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Historic Mosques in Sub-Saharan Africa

From Timbuktu to Zanzibar

By

Stéphane Pradines

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This book is printed on acid-free paper and produced in a sustainable manner.

This book is dedicated to Réjane and Hervé, who have always supported my vocation as an archaeologist from my time at the lycée and my first excavations in the Landes in 1989 to my first fieldworks in Senegal and Syria starting in 1992, and, finally, during all my studies at the Sorbonne. No words of thanks are sufficient. All I can offer them is a feeling of love and gratitude for exemplary parents



Contents

Preface: On Vocabulary and Dates XI
List of Figures XII

Introduction: A Survey of Islamic Architecture in Sub-Saharan Africa 1

1 **The Mosques of the Niger Valleys** 7
1.1 Introduction: The So-Called "Sudanese" Mosques 7
1.2 Historiography of Research on the Mosques of the Niger Valleys 9
1.3 The History of the Great West African Kingdoms 11
1.3.1 *The Kingdoms of Tekrur and Ghana, Ninth to Twelfth Centuries* 11
1.3.2 *The Empire of Mali, Thirteenth to Fifteenth Centuries* 13
1.3.3 *The Songhay Empire, Fifteenth to Sixteenth Centuries* 15
1.3.4 *The Hausa City States, Fifteenth to Eighteenth Centuries* 16
1.3.5 *The Age of the Fulbe Jihads, Eighteenth to Nineteenth Centuries* 17
1.3.5.1 The Caliphate of Sokoto 17
1.3.5.2 The Fulbe Empire of Massina 18
1.3.5.3 The Fulani Theocracies of Futa Jalon and Futa Toro 19
1.4 Commerce and Islam in West Africa 20
1.4.1 *The Forms of Islamisation in West Africa* 20
1.4.2 *Trans-Saharan Trade and Islam* 22
1.5 Technology and Construction 25
1.5.1 *Masons and Builders* 25
1.5.2 *The Building Materials* 27
1.5.3 *The Foundations* 31
1.5.4 *The Walls, the Pillars and the Coatings* 31
1.5.5 *The Openings, Doors and Stairways* 34
1.5.6 *The Ceilings and Roofing: Terraces and Cupolas* 35
1.6 Architectural Characteristics of the Mosques of the Niger Valleys 43
1.6.1 *General Description of the Mosque of the Niger Valleys* 43
1.6.2 *The Mihrab* 46
1.6.3 *The Minbar and the Maqsura* 48
1.6.4 *The Annexes: Madrasa and Ablution Areas* 48
1.6.5 *The Minarets* 48
1.7 Regional Groups of Mosques in the Niger Valleys 50
1.7.1 The Group of the Desert Mosques 50
1.7.1.1 The Stone Mosques of Mauritania 50
1.7.1.2 The Mosque of Kumbi Saleh 51
1.7.1.3 The Mosques of Chinguetti, Wadan and Kidal 53
1.7.1.4 The Mosques of Walata and Tichitt 55
1.7.2 The Group of the Pre-Saharan Steppe 55
1.7.2.1 The Mosques of the Niger Bend 55
1.7.2.2 The Mosques of Gao 57

1.7.2.3 The Mosques of Timbuktu 58
1.7.2.4 The Mosques of Agadez and Assode 66
1.7.2.5 The Sub-group of Air 66
1.7.3 *The Group of the Middle Niger* 68
1.7.3.1 The Mosques of the Middle Niger 68
1.7.3.2 The Sub-group of the Inner Niger Delta 68
1.7.3.3 The Sub-group of Lake Debo 79
1.7.3.4 The Sub-group of Segou 82
1.7.4 *The Pular Mosques of Futa Toro* 83
1.7.4.1 The Mosques of Northern Senegal 83
1.7.4.2 The Mosques of Bode, Doumga Ouro Thierno and Halwar 83
1.7.5 *The Group of Hausa Mosques* 84
1.7.5.1 Hausa Mosques of the Caliphate of Sokoto 84
1.7.5.2 The Mosque of Zaria 84
1.7.5.3 The Mosques of Niger and Nigeria 87
1.7.6 *The Group of Dyula Mosques* 88
1.7.6.1 The Mosques of the Volta-Niger Valleys 88
1.7.6.2 The Bougamena Sub-group 95
1.7.6.3 The Sub-group of Dougouba-Kawara 95
1.7.7 *The Group of Fulbe Mosques of Futa Jalon* 96
1.8 History and Chronology of the Mosques of the Niger Valleys 99
1.8.1 *Architectural Styles, Environmental and Human Constraints* 99
1.8.2 *Vernacular and Traditional Architecture of West Africa* 101
1.8.3 *How to Establish a Chronology?* 104
1.8.4 *Diffusion of the Style of the Niger Valleys* 107
1.8.5 *Al-Sahili and the Myth of Egyptian Influences* 110
1.8.6 *The M'Zab and the Rôle of the Ibadis* 111
1.8.7 *The Mosques of the Niger Valleys from the Colonial Period to the Present Day* 113

2 The Mosques from the Horn of Africa to the Valleys of the Nile 115
2.1 The Mosques of the Ethiopian High Plateau and the Somali Plains 115
2.1.1 *The Neglected History of the Muslim Horn of Africa* 115
2.1.2 *The Sultanate of Ifat and the Mosques of Nora* 116
2.1.3 *The Mosques of the Plains of Bilad al-Barbar* 125
2.2 The African Mosques of the Red Sea 129
2.3 The Mosques of the Nile Valleys, from Nubia to Darfur 133
2.3.1 *The Church-Mosques of Nubia* 133
2.3.2 *The Mosques of the Valley of the Blue Nile* 139
2.3.3 *The Mosques of Darfur* 142
2.3.4 *The Mosques of Kanem, Borno and Wadai* 143

3 The Mosques of the Indian Ocean Coast 146
3.1 The Swahilis, a Cultural Model of Multiple Origins 146
3.2 Historiography of Research on the Swahili Mosques 148

3.3 The History of the East Coast of Africa 151
3.3.1 *The Abbasid Explorers and the First Muslim Communities between the Seventh and the Ninth Century* 151
3.3.2 *The Shiite Merchants in East Africa from the Tenth to the Twelfth Century* 154
3.3.3 *The Apogee of the Swahili City States from the Thirteenth to the Fifteenth Century* 158
3.3.4 *The East African Coast under the Portuguese and the Omanis from the Sixteenth to the Nineteenth Century* 159
3.4 Trade and Islam in the Indian Ocean 162
3.4.1 *The Swahili City* 162
3.4.2 *The Importation of Foreign Products: New Tastes* 165
3.5 Technology and Construction of the Swahili Mosques 170
3.5.1 *Builders and Materials* 170
3.5.2 *The Foundations and the Floors* 172
3.5.3 *The Walls and Masonry* 174
3.5.4 *The Openings: Doors and Windows* 178
3.5.5 *The Supports: Columns, Pillars and Arches* 180
3.5.6 *Roofing and Covering: from Palm Leaves to Cupolas* 184
3.6 Morphology of the Swahili Mosques 192
3.6.1 *The Plan of the Swahili Mosques* 192
3.6.2 *The Ablution Area* 194
3.6.3 *The Minarets* 197
3.6.4 *The Funerary Mosques* 204
3.6.5 *Swahili Minbars and Mihrabs* 207
3.7 The Decorative Programme of the Swahili Mosques 208
3.7.1 *The Inlay Ceramics* 208
3.7.2 *The Bosses and Mouldings in Sea Coral* 212
3.7.3 *The Stucco Decorations* 215
3.7.4 *The Epigraphic Plaques and Inscriptions* 217
3.8 Regional Groups and the Chronology of the Swahili Mosques 218
3.8.1 *The Swahili Mosques from the Ninth to the Twelfth Century* 218
3.8.1.1 The Mosque of Shanga 218
3.8.1.2 Kizimkazi and the First Swahili Mihrabs 219
3.8.1.3 The First Mosque of Kilwa in the Twelfth Century 222
3.8.1.4 The Mosque of Sanje ya Kati in the Twelfth Century 223
3.8.1.5 The Mosques of Comoros in the Twelfth Century 226
3.8.1.6 The Mosques of Gedi of the Twelfth and Thirteenth Centuries 227
3.8.1.7 Common Features of the First Swahili Mosques 227
3.9 The Swahili Mosques of the Thirteenth Century 232
3.9.1 *The Mosque of Fakhr al-Din in Mogadishu* 232
3.9.2 *The Mihrabs of the Tongoni Group* 238
3.9.3 *The Somali-Style Mihrabs* 238

3.10 The Swahili Mosques of the Fourteenth and Fifteenth Centuries 241
3.10.1 *Mnarani and the Swahili Mihrabs from the Fourteenth to the End of the Fifteenth Century* 241
3.10.2 *Domoni, Tsingoni and the Comorian Mihrabs* 244
3.10.3 *The Second Great Mosque of Kilwa and the Influence of the Deccan* 249
3.10.4 *The District Mosques of Kilwa* 255
3.10.5 *The First Great Mosque of Gedi* 255
3.10.6 *The Mosques of Ungwana* 258
3.10.7 *The Second Great Mosque of Gedi* 260
3.10.8 *The District Mosques of Gedi* 264
3.10.9 *The Mosques of Songo Mnara* 268
3.11 Portuguese Domination and the Style of Lamu, Sixteenth to Seventeenth Centuries 271
3.11.1 *The Great Mosque of Kua, Mafia Archipelago* 271
3.11.2 *The Mosques of Pate and the Lamu Archipelago* 273
3.12 The Swahili Mosques of the Nineteenth Century 280
3.12.1 *The Mosques of the Sultanate of Zanzibar* 280
3.12.2 *The Return of the Shi'ite and Ibadi Communities to East Africa* 285

Epilogue: The Mosques of Sub-Saharan Africa in the History of Islamic Architecture 290

Annex 1: Historical Chart of the Main Dynasties and Kingdoms in Sub-Saharan Africa and Their Neighbours 295
Annex 2: Inventory of Historical Mosques in Sub-Saharan Africa Listed by Contemporary States 296
Glossaries 311
List of Credits 317
Bibliography 321
Index 343

Preface: On Vocabulary and Dates

The transliterations and transcriptions of the African, Arabic, Persian, Berber, Sindhi and Gujarati languages change according to the sources. I have therefore kept transliterations in this work as simple as possible for the sake of readability. The Arabic *ʿayn* is rendered as ʿ; the *hamza* as ʾ. Long vowels are not indicated.

Since many sites appear in a different form in the Anglo-Saxon and the Francophone bibliographies, I have standardised all the names, choosing in each case the name closest to the pronunciation in English, the international language most widely used and understood in both the Islamic world and Africa. The French 'ou', for example, will be pronounced 'u' and 'oua' will become 'w'. Souhéli becomes Swahili, Darfour Darfur, Ouara Wara.

There are no Hejira dates in this work (the date zero in the Muslim calendar corresponding to 622 of the Christian era). All the dates given correspond to the Gregorian calendar which is the one most widely used and understood in the Islamic world and Africa today. CE/AD and Hj. have thus been omitted for the sake of readability.

Figures

1 Map of contemporary African states and areas studied 2
2 Postcard showing the great mosque of Djenne, 1920–2 7
3 Map of the Niger valleys mosques and the six main typological groups 10
4 Map of medieval kingdoms and sultanates in West Africa 12
5 Map of pre-modern states and theocraties in West Africa 16
6 Map of the diffusion of Islam along transaharian roads 21
7 Dyula mosque of Sorobango 24
8 Mixing the mud for the bricks, Djenne 25
9 Building with djenne ferey bricks, mosque of Djenne 28
10 Façade with torons, mosque of Mopti 29
11 Façade tile works in Goundam Mosque, Kona 30
12 Bouna Mosque, Mali 32
13 Annual replastering of of the minaret, great mosque of Djenne 33
14 Annual replastering festival in Djenne 34
15 Pillars in the mosque of Mopti 35
16 Pillars in the mosque of Djinguere Ber, Timbuktu 36
17 Azara in the mosque of Djinguere Ber, Timbuktu 36
18 Wooden tree ceiling in the mosque of Chinguetti 38
19 Flat dome of Hawsa mosque in Chiginawen 39
20 Squinches in the mosque of Zaria 40
21 Section of the roof of the great mosque of Djenne and ceramic pots as ventilation mechanism 40
22 Merlons or pinnacles (zanko), great mosque of Mopti 41
23 Ceramic pots ventilation system, great mosque of Djenne 42
24 On the roof, air channels are covered by ceramic pots, great mosque of Djenne 42
25 Female potter makes a clay finial in Mopti, Mali 43
26 Façades interrupted by wooden beams (toron), Timbuktu 44
27 Pinnacles or merlons, often in “sugar loaves”, Mopti 44
28 The courtyard located to the west, mosque of Djinguere Ber, Timbuktu 45
29 Mihrab tower of Djenne enframed by two towers along the qibla wall 45
30 Mihrab of the mosque of Bole, Ghana 46
31 Symmetrical tripartite arrangement of the qibla wall in the mosque of Bouna 47
32 Minaret of Djinguere Ber, Timbuktu 49
33 Mosque of Kumbi Saleh (10th–14th century) 52
34 Plan of the mosque of Chinguetti 53
35 Mosque of Chinguetti 54
36 Minaret of Chinguetti 54
37 Mosque of Tendirma, Mali 56
38 Location of the mosques in the cities of modern Gao, Old Gao, and Gao Sane 57
39 Mosques of Old Gao (tenth to fourteenth century) 59
40 Mosque-mausoleum of Askia Mohammed, Gao 60

41 Location of the three major mosques in the city of Timbuktu, Djinguere Ber, Sankore and Sidi Yahya 62
42 Engraving of three mosques in the city of Timbuktu in 1830 63
43 Mosque of Djinguere Ber, Timbuktu 64
44 3D view of the mosque of Djinguere Ber, Timbuktu 65
45 Mosque of Sankore, Timbuktu 65
46 Plan of the great mosque of Agadez, fifteenth century 67
47 Postcard showing the ruins of the old great mosque of Djenne in 1906 69
48 Engraving of the old great mosque of Djenne in 1897 71
49 The great mosque of Djenne 73
50 The front façade of the great mosque of Djenne after restoration 74
51 The potige, monumental Djennean traditional gate 74
52 Friday mosque of Mopti, Komoguel district 75
53 Plan of the great mosque of Mopti and façade of the qibla wall 76
54 Friday mosque of Mopti, Komoguel district 77
55 Mosque of Koro, footsteps of Bandiagara cliffs 78
56 The great mosque of Koro, Mali 79
57 Great mosque of Guindio-Sare, Mopti region 80
58 Great mosque of Guindio-Sare, Mopti region 81
59 Mosque of Banankoro 82
60 Plan and section of the mosque of Zaria, Northern Nigeria, 1834–46 85
61 Moulded decorations on the piers and arches of Zaria Mosque, Nigeria 86
62 Mosque of Tancinat, Niamey region 87
63 Mosque of Nakori 88
64 Plan and southern façade of the great mosque of Bobo Dioulasso 90
65 Great mosque of Bobo Dioulasso, Burkina Faso 91
66 Plans and elevations of the mosques of Banda Nkwanta and Bole 92
67 Mosque of Banda Nkwanta 93
68 Mosque of Bole 93
69 Mosque Ibrahim, Larabanga 94
70 Mosque of Dinguiraye 96
71 Circular mosque of Dinguiraye, Futa Jalon 97
72 Great mosque of Timbo, Guinea 98
73 Djennean gate of the great mosque of Mopti 103
74 Comparison between the Djennean gate and Dogon ceremonial mask the antilope (*walu*) 103
75 Removing additional layers of earth creating overloading 105
76 Building chronology and mud coating 106
77 Minaret of the mosque of Agadez, Niger 113
78 Mosque of Missiri built in 1928, Fréjus, France 114
79 Map of historical mosques and kingdoms in the Horn of Africa (Ethiopia, Somalia, and Eritrea) 116
80 Plan of the great mosque of Nora, Ethiopia 118
81 Great mosque of Nora 119

82 Excavations in the prayer room of the great mosque of Nora 119
83 Keystone of the mihrab of the great mosque of Nora 121
84 District mosques of Nora (M4 and M5) 122
85 Small mosque (M4), Nora, Ethiopia 123
86 Faqi Dabbis, Ethiopia 124
87 Mosque of Abasa, Somaliland 128
88 Church-mosque of Adulis 131
89 Plan of the church-mosque of Adulis 131
90 Shafa'i mosque of Suakin, Red Sea harbour 132
91 Hanafi and Shafa'i mosques of Suakin, Red Sea harbour 133
92 Palace-church-mosque of Dongola, Nubia 134
93 Palace-church-mosque of Dongola, Nubia 135
94 Palace-church-mosque of Dongola, Nubia 136
95 Church-mosque of Artul 137
96 Qasr Ibrim, Nubia 138
97 Cathedral-mosque of Qasr Ibrim 138
98 Great mosque of Sennar in 1821 140
99 The Kathmiyah Hassan mosque in Kassala, Sudan 140
100 Omdurman, the Khalifa's entrance to Mahdi's Tomb in 1898 141
101 Mosque of el-Koro, Sudan 142
102 Mosque of Wara, capital of Wadai, Chad 144
103 Map of the East African coast and Swahili mosques groups 147
104 Map of the trade routes in the Indian Ocean 164
105 Coral limestone quarry, lamu archipelago, Kenya 171
106 Plaster floor of the thirteenth century mosque in Gedi 173
107 Natural raw blocks of coral bounded by a mud mortar, Dembeni, ninth to tenth century 174
108 Eleventh to twelfth century masonry with sea coral ashlars and regular courses, Sanje ya Kati 175
109 Thirteenth century masonry with regular courses of fossil coral limestone ashlars, walls east of the great mosque of Kilwa 176
110 Fifteenth century formwork masonry with fossil coral limestone walls bounded in mortar (concrete), eastern wall of the southern extension of the great mosque of Kilwa 177
111 Blocked windows transformed into niches, great mosque of Kilwa, twelfth to thirteenth century 178
112 Window and niche for Qurans, Tsingoni, Mayotte 179
113 Octagonal wooden (monoxyle) column base, fourteenth century in the mosques of Gedi 181
114 Fourteenth century octagonal monolithic pillars, great mosque, Kilwa Kisiwani 181
115 Octagonal pillars, great mosque, Kilwa Kisiwani, fifteenth century 182
116 Octagonal pillars of the small mosque, Mnarani of Kilifi, Kenya 183
117 Wooden columns set in sea coral octagonal base socket, mosque n°2 of Kaole, Tanzania 184
118 Ceiling with mangrove poles, Chole, Mafia Island 185
119 Makuti panels for vegetal roof, Songo Mnara 186

120 Conical dome of Fakhr al-Din mosque in Mogadishu 187
121 Mosque of Mwana, northern Kenya 187
122 Plan and section of the small mosque (n°2) in Ungwana 189
123 Main entrance of the southern extension of the great mosque in Kilwa, 1302 AD 190
124 Section of the great mosque of Kilwa and the great dome 190
125 Barrel vaults of Kongo mosque (Tiwi) 191
126 Barrel vaults of the mosque of Kilwa n°2 191
127 Side room in Tsingoni, Mayotte 193
128 Water tank and foot rubbers in the great mosque of Kilwa 194
129 A north-south wall cutting in two the water tank of the Jamia of Mnarani, Kilifi 196
130 Fifteenth century ablution area of the great mosque of Gedi 197
131 Staircase minaret in the north-west corner of the projection of the mihrab of Tsingoni, Mayotte 198
132 Minaret of the Jamia in Mogadishu in Shangani district 199
133 Pseudo-minaret of the mosque of Mbaraki "pyramid of the Moors", Mombasa Island 200
134 Minaret of Shela Mosque on Lamu island 201
135 Mombasa 202
136 Plan Mnara mosque in Malindi district, Zanzibar old town 203
137 Mihrab of the funerary and great mosque in Takwa, Lamu archipelago 204
138 Funerary octagonal pillar overhung the small domed mosque in Kilwa Kisiwani 205
139 Mosque of Mnarani connected to large panel tombs and pilar tomb, fourteenth century, Kilifi, Kenya 206
140 Minbar of the jamia of Ungwana 208
141 Twelve ceramic bowl inlays in the mihrab of Chwaka, Pemba Island 209
142 Ceramic plate inlays in the mosque of Makutani, Kilwa Kisiwani 210
143 Fourteenth century mihrab of Kua and bowl inlays (mosque n°1) 211
144 Carved sea coral engravings in the jamia of Mnarani 213
145 Carved sea coral bosses and mouldings in the jamia of Mnarani, Kilifi 214
146 Mihrab of Rasini (Kikoni), Ciula (Chula) Island, Bajuni archipelago 214
147 Rope mouldings in Kua 215
148 Stucco decorations in the mosque of Fort Siyu, Pate Island 216
149 Mihrab of Kizimkazi, 1107 AD 220
150 Mosque and mihrab of Kizimkazi, Zanzibar Island 221
151 First Shirazi mosque of Kilwa, 1131–1170 AD 223
152 Plan of the mosque of Sanje ya Kati in the twelfth century 224
153 Mosque of Sanje ya Kati during restorations 225
154 Qibla and mihrab of Sanje ya Kati 226
155 Plan of the great mosque(s) of Gedi, 1100–1150 and 1150–1180 AD 228
156 Great mosque(s) of Gedi, 1100–1150 and 1150–1180 AD 229
157 Mosque of Fakhr ed-Din, Mugadishu 234
158 Mihrab of Fakhr al-Din, Mugadishu 235
159 Main gate of Fakhr al-Din mosque with Gujarati white marble plaques 236
160 Gujarati white marble plaque with Arabic inscription 236
161 Simple niche mihrab in Kaole mosque n°1 237
162 Jamia of Mugadishu and minaret 239

163 Mosque and mihrab of Shengeju 240
164 Fourteenth century mihrab in the Shirazi mosque of Kilwa Kisiwani 241
165 Y reversed arch of the mihrab of Kaole n°2, Tanzania 242
166 Mihrab of Tundwa 243
167 Mihrab in the great mosque of Mnarani, Kilifi 244
168 Mosque Mkiri wa Shirazi, Domoni, Anjouan Island 245
169 Plan of the mosque of Pole, Petite terre Island, Mayotte 246
170 Plan of the mosque of Tsingoni, Mayotte 247
171 Mihrab of Tsingoni, Mayotte 248
172 Southern extension of the great mosque of Kilwa between 1421 and 1442 251
173 3D laser scan of the great mosque of Kilwa 252
174 The great mosque of Kilwa 252
175 Basic mihrab of the eighteenth century in the great mosque of Kilwa 253
176 Ablution area of the great mosque of Kilwa with sea coral bosses in a sunken court 254
177 Plan of the site of Gedi with two great mosques and six district mosques 256
178 The plan of the great mosque of Ungwana 259
179 Second great mosque of Gedi (M2), built in 1425–1450 and renovated in 1500–1550 261
180 Minbar with three steps in the great mosque of Gedi 262
181 Mihrab of the great mosque of Gedi, fifteenth century 263
182 Small mosque (M5) and the mosque "of the sarcophagus" (M6), Gedi 265
183 Mosque between the walls (M7) and funerary mosque on the southern wall (M8), Gedi 266
184 Water channel of the mosque of the long conduit (M3) and the mosque of the three bays (M4), Gedi 267
185 Plan of Songo Mnara and location of the mosques in the town 269
186 Great mosque of Songo Mnara (M6) 270
187 Mihrab of the great mosque of Songo Mnara 271
188 Kua, Small Mosque n°3 272
189 Mihrab and minbar of the great mosque of Kua (n°2) 273
190 Plan of the great mosque of Kua (n°2) 274
191 Bwana Tamu and Bwana Bakari mosques, city of Pate 275
192 Localisation of the mosques in the town of Pate, Lamu archipelago 277
193 Mosques of wa-Pwani, and wa-Mwenye Kombo, city of Pate 278
194 Mosques wa-Pokomo and Nuru, city of Pate 279
195 Stucco mihrab in the great mosque of Shela, Lamu Island 280
196 Mihrab-minbar of Mkuje mosque, Songo Mnara Island 281
197 Mosque of Sanga Rungu, Songo Mnara Island 282
198 Mihrab of Chole, Mafia archipelago 283
199 Mosque of Mboamaji 284
200 Conical minaret of Shela Mosque, Lamu Island 286
201 Ibadi mosque of Mandhiri, Sokomuhogo district, Zanzibar old town 287
202 Ibadi mosque of Laghbari, Sokomuhogo district, Zanzibar old town 288
203 Aga Khan Jamat Khana Mosque Zanzibar, Tanzania 289
204 Historical chart of the main dynasties and kingdoms in Sub-Saharan Africa and their neighbours 295

205 Map of the historical mosques of Mali, Mauritania, Senegal, and Guinea 296
206 Map of the historical mosques of Burkina Faso, Ivory Coast and Ghana 297
207 Map of the historical mosques of Niger, Nigeria 298
208 Map of the historical mosques of Chad, Sudan, Erythrea and Ethiopia 301
209 Map of the historical mosques of Somalia 303
210 Map of the historical mosques of Kenya 304
211 Map of the historical mosques of Tanzania and Zanzibar 305
212 Map of the historical mosques of Comoros and Madagascar 306
213 Map of the historical mosques of Mozambique 307

Introduction: A Survey of Islamic Architecture in Sub-Saharan Africa

The origins of this book can be traced all the way back to 1993 and my master's thesis on the Swahili mosques written in Paris under the supervision of Professor Jean Devisse. Between 1995 and 2000 I accumulated an entire bibliography and notes about the mosques built in Sub-Saharan Africa. A first draft had already been prepared in 2001 and brings to my mind my deeply regretted supervisor, Professor Marianne Barrucand, who told me to finish my thesis and have it published before making any further plans. After being transferred to Egypt in order to manage the excavations on the Walls of Cairo, I continued to add to my project and to improve it. It was at last completed in London in 2020.

There is no general survey of the mosques of Sub-Saharan Africa. Numerous works have been published on mosques in general, on the mosques of certain countries such as Egypt, Turkey, India … Other surveys have discussed minarets and *mihrabs* all over the world, but the mosques of Sub-Saharan Africa are seldom mentioned.[1]

Nevertheless, the Africans amount to a third of the world's Muslims, even if the proportion diminishes if we remove North Africa and turn to the 15% of Sub-Saharan Africa. And yet this includes no less than 160 million African Muslims, with 60 million in East Africa, 20 million on the edges of the Sahara, and 80 million in West Africa.[2] The Africans, moreover, represent an important number of practising Muslims, Nigeria, with its 59 million Muslims, being one of the five countries in the world with the greatest number of practitioners.

Where the publications on the great Sub-Saharan areas of the African continent are concerned, two studies stand out as being particularly exhaustive and containing the largest amount of architectural information: Peter Garlake's work on the Swahili mosques and Dorothee Gruner's work on the mosques of West Africa. Further books on the so-called Sudanese mosques appeared between the 1980s and 2000, but they consist mainly of the beautiful photographs we find in coffee table books. Other parts of the African continent have been completely overlooked, and, in cases such as those of Ethiopia and the Horn of Africa, we have to turn to articles and the studies of individual sites for any information.

The geographical context is also extremely important. Africa is plural, from the Ethiopian high plateaus to the valleys of the Nile and the Niger. In Chad and Darfur baked brick predominates, stemming from the Egyptian traditions from the Nile valleys to the Red Sea. Earthen architecture is concentrated in the Niger valleys and stretches to the tributaries as far as the forest areas of the Ivory Coast. Mauritania, Ethiopia and Somalia use building techniques in dry stone. Kenya and Tanzania share the traditions derived from the cultures of the Indian Ocean with the use of sea coral stone. This work is consequently divided into three large geographical areas consisting of over 22 present-day countries (Fig. 1). The first part is dedicated to the mud brick mosques of West Africa. They are extremely hard to date on account of their annual restoration which entails constant adaptations of the building to a new period. Besides, the study of the development of West African architecture is highly limited by the lack of archaeological excavation for the medieval and modern periods. It is to be hoped that this general survey of the mosques of Sub-Saharan Africa will be followed by fieldworks which will improve our limited knowledge in these countries. The second part of this book is on the Horn of Africa, the Nile valleys, the Red Sea coasts and the region surrounding Lake Chad. If certain African countries are less well represented in this work, it is because there are so few studies of their mosques. This is

1 Frishman, M. & Khan, H. eds., *The Mosque* (1994).

2 Quinn, *Pride, faith, and fear: Islam in Sub-Saharan Africa* (2003): 6.

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FIGURE 1 Map of contemporary African states and areas studied

the case of Chad, the Sudan, Ethiopia and Somalia, a geographical area stretching from central Sudan to the north-east of Africa. Such a lack of research is due to two main factors: first of all the political and military problems inherent in the area, and then the conformity of the research programmes of certain institutes which are always centred on the same areas of research. And finally, the third part of this study is on the Swahili mosques of the Indian Ocean, built with a limestone formed by coral fossil. The numerous archaeological excavations performed on the Swahili coastal sites

provide a coherent chronological framework in which to study them.

