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## Archaeological Excavations of Bāb al-Ghurayb Cemetery: Plague Epidemics and the Ruin of Fourteenth-Century Cairo

### Introduction: Archaeological Excavations in Mamluk Cairo

Today, Greater Cairo is probably the largest city in the Arab and African worlds, a megalopolis with nearly 17 million inhabitants. As the city has few green spaces, in 1998 the Aga Khan Trust for Culture launched a huge project to create a new panoramic park at the edge of historic Cairo. In 2000, a scientific cooperation was established between the Egyptian Ministry of Antiquities, the French Institute of Oriental Archaeology (IFAO), and the Aga Khan Trust for Culture (AKTC) to excavate and document the archaeological sites along the al-Azhar Park in Cairo. From 2001 to 2009, our main archaeological site was the Darrāsah parking lot, also called the “Archaeological Triangle.”<sup>1</sup> This site is remarkable especially for its location in the city, less than 350 meters east of the al-Azhar mosque and along the Fatimid and Ayyubid city walls (Figs. 1 and 2). Eight missions were carried out on this site, for a total of 18 months of excavations. Our excavations constituted the first professional field school of Islamic archaeology in Egypt. Between 2007 and 2016, we trained more than 80 Egyptian scholars, including students from Ayn Shams and Cairo Universities and staff from the Egyptian Ministry of Antiquities.

For historians, Cairo is one of the best known and most well documented Middle Eastern cities during the medieval period, as it was the capital of several important dynasties of the Muslim world, including the Fatimids, the Ayyubids, and later the Mamluks. A well known event of Mamluk Cairo is the series of epidemics of plagues and the Black Death from the fourteenth until the fifteenth century and later.<sup>2</sup> These plague epidemics were described in detail by historians but have never been observed physically. Our archaeological excavations have revealed this tragic story through a unique source of documentation: the cemetery of Bāb al-Ghurayb.

What we know about Mamluk funerary architecture in Cairo is linked to what we see and is, therefore, mainly the monumental architecture of princes, Sufi shaykhs, and other notables. Until our excavations near Bāb al-Ghurayb, very

<sup>1</sup>Stéphane Pradines et al., “Excavations of the Archaeological Triangle: 10 years of Archaeological Excavations in Fatimid Cairo (2000 to 2009),” *Mishkah* 4 (2009): 177–79; Stefano Bianca and Philip Jodidio, *Cairo: Revitalising a Historic Metropolis* (Geneva, 2007), 69–87.

<sup>2</sup>Doris Behrens-Abouseif, Sylvie Denoix, and Jean-Claude Garcin, “Le Caire,” in *Grandes villes méditerranéennes du monde musulman médiéval*, ed. J. C. Garcin (Rome, 2000), 182–83.



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little information was available about “normal” peoples’ graves and cemeteries in the city. This article presents two important results of our excavations:<sup>3</sup> first, how the Mamluks responded to epidemic crises by changing their Muslim funerary practices; second, how the plague epidemics impacted and deeply changed the urban history of Cairo.

### Archaeological Context of Our Discoveries in Darb al-Aḥmar

It is important to position our archaeological excavations in a chronological context to understand how we dated the Mamluk cemetery described in this article.<sup>4</sup>

The archaeological site is located to the northeast corner of the district called Darb al-Aḥmar, in front of the contemporary hospital of al-Ḥusayn and al-Azhar street. The site was called the Archaeological Triangle by the AKTC, and Darrāsah parking lot by the IFAO as the place was a former car park, also used by booksellers.

The first occupation levels found on the Darrāsah parking lot/Archaeological Triangle are represented by Fatimid layers dating from 980 to 1040. No occupation layer was found before this, and the area was covered by sand and pebbles. The excavated Fatimid structures consisted of a building centered around a courtyard with a fountain and a garden. The building presents strong similarities to the contemporary mausoleums found to the south of Fustat, in Iṣṭabl ‘Antar.<sup>5</sup> The building was constructed outside the original walls of the city demarcated by Jawhar in 971 and was destroyed during the extension of the fortifications by Badr al-Jamālī.

The second Fatimid occupation dates from 1087–92 and is represented by an imposing quadrangular tower made of square mud bricks. The foundations of the

<sup>3</sup>The unpublished results of this article were presented on 13 September 2014, in “Medieval Burial Practices in Europe and the Near East: Challenges, Approaches, Potential,” at the European Association of Archeologists twentieth annual meeting in Istanbul; on 26 October 2015 in a lecture at the Annemarie Schimmel Kolleg in Bonn; and, more recently, on 29 May 2020, during an online symposium, “Epidemic Urbanism: Reflections on History,” sponsored by Columbia University.

<sup>4</sup>We dated all our structures according to stratigraphy (relative chronology), architecture, epigraphy, and artifacts collected in close and secure contexts. The first volume of our excavations was the publication of all the ceramics studied by Julie Monchamp: *Céramiques des murailles du Caire (fin Xe–début XVIe siècle)* (Cairo, 2018), 248–78. It is the first comprehensive chrono-typological catalogue of the Mamluk ceramics produced in Egypt (glazed and unglazed productions). The other artifacts will be published in another volume, including the Mamluk coins studied by Professor Frédéric Bauden.

<sup>5</sup>Roland-Pierre Gayraud, “Le Qarāfa al-Kubrā, dernière demeure des Fatimides,” in *L’Égypte fatimide, son art et son histoire*, ed. Marianne Barrucand (Paris, 1999), 443–64; Stéphane Pradines and Sher Rahmat Khan, “Fāṭimid Gardens: Archaeological and Historical Perspectives,” *Bulletin of the School of Oriental and African Studies* 79 (2016): 1–30.



tower, built by Badr al-Jamālī, cut the previous Fatimid mausoleum. This tower was connected to a curtain wall, also constructed of mud bricks, measuring 15 meters in length. The wall runs northward to join the Fatimid gate known as Bāb al-Tawfīq, on the other side of the contemporary al-Azhar street.<sup>6</sup>

The most monumental architectural element of the Darrāsah parking lot/Archaeological Triangle is undoubtedly the Ayyubid wall, or Saladin's fortifications. This wall can be accurately dated due to the stratigraphy, the ceramic finds, and an inscription found at Bāb al-Qarātīn in 2002 specifying that the construction of this part of Saladin's defensive wall was carried out from 1173 to 1177. The distance between the Ayyubid wall and the Fatimid town wall is just 16 meters. Our excavations also revealed that the first town wall of Saladin rigorously followed the wall of Badr al-Jamālī. It is amazing to see that the Ayyubids did not enlarge the perimeter of the original city and did not destroy the Fatimid fortification.<sup>7</sup>

During our excavations we exhumed two Mamluk streets parallel to Saladin's city wall. These streets and dwellings were built in the thirteenth century and were used at least until the early sixteenth century. Some modest houses were distributed on both sides of the streets and between the Fatimid and Ayyubid fortifications (Fig. 3). One or two large (public?) buildings were built in the area, and the streets covered a complex sewage system with pits and drains. Analysis of the stratigraphic levels confirms that the Ayyubid fortification had stopped being used as a defensive element and houses were constructed on the inner façade of Saladin's defensive wall and over the old Fatimid wall. This phenomenon is explained by the political context in the Near East: the Mamluk sultans had defeated the Mongols and the Franks, and Cairo was not threatened anymore.

