physiognomy), Arabic, 304 {9}. Aristotle (d. 322 BCE) and Ḥunayn bin Ishāq (d. 873). MANUSCRIPT: TSMK A. 1408 (Karatay: A 7479). EDITION: *Il Kitāb Aristāṭālīs al-faylasūfī al-firāsa nella traduzione di Ḥunayn b. Ishāq*, ed. Antonella Gherseti (Venice: Università Ca’ Foscari, 1999).
27. “*R. bi-al-‘arabiyya fī ‘ilm al-firāsa*” (A treatise in Arabic on physiognomy), Arabic, 304 {10}.
28. “*R. bi-al-turkiyya fī ‘ilm al-firāsa*” (A treatise in Turkish on physiognomy), Turkish, 304 {10–11}.
29. *K. Falīmūn al-ḥakīm fī ‘ilm al-firāsa* (The Book of Polemon the Wise on the Science of Physiognomy), Arabic, 304 {11}. Polemon of Laodicea (d. 144). EDITION: *Polemonis de Physiognomoniam liber, arabice et latine*, ed. G. E. Hoffman and R. Foerster (Leipzig, 1893).
30. Same as no. 29, 304 {12}.
31. Same as no. 29, 304 {12–13}.
32. *K. Aflīmūn fī ‘ilm al-firāsa* (The Book of Polemon on the Science of Physiognomy), 304 {12–13}. Probably the same as no. 29. MANUSCRIPT: TSMK A. 3245 (Karatay: A 7485).
33. a. “*R. marqūma bi-al-khulāṣa fī ‘ilm al-firāsa*” (A succinctly written treatise on the science of physiognomy), 304 {13}.
- b. “*Tuḥfat al-mulūk min qibal al-mawā‘iz*” (Gift of the Kings Pertaining to Sermons), 304 {14}.
- c. “*R. fī al-firāsa*” (A treatise on physiognomy), 304 {14}.
34. *K. Falīmūn fī al-firāsa* (The Book of Polemon on Physiognomy), Persian, 304 {15}. Polemon of Laodicea. Probably the same as no. 29.
35. “*K. Adillat al-firāsa bi-al-fārisiyya*” (The Book of the Proofs of Physiognomy), Persian, 304 {15}.
36. a. “*R. Ṣan‘at al-yad min qibal al-firāsa*” (Treatise on Skillfulness Pertaining to Physiognomy), 304 {16}.
- b. Same as no. 36, 304 {16–17}.
37. a. “*Sharḥ qaṣīda Ibn Sīnā*” (A commentary on Ibn Sīnā’s poem), 304 {17}.
- b. “*R. fī al-firāsa*” (A treatise on physiognomy), 304 {17–18}.
38. *R. Nūrbakhsh fī ‘ilm al-firāsa* (Nūr Bakhsh’s Treatise on the Science of Physiognomy), Persian, 304 {18}. Nūrbakhsh, Muḥammad (d. 1464).<sup>3</sup>
39. *K. Aristāṭālīs fī al-firāsa* (Aristotle’s Book on Physiognomy), Arabic, 304 {18}. Aristotle. Same text as no. 26.
40. *K. al-Imām al-Fakhr al-Rāzī fī al-firāsa* (Imām Fakhr al-Rāzī’s Book on Physiognomy), Arabic, 304 {18}–305 {1}. Al-Rāzī, Fakhr al-Dīn (d. 1209–10). EDITION: *La physiognomonie arabe et le Kitāb al-firāsa de Fakhr al-Dīn al-Rāzī*. Ed. and trans. (French) Youssef Mourad (Paris: P. Geuthner, 1939).<sup>4</sup>
41. “*R. bi-al-fārisiyya fī al-firāsa*” (A treatise in Persian on physiognomy), Persian, 305 {1–2}.
42. “*Mukhtaṣar ‘arabī fī al-firāsa*” (A brief treatise in Arabic on physiognomy), Arabic, 305 {2}.