The architectural and religious traditions are very different in the three regional groups presented in this work, the mosques of the Niger valleys for West Africa, the mosques between the Red Sea and the Nile valleys, and the Swahili mosques of East Africa. Nevertheless, there is a common denominator, and this is the rôle of trade in the process of Islamization. Arab, Berber, Persian and Indian merchants spread Islam across the vast geographical extents formed by the Sahara and the Indian Ocean. The Islam of Sub-Saharan Africa was first of all a commercial Islam, particularly connected with the trade in gold, ivory and slaves. Another common point between East and West Africa is the myth of the Arab origin of the architecture in stone south of the Sahara. And indeed, Europeans long rejected the possibility that an architecture in stone could be of African origin. The only material used by the Africans, they believed, was mud. This theory, partly based on colonial beliefs, is, of course, now obsolete. What we have is an adaptation to the environment in West Africa and a difference of a social order for the Swahili coast. Architecture is the material testimony of a social, economic and political organisation. This is why any change in the culture of a people can be perceived in the analysis of a mosque. Architecture, however, is also influenced by the environment. A mosque is therefore the cristallisation of a certain number of cultural, environmental, technological, social, political and economic parameters.

Our typology of the African mosques is presented according to the geography and the environmental resources which condition the traditions and techniques of building in each region, from the dry stone of the desert areas of Mauritania and the mountain regions of Ethiopia, to the coral blocks of the Indian Ocean, the baked brick of the Red Sea, the Nile valleys and Chad, and the mud brick and banco of the Niger valleys. The great regional groups have been organised according to the trans-Saharan and trans-oceanic trade routes which conditioned the arrival of exogenous influences, forms and techniques. These influences sometimes came from North Africa, Morocco, Algeria and Egypt, but also from Arabia, Persia and India. This book also demonstrates the vitality of inter-African influences and how the movements of certain populations in West Africa conditioned the arrival of new building techniques, particularly in the forest areas of the south. The dynamics of the various conquests too had a part in the elaboration of styles and norms in the Niger valleys from the great medieval empires to the theocratic states of the nineteenth century.

The originality of this book resides in the presentation of African monuments in their historical, political and economic context, often overlooked in Art historian publications, but essential for the still all too neglected territory which is Sub-Saharan Africa. The history of the mosques of Sub-Saharan Africa is marked by the interaction between Islamic civilisation and African cultures. African Islam is plural. It forms a mosaic of cultures with an ethnic and geographical diversity which generates very different architectural models from Timbuktu to Zanzibar. The product of African history is the synthesis of local and exogenous architectural concepts. I shall be dealing with the degree of the reception of Islam by African societies and the degree of permeability of this monotheist religion when confronted by African traditions and rituals. While keeping in mind the possible regional developments I shall demonstrate the dynamism of African architecture from the ninth to the nineteenth centuries. African Islam is both tolerant and syncretistic. And yet there are a few exceptions. In West Africa the Almovarids imposed a Sunni Islam on the people they conquered. Christian Ethiopia and Nubia were in conflict with their Muslim neighbours. And finally, from 1750 to 1900 the Fulani and Sudanese warrior theocracies supported *jihads* and military campaigns to combat the slave-trading African royalties and the arrival of the European colonisers.

The term "historical mosques" refers to African mosques before 1920. The chronological

framework of this study thus stretches from the advent of Islam to the early twentieth century. I have sometimes described certain mud brick mosques in West Africa even if they are later than this date since they are part of the pre-colonial tradition and are in fact restored buildings. I will not be dealing with architectural monuments which have been entirely imported from abroad during the colonial and post-colonial periods.

The first Africans to be converted formed part of the élites. They were mainly merchants and local leaders. The Islamicised towns and kingdoms soon profited from this new religion, reinforcing their administration and their legitimacy by the use of the Arabic script. And indeed, Islam was far more than a new religion. It was a revolution that changed alimentary habits, architecture, but also social relations. Every Muslim had to follow the five pillars of the faith which are: *shahada* or the recognition of the Prophet Muhammad and the unique nature of God; *salat* or the five daily prayers in the direction of Mecca; *saum* or the fast of Ramadan; *zakat*, alms for the poor or the tithe; and the *hajj* or pilgrimage to Mecca. The Qur'an was more than a sacred book. It provided the laws or *sharia* used in daily life and in jurisprudence. The mosque thus played a political role. It was the place where the citizens met for important events such as official communications or taking the oath to the sultan. The great mosque, moreover, was often built close to the royal palace.

The term mosque comes from the Arabic *masjid* which means 'place of prostration'. Originally it was a plain oratory or place of worship. By extension the word indicated the district or village mosques, as opposed to the Friday mosque or great mosque, *masjid-i-jami*, *jami* or *jamia*. In each city there was a single great mosque which was sometimes in the centre of the town and in which the congregation of all the faithful reunited for the ritual Friday noon prayer. The *mihrab* was the most decorated element in the mosque. It was usually a niche or apse indicating the wall of the *qibla*, pointing towards Mecca. The worshippers stood in front of this wall to say their prayers. In order to mark his break with the Jews of Medina Muhammad chose to pray towards Mecca rather than Jerusalem. The mosque would always remain orientated towards this new place sacred to the Muslims. On the east coast the mosques were always facing north. In West Africa they were turned towards the east. The decorations on the frame and in the niche of the *mihrab* were composed of an interlaced vegetal or geometric design and verses from the Qur'an in Kufic or Naskh script. Some texts gave historical indications, mentioning the date of construction of the building and the name of the founder. In the Friday mosques a *minbar* was placed to the right of the *mihrab*. It was a pulpit used for the *khotba*, a sermon directed to the community pronounced by an imam or the *khatib*. The mosque was a place of worship but also a cultural centre in which religious instruction was delivered, sometimes with the addition of a *madrasa* or Qur'anic school.

This book also deals with questions concerning the different religious movements in Africa, how and why the architecture of the mosque evolved according to the various sects and confraternities. African Islam is mainly Sunni, but the study of the mosques shows that this uniformity has not always been the rule and that many religious minorities have lived side by side in Africa since the advent of Islam, from the Ibadis of the Saharan desert to the Ismailis of the coasts of the Indian Ocean. The Muslims are split into two large movements, Sunni and Shiite. The term *Shiite* comes from the schism, or the separation between the supporters of ʿAli, the son-in-law of the Prophet and the fourth Rashidun caliph who was murdered in 661, and the Sunnis who accepted the legitimacy of the Umayyad, and later the Abbasid, dynasties. The Kharijites or "dissidents" refused to choose between ʿAli and Muʿawiya (the first Umayyad caliph). Kharijism is thus the oldest schism in Islam which appeared in 657. This Muslim sect was known for its moral and religious rigour. Its members preached an egalitarianism in Muslim society connected with the nomadic origins of this

culture. The Ibadis were one of the most tolerant and moderate branches of the Kharijite movement. They were to be found in East Africa and the western Sahara. As for the Shiites, they reassembled around the descendants of ʿAli and Fatima, the Prophet's daughter. They were divided into six branches, of which the main ones in Africa were the Ismailis (who followed the seventh Imam), the Twelvers (who followed the twelfth Imam), and the Zaydis. Various subgroups of the Ismailis were particularly active in East Africa, and included the Qarmatians (who have now disappeared) and the Bohras who were also divided into subgroups. The period from the tenth to the twelfth century was the Golden Age of the Shiite dynasties, with the Ismaili Fatimids in Egypt, the Zirids and the Idrisids in North Africa, the Qarmatians in Bahrain and the Buyids in Iran-Iraq. From the thirteenth century on Sunnism gradually prevailed almost everywhere across the world. The Sunnis experienced a more standardised division with their four legal schools: the Shafiites, the Malikites, the Hanbalites and the Hanafites.

In principle Islam acknowledges no religious order, clergy, spiritual hierarchy or saint. And yet Muslim mysticism such as Sufism, first an individual experience, was slowly organised, above all from the twelfth century on, into congregations which admitted the authority of a spiritual master, practised a discipline, and observed a common ritual. The word "confraternities" is used by analogy since the members called themselves *ikhwan*, or *khouan*, brothers. Although only a minority of Muslims was affiliated with the confraternities, they nevertheless played an outstanding historical rôle in Sub-Saharan Africa. They produced missionaries for the conversion of the populations and they developed a popular mysticism which facilitated the recruitment of the masses. Most of the great confraternities were founded between the twelfth and the fifteenth centuries. The most important ones included the Shadhiliyya, the Tijaniyya and the Qadiriyya. One confraternity in particular spread across Sub-Saharan Africa, and was propagated by al-Hajj Omar as far as Guinea. This was the Tijaniyya, founded by Ahmad Muhammad al-Mukhtar Salim al-Tijani (1737–1815). In contrast to the Qadiriyya, the Tijaniyya was most attractive and preached egalitarianism. With its masters or sheikhs there appeared a certain form of veneration of individuals connected with the religion. Although they are rejected by a rigorous Islam, the mausoleums of spiritual masters and saints are still immensely popular in Africa.

I would like to thank here my late Professors Marianne Barrucand and Jean Devisse, and my mentors in Islamic archaeology, Monik Kervran and Claire Hardy-Guilbert. Then, of course, my thanks go to my wife Veronica who has supported me tirelessly for all these years. I also thank warmly the Aga Khan University which provided me with an intellectual environment that allowed me to bring my plan to completion, as well as financial support for the translation of this work originally written in French. In particular, I thank Carl Amrhein, Provost of the Aga Khan University, Anjum Alai, Vice-Provost, and Leif Stenberg, Dean of the Institute for the Study of Muslim Cultures. I am grateful to Alistair Hamilton for the first translation of this volume, Dinah Rapliza for her meticulous copy editing, and to Teddi Dols from Brill for her massive support since the past two years. The plans, elevations and maps from some previous publications have been redrawned and specially commissioned for this volume, and done by Inigo Almela, Fabien Balestra and Ariadni Ilioglou. All the final digital drawings have been executed by Inigo Almela, and I would like to thank him warmly for his minutious work. Finally, I'm extremely grateful to all my colleagues for the photographic documentation as well as the exchange of articles and documents, in particular Pierre Blanchard, senior architect with whom I worked in East Africa for many years, Denis Genequand, Director of the Musée Romain d'Avenches, François-Xavier Fauvelle, Professor at the Collège de France, Christophe Bouleau, senior architect, Francesco

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CHAPTER 1

The Mosques of the Niger Valleys

1.1 Introduction: The So-Called "Sudanese" Mosques

The term *Sudanese* was first applied to architecture in the early twentieth century after the French conquest of Western Sudan. This colonial term was created to designate a region in West Africa,[1] regrouping the territories of Mauritania, Mali, Burkina Faso, the north of the Ivory Coast and Ghana. It was based scientifically on a geographical delimitation devised by the Arab authors with the term *Bilad al-Sudan*, "the land of the Blacks", which corresponds to the southern edge of the Sahara, the Sahelian strip running from the Atlantic Ocean to the Indian Ocean, comprising not only the basins of Senegal, Niger and Chad, but also the areas of savanna and forest further south. The definition was subsequently popularised by the French media and the colonial exhibitions organised in Paris and Marseille (Fig. 2).

The spread of the so-called "Sudanese" mosques relates to trans-Saharan trade. The sites were concentrated on the main commercial roads, and therefore of Islamisation. The countries concerned

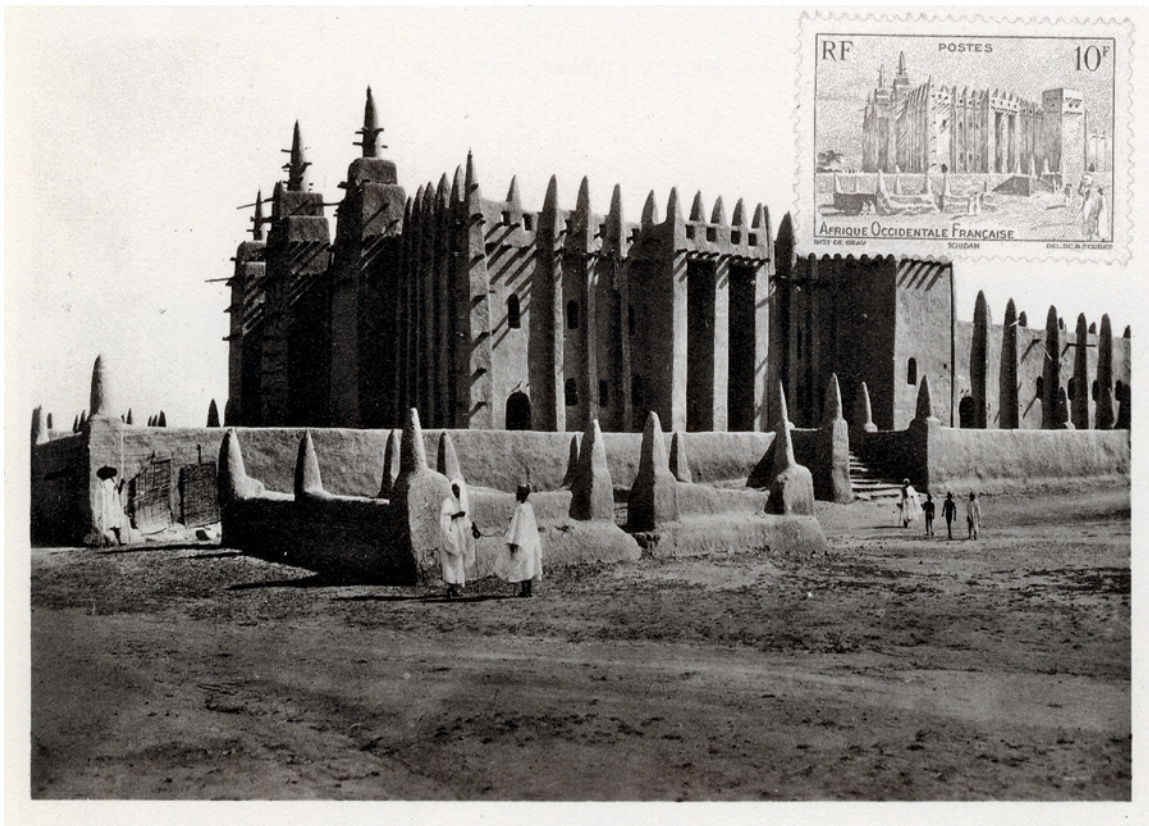


FIGURE 2 Postcard showing the great mosque of Djenne, 1920–2

1 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 99.

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are essentially Mali, Burkina Faso, Niger, the Ivory Coast, but also the north of Nigeria, Ghana, and the north of Senegal (region of Futa Toro). The Sudanese style is never defined with any clarity in the literature. Nevertheless, it has certain morphological and technological elements which are typical of its architecture. First of all, it consists of mud buildings, generally in mud brick dried in the sun and placed on a wooden structure which protrudes beyond the walls. These beams or *toron* also served as a scaffolding for the construction of the mosque and the annual restoration of the façades. The *toron* were the most important decorative elements of the façade. They did not have a functional rôle when they were placed on ground level since a height of almost five metres could be reached by a ladder. The quadrangular buildings were covered by flat terrace roofs. The austere facades of the walls and the roofs were interrupted by the *toron*, but also by buttresses, parapets, and pinnacles, often in "sugar loaves". This expression, widely used in the literature, evokes a conical shape with a rounded extremity. Where Sudanese religious architecture is concerned, in addition to the elements just listed, the north and south entrances of the mosques were richly decorated, in contrast to the east façade which had no decoration. Certain elements crowned the summit of the pinnacles and the towers, such as the ostrich egg, a symbol of fertility, or the crescent associated with the moon, which were Islamic symbols.[2] As for the characteristic elements of the plan of the mosques, the courtyard was generally to the west and the prayer hall to the east. The prayer hall was divided into bays parallel to the wall of the *qibla* by rows of wooden poles or mud pillars. The wall of the *qibla* was oriented towards the east and the façade of the main *qibla* was dominated by a *mihrab* tower. The Sudanese area also regroups stone mosques which have a relationship with the buildings in the so-called Sudanese style. The evolution of this style is both chronological, with the spread of Islam and the religious reforms, and spatial, with regional clusters which establish a division between town and country.

Rather than referring to the style of the "Sudanese" mosques, a colonial term, I prefer to talk of the "mosques of the Niger valleys" since these mosques are in fact concentrated round the Niger river and its tributaries and adjacent valleys.[3] I shall discuss different chronological, cultural and geographical variations of these mosques in order to demonstrate that there is not one single style, but various West African styles conditioned by space and time. The evolution of the mosques of the Niger valleys is obviously linked to the history of Sub-Saharan Africa, to political expansion and the conquests of the African kingdoms, and to the spread of Islam through commercial networks. The architectural characteristics of the West African mosques must be connected with the historical events which mark the history of the region from the eighth century to the present day. And yet our approach cannot be diachronic, largely because of the lack of archaeological excavation of this type of monument. The principal problem posed by the study of the architecture of mosques in mud brick is the absence of a strict chronological delimitation. The uncertainty of the origin and historical evolution of this type of mosque is mainly due to the scarcity of archaeological information about the birth and diffusion of this architecture. Mud brick architecture leaves few lasting traces, and few mosques from the early phase of Islamisation have survived – my study will therefore be concentrated essentially on recent mosques. Mud can only be preserved if it is kept in repair, and the life expectancy of the building is limited by its usage. Besides, since the texture of mud brick is more or less the same as that of the soil in which the architectural remains are hidden, it is difficult to find its traces for unexperienced archaeologists.

Our presentation will cover every type of mosque from the Sahara to the forested area,

2 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 142.

3 Geographical concept introduced by Jean Devisse for the exhibition « Vallées du Niger » in 1993.

and from the great cities to the rural villages. The mosques of the Niger valleys are not limited to a single population, Fulbe, Mandinka or Dyula. It is not possible to confine this architectural style to a particular kingdom or West African empire. Our analysis and typology of the mosques of the Niger valleys will be made on the basis of the rôle of trade and the spread of Islam and will allow us to define the context in which this style of mud mosque must be seen. We shall take external influences into account, without overlooking the value of the traditional vernacular elements. Our objective is to show that this African architecture is profoundly original.

1.2 Historiography of Research on the Mosques of the Niger Valleys

In the sixties, Labelle Prussin, a pioneer, established five categories of mosques according to their "distinctive socio-politico-geographical" characteristics: Timbuktu, Djenne, Bobo-Dioulasso, Kong and the mosques of the humid region, and Kawara and the mosques of the rural savanna.[4] Prussin questioned the influence of North Africa and applied new hypotheses and methods to the history of the architecture of West Africa.[5] In 1977, Dorothee Gruner distinguished the group of the Middle Niger with the mosques of Djenne, Timbuktu, Gao, Segou, Tendirma, and Mopti; the Hausa group including Katsina, Zinder, Zaria, and Kano; and the group of the Dyula mosques such as Bobo-Dioulasso, Kong, Salaga, Wa, and Larabanga.[6]

A few years later, in 1990, Dorothee Gruner published a magisterial study which still remains the standard reference work for West Africa.[7] Based on the missions supported by the Frobenius Institute between 1976 and 1986, this work covered the study of almost 170 mosques, giving, for each monument, information about its geographical situation, its status (Friday mosque or district mosque), the localisation of the building in the town or the village, its year of construction, its state, its measurements, and a description of the different parts (courtyard, prayer hall, external façades).[8] These data are accompanied by plans, drawings of the façades, cross-sections, and photographs of the better documented mosques. She defines four stylistic areas: the mosques with courtyards of the Middle Niger (Mali and east of the Niger), the domed Hausa mosques of Nigeria, the mosques with double towers of the Volta-Niger region (west of Burkina Faso and north of the Ivory Coast), and the mosques with conical roofs of the Upper Niger (Guinea, the west of Mali, the north-west of the Ivory Coast, and the north of Togo).

The other studies are based essentially on the urban mosques, the best known being the ones of Djenne, Mopti, Gao, and Timbuktu in Mali. The works of Bedaux, van der Waals,[9] Maas and Mommersteeg,[10] for example, deal for the first with Djenne, and Mopti, and for the second with Segou and Timbuktu. In their study of Djenne Maas and Mommersteeg only deal with the mosques of the Inner Niger Delta, among which they distinguish the Djenne type from that of Segou or even of Mopti.[11] Sergio Domian, in his turn, defines four zones from north to south: Timbuktu, the mosques of Gao and Agadez; Djenne and the mosques of Mopti, San and Dia; the early mosques to the

4 Prussin, "The Architecture of Islam in West Africa" (1968); Prussin, *Architecture in northern Ghana* (1969).

5 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973); Prussin, *Hatumere: Islamic design in West Africa* (1986).

6 Gruner, "Der traditionelle Moscheebau am mittleren Niger" (1977).

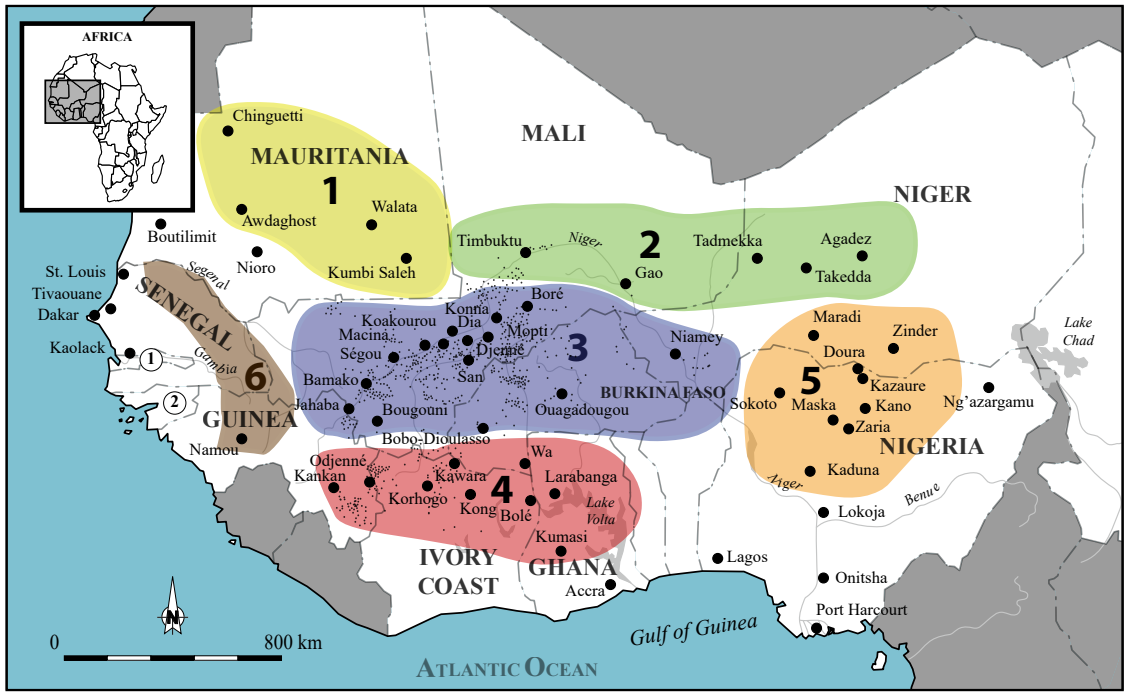
7 Gruner, *Die Lehm-Moschee am Niger; Dokumentation eines traditionellen Bautyps* (1990); Dethier & Gruner, *Banco, Adobe Mosques of the Inner Niger Delta* (2003).

8 Gruner, "*Banco. Mosquées en terre du delta intérieur du fleuve Niger*" (2003): 22–26.

9 Bedaux & van der Waals, *Djenné, une ville millénaire au Mali* (1994).

10 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992).

11 Maas & Mommersteeg, « une architecture fascinante ». *Djenné, une ville millénaire du Mali* (1994): 79–94.



West African, Niger Valleys Mosques

1/ Group of Desert stone mosques

2/ Group of the pre-Saharan steppes
Northern Niger river bend and Air

3/ Group of the Middle Niger
Inner delta, Lac Debo and Segou

4/ Group of Dyula mosques
Bougamena and Dougouba-Kawara subgroup

5/ Group of Hausa mosques
Caliphate of Sokoto mosques

6/ Group of Fulbe mosques
Futa Toro and Futa Djalon

FIGURE 3 Map of the Niger valleys mosques and the six main typological groups

south of the river Bani, the north of the Ivory Coast and Burkina Faso; and finally the mosques of Ghana and the region of Kong.[12] Domian is the first author to have tackled the problem of both stylistic definition and typology. He laid the bases of an overview of the genesis and the evolution of the style, its influence, and the development of the forms and techniques. The rural mosques or the district mosques have been less well documented, sometimes described, often only cited, with no iconographic documentation (plans, photographs, or drawings).

If we consider all the surveys made by different authors the established corpus is vast: about 240

12 Domian, *Architecture soudanaise* (1989).

mosques, which are spread over seven countries and the development of which extends over several centuries. According to the regions studied, the literature on the mosques of the Niger valleys is fairly heterogeneous. Our work reposes essentially on the classification of Gruner and its vast corpus of mosques. Nevertheless, the work of Gruner does not cover all the West African mosques, omitting, for example, those of Futa Toro in Senegal. For the north of Senegal, however, two articles by Boulègue and Bourdier present a survey about a dozen mosques. As for the sites of northern Nigeria, they have been studied on the one hand by Moughtin and on the other by Dmochowski in a richly illustrated work with axonometric views, plans and cross-sections.[13] More recently Denis Gennequand started a research project on the mosques of Ghana. These groups have therefore been added and considered as independent complexes, defined by regional peculiarities but corresponding to the definition of the style of the Niger valleys. Where the group of the Middle Niger is concerned, Gruner divides it into five sub-groups: the mosques of the Niger bend, the region of the Delta, Lake Debo, the region of Segou, and that of Dougouba. We have preferred to separate the mosques of the Niger bend and the pre-Saharan steppe (Agadez, Gao, Timbuktu), with their characteristic minaret, from the other monuments (Fig. 3). Similarly, since the mosques of Dougouba and Kawara distinguish themselves by their compact and rounded shapes from those of Segou, Lake Debo or the Delta, as they do from the mosques of the other groups, they will be considered as a separate group. We should add that not all the mosques surveyed by Gruner have been classified – far from it. In her work of 1990, after defining the different groups, she provided a catalogue of the mosques by region and not by type. We have consequently proceeded to a classification of the best documented mosques which best correspond to the criteria observed in our typology. It is quite evident that, in view of the large number and the variety of the monuments surveyed, it was impossible to classify them all. Even if this were possible, it would not be of any direct interest for our survey. What is essential is to define the different stylistic groups, their characteristics, their localisation, and their chronology. The purpose of this typology is to provide a survey enabling us to approach a geographical and chronological analysis of the development of the mosques of the Niger valleys.

13 Boulègue, « Mosquées de style soudanais au Fuuta Tooro (Sénégal) » (1972): 117–119; Bourdier, "The rural mosques of Futa Toro" (1993): 32–45; Moughtin, "The friday mosque, Zaria city" (1972): 143–163; Moughtin, *Hausa architecture* (1985); Dmochowski, *An introduction to Nigerian traditional architecture* (1990).

1.3 The History of the Great West African Kingdoms

1.3.1 *The Kingdoms of Tekrur and Ghana, Ninth to Twelfth Centuries*

The kingdom of Tekrur developed in the middle valley of the Senegal river between the ninth and the eleventh century (Fig. 4).[14] Al-Bakri was the first Arab writer to mention the kingdom of Tekrur in 1068.[15] According to al-Bakri, the king of Tekrur, War Jabi, converted to Islam in 1040 and was the first African sovereign to do so. A century later, in 1154, al-Idrisi mentioned the great towns of Tekrur, Silla and Barisa in the middle valley of the Senegal river which were all ruled by sultans:

> Tekrur is an important town in the land of the Sudan, but without walls. Power is in the hands of the Muslims. The people are naked, except for the notables, Muslims who wear tunics. As for the idolaters, they cover their natural parts with precious pearls of cornaline mounted on threads and hanging from their belt.[16]

14 al-Naqar, 1969, p. 365–374; Joire, 1955, p. 298.