Our archaeological discoveries indicate that the Fatimid town wall was still visible in fifteenth-century Cairo, and al-Maqrīzī described this zone located between Bāb al-Barqīyah and Bāb al-Jadīd as the district "between the walls" (*bayn al-sūrayn*), meaning between the Ayyubid and Fatimid walls. As we noticed during the excavations, the Mamluk houses were constructed against and over the Fatimid mud brick wall. In fact, the Mamluks were the main cause of the destruction of the Fatimid town wall. Because the double lines of fortification never served as a defense, it is likely that the mud brick wall, unused, fell into ruin during the thirteenth century and was eventually absorbed by Mamluk urbanization.

<sup>6</sup>Stéphane Pradines, "Identity and Architecture: The Fāṭimid Walls in Cairo," in *Earthen Architecture in Muslim Cultures: Historical and Anthropological Perspectives* (Leiden, 2018), 104–45.

<sup>7</sup>Stéphane Pradines, "Burg al-Zafar, architecture de passage des Fatimides aux Ayyoubides," in *Egypt and Syria in the Fatimid, Ayyubid and Mamluk Eras VIII* (Leuven, 2016), 51–119.



## Mamluk Muslim Funerary Practices in Epidemic Context

In 2001–2 and 2008–9, we excavated a large Mamluk cemetery that was built over the abandoned district of Bayn al-Sūrayn and on the previous medieval occupation levels. This cemetery was actively used from the Mamluk period. The stratigraphy—the study of the archaeological layers—allows us to date the cemetery from the fourteenth to fifteenth centuries, mainly because the graves were dug over, or sometimes through, previous occupation layers that date from the late tenth to the mid-thirteenth century, from the Fatimid/Ayyubid and early Mamluk periods (Figs. 4 and 5). Between the late thirteenth and the mid-fourteenth century, the eastern district of Bayn al-Sūrayn was abandoned and subsequently fell into ruin. Only one street, parallel to the wall, was still inhabited by poor dwellings. We do not know if the area was abandoned before or due to the plague epidemic. The neglected neighborhood was converted into a cemetery from the mid-fourteenth to the late fifteenth century under the Circassian Mamluks.

In usual Muslim funerary practices, wooden coffins were only used to transport the bodies to the cemetery. The bodies were wrapped in shrouds (*kafan*), one or two pieces of cotton, normally white but sometimes green.<sup>8</sup> In Cairo, the bodies are oriented north-south with the face toward the southeast in the direction of Mecca. The bodies were buried in the ground, in narrow pits 1–1.5 meters deep. One grave always corresponds to one individual. A grave is signaled by a tombstone located above the head of the individual, and another vertical slab is located at the feet. The tombstone sometimes bears a name, a date, and some verses from the *Quran*. Some tombstones are represented by pillars surmounted by turbans for men.

In the cemetery of Bāb al-Ghurayb, the number of individuals we excavated was around 77, but the number of graves identified was much higher—more than 300 just in the area of the Archaeological Triangle (Figs. 6 and 7). For example, in 2001 and 2002 we identified at least 36 graves, but only 14 were excavated. In 2008–9, 71 graves were recorded but only 63 individuals were excavated, including 30 in multiple deposits. The age of the individuals studied is a combination of adults and children. In 2009, we had 23 adults and 23 youths and children, of whom 6 had died perinatally (fetus). All these burials have been documented by field anthropologists Phillipe Blanchard and Diane Laville (Fig. 8).

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<sup>8</sup>Edward Lane, *An Account of the Manners and Customs of the Modern Egyptians* (London, 1860), 513, 522–24; M. Galal, “Essai d’observations sur les rites funéraires en Egypte actuelle relevés dans certaines régions campagnardes,” *Revue des Etudes Islamiques* 11, no. 2 (1937): 131–300; Andrew Petersen, “Death and Burial,” *Critical Muslim* 33 (2020): 50–51; Éloïse Brac de la Perrière, “Structures et rites funéraires dans la miniature islamique avant la période moderne: quelques remarques liminaires,” in *Sur les chemins d’Onagre: Hommage à Monik Kervran*, ed. C. Hardy-Guilbert et al. (Oxford, 2018), 15–31.



Most of the excavated burials consisted of simple individual graves and were not epidemic burials. Numerous indications suggest decomposition of corpses in very narrow spaces. Some skeletons that we excavated were literally stuck in the ground due to the narrowness of the funeral pits. The most common position is the right lateral decubitus. To sum up, the body is placed on the right side, head toward the south, and the face always turned toward the southeast facing Mecca (Fig. 9). The lower arms are often placed along the body, slightly bent, the hands resting most often on the pubis, more rarely on the abdomen (Fig. 10). The lower limbs are in the axis of the body extension; sometimes the legs are slightly bent (Fig. 11). Back and prone positions were also recorded but are a minority on the whole site (Figs. 12 and 13). They may betray the presence of a shroud that would have masked the actual position of the body during the funeral process.

Artifact offerings in funerary contexts are extremely rare in Islam. The few objects that we found seemed to correspond to items worn, essentially jewelry: bracelets, rings, and necklaces (Fig. 14). Several graves yielded textile waste, for which the most plausible interpretation is that it is remains of shrouds (Fig. 15). The presence of a tunic (*galābiyah* or *jilbāb*) may not, however, be completely excluded in the absence of complete conservation of these items. As mentioned previously, grave goods have been found occasionally in Islamic contexts;<sup>9</sup> the best examples were found on the peripheries of the Muslim world and very often on trade routes such as the Silk Road. One example in southern Ukraine shows the permeability of Muslim cultures by pre-Islamic traditions of nomadic cultures from the steppes. A Kurgan burial of a Turkic (Qipchaq) prince, dated from the early thirteenth century, contained objects and products indicative of exchanges throughout the Black Sea/Mediterranean littoral, the Middle East, and central and northwest Europe.<sup>10</sup> Another example, a large Swahili necropolis in northeast Madagascar from the fourteenth century, contained many graves with archaeological material, including Chinese ceramics, and metalwork and glass from the Middle East and Egypt. These artifacts and funerary rituals reveal entangled relationships between Muslim Malagasy, Africans, and South Asians in the Indian Ocean.<sup>11</sup>

During our excavations, a number of tombstones were discovered in situ (Fig. 16), including two with some calligraphy (Fig. 17). The inscriptions were translated

<sup>9</sup>St John Simpson, "Death and Burial in the Late Islamic Near East: Some Insights from Archaeology and Ethnography," in *The Archaeology of Death in the Ancient Near East*, ed. Stuart Campbell and Anthony Green (Oxford, 1995), 245–47.

