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## Angels in the Sky, Microbes on Earth

### *Some Remarks on the Natural Sciences in al-Manār*

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One of the main topics throughout Muḥammad Rashīd Riḍā's long career as a religious and social reformer was the issue of educational reform as a necessary precondition for all other kinds of renewal. Apart from general articles on the importance of knowledge and education which he penned for his journal *al-Manār*, he made two more concrete and specific efforts in this regard: First, Rashīd Riḍā himself founded an institution of higher learning (*Dār al-da'wa wa-l-irshād*) which was intended to train graduates according to his vision of a combination of religious and worldly subjects. And secondly, the discussion of the relevance of natural sciences also took place in *al-Manār*, mainly in contributions by Muḥammad Tawfīq Ṣidqī, a trained physician whose articles illustrate the balancing act religious reformers had to do in order to reconcile their religious convictions with scientific findings.

In the first part of Najīb Maḥfūz' famous trilogy, *Kamāl*, the youngest child of the family and a bright pupil, makes it a point to report regularly to his mother, Amīna, what he has learnt at school. Although she is glad to discover that what the boy is taught in religious classes did not differ much from her own traditional knowledge of religion, she is very unhappy about non-religious subjects. The natural sciences, in particular, prove to be hard to swallow for her, such as the question "whether the earth rotates on its own axis in space or stands on the head of an ox". Kamāl's brother Fahmī, whom she secretly asks about the truth of the matter, finds an elegant solution by answering that "the earth is held up by the power and wisdom of God", which leaves the ox unhurt in her imagination.<sup>1</sup> The plot is set in Cairo at the end of the First World War, and it is safe to assume that there were many Kamāls and Amīnas at the time. After all, conflicts brought about by traditional certainties being shaken by new concepts, discoveries, or inventions were ubiquitous at the onset of modernity, not the least and to no small a degree in Muslim societies from the early 19<sup>th</sup> century onward. Kamāl later on, as a grown-up, loses his faith.

What this little scene also shows is the fact that one of the main venues of these clashes were schools and other places of education, and it therefore comes as no surprise that many reform

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<sup>1</sup> Maḥfouz, *Palace walk* 65. A condensed summary of the classical cosmological worldview in Islam, based on

thinkers of the Islamic world focused their attention on the perceived need to adapt traditional reasoning to the new requirements. Muḥammad ‘Abduh (d. 1905) may have been the most famous religious scholar who called for a modernization of the traditional educational institutions, above all Azhar University, and the introduction of non-religious subjects and methods into their curricula.<sup>2</sup> But he was far from being the first or only one to become aware of the problem. As is well-known, under Muḥammad ‘Alī’s long rule (1805-1848), many new schools, aiming at the technical and administrative reform of the country, were established, which not only undermined the ‘*ulamā*’s long-standing monopoly on all educational matters, but also set in motion a process of knowledge transfer and appropriation in the field of the natural sciences.<sup>3</sup> The foundation, from the 1870s onward, of a considerable number of journals, both in Egypt and beyond, also contributed to the circulation of information about technical and scientific achievements among a broad readership. Mention may primarily be made of the two Cairo-based journals *al-Muqtaṭaf* (established in 1876) and *al-Hilāl* (1892) which devoted much space to matters of modern science. The case of the former is especially illuminating, as the two Syrian Christians Ya‘qūb Ṣarrūf and Fāris Nimr who had originally founded *al-Muqtaṭaf* in Beirut moved to Egypt in 1884 in the wake of the first big scandal about science in the Arab world sparked off by the debate on Darwin’s Theory of Evolution.<sup>4</sup> When Muḥammad Rashīd Riḍā (1865-1935) started his journal *al-Manār* in 1898, shortly after his arrival in Cairo and the beginning of his collaboration with Muḥammad ‘Abduh, the question of education played an important role from the outset.<sup>5</sup> Hardly any issue appeared during its early years without Rashīd Riḍā’s editorials calling for thorough reforms on all fronts and all levels, his social concerns always being firmly grounded in a decidedly religious worldview, in contrast to those of many of his Christian or secular colleagues from other journals. Thus, for instance, he vehemently supported female education by rejecting “wrong” traditions according to which women should be prevented from learning to write.<sup>6</sup> As it would clearly go beyond the scope of this article to give an overview of all calls for reforms in *al-Manār*, one particular subject will be singled out here that reveals this interdependency of social problems and their religious background in a characteristic way, namely the

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Muṭahhar b. Ṭāhir al-Maqdisī’s *al-Bad’ wa-l-ta’rīkh*, is given by Radtke, *Weltgeschichte* 80-81.

<sup>2</sup> Gesink, *Islamic reform* 165-196.

<sup>3</sup> For a detailed analysis of these developments, see Crozet, *Les sciences modernes en Égypte* passim.

<sup>4</sup> For details, see Glaß, *Der Muqtaṭaf und seine Öffentlichkeit* ii, 415-434; on the debate about Darwin in general, see Elshakry, *Reading Darwin* passim. On *al-Hilāl* and its founder, the Greek orthodox Jurjī Zaydān (1861-1914), see Dupont, *Ġurġī Zaydān* passim.

<sup>5</sup> Handy introductions to Rashīd Riḍā’s biography and works are Ende, Rashīd Riḍā, and Ryad, *Islamic reformism* 2-9; for more details on his early career and the founding of *al-Manār*, see Ryad, A printed Muslim ‘lighthouse’.

<sup>6</sup> Ende, Sollen Frauen schreiben lernen?

significance of the natural sciences. After all, Rashīd Riḍā reminded his readers several times that he had made it clear to the rector of al-Azhar early on that preserving the Islamic religion and the dignity of the believers as well as returning Islam to its former supremacy needed, among other things, the natural sciences (*al-‘ulūm al-kawniyya*) and that this was precisely what *al-Manār* was calling for.<sup>7</sup> The topic as such is not entirely new, but it has previously been studied mainly in regard to the *fatwās* that Rashīd Riḍā issued on a regular basis, and the running commentary of the Quran (*Tafsīr al-Manār*) that he started in collaboration with ‘Abduh and continued, after the latter’s death in 1905, on his own.<sup>8</sup> What is more, the focus of these studies is predominantly on Darwinism, the related (and more vehemently debated) problem of materialism in a broader sense, as well as the theological conclusions that might be drawn therefrom as far as the fate of the human soul is concerned. Surprisingly little attention, however, has been paid to those articles in his journal that focus on the natural sciences proper, and this from a (seemingly) scientific point of view. For reasons which will, I hope, become clear in the following, they also merit our interest. But before we turn to these items that were penned by a close friend and collaborator of his, a few words on Rashīd Riḍā’s background and his own efforts towards institutional reform are necessary.

### **1 Rashīd Riḍā’s *da‘wa* School and the Necessity of the Natural Sciences for Islamic Reform**

Muḥammad Rashīd Riḍā hailed from a family of notables near Tripoli in what later became Northern Lebanon. After attending the local Quranic school and the national *al-Madrasa al-rashīdiyya* (which he left after one year because all the classes were conducted in Turkish<sup>9</sup>), he entered the Arabophone *al-Madrasa al-waṭaniyya* that had been opened by Ḥusayn al-Jisr (1845-1909) in January 1879. Although the school was forced to close merely three years later, this turned out to be his decisive educational awakening experience. Al-Jisr was one of the first religious-minded reform thinkers to acknowledge the necessity of adding new scientific knowledge as well as foreign languages to the traditional curriculum of religious studies in order to enable his students to meet the needs of the time, and, not least, to combat the advance of the Christian missionaries and their schools.<sup>10</sup> It was al-Jisr, Rashīd Riḍā

<sup>7</sup> Rashīd Riḍā, Ḥadīth ma‘a Shaykh al-Azhar 158; Rashīd Riḍā returned to this episode later on twice: *Jam‘iyyat al-da‘wa wa-l-irshād* 59, and *al-Manār wa-l-Azhar* 240-241.

<sup>8</sup> With regard to Rashīd Riḍā’s *fatwās*, see Stolz, *By virtue of your knowledge*; Shavit, *The evolution of Darwin* 19-23; Shavit, *Scientific and political freedom* 75-79; with regard to the treatment of science in the *Tafsīr al-Manār*, see Jomier, *Le commentaire coranique* 150-163; Nispen tot Sevenaer, *Activité humaine* 84-101.

<sup>9</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 139.