## III. ALCHEMY

43. a. *K. Rutbat al-ḥakīm* (The Book of the Rank of the Wise), Arabic, 305 {12}. Al-Qurṭubī, Maslama b. Qāsim (d. 964).<sup>5</sup> EDITION: *The Book of the Rank of the Sage*, ed. Wilferd Madelung and Theodore Abt (Einsiedeln: Daimon Verlag, 2016).
- b. *K. al-Rawḍa fī al-kīmīyā* (The Book of the Garden on Alchemy), 305 {12}.
- c. “*Thamāniya wa-thalāthūn kitāban fī al-kīmīyā*” (Thirty-Eight Books on Alchemy), 305 {12–13}.
44. a. *K. Uṣṭuqus al-uss fī al-kīmīyā* (The Book of Elements of the Foundation on Alchemy), Arabic, 305 {13–14}. Jābir bin Ḥayyān (d. 815). EDITION: Peter Ziris, “The *Kitāb Ustuquṣ al-Uss* of Jabir bin Hayyan” (PhD diss., New York University, 1979).
- b. *K. al-Jumal [al-‘ishrīn]* (The Book of Twenty Maxims), Arabic, 305 {14}. Jābir bin Ḥayyān.
45. “*K. Bustān al-ḥikma bi-al-turkiyya fī al-kīmīyā*” (The Book of the Garden of Wisdom in Turkish on Alchemy), Turkish, 305 {15}.
46. “*K. Kanz al-ḥikma fī anwā‘ a‘māl al-kīmīyā*” (The Book of the Treasure of Wisdom regarding [Various] Types of Alchemical Operations), 305 {15–16}.
47. a. “*Al-quṭb al-thānī min khātimat K. Durrat al-tāj fī al-‘itiqād wa-arkān al-islām*” (The second part of the conclusion of *The Pearl of the Crown regarding Faith and the Pillars of Islam*), 305 {16–17}.
- b. “*K. Jawharnāma*” (The Book of Stones), Persian, 305 {17}
- c. “*K. mukhtaṣar fī ‘ilm al-kīmīyā*” (A brief book on alchemy), 305 {18}.
48. a. *K. al-Munqidh [min al-ḍalāl]* (The Book of the Deliverance from Error), Arabic, 305 {18}. Al-Ghazālī, Abū Ḥāmid Muḥammad (d. 1111). EDITION: *Der Erretter aus dem Irrtum = al-Munqid min aḍ-ḍalāl*, ed. Abd-Elsamad Abd-Elhamid Elschazli (Hamburg: Felix Meiner Verlag, 1988),
- b. *K. Kīmīyā‘-i sa‘ādat bi-al-‘arabiyya* (The Book of the Alchemy of Happiness in Arabic), Arabic, 305 {19}. Al-Ghazālī. MANUSCRIPT: TSMK K. 881 (Karatay: F 33), H. 240 (Karatay: F 34), E.H. 1304 (Karatay: F 36), and Türk ve İslam Eserleri Müzesi 1999 are all copies of the work with Bayezid II’s seals; however, none are referred to as being in Arabic. EDITION (Persian): Muḥammad ‘Abbāsī, ed. (Tehran: Ṭulū‘ va Zarrīn, 1982).
- c. *K. al-Maḍnūn bihi ‘alā ghayr ahlīh* (The Book to be Withheld from Those for Whom It Is Not), Arabic, 305 {19}–306 {1}. Al-Ghazālī. EDITION: Ed. Riyāḍ Muṣṭafa ‘Abd Allāh (Damascus: Al-Ḥikma, 1996).
- d. *R. al-Taqrīb fī ma‘rifat al-tarkīb wa-huwa al-Maḍnūnu bihi ‘alā [ghayri] ahlīhī* (The Treatise of Approaching the Knowledge of Composition, and it is The Book to Be Withheld from Those for Whom It Is [Not]), Arabic, 306 {1–2}. Al-Ghazālī.
- e. “*Rasā‘il ukhrā fī al-riyāḍiyyāt*” (Other treatises on mathematics), 306 {2–3}.
49. a. “*K. al-Rumūz al-dālla ‘alā al-kunūz*” (The Book of the Symbols Indicating the Treasures), 306 {3–4}.
- b. *K. Shudhūr al-dhahab fī al-kīmīyā* (The Book of Nuggets of Gold on Alchemy). 306 {4}. By Ibn Arfa‘ Ra’s (d. 1197). EDITION: Ghazzali Lahouari, ed. (Beirut: Dār al-Kutub al-‘Ilmiyya, 2018).<sup>6</sup>
- c. *K. al-‘Ahd* (The Book of the Pact), 306 {4–5}. By Jābir bin Ḥayyān. EDITION: In Pierre Lory, *L’élaboration de l’élixir supreme: Quatorze traités de Gabir Ibn Hayyan sur le grand oeuvre alchimique* (Damascus: Institut français de Damas, 1988).

- d. *R. Hurmus fī al-kīmīyā* (The Treatise of Hermes on Alchemy), 306 {5}. Hermes.
- e. *R. Rismūs fī al-kīmīyā* (The Treatise of Zosimos on Alchemy), 306 {6}. Zosimos (fl. early fourth century).
- f. *K. al-Raḥma* (The Book of Mercy), Arabic, 306 {6–7}. Jābir bin Ḥayyān. EDITION: Marcelin Berthelot and Octave Houdas, *La chimie au moyen âge, Tome III, L'alchimie arabe* (Paris: Imprimerie nationale, 1893), 163–90.
- g. *K. Mawāzīn al-aḥjār* (The Book of Balances of the Stones), 306 {7}. Jābir bin Ḥayyān?
- h. “*Rasā'il ukhrā*” (Other treatises), 306 {7}.
50. a. “*R. tārikhihi wa-fihrist kutubihī*” (Treatise on His [Ibn Sīnā's] History and a Bibliography of His Works), 306 {8–9}. Ibn Sīnā (d. 1037). Works with similar titles are listed elsewhere in the inventory, at 181 {13} and 346 (16). EDITION: Arabic: *The Life of Ibn Sina*, ed. William Gohlman (Albany: SUNY Press, 1974). English trans.: Dimitri Gutas, *Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works* (Leiden: Brill, 2014), 10–19.
- b. “*R. fī al-kīmīyā*” (A treatise on alchemy), 306 {9}. Ibn Sīnā.
51. “*Majmū'a min rasā'il fī al-kīmīyā*” (An anthology of treatises on alchemy), 306 {9–10}.
52. a. *R. fī ḥudūth al-ḥurūf* (A treatise on the instantiation of the letters), 306 {10–11}. Ibn Sīnā, *Asbāb ḥudūth al-ḥurūf*. EDITION: M. H. al-Ṭayyān and Y. M. 'Alam, eds. (Damascus: Majma' al-Lughā al-'Arabiyya, 1983).
- b. *R. Ibn Sīnā fī al-kīmīyā* (Ibn Sīnā's Treatise on Alchemy), 306 {11–12}. Ibn Sīnā.