<sup>10</sup>Renata Holod and Yuriy Rassamakin, "Imported and Native Remedies for a Wounded Prince: Grave Goods from the Chungul Kurgan in the Black Sea Steppe of the Thirteenth Century," *Medieval Encounters* 18 (2012): 350–81.

<sup>11</sup>E. Vernier and J. Millot, *Archéologie malgache: Comptoirs musulmans* (Paris, 1971), 17–24.



by Frédéric Bauden and Élise Franssen. On one we can read *al-marḥūm ‘Abd al-Raḥmān*; the other says *hādhā ḍarīḥ* at the beginning of the first sentence. The text refers to a tomb (*ḍarīḥ*), but the rest is impossible to read. According to our colleagues, this type of Naskhī calligraphic style is found in the Mamluk period,<sup>12</sup> but, unfortunately, the inscriptions bear no date.<sup>13</sup> One tombstone was particularly interesting, as the epitaph engraved in the limestone block was covered later by a coat of stucco (Fig. 18). This indicates that the stela from a previous tomb was reused for a new grave. This evidence shows how intensively the cemetery was used during the entire Mamluk period.

The mission in 2008/2009 identified at least 30 grave reductions. These graves were cut by the digging of new funerary pits, as is often the case in extensively used cemeteries. Some secondary deposits (re-inhumations) and numerous human bones were also discovered in the filling of some funerary structures, suggesting a continuous use of the cemetery and a lack of attention to previously buried bodies (Fig. 19).

During the excavations, we recorded some stone blocks and thick ceramics in funerary pits (Fig. 20). These stones are usually placed along the lower limbs to lock the body in a side position. In one case, the body of a child was clearly leaning against the stone block to maintain its lateral position (Fig. 21). One grave was very different from the others, with a young individual buried under three large thick limestone slabs (Fig. 22). These stones were probably placed on the surface of the ground as an indicator of the grave’s position. It is also possible that the stones and ceramics were used during backfilling to warn gravediggers of the presence of a body at that location.

A Mamluk cemetery (from the mid-thirteenth to the early sixteenth century) excavated in central Israel presents similarities with some of our graves. Thick ceramic vessels were used to seal the tombs—mainly sugar pots from eastern Jordan. Our colleagues concluded that the people buried like that were Turcomans because of some characteristics of their anatomy. There is also a correlation with burial customs involving covering tombs with ceramic vessels.<sup>14</sup> We cannot con-

<sup>12</sup>Tawfiq Da‘ādli, “Mamlūk Epitaphs from Māmillā Cemetery,” *Levant* 43, no. 1 (2011): 81–95. The Ottoman epitaphs are very different from the Mamluk ones; see Jean-Louis Bacqué-Grammont, “L’étude des cimetières ottomans: méthodes et perspectives,” in *Cimetières et traditions funéraires dans le monde islamique*, ed. Jean-Louis Bacqué-Grammont and Aksel Tibet (Ankara, 1996), 135–57; Edhem Eldem, *Death in Istanbul: Death and Its Rituals in Ottoman-Islamic Culture* (Istanbul, 2005).

<sup>13</sup>Frédéric Bauden, Élise Franssen, personal communications, 2008–9.

<sup>14</sup>Amir Gorzalczany, “A New Type of Cemetery from the Late Mamluk and Early Ottoman Periods from Central Israel,” *Levant* 41, no. 2 (2009): 234–36. Another Mamluk cemetery was excavated in Israel: see Meir Edrey and Yossi Nagar, “A Mamluk Period Cemetery at Beit Dagan,” *Salvage Excavation Reports* 10 (2017): 189–94.



firm that Mamluk Turcomans were buried in the cemetery of Bāb al-Ghurayb, but we did record graves with some similarities in the burial practices.

Undoubtedly, the most interesting part of our excavation was the discovery of collective burials. Some funerary pits contained deposits of multiple individuals laid on top of each other or, in larger pits, in juxtapositions very close to each other (Fig. 23). Some graves contained two to five individuals in the same pit (Figs. 24, 25, and 26). The evidence is clear: the positions of the skeletons that are touching without the bones having been disturbed, coupled with the absence of soil separating the bodies, clearly indicates simultaneous deposition of two (and sometimes more) superimposed individuals. The arguments for contemporaneity and simultaneity of some burials are proved by the contact between individuals without any disturbance and the perfect anatomical connection of each skeleton (i.e., the absence of dislocation) (Fig. 27). As no bone lesions associated with inter-human violence were recorded, we can discard the hypothesis that these were casualties of war.<sup>15</sup> The unusually high number of simultaneous burials is evidence of a mortality crisis, probably an epidemic.<sup>16</sup>

Several graves contained blackish residue in contact with and around the bodies (Fig. 28). As we did not observe any traces of coffins, and as the dry climate of Egypt usually preserves wood, we have rejected the hypothesis of decaying wood. A careful sample study showed the presence of textiles stuck within the blackened substance. The most plausible interpretation is that of a shroud. The substance could have been an application of naphtha on the shroud, especially as some bones presented discoloration showing that they were exposed to fire. Traces of lime have been found in some graves as well, showing that different burning or cleaning processes may have been used.

As mentioned above, the collective graves excavated are evidence of mortality crises, probably epidemics in fourteenth- and fifteenth-century Cairo. The plague, or *Yersinia pestis*, was a very severe pandemic that affected most parts of the world,<sup>17</sup> starting in Asia and arriving in Egypt in 1348–49. Our archaeological data overlaps with the writings of famous medieval chroniclers such as Ibn

<sup>15</sup>On military mass graves and battles, see Catherine Rigeade, “Approche archéo-anthropologique des inhumations militaires,” *Socio-anthropologie* 22 (2008): 93–105.

<sup>16</sup>Dominique Castex, Patrice Georges, and Philippe Blanchard, “Complémentarité et discordances entre sources textuelles et sources archéo-anthropologiques en contexte de crises de mortalité par épidémie: Études de cas,” *Revue archéologique du Centre de la France* 47 (2008): 3–5.

<sup>17</sup>Isabelle Séguy and Guido Alfani, “La Peste: Bref état des connaissances actuelles,” *Annales de démographie historique* 2 (2017): 21–23. Dominique Castex and Isabelle Cartron, “Épidémies et crises de mortalité du passé,” in *Trente ans d’archéologie médiévale en France: Un bilan pour un avenir*, ed. Jean Chapelot and François Gentili (Caen, 2010), 3–24.



