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Mamluk metalwork fittings in their artistic and architectural context

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Cover illustration: Medallion door and grille in the courtyard of the *madrasa* and *khānqāh* of Sultan Barqūq in Cairo.

**Mamluk metalwork fittings
in their artistic and architectural context**

PROEFSCHRIFT

ter verkrijging van
de graad van Doctor aan de Universiteit Leiden,
op gezag van de Rector Magnificus Dr. D.D. Breimer,
hoogleraar in de faculteit der Wiskunde en
Natuurwetenschappen en die der Geneeskunde,
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Luitgard Eva Maria Mols

geboren te Tilburg
in 1968

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Foreword

During my first stay in Cairo as a student of Arabic, I spent much of my spare time wandering through the medieval parts of the city, visiting the vast numbers of religious and scholarly foundations. I remember being struck by the multitude of the surviving Mamluk mosques, *madrasas*, mausoleums and *sabīl-kuttābs* that are still in use by the local population. Their imposing façades and lofty entrance portals in addition to the use of two-tone masonry (white–red or white–black) easily called for my attention. It was fascinating to find these monumental buildings standing in the midst of the bustling streets of popular neighbourhoods. Besides being fascinated, I was also somewhat annoyed: I recall the difficulty of capturing façades photographically as I could not stand back far enough in the narrow streets.

A few years later my interest in Islamic metalwork was kindled when I studied a private collection of metalwork magic bowls engraved with Arabic inscriptions, made for the benefit of those who had fallen ill. My interest in metalwork was further stimulated during volunteer work in the Ashmolean Museum in Oxford and the Rijksmuseum in Amsterdam. Studying metalwork artefacts from various periods, I noticed again that the objects from the Mamluk period with their bold calligraphy caught my eye most frequently. Eventually I chose to combine these two interests, for metalwork fittings in Mamluk architecture had not yet gained wide scholarly attention. Moreover, the topic was captivating for it not only necessitated fieldwork in Cairo, Damascus, Aleppo, Jerusalem, and Tripoli, but it also gave me the opportunity to study metalwork objects in the context for which they were originally intended.

I enjoyed – and benefited from – my discussions with colleagues, friends, and practitioners of metalworking among whom are Maaïke van Berkel, David Beiles, Kees van Gool, Stefan Heidemann, Martin Hense, François Hoek, Mat Immerzeel, Marieke Mols, and Rachel Ward. On a more daily basis, I recall with great pleasure the numerous conversations with my colleagues and friends at the Leiden based Research School CNWS, among whom especially Mariëtte van Beek, Aucke Forsten, Janneke Jansen, Jos van Lent, Sabine Luning, and Laila al-Zwaini. In addition to this, I owe a great debt of gratitude to those individuals that the Leiden *mores* forbid me to mention.

While extending my search for Mamluk metalwork fittings to museum collections, the following museums and their staff kindly allowed me either to work on the fittings in their collections or were generous in giving information: director Rif'at 'Abd al-'Azīm and the staff of the Museum of Islamic Art in Cairo; director Philip Halim and Ashraf Nageh of the Coptic Museum in Cairo; Mona Muadhan of the National Museum in Damascus; Almut von Gladiss and Claus-Peter Haase of the Museum für Islamische Kunst in Berlin; Mariam Rosser-Owen of the Victoria & Albert Museum in London; Sue Kaoukji from the Dār al-Āthār al-Islāmīyah, Kuwait National Museum in Kuwait; Kjeld von Folsach of The David Collection in Copenhagen; and Gabriele Teichmann of the Oppenheim Estate in Cologne. My fieldwork in Egypt was enthusiastically facilitated by Muḥammad 'Abd al-Laṭīf of the Supreme Council of Antiquities. I would like to thank him for his generous support.

My fieldwork in the Middle East and my visits to various museums in Europe were financially supported by the following organisations: The Research School of Asian, African and Amerindian Studies

(CNWS) of Leiden University; Leiden University Fund (LUF), Netherlands Organisation for Scientific Research (NWO), and Het Oosters Instituut. I would like to thank them for their generous support.

Furthermore, I would like to thank the staff of the Research School CNWS and the staff of the Department of Languages and Cultures of the Middle East of Leiden University for their warm support over the years. Moreover, the hospitality I enjoyed in both the Netherlands Flemish Institute in Cairo (NVIC) and the Netherlands Institute for Academic Studies in Damascus (NIASD) has been greatly appreciated. I would like to thank their staff for their help, stimulation and enthusiastic response.

In addition, I would like to thank my parents Theo and Hanneke Mols–van Gool who have always shown a strong interest in my work and who taught me the essentials of looking at objects. Kalli Tsitsiloni joined me on numerous visits to mosques and *madrasas* in Damascus and Aleppo during our time off from the restoration project concerning the icons at the monastery of Saydnāyā in Syria in which we were involved: I greatly enjoyed her company and admire her for her patience. Furthermore, I am very grateful to Dorothy Wessels Boer–Stallman for her comments regarding my English – any mistakes that remain are mine, of course – and her energetic approach to face the challenges that came up during the process of making the manuscript ready for publication. To be able to discuss the different stages of the project with her was really encouraging and enjoyable.