<sup>10</sup> On al-Jisr’s biography, see in detail Ebert, *Religion und Reform* 73-100 (on the school, 79-82).

recalls in his memoirs, who made him understand that reform and progress were only possible for the *umma* if religious and secular branches of knowledge were brought together, and if the religious scholars were familiar with the modern era in order to defend the Islamic faith.<sup>11</sup> This is not to say that they necessarily agreed with all aspects of modern science; al-Jisr himself was rather sceptical about the theory of evolution (knowing Darwin, however, only second-hand, through the writings of the German materialist Ludwig Büchner and his Arab supporters as well as opponents),<sup>12</sup> and Rashīd Riḍā once complained to him about having answered the question of the spherical form of the earth and its orbiting the sun only in a hypothetical manner, thus insinuating doubts about it. When al-Jisr reminded him of the fanaticism of all those in the country who had no clue of these sciences and whom he did not want to provide cause for gossip, this did not really satisfy his disciple: “If someone like you in whose religion and knowledge the *umma* has confidence does not encourage us to speak out the truth, from whom else should we hope for it?”<sup>13</sup>

It is in the nature of things that the religious reformer Rashīd Riḍā, as soon as he arrived in Egypt and following ‘Abduh’s example, immediately showed deep concern for the Azhar. His first visits there left a devastating impression on him, when he watched, for instance, the ritual sweeping (*kansa*) at al-Shāfi‘ī’s grave, after which the dust would be distributed among the believers because of its blessing, or when he heard of that noble lady from Russia who converted to Islam, came to Egypt in order to visit the Azhar, and who – upon seeing all the students from abroad (*mujāwirūn*) sitting around and eating radishes, onions, and broad beans – turned away weeping and sobbing.<sup>14</sup> Yet he deemed the time-honoured institution reformable, and the first years of *al-Manār* are replete with proposals, demands, and recommendations that aimed, above all, at introducing new subjects, such as mathematics, geography, sociology, hygiene, and the principles of natural history. He was all the more persistent as, at least according to his own judgment, many Azhar scholars sent their own children to governmental schools in order to have them study the very same secular subjects which they refused publicly for the Azhar.<sup>15</sup> At some point, perhaps after ‘Abduh’s death in

<sup>11</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 139 and 193. Ironically, Rashīd Riḍā would later temporarily fall out with his teacher whom he accused of siding too much with the conservative scholars and not pushing firmly enough for reform; see Ebert, *Religion und Reform* 158-161.

<sup>12</sup> On al-Jisr’s discussion of Darwin, see in detail Ebert, 131-150; Elshakry, *Reading Darwin* 138-159.

<sup>13</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 145.

<sup>14</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 203 (*kansa*), 233.

<sup>15</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 220-221, 231, 251; a great number of relevant statements were later on assembled by him in this last book of his which came out in 1934, see Rashīd Riḍā, *al-Manār wa-l-Azhar* 201-252.

July 1905,<sup>16</sup> Rashīd Riḍā must have understood, however, that he could not overcome the opposition from within the Azhar, his aforementioned ostentatious agreement with its rector notwithstanding.<sup>17</sup> This was, then, when the plan to establish an educational institution of his own, as his teacher al-Jisr had done nearly thirty years previously, started to form in his mind. Its purpose was not to compete with the Azhar as a fullyfledged university, but rather to set up a cadre training unit in order to counter the growing influence of Christian missionaries, both in Egypt and elsewhere, whose schools were also attended by many Muslim pupils – which, it turns out, he considered the Azhar as no longer being capable of achieving.<sup>18</sup> After unsuccessful initial steps in 1909-10 to realize his project in Istanbul, he decided to pursue it in Cairo, where, after much networking and fundraising, and in spite of polemical articles in the daily press, the House of Propagation and Guidance (*Dār al-da‘wa wa-l-irshād*), a boarding school situated on the Nile island of al-Rawḍa, was finally inaugurated on 2 March 1912.<sup>19</sup> Since the main idea of the school was to train future missionaries (*du‘āt*) to be sent to faraway Muslim communities to prevent them from falling into Christian missionaries’ hands, the curriculum consisted quite naturally to a large degree of the usual religious subjects. There were two noteworthy extensions into the “modern” subjects: first, students at the *Dār al-da‘wa* were obliged to learn a European language, and could add other foreign languages as well. This reveals a distinct sense of pragmatism on the part of Rashīd Riḍā, who – although he considered himself without doubt to be the representative of modern Islamic *da‘wa* par excellence – apparently did not understand, let alone speak, any foreign language, a fact that he sometimes noted with a certain regret, but never to the degree that he felt the need to remedy this problem during his life.<sup>20</sup> And secondly, more importantly in our context, the natural sciences were also an integral part of the classes and were made up of elementary courses in biology, physics, chemistry, and physiology, if possible even supported by practical experiments; astronomy was taught in connection with general mathematics.<sup>21</sup> This

<sup>16</sup> Gesink, *Islamic reform* 210-211.

<sup>17</sup> See above, note 7.

<sup>18</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 253.

<sup>19</sup> Rashīd Riḍā, *Madrasat Dār al-da‘wa* (1912); Rashīd Riḍā had over the preceding years published a number of articles in which he kept his readers informed about the state of things; most notable is Rashīd Riḍā, *Jam‘iyyat al-da‘wa wa-l-irshād*. For more details on the school and the accompanying *Jam‘iyyat al-da‘wa wa-l-irshād*, see Adams, *Islam and modernism* 195-198; Ryad, *Islamic reformism* 162-166.

<sup>20</sup> Rashīd Riḍā, *Nizām* 786 (§4); for example, he deplored the fact that on board the ship that took him to India in 1912, he was greeted and approached by the British travellers, but could not interact with them for lack of command of English: Rashīd Riḍā, ‘Ujāla, on 450; for his (astonishing) lack of Turkish, cf. Brunner, *Lātinīya lā-dīnīya* 84.

<sup>21</sup> A list of all subjects can be found in Rashīd Riḍā, *al-‘Ulūm wa-l-funūn*, esp. 815-816 for the natural sciences (*sunan al-kā’ināt, fī l-mawālīd wa-sā’ir al-mawjūdāt*) and mathematics. In the final exams, however, the natural sciences were considerably less important than the religious subjects; the candidates passed the exam with 40 percent correct answers, in foreign languages 60, as opposed to exegesis (70) and memorization (80)

was not only complemented by the additional subject healthcare (*hifz al-ṣiḥḥa*), but also by the general prescription for the students to pay attention to their physical hygiene and to lead a moderate and safe life – the latter being a constant cause for concern to Rashīd Riḍā throughout his own life.<sup>22</sup>

Rashīd Riḍā's approach to the natural sciences in a way resembled his attitude towards foreign languages: he recognized their significance without himself having deeper knowledge about them. Whenever he touched on this realm in his articles or *fatwās*, one notices a very clear distinction: natural sciences were for him, first and foremost, *applied* sciences, i.e., engineering. During his journey to Syria in 1908, for instance, he gave a sermon in the Umayyad Mosque in Damascus about being a believer in modern times which, as he explained to his listeners, rested entirely “upon the sciences and skills (*al-‘ulūm wa-l-funūn*) by which human society progresses”. Building armoured cruisers and other weapons, using electricity or steam engines for the Ḥijāz railway that took the Muslims straight to the city of the Prophet was by no means directed against religion – on the contrary: whoever withheld these things from the believers was either a clueless friend or a malicious enemy. After all, modern sciences were based on experiments and observations, and thus differed from the ancient “Greek theories” (*al-naẓariyyāt al-yūnāniyya*), which contradicted the principles of religion.<sup>23</sup> In the same vein, he found no fault in repeatedly allowing the use of telephones or telegraphs in order to transmit the news of the sighting of the new moon at the beginning or end of Ramaḍān from anywhere in the country to the authorities in the capital.<sup>24</sup> But his enthusiasm had strict limits, as is also shown in his Ramaḍān statements: a phone call to communicate that the moon had been sighted, was alright, astronomical calculation to determine when it would be visible, or when it could be taken for granted under a cloudy sky, was not. Throughout his career, Rashīd Riḍā attached great importance to the necessity of seeing the moon with the naked eye, and the reason for this is fairly simple: while communication channels are not mentioned in the Quran, the sighting of the moon is, in Q 2:185 (*fa-man shahida minkum al-shahr fa-l-yaṣumhu*). Therefore, it was a matter of religious authority, which, in Rashīd Riḍā's conviction, could inconceivably be left to “every Tom,

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of the Quran and general ethics and morals, (*ādāb*, 90 percent): Rashīd Riḍā, Nizām 798-799 (§73).