## IV. THE SCIENCE OF STONES

53. “*K. Ma'rifat al-aḥjār wa-khawāṣṣihā*” (The Book of the Knowledge of Stones and Their Occult Properties), 307 {1}.
54. *K. Azhār al-afkār fī jawāhir al-aḥjār* (The Book of Blossoms of Contemplation on the Natures of Stones), Arabic, 307 {1–2}. Al-Tifāshī, Aḥmad bin Yūsuf (d. 1253). MANUSCRIPT: TSMK A. 1965 (Karatay: A 7168). EDITION: *Azhār al-afkār fī jawāhir al-aḥjār*, ed. Muḥammad Yūsuf Ḥasan and Maḥmūd Basyūnī Khafājī (Cairo: Maṭba'at Dār al-Kutub wa-al-Wathā'iq al-Qawmīyah, 2010).
55. “*R. Jawharnāma*” (Treatise on Gems), 307 {2}.
56. *K. al-Jamāhīr fī al-jawāhir* (The Comprehensive Book on Stones), 307 {3}. Al-Bīrūnī, Abū al-Rayḥān (d. 1050). MANUSCRIPT: TSMK A. 2047 (Karatay: A 7167). EDITION: *K. al-Jamāhīr fī ma'rifat al-jawāhir: Texts and Studies*, ed. Fuat Sezgin, Mazen Amawi, Carl Ehrig-Eggert, and Eckhard Neubauer (Frankfurt am Main: Institute for the History of Arabic-Islamic Science at the Johann Wolfgang Goethe University, 2001).
57. a. ‘*Uyūn al-ḥaqā'iq fī ṣanā'i' al-ḥiyāl al-‘ajība*’ (The Sources of Truths on the Manufacture of Wondrous Mechanical Devices), 307 {3–4}. Abū al-Qāsīm al-‘Irāqī (fl. early thirteenth century), ‘*Uyūn al-ḥaqā'iq wa-idāḥ al-ṭarā'iq*’ (The Sources of Truths and the Explanations of Paths).<sup>7</sup> See no. 99 for more information.
- b. “*K. al-Ṭibb*” (Book of Medicine), 307 {4}.
- c. “*R. al-Siḥr wa-‘ilm al-naḥās wa-ghayrih*” (Treatise on Sorcery and Science of the Breath, etc.), 307 {4}.
- d. “*R. fī al-kīmīyā*” (A book on alchemy), 307 {4–5}.
- e. “*R. fī ‘ilm al-aḥjār*” (A treatise on the science of stones), 307 {5}.

58. “*K. Jawharnāma*” (The Book of Stones), Persian, 307 {5–6}.
59. *K. Azhār al-afkār fī jawāhir al-ahjār*, Arabic, 307 {6}. Al-Tifāshī. Same as no. 54.
60. *Tansukhnāmah-i ūlkhānī* (Book on Precious Stones for the Īlkhān), 307 {7}. Al-Ṭūsī, Naṣīr al-Dīn (d. 1274). EDITION: Mudarris Razavī, ed. (Tehran: Ittālā’āt, 1984–85).<sup>8</sup>
61. a. “*Zahr al-basātīn fī al-ḥiyāl*” (The Blossom of the Gardens on Automata), 307 {8}.
- b. *Al-Ṣanā’i’ al-‘ajība fī khawāṣṣ al-ahjār wa-al-ashjār* (The Wondrous Arts regarding the Occult Qualities of the Stones and Trees), 307 {8–9}.
62. a. “*K. al-Jawāhir*” (The Book of Stones), 307 {9}.
- b. *K. Abī al-Rayḥān* (The Book of Abū al-Rayḥān [al-Bīrūnī]), 307 {9–10}. Al-Bīrūnī, probably the same as no. 56.

## V. GEOMANCY

63. *Faḥḥ al-aqfāl li-al-Zanātī fī al-raml* (Opening the Locks by al-Zanātī on Geomancy), Arabic, 307 {14}. Al-Zanātī, Abū ‘Abd Allāh Muḥammad (d. before 1230). *Faḥḥ al-aqfāl fī ‘ilm al-ashkāl* (Opening the Locks on Knowledge on the Science of the Figures). TSMK A. 1603 (Karatay: A 7477).
64. “*Majmū‘a min ‘idda rasā’il fī al-raml*” (An anthology of numerous treatises on geomancy), 307 {14–15}.
65. “*Majmū‘a min rasā’il aktharuhā fī al-raml*” (An anthology of treatises most of which are on geomancy), 307 {15}.
66. “*R. fārisiyya fī al-raml*” (A treatise in Persian on geomancy), 307 {16}.
67. “*Taqwīm al-raml*” (Geomantic almanac), 307 {16}.
68. Same as no. 67, 307 {16–17}.
69. “*R. bi-al-turkiyya fī al-raml*” (A treatise in Turkish on geomancy), 307 {17}.
70. “*Jadwal bi-al-turkiyya fī al-raml*” (A chart in Turkish on geomancy), 307 {17–18}.
71. a. “*R. min qibal al-raml*” (A treatise on geomancy), 307 {18}.
- b. “*R. fī fāl al-Qur’āni al-‘azīm*” (A treatise on prognostication with the Exalted Qur’an), 307 {18–19}.
72. a. “*Thalath rasā’il fī al-raml*” (Three treatises on geomancy), 307 {19}.
- b. “*Kanz al-balāgha fī al-inshā*” (The Treasure of Eloquence in Letter-Writing), 307 {19}.
73. “*R. bi-al-‘arabiyya fī al-raml*” (A treatise in Arabic on geomancy), 308 {1}.
74. a. *K. Idrīs al-nabī ‘alayhi al-salām fī ahkām ṭulū‘i Shi’rā* (The Book of the Prophet Idrīs, Peace Be upon Him, on Judgments of the Appearance of Sirius), 308 {1–2}. Idrīs (Hermes), *Aḥkām ṭulū‘ al-shi’rā al-yamāniyya min al-hawādīth allatī taḥduth fī al-‘alam* (Judgments of the Fortunate Ascents of Sirius and Events that Occur in the World).<sup>9</sup> Another copy of this work is listed later in the inventory, at 320 {4–5}.
- b. “*R. bism Allāh*” (A treatise on the *Basmala*), 308 {2}.
- c. “*R. fārisiyya manzūma fī al-raml*” (A treatise in versified Persian on geomancy), 308 {2–3}.
75. *K. Ashkāl al-raml* (The Book of The Geomantic Figures), 308 {3}. Perhaps *Hulūl al-ashkāl* (Explanation of the Figures), a Turkish translation of al-Zanātī’s *al-Faṣl fī uṣūl al-raml* (Section on the Sources of Geomancy).<sup>10</sup>
76. “*K. bi-al-fārisiyya fī al-raml*” (A book in Persian on geomancy), 308 {4}.