Finally, my heartfelt thanks goes to my husband Harold van der Weegen who encouraged me throughout the writing of this thesis, who learned to appreciate Mamluk art and architecture in the process, and through whom I was able to put my work into perspective. It is to him that I dedicate this study.

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- 35 Cairo, mosque and mausoleum of Amir Ulmās al-Nāṣirī, 729–30/1329–30, entrance door (cat. no. 15/1): state of the door in 2002 AD.
- 36 Cairo, mosque and mausoleum of Amir Ulmās al-Nāṣirī, 729–30/1329–30, entrance door (cat. no. 15/1), drawing [after Prisse d’Avennes (1877) II, pl. 100].
- 37 Jerusalem, *sūq* al-Qaṭṭānīn, 736–37/1335–37, door (cat. no. 17/1): detail of left leaf with bosses and oblong bands.
- 38 Jerusalem, *sūq* al-Qaṭṭānīn, 736–37/1335–37, door (cat. no. 17/1): detail of inscription band (A).
- 39 Jerusalem, *sūq* al-Qaṭṭānīn, 736–37/1335–37, doorknocker (cat. no. 17/2).
- 40 Jerusalem, *madrasa* of Majd al-Sallāmī, 738/1338, entrance door (cat. no. 18/1) and doorknocker (cat. no. 18/2) [© CBRL; after Burgoyne & Richards (1987), fig. 25.4].
- 41 Cairo, mosque of Amir Aḷṭunbughā al-Māridānī, 738–40/1338–40, 16-pointed embossed star (cat. no. 19/1) [after Mayer (1933), pl. XXI.1].
- 42 Cairo, mosque of Amir Aḷṭunbughā al-Māridānī, 738–40/1338–40, 16-pointed embossed star (cat. no. 19/2) [after Herz (1907), pl. 37].
- 43 Cairo, mosque of Amir Aḷṭunbughā al-Māridānī, 738–40/1338–40, plaque (cat. no. 19/3) [after Mayer (1933), pl. XXI.2].
- 44 Cairo, mosque of Amir Aṣḷam al-Silāḥdār, 745–46/1344–45, entrance door (cat. no. 20/1): detail of upper part [after Creswell (1949) I, pl. 70].
- 45 Window grille (cat. no. 21/1), Cairo, Museum of Islamic Art, inv. no. 37749: formerly in Cairo, building of Sultan al-Malik al-Muẓaffar Ḥājī (r. 747/1346 to 748/1347) [courtesy of J.W. Allan].
- 46 Aleppo, *bīmāristān* of Arghūn al-Kāmīlī, 755/1354–55, entrance door (cat. no. 22/1).
- 47 Aleppo, *bīmāristān* of Arghūn al-Kāmīlī, 755/1354–55, entrance door (cat. no. 22/1): detail of star pattern on central field.
- 48 Aleppo, *bīmāristān* of Arghūn al-Kāmīlī, 755/1354–55, entrance door (cat. no. 22/1): detail of technique.
- 49 Aleppo, *bīmāristān* of Arghūn al-Kāmīlī, 755/1354–55, former doorknocker (cat. no. 22/2) [after Herzfeld (1954–56) I, part II, fig. 144b].
- 50 Aleppo, *bīmāristān* of Arghūn al-Kāmīlī, 755/1354–55, window grille (cat. no. 22/3).
- 51 Jerusalem, mausoleum of Jamāl al-Dīn Bahlawān (al-Kīlānīya), after 753/1352, entrance door (cat. no. 23/1) and doorknockers (cat. no. 23/2).
- 52 Jerusalem, mausoleum of Jamāl al-Dīn Bahlawān (al-Kīlānīya), after 753/1352, entrance door (cat. no. 23/1): detail of arrangement of nails.
- 53 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, entrance door (cat. no. 24/1), now in the mosque of Sultan al-Mu’ayyad Shaykh.