<sup>22</sup> Smoking was completely forbidden, sport was obligatory; suspension from sport was one of the sanctions for misconduct: Rashīd Riḍā, Nizām 788-789 (§§19-21) and 796 (§60) which also stipulated that corporal punishment was categorically forbidden. For some admiring remarks on the British devotion to bodily exercise and sport as well as their cleanliness, see his aforementioned (note 20) travelogue to India, Rashīd Riḍā, ‘Ujāla 449-450

<sup>23</sup> Rashīd Riḍā, Riḥlat ṣāhib al-Manār 939-940.

<sup>24</sup> Rashīd Riḍā, Bāb al-fiqh 697; Rashīd Riḍā, al-‘Amal bi-khabar al-tilifūn; Rashīd Riḍā, Ithbāt shahr Ramaḍān 64. This question was not yet unanimously decided at the time; for details on this debate, see Skovgaard-

Dick and Harry who have nothing to say in religious matters, even if they did not contradict the Qur'ān and the Sunna."<sup>25</sup> As the normative religious texts were Rashīd Riḍā's home ground, he approached problems pertaining to natural science exclusively from this angle, not from the perspective of science proper with which he was not familiar enough. Both in his contributions to the materialism debate and in his treatment of traditions about Prophetic miracles that touched on cosmological issues, his reasoning remained thoroughly theological, and his occasional excursions into the laws of nature never left the frame of natural theology.<sup>26</sup>

## 2 Muḥammad Tawfīq Ṣidqī and his Reading of the Natural Sciences

Nevertheless, articles about more scientific aspects of nature did have a place in *al-Manār* for more than a decade. They were all written by one of Rashīd Riḍā's closest collaborators and personal friends, plus his family doctor, Muḥammad Tawfīq Ṣidqī. Born in 1881, he studied medicine, graduated in 1904 and then served as a physician in various prisons in Cairo, before he died of typhus in 1920.<sup>27</sup> Besides his articles on the natural sciences to which we will turn presently, he made a name for himself because of a great number of controversial contributions to two topics that have received their fair share of attention in Western scholarship: his uncompromising rejection of the entire corpus of the Prophetic *ḥadīth* (and the debate it triggered off) has been analysed by G.H.A. Juynboll,<sup>28</sup> while his various polemics against Christianity have been studied in great depth by Umar Ryad.<sup>29</sup> Some of these attacks against the missionaries in Egypt were so fierce that they brought the *Manār* close to being banned by the British authorities, but at the same time, Ṣidqī was acknowledged as "easily the most subtle, up-to-date, and best informed controversialist of his generation."<sup>30</sup> Even his most natural enemies, the missionaries themselves, did not deny him their respect for the shrewdness of his writings.<sup>31</sup> As far as his articles on the natural sciences are concerned,

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Petersen, *Defining Islam* 80-99.

<sup>25</sup> Rashīd Riḍā, *Ithbāt hilāl Ramaḍān* 585; other statements to this effect are: *al-Ṣawm wa-l-fiṭr* 915-916; *Ḥikmat al-ṣiyām* 814-815; *I'tibār ru'yat al-hilāl* 706-707; *al-Jawāb 'an mas'alat al-ṣiyām* 436-437; *Ithbāt shahr Ramaḍān* 64; *Mas'alat hilāl Ramaḍān* 278; see also Stolz, *The lighthouse* 259-262.

<sup>26</sup> Stolz, *By virtue of your knowledge* 234-246 (on the materialism debate); Juynboll, *Authenticity* 145-147 (on miracles such as the splitting of the moon, or the opening of Muḥammad's breast and the washing of his heart).

<sup>27</sup> See the obituary by Rashīd Riḍā, *Tarjamat al-ṭabīb Muḥammad Tawfīq Ṣidqī*.

<sup>28</sup> Juynboll, *Authenticity* 21-32; cf. also Brown, *Rethinking tradition* 40-42, 67, 74. The debate was caused by Ṣidqī's articles in 1906/07 (*al-Islām huwa al-Qur'ān waḥdah*) and dragged on until autumn 1909.

<sup>29</sup> Ryad, *Islamic reformism* 54-56, 137-139, 243-276; on [369], Ryad reproduces what is likely to be the only existing photograph of Ṣidqī.

<sup>30</sup> Jeffery, *A collection of anti-Christian books* 34.

<sup>31</sup> The British missionary George Swan called Ṣidqī's book *'Aqīdat al-ṣalb wa-l-fidā'* (1913) "a remarkably clever book, the strongest, perhaps, that has yet appeared in favour of Islamic Modernism". Swan, *The Matbuli incident* 177.



these did not go entirely unnoticed by his contemporaries either: it was none other than Ignaz Goldziher who, in his last book on the history of Quranic exegesis, devoted a few lines to him in the context of the interpretation of the Quran in the light of modern science.<sup>32</sup>

Şidqī got in touch with Rashīd Riḍā for the first time in 1903, when he sent him an article on „the prohibition of the pig and the impurity of the dog”. The author was identified only by his initials M.T.Ş. and introduced as “a student of medicine in Egypt”.<sup>33</sup> At first sight, this comes across as yet another apologia for Islamic dietary law and purity concepts, the more so as Şidqī states in this introduction that he offered the article for publication so that the readers might understand the wisdom of the Islamic *sharī‘a* inherent in these stipulations. Yet it immediately turns out to be a rather thorough biological and medical explanation of tapeworms, their provenance, characteristics, mode of operation, and dangerous effects both on the animals and, through food or bodily contact, on humans. In particular, he details the structural differences to other worms, such as the beef tapeworm, which result in beef or mutton being considerably less problematic for the human body than pork.<sup>34</sup> In order to drive his message home with greater emphasis, he did not make do with biology proper, but also included a reference to Islam, which cared not only for spiritual reform, but also for the reform of the body, and which, by prohibiting the consumption of pork (and alcohol), anticipated the retardation of human cognitive faculties and thus preserved them from harm.<sup>35</sup>

By this nexus of science and religion, and by concluding with a Quranic verse (Q 41:53), Şidqī apparently struck the right chord in Rashīd Riḍā, for in the following years, he became one of the most regular and productive authors in *al-Manār*, besides the patron himself. In several of his contributions, he touched upon natural phenomena only in passing, mainly using them as a launching pad for exegetical reflections or polemical attacks against Christianity, although he constantly emphasized his rational approach and his inspection of religion from a marked common-sense perspective. This was the case, for instance, in a series of six articles with the programmatic title “Religion from the perspective of a sound mind” which consisted of theological reflections on the necessities and axioms of matter, the

<sup>32</sup> Goldziher, *Richtungen* 349; two more early references are Adams, *Islam and modernism* 239-242, and GAL S iii, 323-324; they all referred to Şidqī’s article on astronomy, see below, note 47. The only noteworthy posterior references are Jansen, *The interpretation of the Koran* 43-44. and, to a rather limited degree, Stolz, *The lighthouse* 200-201.

<sup>33</sup> Şidqī, *Tahrīm al-khinzīr wa-najāsāt al-kalb* 308; on the cultural history of the pig in Islam, see Kruk, *The saddest beast?*; on dogs, see Mikhail, *The animal in Ottoman Egypt* 67-87.

<sup>34</sup> Şidqī used the common Arabic word for worms (*dūdān*, sg. *dūda*), but also introduced the veterinary terminology, identifying the pig tapeworm as *tīnīyā sūlīm* (i.e., *taenia solium*), the beef tapeworm as *tīnīyā sajanīṭā* (sic!, i.e., *taenia saginata*), and the dog tapeworm as *tīnīyā ikīnūkūkus* (i.e., *taenia echinococcus*); *Tahrīm* 303, 304, 307.