## VI. OMENS

77. “*Rasā’il awwaluhā fāl al-Qur’ān al-‘azīm*” (Treatises the first of which is a prognosticon of the Exalted Qur’an), 308 {5}.
78. a. “*Mukhtār Rawḍat al-nāẓir bi-al-manzūmāt al-‘arabīyya wa-al-fārisīyya*” (Abridgement of the Garden of the Watcher in Arabic and Persian verse), Arabic and Persian, 308 {6}.<sup>11</sup>  
 b. “*K. al-Ikhtilāj bi-al-fārisīyya al-manzūma*” (The Book of Twitches, in versified Persian), Persian, 308 {7}.  
 c. “*R. al-Fāl al-mu’tabar*” (Treatise of the Interpreted Omen), Persian, 308 {7–8}.
79. *K. Dāniyāl al-nabī ‘alayhi al-salām* (The Book of Daniel the Prophet, Peace Be upon Him), Arabic, 308 {8}. Daniel, perhaps either *Malḥamat Dāniyāl* (Destinies of Daniel)<sup>12</sup> or *Qur’at Dāniyāl* (Prognosticon of Daniel),<sup>13</sup> though numerous works attributed to him were in circulation.<sup>14</sup>
80. “*K. al-Za’iraja al-ḥizā’iyya fī al-fāl*” (The Book of the Za’iraja of Fortunes in Prognostication), 308 {9}.
81. “*Jām-i sakhun-gūy bi-al-fārisīyya*” (Oracle Cup in Persian), Persian, 308 {9–10}.
82. Same as no. 81, Persian, 308 {10}.
83. “*K. al-Mas’ala wa-al-ṭālī‘ min qibal al-fāl*” (Book of the Question and the Rising Star Pertaining to Prognostication), 308 {11}.
84. a. “*R. Aḥkām al-sinīn*” (The Treatise of Judgments of the Years), 308 {11–12}.  
 b. “*K. al-fāl al-mu’tabar alladhī waḍa‘ahū al-‘ulamā’ li-Hārūn al-Rashīd*” (The Book of the Interpreted Prognosticon Prepared by the Scholars for Hārūn al-Rashīd), 308 {12–13}.

## VII. ARTS OF “MAGIC”

85. *K. al-Shāmīl fī ‘ilm al-‘azā’im wa-al-nayranjāt* (The Comprehensive Book on the Science of Adjourning [Spirits] and *Nayranjāt*), 308 {14}. Probably al-Ṭabasī, Muḥammad bin Aḥmad (d. 1089), *K. al-Shāmīl fī baḥr al-kāmil* (The Comprehensive Book of Perfect Knowledge).
86. “*K. bi-al-fārisīyya fī al-nayranjāt*” (A book in Persian on *Nayranjāt*), 308 {14–15}.
87. *K. al-Sirr al-maktūm fī al-ṭilsimāt wa-al-nayranjāt* (The Book of the Hidden Secret of Talismans and *Nayranjāt*), Arabic, 308 {15}. Al-Rāzī, Fakhr al-Dīn (d. 1209–10), *Al-Sirr al-maktūm fī mukhāṭabāt al-nujūm* (The Hidden Secret of Conversing with the Stars). MANUSCRIPT: TSMK A. 3256 (Karatay: A 7467). EDITION: *Al-Sirr al-maktūm fī asrār al-nujūm* (Cairo: al-Maṭba‘ al-Ḥajariyya, 1880).<sup>15</sup>
88. Same as no. 87, 308 {16}.
89. Same as no. 87, 308 {16–17}.
90. Same as no. 87, 308 {17–18}.
91. a. “*Nuzhat al-nufūs fī ta’līf al-shukhūṣ min qibal al-nayranjāt*” (The Delight of Souls in the Composition of Bodies on *Nayranjāt*), 308 {18–19}.<sup>16</sup>  
 b. *K. Hurmus alladhī tarjamahū Balīnās min qibal al-nayranjāt* (The Book of Hermes Translated by Apollonius Pertaining to *Nayranjāt*), 308 {19}. Hermes and Apollonius of Tyana (d. ca. 100).<sup>17</sup>
92. *K. al-Shāmīl fī al-nayranjāt* (The Comprehensive Book on *Nayranjāt*), 309 {1}. Al-Ṭabasī. Same as no. 85.