- 54 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, entrance door (cat. no. 24/1): detail of openwork hexagons and framework plaques on central field.
- 55 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, entrance door (cat. no. 24/1): detail of 16-pointed star on central field.
- 56 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, entrance door (cat. no. 24/1): detail of inscription band (B) and the border band surrounding it.
- 57 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, doorknocker (cat. no. 24/2).
- 58 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, doorknocker (cat. no. 24/2): detail of hatching on the hanger's surface.
- 59 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla īwān* (cat. no. 24/3).
- 60 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla īwān* (cat. no. 24/3): detail of star unit with authentic and restored plaques on central field.
- 61 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla īwān* (cat. no. 24/3): detail of border band.
- 62 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla īwān* (cat. no. 24/4).
- 63 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla īwān* (cat. no. 24/4): detail of authentic and restored plaques on central field.
- 64 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *minbar* (cat. no. 24/5).
- 65 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *minbar* (cat. no. 24/5): detail of 16-pointed star unit on central field.
- 66 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *minbar* (cat. no. 24/5): detail of inscription (A) near the top.
- 67 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla* wall (cat. no. 24/6).
- 68 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla* wall (cat. no. 24/6): detail of restored 12-pointed epigraphic star (C) in central field.
- 69 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla* wall (cat. no. 24/6): detail of hexagon with floral decoration in central field.
- 70 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla* wall (cat. no. 24/6): detail of hexagon with fretwork in central field.
- 71 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, door in *qibla* wall (cat. no. 24/6): detail of inscription band (B) at the door's base, with at the far end the name of the 19th-century calligrapher Ḥasan.
- 72 Hexagon (cat. no. 24/7), Berlin, Museum für Islamische Kunst, inv. no. I. 2054, formerly part of the door in the *qibla* wall (cat. no. 24/6) in Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60 [after Gladiss & Kröger (1985), 116, no. 303].
- 73 Half 9-pointed star (cat. no. 24/8), Berlin, Museum für Islamische Kunst, inv. no. I. 2055, formerly part of the door in the *qibla* wall (cat. no. 24/6) in Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60 [after Gladiss & Kröger (1985), 116, no. 304].
- 74 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, doorknocker (cat. no. 24/9).
- 75 Cairo, *madrasa* of Sultan al-Nāṣir Ḥasan, 757–61/1356–60, doorknocker (cat. no. 24/9): detail of central decoration.
- 76 Jerusalem, mausoleum of Ṭashtamur al-ʿAlāʾī, 784/1382–83, entrance door (cat. no. 25/1) and doorknockers

- (cat. no. 25/2).
- 77 Jerusalem, mausoleum of ʿAṣḥab al-ʿAlāʾī, 784/1382–83, window grille (cat. no. 25/3).
- 78 Jerusalem, mausoleum of ʿAṣḥab al-ʿAlāʾī, 784/1382–83, doorknocker (cat. no. 25/5) on interior door to the mausoleum [© CBRL; after Burgoyne & Richards (1987), pl. 45.4].
- 79 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, entrance door (cat. no. 26/1).
- 80 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, entrance door (cat. no. 26/1): detail of embossed star unit on central field.
- 81 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, entrance door (cat. no. 26/1): detail of inlaid plaques on central field.
- 82 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, entrance door (cat. no. 26/1): detail of inscription band (B) at the base of the door and its surrounding border.
- 83 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, doorknocker (cat. no. 26/2), now in Copenhagen, The David Collection, inv. no. 32/1997 [after Folsach 2001, 323, no. 516].
- 84 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/3).
- 85 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/3): detail of central medallion with epigraphic blazon (B).
- 86 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/3): detail of the lower corner-piece on the left leaf.
- 87 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/3): detail of inscription band (A) near the top.
- 88 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/3): detail of the lower oblong band engraved with intertwined knots.
- 89 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/4).
- 90 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/6): detail of inscription band (A) near the top of the door.
- 91 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/6): panel division on reverse.
- 92 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, door in *sahn* (cat. no. 26/8).
- 93 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window grille (cat. no. 26/9) in façade above entrance door (cat. no. 26/1).
- 94 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window grille (cat. no. 26/10) in *sahn* above door (cat. no. 26/3).
- 95 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window grille (cat. no. 26/12) in *sahn* above door (cat. no. 26/5).
- 96 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window shutter (cat. no. 26/14) and grille.
- 97 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window shutter (cat. no. 26/14): detail of upper inscription band (A).
- 98 Cairo, *madrasa* and *khānqāh* of Sultan Barqūq, 786–88/1384–86, window shutters (cat. nos. 26/15 to–26/19) and plain grilles in façade.
- 99 Cairo, *madrasa* of Amir Īnāl al-Yūsufī, 794–95/1392–93, entrance door (cat. no. 27/1).
- 100 Cairo, *madrasa* of Amir Īnāl al-Yūsufī, 794–95/1392–93, entrance door (cat. no. 27/1): detail of openwork