15 Hopkins, *Corpus of early Arabic sources for West African history* (1981).

16 Al-Idrisi, 1968 (1154): 200.

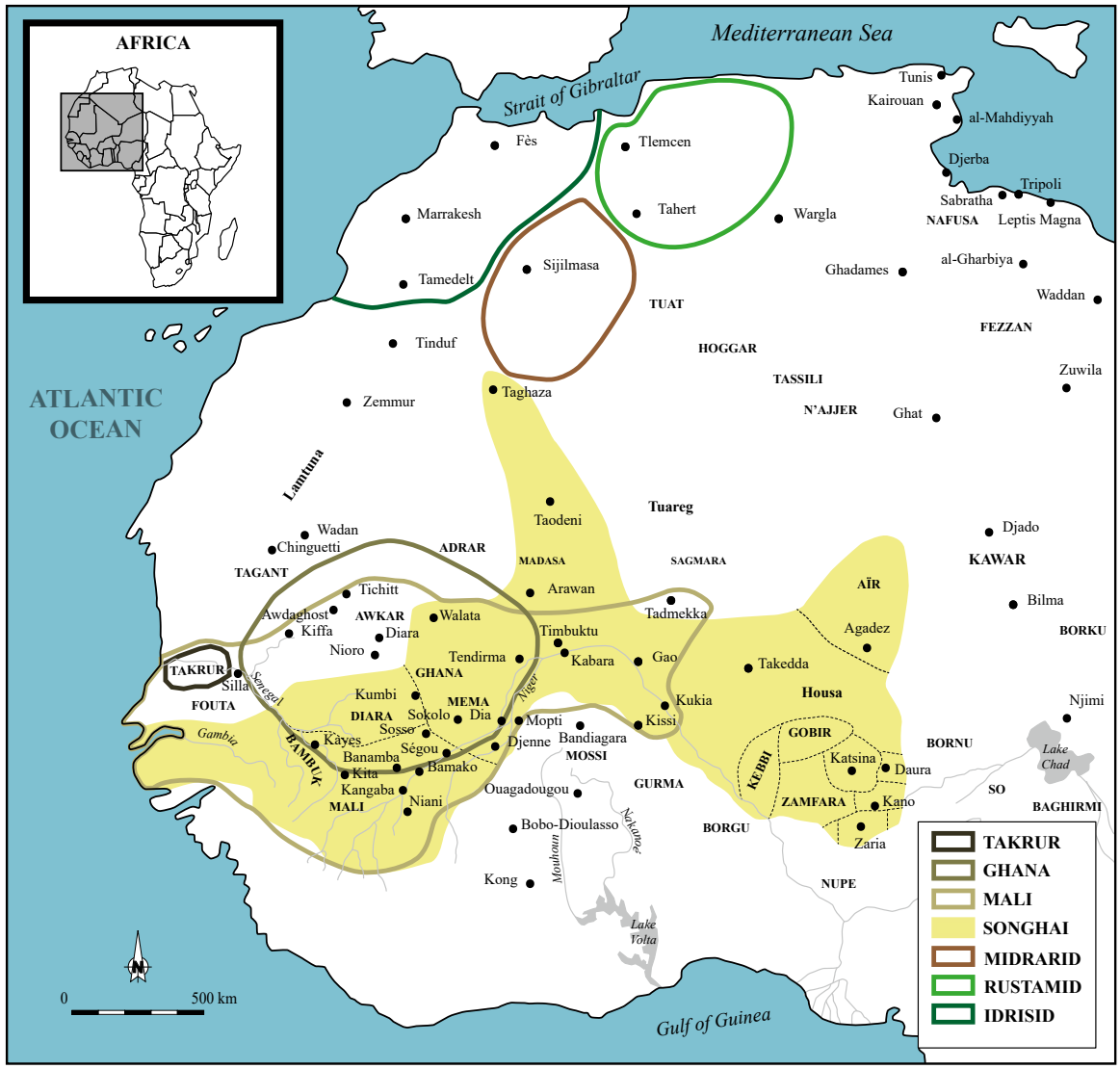


FIGURE 4 Map of medieval kingdoms and sultanates in West Africa

Founded in the fourth century of the Christian era, the kingdom of Ghana owes its fame to the gold mines of neighbouring Bambuk.[17] Its wealth related to the lucrative gold trade with the Muslim states of the Maghreb. We know little about the origins and the extent of the kingdom of Ghana (Fig. 4). Only one part of the territory was under the direct control of the king and his representatives, while the border regions were simply vassals. Kumbi Saleh, the capital of Ghana, was the first African town to be cited by the Arab geographers under the name of Ghana. Al-Bakri describes it as follows:

17 Niane, *Le Soudan occidental au temps des grands empires XI–XVI^e siècle* (1975): 31–35.

> Ghana is composed of two towns situated in a plain. That which is inhabited by Muslims is very large and contains twelve mosques, in one of which the Friday prayer is celebrated [...] The town inhabited by the king is six miles away from this one and bears the name of Al-Ghaba, the forest, the copse [...]. In the town of the soveriegn, not far from the royal tribunal, stands a mosque where the Muslims who come there on missions to the prince go to say their prayer.[18]

So, there were numerous Muslim residents in the town. The sovereign became a Muslim at the time of the Almoravid expansion and the mosque was enlarged at the end of the century. The town knew a period of remarkable prosperity in the thirteenth and fourteenth centuries under Almoravid rule. Ghana exported gold, salt, ivory, skins, and slaves to the Mediterranean world. It controlled the great caravan towns of the western tracks of the Sahara. The relations between Kumbi and the towns of the north were sustained through the intermediary of Awdaghust. This town was the commercial hub between the nomads of the Sahara and the sedentary inhabitants of the empire of Ghana. In the ninth century Awdaghust appeared as a great city thanks to the importance of trans-Saharan trade which benefited from the security enforced by the main Sanhaja berber tribes. But their successors were unable to prevent the quarrels and divisions which weakened the Sanhaja tribes. The kings of Ghana seized the opportunity to dominate and impose a tribute on Awdaghust.

The capital of Ghana, Kumbi Saleh, and the city of Awdaghust were destroyed in 1054. The capture of Ghana by the Almoravids marks the official entry of Sunni Islam in the region. The etymology of Almoravid is *al-murabitun*, in Arabic "the people of the *ribat*". This fundamentalist Sunni movement was created in 1042 by ʿAbd Allah bin Yasin, a religious leader, and Yahya bin Ibrahim, a Berber chieftain.[19] Their *ribat*, a fortified monastery, was situated at the mouth of the river Senegal. The Almoravids Islamised West Africa with a holy war. Yahya bin Omar seized the Zenata capital, Sijilmasa, in 1053. He then took back Awdaghust. The Almoravids converted numerous Berber populations by force and founded Marrakesh in 1062. In 1077 Abu Bakr succeeded his brother Yahya bin Omar and overthrew the kingdom of Ghana. Some sub-Saharan states were temporarily subjected to the Berber princes, and the Almoravids would consolidate the position of Sunnism south of the Sahara. The conversion of Tekrur and the decline of Ghana led to a shift of the trade routes. From then on the traders of the north circumvented Ghana to the west in order to procure gold. From the twelfth century on Tekrur and Gao gained control of the commercial axes and ensured the gold trade. The establishment of a new western commercial road resulted in the advance of Islam towards the south of Senegal and the mouth of the Niger.

1.3.2 *The Empire of Mali, Thirteenth to Fifteenth Centuries*

Sun Dyata Keita founded the empire of Mali in the first half of the thirteenth century. We know hardly anything about the first capital. The second capital was founded at Niani, on the Sankarani river, a tributary of the Niger, in the region of gold production of Bure and of the kola nut, in the south. Niani consisted of an Arab district and a royal African town. The apogee of Mali was in the fourteenth century. The kingdom then stretched from the Ifoghas at the mouth of the Gambia and into the Mandinka mountains as far as the confluence of the Niger and the Sankarani. The empire of Mali dominated the entire mouth of the Niger, above all the region round Timbuktu, and the centres of commerce with the Berber tribes who traded there (Massufa and Lamtuna).[20] The region

18 al-Bakri, (1858): 382.

19 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 40–42.

20 El Fasi & Hrbek, « Etapes du développement de l'Islam et de sa diffusion en Afrique » (1990): 93.

was the convergence of numerous Saharan tracks. It was also the bifurcation of the routes across the western *Bilad al-Sudan* along the Niger and the Bani. It was very active culturally under the influence of the Arabo-Berbers, on both a commercial level and a technical, cultural, and religious one. The Mansa, kings of Mali, adopted Islam out of a desire for hegemony and cohesion. Sunjata and his successors appeared as great leaders of the Mandinkas and the neighbouring ethnic minorities. By their will the chiefdoms of West Africa were federated in a vast empire. Islam gathered clans, tribes and ethnic minorities in a single faith and form of religious worship. It brought about a political unity of the multiracial regions at a time when the traditional (animist) religion was a village religion. Under the empire of Mali, the region consequently experienced a period of stability and security which favoured the expansion of trade and at the same time the diffusion of Islam, whose principal propagators were the Dyula and Soninke merchants. The *Dar al-Islam* then stretched from Tekrur to Gao, along the edge of the Sahelian savanna or Sahel.

The most famous sovereign of Mali was Mansa Musa (1307–1332), who performed the pilgrimage to Mecca in 1325.[21] The *Ta'rikh al-Sudan*, compiled between 1627 and 1655, informs us that, on his return, "Mansa Musa had built outside the town of Gao a mosque with a mihrab, where he said the Friday prayer … In all the places where he spent a Friday the prince proceeded in this way".[22] Mansa Musa thus built the great mosque of Timbuktu, and the mosques of Doukoure, Goundam, Dire and other localities. The Mandinka sovereigns spread Malikite Sunnism by constructing numerous mosques.[23] Islam became a religion of the script and the book, sustained by Qur'anic schools or *madrasas*. Mansa Musa and his brother and successor Mansa Sulayman (1332–1360) marked the apogee of the kingdom of Mali.[24]

Walata, Timbuktu, Djenne and Dia were the main starting points of the principal movements of Islamisation in West Africa. Walata was one of the first centres of Islamic acculturation. It was founded by merchants from Ghana in 1224 and became a large caravan centre. On account of its commercial importance rather than its size, Walata acquired the status of a city. With the shift of the trans-Saharan tracks towards the east and the rise of Timbuktu, it went into decline. And yet Walata was at the origin of the intellectual vocation and the rise of Timbuktu. According to the *Ta'rikh al-Sudan*, Timbuktu was founded towards 1100 by a group of nomadic Berbers from the north and was integrated in the great Mandinka complex of Mali in the fourteenth century.[25] It was no more than a large market-town at the time of the Mansas and rose at the end of the Mandinka domination and with the arrival of the Askya. The terminus of the Saharan caravans, the town welcomed Berber scholars from the Sahel and the Sahara, Arabs from the Maghreb, and the Near East, and learned Arabs of Sudanese origin. The north district of Sankore was inhabited by the Berbers, and the south by the Sudanese, while the people of Tuat were the main occupants of the district of the great mosque.[26] Timbuktu was ahead of Djenne by a century. At the beginning of the thirteenth century the sovereign of Djenne, Koi Konboro, converted to Islam. Konboro had his palace destroyed and a mosque built in its stead. In this period Djenne remained a tributary of Timbuktu. It retained an animist and African cultural infrastructure and continued to be dominated by the Wangara merchants, Islamised

21 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 109–116.

22 Es-Sa'di (1900): 14; Kâti, *Tarikh El-Fettâch* (1913–1914).

23 Niane, *Le Soudan occidental au temps des grands empires XI–XVI^e siècle* (1975): 36–40.

24 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 69–85.

25 Cuoq, *Recueil des sources arabes concernant l'Afrique occidentale du VIII^e au XVI^e siècle* (1975); Levtzion, & Hopkings, *Corpus of early Arabic sources for west African history* (1981).

26 Coquery-Vidrovitch (1993): 125.

Africans concentrated to the east of the kingdom of Ghana. Dia was a very ancient town according to the oral tradition recorded by Charles Monteil, its foundation by the Berbers dating back to the eighth century.[27] The Wangara traders who lived together with the Arabo-Berbers were responsible for its prosperity, and its commercial activity increased with the foundation of Walata. The Saharan routes had indeed shifted to the east. Dia ensured communications between Walata and the capital Niani on the one hand, and between Niani and Timbuktu on the other.

Three dynasties dominated the history of Gao[28] from the eleventh century to the Moroccan conquest in 1591. First there were the Za, who made Gao their capital from the eleventh century to 1275. Then came the Sonni of Mali who controlled Gao from 1275 to 1464. Ibn Battuta stopped in Gao in 1353 and reported the prosperity of the town, the largest and the richest of the entire region of the Sudan. He mentioned the "mosque of the Whites" for the resident Moroccans, whose imam was from Tafilelt. The town of Gao was no intellectual centre, but it was a great commercial metropolis. It was under the yoke of the empire of Mali, but at the end of the fourteenth century the bonds of allegiance between the Mansa and their provinces relaxed. The empire of Mali finally started to decline in the early fourteenth century with the rise to power of the Songhay peoples to the east. In the west the Mossi, originally from the basin of the river Nakembe (present-day Burkina Faso), advanced on the Massina as far as Walata, and the Tuareg took Timbuktu and its region in 1433, threatening the western Saharan tracks. From the mid-fifteenth century trade turned partly towards the coast.

27 Monteil, « La langue azer » (1939): 216–217.

28 Al-Idrisi & Ibn Sa'id (1286).

1.3.3 *The Songhay Empire, Fifteenth to Sixteenth Centuries*

Under the Songhay (1464–1591) a great empire came into existence thanks to the activity of Sonni ʿAli Ber (1464–1492), who embarked on a series of victorious territorial conquests. He took Timbuktu in 1468, Massina of Djenne in 1473, and drove the Tuareg north.[29] There were numerous conversions to Islam, above all among the peoples situated between Bornu and the Niger. They corresponded to a religious awakening and the desire for a connection with the civilisations of North Africa. The Songhay sovereigns took the title of Askia to differentiate themselves from the Mansa of the former Sonni dynasty.[30] The reign of Askia Muhammad (1493–1528) was filled with military expeditions which included the holy war undertaken against the Mossi who attacked Timbuktu in the fourteenth century. Under Sonni ʿAli they were territorial battles, while Muhammad fought the infidels: it was the sign of an effective Islamisation of Songhay power under the influence of the *ulama* or men of religion. At the end of the fifteenth century the Songhay empire stretched west as far as Futa and the Atlantic Ocean, north as far as Teghaza and south as far as Bendougou, in the region of the Wangara and the Mossi. Later these limits would be pushed back to Agadez and the oases of Tuat in the north and to the northern zone of the Hausa country. The chieftains acknowledged their allegiance to the Songhay empire by paying a tribute. The Songhay met with the resistance of the Fulbe in the west, the Hausa in the east, the Tuareg in the north-east and the Mossi in the south.

The important towns in this period were Kano and Katsina in the south, Islamised since the fourteenth century. In the north Timbuktu and Djenne remained the main centres of Islamic teaching. The Askia increased his politico-religious power,

29 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 149–202.

30 Niane, *Le Soudan occidental au temps des grands empires XI–XVI^e siècle* (1975): 40–43.

multiplying imams and qadis and surrounding himself with *ulama* to unite the empire.

The reign of Askia Muhammad (1493–1528) is regarded as the apogee of the empire and the golden age of Sahelian architecture, with numerous building programmes. In 1495, he invaded Diaga in the Massina, and tradition has it that he captured five hundred masons with their chieftain, Karamogho.[31] Four hundred of them were sent to the capital Gao and a hundred were reserved for his brother, Amar Komdiago, who built the town of Tendirma, of which the Friday mosque and the mud palace survive. It was therefore a Songhay mosque, but built by Mandinka masons from Massina. The tomb of Askia Muhammad in Gao also dates from this period. It should be noted that the combination of the *minbar* and the niche *mihrab* appeared under the Songhay.

At the end of the sixteenth century, the north of the empire was occupied by the Moroccans who made an expedition to the salt mines of Teghaza and took the town of Timbuktu in 1591. That was the end of the Songhay empire.

1.3.4 *The Hausa City States, Fifteenth to Eighteenth Centuries*

The Hausa city states were created between the eleventh and twelfth centuries, but never gave birth to an empire. At the end of the fourteenth century the Hausa federation combined seven towns: Gibir, Daura, Katsina, Biram, Kano, Rano and Zaria (Fig. 5). Like "Swahili", the term "Hausa"

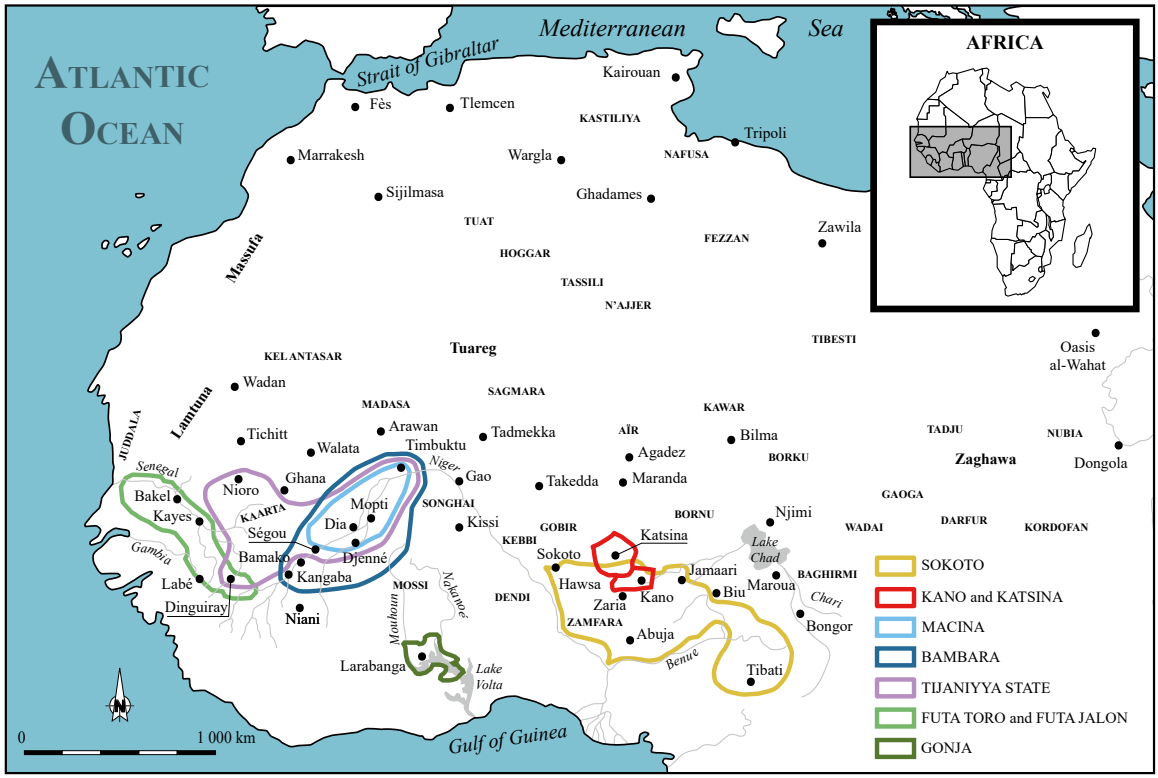


FIGURE 5 Map of pre-modern states and theocracies in West Africa

31 Kâti, *Tarikh El-Fettâch* (1913–1914): 118–9.

is recent. At present the Hausa include tribes of different origins. Their unity is linguistic, cultural, and religious, but not ethnic. They occupy the west and the north of Nigeria, above all the provinces of Zaria, Sokoto and Kano. The Hausa territory is part of the Sahelian savanna, located between the Songhay empire and the kingdoms of Kanem-Bornu, in the south of the territory of the Ullimenden Tuareg, Air and Lake Chad.

The introduction of Islam in the Hausa country was fairly late and goes back to the fifteenth century.[32] At first the Muslim implantation was fragile and was created through the intermediary of merchants. Islam arrived in Kano during the heyday of the empire of Mali, in the first half of the fifteenth century, and in Zaria in 1456. The first mosque of Kano was built under Muhammad Rumfa (1463–1499) and was then completely reconstructed between 1855 and 1883. The mid-fifteenth century was marked by an important commercial activity. Kano, Katsina, Nupe and Zaria were among the merchant towns. At first the Hausa were intermediaries between the auriferous regions of the Volta and the great cities of the Niger valleys. These traders transported other products too, such as kola nuts, salt, glassbeads, metals and textiles. The Hausa country was also a reserve of slaves who attracted foreign Muslim traders and, later, Europeans. The city states reached their apogee in the seventeenth and eighteenth centuries with the development of the Atlantic slave trade.

1.3.5 *The Age of the Fulbe Jihads, Eighteenth to Nineteenth Centuries*

The Fula, Fulani or Fulbe were often called Peuls in the colonial and post-colonial period. The Fulbe had a language of their own, al-Pular. The ethnographers of the colonial era divided them into two groups, the Fulbe or Fulani shepherds and the sedentary populations of mixed race but with the same language, Pulars and Sereres.[33] The Fulbe-Pulars were called *toucouleurs* by the French during the colonial period. From the eighteenth to the end of the nineteenth century several large theocratic Fulani states were founded in West Africa. Based on the *jihad* and a strict observance of Islam, they were very close to the East African movements, and above all to the ones organised in the Sudan and Somalia. These jihadist states appear as a resistance to a new order and the colonialist advance in Sub-Saharan Africa.[34]

1.3.5.1 The Caliphate of Sokoto

In 1786, the Fulbe, who originated from Futa Toro, settled in the Hausa kingdom of Gobir, in the north of present-day Nigeria. Usman dan Fodio was a Fulbe religious leader from Degel who preached in the city state of Gobir, but in 1801 the king of Gobir, Sarkin Gobir Nafata, thought that he was too powerful and troublesome and decided to exile him. Exile was followed by persecutions which strengthened the unity of Usman dan Fodio's followers. He was declared the emir of the faithful and launched a holy war against Gobir in 1804, and then against all the Hausa city states accused of discrimination towards the Fulani pastoral peoples. In 1807–8 the jihadists took the city states of Zaria, Nupe, Kebbi, Katsina, Daura, Kano and Gobir. Usman dan Fodio made Kano his first capital and put at its head Sulayman who became the first member of the dynasty of the emirs of Kano. In 1809, the son of Usman dan Fodio transformed a semi-permanent encampment into a newly funded city, Sokoto. The caliphate of Sokoto became the largest African kingdom of the nineteenth century, situated between present-day Nigeria and Cameroon.

The caliphate of Sokoto united the Hausa city states in a confederation. It occupied about a quarter of present-day Nigeria. Sokoto was then

32 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 283–293.

33 El Fasi & Hrbek, « Etapes du développement de l'Islam et de sa diffusion en Afrique » (1990): 152.

34 Lovejoy, « Les empires djihadistes de l'Ouest africain aux XVIII^{e}–XIX^{e} siècles » (2015).

considered to be the centre of modern Nigerian Islamic doctrines. This period experienced a great architectural activity with regard both to mosques and palaces and to the reinforcement of fortifications. Very few monuments have survived from before the conquest of the Hausa country by the Fulani towards 1800, since they were destroyed by the conquerors on their arrival. After the fall of the Fulani empire of Massina, numerous mosques were supposed to have been rebuilt. There are two divergent local traditions about the origin of these mosques. According to one, they followed new architectural models exported by the Pular recruited by al-Hajj ʿUmar, and were based on the model of the mosques in the conqueror's region of origin. According to the other tradition al-Hajj ʿUmar built, or at least restored, Hausa mosques, such as Bode and Kobilo, on his return from pilgrimage.[35] These two traditions are not incompatible: the mosques could have been built, or rebuilt, on the orders of al-Hajj ʿUmar, and restored, with modifications, at the end of the nineteenth century.

The Fulani invited Hausa builders because of their great experience of mud brick construction techniques.[36] At the end of the 1830s Babban Gwani Mallam Mikhaila was the first Hausa chief architect employed in Zaria by Osman dan Fodio. Moughtin noted a change in the Hausa mosques in the nineteenth century, before the *jihad*, when each mosque had a tower (*sumi'a*), as in Katsina and Bauchi dating from about 1650, while the later mosques, like the one in Zaria, no longer have a tower.[37] The new mosques, however, were built according to the traditional Hausa forms with flat roofs supported by a multitude of pillars and sections of palm tree, split and tightened to form a false dome covered with grass matting under the mud roof. The wider spaces were covered with a traditional system of corbelling (false domes). Kafin Madaki is a magnificent mosque built in this period. In 1824 Captain Clapperton described this rectangular mosque with a square ablution area, seven rows of seven pillars each, and false arches supporting a flat roof, the structure of which is typical of the Hausa mosques.[38]

1.3.5.2 The Fulbe Empire of Massina

In the early eighteenth century, the Bambara of Segou assembled under the leadership of Biton Coulibaly (1712–1755). They created a redoubtable army and formed a kingdom which would reach its apogee under the dynasty of the Diarra (1766–1818). In the second half of the eighteenth century the Bambara reigned along the Niger, between Segou and Timbuktu. They controlled trade between Djenne and Timbuktu, and large villages such as Sarafere, Sa, Dia and Niafounke prospered on the Segou-Timbuktu axes.

The Fulbes of Massina resisted to islamisation for a long time. A substantial part of them had still not converted by the early nineteenth century. It was in this period that the Muslims of Massina reassembled around Sheku Ahmadu, with the help of Osman dan Fodio, to combat the animist Bambara rulers. In 1818, Massina became a theocratic Muslim state in the Inner Niger Delta. Djenne was occupied in 1819, Timbuktu in 1826. In 1820 a new capital was founded Hamdullahi (*al hamdu lillah* "praise be to God"), on the banks of the Bani river, some sixty kilometres north-east of Djenne. There is little historical information about the capital of the Fulbe empire of Massina. No European traveller had seen the town before its destruction. Nevertheless, Ba and Daget recorded a very interesting description of the mosque:

> The mosque of Hamdallay had been built under the direction of masons who had come from Djenne. It had no minaret or architectural ornament of any kind. The walls,

35 Boulègue, « Mosquées de style soudanais au Fuuta Tooro (Sénégal) » (1972): 19.

36 Prussin, "Sub-saharan West Africa" (1994): 188.

37 Moughtin, *Hausa architecture* (1985): 153.

38 Denham, Clapperton & Oudney, *Voyage et découverte dans le nord et dans les parties centrales de l'Afrique* (1826).

> seven cubits high, were made of unmoulded mud bricks. Bifurcated wooden pillars supported the flat roof. They took up less room and did not block the view in the way that stone pillars would have done. There were twelve rows of pillars, oriented north-south and bordering thirteen transversal bays. The mihrab was at the back of the building, to the east, and next to it was a raised pulpit with three steps. On the sides, moreover, there were longitudinal bays, two to the north and two to the south. The former were reserved for the readers of the Qur'an and the copyists who reproduced rare works, and the latter for tailors making winding-sheets. The covered area was preceded, to the west, by a courtyard of about the same size in the corners of which were placed the pottery and the water for the ritual ablutions.[39]

Hamdullahi was excavated from 1988 to 1991, under the direction of Eric Huysecom and Anne Mayor.[40] It was a fortified town: the wall in quadrangular and cylindrical mud bricks covered a surface of 2.5 km^2. In the centre of the town rose the great mosque in mud brick, and the palace of the emperor al-Hajj ʿUmar, protected by a high stone wall. The quadrangular bricks measured 25–30 cm in length, 15–20 cm in width, and were 7–9 cm thick. According to the oral tradition the town was built by masons from Djenne, or at least under their direction. Huysecom's team, however, dismissed this origin since quadrangular bricks were not used in Djenne before 1930. In the nearby villages, on the other hand, they found, at the time of the Fulbe theocratic empire, a type of fine quadrangular brick with the same dimensions as those of Hamdullahi,[41] which could therefore have been the work of labourers recruited in the neighbouring villages.

Previously there were only a few Fulbe and Bambara Muslims in Djenne, of different Islamic confessions. Sheku Ahmadu put an end to the local schisms and built a new great mosque in the town, an example of ideological simplicity and austerity, the mark of an architectural style connected to a reform of religious practices. All the district mosques of Djenne and Timbuktu were closed in order avoid the rallying points of anti-Fulbe resistance;[42] Sheku Ahmadu imposed the Friday prayer in the main mosque and those who did not attend were punished.[43] At his death in 1844, Massina extended from the Muhun river to present-day Burkina Faso and to Timbuktu in the north. Djenne and Dia were the great metropolises of the Fulani empire.