<sup>35</sup> Şidqī, *Tahrīm* 306.

conditions of prophecy, the general character of Islam as a strictly egalitarian religion, and the refutation of alleged Christian distortions of the correct meaning of the Quran. The closest he came to science here was in a short passage in the fifth part of the series, when he made some remarks about Darwinism and the usual suspects: setting things straight against the (unnamed) materialists, Şidqī called Darwin's theory the ultimate point that human intellect had reached so far in trying to explain the enigma of creation. Geological traces, fossils, the similarities between animals, especially their foeti – all this could not be explained in a better way. But this was not to say, he immediately qualified, that it was an absolute truth or that one could not also draw other conclusions, since many theories that had vigorously been defended in the past had then be disproved: the tenets of the four elements, the geocentric model of the world, the four temperaments and their effects on many illnesses. As far as the materialists' criticism of the Quran was concerned, this was simply baseless in Şidqī's eyes, for the holy book did not claim that Adam was created directly from clay, and it only stated (Q 4:1) that *many* men and women were descended from Adam, not *all*; while Adam and Eve could thus be the Arabs' ancestors, other peoples might just as well have other forefathers.<sup>36</sup> Although this was not particularly new or innovative, it was a remarkable step in *al-Manār* – and it promptly aroused criticism by some readers for whom this modest concession went too far and who demanded that Rashīd Riḍā intervene, which he, however, refused to do.<sup>37</sup>

For Şidqī, however, this was apparently reason enough to return to this issue some years later, in an article that explicitly asked the question “how was mankind created?”<sup>38</sup> Again, he begins by paying lip service to Darwinism, calling it the best theory available for explaining nature. But in order to emphasize that it remained a *theory* only, he then sets out to present a number of fundamental objections to it, and he does so from a seemingly strictly scientific point of view. How should we, for example, explain the changing or completely vanishing function of organs that had once existed in some species but then passed out of use, such as the pineal gland which, according to some, had once been a third eye, as is still observable in the parietal eye of some lizards? Why should the disappearance of some teeth from the upper jaw of whales or mammals count as a proof of evolution? We might in fact say, he continues, that God created the foeti of all animals in one and the same way, but then unfolded them into different species. Just as one could not claim that the male derived from the female or vice versa, just because both possess elements of the respective other sex, it is impossible to say that humans had once been a different species, just because some vestigial organs such as the

<sup>36</sup> Şidqī, *al-Dīn fī naẓar al-‘aql al-ṣaḥīḥ*, part 5, 737-740; cf. also Elshakry, *Reading Darwin* 175-176.

<sup>37</sup> Shavit, *Scientific and political freedom* 76.

appendix are left. The existence of such traces is therefore not a sign of evolution, but rather a hint at a common origin of all animals. At this point, Şidqī has already changed sides, and it is easy for him to make the game end in a draw – albeit with distinct advantages on the part of the non-evolutionists: if Darwin’s followers (*aşhāb Dārwin*) acknowledge that they cannot explain the sense of the thymus, the carotid, or the coccygeal bone, “we, too, acknowledge (*i’ tarafnā nahnu aydan*) that we do not know the rationale of some ancient organs, so there is no difference between our school and theirs, except that they more daringly claim to know the secrets of being and are more smug about what they know, even if it becomes clear every day that in what they assert they are impotent liars (*annahum fīmā yaz’umūn kādhibūn wa-’ājjizūn*).”<sup>39</sup> While maintaining that the definitive answer to the question how mankind was created is known only to God, Şidqī then ends his article with a fanciful theory of his own about the human origins on the basis of parthenogenesis, the way Christ came into existence without a father, i.e., without a male sperm donor. True, he says, this has so far only been observed with small animals, but what constitutes the norm in one species may well happen as an exception in a different one.<sup>40</sup>

The next field of science Şidqī turned to only a few months later was hardly less controversial. The reception, adoption, and controversial discussion of modern astronomy and heliocentrism had by then been going on in the Ottoman Empire in general and Egypt in particular for over a century. The first modern Arabic textbook on astronomy appeared in 1874, and some journals, like *al-Muqtataf*, regularly published articles that sought to propagate the heliocentric model among a wider public.<sup>41</sup> Alas, as was the case with Darwinism, reluctance was enormous. Muḥammad al-Aḥmadī al-Zawāhirī, who was later to become *Shaykh al-Azhar* and Rashīd Riḍā’s reformist nemesis,<sup>42</sup> complained as late as 1904 about the pitiable students who were still possessed by their delusions and believed that the earth was flat and carried by an ox – Amīna’s scare from the beginning.<sup>43</sup> Around the same time, Rashīd Riḍā was asked by some readers whether there was indeed anything in the noble Quran that supported the view that the earth was spherical and revolved around the sun. In both *fatwās*, he answered in the affirmative and adduced some appropriate verses – but in

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<sup>38</sup> Şidqī, *Kayfa khuliqa l-insān?*

<sup>39</sup> Şidqī, *Kayfa khuliqa l-insān?* 306.

<sup>40</sup> Şidqī, *Kayfa khuliqa l-insān?* 306-307; Şidqī used this argument also in his anti-Christian writings, see Ryad, *Islamic reformism* 251-252.; Shavit, *Scientific and political freedom* 76, misses this article and thus portrays Şidqī as a more or less unconditional supporter of Darwinism.

<sup>41</sup> See Stolz, *The lighthouse* 145-206; Dallal, *Islam, science* 162-165; see also above note 13.

<sup>42</sup> On al-Zawāhirī (1878-1944; rector 1929-1935) and his controversies with Rashīd Riḍā see Brunner, *Education* 120-131.

<sup>43</sup> Al-Zawāhirī, *al-’Ilm wa-l-’ulamā’* 101.

neither case did he refer to any of the available textbooks, not even to an article from his colleagues of *al-Muqataṭaf*, but rather to two figures who were only remotely in touch with modern astronomy.<sup>44</sup> It seemed clear, therefore, that beyond secular journalists, also in religious circles, one had to look for an answer to this question. The first to do so was the Iraqi Shi'ite scholar (and later Minister of Education), Hibat al-Dīn al-Shahrastānī who, in 1910, published a long treatise on “Astronomy (*al-hay'a*) and Islam” in which he declared modern knowledge about the cosmos not only to be compatible with Islamic tenets and Quranic revelations, but in fact even based on them.<sup>45</sup> Rashīd Riḍā, to whom the author had sent a copy, published a very short announcement in *al-Manār* and promised, *in shā' allāh*, a more detailed review of it.<sup>46</sup>

This never happened; instead, Muḥammad Tawfīq Ṣidqī stepped in and wrote a long piece on “the orbit (*ilm al-falak*) and the Quran”.<sup>47</sup> The slight variation in the title as compared to Shahrastānī's book appears to be programmatic: Although often used interchangeably for “astronomy”, *falak* denotes the celestial sphere in general and is used in this sense also in the Quran (Q 21:33 and 36:40), whereas *hay'a* (lit. “shape”) is not.<sup>48</sup> Ṣidqī's text consists of two distinct layers which are, however, constantly and deliberately interwoven. On the one hand, he tries to give an accurate picture of the universe, couched in scientific terms: our solar system (*majmū'a*) with the eight planets known at the time,<sup>49</sup> plus the existence of dwarf planets, the fact that their orbits are elliptical and that their respective length of a year depends on their orbital period, that they are dark bodies illuminated only by the sun, the different degrees of brightness resulting thereof, the powers of gravitation, fixed stars (which are not really “fixed”, as they move constantly, as do all celestial bodies), comets and their

<sup>44</sup> Rashīd Riḍā, *Kurawīyyat al-arḍ*; Rashīd Riḍā, *Ithbāt istidārat al-arḍ*; the two references in the latter *fatwā* are, first, to the Ottoman statesman Ghāzī Mukhtār Pāshā (1839-1919) who served as the powerless Ottoman “Extraordinary Commissioner to Egypt” during the British rule; as an amateur astronomer, he also proposed a comprehensive calendar reform, based on the solar year; on him, see Reinkowski, *Uncommunicative communication* 409 and *passim*. The second reference is to Muḥammad Bayram al-Khāmis (1840-1889), a Tunisian reformer and prolific author, and his most important book *Ṣafwat al-i'tibār*, which is a world history, local Tunisian historiography, and travelogue; on him, see Tunger-Zanetti, *La communication* 125-127 and index, s.n. Bayram al-Ḥāmis.

<sup>45</sup> Al-Shahrastānī, *al-Hay'a wa-l-Islām* 23-27; see in more detail Bashkin, *The Iraqi Afghans and 'Abduhs* 147-153. In his bibliography of Shi'ite literature, Āghā Bozorg al-Tehrānī (d. 1970) readily acknowledged that “it spread quickly, because there was a need for it” (*lil-ḥāja ilayhi*); *al-Dharī'a* xxv, 259 (no. 639). See also Ende, *al-Shahrastānī*. Ironically enough, al-Shahrastānī (1884-1967) had originally begun to write a book in defense of geocentrism, but then changed his own worldview after reading a treatise by another Shi'ite scholar, Muḥammad Ḥusayn b. Muḥammad 'Alī Mar'ashī Shahrastānī (d. 1897), which convinced him of the compatibility of Copernican astronomy with the Islamic revelation; see Arjomand, *Emergence* 20-21.

<sup>46</sup> Rashīd Riḍā, *Taqrīz al-maṭbū'āt al-jadīda* 954.