- corner-piece with border band.
- 101 Cairo, *madrasa* of Amir Īnāl al-Yūsufī, 794–95/1392–93 (cat. no. 27/1): detail of openwork medallion with section of central 3-tiered roundel with blazon.
 - 102 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, entrance door (cat. no. 28/1).
 - 103 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, entrance door (cat. no. 28/1): detail of medallion with framing plaques nailed onto an engraved sheet.
 - 104 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, entrance door (cat. no. 28/1): detail of oblong inscription band (A) located at the top.
 - 105 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, entrance door (cat. no. 28/1): detail of knotted design on the lower oblong band.
 - 106 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/2).
 - 107 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/2): detail of inlaid bosses.
 - 108 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/3): detail of bosses and cylindrical bars.
 - 109 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/3): detail of engraved blazon and floral design on spherical bosses with faceted sides.
 - 110 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/4).
 - 111 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/4): detail.
 - 112 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/5).
 - 113 Cairo, *madrasa* and mausoleum of Amir Maḥmūd al-Ustādār, 797/1394–95, window grille (cat. no. 28/5): detail of boss with floral decoration.
 - 114 Damascus, Umayyad Mosque, restored in 808/1405, entrance door, east wall (now lost) (cat. no. 29/1) [after Migeon (1907), pl. 194].
 - 115 Damascus, Umayyad Mosque, restored in 809/1406, entrance door, north wall (cat. no. 29/2): left leaf.
 - 116 Damascus, Umayyad Mosque, restored in 809/1406, entrance door, north wall (cat. no. 29/2): right leaf.
 - 117 Damascus, Umayyad Mosque, restored in 809/1406, entrance door, north wall (cat. no. 29/2): detail of bismillah and Qurʾānic inscription on central panel (B).
 - 118 Damascus, Umayyad Mosque, restored in 809/1406, entrance door (cat. no. 29/2), north wall, right leaf, lower panel: detail of inscription with introductory phrase for patronage and blazon.
 - 119 Damascus, Umayyad Mosque, restored in 809/1406, entrance door (cat. no. 29/2), north wall, left leaf, lower panel (C): inscription with the name of the sultan and blazon.
 - 120 Cairo, mosque, *madrasa* and *sabīl* of Sultan Faraj b. Barqūq, entrance door (cat. no. 30/1).
 - 121 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/1).
 - 122 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/1): detail of inscription on panel (C).
 - 123 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/1): detail of inscription and rosette on panel (D).
 - 124 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/2).
 - 125 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/2): detail of

- inscription on panel (B).
- 126 Damascus, Umayyad Mosque, restored in 819/1416–17, entrance door, west wall (cat. no. 31/2): detail of inscription on panel (D).
- 127 Damascus, Umayyad Mosque, restored in 820/1417, entrance door, east wall (cat. no. 31/3).
- 128 Damascus, Umayyad Mosque, restored in 820/1417, entrance door, east wall (cat. no. 31/3): detail of inscription of the bismillah on upper panel (A).
- 129 Damascus, Umayyad Mosque, restored in 820/1417, entrance door, east wall (cat. no. 31/3): detail of epigraphic blazon on central panel (B).
- 130 Damascus, Umayyad Mosque, restored in 820/1417, entrance door, east wall (cat. no. 31/3): detail of inscription on lower panel (C).
- 131 Damascus, Umayyad Mosque, restored in 820/1417, entrance door, east wall (cat. no. 31/4).
- 132 Cairo, mosque of Sultan al-Mu'ayyad Shaykh, 818–24/1415–21, door in vestibule (cat. no. 32/1).
- 133 Cairo, mosque of Sultan al-Mu'ayyad Shaykh, 818–24/1415–21, door in vestibule (cat. no. 32/1): detail of medallion with oblong inscription band (C).
- 134 Cairo, mosque of Sultan al-Mu'ayyad Shaykh, 818–24/1415–21, door in vestibule (cat. no. 32/1): detail of border band.
- 135 Cairo, mosque of Sultan al-Mu'ayyad Shaykh, 818–24/1415–21, door in vestibule (cat. no. 32/2).
- 136 Cairo, mosque of Sultan al-Mu'ayyad Shaykh, 818–24/1415–21, door in vestibule (cat. no. 32/2): detail of openwork scrollwork on medallion.
- 137 Cairo, mosque of Amir Ustādār 'Abd al-Ghanī b. Abī'l-Faraj, entrance door (cat. no. 33/1).
- 138 Cairo, mosque of Amir Ustādār 'Abd al-Ghanī b. Abī'l-Faraj, entrance door (cat. no. 33/1): detail of openwork infill plaques on central field.
- 139 Cairo, *madrasa* of Qāḍī 'Abd al-Bāsiṭ b. Khalīl, 822–23/1419–20, entrance door, north wall (cat. no. 34/1).
- 140 Cairo, *madrasa* of Qāḍī 'Abd al-Bāsiṭ b. Khalīl, 822–23/1419–20, entrance door, north wall (cat. no. 34/1): detail of openwork scrolls in the central medallion.
- 141 Cairo, *madrasa* of Qāḍī 'Abd al-Bāsiṭ b. Khalīl, 822–23/1419–20, entrance door, east wall (cat. no. 34/2).
- 142 Cairo, *madrasa* of Qāḍī 'Abd al-Bāsiṭ b. Khalīl, 822–23/1419–20, entrance door, east wall (cat. no. 34/2): detail of openwork inscription on panel (B) near the door's base.
- 143 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, entrance door (cat. no. 35/1).
- 144 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, entrance door (cat. no. 35/1): detail of central disk (C1 and C2) cut in half by oblong inscription band (B).
- 145 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, entrance door (cat. no. 35/1): detail of hatching on foliate design of the central medallion.
- 146 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, entrance door (cat. no. 35/1): detail of the two border bands.
- 147 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, doorknockers (now lost) (cat. no. 35/2) formerly on entrance door (cat. no. 35/1) [after Stierlin (1996), 55].
- 148 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, interior door (cat. no. 35/3).
- 149 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, doorknocker (cat. no. 35/4) on interior door (cat. no. 35/3).
- 150 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, interior door (cat. no. 35/5).