1.3.5.3 The Fulani Theocracies of Futa Jalon and Futa Toro

In 1725, the Fulani chiefdoms reassembled at the heart of the theocracy of Futa Jalon, a feudal and warrior state with Timbo as its capital (1776–1897). At the end of the eighteenth century this confederation included nine provinces, led by a supreme chieftain, *almany*, from the family of the Alfa or Sori.

In Futa Toro, another religious revolution occurred at the end of the eighteenth century. The marabout Sulayman Baal was appointed *almany* in 1776, and then came the turn of the imam Abdul Kader (1776–1804) who proclaimed Islam to be the religion of the State. Under al-Hajj ʿUmar (1794–1864), the Fulbes set out to conquer the Sahelian area.[44] Al-Hajj ʿUmar was born in Halwar in Futa

39 Bâ, & Daget, *L'empire peul du Massina (1818–1853)* (1955): 47–48.

40 Gallay, Huysecom, Honegger & Mayor, *Hamdullahi, capitale de l'Empire peul du Massina, Mali* (1990): 32–33; Gallay & al., *Hier et aujourd'hui : des poteries et des femmes. Céramiques traditionnelles du Mali* (1996): 69–76.

41 Caillé, 1830: 171–2.

42 Bâ, & Daget, *L'empire peul du Massina (1818–1853)* (1955): 212; Monteil, *Une cîté soudanaise : Djenné, métropole du Delta central du Niger* (1932): 151.

43 Barth, *Voyages et découvertes dans l'Afrique septentrionale et centrale pendant les années 1849 à 1855* (1859): 394.

44 Levtzion, "Islam in the Bilad al-Sudan to 1800" (2000): 77–79.

Toro, close to Podor, the home of the Pular. His empire assembled the members of the Tijaniyya in the first half of the nineteenth century. After Futa Jalon and the banks of the Senegal river, it was the turn of the Mandinka and Bambouk territories. Al-Hajj ʿUmar took Nioro in 1854 and destroyed the animist Bambara kingdom of Segou in 1861. The Pular occupied Segou, and then destroyed Hamdullahi, the capital of Massina in 1862. Al-Hajj ʿUmar then formed a veritable Islamic empire called the *empire toucouleur* or the "Jihadist State of the Tijaniyya", which stretched from Futa Toro in the valley of the Senegal river to Futa Jalon in Guinea.

The Fulbes would rule the region until its colonisation. In 1892 the lower basin of the Niger river was occupied by the British and marked the start of the colonisation of present-day Nigeria. The French advanced in the region of Podor and Senegal in 1891, then in the Inner Niger Delta. Djenne surrendered its rôle as an administrative centre to Mopti, which became the new regional capital and a centre of French colonial trade in 1914. Further east the British took the town of Kano in 1903. This was the end of the great West African empires.

1.4 Commerce and Islam in West Africa

1.4.1 *The Forms of Islamisation in West Africa*

After the conquest of the Maghreb, the Arabs crossed the Sahara and entered the *Bilad al-Sudan*. This brief and brutal military incursion contrasted with a Berber wave of Islamisation, more widespread and more pacific, which stretched from the Senegal river to Lake Chad from the second half of the eighth century on. The Berbers of the western Sahara were divided into two large groups: the Ibadi Zenata (moderate Kharijites) who lived on the southern edge of Morocco, and the Sanhaja (Sunni Malikites), whose area of nomadisation corresponded roughly to present-day Mauritania. The capital of the Zenata was Sijilmassa in Tafilalet, that of the Sanhaja, Awdaghust (present-day Tegdaust). At the end of the tenth century the Sanhaja converted a part of western Sudan to Islam. This Islamisation became effective in the second half of the eleventh century. The Fulbe of the kingdom of Tekrur in Futa Toro (north of present-day Senegal) are regarded as the first Islamised Africans. The first manifestations of the practice of Islam in the *Bilad al-Sudan* date back to the eleventh century. The first Islamised centres were Tekrur in 1040 (Senegal), Ghana which was conquered by the Almoravids in 1054, Gao at the end of the tenth century, and Kanem towards 1067. The Lamta and Lamtuna were Berber nomads from the Sahara belonging to the group of the Sanhaja. With the Lamtuna and the Lamta relations were more strained. At the instigation of the jurists of Spain and Morocco, they launched a series of religious wars in North Africa and the south of the Sahara. The destruction of Ghana in the eleventh century resulting from Almoravid raids must be seen in this context. It seems to have been in this period that the Niger bend fell under the influence of the Sunni Malikite Almoravids. A part of the Songhay people refused to convert and left the Niger bend to settle in the Lower Niger: these were the Zarma.[45] Further south the first converts to Islam were the Dyula merchants (Islamised Mandinka), called Wangara in the Arab sources.

Islamisation in the south of the Sahara assumed very different forms according to the period and the groups concerned. Various factors explain the different currents of diffusion of Islam in West Africa: the migrations of populations; commercial exchanges; the rôle of the elites; the military conquest or *jihads*; and finally, the rôle of the Sufi confraternities. In its first stages, African Islamisation was the result of a slow acculturation of the Sub-Saharan milieu by the Arabo-Berber civilisation. The Maghrebi traders and Saharan nomads were of primary importance. The spread of Muslim culture was very slow, extending over ten centuries, from the ninth century to the nineteenth. The Islam propagated by the Berber-speaking

45 Devisse & Vernet, « Le bassin des vallées du Niger : chronologies et espaces » (1993): 22.



FIGURE 6 Map of the diffusion of Islam along transaharian roads

merchants, masters of the Sahara, was far from rigorous and was very tolerant. There were no wars or violent proselytism. The merchants contributed to the development of the urban centres. The connection between the architecture of the Niger valleys and urban culture in West Africa was essential. Altogether there was no deep upheaval. Islamisation remained superficial and was simply juxtaposed to the old African religious traditions.

Starting in the eleventh and twelfth centuries a profound mutation, which lasted for several centuries, affected the societies of West Africa and accounts for the expansion of Islam. Rural and peasant life with districts governed by the customary chieftains turned into kingdoms and city states, and fetishism and ancestor worship were generally abandoned. Islam, practised by the merchants and the court, was an urban type of religion, symbolising a certain prestige. The acculturation of these new African Muslims allowed them to have business dealings with the Arabo-Berbers, and even to compete with them. Here proselytism appeared as a means of dominating the other religions and of imposing a socio-cultural uniformity on the different groups. The spread of Islam, and consequently of the architecture of the mosques of the Niger valleys, was also due to the political expansion of the kingdoms and the empires, and sovereigns developed a more orthodox Islam.

The expansion of African Islam was not systematic. The centres of Islamisation varied with the displacement of the trade routes (Fig. 6). In the tenth and the eleventh centuries they passed through Awdaghust and Middle Senegal (Tekrur, Silla); then, between the fourteenth and the sixteenth centuries, they were shifted eastward, between Walata and Timbuktu, as far as Massina. Islam ran alongside the traditional religion on the periphery of the commercial centres which were home to the clients depending on trade – craftsmen, small time merchants and intermediaries. Finally, in the bush and the forest, on the edge of the waves of Islamisation, the populations were either converted superficially or, like the Mossi and the Bambara, rejected Islam.

In fact, over the centuries, African Islam remained a religion of the court or the merchants,

and not of the people. The great Fulbe *jihads* of the nineteenth century would upset this established order, first by Islamising the societies of West Africa in depth, and then by standardising the practices of Islam. Seku Ahmadu imposed the rules of Qur'anic law. The Friday prayer became obligatory in the main mosque of Djenne and Timbuktu. Every believer had his appointed place and absences were punished.[46] The mosques were rebuilt for political and religious reasons. Seku Ahmadu, for example, was afraid that the district mosques of the two cities might rally the enemies of the Fulani. He then decided to close them.[47] Muslims were forbidden to destroy mosques by Islamic law. Seku thus had these sacred buildings destroyed "naturally" by water by blocking the gutters of the roofs. The strong pressure of the water during the rainy season on the terrace roofs led to their collapse.

In short, West Africa was Islamised in three main phases,[48] first by a Kharijite Islam (mainly Ibadi), and a Shi'a Islam (mainly Ismaili) tolerant and highly syncretic, reserved for the elites; then, in the twelfth and thirteenth centuries, by a Sunni Malikite Islam spread among the people by the great empires of West Africa; and finally, by a Sufi Islam, reformist and rigorous, in the nineteenth century, prelude to anticolonialist wars.

1.4.2 *Trans-Saharan Trade and Islam*

The rôle of the Berber merchants was preponderant. Through commercial relations between the Maghreb and the south of the Sahara they favoured the implantation of Islam in West Africa and the appearance of the first Islamic communities with the great Muslim empires of Ghana, Mali, Gao and Kanem-Bornu. The penetration of Islam through the intermediary of merchants along the axes of communication explains why, at first, it was only the large towns like Timbuktu and Djenne which were affected by Muslim civilisation, as we see from the mosques of Djinguere Ber and Sankore in Timbuktu or the tomb of Askia Muhammad in Gao. Generally, the rural populations were impermeable to this phenomenon of conversion.

Two small Berber kingdoms or theocraties were born on the borders of the Sahara Desert. The Miknasi Berber tribe funded the Emirate Midrarid of Sijilmasa (758–977), they were Kahjirites sufrites. The Emirate of the Rustamid was funded by a Persian with the support of local Berber tribes (761–909), they were kharijites ibadis and had their capital in Tahert. They were replaced in the region by the Fatimid Ismaili Caliphate (909–1171). The Ibadi Berbers controlled the Sijilmasa-Awdaghust axis. The towns of Kumbi Saleh and Awdaghust had lived on the gold trade of Bambuk ever since the eighth century. In the ninth century Awdaghust was ruled by a non-Muslim king and was then conquered by the Almoravids in 1054. Al-Bakri tells us that the population of Awdaghust consisted of Berbers from Ifriqiya (eastern Algeria, present-day Tunisia, and Libya) and from Nefusa, in other words Ibadi populations. The town was built in stone. The main elements of a mosque measuring 75 × 24 m were excavated and surveyed by Raymond Mauny. Today these vestiges have disappeared.[49] Gao (Kawkaw in the Arab sources) was another Ibadi centre founded at the end of the seventh century. Ever since the mid-eighth century Gao had gained sufficient control of trade for the merchants of Tahert (Algeria) to establish close relations with the sovereign of Gao, reputed to be rich in salt. Arab authors such as Ibn Hawqal in the tenth century or al-Bakri in the eleventh century refer to the gold traffic of Ghana, a part of which passed by the Inner Niger Delta towards Gao and Tadmekka (Tadamakka).[50] In the north Gao controlled the trade in the valley of Tilemsi.

46 Bourgeois & Pelos, *Spectacular vernacular. The adobe tradition* (1989): 135, from Barth, vol. III (1859): 394.

47 Monteil, *Une cîté soudanaise : Djenné, métropole du Delta central du Niger* (1932): 151; Bâ, & Daget, *L'empire peul du Massina (1818–1853)* (1955): 212.

48 Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 297–306.

49 Devisse & Robert, *Tegdaoust III* (1983): 21.

50 Nixon, *Essouk – Tadmekka. An Early Islamic Trans-Saharan Market Town* (2017).

Al-Muhallabi, in the last quarter of the tenth century, wrote that the town of the king, reserved for the court, had a mosque:

> On the east bank of the river the king has a town called Sarnat (Sane). It is a town for markets and merchandise. Travellers come from all the neighbouring countries. On the west bank the king has another town, inhabited by him, his soldiers, and his most trusted followers. There is a mosque there where people pray. There is a place of worship (musalla) for Friday between the two towns.

So, Islam penetrated West Africa through the intermediary of trade, along the routes of communication.[51] Trade was conducted from two main poles: first there was the internal or local trade which left from Djenne, the metropolis of the southern Sahel, and from Timbuktu and Gao for the northern Sahel. The products exchanged were cereals, tools and arms in iron, kola nuts, fish from the Inner Niger Delta, rock salt, dates, and horses. Transport was arranged by the Dyula, overland or by river. The second islamisation stream was the trans-Saharan trade. The Moroccans exported to West Africa cereals (barley, corn) and dry vegetables (beans), dates, spices, tobacco, leather, copper, porcelain, horses, guns and powder, together with European products (textiles, tea, coffee, sugar, paper, arms and glasswork) and oriental ones (silk, spices …). The Africans provided ivory, gold (in powder and small lingots), jewels from Djenne and Timbuktu, slaves, blue indigo tissues, cowries, and animal skins … Transport as far as the savanna of the south, via Djenne and Timbuktu, was organised by the Arabo-Berbers and local representatives such as the Dyula, Songhay and Fulani.

The principal routes of communication were multiple. The western route passed by the kingdom of Ghana (Kumbi Saleh, Walata, Awdaghust) and went up towards Sijilmasa (in the south of Morocco). This route was abandoned in the course of the twelfth and thirteenth centuries after the fall of Ghana, the destruction of Kumbi Saleh, and various problems such as lack of water and sandstorms. Further east the tracks led to Gao, crossed the Sahara as far as Tadmekka in Adrar and the salt mines of Teghaza, to reach the Mediterranean. This route was used above all under the empires of Mali and Songhay (fourteenth to sixteenth centuries). The eastern routes, finally, connected Tripoli, Tunis and Egypt with the kingdoms of the central Sudan such as Kanem, Borno and the Hausa towns.

At the end of the sixteenth century the commercial organisation of the Niger bend remained the same despite political changes, such as the Moroccan conquest and the intensification of European traffic on the African coast. The caravans chose the Atlantic axis with direct connections between Walata and Djenne via Timbuktu or passed by Goundam and Sebi. The eastern network crossed Tuat, the transit point of Moroccan pilgrims from Fez and Taza going to Tripoli and Egypt through the Algerian oases of the M'Zab.

From the fifteenth to the sixteenth centuries the commercial network was in the hands of the Malinke merchants: the Dyula and the Wangara (Fig. 7). The Dyula Muslims were installed on the Niger bend in the present-day Ivory Coast and Burkina Faso. They were organised in chiefdoms, especially in Korhogo and Bobo-Dioulasso. Their networks connected Djenne with the forest regions which produced gold and kola nuts, up the river towards Segou and Bamako or in the direction of Kong and Ashanti in the southeast. San and Bobo-Dioulasso were the principal stages of this journey. These traders spread Islam to the forest areas of Upper Volta.[52] The conversion often remained superficial. The Dyula, however, played an important part in Kong, where they founded a centre of Islamic studies. The

51 McCall, "Islamization of the Western and Central Sudan in the eleventh century" (1971): 1–30; Willis, "Reflections on the diffusion of Islam in West Africa" (1979): 1–39.

52 Wilks, "The Juula and the expansion of Islam into the Forest" (2000): 93–115.



FIGURE 7 Dyula mosque of Sorobango

town was representative of the architectural style of the Dyula, who even founded a little kingdom in the eighteenth century with Kong as its capital. The second mosque of Kawara is also considered a model of seventeenth-century architecture.[53] In the north of present-day Ghana the kingdom of Gonja was founded by Malinke conquerors from the region of Djenne in the mid-sixteenth century. It was in this period that the region was Islamised.[54] According to the local chronicles the mosque of Buipe, capital of Gonja, might date back to the end of the sixteenth century and the reign of King Manwura who had it built next to the tomb of his predecessor, Namba.[55] The kingdom was a crossroads at the far end of the Sub-Saharan trade routes between the Niger and the forest area. It was there that salt, kola nuts, gold and slaves were exchanged. The chiefs of Gonja had alliances with the Muslim Wangara traders.

Parallel to the Dyula network, the Yarse Mossi established direct links between Timbuktu and the land of Ashanti during the seventeenth and eighteenth centuries. They avoided Djenne and the Inner Niger Delta by skirting the basins of the Volta in the direction of Bobo-Dioulasso and Bani in the west and the Hausa country to the east. A first track served Timbuktu by way of Douentza, Korientze and Dire, another by way of Bandiagara,

53 Prussin, *Hatumere: Islamic design in West Africa* (1986): 169.

54 Genequand & alii, "Excavations in Old Buipe and Study of the Mosque of Bole (Ghana, Northern Region): Report on the 2015 Season of the Gonja Project" (2016): 25–66.

55 Genequand & alii, "Excavations in Old Buipe and Study of the Mosque of Bole (Ghana, Northern Region): Report on the 2015 Season of the Gonja Project" (2016): 53–64.

Konna and Korientze. The trans-Saharan trade between Morocco and the Sudan was thus very fruitful and was uninterrupted until the early nineteenth century. The Algerian provinces of Tuat and M'Zab were enriched thanks to the trade with Sub-Saharan Africa and the towns of Ghardaya, Metlili, and Wargla in the west and Gabes or Ghadames in the east.

1.5 Technology and Construction

1.5.1 *Masons and Builders*

In contrast to the mosques of East Africa, we have a great many ethnographical descriptions of the building technique of the mosques of West Africa for the simple reason that it was still being practised during the colonial period and is in use to this day.

The construction of a mosque was sometimes the work of specialists. In other cases, it was the result of a collective village enterprise due to the solidarity of a community: the male members of an extended family or of a village association were directed by experienced masons. Apart from the elderly and disabled, all age groups took part, even children. Those who no longer lived there would signal their participation in the construction by contributing to its costs, something which demonstrates not only alliances but also unchanging social ties. In the case of a long and hard assignment, foreign ethnicities would be invited, such as the Dogon of the Niger Delta.

Traditionally in West Africa there was a distinction between the work of men and the work of women. The men mixed the earth, prepared the bricks (Fig. 8), and put up the walls and the roof, while the women brought the water, the earth, the wood for heating, and made the surface plastering and the decorations.[56] A master mason was responsible for the co-ordination of the different stages of construction. He came from the town



FIGURE 8 Mixing the mud for the bricks, Djenne

56 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 158.

or its neighbourhood, as did the little group of masons who worked with him. There was no architect in the modern sense of the word. The master mason worked without a plan, which is why the mosques were not really standardised.

The masons, or *bari* in the region of Djenne, were reassembled into a caste directed by a master.[57] The profession of the mason was powerful and respected, at least in the vicinity of Djenne. The Bozo of Djenne were regarded in the Delta as masons with a great experience.[58] Trained ever since their childhood, they provided a specialised work force. They took part in the construction of the mosques of Mopti, Guindio-Sare and Bore. The masons of Dia were in demand in the entire region, from San to Mopti.[59] According to the *Ta'rikh al-Fattash*, compiled between 1519 and 1665, the masons of Dia had been active since the end of the fifteenth century. The village mosque of Sirimou, built in the 1960s, is a replica on a smaller scale of the mosque of Djenne. The masons of Sirimou had close ties with those of Djenne, and they even worked together to build a group of mosques outside the region of Djenne. The village of Worondjikoy, for example, situated between Djenne and Sirimou, ordered a mosque to be built by the masons of Sirimou.

The traditional tools were the pick with which the mason extracted the earth, worked it, and pushed back the deteriorated plaster of the walls. The mortar was prepared in wicker baskets and calabashes, which were used too for the transport of the building materials. For this purpose, they also used a stretcher carried by two workmen.[60] The mason's main instrument was a sort of large multipurpose adze used above all for working the wood. The modern tools of European origin were the metal trowel with a wooden handle, the plumbline, the spirit level and the folding rule. Amongst the Hausa of Nigeria the dimensions were determined with reference to the human body. The finger, the hand, and the forearm were all metrical units. The base of the arches was level with the head or the shoulder, except in Zaria where the arches sprang from the floor. The construction material and technique of the mosques, finally, hardly differed from those applied to profane buildings. At the beginning of the twentieth century Charles Monteil wrote:

> The only instrument with which the Bari work is a sort of iron paddle fixed to the barrel of an old gun. They use it as a pick for cutting bricks or masonry. They have neither trowels nor grouting tools and only use their hands to place the mortar and to spread and consolidate the plaster. An apprentice then kneads the earth with his feet. The bricks, finally, are made without a mould with a clay soil, as free of sand as possible, and are only dried in the sun. They are unacquainted with the level and the plumbline, and judge what has to be done by eye.[61]

The salary of the workmen was very low, but food was free.[62] They could be paid in kind – rice, millet, cows, or sheep distributed after the mosque had been completed. The construction of a mosque was financed by all the inhabitants. In the words of Marty:

> People paid according to their means: the poor brought stones, sand, clay and lime; others provided labourers. The rich sent trunks of palm trees bought at great expense from the south. They paid for the music of

57 La Violette, *An archaeological ethnography of blacksmiths, potters and masons in Jenne, Mali* (1987); Marchand, *The Masons of Djenné* (2009).

58 Decque, « Les chefs-d'oeuvre en terre du peuple de l'eau » (1994): 70.

59 Beaudoin, *Architecture du fleuve* (*Le Niger de Djenné à Gao*) (1978): 30.

60 Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 75.

61 Monteil, *Monographie de Djenné, cercle et ville* (1903): 196.

62 Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 76.

> the tambourins, flutes and castanets, the games and the dances of the mountebanks, the songs of the griots, the banquets of beef and the calabashes of rice which accompanied the work of the masons.[63]

Louis Decque, a French architect, attended the construction of the mosque of Koa in Mali in 1994. While loudspeakers broadcast music accompanied by drums and balafons, the walls of the sacred building were set up, without a rule or a plumbline, on a design traced in the ground by a master mason. The clay was mixed with the earth derived from the demolition of earlier buildings and the powder of rice husks used against termites and which prevents the banco from splitting in the sun. The earth was kneaded by hand and foot and then left for a night. On the next day, the bricks were shaped in a wooden mould, square ones for the walls, round ones for the columns, and pointed ones for the arches and towers. The drying took four days, after which the bricks were withdrawn. When Decque returned three months later the mosque had been completed. The architect only gave a brief description of the building: it had a square tower, an entrance set in an ovoid arch and surmounted by a round turret, the pointed extremity of which was capped by an ostrich egg, a crescent moon, and a metal star.

The duration of the construction of a mosque obviously depended on the importance of the project. It could be protracted for two years, as in the case of the mosque of Mopti. The mosque of Bore, with a surface of 472 m^2, was built in 1932. It took about a year of work, with interruptions owing to the lack of material. The mosque of Sibo, with a surface of 189 m^2, was built in 1977 and took 25 days. The mosque of Tingole, finally, with a surface of 80 m^2 without the courtyard, was completed in 60 days in 1983. At the end of the works a great feast was organised by the inhabitants of the village or of the town, as well as of the neighbouring villages. They brought offerings that they shared with the community.

1.5.2 *The Building Materials*

The principal material of the West African mosques was earth extracted with the help of picks in the vicinity of the building site.[64] It was cleared of pebbles and mixed with vegetals and water. The clay of Djenne and its surroundings was reputed to be of good quality since it was rich in alluvial deposits from the river Niger. The bricks of the ruins of earlier mosques were often reused directly as building material or reduced to powder before being added to the clay. The mixture was kneaded by foot until it formed a thick paste.

The components of the mixture and their proportions depended on their ultimate utilisation. For the bricks, minced rice or fonio straw was added to the earth to obtain a drier and harder consistency. For mortar, a binding material of cow dung was added to obtain a stickier and more liquid consistency. Mortar, used as paste, was prepared with the utmost care. It had to provide a reliable resistance against water for the outer façades and the roof. For that purpose, one or more combined elements were added: loppings of rice, manure or dung, the powder of the fruit of the baobab, the earth of the termitaries, the blood of animals or, more rarely, karité (or shea) butter. The damp mixture was then left for two or three days for the bricks and at least three months for the mortar. In this time the coarse vegetal structures were destroyed by rot, and the colloidal substance obtained hardened after drying.

The mud bricks were formed with the help of a wooden mould. The moulds were filled with

63 Marty, *Etudes sur l'Islam et les tribus du Soudan, II. La région de Tombouctou* (*Islam songaï*)*, Djenné, Le Massina et dépendances* (1920): 68.

64 Beaudoin, *Architecture du fleuve* (*Le Niger de Djenné à Gao*) (1978): 30; Cressier & Bernus, « La grande mosquée d'Agadez (architecture et histoire) » (1984): 10; Gardi, *Maisons africaines* (*l'art traditionnel de bâtir en Afrique occidentale*) (1974): 53; Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 61–3; Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 124–38.



FIGURE 9 Building with djenne ferey bricks, mosque of Djenne

earth heaped in by hand. The bricks were then withdrawn and dried in the sun for two or three weeks, after which they were heaped up and stored. This had to be done in a cool and dry season, between November and February, in order to avoid the splits and cracks which might be caused by the wind and an excessively high temperature. It also corresponded to a slack period where agricultural labour was concerned. The use of rectangular bricks has been recorded in certain West African sites over several centuries. They were formed by hand and were used mainly in Bambara buildings.[65] The introduction of moulded bricks allows us to establish the age of a building, as we shall see later. René Caillé observed the existence of non-moulded rectangular bricks in the villages between Oulasso and Djenne:

> These bricks, 30cm long, 20cm wide and 6cm thick, are made without the assistance of a mould. Once the earth has been thinned into a convenient consistence the builders spread it on the ground in very long layers. When they are half dry, they cut them and turn them from one side to another in order to complete their desiccation.[66]

Round or cylindrical bricks were shaped by hand in the town of Djenne and the Upper Niger Delta (Fig. 9). These bricks, called *ferey* or *djenne ferey* in Songhay, had to be assembled with a great deal of mortar, something which explains the fluid contours of the old buildings. The rectangular bricks formed with a mould are called *tubalu ferey*, after a Hausa expression which means "brick of the Whites". The moulds were frames between 30 and 40 cm long by 15 to 20 cm wide and 10 cm high. They had a handle on each side and could be obtained in all the great markets from the Ivory Coast to the Niger. These figures are valid for Mali and the central and western Sudan and are the same as those

65 Monteil, *Monographie de Djenné, cercle et ville* (1903): 131; Monteil, *Une cîté soudanaise: Djenné, métropole du Delta central du Niger* (1932): 183.

66 Caillé, vol. 2 (1830): 172.



FIGURE 10 Façade with torons, mosque of Mopti

indicated by Charles Monteil 65 years ago.[67] The *tubala* or rectangular bricks were used in the great mosque in Djenne, where we also find cylindrical bricks in the earliest parts.[68] On the Middle Niger and in the Hausa country the bricks were shaped by hand at least until the 1960s.[69] The conical bricks of the Hausa were between 5 and 15 cm in diameter. In the region of the river Niger, the *tubala* were replaced by quadrangular bricks.

Lumber is rare outside the forested area of the south, but in the south-east region of Pondori, close to Say and in the vicinity of Djenne, small forests of palm trees have survived. The material most widely used was the rônier or fan palm (*Borassus Aethiopium*), while the doum-palm or dark brown palm (*Hyphaene Thebaïca*) is the most characteristic of the northern edge of the Niger flooded plain. The rônier palm tree has a finer and larger trunk which makes it ideal for frameworks.[70] In contrast to earth, wood has a good resistance to traction. In the region of Djenne, the trunks and beams of palm wood were used for binding party walls to the outer walls. Amongst the Hausa buildings, there were often horizontal beams in the walls which formed a reinforcement to brace the earth. Wooden lintels for the windows and the doors were also used in all the regions. The *toron*, characteristic of the mosques of the Middle Niger and the north of the Volta, are branches which have hardly been worked or palm wood which has simply been split (Fig. 10). They serve as a framework but also provide a permanent scaffolding for the restoration works on the façades. Their decorative value is pre-eminent. The large branches are integrated in the façade in ones or twos, while the palm leaves are always mounted in bundles. The *toron* overshoot the wall by about half their length. They also decorate the buttresses. The pieces of wood on the façade are placed in the shape of a

67 Monteil, *Une cîté soudanaise : Djenné, métropole du Delta central du Niger* (1932): 182.

68 Domian, *Architecture soudanaise* (1989): 51.

69 Haselberger, "Zur traditionellen Architektur der westafrikanischen Niger: der Bauvergang in den westlichen Guinealändern und im Westsudan" (1963): 193.

70 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 115.