<sup>47</sup> Ṣidqī, *Ilm al-falak wa-l-Qur'ān*; a shorter version had already appeared before in *Majallat al-ṭalaba al-miṣriyyīn*.

<sup>48</sup> Cf. Hartner, *Falak*; Pingree, *Ilm al-hay'a*; *hay'a* in the Quran (3:49 and 5:110) in fact only means “shape”.

characteristics, the existence of other remote galaxies, *et cetera* – the whole set-up is there, and although there are (unlike in *al-Muqtaṭaf*) neither diagrams nor other visualizations, Ṣidqī tries to make up for it by adducing some English terms in brackets.<sup>50</sup> Not everything is perfect (Halley, *mudhannab Hālī*, for instance, is mixed up with other comets),<sup>51</sup> and nothing of it was remotely new even in his days; nevertheless, in view of his anticipated readership, Ṣidqī provided, on a modest level, a fairly reliable summary of the universe. But science proper was not his primary concern, as is already announced in the title, and therefore a second layer stretches through the text, which is entirely exegetical. The Quran is omnipresent, and not a single detail of the universe comes along without the appropriate Quranic support. To single out but a few: the gravitational attraction of fixed stars towards their circulating planets is corroborated by Q 79:27 and 51:7; its cessation would lead straight to Q 82:1 and 84:1; moons orbit planets which are sunlit because of Q 71:16; all stars are in constant motion according to Q 81:15 and 21:33; planet earth’s circling round the sun becomes clear from Q 65:12, 21:30 and 27:88; and whatever silly and absurd ideas the ancients may have cherished about the stars, the Quran did away with them in Q 24:43 and 39:21.<sup>52</sup> As to star constellations, they are only illusions, although what is mentioned in Q 53:14 and 16 as *sidrat al-muntahā* may be of this kind – the more so as the term *sidra* not only denotes the final destination of all creation after Judgement Day, but could also be derived from the Latin word *sideris*, i.e., “stars”.<sup>53</sup> Imagining the existence of other galaxies (*‘awālim*) besides ours, inhabited by other creatures, is no problem, Ṣidqī posits, since the Quran constantly addresses God as *rabb al-‘ālamīn*, Lord of the worlds in the plural.<sup>54</sup> Distances, however, are gigantic, as is indicated by Q 22:47, 70:4 and 32:5; our neighbouring galaxy is 19 131 030 000 000 miles away, and its light reaches us only after more than three years.<sup>55</sup> This means that our sun along with its planets orbits another sun which thus functions as the sun’s central body, and it is absolutely conceivable that all these solar systems (*majāmī’*) then gather (*qāṭiba*) around one single and common centre where some sort of electromagnetic induction is effective. This, Ṣidqī concludes, is what is probably meant by the term *‘arsh* in Q 23:86-87

<sup>49</sup> Pluto would join them only in 1930 before being dwarfed itself in 2006.

<sup>50</sup> Ṣidqī, *‘Ilm al-falak wa-l-Qur’ān* 578-579, 582, 593, 599; by contrast, *al-Muqtaṭaf* published already in the very first issues articles on astronomy accompanied by illustrations, see, e.g., *al-Muqtaṭaf* 1 (1876), 7-9, 29-32, 58-60. *Al-Manār* did not have any illustrations throughout its existence.

<sup>51</sup> Ṣidqī states that it appeared in 1843, 1880 and 1882; to his credit, it has to be said that Halley’s appearance in April 1910 (on p. 583, he writes “finally, there appeared one which we observed last year, i.e., 1910”) was preceded, some months previously, by another, brighter comet which was later dubbed “1910 I”; see for details Tammann, *Halley’s Komet* 240. *Al-Muqtaṭaf* was better informed: 36 (1910), 203-204.

<sup>52</sup> Ṣidqī, *‘Ilm al-falak wa-l-Qur’ān* 580, 581, 586, 589, 595, 598, respectively.

<sup>53</sup> Ṣidqī, *‘Ilm al-falak wa-l-Qur’ān* 583-584; on the term see also Rippin, “*Sidrat al-Muntahā*”.

<sup>54</sup> Ṣidqī, *‘Ilm al-falak wa-l-Qur’ān* 593, 597.

<sup>55</sup> Ṣidqī, *‘Ilm al-falak wa-l-Qur’ān* 579.

when it talks about “the Lord of the Great Throne”. As to the question whether this *‘arsh* is fixed or in motion, and what kind of force is active there (after all, it can’t be gravitation), Şidqī answers that God makes a specific power work here which is called “the carriers of the throne” (*hamalat al-‘arsh*), and which we do not perceive, just as we do not perceive magnetism, electricity, or other gravitational forces; eight such forces called “angels” (*malā’ika*) are duly described in the Quran (69:17; also 39:75 and 40:7).<sup>56</sup>

### 3 Şidqī’s Lectures at the *Dār al-da‘wa*

Şidqī was involved in Rashīd Riḍā’s abovementioned school *Dār al-da‘wa wa-l-irshād* from the very beginning, as one of the ten members of the administrative council (*majlis al-idāra*).<sup>57</sup> When the school opened, he was, apparently besides his regular job as a prison physician, entrusted with the teaching of science, medicine and, sure enough, Christianity.<sup>58</sup> The articles on the sciences which appeared in the following years were prepared by him clearly in the context of his lectures. The first set, made up of three parts, was a rather curious item, particularly for a journal like *al-Manār*, for it consisted of a glossary of Arabic terms, often (but far from exclusively) of a scientific nature, and it was intended to refute those critics who maintained that the Arabic language was not able to express scientific facts adequately. In most cases, the English equivalents are given, sometimes accompanied by short explanations in Arabic; but there is no alphabetical or otherwise discernible order, and no criteria are named according to which a word was included. The result is an interesting chaos, with words like *athāth al-bayt* (furniture) standing next to *al-farzaja* (pessary), or *al-judārī* (smallpox) next to *istamnā* (to masturbate).<sup>59</sup>

Apparently, these lists were meant to be teaching material for his courses at the *Dār al-da‘wa*, and the lecture notes for these courses then resulted in a second set of articles that were published in *al-Manār* in 19 instalments, between October 1914 and October 1919. Here, the structure is fairly clear, and so is the intention: the students should become familiar with the basics of some natural and medical sciences in general, and sanitary rules in particular. Two

<sup>56</sup> Şidqī, ‘*Ilm al-falak wa-l-Qur’ān* 590-591. Şidqī readily acknowledges here that he got this idea from a talk he once had had with Rashīd Riḍā. In a *fatwā* issued some time after Şidqī’s death, Rashīd Riḍā referred to this interpretation himself, when answering the question how Q 36:38 (“And the sun – it runs to a fixed resting place”) was to be understood. In his answer, he directed the reader to Şidqī’s article, but also adduced a *ḥadīth* via Abū Dharr; Rashīd Riḍā, *Ḥarakat al-arḍ*, 670-671. Given Şidqī’s overall reasoning, Stolz’s conclusion that “through such arguments, a reader also received a surprisingly thorough introduction to modern astronomical terms” (*The lighthouse* 201) seems a little over-optimistic to me.

<sup>57</sup> Rashīd Riḍā, *Jamā‘at al-da‘wa wa-l-irshād* 115 (where he was presented as “the author of the book *al-Dīn fī naẓar al-‘aql al-ṣaḥīḥ*”).

<sup>58</sup> Ryad, *Islamic reformism* 163.