- 151 Cairo, *madrasa* of Sultan al-Ashraf Barsbāy, 826–27/1423–24, doorknocker (cat. no. 35/6) on interior door (cat. no. 35/5).
- 152 Aleppo, *madrasa* al-Ṣaffāḥīya, 828/1425–26, entrance door (cat. no. 36/1).
- 153 Cairo, mosque of Amir Jānī Bak al-Ashrafī, 830/1427, entrance door (cat. no. 37/1).
- 154 Cairo, mosque of Amir Jānī Bak al-Ashrafī, 830/1427, entrance door (cat. no. 37/1): detail of inlaid trefoil finial.
- 155 Cairo, mosque of Amir Jānī Bak al-Ashrafī, 830/1427, entrance door (cat. no. 37/1): detail of border band.
- 156 Cairo, mosque of Amir Jānī Bak al-Ashrafī, 830/1427, pair of doorknockers (cat. no. 37/2).
- 157 Cairo, mosque of Amir Jānī Bak al-Ashrafī, 830/1427, doorknocker (cat. no. 37/2): detail of engraved central lozenge surrounded by loops.
- 158 Cairo, *madrasa* of Jawhar al-Lālā, 833/1429–30, entrance door (cat. no. 38/1).
- 159 Cairo, *madrasa* of Jawhar al-Lālā, 833/1429–30, doorknockers (now lost) (cat. no. 38/2) [after Briggs (1924), pl. 236].
- 160 Cairo, mosque of Qāḍī Yaḥyā Zayn al-Dīn, 848/1444, entrance door, north side (cat. no. 39/1).
- 161 Cairo, mosque of Qāḍī Yaḥyā Zayn al-Dīn, 848/1444, entrance door, north side (cat. no. 39/1): detail of restored openwork foliage.
- 162 Cairo, mosque of Qāḍī Yaḥyā Zayn al-Dīn, 848/1444, entrance door, south-west side (cat. no. 39/2).
- 163 Cairo, mosque of Qāḍī Yaḥyā Zayn al-Dīn, 848/1444, entrance door, south-west side (cat. no. 39/2): detail of upper openwork inscription (A).
- 164 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, entrance door (cat. no. 41/1).
- 165 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, entrance door (cat. no. 41/1): detail of engraved inscription on lower oblong band (B).
- 166 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, entrance door (cat. no. 41/1): detail of engraved ornament on the right of the lower oblong inscription band (B).
- 167 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, doorknocker (cat. no. 41/2).
- 168 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door leading to *sabīl* (cat. no. 41/3).
- 169 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door leading to *sabīl* (cat. no. 41/3): detail of lower inscription band (B) with new and authentic parts.
- 170 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door in vestibule (cat. no. 41/4): detail of inscription.
- 171 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door leading to *sahn* (cat. no. 41/5).
- 172 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, doorknocker (cat. no. 41/6) suspended on door (cat. no. 41/5).
- 173 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door in east side of *sahn* (cat. no. 41/7).
- 174 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, shutter in east side of *sahn* (cat. no. 41/9): detail of inscription band (A).
- 175 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, shutter in north side of *sahn* (cat. no. 41/15).
- 176 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door in north side of *sahn* (cat. no. 41/18).