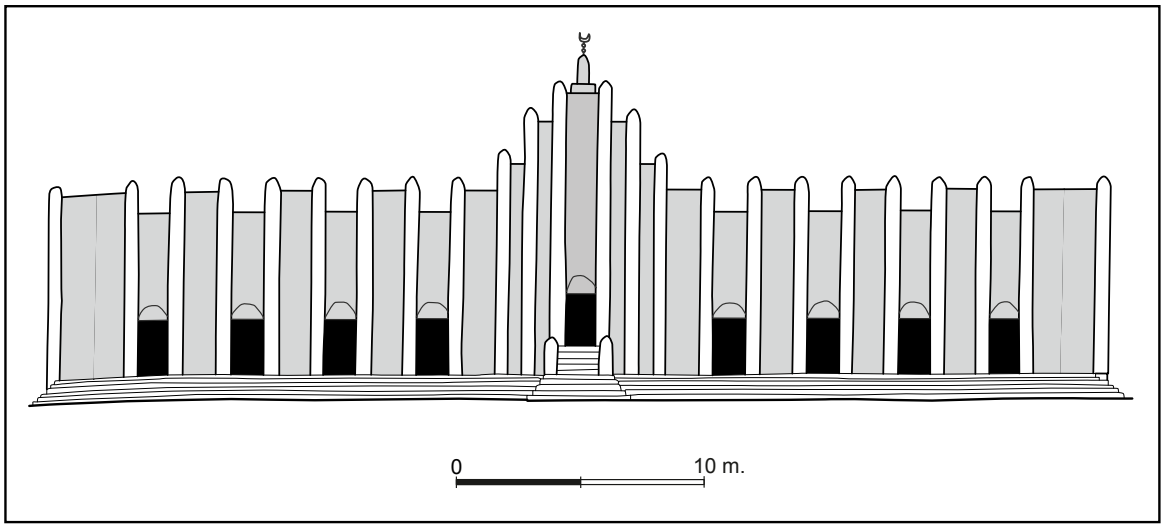


FIGURE 11 Façade tile works in Goundam Mosque, Kona

cross on the modern pilasters which are more decorated. In the mosques with two towers of Burkina Faso and the Ivory Coast, the horizontal pieces of wood clamped between the buttresses are a supplementary stabiliser of the structure.

Stone is sometimes used in the shape of rough ashlar blocks for the base of the walls and above all for the foundations, as in the mosque of Agadez, as well as for the plinth of the minarets. In the mosque of Assode (Air, Niger), now in ruins, the walls were in ashlar blocks of a local rock bounded with mud brick and covered with an earth coating.[71] The ashlar blocks were square modules with sides of between 12 and 15 cm. In the Djinguere Ber mosque the stone known as "Timbuktu" stone is simply a lacustine clay extracted from the quarry of El Horgoussou, 18 km north of Timbuktu. This clay has been used to cover the vaults of the west part of the mosque, the *mihrab*, and the outer walls.[72] This sort of kaolinite clay, it has the same function as a lime coating: it insulates and decorates.

Examples of buildings in baked (fired/red) brick are rare south of the Sahara before the colonial period. Apart from the region of Lake Chad[73] and the Kanuri country[74] in Nigeria, only the site of old Gao has this particularity, with a *mihrab* in baked brick dating from the fourteenth century. Prussin gives two main reasons for the rejection of baked brick in the western Sudan: on the one hand, a lack of combustibles for the baking of the bricks on account of desertification, and on the other, a conflict in the sexual division of labour connected with the African social structure and system of values. The combustible material was collected by women, while it was the men who made the bricks.[75] Nevertheless in the region of the Delta, in the early twentieth century, little ceramic tiles were made to cover the floor of the inner chambers and platforms. In the last thirty years, they have been used to cover the points of certain towers and pinnacles, as in Timbuktu. They also cover the façade, as in Dire, Goundam, Kona and Dia (Fig. 11). These tiles protect the earth from bad weather and diminish the frequency of repairs. The squares are assembled with a clay mortar, the

71 Cressier, « La grande mosquée d'Assodé » (1989): 141.

72 Caillé, vol. (1830): 335; Mauny, « Notes d'archéologie sur Tombouctou » (1952): 904.

73 Binet, « Notes sur les ruines de Garoumélé, Niger » (1952): 1–2.

74 Bivar & Shinnie, "Old Kanuri Capitals" (1962): 1–10.

75 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 141.

same as is used for the baked bricks. Their dimensions vary from 15 to 22 cm long by 7.5 to 15 cm wide and 4 cm thick.[76]

Finally, the mosques of the twentieth century follow the development of the domestic habitat and are frequently covered by a roof in corrugated iron. The roofs then slope down as at Dougouba. Corrugated iron is used more frequently for doors, as in Dire, Segou or Tancinat. In Mopti, cement tends to replace clay in the repairs of surfaces. In the mind of the villager's cement and corrugated iron increase the value of the mosque since they are manufactured products of European origin.

1.5.3 *The Foundations*

The ground of the building site must be flattened before the work begins by a process of levelling and in some cases the creation of a terrace. On a sloping surface the changes of level can be compensated by steps inside the building, as in the mosque of Guindio-Sare in Mali. The ruins of the abandoned mosques were entirely evacuated before starting work on a new building. And yet there are a few exceptions: the new mosques of Sebi, Dougouba or Sibila were built on the remains of previous constructions.[77] The monumental podium of the mosque of Djenne, moreover, is interpreted as a heap of the remains of an earlier edifice. The only way to prove this would be archaeological excavations. The earth plinth often protected the walls from rainwater and the periodical floods which occur in the Delta, as in Daka Womira in Mali.

The imam, assisted by a dignitary, would then determine the orientation of the mosque, turned east towards Mecca. The mosques of West Africa are sometimes oriented with a variation of 15° with respect to the east. For Dorothee Gruner, this can be explained by simple methods of determination, without the use of any calculation tool, which would not exclude a margin of error. Raymond Mauny advanced another hypothesis: in the whole of the Maghreb and the Maghrebi colonies in the south of the Sahara, all mosques once followed the *qibla* of the great mosque of Kairouan (115° east of the geographical north).[78] It is possible that this tradition was perpetuated in Sub-Saharan Africa. The imam would say a first prayer on the site of the future *mihrab* and would then draw the line of the *qibla* wall on the ground. The alignments of the walls are determined with the help of ropes to this day.[79] The foundations of the walls are usually composed of mud bricks, two layers of which are generally sufficient.

1.5.4 *The Walls, the Pillars and the Coatings*

A considerable amount of clay is needed to build a wall of mud brick. For the wall not to be deformed under its own weight the mason has to interrupt his work after each row of bricks and leave enough time for the mortar to dry and harden. This momentary pause is even more important since the mason works without any scaffolding or ladder. He sits astride on the wall, while a workman at the foot of the wall throws him the mud bricks which he needs. The mason on the wall works back and forth and the wall must bear his weight. The thickness of the walls rarely exceeds 65 cm for the mosques built in moulded bricks, as at Diafarabé in Mali. The walls in bricks modelled by hand are far thicker, as in Dougouba. To reinforce the stability of a construction in mud brick the thickness of the walls decreases towards the summit. The architecture of the Niger valleys is often composed of oblique walls, and rarely offers vertical lines.

The mud supports are square (pillars), rectangular (stacks), sometimes round (wooden poles or columns), or cruciform in the Hausa mosques, as in Zaria. Bifurcated wooden poles are very rare,

76 Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 74.

77 Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 60.

78 Mauny, « Notes d'archéologie sur Tombouctou » (1952): 903.

79 Gruner, *Die Lehm-Moschee am Niger; Dokumentation eines traditionellen Bautyps* (1990): 61.



FIGURE 12 Bouna Mosque, Mali

as in Bandiagara in Mali. The supports are often connected to each other by a series of straight or curved lintels, or even arcades. The pilaster, column or engaged pillar in a wall, forming a slight protuberance, generally has the function of a buttress, which is to say that it serves as a support for the wall or the spring of the arches and thus bears a part of the load. On the outside buttresses stabilise the construction and have an ornamental rôle in creating a shadow play on the bare façades (Fig. 12).

The walls are covered with layers of plaster added over the years, and thus gain in solidity and thickness. The mud plaster adjusts the irregularities of the wall and smooths the surfaces, but it is above all a protection against the weather. It is spread by hand on a thickness of 2 to 5 cm on the exterior façades. The last layer is finished off with semicircles traced with the fingers (Fig. 13). In the Hausa mosques the large arches are obtained by a circular sweep of the forearm and fine grit is added in the fresh plaster by a spatula. The Hausa rough coats are particularly resistant to bad weather and can last for five or six years without being restored. The most used is *laso*, prepared with a deposit of indigo recuperated from the dyers' vats. *Makuba* is a dark maroon-purple coating. The most expensive plaster is *cafe* with a basis of black earth extracted from wells. The superposition of layers of plaster, when it is visible, could be a means of dating a building. Dubois applied this method to the old mosque of Djenne, destroyed in 1830 by Seku Ahmadu:

> On the massive walls of the façade, which are normally just over a metre thick, I found layers of successive replastering which were no less than 90 centimetres thick! Now, judging from the old houses, the masons counted 12 centimetres per century, which takes us back to the end of the eleventh century, and this date corresponds to the one given us in the Ta'rikh.[80]

The inner chambers are also plastered with mortar and sometimes whitewashed with lime, as in

80 Dubois, *Tombouctou la mystérieuse* (1897): 183.



FIGURE 13 Annual replastering of of the minaret, great mosque of Djenne

Segou. Only a very few mosques are painted on the outside with a dyed clay mud. Hematite mixed with earth, for example, gives it a red brick colour, as in Segou and Zinzana. In Daka Womira and the mosques of Kounari to the north of Mopti, the battlements and the points of the towers are daubed in white, while the mosques of Kong or Kawara are entirely painted in white.

The mud brick walls require a regular upkeep to resist the bad weather. The plaster is generally restored every year at the end of the dry season, but in the mosque of Agadez the outer replastering is done roughly every two years. The maintenance of the buildings forms an important social bond within the communities (Fig. 14). The restoration of the plastering of the mosques is celebrated by a collective banquet. The renovation of a Friday mosque or a village mosque is performed by all the inhabitants, while a district mosque is only renovated by the residents of the district



FIGURE 14 Annual replastering festival in Djenne

concerned.[81] Nowadays certain masons add cement to the plaster, as they have done ever since 1980 on the upper parts of the mosque of Mopti.

1.5.5 *The Openings, Doors and Stairways*

Most of the mosques have wooden doors. Doors with a single leaf have a mass of slats nailed or tied with string. The door is closed by a sash-bolt or a wooden bolt inserted in the mud brick door jamb. It turns thanks to hinges, or a stone sock placed on the floor or even in a hollow of the lintel. The doors open both inwards and outwards. The most recent doors are in slats of wood furnished with corrugated iron, hinges, and a metal lock. Certain mosques have richly worked wooden doors. The district mosque of Lampour in Salaga "has doors carpented by Ashanti workmen and its various parts are adjusted in European style with nails and points from Europe".[82] To prevent cattle from passing through, the openings are also obstructed by gratings, as in Komara in Mali, poles as in Koumaïra, also in Mali, and sometimes by suspended mats. The windows, of small dimensions, have disadvantages for the lighting and airing of the chambers. They are generally closed by a shutter in wood or in corrugated iron, or simply by a grating in wood, mud brick, stone or cement, in a Moroccan style.

Generally, the stairways consist of wooden beams. The steps are made with bricks. For the large stairways with several flights, as in Djenne or the minaret of Agadez, stairheads have been installed in wooden billets. The billets are supported by the front wall or the pivot of the tower. Most of the time there is a disproportion between the height of the steps, which can reach 40 cm, the narrowness of the entrance, and the height of the ceiling of the covered stairways, and one must bend down to go up or down the steps. Niches in the walls serve to contain the water jugs for the ritual ablutions, the prayer mats, and the stretchers for the bodies of the dead for the funerals.

The elements which support the roof are in wood, and this limits the width of the rooms and the load of the covering. These technical conditions determine the choice of how construction should proceed, methods being applied by the Hausa which are different to those of other

81 Marty, *Etudes sur l'Islam et les tribus du Soudan, II. La région de Tombouctou* (*Islam songaï*), *Djenné, Le Massina et dépendances* (1920): 68.

82 Binger, *Du Niger au Golfe de Guinée par le pays de Kong et le Mossi* (1892): 92.



FIGURE 15
Pillars in the mosque of Mopti

mosques in the Niger valleys. In the mosques of the Niger valleys, the load of the terrace roofs weighs not only on the outer walls and buttresses (Fig. 15), but also on the supports (stacks, pillars, columns, arcades) (Fig. 16).

1.5.6 *The Ceilings and Roofing: Terraces and Cupolas*

The ceiling of the prayer room is made of a structure of branches of wood or more generally of trunks of palm trees split in two or sometimes in four. In general, it is the *Borassus Aethiopium* palm tree which is most resistant to rot and attacks by termites. The ceiling gives an impression of coarse workmanship. Only the coverings of the mosques of the Delta are executed with care. In most of the mosques the beams are masked by a layer of plaster. The length of the pieces of wood used for the building never goes beyond 2 to 2.5 m, and this explains the feeble width of the transversal bays and those of the galleries of the courtyard usually limited to 1.8 m. The ceiling with a wooden framework is covered by a layer of mud mortar, and then by an intermediary layer of plaited mats or palm leaves, which avoids large splits. A layer of mud bricks follows, then a new layer of mud, and finally a plaster (Fig. 17). The result is a massive and thermically isolating covering anything up to 60 cm thick.

The floor of the inner chambers is made of a compressed earthen plaster. It is as hard as a coat of cement. In certain regions fine grained sand is



FIGURE 16 Pillars in the mosque of Djinguere Ber, Timbuktu



FIGURE 17 Azara in the Mosque of Djinguere Ber, Timbuktu

used to adjust and fill in the holes in the ground. In Agadez the floor of the terraces consists of a layer of compacted banco some ten centimetres thick. It is restored on an average of every ten years. The floor is covered with mats. The roofing of the mosques of Assode and Chinguetti is composed from bottom to top of beams in wood of doum-palm and sometimes of acacia (Fig. 18); rafters of doum palm perpendicular to the beams, rough straw plaited into rafters and sometimes alternated with finer matting in leaves or strips of leather; and finally, by a thick layer of ash-grey earth mixed with straw and various forms of refuse (shards, bones, wood, etc.).[83]

The Hausa mosques are remarkable for two types of roofing. First, the flat terrace roofs are supported by mud walls for a small square or rectangular surface with a side of up to 2 m. Beyond that, horizontal brackets, made of rows of assembled wooden sticks, are used on one or two walls. They support the planks parallel to the walls. *Azara* (beams of doum- or deleb-palm wood, resistant to termites) are then placed on the brackets in parallel rows. After that the two opposite walls are connected by *azara* perpendicular to the first ones. Another method consists of beginning with the corners of the building, covering them diagonally with triangles of *azara*, then connecting them to each other by transversal *azara*. The layers are often superimposed to form a relief in the centre of the building. A layer of mud and a final plaster give the impression of a flat dome (Fig. 19). For larger surfaces a central pillar supports long brackets connecting one wall to the other, on which lean the beams of the covering.

The second type of covering are the Hausa cupolas,[84] which we find both in the architecture of the mosques and in the palace architecture of Korgom, Bouza, Kantche or Dosso, as well as in regional mosques such as Zaria. Above 3.5 m, and for rooms with sides of up to 8 m the space is covered by a mud brick arch. In fact, it is not a proper arch but a reinforcement in *azara* coated with mud. The arch is formed from the vertical brackets which are superimposed obliquely to obtain a horizontal junction in the centre. The spaces between the arches are then filled by the *azara* to form vaults (Fig. 20). The construction of a vaulted roof supported by two arches begins with the corners of the chamber which are covered diagonally by *azara* forming triangles. These are then joined two by two by *azara* parallel to the opposite walls, while diagonals are formed by the intersection of the arches. Finally, some lighter beams form the arms of the vault. The wooden structure is then covered again by vegetal matting, clay, and a mud plaster resistant to bad weather.

The terrace (flat) roofs have a slight declivity. The roof of the largest mosques often has wide drains which correspond to the empty spaces between the rows of inner supports. The rainwater is directed towards the gutters on one or more sides of the building. The gutters are made of wood or clay pipes covered in plaster. The ceramic gutters are only known in the region of Djenne.[85] The gutters carry the water to the gargoyles, long hollow pieces of wood, sometimes pipes in ceramic, with an inclination of between 15 and 20°, at 50 cm from the wall. They have the same shape in all the regions concerned. The pipes narrow slightly at their extremity (Fig. 21). The outer tip sometimes has either a "lip" (Zangarata, Niger), or a cuff (Koumaïra, Mali), and more generally an end cut in a point with a linear border (Togonrogo, Mali). Transversal grooves of red slip provide a

83 Cressier, « La grande mosquée d'Assodé » (1989): 141.

84 Moughtin, *Hausa architecture* (1985): 107; Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 68; Dmochowski, *An introduction to Nigerian traditional architecture* I (1990): 1.45.

85 Gruner, *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (1990): 66.



FIGURE 18 Wooden tree ceiling in the mosque of Chinguetti

restrained decoration on the shaft of the pipe. In the region of Mopti the gargoyles measure at least 85 cm in length by 15 to 17 cm in diameter, and 12 to 14 cm for the narrowed tip.

The pinnacles crown the pilasters, the corner pillars, and the towers (Fig. 22). In certain cases, they are placed independently on the parapet like merlons. Upturned clay pots protect the tips of the towers, pillars, buttresses, and battlements from the weather. This arrangement can be found in the houses of Djenne. An ostrich egg is fixed to the tip of the tower. This pre-Islamic symbol of life remains one of the commonest ornaments in the mosques and the houses. The disappearance of ostriches in West Africa makes difficult the acquisition of these eggs. They are consequently often replaced by the religious symbols of the moon crescent and the star in bronze, copper, or iron, or by an ornament in ceramic. The corniches are in various ornamental shapes.

The mechanisms of ventilation are in ceramic. Although they are frequent in the houses in the

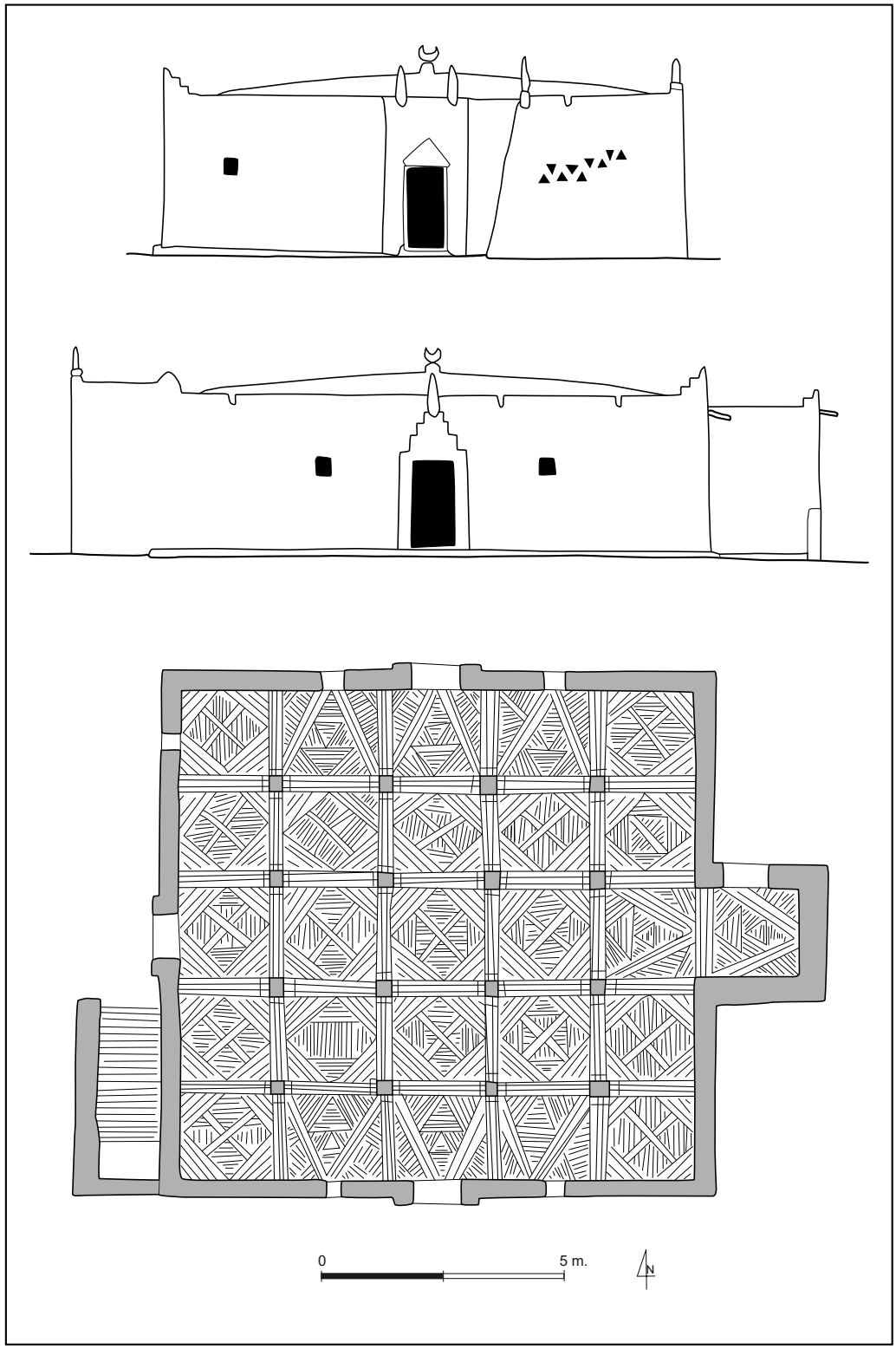


FIGURE 19 Flat dome of Hawsa mosque in Chiginawen



FIGURE 20 Squinches in the mosque of Zaria

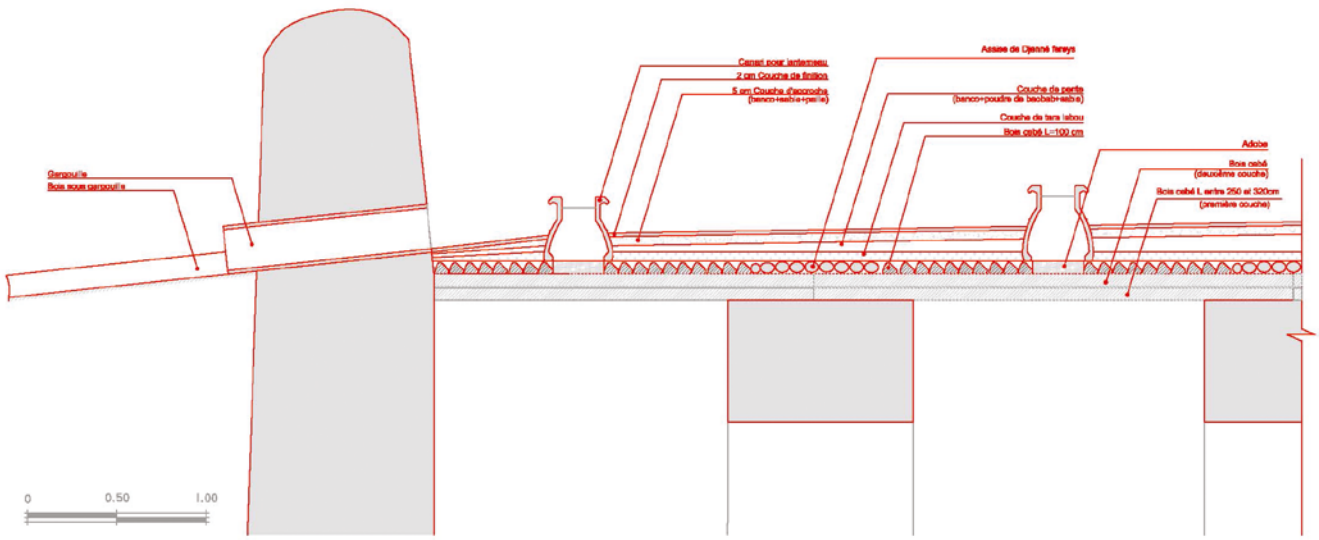


FIGURE 21 Section of the roof of the great mosque of Djenne and ceramic pots as ventilation mechanism



FIGURE 22
Merlons or pinnacles (zanko), great mosque of Mopti

south of the Delta, they can only be found in mosques in Djenne. On the roof little protuberances of mud are covered by ceramic pots (Fig. 23). Certain systems of ventilation are shaped like spherical pots prolonged by a communication pipe as far as the inner chamber (Fig. 24). This principle allows the transmission of sound between the flat roof and the prayer room. In contrast to the mechanisms of ventilation it is isolated and close to the *mihrab*. It serves for the call to prayer and makes it possible to follow the activity of the imam on the roof. The ceramic structures were made by women according to the traditional techniques of pottery baked in the open air (Fig. 25). Nowadays the gutters and gargoyles are made by men and baked in a simple oven.[86] Togonrogo (Mali) is an important workshop in the south of the Delta which produces gargoyles for distribution on the market of Mopti.[87]

86 Gruner, "Der traditionelle Lehmbau und seine Problematik, Entwicklungstendenzen am mittleren Niger (Mali)" (1981): 46.

87 Gruner, *Die Lehm-Moschee am Niger; Dokumentation eines traditionellen Bautyps* (1990): 75.



FIGURE 23 Ceramic pots ventilation system, great mosque of Djenne

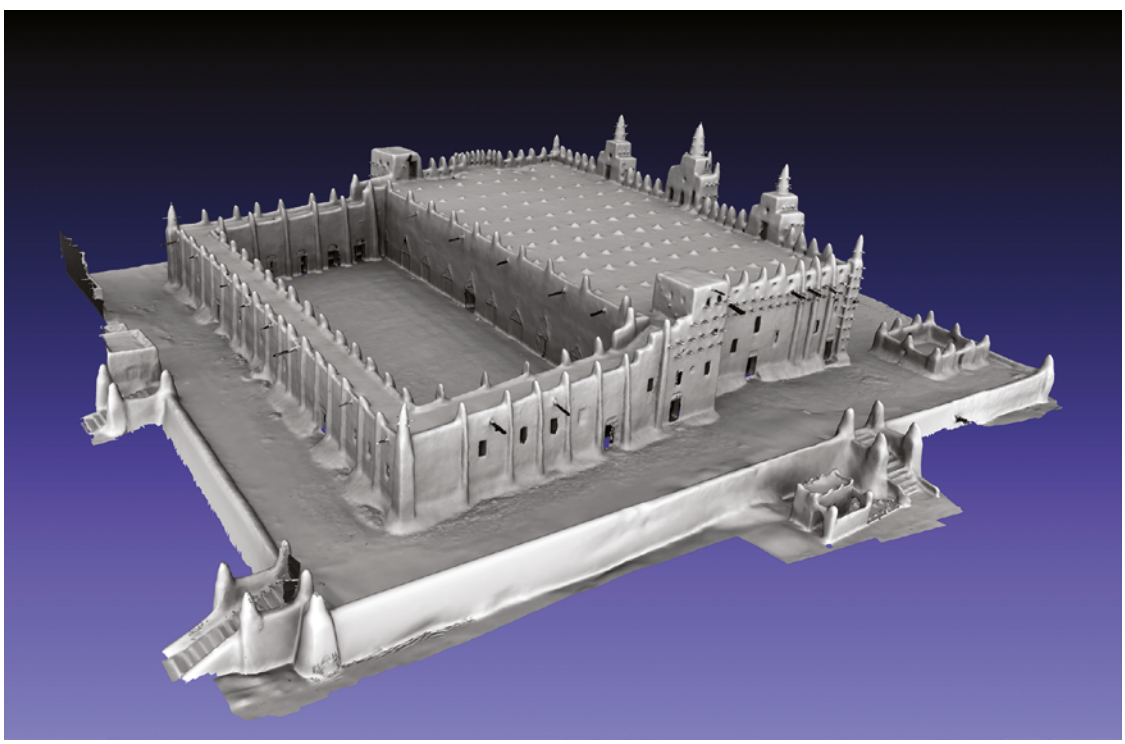


FIGURE 24 On the roof, air channels are covered by ceramic pots, great mosque of Djenne



FIGURE 25
Female potter makes a clay finial in Mopti, Mali

1.6 Architectural Characteristics of the Mosques of the Niger Valleys

1.6.1 *General Description of the Mosque of the Niger Valleys*

The mosques of the Niger valleys are essentially earthen buildings, generally in mud brick, reinforced by a wooden structure which protrudes beyond the walls. They are covered by flat terrace roofs. The austere surfaces of the façades and the roofs are interrupted by wooden beams (*toron*) (Fig. 26), buttresses, parapets, and pinnacles (or merlons), often in "sugar loaves" (Fig. 27). The courtyard is generally to the west (Fig. 28). The main entrance of the mosque is always situated on a façade different from that of the *qibla*. It is surmounted by a porch roof and appears like a portal bordered by pilasters supporting an entablature with one or three pinnacles and *toron*. The prayer hall, situated to the east, is divided into bays parallel to the wall of the *qibla* by rows of wooden poles or mud brick pillars. The façade of the *qibla* is dominated by a *mihrab* tower which replaces the cupola preceding the *mihrab* in the mosques of North Africa and Middle East. The *mihrab* tower has a visual function of minaret. This massive tower is often enframed by two towers placed against the wall of the *qibla* (Fig. 29). The mosques of the Niger valleys are frequently built in the centre of the town or the village, on the market square



FIGURE 26 Façades interrupted by wooden beams (toron), Timbuktu



FIGURE 27 Pinnacles or merlons, often in "sugar loaves", Mopti

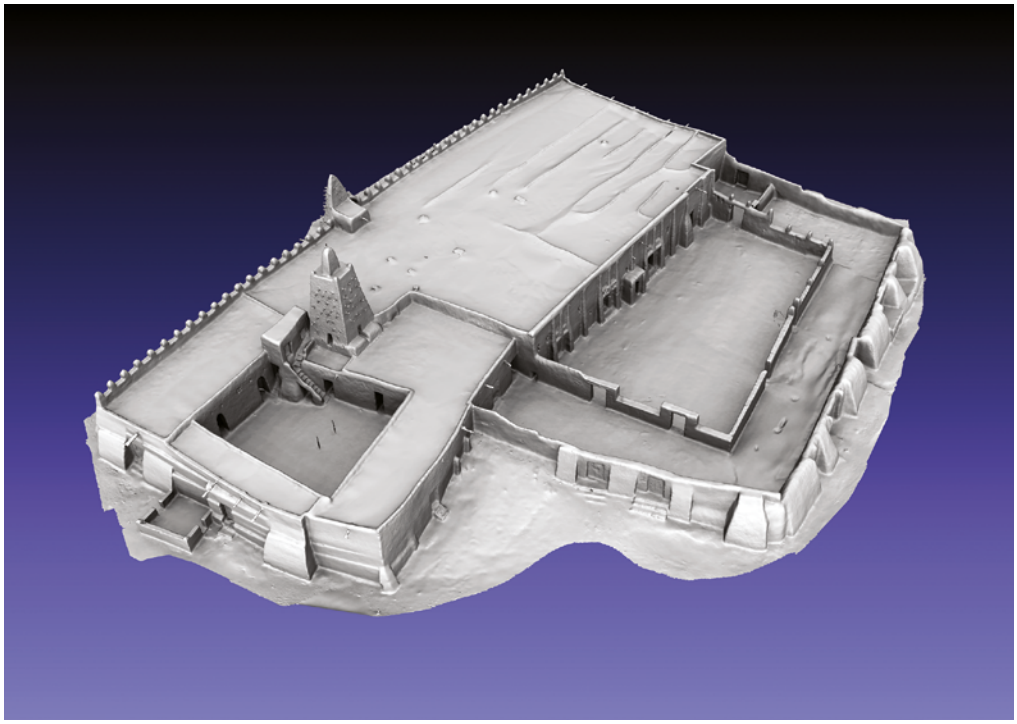


FIGURE 28 The courtyard located to the west, Mosque of Djinguere Ber, Timbuktu



FIGURE 29 Mihrab tower of Djenne enframed by two towers along the qibla wall

as in Djenne or close to the palace of the sultan as in Zinder. In the event of there not being enough room for the new mosque, a location would be chosen on the outskirts, as at Gao Safon Gari in Niger.