Duqmāq, al-Maqrizī, and Ibn Iyās.<sup>18</sup> The “Black Death,” *al-wabā’ al-‘amm*, from 1349 to 1365 may have reduced the population of Egypt by a third as around a million people died.<sup>19</sup> Egypt then suffered from repeated plague epidemics from 1469 to 1513.<sup>20</sup> No part of the Egyptian population was spared, from the poor to the rich.<sup>21</sup> Two thousand Royal Mamluks died of the plague in 1477. Outbreaks of the plague occurred regularly from the second half of the fourteenth century to the early sixteenth century<sup>22</sup> (in fact, well into the nineteenth century).

Our archaeological knowledge about Muslim funerary practices in this period is very limited. Determining how representative the graves we have excavated are is problematic: the corpus presented is only a small part of the cemetery excavated, and the cemetery itself is a tiny part of the whole intramuros funerary area extending to the north up to Burj al-Zafar. It is very difficult to draw a general picture of Islamic funerary rituals during the medieval period in Egypt, not to mention the broader Middle East, and we know even less about Muslim funerary practices in times of epidemics. Muslim graves are sometimes found during excavations, but few cemeteries or necropolises have been systematically investigated so far.<sup>23</sup> A second problem is that most of these excavations were done by archaeologists without the presence of physical anthropologists, meaning many details were likely missed during the excavation process. Further, no osteological studies were carried out during post-excavation work. We have, therefore, little information about the causes of death, origins, and ways of life of the individuals.

In Cairo, the most important excavation in a funerary context has been conducted in Iṣṭabl ‘Antar to the southern borders of Fustat and the Qarāfah al-Ku-

<sup>18</sup>Michael Dols, *The Black Death in the Middle East* (Princeton, 1977); Behrens-Abouseif, Denoix, and Garcin, “Le Caire,” 182–83.

<sup>19</sup>Stuart Borsch and Tarek Sabraa, “Refugees of the Black Death: Quantifying Rural Migration for Plague and Other Environmental Disasters,” *Annales de démographie historique* 2 (2017): 73; Dr. Ayman Fouad Sayyid, personal communication, 2009.

<sup>20</sup>Stuart Borsch and Tarek Sabraa, “Plague Mortality in Late Medieval Cairo: Quantifying the Plague Outbreaks of 833/1430 and 864/1460,” *Mamlūk Studies Review* 19 (2016): 57–90.

<sup>21</sup>David Ayalon, “The Plague and Its Effects upon the Mamluk Army,” *Journal of the Royal Asiatic Society* (1946): 67–73; idem, “Regarding Population Estimates in the Countries of Medieval Islam,” *Journal of the Economic and Social History of the Orient* 28 (1985): 1–19; André Clot, *L’Égypte des Mamelouks: L’empire des esclaves (1250–1517)* (Paris, 1996), 114–19, 137–39, 180.

<sup>22</sup>Philip Ziegler, *The Black Death* (London, 1969); John Hatcher, *Plague, Population and the English Economy 1348–1530* (London, 1977); Stuart Borsch, *The Black Death in Egypt and England: A Comparative Study* (Austin, 2005); Arien Mack, ed., *In Time of Plague: The History and Social Consequences of Lethal Epidemic Disease*, (New York, 1991).

<sup>23</sup>Jorge Lopez Quiroga and Artemio Manuel Martinez Tejera, *Morir en el Mediterraneo Medieval* (Oxford, 2009); Lloyd Weeks, ed., *Death and Burial in Arabia and Beyond: Multidisciplinary Perspectives* (Oxford, 2010).





brá. An Abbasid and Fatimid necropolis (ninth to eleventh centuries) was built over the remains of the first settlement from the Arab conquest and the Umayyad periods (seventh to eighth centuries). Family mausoleums were found and excavated, as well as individual graves with wooden coffins.<sup>24</sup> The use of coffins in medieval Islam is not uncommon, and similar graves have been found in Syria at Qaṣr al-Ḥayr al-Sharqī in an Ayyubid context<sup>25</sup> and in a cemetery in Bahrain (eighth to sixteenth centuries).<sup>26</sup> Closer to our excavations, the mausoleum of Sultan Īnāl (1456) and the funerary complex of Qurqumās, the great amir and chief of the army of Sultan al-Ghawrī (1506), were part of a conservation project. An excavation was conducted in the crypt of Qurqumās (d. 1510), where more than one hundred skeletons—72 adults and 37 children—were found.<sup>27</sup>

## How a Plague Epidemic Cemetery Illustrates the Ruin of Cairo

The role and the importance of Bāb al-Ghurayb cemetery can only be understood in the context of urbanization, funerary spaces in Cairo, and the boundaries of the city through time.

Only sultans, amirs, prominent religious personalities, and other important figures of the Mamluk Sultanate were buried in mausoleums attached to mosques and madrasahs in the city. Most of them were, like the rest of the population, buried in the desert outside the city. The Nile was always considered a fertile place for life, and the desert was a place for the dead, mainly for sanitary reasons.<sup>28</sup> Nevertheless, Cairene cemeteries were not empty places reserved only for the dead; as in Europe, they were places for the living as well. People used cemeteries as gardens and open spaces, according to al-Maqrīzī writing in 1442, and not only common people but the elite since at least the Fatimid period.<sup>29</sup>

During the medieval period, Cairo had two major necropolises outside the city (Fig. 29). With an area of 1500 hectares and origins in the Umayyad period,

<sup>24</sup>Gayraud, “Qarāfa al-Kubrā,” 443–64.

<sup>25</sup>Denis Genequand, “Nouvelles recherches à Qaṣr al-Ḥayr al-Sharqī: la mosquée ayyoubide et la nécropole,” *Les Annales Archéologiques Arabes Syriennes* 47–48 (2004–5): 279–89.

<sup>26</sup>Monik Kervran, “Cimetières islamiques de Bahrain (VIIIe–XVIe siècles),” in *Cimetières et traditions funéraires dans le monde islamique*, ed. Jean-Louis Bacqué-Grammont and Aksel Tibet (Ankara, 1996), 57–78.

<sup>27</sup>T. Dzierzykray-Rogalski, J. Kania, and M. al-Minabbawi, “The Investigations of Burial Crypts in the Mausoleum of Princess Tatar al-Ḥiḡāziyya in Cairo,” *Annales Islamologiques* 23 (1987): 73–86.

<sup>28</sup>Galila El-Kadi and Alain Bonnamy, *La Cité des Morts* (Cairo, 2001), 23.