93. *K. al-Sirr al-maktūm fī al-ṭilsimāt wa-al-sihriyyāt wa-al-‘azā’im* (The Book of the Hidden Secret on Talismans, Sorcerous Acts, and Adjuration [of spirits]), Arabic, 309 {1–2}. Al-Rāzī. Same as no. 87.
94. *Mujalladun awwalu min K. al-Sirr al-maktūm fī al-ṭilsimāt* (Composite volume, the first part of which is The Book of the Hidden Secret on Talismans), Arabic, 309 {2–3}. Al-Rāzī. Same as no. 87.
95. “*K. Tuḥfat al-gharā’ib fī al-nīranj wa-al-‘ajā’ib*” (The Precious Gift of Prodigies on *Nīranj* and Wonders), Arabic, 309 {3–4}.<sup>18</sup>
96. “*K. Tuḥfat al-gharā’ib fī al-nayranjāt wa-al-khawāṣṣ al-‘ajība*” (The Book of the Precious Gift of Prodigies on *Nayranjāt* and Wondrous Occult Properties), Arabic, 309 {4}. Same as no. 95.
97. a. *Dhakhīrat al-Iskandar fī al-ṭilsimāt al-‘ajība* (The Treasure of Alexander on Wondrous Talismans), 309 {5}. Aristotle.<sup>19</sup>  
b. *Kunnāsh al-khuff tarjamat Ishāq bin Ḥunayn bi-al-‘arabiyya fī al-ṭibb* (Medical Notebook of the Foot, translated by Ishāq bin Ḥunayn into Arabic, on Medicine), Arabic, 309 {5–6}. Ishāq bin Ḥunayn (d. 910–11).
98. a. *K. al-Nawāmīs ay al-umūr al-‘ajība* (The Book of Sacred Secrets, i.e., Wondrous Matters), 309 {7}. Plato (d. 348 or 347 BCE).<sup>20</sup>  
b. “*R. al-Asmā’ al-khamsat ‘ashara*” (Treatise of the Fifteen Names), 309 {7}.
99. *K. ‘Uyūn al-ḥaqā’iq fī al-a’māl al-‘ajība min qibal ‘ilm al-simiyā’* (Book of the Sources of Truths concerning Wondrous Works Pertaining to *Simiyā’*), Arabic, 309 {8}. Al-‘Irāqī, Abū al-Qāsim (fl. early thirteenth century), *‘Uyūn al-ḥaqā’iq wa-idāḥ al-ṭarā’iq* (The Sources of Truths and the Explanations of Paths). EDITION: No editor listed (Beirut: Dār al-Maḥjjah al-Bayḍā’, 2013).<sup>21</sup>
100. *Mukhtaṣar ‘Uyūn al-ḥaqā’iq fī al-a’māl al-‘ajība wa-al-ḥiyal min qibal ‘ilm al-simiyā’* (Abridgement of the Sources of Truths concerning Wondrous Works and Automata on *Simiyā’*), 309 {9}. Al-‘Irāqī. Abridgement of the above.
101. *K. Sirr al-asrār fī al-sihriyyāt wa-al-‘azā’im* (The Book of the Secret of Secrets on Sorcerous Acts and Adjuration [of spirits]), Arabic, 309 {11}. Probably Aristotle, *Sirr al-asrār*. EDITION: A. Badawī, ed., *Islamicica* 15 (1954): 67–171.
102. “*Sifr al-asrār fī ‘ajā’ib al-umūr wa-al-‘azā’im*” (The Secret Scroll on Wondrous Matters and Adjuration [of spirits]), Arabic, 309 {11–12}.<sup>22</sup>
103. “*R. fī da‘wat al-ra’s wa-al-dhanab fī al-‘azā’im*” (The Treatise on Invocations of the Head and Tail on Spirit Adjuration), 309 {12–13}.

VIII. *JAFR*

104. “*R. fī Kashf al-ḍamā’ir wa-al-khafīyyāt min qibal al-‘ulūm al-jafriyya*” (The Treatise on the Unveiling of Inner Secrets and That Which Is Hidden Pertaining to the Sciences of *Jafr*), 309 {16}.
105. *K. Ṣayḥat al-būm fī ḥawādith al-rūm min qibal ‘ilm al-jafr wa-al-wafq* (The Book of the Cry of the Owl regarding the Events of Rome Pertaining to the Science of *Jafr* and Magic Squares), 309 {17}. Ibn al-‘Arabī (d. 638/1240).<sup>23</sup>
106. “*K. Baṣṭ ḥurūf al-jafr*” (The Book of Explanation of the Letters of *Jafr*), 309 {18}.
107. *K. al-Washy al-maṣūn fī ma’rifat ‘ilm al-khaṭṭ alladhī bayna al-kāf wa-al-nūn fī al-‘ulūm al-ḥarfīyya wa-‘ilm al-jafr* (The Book of the Hidden Ornaments of Knowledge of the Line between the *Kāf* and the *Nūn* on the Lettrist Sciences and the Science of *Jafr*), 309 {18–19}. Abū al-‘Abbās Aḥmad bin Muḥammad (fl. thirteenth century).<sup>24</sup>

108. “*R. fī ‘ilm al-jafr*” (A treatise on the science of *jafr*), 310 {1}.