1.6.2 *The Mihrab*

In the mosques of the Niger valleys, the narrow niche of the *mihrab* can reach the height of the chamber but is often too small for anyone to be able to stand in the interior. It is generally not decorated. The most widespread plan of the West African *mihrab* is rectangular (Fig. 30). The semi-circular plan is less frequent. The omega-shaped *mihrab* of Gao has no precedent in West Africa.[88] The entrance of the niche can be formed by a rectilinear lintel or by a vaulted or pointed arch. In the Hausa mosques the *mihrab* is a spacious niche



FIGURE 30 Mihrab of the mosque of Bole, Ghana

88 Mauny, "Notes d'archéologie au sujet de Gao" (1951): 842, fig. 125–1.

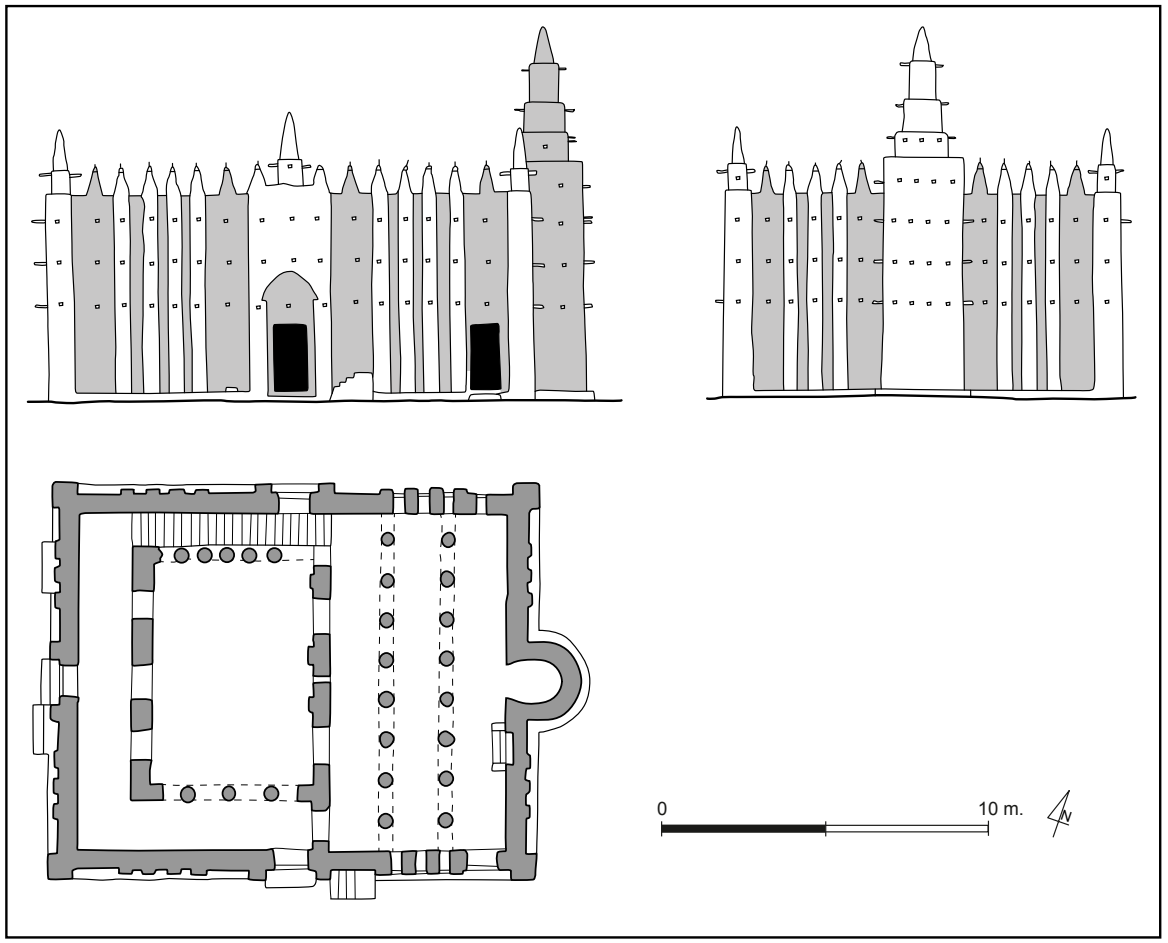


FIGURE 31 Symmetrical tripartite arrangement of the qibla wall in the mosque of Bouna

with an entrance reserved for the imam on the north side. Sometimes the wall of the *qibla* is decorated by niches and there is often a mural clock and a cavity for the prayer stick of the imam or a Qur'an. In certain mosques a second *mihrab* is set up in the *qibla* wall of the courtyard and is generally more decorated than the one in the main prayer hall.

As mentioned previously, the *mihrabs* are often surmounted by a tower overhanging the outer façade, an architectural marker of the *qibla* like the cupolas which precede the *mihrab* in North Africa (Fig. 31). This square or rectangular *mihrab* tower develops from the low hemispherical form in Gao into a sort of edgeless half-cone, and then into a slender rectangular tower characteristic of the group of the Middle Niger. The *mihrab* tower of the eastern façade is often flanked by buttresses and enframed by two, usually smaller, lateral towers in a symmetrical tripartite arrangement. The façade of the *mihrab* tower often contains a decorative niche. Its most frequent shape is reminiscent of a javelin or a spear, a weapon which has a great religious symbolic significance. The spear is called *harba* in Arabic and one of the meanings of the word *mihrab* is "the place where one plants the spear". And indeed, the spear planted in the sand indicated to the Muslim armies on the move the direction of prayer during temporary halts. The spear was subsequently replaced by the niche of the *mihrab*, the decorative external niche marking the presence of the internal *mihrab*. The

shape of this niche was also interpreted as the representation of a stick, the symbol of the imam, the spiritual master and orator. The stick was a symbol of justice and power. It was also the attribute of the orator and the Friday preacher, the *katib*, who used it to interrupt the verses he recited. In Djenne the functions of the *katib* and the imam were reunited in a single person. The decorative niche of the *mihrab* tower thus symbolizes the direction of prayer as well as the place of the spiritual leader and the orator who delivers the Friday sermon or *khutba* from the *minbar*.[89]

1.6.3 *The Minbar and the Maqsura*

The *minbar* is the pulpit from which the *khutba* or the Friday sermon is delivered. It is only to be found in the congressional or great mosques and is always situated on the right of the *mihrab*. The *minbar* is the symbol of the theocratic aspect of Islam rather than of the religious aspect. It also represents the throne of Muhammad.[90] In the mosques of the Niger valleys it is rarely more than a metre wide and appears in the form of a little mud step or of a few steps leading to a small platform. It is sometimes flanked by small lateral pilasters. Certain *minbars* are set up in the thickness of the wall of the *qibla* and are called niche *minbars*, sometimes preceded by one or two steps. These niche minbars are considered as a Saharian Ibadi influence.[91] The categories of the mosques can be distinguished according to the association of the *mihrab* with the niche *minbar*. The mosques of Futa Toro have a spacious circular *mihrab* niche, while the *minbars* in Mali have a small and narrow rectangular ones.

The enclosure of the sultan or *maqsura* is only to be found in a few great mosques such as those of Zinder or Agadez. It is situated in the bay of the *qibla*, surrounded by a half-height wall. It was in this enclosure that the dignitary would withdraw to follow the prayer. The *maqsura* has a *mihrab* of its own, smaller than the main *mihrab* and with no decoration.

1.6.4 *The Annexes: Madrasa and Ablution Areas*

A small annex is always reserved for the ritual ablutions associated with latrines. It is marked by the presence of jars and little cups filled with water usually situated in a niche near the stairway. Large annexes were rare in the region of the Sahel. Sometimes annexes were occupied by a Qur'anic school. The *madrasa* was unusual in the mosques of the Niger valleys. In an oasis of Air, not far from Agadez, the Friday mosque of Tabelot had a *madrasa*. It consisted of two bays and opened onto a gallery on the east and south sides. It did not extend along the entire width of the west wall of the courtyard. A district mosque in In-Gall, the great oasis of the department of Agadez, dates from the sixteenth century and had a *madrasa* of 60 m^2, situated in the south-west corner of the courtyard and consisting of two bays. Women are admitted to the mosques of the Niger valleys if they pray behind the last row of men in the outer courtyard or in an annex gallery.

1.6.5 *The Minarets*

The muezzin calls to prayer from an elevation, traditionally from the minaret, tower called *al-manar*. And yet the minaret remains exceptional in the West African mosques. Because the tower-mihrab plays the visual role of minaret, and in the South, minarets simply do not exist.

An inner stairway leads to the roof from the prayer hall or from the hypostyle gallery of the courtyard. Its function corresponds to that of the stairway of the minaret and conducts the muezzin to an elevation. It is usually situated in a corner of the roof, next to the *mihrab* tower. In the mosques of the Volta-Niger and the Futa-Toro group the stairway is surmounted by a tower in

89 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 154.

90 Papadopoulo, *Le Mihrab dans l'architecture et la religion musulmanes* (1988): 219.

91 Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173.

the north-west corner of the building. The stairway in the courtyard is to be found in the mosques without a gallery more rarely than in those with a western gallery. In the great mosques it is often doubled and symmetrical to the axis of the monument. In most cases it skirts the north or south wall of the courtyard.

In the mosque of Agadez (Air, Niger) the prayer call was made from a little external platform a few steps above the level of the terraces on the west façade (despite the presence of a minaret). The minaret is also rare in the Inner Niger Delta or the plain of the Middle Niger, where the prayer is called from the roof. A spiral staircase leads to the roof, sometimes prolonged by a platform. Ceramic pipes occasionally connect the roof to the *mihrab* in such a way as to allow the muezzin to repeat the different phases of the prayer recited by the imam for the benefit of the worshippers who have remained outside the mosque. Other places can be used for the call to prayer, such as clay podiums (*adhan*) situated near the west and south entrances or, more rarely, on the roof of the stairwell, then used as a minaret.

The minarets of the mosques of Djinguere Ber and Agadez are monoblock towers, while those of Gao, Sankore and Zinder consist of large steps (Fig. 32). An inner stairway leads to the upper platform, except for Gao, where there is an outer stairway built against the massive tower. The minaret of Agadez, in the shape of a truncated and elongated pyramid, seems to be an influence from the M'Zab.[92] In certain mosques of the Niger valleys (the mosque of Sidi Yahya in Timbuktu), as in the mosques of North Africa, the minaret marks the site of early tombs of scholars and marabouts. This architectural signal is strangely reminiscent of the pillars surmounting the Swahili funerary mosques.



FIGURE 32 Minaret of Djinguere Ber, Timbuktu

92 Gruner, "Islamische Tradition oder autochtones Erbe? Anmerkungen zum Moscheeturm in Westafrika" (1989): 101.

The tower of the minaret had various functions. Besides the prayer call it served to protect the muezzin from the rain and the sun and it served as an astronomical observatory. It also had a political and strategic rôle as a watch tower or simply as an indication of the presence of a town for caravans, a sort of desert lighthouse. The tower, *al-manar*, finally, also symbolises the spiritual "light" of Islam by its height.[93]

1.7 Regional Groups of Mosques in the Niger Valleys

It is difficult to establish a chronological typology of the West African mosques[94] because of the lack of archaeological excavations and historical and epigraphical information.[95] And yet the analysis of different architectural elements allows us to discern six regional groups and several sub-groups. These groups are representative of the chronological periods discussed in my chapter on the history of the great West African kingdoms.

1.7.1 *The Group of the Desert Mosques*

1.7.1.1 The Stone Mosques of Mauritania

The mosques of the western Sahara, known as "Mauritanian", are not, from a geographical point of view, part of the group of mosques of the Niger valleys. They are situated in a territory between Mauritania and the north-west of Mali. And yet the Mauritanian mosques are the last testimonies of a stone architecture born between the ninth and eleventh centuries in the south of Mauritania, the north of Senegal, and the north-west of Mali, and which was the source of inspiration of the mosques of the Niger valleys. This particular style of mosque was spread in the south by Ibadi merchants and then by the Almoravids, who moved both from south to north and from west to east. Yahya bin ʿUmar took the Zenata capital, Sijilmasa, in 1053 and recaptured Awadaghost which had fallen to the Africans. He was succeeded by his brother Abu Bakr who overthrew the empire of Ghana in 1077. The *ksur* of the Adrar became commercial centres on the caravan routes and the centres of diffusion of Islamic culture.[96] In the Almoravid period, the mosques of Mauritania consisted of stone ashlar jointed by a clay mortar of loam, sand, and dung.[97] This building technique was probably the result of contacts with the Saharan Berbers. The buildings were often covered with an outer beige-coloured mud plaster as in Walata. The methods of construction of the Saharan Berbers and the Mauritanian *Ksur* were mixed. The masons used stones layered in horizontal courses jointed by a mortar of red loam, sand and dung, as in Kumbi Saleh. Between the eleventh and the thirteenth centuries the Berber architecture of the desert encountered African traditions and changed profoundly in contact with the influences of the Inner Niger Delta. The Saharan model, consequently, would have adapted itself to the natural environment in which stone was rarer and the local tastes drew on an ancient African vernacular tradition of earthen architecture.

The desert mosques are built on a simple rectangular plan, a courtyard to the east with a surface equivalent to the prayer hall covered by transversal bays parallel to the *qibla*. The *mihrab* is semi-circular and sometimes off centre of the qibla wall. On the external façade it forms a convex or rectangular protuberance when it is associated with a niche minbar. The *minbar* is often associated with the *mihrab* in the region of Hodh

93 Pedersen and Diez, "Masd̲jid" (1930); Gottheil, "The origin and history of the minaret" (1910): 132; Hillenbrand, *Islamic Architecture. Form, Function, and Meaning* (1994): 131–134.

94 Gruner, *Die Lehm-Moschee am Niger; Dokumentation eines traditionellen Bautyps* (1990): 13–42; Pereira, *Islamic sacred architecture* (1994): 339.

95 Insoll, « Mieux comprendre l'architecture religieuse musulmane en Afrique subsaharienne grâce à l'archéologie » (2017): 82–87.

96 Cheikh, *Vie et Architecture Mauritaniennes de l'Adrar* (1989): 9–10.

97 Insoll, *The Archaeology of Islam in sub-Saharan Africa* (2003): 220–231.

(an old Ibadi influence). As mentioned previously, the medieval mosques of Mauritania, present astonishing similarities with the mosques of the Niger valleys where the plan is concerned. The building materials alone are different, stone being used rather than mud brick. This difference can be explained by environmental and climatic reasons. In the desert area of the Mauritanian Sahara, stone is a more accessible primary matter than clay. Certain desert towns, or *ksar* such as Atar, combine the architectural traditions with some walls in stone and others in clay brick dried in the sun. The buttresses are features of mud architecture which were originally justified by the need for architectural supports before becoming ornamental elements. This adaptation to the environmental resources is astonishing in the case of the salt town of Teghaza. In the eleventh century al-Bakri mentioned a town which exported rock salt to Sijilmasa and the "lands of the Blacks". In 1352, Ibn Battuta passed trough Teghaza during his journey from Morocco to Walata. He observed that the houses and the mosque were built with salt gemstones. This observation was confirmed by the Portuguese in the fifteenth century, by René Caillié in 1828, and by Grosdemange in 1908. In 1590, the locality was joined to Morocco. Despite the political changes the salt mines continued to be exploited until the end of the seventeenth century. In 1937–38, Langlais excavated a part of the main town and brought to light arches both semicircular and horseshoe. At this point the archaeological site was 5 m deep.[98] Teghaza has never been seriously excavated, and yet the use of rock salt as an architectural material presents a previously unknown technical solution which deserves to be explored.

1.7.1.2 The Mosque of Kumbi Saleh

The first mosques to be recognised as part of this group were those of Kumbi Saleh and Awdaghust, dating from between the ninth and the fourteenth century and situated in the Adrar and Hodh. The sources concerning these mosques are rare. Al-Bakri in the eleventh century, for example, describes the towns of Awdaghust and Kumbi Saleh, but provides no description of the mosques.

Kumbi Saleh was the capital of the kingdom of Wagadu, also known as the kingdom of Ghana.[99] The mosque of Kumbi Saleh was situated in the south-east of Mauritania, not far from the Malian frontier, and is associated with the apogee of the kingdom of Ghana. It was situated in an environment which cannot have been a desert at the time and was certainly a Sahelian steppe. Raymond Mauny and Paul Thomassey made a first survey in 1950.[100] The mosque was then extricated by Serge Robert during the excavations carried out between 1979 and 1982.[101] The building, measuring 46 m on the east-west axis and 23 m on the north-south one, had a courtyard and a square minaret (Fig. 33). It was built in dry stones covered by a plaster of red mud. Plates of schist were decorated with painted drawings with epigraphical, geometrical, and floral motifs, and ornamented the interior and the exterior of the mosque. The building was enlarged and raised on several occasions after the tenth century. In its last state, probably dating from the fourteenth century, the prayer hall reached a height of about 3 m. The supports were columns with superimposed stone drums. An outer buttress, dating from the thirteen century, protected the wall of the *qibla* from rainwater flooding.

The archaeological excavations have revealed three superimposed *mihrabs*. In fact we can distinguish four successive stages. First, we have an oratory with square pillars and a semicircular *mihrab*

98 Monod, « Teghaza, la ville en sel gemme (Sahara Occidental) » (1938): 289–296; Monod, « Nouvelles remarques sur Teghaza » (1940): 248–250.

99 Berthier, *Recherches archéologiques sur la capitale de l'empire de Ghana* (1997): 2.

100 Thomassey & Mauny « Campagne de fouilles à Koumbi Saleh » (1951): 436–462; Thomassey & Mauny « Campagne de fouilles à Koumbi Saleh » (1956): 117–140.

101 Unfortunately, they never published the results of their excavation on the mosque. The best abstract is probably in Devisse & Diallo, « Le seuil du Wagadu » (1993): 108–113.

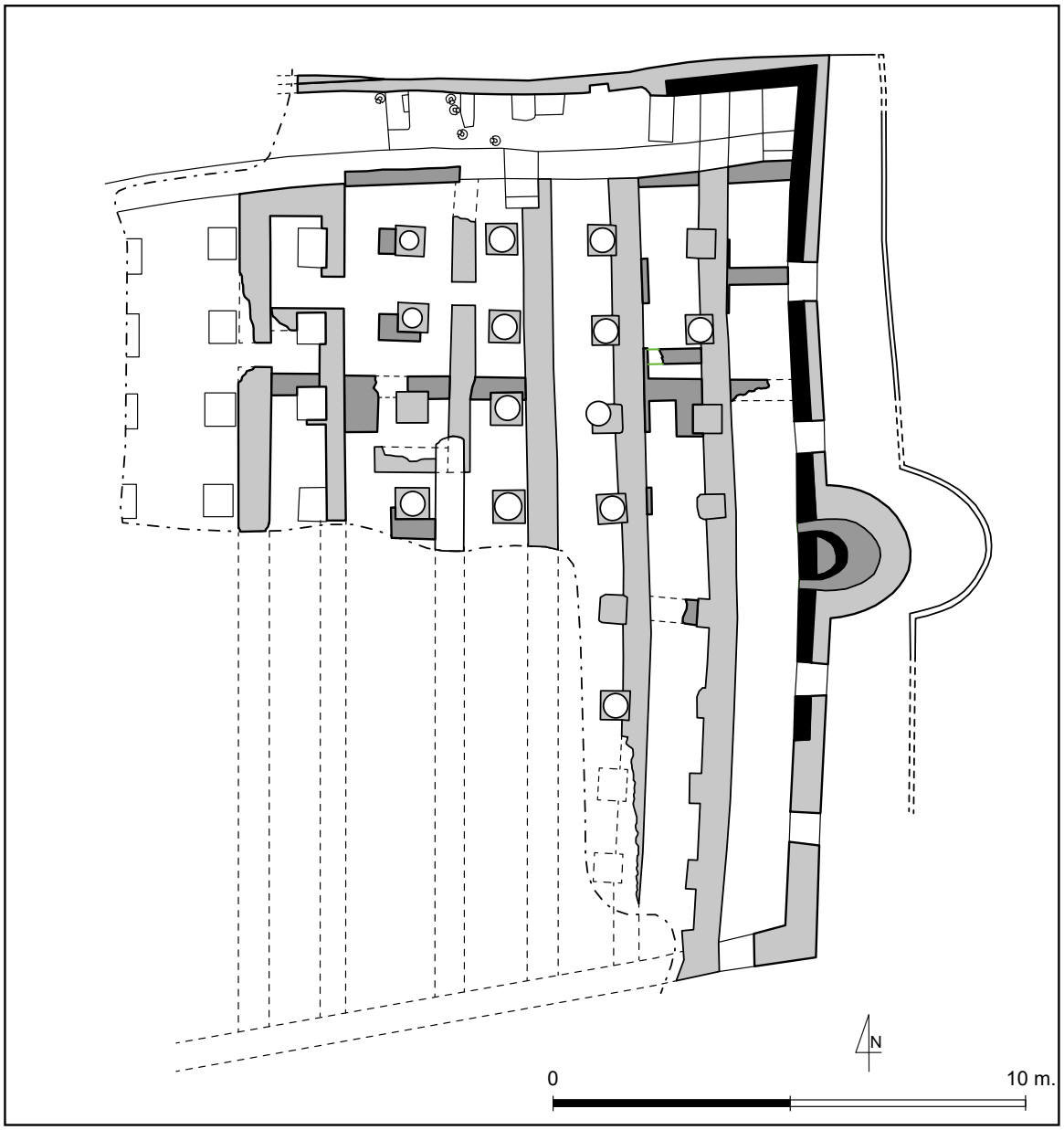


FIGURE 33 Mosque of Kumbi Saleh (10th–14th century)

dating from the tenth century. At the end of the eleventh century the prayer hall was enlarged and a second was superimposed on top of the first. In the thirteenth century the pillars were replaced by columns in disks of schist 2.20 m high, while a third *mihrab* was flanked by two colonnettes. Finally, in the early fourteenth century, the mosque was again expanded, before being abandoned in the fifteenth century.

The successive enlargements of the mosque demonstrate the urban vitality of the town of Kumbi Saleh. The mosque of Awdaghust (Tegdaust) was also in stone, as were the other buildings of the town. It had all the same characteristics listed

above, but with a courtyard larger than the prayer hall which only had two rows of four pillars.

1.7.1.3 The Mosques of Chinguetti, Wadan and Kidal

The mosques of Chinguetti, Wadan and Kidal have been studied by Raymond Mauny[102] and have been in ruins since the sixteenth or seventeenth centuries. The mosque of Chinguetti, in ochre sandstone, was built at the time of the foundation of the town in the thirteenth century. Strangely enough Chinguetti was not cited by the Arab authors of the Middle Ages. The mosque was a rectangular building of 30 m on the north-south axis and 11 m on the east-west one (Fig. 34). Because of a sand encroachment the prayer hall was slightly lower than the courtyard, with a few steps leading down to it (Fig. 35). Three rows of eleven columns and pillars supported the ceiling. These different types of support could be an indication

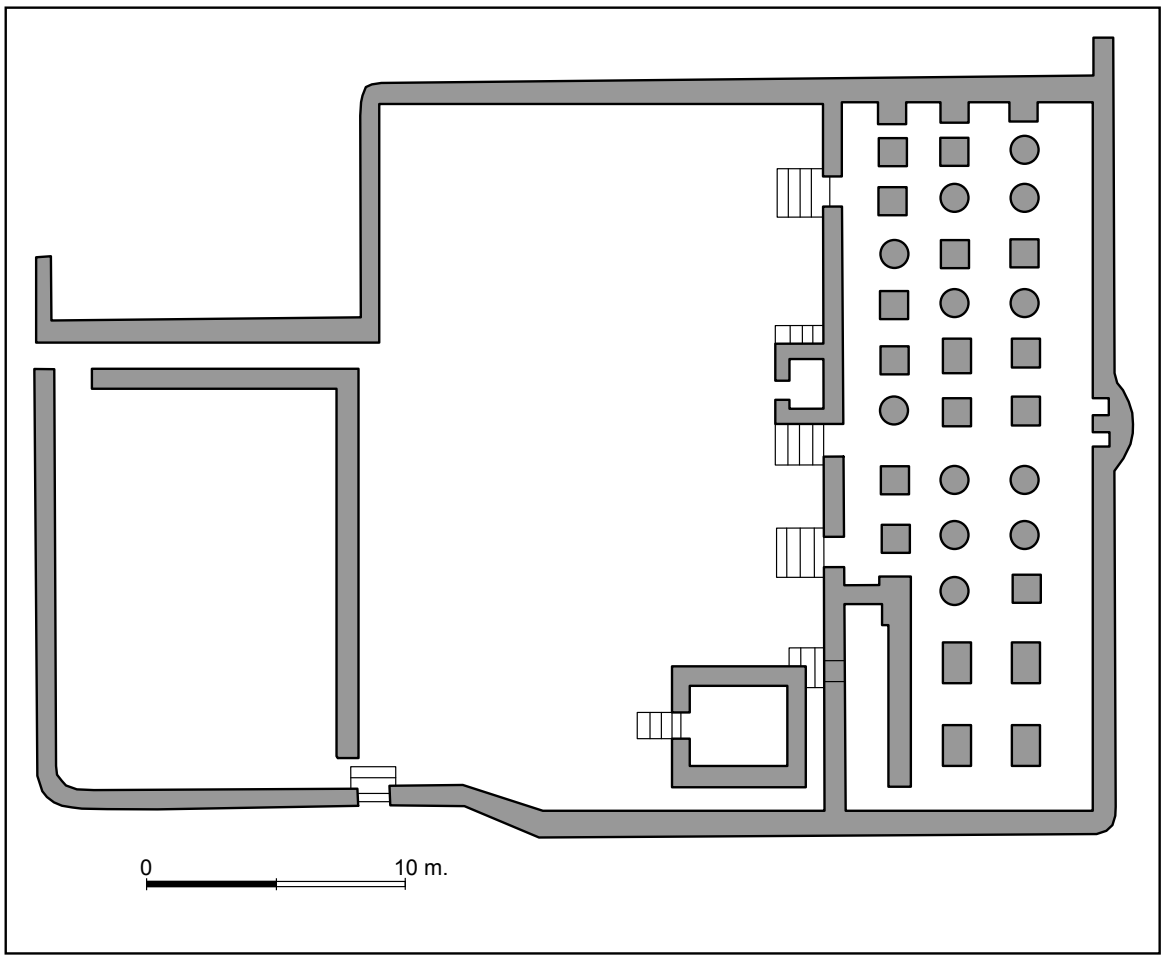


FIGURE 34 Plan of the mosque of Chinguetti

102 Mauny, « Notes d'histoire et d'archéologie sur Azougui, Chinguetti et Ouadan » (1955): 150–158; and Mauny, *Tableau géographique de l'Ouest africain au Moyen-Age* (1961): 472–5.