<sup>29</sup>Tetsuya Ohtoshi, “Cairene Cemeteries as Public Loci in Mamluk Egypt,” *Mamlūk Studies Review* 10, no. 1 (2006): 83–116.



al-Qarāfah al-Kubrā (the great cemetery) was the biggest and oldest necropolis.<sup>30</sup> It is located between the rocky mountains of the Muqaṭṭam<sup>31</sup> and the Ibn Ṭūlūn mosque to the north and the lake of ʿAyn al-Šīrah and the Iṣṭabl ʿAntar plateau to the south (Fig. 30). The mosque of Sayyidah Nafīṣah and the mausoleum of the Imām al-Shāfiʿī are two important religious landmarks in the northern part of the necropolis. The Circassian Mamluks opened a new necropolis, al-Qarāfah al-Šuġhrā, east of Islamic Cairo—between the Ayyubid citadel to the south and Jabal Aḥmar to the north—as they needed space to build mausoleums and pious foundations.<sup>32</sup> Six hundred *turbahs* (mausoleums) and more than four thousand tombs were built in the area.<sup>33</sup>

Working on the archaeology of funerary spaces in Cairo forces us to think of urbanization in diachrony and synchrony. For example, burials in the city existed since at least the Abbasid period in Fustat. Later, Fatimid princes liked to be buried in their houses, even if most of these burials were temporary, and secondary reburials were organized a few years later outside the city.<sup>34</sup> Some older, smaller necropolises outside the city were later incorporated in the Mamluk city, such as the Fatimid necropolis in front of Bāb al-Naṣr, north of Ḥusaynīyah.<sup>35</sup> This small necropolis began to expand after the death of Badr al-Jamālī in 1088, but was probably in use before that, as it is extremely common to have graves outside the main gates of the city. A small Fatimid necropolis also existed in front of Bāb Zuwaylah, nowadays under the Mamluk and Ottoman city.

Can we consider the cemetery of Bāb al-Ghurayb as being inside or outside of the city? This question is extremely important, because, *de facto*, the cemetery is located inside the Ayyubid and Fatimid city walls, but on more modern maps, such as the *Description de l’Égypte*, it seems to be situated outside the Ottoman city.

The cemetery of Bāb al-Ghurayb was ideally located close to the Qarāfah al-Šuġhrā, but also on the Darb al-Sulṭānī, the main road going to the north and east of Cairo leading to the main pilgrimage road through the Sinai, used after 1250

<sup>30</sup>Dorothea Russell, “A Note on the Cemetery of the Abbasid Caliphs of Cairo and the Shrine of Saiyida Nafīsa,” *Ars Islamica* 6, no. 2 (1939): 168–74.

<sup>31</sup>Yusuf Ragib, “Le site de Muqaṭṭam,” *Annales Islamologiques* 33 (1999): 159–84.

<sup>32</sup>El-Kadi and Bonnamy, *La Cité*, 23–35.

<sup>33</sup>Tetsuya Ohtoshi, “A Note on the Disregarded Ottoman Cairene Ziyāra Book,” *Mediterranean World* 15 (1998): 81.

<sup>34</sup>Yusuf Ragib, “Morts dans la ville: Les sépultures de Fustāṭ et du Caire jusqu’à la fin des Ayyoubides,” *Annales Islamologiques* 46 (2012): 343–47 and 350–60; idem, “Faux morts et enterrés vifs dans l’espace musulman,” *Studia Islamica* 57 (1983): 5–30.

<sup>35</sup>El-Kadi and Bonnamy, *La Cité*, 129.



and the fall of the Crusader states. The cemetery<sup>36</sup> owes its name to the gate of al-Ghurayb, so designated during the Ottoman period. The original name of the eastern gate was Bāb al-Barqīyah, the name of a *ḥarah* (quarter) of the Fatimid city that was inhabited by Berbers from Barqa to the Libyan-Tunisian borders.<sup>37</sup> In 1087, the vizier Badr al-Jamālī renamed it Bāb al-Tawfiq, but no one used this name. The hills of debris along the eastern walls are also called Tell al-Barqīyah or Kom al-Barqīyah, and those to the south of Bāb al-Barqīyah are generally called Kom al-Darrāsah. The practice of throwing rubbish and debris of all sorts to the east of the city started under the rule of the caliph al-Ḥākim, and the mounds reach a height of 40 meters in some places.

The Bayn al-Sūrayn area illustrates the famous “ruin of Cairo” described by al-Maqrīzī,<sup>38</sup> and is exactly where we conducted our excavations: the area “between the [Fatimid and Ayyubid] walls.” We can see here the profound impact the plague had on Mamluk society and the urban landscape, when entire neighborhoods in eastern Cairo were abandoned.<sup>39</sup> Of course, other factors can explain the abandonment of eastern Cairo, including the great earthquake of 1302 and the economic crises that followed the recurrent plague epidemics. Nevertheless, the cemetery that we excavated was built during the fourteenth century over the twelfth- and thirteenth-century settlement and shows the change in function and use of an urban space during the fourteenth century.

Our work changes our view of the neighborhood. It had been believed that the area became a cemetery during the Ottoman era, but in fact the cemetery of Bāb al-Ghurayb dates from the fourteenth century. It was used extensively under the Circassian Mamluks and was still in use later.<sup>40</sup>

A Venetian map of Cairo shows that the cemetery was in use in the late fifteenth and very early sixteenth century.<sup>41</sup> The map shows the presence of tombs and mausoleums in the eastern area in the ruins from Burj al-Zafar to the northeast to Burj al-Qaratīn (also called Burj al-Maḥrūq) to the southeast (Fig. 31). The cemetery continued to be used during the Ottoman period,<sup>42</sup> as it is mentioned on the map of the *Description de l’Egypte* in 1798–1801 (Fig. 32). By the end of the eighteenth century, the French promulgated sanitary rules in the city to prevent epi-

<sup>36</sup>Ibid., 31.

<sup>37</sup>Ibid., 173.

<sup>38</sup>Julien Loiseau, *Reconstruire la maison du Sultan* (Cairo, 2010), 452–61.

<sup>39</sup>And never reoccupied during the Ottoman period. André Raymond, “Cairo’s Area and Population in the Early Fifteenth Century,” *Muqarnas* 2 (1984): 21–31.

<sup>40</sup>El-Kadi and Bonnamy, *La Cité*, 31.

<sup>41</sup>Bernard Blanc, Sylvie Denoix, Jean-Claude Garcin, and Romanello Gordiani, “À propos de la carte du Caire de Matheo Pagano,” *Annales Islamologiques* 17 (1981): 272–85.