- 177 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, door in west side of *sahn* (cat. no. 41/21): detail of inscription band (A).
- 178 Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74, pair of doorknockers (cat. no. 41/22).
- 179 Doorknocker (cat. no. 41/25), the Keir Collection, inv. no. M16, formerly in Cairo, *madrasa* and mausoleum of Sultan Qāitbāy, 874–79/1470–74 on one of the interior doors, drawing (by Dorothy Wessels Boer–Stallman).
- 180 Damascus, *madrasa* of Qāḍī Quṭb al-Dīn Muḥammad al-Khaiḍarī, 878/1473–74, doorknocker (cat. no. 42/1).
- 181 Damascus, *madrasa* of Qāḍī Quṭb al-Dīn Muḥammad al-Khaiḍarī, 878/1473–74 (cat. no. 42/1), doorknocker, drawing (by Margaret Graves) of hanger.
- 182 Cairo (Qalʿat Kabsh), *madrasa* of Sultan Qāitbāy, 880/1475, entrance door (cat. no. 43/1).
- 183 Cairo (Qalʿat Kabsh), *madrasa* of Sultan Qāitbāy, 880/1475, doorknocker (cat. no. 43/2).
- 184 Cairo, mosque and *madrasa* of Amir Jānim al-Sayfī Qānībāy al-Bahlawān, 883/1478, entrance door (cat. no. 44/1).
- 185 Cairo, mosque and *madrasa* of Amir Jānim al-Sayfī Qānībāy al-Bahlawān, 883/1478, entrance door (cat. no. 44/1): detail of central medallion.
- 186 Cairo, mosque and *madrasa* of Amir Jānim al-Sayfī Qānībāy al-Bahlawān, 883/1478, entrance door (cat. no. 44/1): detail of superficially engraved oblong inscription band (B) surrounded by border frames.
- 187 Cairo, *sabīl-kuttāb* of Sultan Qāitbāy, 884/1479–80, window grille (cat. no. 45/1).
- 188 Cairo, *sabīl-kuttāb* of Sultan Qāitbāy, 884/1479–80, window grille (cat. no. 45/1): detail of bosses and bars.
- 189 Cairo, *sabīl-kuttāb* of Sultan Qāitbāy, 884/1479–80, window grille (cat. no. 45/1): detail of engraved inscription ‘al-Malik al-Ashraf’.
- 190 Cairo, *sabīl-kuttāb* of Sultan Qāitbāy, 884/1479–80, window grille (cat. no. 45/1): detail of signature of metalworker Zayn al-ʿAbdīn al-Zaradkāsh.
- 191 Cairo, *madrasa* of Qāḍī Abū Bakr b. Muzhir, 884/1479–80, entrance door (cat. no. 46/1).
- 192 Cairo, *madrasa* of Qāḍī Abū Bakr b. Muzhir, 884/1479–80, entrance door (cat. no. 46/1): detail of flat and embossed plaques on central field.
- 193 Cairo, *madrasa* of Qāḍī Abū Bakr b. Muzhir, 884/1479–80, entrance door (cat. no. 46/1): detail of openwork hexagon on central field.
- 194 Cairo, *madrasa* of Qāḍī Abū Bakr b. Muzhir, 884/1479–80, entrance door (cat. no. 46/1): detail of inscription (B) near the door’s base cut from a thin sheet of metal.
- 195 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, entrance door (cat. no. 47/1).
- 196 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, entrance door (cat. no. 47/1): detail of framework strips on top of engraved sheet in central medallion, with section of radial inscription (B).
- 197 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, entrance door (cat. no. 47/1): detail of lotus flower on trefoil of corner-piece.
- 198 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, entrance door (cat. no. 47/1): detail of interwoven knots on lower oblong band.
- 199 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, pair of doorknockers (cat. no. 47/2).
- 200 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, doorknocker (cat. no. 47/2): on right leaf.
- 201 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, doorknocker on right leaf (cat. no. 47/2): detail

of foliate scrolls on the knocker's surface.

- 202 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, exterior door, west side (cat. no. 47/3).
- 203 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, exterior door, south side (cat. no. 47/4).
- 204 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/7).
- 205 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/7): detail of bar meeting the surrounding woodwork.
- 206 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/7): detail of blazon, located upside down.
- 207 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/7): signature of metalworker Zayn al-ʿAbdīn al-Zaradkāsh.
- 208 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/8): detail of bosses and bars.
- 209 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, window grille (cat. no. 47/8): detail of engraved title, placed upside down.
- 210 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, interior door (cat. no. 47/9).
- 211 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, interior door (cat. no. 47/10): detail of inscription band.
- 212 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, interior door (cat. no. 47/11): detail of effect of shadow on inscription band.
- 213 Cairo, mosque of Amir Qajmās al-Ishāqī, 884–86/1479–81, interior door (cat. no. 47/12).
- 214 Jerusalem, *madrasa* of Sultan Qāitbāy, 884–87/1479–82, entrance door (cat. no. 48/1): detail of inscription band, drawing [© CBRL; after Burgoyne & Richards (1987), fig. 63.11].
- 215 al-Anṣarī (near Aleppo), mausoleum of Azdamur min Mazīd, 893/1488, window grille (cat. no. 49/1) [after Herzfeld (1954–56) II, pl. 167a].
- 216 al-Anṣarī (near Aleppo), mausoleum of Azdamur min Mazīd, 893/1488, window grille (cat. no. 49/2) [after Herzfeld (1954–56) II, pl. 167b].
- 217 Window grille (cat. no. 49/3), probably from al-Anṣarī (near Aleppo), mausoleum of Azdamur min Mazīd, 893/1488, now in Kuwait National Museum, inv. no. LNS 128M: detail of central design [copyright © Dār al-Āthār al-Islāmīyah, Kuwait National Museum].
- 218 Window grille (cat. no. 49/3), probably from al-Anṣarī (near Aleppo), mausoleum of Azdamur min Mazīd, 893/1488, now in Kuwait National Museum, inv. no. LNS 128M: detail of boss [copyright © Dār al-Āthār al-Islāmīyah, Kuwait National Museum].
- 219 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, entrance door (cat. no. 50/1).
- 220 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, entrance door (cat. no. 50/1): detail of openwork vegetal motifs in central medallion.
- 221 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, doorknocker (cat. no. 50/2).
- 222 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, window grille (cat. no. 50/3).
- 223 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, window grille (cat. no. 50/4).
- 224 Cairo, mosque of Amir Azbak al-Yūsufī, 900/1494–95, interior door (cat. no. 50/11).
- 225 Madīnat al-Fayyūm, mosque of Princess ʿAṣalbāy, 903–5/1498–99, entrance door (cat. no. 52/1) and doorknockers (cat. no. 52/2) [after Briggs (1924), pl. 235].