FIGURE 35
Mosque of Chinguetti



FIGURE 36
Minaret of Chinguetti

of different building phases. The minaret was isolated in the south-east corner of the courtyard. It had a square base, 5 m on the side, and a height of 10 m. An external stairway led to the summit of the *mihrab*, composed of a platform surmounted by a parapet 1 m high with the four conical corners capped by an ostrich egg (Fig. 36).

The foundation of Wadan dates to 1147. It was a fortified site or *ksar* perched on a sandstone plateau. The mosque, built at the foot of the town in the same year of its foundation, was in dry stone covered with a mud plaster. It measured 24 m in length by 17 m, after an enlargement (originally about 8 m). The vault was supported by five rows of stacks which were connected by horseshoe arches in a north-south direction. In the south-west corner a huge rubble heap is the only sign of the early minaret which has since collapsed. To the north-west the ruined annex buildings must have been reserved for the ablutions. The niche of the *minbar* is to the right of the *mihrab*. In the courtyard, this time situated to the east, was a second *mihrab*. Towards 1450 a new mosque was built with a courtyard to the west but with no *minbar* and with a minaret in the north-east corner.

Finally, the little stone mosque of Kidal, measuring 19 by 14 m, had a gallery against the west wall of the courtyard. This was a frequent element in the mosques of the Niger valleys where it was reserved for female worshippers and sometimes acted as a Qur'anic school (madrasa).

1.7.1.4 The Mosques of Walata and Tichitt

The other important monuments of Mauritania[103] are the famous mosques of Walata of the twelfth century, Tichitt of the fourteenth century, Qasr El-Barka and Tijikja of the late seventeenth century, and Nema built between 1810 and 1815. The mosque of Tichitt has a minaret 16 m high containing a stairway which leads to a terrace. This minaret seems to date from 1842 and to have undergone several reconstructions since. Certain minarets in the region of Tagannt and Hodh, including Walata and Tichitt, were crowned by four pointed merlons capped with reversed ceramics and an ostrich egg. The walls of the mosque of Walata are adjoining by domestic dwellings, something which is less frequent in the mosques of the Niger valleys. Could this be an Ibadi tradition in which the places of worship were not distinguished from habitations? The triangular zigzag decorations of the niches and ventilation shafts of the houses and mosques of Walata can be found again in the mosque of Sankore in Timbuktu. The façades of the mosque of Walata were covered with a plaster of red or beige mud, as in the houses of the village. In Tichitt and Walata, the niche of the *minbar* is rectangular, while in Tijikja and Nema it is semicircular with a few steps. Elsewhere the *minbar* is a little wooden stairway with no niche. In the south-east corner of the prayer hall a stairway leading to the roof is capped by a turret.

1.7.2 *The Group of the Pre-Saharan Steppe*

1.7.2.1 The Mosques of the Niger Bend

The mosques of the Niger bend and the pre-Saharan steppe form a group corresponding to the northern extremity of the Sahel, in direct contact with the desert. The principal façade of the mosques of the Niger bend is smooth, with no vertical elements, and terraces with merlons are rare. On the external façade the *mihrab* forms a low protuberance ending in a conical point but which is not surmounted by a tower. Inside the prayer hall the pillars are massive, there are no arcades, and the mural decorations are few. Only the minaret stands out in these rather low buildings. In short, this group of mosques is situated mainly in the north of Mali and in Niger and is a prerogative of the Songhay and Tuareg populations. It is characterised by a minaret, a low and protruding conical *mihrab* tower, the rarity of the buttresses and battlements, and massive supports in the prayer hall, as in the mosques of Sankore and Sidi Yahya in Timbuktu and Tendirma in Mali (Fig. 37).

103 Jacques-Meunié, *Cités anciennes de Mauritanie* (1961): fig. 79.

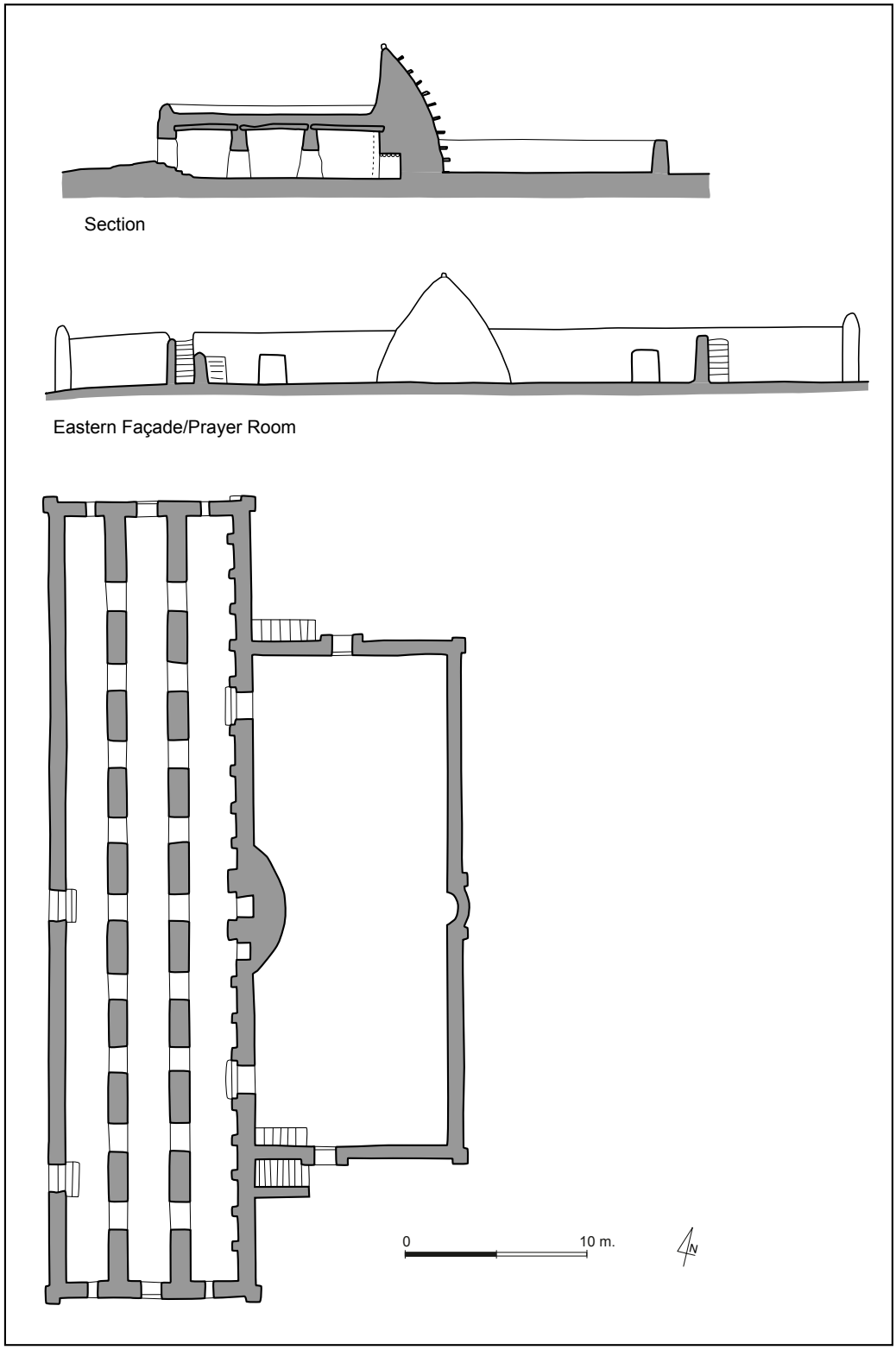


FIGURE 37 Mosque of Tendirma, Mali

1.7.2.2 The Mosques of Gao

The city of Gao was the centre of the Songhay empire. It was an important trading point which still contains numerous historical monuments (Fig. 38). Gao was, in fact, composed of three urban settlements: Gao Saney, Old Gao and Gao.

Takezawa and Cisse carried out excavations in Gao Saney in 2001–2002, it's the first and oldest settlement of Gao, located to the east, at 7 km from the actual city.[104] It is also the place of the royal cemetery and the famous epitaphs and tombstones (61 inscriptions dated from 1104 to 1299), notably the one dated from 1104, a funerary stele on Spanish marble imported from the region of Almería.[105] Old Gao, situated to the North of the present-day city, was built when Gao Saney was still active (from eighth to the tenth century) and both sites co-existed. Even if the settlement moved to the West, it is quite common in sub-Saharan Africa to have an old site reused as a necropolis mainly because of the memories attached to the place and the link to ancestors and previous royal families.

Mauny, and then Insoll, carried out some excavations in Old Gao, to the North of the current city.[106] In 1993, Timothy Insoll excavated the area. Insoll dated the *mihrab* in baked brick found by Mauny to the end of the twelfth century and reckoned that the mosque in banco masonry was from the late thirteenth century.[107] But archaeological excavations have been limited to small test pits, with poor archeological documentation. As mentioned by Takezawa and Cisse, Insoll failed to find any new data about the urbanisation of Gao or any historical buildings.[108]

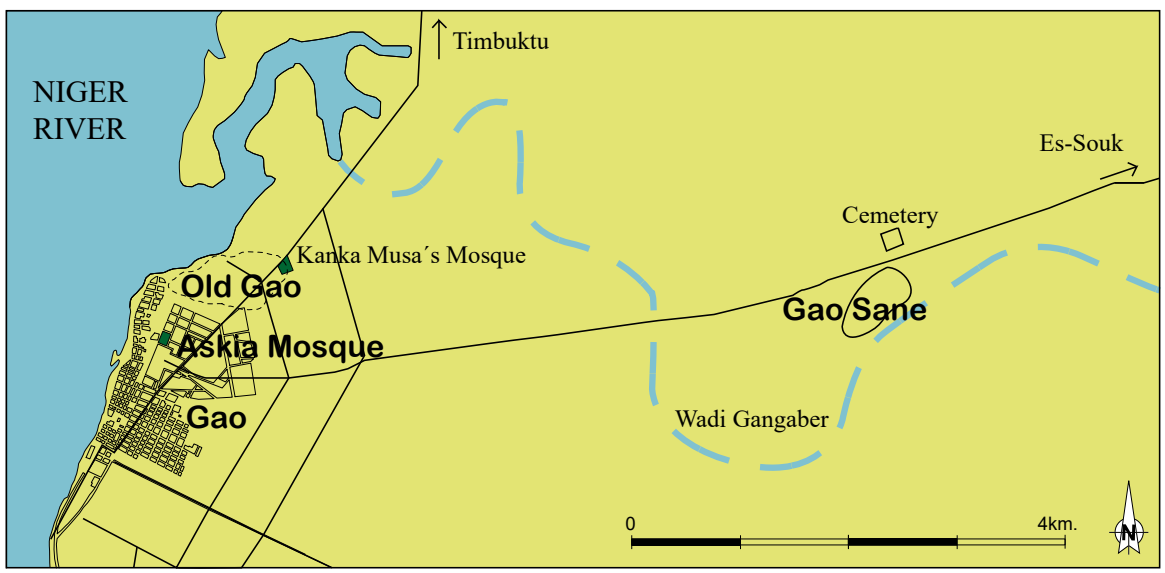


FIGURE 38 Location of the mosques in the cities of modern Gao, Old Gao, and Gao Sane

104 Takezawa and Cisse, M., "Discovery of the earliest royal palace in Gao" (2012): 6–11.

105 De Moraes Farias, *Arabic Medieval Inscriptions from the Republic of Mali* (2003): XXXIII–XXXIV and 3–84.

106 Mauny, "Notes d'archéologie au sujet de Gao" (1951): 837–852.

107 Insoll, *Islam, Archaeology and History in Gao Region (Mali) ca AD 900–1250* (1996): 16 et 55; *The Archaeology of Islam in sub-Saharan Africa* (2003): 235–236.

108 Takezawa and Cisse, M., "Discovery of the earliest royal palace in Gao" (2012): 5.

In 2003 and 2004, Takezawa and Cisse carried out new excavations in old Gao and they made some extraordinary new discoveries.[109] They cleared two monumental buildings constructed in two phases with different types of wall thickness and orientation. The walls were made of stone with the corners reinforced with fired bricks. The archaeological levels above these structures were dated from eleventh and twelfth centuries with floors made of backed bricks. The two buildings that were found were built in the early tenth century and abandoned in the end of the same century. Takezawa and Cisse concluded that the small building to the north was a royal residence, protected by a large citadel to the south. Their interpretation does not sound correct to me.[110] The "so-called" palace to the north has a room of 11 m by 5.5 m, with two rows of columns and a small bathroom with a water pipe attached to it. The bathroom is probably an ablution area, and the audience room is probably a prayer room. Most probably, the mosque discovered by Mauny dates from the end of the twelfth to the fourteenth century at the latest (Fig. 39A).[111] The building itself has a different orientation than the house to the south, it is logic as the mosque is oriented toward the *qibla* (Fig. 39B). The absence of a mihrab niche could be seen as a clue of the first Muslim communities in the region, the mosque might have been used by Ismailis or Ibadis. Dated from the tenth century, it would be one of the oldest mosques excavated so far in West Africa.

The mosque tomb of Askia Muhammad is situated north of modern Gao (Fig. 40). According to the *Ta'rikh al-Sudan*, the mosque was built between 1493 and 1538, just after the pilgrimage of Askia Muhammad.[112] The building had a surface of 2500 m^2. The seven bays of the prayer hall were parallel to the wall of the *qibla* and were composed of arcades resting on wide stacks. The widest aisle was on an axis which is slightly out of line regarding the *mihrab*. The rectangular niche of the *mihrab* has a semi-cylindrical protuberance. To the west, the courtyard, larger than the covered hall, opened onto a gallery with two bays on the west wall. A minaret 12 m high rose in the centre of the courtyard. This pyramidal structure, decorated with *toron*, rested on a rectangular base. It consisted of three segments, maybe originally seven. This minaret is probably the remains of an earlier building, perhaps a mausoleum, and the mosque was built around. The outer walls of the mosque were smooth and oblique, interrupted by irregular *toron* on the north, south and east façades, except for the *mihrab* tower. The step minaret of the mosque of Askia Muhammad is a local imitation of the mosque of Ibn Tulun in Cairo. This Egyptian minaret itself was strongly influenced by the Abbasid mosque of al-Mutawakil in Samarra.[113]

1.7.2.3 The Mosques of Timbuktu

The city of Timbuktu is situated to the north of the Niger Delta, on the edge of the Sahara. It is in a strategic position at the point of arrival of the Saharan caravans and close to the river Niger. This important cultural and commercial centre was founded in 1100 by the Tuaregs. According to the imam of the mosque of Sankore, al-Saʿdi, Timbuktu was composed of an enclosure of thorns

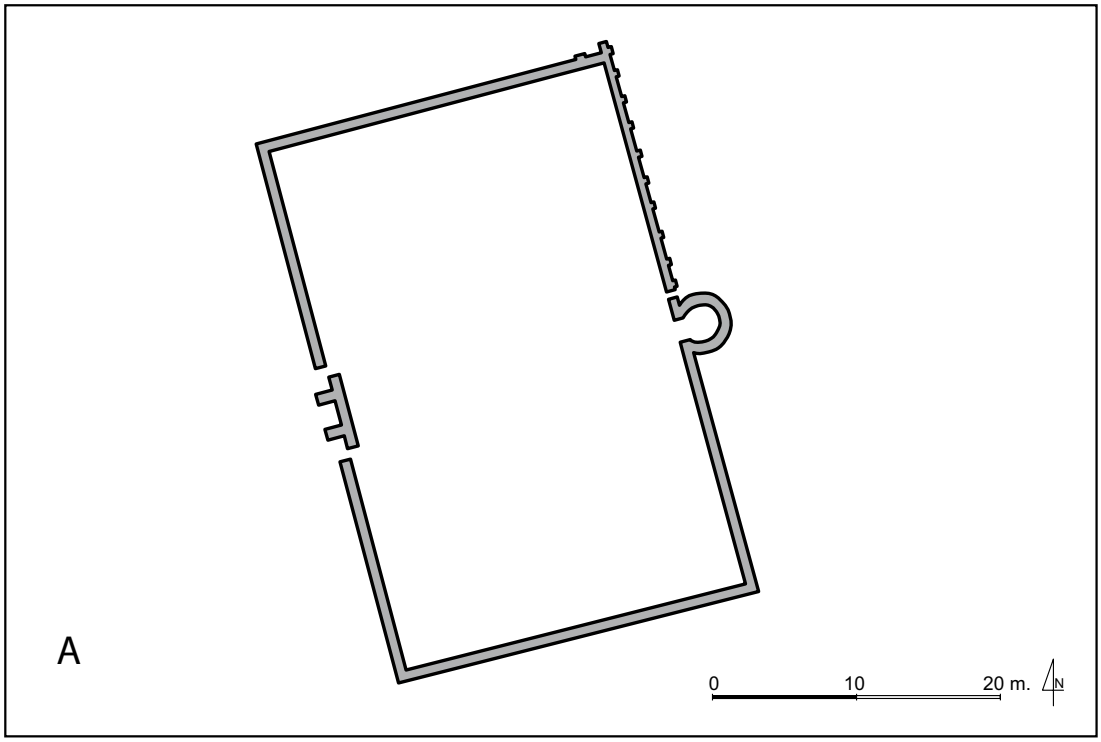
109 Idem: 11–20.

110 Despite their amazing discoveries, these archaeologists had problems interpretating their data; and problems with technical vocabulary, for example there is no "fired mud brick": Takezawa and Cisse (2012): 19. These methodological pitfalls would have been easily avoided by doing Islamic archaeology in African context, and not African archaeology without Islamic context: Pradines, Earthen Architecture in Muslim Cultures (2018): 1–10.

111 The omega plan of the mihrab and the external buttresses of the qibla wall of the fourteenth century mosque in Old Gao are very similar to those of the mosque of Bouna (Mali) which is more recent and made of mud bricks.

112 Prussin, "The Architecture of Islam in West Africa" (1968): 32–74.

113 Northedge, *The Historical topography of Samarra* (2007): 216–220; O'Kane, *The mosques of Egypt* (2016).



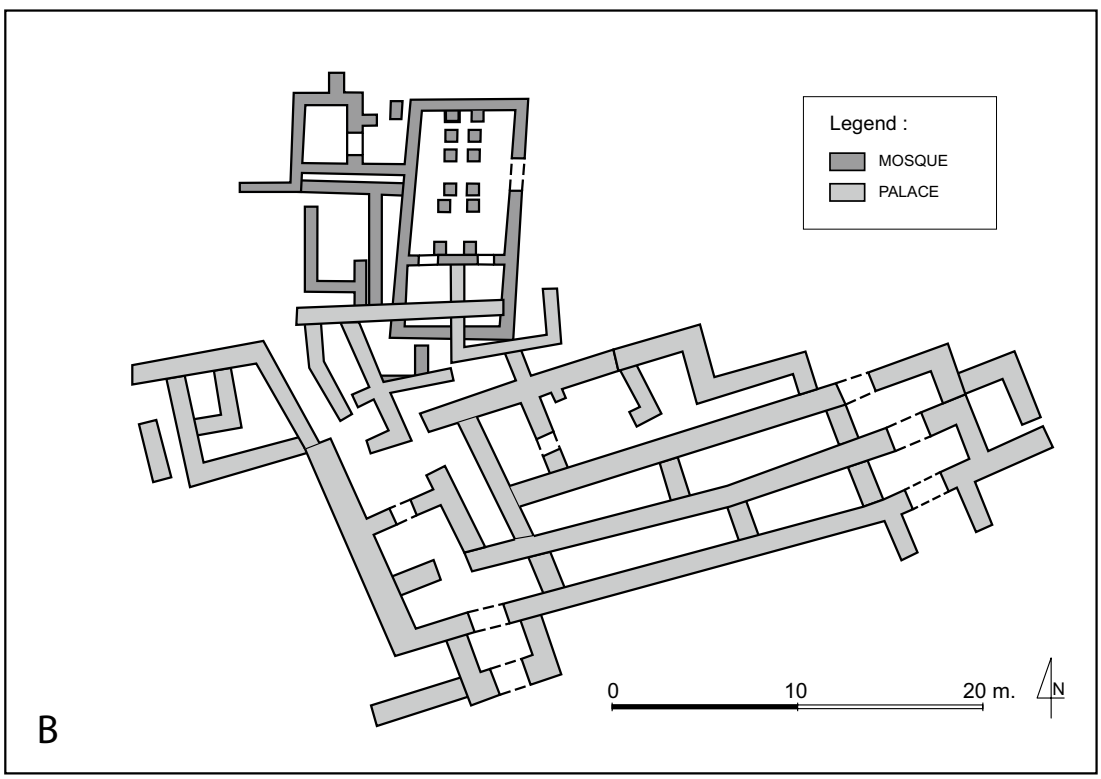


FIGURE 39 Mosques of Old Gao (tenth to fourteenth century)

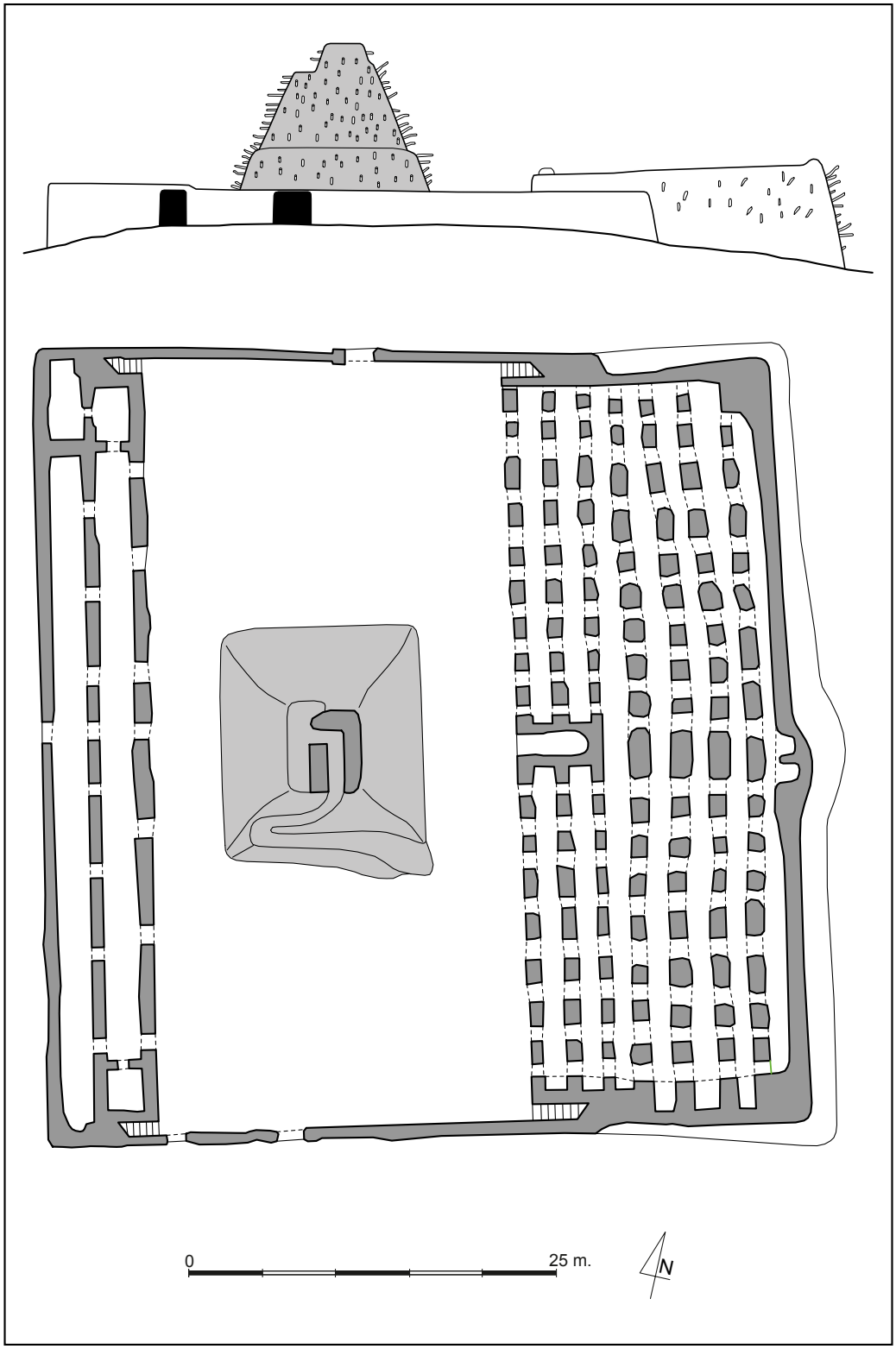


FIGURE 40 Mosque-mausoleum of Askia Mohammed, Gao

and straw huts.[114] The only elements built in brick and stone were the great mosque of Djinguere Ber and the mosque of Sankore. Sometimes called the town of the thousand saints, Timbuktu in fact only has 16 significant mausoleums. It has three major mosques: Djinguere Ber (Djingereyber), Sankore and Sidi Yahya (Fig. 41).

The Friday mosque, known as the mosque of Djinguere Ber, stands on the south-western edge of the old town. It is the largest mosque in the town. In Songhay "*Djinguere Ber*" means "the great mosque". It was built by the Sultan of Mali, al-Hajj Kanku Musa (Mansa Musa), after his return from the pilgrimage to Mecca in 1328, and is surrounded by tenacious myths, notably concerning its builder, named Abu-Ishaq al-Sahili. Mansa Musa is said to have paid 40,000 gold mithqal to have the mosque built by this Andalusian architect from Granada. Such myths have been sustained by the descriptions of European travellers such as Renée Caillé in 1828 and Henrich Barth in 1853 (Fig. 42).[115] The monument was enlarged and restored by the *qadi* al-Akib in 1569.[116] As a result of heavy rains the main minaret collapsed in 1678 and certain walls were badly damaged.[117] Restorations were carried out in 1709 and 1736. The mosque covers a surface of 3200 m^2. Its irregular plan includes a little courtyard to the north and a large courtyard to the west with an uncovered gallery on the north, west and south sides (Fig. 43). The original external façade was interrupted by pilasters and rectangular battlements. The minaret, attached to the south wall, is 14 m high. It is a pyramidal structure with steps, a conical point and a parapet decorated with little corner battlements. The *mihrab* is surmounted by a horseshoe arch and a zigzag decoration. The *minbar* has a niche as wide and deep as that of the *mihrab*. The *mihrab* tower is off centre and forms a conical protuberance 9 m high with *toron* and an ostrich egg at the summit (Fig. 44).