<sup>42</sup>The last plague epidemics in Cairo date from 1834–35.



demics and after September 1798 it was forbidden to bury the dead in cemeteries in the city of Cairo. People were instructed to use the eastern *qarāfah* outside the city.<sup>43</sup> Later, during Muḥammad ‘Alī’s rule and until the early twentieth century, people reverted to old habits and continued to use the Bāb al-Ghurayb cemetery. It is visible on Pascal Coste’s map in 1825, and in a panoramic view of Cairo drawn from the Darrāsah hills by David Roberts in 1839.<sup>44</sup> The cemetery is still in use in the 1920s, as seen in Cresswell’s photographs (Fig. 33).<sup>45</sup>

During our excavations we found a few isolated Ottoman tombs around the northern walls, between Bāb al-Naṣr and Burj al-Zafar, but all the graves we found in the Darrāsah parking lot were Mamluk. The absence Ottoman tombs in the Bāb al-Ghurayb cemetery can be easily explained by the twentieth-century modernization of the city. When the new al-Azhar street was created in 1923 several Ottoman cemeteries were destroyed or displaced.<sup>46</sup> Later, when the eastern part of Islamic Cairo was re-urbanized during the Nasser and Sadat eras, from the 1950s to 1981, many archaeological levels were again destroyed by the extensive use of bulldozers and other industrial machinery. Houses, petrol stations, fire stations, and hospitals were built in the vicinity of the Bāb al-Ghurayb cemetery. Major urban redevelopment continued during the Mubarak presidency. The Ṣalāḥ Sālīm and al-Naṣr motorways opened in 1985 along the stone quarries and the old railway, and many tombs and graves were displaced. The construction of the al-Azhar tunnel (1998–2001), connecting Islamic Cairo to Ṣalāḥ Sālīm Street, was the last destructive blow to antiquities in the area, when seven to eight meters of modern debris were pushed onto the Archaeological Triangle/Darrāsah parking lot. Paradoxically, this backfill of rubbish protected the old Mamluk cemetery until our excavations.

## Conclusion: Plague Epidemic Factors in Urban and Social Changes

The results of our excavations provide new data for historians, archaeologists, and specialists in Cairo and the Mamluk period in general.

First, Bāb al-Ghurayb is one of the largest Mamluk cemeteries excavated so far in the Middle East, and the only cemetery excavated in Islamic Cairo. It was situated within the walls of the city and delimited by a funerary enclosure wall. Having a cemetery inside the city walls was an unusual practice and corresponds with a rapid reaction to an epidemic crisis. Cairenes had to find quick and prac-

<sup>43</sup>Al-Jabartī in André Raymond, *Le Caire* (Paris, 1993), 294.

<sup>44</sup>Private collection, Fine Art Society, London.

<sup>45</sup>Cresswell’s photographic archives from the Egyptian Ministry of Antiquities.

<sup>46</sup>El-Kadi and Bonnamy, *La Cité*, 173.



tical ways to bury their dead, and this cemetery presents serious evidence of the plague epidemics in Egypt during the fourteenth and fifteenth centuries. The anthropological excavations reveal an unusually high number of simultaneous burials, which are evidence of a mortality crisis due to epidemics. Some multiple burials contained several skeletons stacked one on top of the other. They were perfectly oriented with the face turned to Mecca but were placed in the same pit at the same time. These mass graves indicate that groups of people were buried in the same pit and that it was done hastily. Some human bones show evidence of being burned, though the method of burning has yet to be determined; no trace of charcoal was present. These graves are often associated with lime and black deposits that may indicate a flammable liquid such as naphtha was used to burn infected bodies. This funerary practice is unusual in Islam; it might have been permitted in an epidemic crisis. Religious debates and treatments for the pandemic had been discussed for a long time amongst Muslim communities from the Great Plague of 1348–49 to the Ottoman period.<sup>47</sup> Our observations in the field and our interpretations needed to be confirmed by molecular and DNA analyses to identify the type of epidemic and confirm the presence of plague. For this reason, we joined the research programme of Professor Hendrik Poinar of the Ancient DNA Centre at McMaster University, Ontario. This is the first comprehensive project that shifts the focus from Europe to the Muslim world during the second pandemic (the Black Death and its recurrent waves, from approximately the 1340s to the 1840s). Unfortunately, the Egyptian authorities refused to grant permission to conduct the DNA analyses and the skeletons were reburied.

Another important result is a better understanding of the boundaries of medieval Cairo. Cairo, from the Fatimid to the Mamluk periods, was much larger than had been previously described by historians. Our excavations revealed that the Ayyubid wall followed the contours of the previous city wall built by the Fatimids and that the whole eastern part of the city was densely populated, with dwellings and streets parallel to the walls until, in 1348, the Black Death had a deep impact on the urban landscape, pushing people to abandon the whole eastern district of the city. Our archaeological discoveries confirm the historical reports of authors such as al-Maqrīzī and Ibn Iyās. Cairo suffered huge economic crises linked to recurrent plague epidemics and consequently parts of the eastern districts were abandoned for 500 years. By the end of the fifteenth century the plague epidemics had completely transformed the city of Cairo, and these new “no man’s lands”

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<sup>47</sup>Nükhet Varlik, *Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience, 1347–1600* (Cambridge, 2015), 207–47; Suzanne Gigandet, *La grande peste en Espagne musulmane au XIVe siècle: Le récit d’un témoin: Abū Ġa’far al-Anṣārī* (Damascus, 2010).



were reused as cemeteries by the Ottomans until the British protectorate and the colonial period in the 1920s.

As an epilogue, at the end of our excavations in 2009 the Aga Khan Trust for Culture started a conservation programme to protect and present to the wider public our excavations on the Archaeological Triangle. The archaeological park was completed in 2012. It will become a major gateway between al-Azhar Street and the al-Azhar Park (Fig. 34).



Figure 1: Location of the Darrāsah parking lot or “Archaeological Triangle” in Cairo.





Figure 2: The site of the Bāb al-Ghurayb cemetery, also known as “the Archaeological Triangle.”



Figure 3: Thirteenth- and early fourteenth-century Ayyubid-Mamluk streets and dwellings.



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Figure 4: Fourteenth- and fifteenth-century graves dug over ruined large (public?) building from the thirteenth century.



Figure 5: Fourteenth- and fifteenth-century graves dug over a street and an abandoned sewage system and drains from the thirteenth and early fourteenth centuries.



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Figure 6: Plan of “the Archaeological Triangle” and localization of the graves excavated.



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Figure 7: General view of the excavated part of the Bāb al-Ghurayb cemetery.



Figure 8: Anatomic record and post-excavations study.



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Figure 9a: Usual funerary position, on the right side; the head is always turned toward the southeast and facing Mecca (grave DHF 07).



Figure 9b: Usual funerary position, on the right side; the head is always turned toward the southeast and facing Mecca (grave DHF 17).



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Figure 9c: Usual funerary position, on the right side; the head is always turned toward the southeast and facing Mecca (grave DHF 49).



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Figure 10: Lower arms are placed along the body, the hands resting most often on the pubis, more rarely on the abdomen (grave DHF 52).