## IX. WONDROUS AUTOMATA

109. “*R. Badā’i‘ al-‘amal fī ṣanā’i‘ al-ḥiyal*” (The Treatise of Amazing Acts in the Arts of Mechanical Devices), 310 {3}.
110. a. *K. Ayrān fī ḥiyāl raḥ al-ashyā’ al-thaqīla* (The Book of Hero on Mechanical Devices for Lifting Heavy Things), 310 {4}. Hero of Alexandria (d. 70) and Quṣṭā bin Luqā al-Ba‘albakī (d. ca. 912), *K. Raḥ al-athqāl* (The Book on Lifting Weights). EDITION: *Les mécaniques ou L’élèveur de Héron d’Alexandrie, publiées pour la première fois sur la version arabe de Qostā ibn Lûqā et traduites en français*, ed. and trans. Bernard Carra de Vaux (Paris: Imprimerie nationale, 1894). MANUSCRIPT: Süleymaniye MS Ayasofya 2755, fols. 1a–61a; however, it likely is not the exact MS referred to here, as it is presently bound with a different set of works.
- b. “*Rasā’il ukhrā fī ‘ajā’ib ṣanā’i‘ ālāt al-mā’*” (Other treatises on the wonders of manufacturing hydraulic machines), 310 {4–5}.
111. *Madkhal Babūs fī al-ḥiyāl ka-jarr al-athqāl* (Pappus’s Introduction to Mechanical Devices for Lifting Weights), 310 {5}. Pappus of Alexandria (d. ca. 350).<sup>25</sup>
112. Same as no. 111, 310 {6}.
113. a. *Thalāth maqālā min K. Ayrān fī raḥ al-ashyā’ al-thaqīla* (Three sections from Hero’s Book of Lifting Heavy Things), 310 {6–7}. Hero of Alexandria. Same as no. 110.
- b. *R. al-Dawā’ir al-mutaḥarrika min dhawātihā* (The Treatise of Wheels That Move by Themselves), 310 {8}. Philo of Byzantium (fl. third century BCE). EDITION: Part or all of this and the following two works may be found in *Le livre des appareils pneumatiques et des machines hydrauliques par Philon de Byzance, édité d’après les versions arabes d’Oxford et de Constantinople et traduit en français*, ed. and trans. Bernard Carra de Vaux (Paris: Imprimerie nationale, 1902). MANUSCRIPT: Süleymaniye MS Ayasofya 2755, fols. 61b–80a, though see note to no. 110 above.
- c. *R. ‘Amal al-sā’āt allatī tarmī bi-al-banādiq* (The Treatise of the Working of a [Water-]Clock That Throws Slingstones<sup>26</sup>), 310 {8–9}. Philo of Byzantium.
- d. *R. Jadāwil al-tawārikh wa-ikhtiyārāt al-a’māl bi-ḥasab ittiṣālāt al-qamar* (The Treatise of Date-Tables for Electing the Timing of Works in Accordance with Lunar Conjunctions), 310 {9–10}.
- e. *K. al-Qirānāt wa-ittiṣālāt al-kawākib* (The Book of the Great Conjunctions and [Lesser] Conjunctions of the Planets), 310 {10–11}.
114. *K. muṣawwar li-l-Ra’īs al-Jazarī fī al-ṣanā’i‘ al-‘ajība wa-al-ḥiyāl* (An illustrated book by the master al-Jazarī on wondrous arts and mechanical devices), Arabic, 310 {11–12}. This is Ismā’il bin Razzāz al-Jazarī’s (d. 1206) *K. al-Jāmi‘ bayn al-‘ilm wa-al-‘amal al-nāfi‘ fī ṣinā’at al-ḥiyāl* (Comprehensive Book of Knowledge and Beneficial Practice in the Manufacture of Devices), often known simply as *K. fī ma’rifat al-ḥiyāl al-handasiyya* (Knowledge of Mechanical Devices). MANUSCRIPT: TSMK A. 3472 (Karatay: A 7143) and A. 3472 (Karatay: A 7146). EDITION: An edition based on the MS above is *al-Jāmi‘ bayn al-‘ilm wa-al-‘amal al-nāfi‘ fī ṣinā’at al-ḥiyāl* (Ankara: Kültür Bakanlığı, 1990). English translation: *The Book of Knowledge of Ingenious Mechanical Devices*, trans. Donald Hill (Dordrecht: Reidel, 1974).

115. “*K. fī al-ḥiyāl wa-al-umūr al-‘ajība fī ‘amal ālāt al-mā*” (A book on mechanical devices and wondrous matters in the operation of hydraulic machines), Arabic, 310 {12–13}. MANUSCRIPT: TSMK A. 3474 (Karatay: A 7143).
116. “*K. Bayān al-ṣinā‘āt ay al-‘ajība*” (The Book of Explaining the Arts, i.e., the Wondrous [Arts]), 310 {13}.
117. *K. Fīlun fī al-ḥiyāl al-‘ajība fī ‘amal ālāti al-mā*’ (Philo’s Book on Wondrous Mechanical Devices and the Operation of Hydraulic Machines), 310 {14}. Philo of Byzantium.<sup>27</sup>
118. “*K. Bayān al-ṣinā‘āt ay al-‘ajība*” (The Book of Explaining the Arts, i.e., the Wondrous [Arts]), 310 {14–15}. Same as no. 116.
119. “*R. Badā’i‘ al-‘amal fī ṣanā’i‘ al-ḥiyāl*” (The Treatise of Amazing Acts in the Arts of Mechanical Devices), 310 {15}. Same as no. 109.
120. *Thalāth rasā’il li-Mūristūs fī ālāti al-ṣawt* (Three Treatises by Mūristūs on [automated] Instruments of Sound), 310 {16}. Mūristūs (possibly Ctesibius of Alexandria, fl. third century BCE). MANUSCRIPT: Süleymaniye MS Ayasofya 2755, fols. 81b–91a, though see note to no. 110 above. In that MS, the titles of the treatises are given as *Ṣinā‘at al-arāghīn al-būqī* (Manufacturing Trumpet-Organs), *Ṣinā‘at al-arāghīn al-zamriyya* (Manufacturing Pipe-Organs), and *Ṣinā‘at al-juljul* (Manufacturing Bells).
121. *K. al-Marāyā al-muḥriqa* (The Book of the Burning Mirrors), 310 {16–17}. Possibly Ibn al-Haytham’s (d. ca. 1040) *R. al-Marāyā al-muḥriqa bi-al-dā’ira* (Treatise of Burning Mirrors in the Sphere).<sup>28</sup>