<sup>59</sup> Şidqī, *Kalimāt ‘ilmiyya ‘arabiyya* part 2, 677-678.

important side effects were supposed to be the Arabization of scientific vocabulary and, inevitably, the application of these sciences to Islamic religious texts.<sup>60</sup> In view of these general guidelines, and given Şidqī's own education as physician, the curriculum was as follows: elementary chemistry (part 1); physics, including the atmosphere, electricity, optics (1-3); anatomy and inner organs, including metabolism and sexuality (3-8); hygiene, including clothes, personal care, household, sleep and dreams (8-9). The by far most detailed part, covering the remaining nine parts, was on bacteriology and pathology, which is certainly also due to the fact that epidemic diseases were a constant threat in the Middle East (and far beyond) in this era, especially in the context of local pilgrimages and the annual *hajj* to Mecca.<sup>61</sup> Şidqī accordingly details a great number of infectious diseases caused by parasites, all kinds of bacteria (typhus, plague, cholera, tuberculosis, and many more) or insects (malaria, various fever diseases), and ends his catalogue of dreadful things with a chapter on syphilis (*al-ifranjī*, probably derived from "French disease").<sup>62</sup> All in all, this adds up to no small amount of usable and practical knowledge, the more so as Şidqī gives the particulars about the causes for every illness, its symptoms, treatment and prophylaxis in a very systematic manner.<sup>63</sup> As it turns out, he is quite up-to-date with regard to medical research, for he even quotes the British medical review *The Lancet* on the necessity of adopting hygienic measures against the spread of gonorrhoea (which is in his eyes both a confirmation of the calls for cleanliness in Islamic law and an urgent warning against the lousy conditions in brothels).<sup>64</sup> He knows not only the name and the fame of Louis Pasteur and Robert Koch, whom he calls "one of the greatest scholars of his time"<sup>65</sup>, but also of those who only recently detected the pathogens of whooping cough (Jules Bordet and Octave Gengou) or dysentery (Kiyoshi Shiga and Walter Kruse).<sup>66</sup> And he is aware that there are a few things everybody could do in order to avoid a tuberculosis infection: isolation of and keeping one's distance from the infected, avoiding crowded places such as theatres or cinemas (*dūr al-şuwar al-mutaḥarrika*) – in short, things that sound disturbingly familiar at the time of writing the present article (January 2021).<sup>67</sup>

<sup>60</sup> Şidqī, *Durūs sunan al-kā'ināt*, part 1, 853.

<sup>61</sup> See, e.g., Essner, *Cholera der Mekkapilger*; Tagliacozzo, *Hajj in the time of Cholera*.

<sup>62</sup> Şidqī, *Durūs sunan al-kā'ināt*, part 19, 305-314.

<sup>63</sup> This explains why other scientific issues do not loom large here; Darwinism, for instance, is relegated to a single footnote – in which Şidqī calls the theory again "all in all correct without doubt" (*fa-l-madḥhab fī l-jumla ṣaḥīḥ lā šakk fīhi*), not the least because of Q 71:14; *Durūs sunan al-kā'ināt*, part 5, 207-208.

<sup>64</sup> *Durūs sunan al-kā'ināt*, part 15, 353-354. (The reference is to M.F.H. Gamble, "A contribution to the etiology of epidemic cerebro-spinal meningitis", *The Lancet* 188.4850 (12 Aug. 1916), 277-279).

<sup>65</sup> Şidqī, *Durūs sunan al-kā'ināt*, part 9, 531 and part 13, 225.

<sup>66</sup> Şidqī, *Durūs sunan al-kā'ināt*, part 15, 357 and part 16, 426.

<sup>67</sup> Şidqī, *Durūs sunan al-kā'ināt*, part 13, 232-233; Şidqī adds more pieces of advice: boiling and cooking food

This is not to say, however, that Şidqī did not seize the opportunity for exegetical digressions in these lectures either. Already in his list of words, he inserted an entry on *sijjīl*, which he rendered as “pumice-stone”, identified in the Quran as the stones that God made rain on the people of Lot (Q 15:74) and the “people of the elephant” (Q 105:4). While the former, Şidqī explains, means a volcanic eruption, in the latter case these stones were probably infected with smallpox germs (*mīkrūb al-judarī*) which then led to an epidemic among the *aşḥāb al-fīl*. Şidqī here – knowingly, one may surmise, although he does not mention the name – follows Muḥammad ‘Abduh’s footsteps, who had also interpreted this verse as a sign of an outbreak of smallpox or measles.<sup>68</sup> During his lectures, Şidqī sometimes comes up with intriguing variations on themes he had already dealt with previously. As we have seen above, the fatherless birth of Jesus could have been, in his eyes, the result of parthenogenesis.<sup>69</sup> Now, in the context of sexual organs, he comes to discuss hermaphrodites, and considers the idea that Mary might have been such a hermaphrodite, in the sense that she had both female and male sexual characteristics, the female ones being predominant and thus enabling her to give birth and suckle the infant. True, he concedes, this is an utterly rare case, and we do not know of any other example, but it would not contradict the belief that Mary and Jesus were a “sign for the worlds” (*āya li-l-‘ālamīn*, Q 21:91), for “in your creation, and the crawling things He scatters abroad, there are signs for a people having sure faith” (Q 45:4).<sup>70</sup> Also, the angels, whom we have met earlier on as the central cosmic force that stabilizes God’s throne,<sup>71</sup> make a remarkable comeback in microbiology. Lecturing about the general characteristics of microbes and their mode of operation, Şidqī makes a point of stressing that whatever is sent by God onto earth, every force of nature, can be called *malak*, by virtue of Q 13:13, which establishes a connection between thunder and the angels. The microbes which are sent by God can therefore be classified as angels as well, since dead bodies decompose only through the agency of microbes, whereby gases are released. Now if we say that the spirit (*rūḥ*) is the ethereal matter linked to a body, we cannot exclude the option that this *rūḥ* is released when the corpse decomposes because of the microbes in it – which takes us to Q 6:93 where the

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well, avoiding bodily, mental, and sexual overexertion, doing sports in fresh air, eating easily digestible things, getting enough sleep, refraining from smoking and from inhaling exhaust fumes.

<sup>68</sup> Şidqī, *Kalimāt ‘ilmiyya ‘arabiyya*, part 2, 674-675; cf. Vacca, *Sidjīl* and Beeston, *al-Fīl*; on ‘Abduh’s exegesis see Shabana, *In pursuit of consonance*, 15. Şidqī joins here (675-676) another exegetical exercise: talking about volcanos, such an eruption may have been the reason why Dhū l-Qarnayn’s wall against Gog and Magog (Q 18:95) no longer exists. See also van Donzel, Ott, *Yādūjī wa-Mādūjī*; Radtke, *Weltgeschichte* 136.

<sup>69</sup> See above, note 40.

<sup>70</sup> Arberry’s translation; see Şidqī, *Durūs sunan al-kā’ināt*, part 6, 302-303; the passage is also dealt with by Ryad, *Islamic reformism* 252; on the importance of hermaphrodites in Islamic law, see Rebstock, *Mathematische Quellen* (with extensive bibliography).

<sup>71</sup> See above, note 56.



angels, in the agonies of death (*ghamarāt al-mawt*), stretch out their hands and say “deliver your souls!” By this, Ṣidqī quickly protests, he is not denying the existence of other heavenly guardians, and Gabriel most certainly is one of a different kind; rather, microbes *fall under the category* of what is described as angels, without *all* angels being microbes. Moreover, also Q 35:1 which mentions the angels’ wings can be applied to microbes, since some of them, such as the cholera microbes, have fringes in pairs. In this sense, he ends his angelic excursion, the *jinn*s, whose semantic root means “to conceal”, may also be a placeholder for microbes which have been sent by God but are hidden from human view.<sup>72</sup>

Muḥammad Tawfīq Ṣidqī’s lecture series ended in October 1919, half a year before his death; the third part, on illnesses whose pathogenic agents were not yet known at the time, never appeared in *al-Manār*. As a separate book, it had already been published in 1915, and Rashīd Riḍā had spoken very highly of it in a short review, particularly underscoring two points: first, it contributed to the Arabicization of scientific terminology, and secondly, it served as a mediation (*tawfīq*) between science and religion, in the sense that benefiting from science was a religious command, and that it did absolutely not contradict the belief in God and the trust in Him (*tawakkul*) to guard against the attacks of microbes.<sup>73</sup> Rashīd Riḍā’s school closed at some point afterwards, during the war, after a continuous and ultimately unsuccessful struggle for funding.<sup>74</sup>

#### 4 Trying to Have the Cake and Eat it, too

When looking at Ṣidqī’s articles on the natural sciences in *al-Manār* as a whole, one notices a few striking characteristics. For one thing, there are no references whatsoever to the long tradition of Arabic or “Islamic” science, neither in the field of astronomy nor in medicine –as if Ibn al-Haytham, Ḥunayn b. Iṣḥāq or al-Bīrūnī had never lived.<sup>75</sup> This shows in fact two things: on the one hand, Ṣidqī was completely detached from the findings of pre-modern

<sup>72</sup> Ṣidqī, *Durūs sunan al-kā’ināt*, part 10, 604-607. By this last remark, Ṣidqī is once again back to ‘Abduh (again without mentioning his name) who famously also interpreted the *jinn*s to be microbes; see Berger, *Esprits et microbes* 557; Elshakry, *The exegesis of science* 501; Jansen, *The interpretation of the Koran* 39.