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Figure 11a: The lower limbs are straight in the axis of the body extension; sometimes the legs are slightly bent, and the feet are always together (grave DHF 14).



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Figure 11b: The lower limbs are straight in the axis of the body extension; sometimes the legs are slightly bent, and the feet are always together (grave DHF 18).



Figure 11c: The lower limbs are straight in the axis of the body extension; sometimes the legs are slightly bent, and the feet are always together (grave DHF 23).



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Figure 12a: Uncommon back positions, still oriented in the *qiblah* direction (grave 2001 S12).



Figure 12b: Uncommon back positions, still oriented in the *qiblah* direction (grave DHF 52).



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Figure 12c: Uncommon back positions, still oriented in the *qiblah* direction (grave DHF 2002).



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Figure 13a: Uncommon prone positions, still oriented in the *qiblah* direction (grave 2001 S5).



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Figure 13b: Uncommon prone positions, still oriented in the *qiblah* direction (grave 2002 S2).



Figure 13c: Uncommon prone positions, still oriented in the *qiblah* direction (grave DHF 44).



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Figure 14a: Artifacts found in the graves correspond to items worn, essentially jewelry: ring (grave DHF 44).



Figure 14b: Artifacts found in the graves correspond to items worn, essentially jewelry: necklace (grave DHF 58).



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Figure 15a: Several graves yielded textile waste, shrouds, or clothes (grave DHF 16).



Figure 15b: Several graves yielded textile waste, shrouds, or clothes (grave DHF 45).



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Figure 16: Funerary architectures and signaling devices, several tombstones found in situ.



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Figure 17a: Mamluk epigraphy, tombstone 1 with calligraphic inscription.



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Figure 17b: Mamluk epigraphy, tombstone 2 with calligraphic inscription.



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Figure 18: One inscription (2) was covered and this indicates that the tombstone was reused.



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Figure 19a: Secondary deposits (re-inhumation, grave DHF 9).



Figure 19b: Secondary deposits (re-inhumation, grave DHF 41).



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Figure 20a: Stone blocks in funerary pits, on the edges or on the top (grave S3 2001).



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Figure 20b: Stone blocks in funerary pits on the top.



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Figure 20c: Thick ceramics (water pipes) reused on the edges or on top of funerary pits.



Figure 21: Body of a child leaning against stone blocks to maintain its position (grave S2 2002).



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Figure 22: A grave of a young individual covered by three large limestone slabs (grave S4 2001).



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Figure 23: Funerary pits with multiple deposits of individuals laid on top of each other or in juxtapositions very close to each other in larger pits (DHF 59).



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Figure 24: Some collective graves contained 2 to 5 individuals in the same pit (DHF 62).



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Figure 25a: Multiple burials as good indicators of mortality crisis in Cairo (DHF 24).



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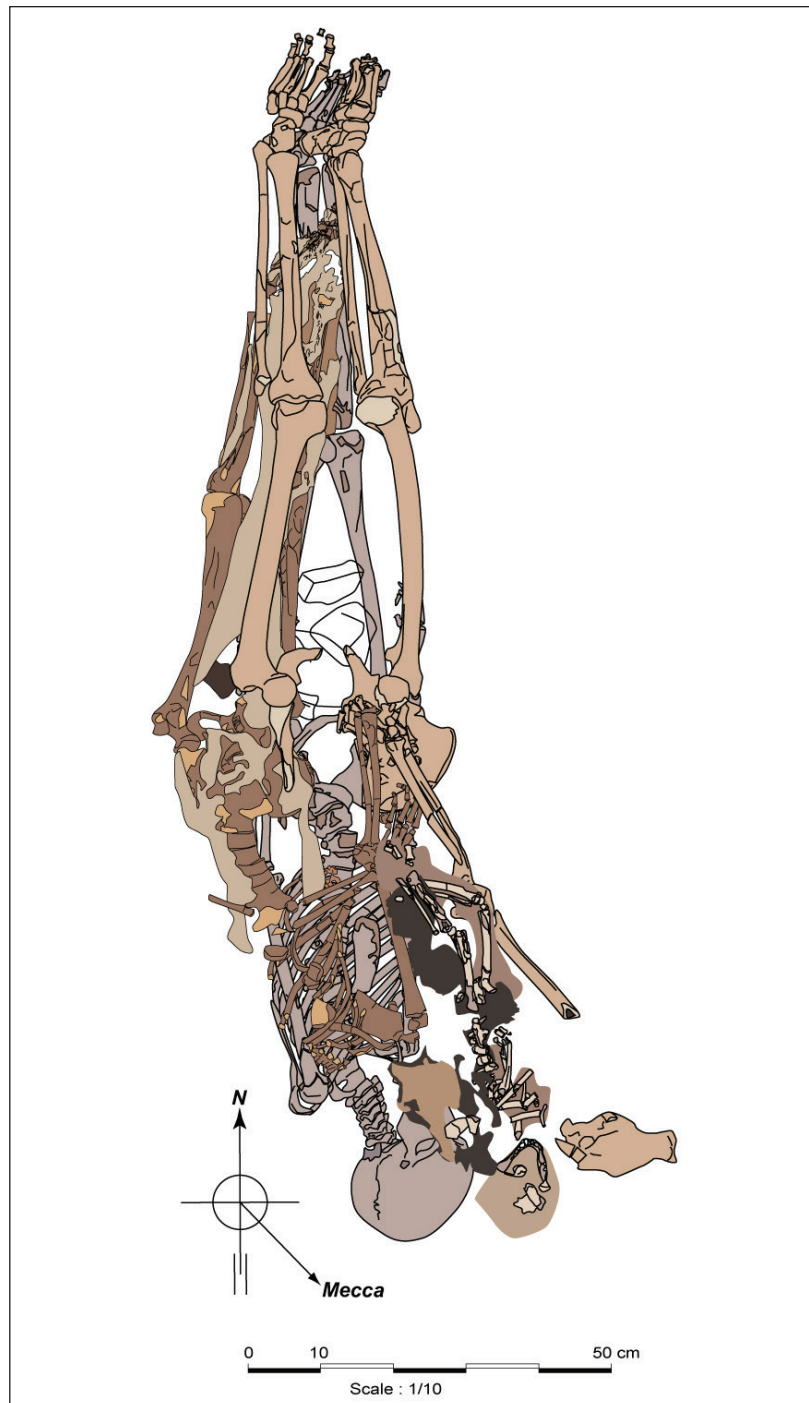


Figure 25b: Multiple burials as good indicators of mortality crisis in Cairo (DHF 24).



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Figure 26a: Collective graves, evidence of mortality crisis in Cairo (DHF 38).



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Figure 26b: Collective graves, evidence of mortality crisis in Cairo (DHF 38).