## X. SORCERY (*SIHR*)

122. “*R. fī al-ghālib wa-al-maghlūb min al-mutaḥāribayn*” (A treatise on the victor and the vanquished among the combatants), 311 {1}.<sup>29</sup>
123. Same as no. 122, 311 {1–2}.
124. a. *Sharḥ Mīrak li-ḥikmat al-hidāya* (Commentary of Mīrak on the Wisdom of Guidance), 311 {2–3}. This should be *Sharḥ Mīrak li-hidāyat al-ḥikma* (Commentary of Mīrak on the Guidance of Wisdom). Mīrak Shams al-Dīn Muḥammad b. Mubārakhshāh al-Bukhārī al-Jangī’s (d. ca. 1340) commentary on Athīr al-Dīn b. ‘Umar al-Abharī’s (d. between 1263 and 1265) *Hidāyat al-ḥikma* (Guidance of Wisdom). MANUSCRIPT: TSMK A. 3279 (Karatay: 6721).
- b. *R. al-‘Amal bi-al-kurat al-falakiyya* (The Treatise on the Use of the Celestial Globe), 311 {3}. Qustā bin Luqā al-Ba‘albakī (d. ca. 912). MANUSCRIPT: TSMK A. 3475 (Karatay: A 7040). EDITION: An edition of the medieval Latin translation is *Qusta ben Luca: De sphere uolubili*, ed. Richard Lorch and José Martínez Gázquez, *Suhayl* 5 (2005), 9–62.
- c. *R. fī al-mūsīqī* (Treatise on Music), 311 {3}. Possibly Faṭḥ Allāh Mu‘min al-Shirwānī’s (d. 1486), *R. fī ‘ilm al-mūsīqī* (On the Knowledge of Music). MANUSCRIPT: TSMK A. 3449 (Karatay: A 7428). EDITION: An edition based on the MS above is *Codex on Music: Majalla fī al-mūsīqī* (Frankfurt am Main: Institute for history of Arabic-Islamic Science at the Johann Wolfgang Goethe University, 1986).
- d. “*K. fī ma‘rifat al-ghālib wa-al-maghlūb min al-mutaḥāribayn*” (A book on the knowledge of the victor and the vanquished among the combatants), 311 {4}. Perhaps the same as no. 122)
125. a. “*al-Durr al-maṭlūb fī sirr al-ghālib wa-al-maghlūb*” (The Desired Pearls in the Secret of the Victor and the Vanquished), 311 {5}.



- b. “*R. fī al-kharazāt al-khams min al-jafī*” (The Treatise on the Five Beads in *Jafr*), 311 {5–6}.
- c. “*R. Jihād al-mulūk ‘alā ṭarīqat aḥkām al-nujūm*” (The Treatise on the Holy War of Kings by Way of Astrology), 311 {6–7}.

## XI. WONDROUS MATTERS

- 126. “*K. al-Mu‘lam fī bayān madhāhib al-naṣārā*” (The Book of the Informed on Explicating the Doctrines of Christians), 311 {12}.
- 127. *Tarjamat al-baqḍiyya min K. Yamīstūs al-wathanī fī madhāhib al-awwalīn min ‘abadat al-aṣnām* (Translation of the remainder of the Book of Gemistos the Pagan on the Doctrines of the Ancients on the Worship of the Idols), Arabic, 311 {12–13}. Plethon, George Gemistus (d. 1452 or 54).<sup>30</sup>
- 128. *Tarjamat K. Yamīstūs al-wathanī tarjamatan thāniyatan fī madhāhib ‘abadat al-aṣnām* (Translation of the Book of Gemistos the Pagan, a second translation of the Doctrines of the Worship of the Idols), Arabic, 311 {14}. Plethon.
- 129. *K. al-Mukhtār fī kashf al-asrār* (The Book of the Selection in the Unveiling of the Secrets and the Rending of the Veils), Arabic, 310 {16}. Al-Jawbarī, ‘Abd al-Raḥīm (or al-Raḥmān) bin ‘Umar (fl. thirteenth century). MANUSCRIPT: TSMK A. 3238 (Karatay: A 7471). EDITION: Al-Jawbarī, ‘Abd al-Raḥmān bin ‘Umar, and Manuela Höglmeier, *Al-Ġawbarī und sein Kaṣf al-asrār: ein Sittenbild des Gauners im arabisch-islamischen Mittelalter (7./13. Jahrhundert): Einführung, Edition und Kommentar* (Berlin: Klaus Schwarz, 2006).<sup>31</sup>

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- Aḥmad bin Muḥammad, Abū al-‘Abbās (fl. thirteenth century), 107.  
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 ‘Atūfī, Khayr al-Dīn Khidr bin Maḥmūd bin ‘Umar (d. 1541), 23.  
 Al-Bīrūnī, Abū al-Rayḥān (d. 1050), 56, 62b.  
 Al-Biṣṭāmī, ‘Abd al-Raḥmān (d. 1454), 18.  
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 Ibn Arfa‘ Ra‘s (d. 1197), 49b.  
 Ibn Ghannām al-Maqdisī, Abū Ṭāhir Ibrāhīm (d. 1294), 13–15.  
 Ibn al-Haytham, Abū ‘Alī al-Ḥasan bin al-Ḥasan (d. ca. 1040), 121.  
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 Ibn Sīrīn (d. 728), 25.  
 Idrīs, see Hermes.  
 Al-‘Irāqī, Abū al-Qāsim (fl. early thirteenth century), 57a, 99, 100.

- Ishāq bin Ḥunayn (d. 910–11), 97b.  
 Ismā'il bin Niẓām al-Dīn (fl. 1362), 10.  
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 Al-Jawbarī, 'Abd al-Raḥīm (or al-Raḥmān) bin 'Umar (fl. thirteenth century), 129.  
 Al-Jazarī, Ismā'il bin Razzāz (d. 1206), 114.  
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 Al-Ṭūsī, Naṣīr al-Dīn (d. 1274), 60.  
 Al-Zanātī, Abū 'Abd Allāh Muḥammad (d. before 1230), 63, 75.  
 Zosimos (fl. early fourth century), 49e.