<sup>73</sup> Rashīd Riḍā, *Kitāb Durūs sunan al-kā’ināt* 719-720.; a second edition came out in 1348/1929-1930 (328 pp.), a third one in 1354/1935-1936 (370 pp.); cf. Nuṣayr, *al-Kutub al-‘arabiyya* 271 (entries m/402 and 403); Jansen, *The interpretation of the Koran* 44. Drafts of further lectures did exist, and the facsimile reproduced in Ryad, *Islamic reformism*, 371, is likely to be such a draft, as it deals with illnesses that had not been treated in the previous lectures (Bee Poison, and its medical use for muscle growth; Bell’s Paralysis/Bell’s Palsy and its causes). Ṣidqī’s intention to continue his lectures even after the closure of the *Dār al-da‘wa* was thwarted by his premature death; see the short notice (presumably by Rashīd Riḍā) at the very end of the printed book: Ṣidqī, *Durūs sunan al-kā’ināt* (3<sup>rd</sup> edition), 363.

<sup>74</sup> Rashīd Riḍā, *Madrasat Dār al-da‘wa* (1915); al-Baṭal, *Faqīd al-islām* 197; see also Ryad, *Islamic reformism* 165.

<sup>75</sup> On the classical medical and astronomical tradition in Islam, see in detail *GAS*, iii (medicine 247-256 on Ḥunayn, d. 873) and vi (astronomy 251-261 on Ibn al-Haytham, d. 1041, and 261-276 on al-Bīrūnī, d. 1048).

Muslim science, and he did not even use the classical tradition for the apologetic accusation that European scientists had actually only appropriated what had originally been conceived in “the Orient”.<sup>76</sup> While this is strikingly true also for debates about modern astronomy in other venues,<sup>77</sup> Şidqī was no less detached from his own environment. A trained physician, he paid homage to those who detected microbes, but this was the exception, because otherwise, there was no integration of his articles into contemporary academic reasoning. Neither did he refer to Egyptian or Ottoman astronomers and their findings,<sup>78</sup> nor did he, in his statements on Darwinism, mention Ḥusayn al-Jisr, Jamāl al-Dīn al-Afghānī, Muḥammad ‘Abduh, Shiblī Shumayyil, or anyone else who had previously participated in the debate.<sup>79</sup> But this was not the point for him, because what counted for him in the end was not scientific progress and increased knowledge about nature, but religious reinsurance. When he began his very first contribution in 1903, on pigs and dogs, by affirming that his intention was to make his readers aware of the foresight of the *sharī‘a*, this was his lifetime programme: to explain scientific details against the backdrop of religion as a meaningful superstructure. The only reference work that was permitted in this context was the Quran, for there, all scientific findings had already been anticipated, as Şidqī never tired of stressing.<sup>80</sup> It goes without saying that his approach to natural science from the religious side was perfectly in line with Rashīd Riḍā’s demands on the purpose of his *Dār al-da‘wa wa-l-irshād*: in the curriculum, it was explicitly stipulated that all sciences of natural laws (*‘ulūm sunan al-kā’ināt*) had to be taught in an Islamic way (*‘alā ṭarīqa islāmiyya*) in which all rules would be expressed with God’s law (*bi-l-sunna al-ilāhiyya*), e.g., by naming them “God’s law of gravitation, God’s law in the extension of bodies through heat”, etc. While the teaching method of mathematics (which characteristically did not play any role at all in the *Manār* articles) was the same as in public schools, astronomy, like the other natural sciences, would be combined with Quranic verses in order to explain that modern knowledge corresponded to what God had revealed to the

<sup>76</sup> This does not hold true to the same degree of Rashīd Riḍā, at least not with regard to the initial stages of *al-Manār*, for in its third volume (1900), he had published a five-part series on classical Islamic civilization and the need to revive it for the sake of Arab unity and renaissance. There, he devoted also a fair share of attention to the discoveries of classical Arab astronomy and to a brief history of Arab mathematics: *Madaniyyat al-‘Arab*, esp. part 3, 388-391; part 4, 412-414, and part 5. However, he neither referred to these articles later in the context of the *Dār al-da‘wa wa-l-irshād*, nor with regard to Şidqī’s contributions.

<sup>77</sup> Dallal, *Islam, science* 162-163, 165.

<sup>78</sup> It is characteristic that his astronomy article appeared in the very same year as Carlo Alfonso Nallino’s lectures on the history of Arab astronomy in the Middle Ages which he had given (in Arabic) in 1909/1910 at the Egyptian University: Nallino, *‘Ilm al-falak*; see Reid, *Cairo University and the Orientalists* 51.

<sup>79</sup> This was also in marked contrast to al-Shahrastānī who in his abovementioned book *al-Hay‘a wa-l-Islām* (see above, note 45) not only knew the history of astronomical studies, but was also well aware of contemporary scholarship: Al-Shahrastānī, *al-Hay‘a wa-l-Islām* 37-38, 59; see also Bashkin, *The Iraqi Afghani* and ‘Abduhs, 144-148, 150-152.

<sup>80</sup> Şidqī, *al-Dīn fī nazar al-‘aql al-ṣaḥīḥ*, part 3, 496; *‘Ilm al-falak wa-l-Qur’ān* 593-594; *Durūs sunan al-kā’ināt*,

Prophet 1300 years ago.<sup>81</sup>

So the Quran was ever-present for Ṣidqī. In contrast, completely absent in his texts was the Prophet. This had of course much to do with his general and unyielding rejection of the genre of *ḥadīth* per se that has already been mentioned above.<sup>82</sup> It paid off for him particularly in his treatment of astronomy, for there was not only the ox carrying the earth on its horns that somehow no longer met scientific criteria. There was, in addition, another famous *ḥadīth* to the effect that the sun every day, after it has set, prostrates itself before God’s throne, whereupon it is granted permission to rise again the following day. While Rashīd Riḍā for many years was at loggerheads with Yūsuf al-Dijwī (d. 1946), a conservative Azhar scholar, over precisely this tradition, and spilled much ink to put things straight,<sup>83</sup> all this was no problem at all for Ṣidqī. He dismissed these traditions by plainly and simply ignoring them. There was one exceptional case, in his lectures on hygiene and housekeeping, when he came to mention the famous tradition “if a house fly falls in the drink of anyone of you, he should dip it (in the drink) and take it out, for one of its wings has a disease and the other has the cure for the disease.” Here, it suited him just fine that the *ḥadīth* was transmitted by Abū Hurayra, who had a dubious reputation in certain circles anyway, and so he made do with a footnote and a few disparaging remarks on this “glutton who lived off the Prophet and his companions”.<sup>84</sup> Ṣidqī ended this passage by reassuring his students that even if the Prophet had said such a thing, it would not be obligatory for Muslims to emulate him in purely worldly issues, because in this realm prophets were allowed to err. This remark is rather characteristic of Ṣidqī’s idea of prophets in general and of Muḥammad in particular: he was nothing but a tool in the Lord’s hands in order to transmit the Quranic revelation, and the only miracle here was that God chose a poor orphan for this task, a *nabī ummī*, which means “illiterate”, full stop. Ṣidqī goes to great lengths to prove historically that Muḥammad grew up in a completely uneducated society and that he was in a state of constant bewilderment and only knew to discern truth from falsehood when God’s revelation finally reached him.<sup>85</sup> What

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part 15, 354.

<sup>81</sup> Rashīd Riḍā, *al-‘Ulūm wa-l-funūn* 816.

<sup>82</sup> See above, note 28.

<sup>83</sup> Rashīd Riḍā, *al-Manār wa-l-Azhar* 20, 68-88; cf. Juynboll, *Authenticity* 147-148. On the classical background, see Radtke, *Weltgeschichte* 20, 277.

<sup>84</sup> Ṣidqī, *Durūs sunan al-kā’ināt*, part 8, 456-457; the portrait Ṣidqī drew of Abū Hurayra was so negative that Rashīd Riḍā felt compelled to insert a slightly attenuating footnote of his own: Ṣidqī, *Durūs sunan al-kā’ināt*, part 8, 458; on the afterlife of this debate see Juynboll, *Authenticity* 141-143; on the many polemics in modern times around Abū Hurayra in general Juynboll, *Authenticity* 62-99. The tradition (via Bukhārī) is very handy at <https://sunnah.com/bukhari/59/126> (last accessed: 10 February 2021). Another passage where Ṣidqī criticized in passing traditions on contagion is *Durūs sunan al-kā’ināt*, part 10, 609-610.