- 226 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, entrance door (cat. no. 53/1).
- 227 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, entrance door (cat. no. 53/1): detail of 12-pointed epigraphic star in central star field.
- 228 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, entrance door (cat. no. 53/1): detail of engraved octagon in border band.
- 229 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, entrance door (cat. no. 53/1): detail of part of lower oblong inscription band (B).
- 230 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, doorknocker (cat. no. 53/3).
- 231 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, exterior door at rear (cat. no. 53/4).
- 232 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, exterior door at rear (cat. no. 53/4): detail of geometric pattern in central medallion.
- 233 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, interior door (cat. no. 53/5).
- 234 Cairo, *madrasa* of Sultan Qānṣūh al-Ghūrī, 907–9/1501–3, interior door (cat. no. 53/5): detail of inscription band (B) on right leaf.
- 235 Cairo, mausoleum and *sabīl-kuttāb* of Sultan Qānṣūh al-Ghūrī, 908–10/1503–4, entrance door (cat. no. 54/1).
- 236 Cairo, mausoleum and *sabīl-kuttāb* of Sultan Qānṣūh al-Ghūrī, 908–10/1503–4, entrance door (cat. no. 54/1): detail of framework and infill plaques.
- 237 Cairo, mausoleum and *sabīl-kuttāb* of Sultan Qānṣūh al-Ghūrī, 908–10/1503–4, entrance door (cat. no. 54/1): detail of concentration of nails in star pattern.
- 238 Cairo, mausoleum and *sabīl-kuttāb* of Sultan Qānṣūh al-Ghūrī, 908–10/1503–4, entrance door (cat. no. 54/1): detail of border band.
- 239 Cairo, mausoleum and *sabīl-kuttāb* of Sultan Qānṣūh al-Ghūrī, 908–10/1503–4, doorknockers (cat. no. 54/2).
- 240 Aleppo, *khān* al-Qaṣṣābiya, 916/1510, entrance gate (cat. no. 55/1): right leaf.
- 241 Aleppo, *khān* al-Qaṣṣābiya, 916/1510, entrance gate (cat. no. 55/1): detail of 6-pointed star composed of nails on right leaf.
- 242 Aleppo, *khān* al-Qaṣṣābiya, 916/1510, entrance gate (cat. no. 55/1): detail of inscription band on right leaf.
- 243 Aleppo, *khān* of Governor Khā'irbak min Malbāy, 920/1514, entrance gate (cat. no. 56/1), left leaf.
- 244 Aleppo, *khān* of Governor Khā'irbak min Malbāy, 920/1514, entrance gate (cat. no. 56/1): detail of blazon and inscription (A) on right leaf.
- 245 Damascus, Umayyad mosque, restored in 933/1527, entrance door, west wall (cat. no. 57/1).
- 246 Damascus, Umayyad mosque, restored in 933/1527, entrance door, west wall (cat. no. 57/1): detail of radial inscription (B) in the centre of the upper panel on the right leaf.
- 247 Damascus, Umayyad mosque, restored in 933/1527, entrance door, west wall (cat. no. 57/1): detail of ornament in relief on the lower panel of the left leaf.
- 248 Damascus, Umayyad mosque, restored in 933/1527, entrance door, west wall (cat. no. 57/1): detail of inscription (A) on the central oblong panel of the left leaf.
- 249 Overall star pattern door (cat. no. 58), Gīza, French Embassy, courtyard.
- 250 Overall star pattern door (cat. no. 58), Gīza, French Embassy, courtyard: detail of upper inscription band (A).