## NOTES

1. See N. Bland, "On the Muhammadan Science of *Ta'bir*, or Interpretation of Dreams," *Journal of the Royal Asiatic Society of Great Britain and Ireland* 16 (1856): 124–25.
2. On which see *El2*, s.v. "Ibn Ghannām," by Toufic Fahd.
3. Shahzad Bashir, *Sufi Bodies: Religion and Society in Medieval Islam* (New York: Columbia University Press, 2011), 47.
4. See also Muhammad Ali Khalidi and Tarif Khalidi, "Is Physiognomy a Science? Reflections on the *Kitāb al-Firāsa* of Fakhr al-Dīn al-Rāzī," in *The Occult Sciences in Pre-Modern Islamic Cultures*, ed. Nader El-Bizri and Eva Orthmann (Würzburg: Ergon Verlag, 2018), 67–82.
5. On the identification of al-Qurṭubī as the author of this work, see M. Fierro, "Bāṭinism in al-Andalus: Maslama b. Qāsim al-Qurṭubī (d. 353/964), Author of the *Rutbat al-Ḥakīm* and the *Ghāyat al-Ḥakīm* (Picatrix)," *Studia Islamica* 84 (1996): 87–112.
6. A scholarly edition (which the above is not) is currently being prepared by Svetlana Dolgusheva of the Institute of Asian and Oriental Studies, University of Zurich.
7. Manfred Ullmann, *Die Natur- und Geheimwissenschaften im Islam* (Leiden: Brill, 1972), 125.
8. *Ibid.*, 134.
9. *GAS*, IV:41.
10. Matthew Melvin-Koushki, "Persianate Geomancy from Ṭūsī to the Millennium: A Preliminary Survey," in *Occult Sciences in Premodern Islamic Culture*, ed. Nader El-Bizri and Eva Orthmann (Beirut: Orient-Institut Beirut, 2018), 161.
11. It is conceivable that this is a versified abridgement of Ibn Qudāma's (d. 1223) *Rawḍat al-nāẓir wa-jannat al-munāẓir*, a classic manual of Ḥanbalī *fiqh*, though that would seem counterintuitive given the works it is gathered with. Another possibility is that it relates to the *Rawḍat al-naẓir wa nuṣkhat*

- al-khāṭir* attributed to the Timurid astronomer and mathematician ‘Abd al-Qādir al-Kāshī (d. 1429), which is found in BnF MS Arabe 3365, a codex bearing the seal of Bayezid II.
12. For an English translation of one version of this text, see Alexander Fodor, “Malḥamat Dāniyāl,” in *The Muslim East: Studies in Honour of Julius Germanus*, ed. Gy. Káldy-Nagy (Budapest: Loránd Eötvös University, 1974), 85–133.
  13. Toufic Fahd, *La divination arabe: Études religieuses, sociologiques et folkloriques sur le milieu natif de l’islam* (Leiden: Brill, 1966), 218.
  14. *GAS*, VII:312–17.
  15. Also see Michael Noble, “The Perfection of the Soul in Fakhr al-Dīn al-Rāzī’s *Al-Sirr al-maktūm*” (PhD diss., The Warburg Institute, University of London, 2017).
  16. Ullmann, *Die Natur- und Geheimwissenschaften*, 381.
  17. *Ibid.*, 378–79.
  18. Maria Kowalska, “Remarks on the Unidentified Cosmography *Tuḥfat Al-Ġuḥfat*,” *Folia Orientalia* 9 (1968): 11–18.
  19. Ullmann, *Die Natur- und Geheimwissenschaften*, 419ff.
  20. On which see Liana Saif, “The Cows and the Bees: Arabic Sources and Parallels for Pseudo-Plato’s *Liber Vaccae* (*Kitāb al-Nawāmīs*),” *Journal of the Warburg and Courtauld Institutes* 79 (2016): 1–47.
  21. Ullmann, *Die Natur- und Geheimwissenschaften*, 391ff.; Saif, “The Cows and the Bees.”
  22. For various possibilities as to the identity of this text, see Ullmann, *Die Natur- und Geheimwissenschaften*, 212, 365, 376, and 383.
  23. See Cornell Fleischer, “A Mediterranean Apocalypse: Prophecies of Empire in the Fifteenth and Sixteenth Centuries,” *Journal of the Economic and Social History of the Orient* 61, no. 1-2 (2018): 45.
  24. Ḥājī Khalifa gives the title as *K. al-Washy al-maṣūn wa-al-lu’lu’ al-maknūn fī ma’rifat ‘ilm al-khaṭṭ alladhī bayna al-kāf wa-al-nūn; Kashf al-zunūn ‘an asāmī al-kutub wa-al-funūn* (Istanbul: Maarif Matbaası, 1941), 2:2012.
  25. *GAS*, V:175.
  26. On automated weapons of this nature, see Werner Soedel and Vernard Foley, “Ancient Catapults,” *Scientific American* 240, no. 3 (March 1979): 150–61.
  27. *GAS*, V:148–49.
  28. On this work, see Roshdi Rashed, *Géométrie et dioptrique au X<sup>e</sup> siècle : Ibn Sahl, al-Qūhī et Ibn al-Haytham* (Paris: Les Belles lettres, 1993).
  29. Ullmann, *Die Natur- und Geheimwissenschaften*, 366.
  30. See Maria Mavroudi, “Pletho as Subversive and His Reception in the Islamic World,” in *Power and Subversion in Byzantium*, ed. Dimiter Angelov and Michael Saxby (Farnham: Ashgate, 2013), 177–203.
  31. On this work see Stefan Wild, “Jugglers and Fraudulent Sufis,” in *Proceedings of the VIth Congress of Arabic and Islamic Studies, Visby 13-16 August, Stockholm 17-19 August, 1972*, ed. Frithiof Rundgren (Stockholm: Almqvist and Wiskell International, 1975), 58–63.