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Figure 27a: Contemporaneity and simultaneity for some burials proved by the contacts between individuals without any dislocation (grave 2002 S13).



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Figure 27b: Contemporaneity and simultaneity for some burials proved by perfect anatomic connection of each skeleton (grave DHF 23).



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Figure 28a: Several graves contained blackish residue (oil?) in contact with and around the bodies (grave DHF 8).



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Figure 28b: Several graves contained blackish residue (oil?) and some bones showed evidence of being burned (grave DHF 33).



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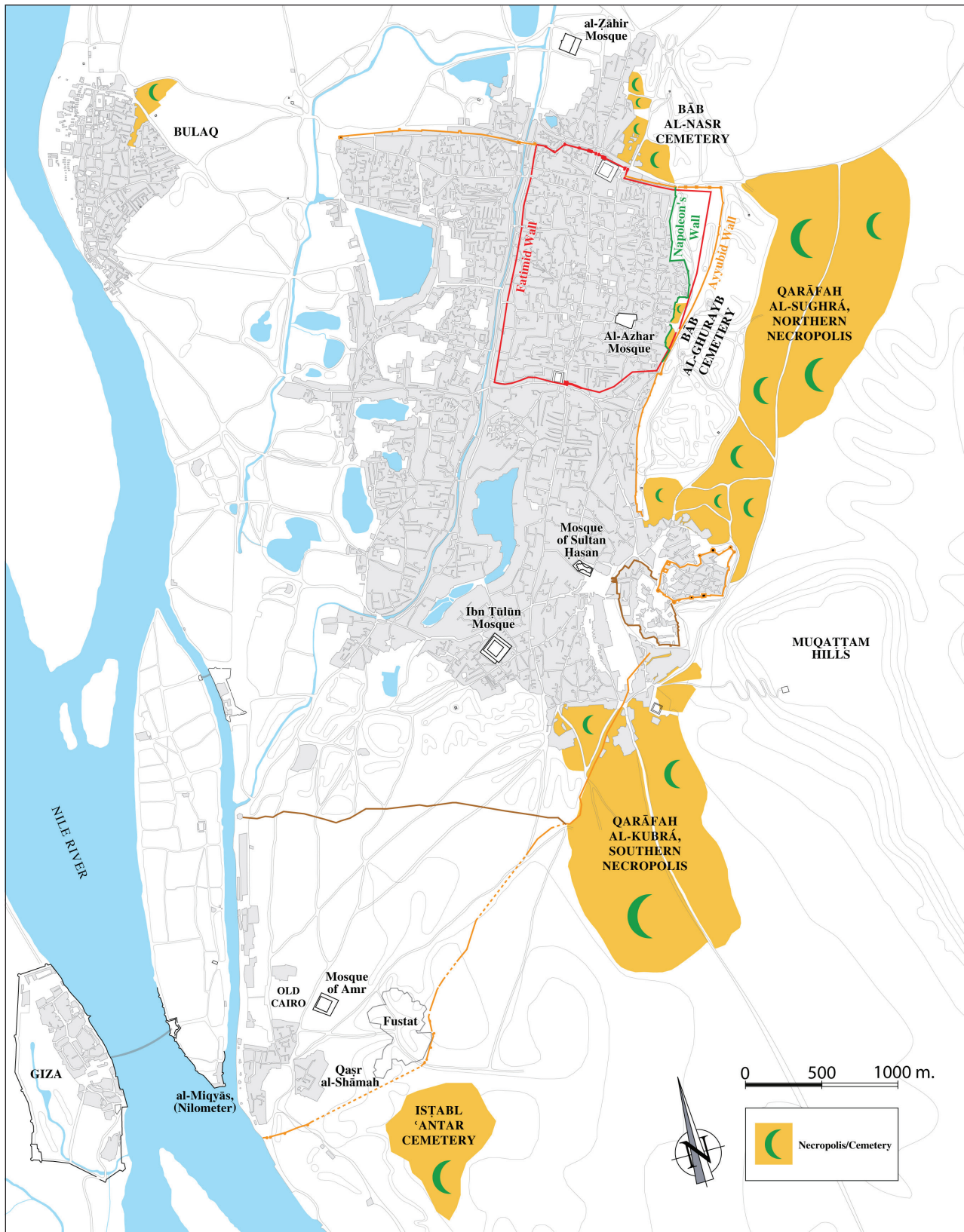


Figure 29: Map of Cairene cemeteries and necropolises.



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Figure 30: View of the al-Qarāfah al-Kubrā near Bāb al-Qarāfah.

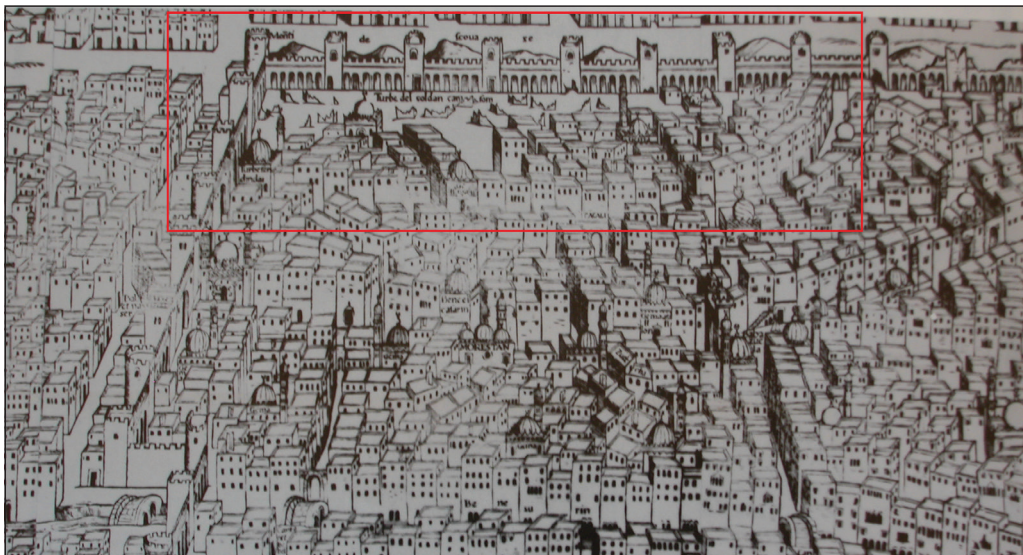


Figure 31: Venetian map of eastern Cairo in the late fifteenth century (Matheo Pagano in *Civitate Orbis Tarrarum* by Braun et Hogenberg, 1572).



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Figure 32: French map of eastern Cairo in the late eighteenth century (in *Description de l’Égypte*, 1798–1801).



Figure 33: Creswell early photographs, 1920s (from the Egyptian Antiquities Service).



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Figure 34: The Aga Khan Trust for Culture archaeological park, completed in 2012.



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