<sup>85</sup> Ṣidqī, *al-Dīn fī nazar al-‘aql al-ṣaḥīḥ*, part 2, passim; part 3, 495-497. On the term *ummī* and its many interpretations, see Günther, *Muḥammad, the illiterate prophet*. It is also telling in this context that Ṣidqī is

was primarily directed against the missionaries and intended to counter the allegation that Muḥammad was a “false prophet” who only appropriated what Jesus and others had said before, had indirect repercussions on Muslims, too. Refraining from quoting any *ḥadīth* on any of his topics meant scaling down Muḥammad, who completely disappears behind the Quran and is more or less cancelled out as a normative model for the believers. When Ṣidqī, in a long side-treatise, defends marrying off girls at a very young age, he naturally also mentions that Muḥammad married ‘Ā’isha when she was only nine years old (after she had already been engaged to Jubayr b. Muṭ‘im b. ‘Adī for two years). But for him, it is not a question of today’s Muslims having to emulate the Prophet and marry young girls because Muḥammad had done so; instead, he concludes that this was customary in a hot country where all girls reached puberty so early in life, so that it was rather Muḥammad who emulated nature by doing what everybody around him did.<sup>86</sup>

Reading holy scriptures from a faithful, yet markedly “scientific” perspective and explaining the laws of nature by quoting Quranic (or, for that matter, Biblical) verses often looks like an attempt to have one’s cake and eat it, too.<sup>87</sup> As it became increasingly impossible to ignore the radical change of the traditional worldview, it seemed, to some, more promising to take the bull by the horns by asserting that all discoveries and inventions had already been announced in the Quran, which merely had to be read accordingly. It is therefore only natural that from the late 19<sup>th</sup> century onward, the intensifying debates on issues such as astronomy or Darwinism which by necessity affected the religious worldview also made their way into Quranic exegesis. Muḥammad Aḥmad al-Iskandarānī (d. 1889), like Ṣidqī an Egyptian physician, is usually credited with the establishment of what came to be called the “scientific exegesis” (*tafsīr ‘ilmī*) of the Quran, and it was Ṭaṭṭāwī Jawharī (1862-1940) who in the 1920s-30s published the most important work of this genre, his *al-Jawāhir fī tafsīr al-Qur’ān al-karīm* in 26 volumes.<sup>88</sup> But it was not only in the field of Quranic exegesis proper that this road was

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ready to accept as real Muḥammad’s so-called “Night Journey” (*isrā’*), which is associated with Q 17:1 and 53:1-21, whereas he rejects the story of Muḥammad’s ascension to heaven (*mi’rāj*) which is based on tradition literature; for Ṣidqī, this was only a dream that was in no connection with the *isrā’*; ‘Ilm al-falak wa-l-Qur’ān, 585-586; on the issue of heavenly journeys in Islam in general, see Günther, “Gepriesen sei der, der seinen Diener bei Nacht reisen ließ” (with extensive bibliography).

<sup>86</sup> Ṣidqī, *Durūs sunan al-kā’ināt*, part 7, 370.

<sup>87</sup> To give but one, perhaps slightly surprising, example from a different context: in 2014, the professor for applied physics at the Karlsruhe Institute of Technology, Thomas Schimmel, gave a public lecture at the University of Munich on “Der Urknall und die Gottesfrage. Ein Streifzug vom Inneren der Atome bis an die Grenzen des Universums” which ended in an implicit proof of the existence of God and an outright sermon. The lecture is available at <https://videoonline.edu.lmu.de/de/node/6459> (last accessed: 10 February 2021). I owe this reference to Ulrich Rebstock).

<sup>88</sup> On the genre of *tafsīr ‘ilmī* in general, see Jansen, *The interpretation of the Koran* 35-54; recent studies are Elshakry, *The exegesis of science*, and Shabana, *In pursuit of consonance* (both with comprehensive bibliographies); on Jawharī’s commentary in particular, see Daneshgar, *Ṭaṭṭāwī Jawharī*.

taken, as could be seen in the contributions by Ḥusayn al-Jisr or Hibat al-Dīn al-Shahrastānī; even an early precursor of Arab nationalist thought, ‘Abd al-Raḥmān al-Kawākibī (d. 1902), deemed it appropriate to incorporate into his political treatise against Ottoman despotism a number of verses which allegedly anticipated modern scientific discoveries, including microbes.<sup>89</sup>

Muḥammad Tawfīq Ṣidqī’s articles fit into this category quite well, although he did not write a Quranic commentary proper. The closest he came in this regard was a four-part series of articles on “the Quran and science”, yet again directed against Orientalists and missionaries and their (alleged or real) misconceptions of the Quran, in which he singled out a great number of verses in order to show their compatibility with modern science. The Quran, he concluded, may not have been revealed in order to teach the humans natural sciences, but it contained enough exact scientific expressions and details which were known to nobody at the time, and which no Arab could ever have studied, had there not been God’s revelation.<sup>90</sup> His seemingly strict focus on rational thinking did not preclude him from occasionally showing some affinity towards supernatural phenomena such as necromancy or telepathy.<sup>91</sup> And it most certainly did not preclude him from having an utterly conservative and patriarchal understanding of society: he demanded that the legal age for marriage of girls be lowered to fourteen or possibly younger in order to avoid promiscuity, masturbation and lesbianism among them,<sup>92</sup> he defended polygyny as a protection against prostitution, fornication and contagious diseases, still being optimistic that women would understand that the husband is their provider and breadwinner ( *‘ā’iluhā wa-kāfiluhā* )<sup>93</sup>. And the strict egalitarianism of Islam as illustrated by Q 2:256 (*lā ikrāh fī l-dīn*) notwithstanding, if prevented from *da‘wa*, Muslims were ordered to fight (*umirū bi-l-qitāl*) in order to ward off temptation (*fitna*), until the threatener submits to the rule of Islam (Q 2:193)<sup>94</sup> – by which last sentence he may be identified as a precursor of 20<sup>th</sup>-century Islamist ideologues.<sup>95</sup>

After the closure of the *Dār al-da‘wa wa-l-irshād* and Ṣidqī’s death, the natural sciences ceased to be of notable importance in *al-Manār*, and on the few occasions when Rashīd Riḍā later on referred to cases in point, mostly in the context of *fatwās*, he did so on strictly

<sup>89</sup> Al-Kawākibī, *Kitāb Ṭabā’i’ al-istibdād*, 208-209; see also Weismann, al-Kawākibī, and the references given there.

<sup>90</sup> Ṣidqī, *al-Qur’ān wa-l-‘ilm*, part 4, 452.

<sup>91</sup> Khawāriq al-‘ādāt fī l-islām 122-123; Durūs sunan al-kā’ināt, part 9, 520-524.

<sup>92</sup> Ṣidqī, *Durūs sunan al-kā’ināt*, part 7, 369.

<sup>93</sup> Ṣidqī, *al-Dīn fī naẓar al-‘aql al-ṣaḥīḥ*, part 4, 703-704.

<sup>94</sup> Ṣidqī, *al-Dīn fī naẓar al-‘aql al-ṣaḥīḥ*, part 4, 699-700. The reader be reminded here of Ṣidqī’s other field of activity, namely his incessant polemicism against Christianity; see above, note 29.

<sup>95</sup> Brunner, ‘Kein Zwang in der Religion’ 14.

exegetical grounds.<sup>96</sup> This also spared him a more thorough attempt at coming to terms with the fashionable “scientific” exegesis of the Quran. With regard to this approach, he maintained a characteristically ambivalent attitude. On the one hand, he mildly criticized Jawharī’s abovementioned *al-Jawāhir*, saying that it contained “everything except exegesis” (without, however, denying the author God’s reward for his good intentions).<sup>97</sup> On the other hand, he had no qualms about availing himself of it and declaring Darwinism as acceptable because of the support of a number of Quranic verses.<sup>98</sup> While advocating for the inclusion of the natural sciences in the educational curricula, he never wavered between priorities of epistemological interest: in order to be admissible, the natural sciences had to be validated by revelation. After all, it cannot be what must not be.<sup>99</sup>

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<sup>96</sup> See above, notes 25 (on the sighting of the moon) and 56 (on the movement of the sun).

<sup>97</sup> Rashīd Riḍā, *Tafsīr al-Shaykh Ṭaṭṭāwī Jawharī* 515-516. He quoted and adopted here a judgment that was often passed on Fakhr al-Dīn al-Rāzī’s (d. 1209) commentary.

<sup>98</sup> Rashīd Riḍā, *Nazariyyat Dārwin*, 596-600; see also Shavit, *The evolution of Darwin* 22.

<sup>99</sup> My sincere thanks go to Werner Ende, Ulrich Rebstock, Umar Ryad, and Monika Winet for their helpful comments.

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