- 251 Overall star pattern door (cat. no. 59), drawing [after Bourgoïn (1892) III, pl. 42].
- 252 Fragment of border frame (cat. no. 60), Keir Collection, no. 163, drawing (by Dorothy Wessels Boer–Stallman).
- 253 Window grille (cat. no. 61), Cairo, Museum of Islamic Art, inv. no. 3172 [courtesy of J.W. Allan].
- 254 Window grille (cat. no. 62), Cairo, Museum of Islamic Art, inv. no. 7029: detail, drawing (by Martin Hense).
- 255 Window grille (cat. no. 63), Cairo, Museum of Islamic Art, inv. no. 1354: detail, drawing (by Martin Hense).
- 256 Doorknocker (cat. no. 64), Saint Louis, Saint Louis Art Museum, inv. no. 40:1926 [courtesy of Saint Louis Art Museum].
- 257 Doorknocker (cat. no. 66), Jerusalem, The Israel Museum, inv. no. unknown, drawing (by Martin Hense).
- 258 Doorknocker (cat. no. 67), Sotheby's (London, 30 April 1998), 18, lot 10 [after Sotheby's (London, 30 April 1998), 18, lot 10].
- 259 Doorknocker (cat. no. 68), Sotheby's (London, 22 April 1999), 46, lot 74 [after Sotheby's (London, 22 April 1999), 46, lot 74].
- 260 Doorknocker (cat. no. 69), Christies (London, 1 May 2001), 110, lot 227, drawing (by Martin Hense).
- 261 Doorknocker (cat. no. 70), Keir Collection, no. 166 [after Fehérvári (1976), pl. 57d].
- 262 Doorknocker (cat. no. 71), Kuwait, Kuwait National Museum, inv. no. LNS724Ma [copyright © Dār al-Āthār al-Islāmīyah, Kuwait National Museum].
- 263 Doorknocker (cat. no. 71), Kuwait, Kuwait National Museum, inv. no. LNS724Mb [copyright © Dār al-Āthār al-Islāmīyah, Kuwait National Museum].
- 264 Doorknocker (cat. no. 72), Cairo, Museum of Islamic Art, inv. no. unknown [after Herz (1895), pl. VI, no. 92].
- 265 Doorknocker (cat. no. 73), Cairo, Museum of Islamic Art, inv. no. unknown [after Migeon (1907) II, pl. 191].
- 266 Damascus, *bīmāristān* of Nūr al-Dīn b. Zengī, 549/1154, entrance door (cat. no. I/1).
- 267 Damascus, *bīmāristān* of Nūr al-Dīn b. Zengī, 549/1154, entrance door (cat. no. I/1): detail of geometric pattern composed of strips and nails on central field.
- 268 Damascus, *bīmāristān* of Nūr al-Dīn b. Zengī, 549/1154, entrance door (cat. no. I/1): detail of inscription band (A) near top of door.
- 269 Damascus, *bīmāristān* of Nūr al-Dīn b. Zengī, 549/1154, doorknocker (cat. no. I/2).
- 270 Damascus, *bīmāristān* of Nūr al-Dīn b. Zengī, 549/1154, interior door (cat. no. I/3) and doorknocker (cat. no. I/4).
- 271 Overall star pattern door (cat. no. II/1), formerly in Cairo, mosque of al-Şāliḥ Ṭalā'ī, 555/1160, now in Cairo, Museum of Islamic Art, inv. no. 1055: detail of star field [after Creswell (1952–59), pl. 102].
- 272 Cairo, mosque of al-Şāliḥ Ṭalā'ī, entrance door (copy of cat. no. II/1 *in situ*).
- 273 Overall star pattern door (cat. no. III/1), formerly in Āmid (Diyarbakr), palace of Nūr al-Dīn Muḥammad b. Qarā Arslān, drawing by al-Jazarī [after Jazarī (1990), 328; with permission from the Topkapı Sarayı Müzesi].

- 274 Doorknocker (cat. no. III/2), formerly suspended on the overall star pattern door (cat. no. III/1) in Āmid (Diyarbakr), palace of Nūr al-Dīn Muḥammad b. Qarā Arslān, drawing by al-Jazarī [after Jazarī (1990), 335; with permission from the Topkapı Sarayı Müzesi].
- 275 Aleppo, Citadel, first entrance gate (cat. no. IV/1), 608/1211–12.
- 276 Aleppo, Citadel, first entrance gate (cat. no. IV/1), 608/1211–12: detail of inscription band.
- 277 Aleppo, Citadel proper, gate (cat. no. IV/2), early 7th/13th century: detail of horseshoe design.
- 278 Aleppo, Citadel proper, 3rd gate (cat. no. IV/3), 606/1209–10, drawing [after Herzfeld (1954–56) II, fig. 38].
- 279 Overall star pattern door (cat. no. V/1), formerly in Cairo, mausoleum of al-Imām al-Shāfiʿī, 608/1211, now in Cairo, Museum of Islamic Art, inv. no. 1056: detail of star field [after Herz (1907), pl. VI].
- 280 Overall star pattern door (cat. no. VI/1), formerly in Cizre (Jazīrat b. ʿUmar), Ulu mosque, restored during the reign (604/1208 to 638/1241) of Maḥmūd Sanjar Shāh, now in Istanbul, Museum of Turkish and Islamic Art, inv. no. 4282 [after Preusser (1911) II, pl. 36,1].
- 281 Doorknocker (cat. no. VI/2), formerly in Cizre (Jazīrat b. ʿUmar), Ulu mosque, suspended on entrance door [after Preusser (1911) II, pl. 36,2].
- 282 Mosul, mausoleum of ʿAwn al-Dīn, 631–57/1233–59, overall star pattern door (cat. no. VII/1) [after Sarre & Herzfeld (1911–20) III, pl. 8].
- 283 Mosul, mausoleum of ʿAwn al-Dīn, 631–57/1233–59, overall star pattern door (cat. no. VII/1), drawing: detail of star pattern and inscription band [after Sarre & Herzfeld (1911–20) II, fig. 264].
- 284 Mosul, mausoleum of ʿAwn al-Dīn, 631–57/1233–59, doorknocker (cat. no. VII/2) [after Sarre & Herzfeld (1911–20) II, fig. 265].