The town of Timbuktu has never been the object of serious archaeological excavations other than the test pits done by Timothy Insoll in 1996 and 1998. Unfortunately, he was unable to discover ancient archaeological layers.[118] We had to wait until 2009 and the conservation undertaken by the Aga Khan Trust for Culture for there to be any archaeological research of importance. Bertrand Poissonnier did thirteen soundings and revealed four building phases of the mosque of Djinguere Ber.[119] The first phase was dated 1330–1340. The excavations brought to light five pillars silted up under the present floor, which is less than 3.5 m above the level of the first floor of the original mosque. The pillars were covered by a fine plaster of mud and gypsum decorated with Qur'anic inscriptions. The original plan of the prayer hall was 38 × 13.5 m, with four bays and three rows of pillars. The *mihrab* was at the exact centre of the wall of the *qibla* and the minaret was situated in the north-west corner. The original plan of Djinguere Ber resembles another mosque in Timbuktu, that of Sidi Yahia, with almost identical proportions of 30 by 15 m. Djinguere Ber also has similarities with the great mosque of Agadez studied by Patrice Cressier. Poissonnier mentions a Catalan atlas dated 1375 which, he believes, represents Mansa Musa next to the mosque. The archaeologist interpreted this document as the proof of the existence of barrel vaults as a form of covering of the primitive edifice. This bold interpretation is particularly questionable, first because there is no proof that this building was a mosque – it could have been the palace of Mansa Musa – and then because the European representations of African architecture were based on western models like, for example, the city of Kilwa described in the Portuguese atlases and which looks more like a German town

114 Es-Sa'di, *Tarikh es-Sudan* (1900, reed. 1964): 37.

115 Barth, *Voyages et découvertes dans l'Afrique septentrionale et centrale pendant les années 1849 à 1855*, vol. 4 (1859): 37.

116 Kati, *Tarikh El-Fettach* (1914, reed. 1981): 222; Es-Sa'di, *Tarikh es-Sudan* (1900, reed.1964): 177, 330.

117 Es-Sa'di, *Tarikh es-Sudan* (1900, reed. 1964): 18; Kati, *Tarikh El-Fettach* (1914, reed. 1981): 222.

118 Insoll, "The origins of Timbuktu" (2000): 483–484. Poissonnier, "The great mosque of Timbuktu: seven centurie of earthen architecture" (2018): 22–25.

119 Idem: 26–36.

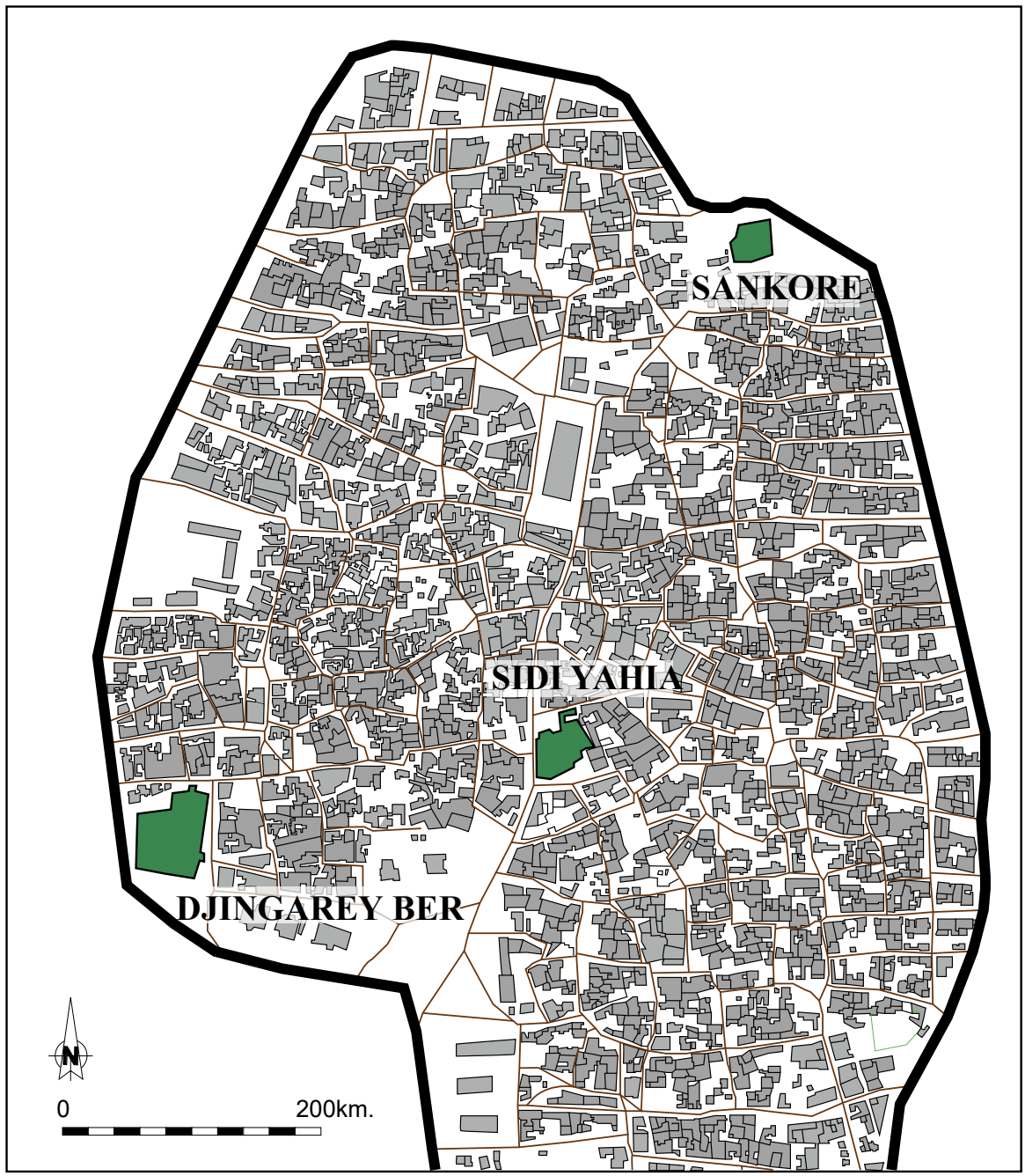


FIGURE 41 Location of the three major mosques in the city of Timbuktu, Djinguere Ber, Sankore and Sidi Yahya

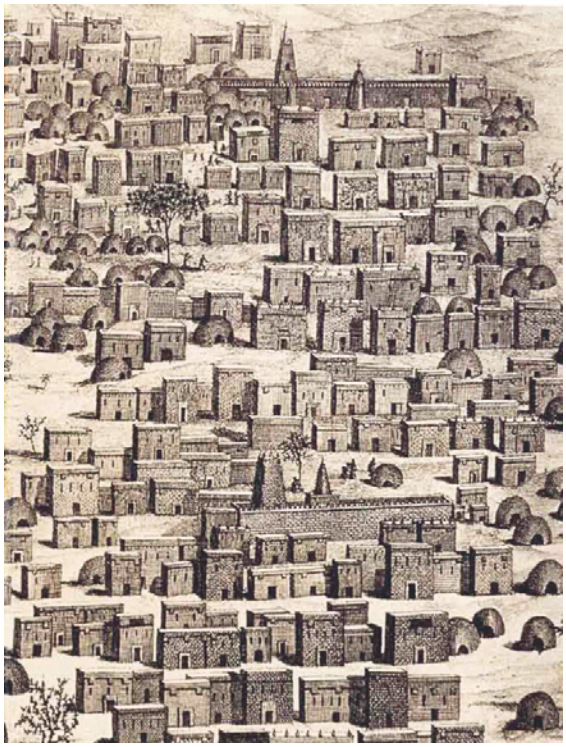


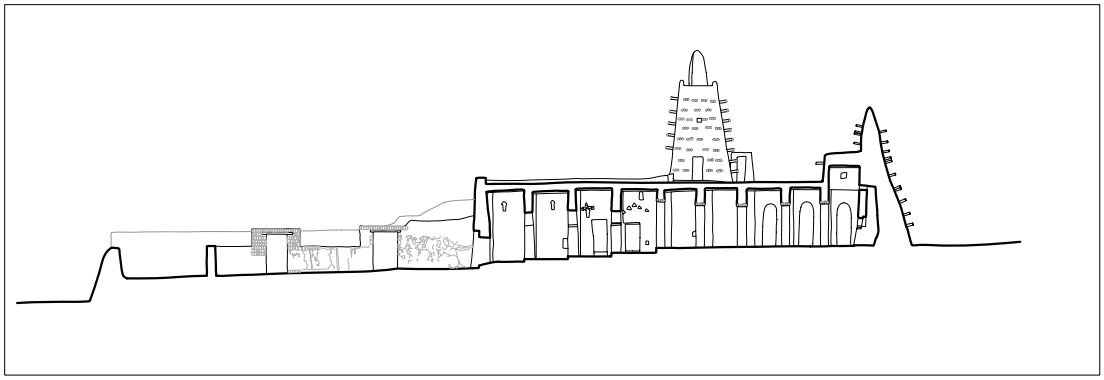
FIGURE 42 Engraving of three mosques in the city of Timbuktu in 1830

than a Swahili port. The "barrel vaults" of the king of Mali could also represent ceramic tiles on a European model. The second phase of construction of Djinguere Ber is dated at the end of the fifteenth century or the beginning of the sixteenth century. In this period the mosque had a terrace roof with walls in mud brick and local calcareous stone (travertine). The works of the third phase were more significant. A part of the mosque was demolished, then abandoned, and finally restored in the sixteenth century. This probably refers to the works of the *qadi* al-Akib in 1569. The prayer hall was filled up and covered with a new floor. A *maqsura* or sultan's lodge was built to the north-east. New rectangular pillars were built with a stone masonry called *alhore* bounded with banco (mud), and two thick layers of mud render. The hall had five bays and four rows of stacks. Three staircases arose from the west side of the courtyard. The present minaret was built in this phase and was undoubtedly erected on the tomb of an important figure, possibly al-Sahali. Phase 4 is dated to the eighteenth century and was probably connected with the restoration work undertaken between 1678 and 1736. New architectural elements seem to reveal the growing influence of a Moroccan presence. Stone arcades close the lower part and the west façade of the courtyard, reflecting the classic hypostyle mosques. In the prayer hall four new rows of supports, wide stacks, were erected to form four new bays.

The Sankore mosque was situated north-east of the town in the district of the same name. It was built between 1325 and 1463. According to the *Ta'rikh al-Fattash* it was rebuilt in 1581 by the imam al-Hajj al-Aqib, who enlarged the monument to give the sanctuary the dimensions of the Kaʿaba after his pilgrimage in 1581. The mosque of Sankore then became a university of great repute in West Africa. It was built in stone and banco masonry (Fig. 45). The roofing was supported by trunks of palm tree on which rested thin slats, then mats, themselves covered by a thick layer of mud. Certain horseshoe arches betray a North African influence.

The mosque of Sidi Yahya, finally, was situated at the centre of the old town. It was built in 1440 by the marabout Sheikh al-Mukhtar Hamallah in the expectation of a providential saint who would then occupy it. The prediction came true forty years later: a sherif called Sidi Yahia al-Tadlissi presented himself and demanded the keys of the building. The mosque was entirely restored in 1577–78 by the imam al-Hajj al-Aqib.[120] It would be transformed still more radically in 1939, with a complete coating of the original structure with dressed stones. On this occasion the minaret assumed the appearance of a battlemented tower and the façade was entirely rearranged.

120 *Ta'rikh es-Sudan* (1900): 179; Conrad, "A town called Dakajalan: the Sunjata tradition and the question of ancient Mali's capital" (1994): 355–377.



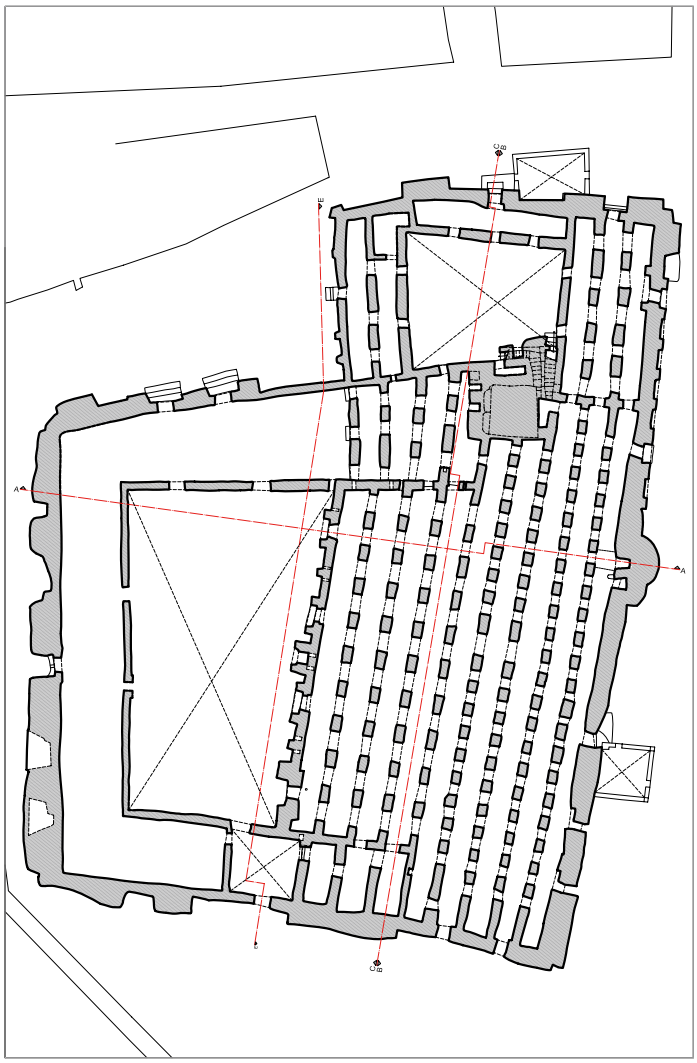


FIGURE 43 Mosque of Djinguere Ber, Timbuktu

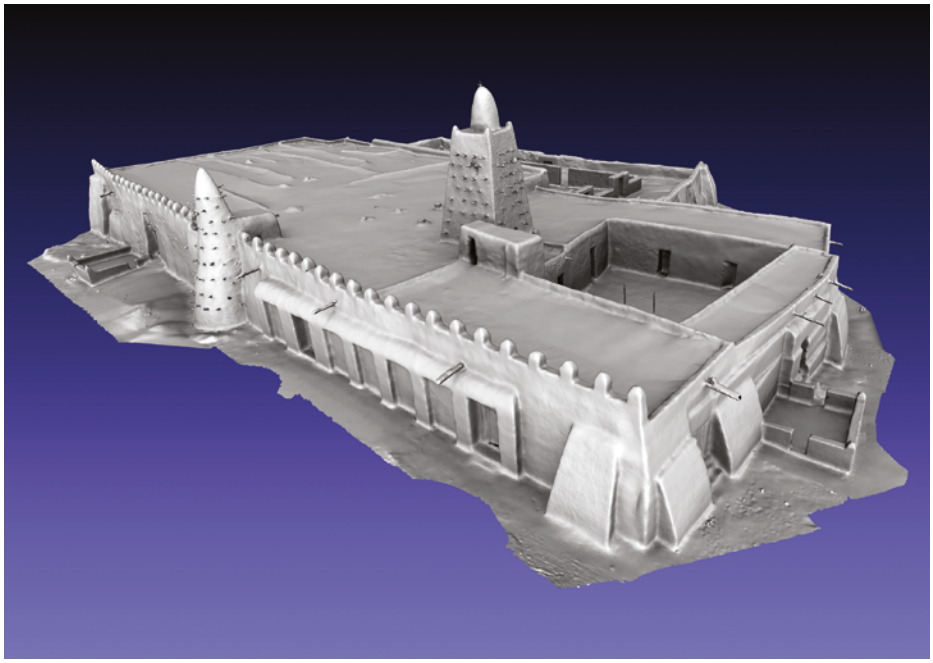


FIGURE 44 3D view of the mosque of Djinguere Ber, Timbuktu

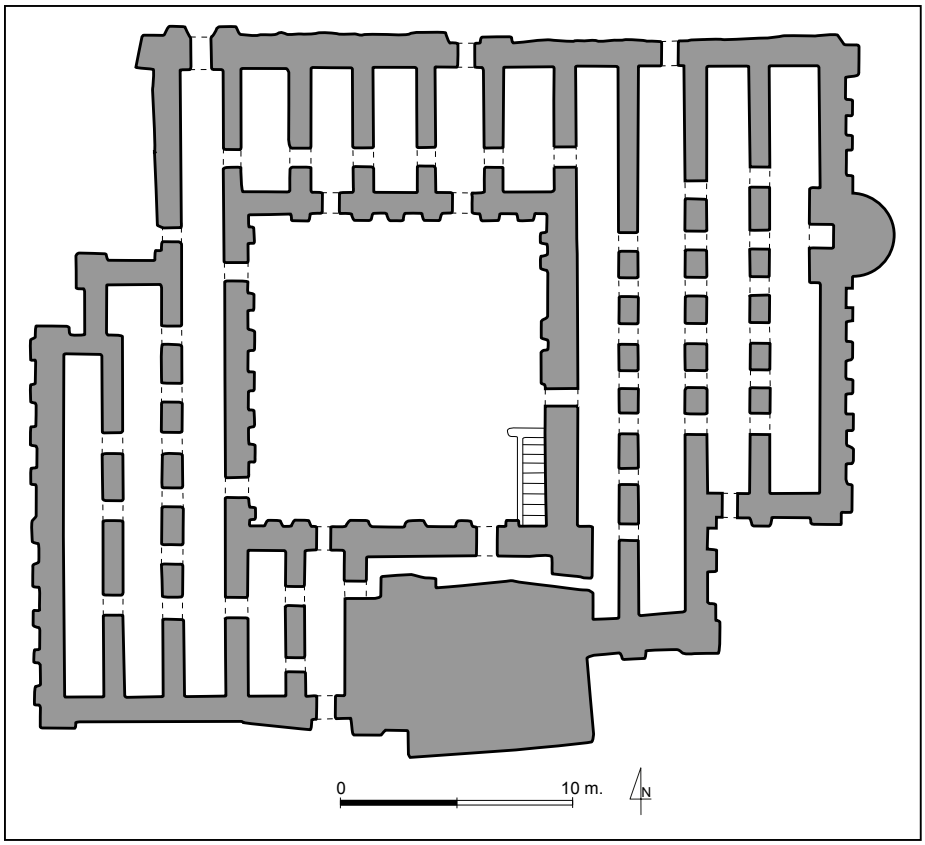


FIGURE 45 Mosque of Sankore, Timbuktu

1.7.2.4 The Mosques of Agadez and Assode

The town of Agadez, situated in Air in Niger, had been an important oasis on the caravan routes since the fourteenth century. The town was also a Tuareg political centre in the fifteenth century. The Friday mosque of Agadez was built in the fifteenth century close to the sultan's palace. It was the result of at least three successive stages of construction.[121] Before 1449 the oratory consisted of four bays parallel to the *qibla*. It was preceded by a courtyard (Fig. 46). After the invasion of Askia Muhammad and the consolidation of the power of the sultan of Agadez in 1515, the prayer hall was enlarged by two bays to the east, which included the one in front of the *qibla*, containing the *maqsura* at its far end and a new minaret. The building had an irregular general plan with a surface of 1500 m². It consisted of various chambers, notably four prayer halls, a central minaret and an inner courtyard. The courtyard was protected by a covering of mats providing shelter from the sun. The semicircular *mihrab* was a metre high and was not decorated. To the south of the mihrab, a little opening 67 cm high was sealed by planks. It now serves as a *minbar*, but according to tradition it was an ancient *mihrab* condemned after a holy man had thrown into it the head of an evil spirit or *jinn* who devoured the muezzins responsible for the prayer call.[122] The conical *mihrab* tower is off centre of the qibla wall, its outer wall smooth and with no relief. Small mural niches were used for oil lamps before the introduction of electric lighting. Three horseshoe arches with lowered jambs were to be found in the prayer hall, two in the axis of the *mihrab* and one in the *maqsura*. We know nothing of the exact origin of this type of arch, which can also be found in the porticos of the mosques of Chinguetti, Wadan and Walata, but with a higher jamb. A first minaret was added on the axis of the *mihrab*. Today its ruins are no more than 2 m in height. The explorer Barth observed the ruins of a tower to the west (1857). Towards 1844 or 1847 the south façade was reorganised, and the present minaret built with a height of 27 m. The rectangular minaret was decorated with corner battlements and *toron* assembled in pairs. Its four facades were pierced by seven little square windows, lighting up the staircase leading to the platform. Recent buildings, finally, were added in the nineteenth and twentieth centuries, such as the west hall (n°3) and the south hall (n°4). Two cemeteries are located within the enclosure of the mosque: the western cemetery reserved for the graves of young children, and the eastern cemetery containing members of the sultan's family, including the tombs of two twin marabouts dating from the early fifteenth century.

In Air, north of Agadez, the Friday mosque of Assode dates at least as far back as the first half of the seventeenth century. The building, now in ruins, consisted of a large prayer hall measuring 34 m by 12.5 m, with five bays parallel to the wall of the *qibla*. In the rectangular courtyard the remains of a minaret are 2.50 m high. The minaret rests on a square base with sides of 4.50 m. To the west of the courtyard, an annex hall is composed of two bays oriented north-south. The *mihrab* is built into one of the large pilasters. It is a little niche, almost square and clearly off centre by 5.70 m towards the south with respect to the middle of the *qibla*.

1.7.2.5 The Sub-group of Air

Patrice Cressier has made a very complete study of four mosques of the Adrar des Ifoghas north of Gao and Agadez.[123] First of all there is the mosque of Tefis, founded in about 1480. This building was situated at the centre of an oval sacred enclosure and was associated with a little oratory dating from the fifteenth century. Another mosque in the town of In-Teduq was founded in about 1430

121 Cressier, « Architecture religieuse à Agadez et dans l'Aïr » (1982): 171.

122 Cressier & Bernus, « La grande mosquée d'Agadez (architecture et histoire) » (1984): 14.

123 Cressier, « Archéologie de la dévotion Soufi » (1992): 75–77.

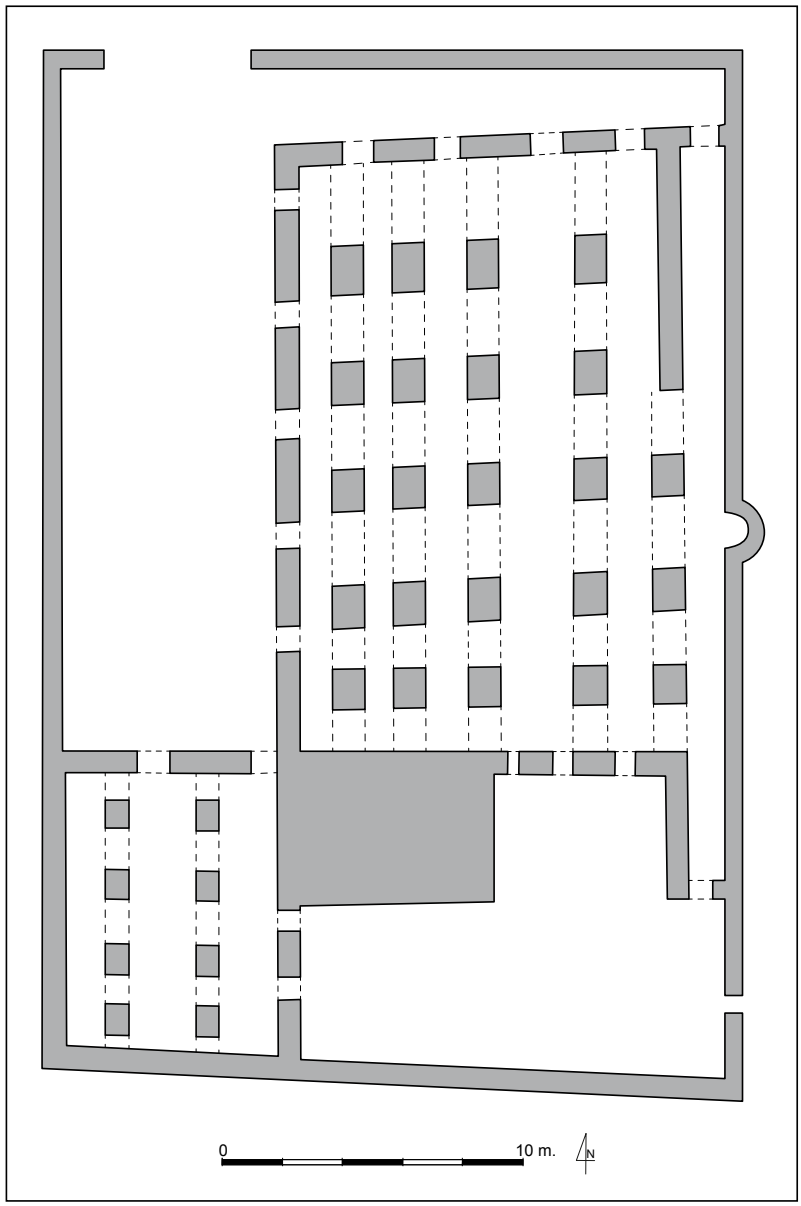


FIGURE 46 Plan of the great mosque of Agadez, fifteenth century

by ʿUthman al-Mawhub bin Iflawas. The central building was divided into three aisles parallel to the *qibla*. The interest of the mosque of In-Teduq is due to the symbolic importance of the *qibla*, and indeed, three groups of religious or funerary structures are connected to it. There were no permanent dwellings around the mosque, which must have been a temporary establishment used by nomadic populations. In-Teduq was destroyed violently by Hada Hada and his troops in the mid-sixteenth century. As for the mosque of Shi-n Wasagharan, it consisted of two aisles parallel to the *qibla*. According to the epigraphic stelae of the neighbouring necropolis the building dates to the sixteenth century.

The mosque of Es-Suk (the medieval city of Tadmekka), was composed of a rectangular hall measuring 23.5 by 15.5 m, divided into five aisles

parallel to the *qibla*.[124] All these mosques were built on a rectangular plan stretching north-south, with narrow aisles parallel to the *qibla* and massive walls pierced by small openings. The number of aisles varied from one for the villages or temporary establishments to three for urban centres such as Assode or Tadmekka. The two mosques studied by Sam Nixon[125] at Es-Suk Tadmekka have an architecture in polygonal blocks of undressed stone bounded by a mud mortar, sometimes with a rough coating in banco. They date from the fourteenth and fifteenth centuries. The stone architecture of the site must relate to the mosques of Mauritania, but these mosques differ in many respects. In Air, the mosques have no decorations and a massive appearance. They never have minarets or *minbars*. They could be integrated in a sacred oval enclosure which formed a main urbanisation axis following the *qibla* orientation. Small places of worship multiplied all round the mosque, with oratories provided with *mihrabs*. The sites were structured according to an east-west axis. Patrice Cressier suggested that this rigorous organisation of space reflected divine harmony and was connected to Sufism. At the end of the fifteenth century some scholars originating from Tadmekka founded a series of hermitages in Air. These members of the Sufi confraternity of the Qadiriyya were probably at the origin of a religious architecture peculiar to the region. The mosques can clearly be classified as a sub-group of the pre-Saharan steppe characterised by two or three aisles parallel to the *qibla*.

1.7.3 *The Group of the Middle Niger*

1.7.3.1 The Mosques of the Middle Niger

The Middle Niger designates the region between Segou and Timbuktu, of which the river Niger forms the main axis. This group of Malian mosques is characterised by a rectangular plan, a courtyard to the west, and a great verticality expressed by high façades and towers. A western gallery is generally reserved for women. These mosques were built by Songhay, Mandingo and Fulani populations. In the group of the Middle Niger, the arches which connected the pillars were horseshoe, ogee and broken arches. The stairways of the mosques of the Middle Niger had a characteristic porch roof, with what is known as a "camel silhouette" or stepped parapet. The *adhan* or podium is typical of the group. This structure was generally placed next to the entrance of the courtyard or the prayer hall and was sometimes doubled by a parapet. In certain cases, the prayer was called from this podium. The mosques of the Middle Niger can be divided into three sub-groups: the Inner Niger Delta, the region of Lake Debo, and the region of Segou.

1.7.3.2 The Sub-group of the Inner Niger Delta

The mosques of the Inner Niger Delta are often emblematic of the literature on so-called "Sudanese" architecture. They have a decoration and plastic elements in mud and are tall and majestic. Their façades are punctuated by buttresses, towers, corner pillars and numerous pinnacles They have battlements and *toron* on the towers and the outer walls, and an impressive portal. The towers and the façades have refined and smooth shapes and are interrupted by quadrangular buttresses. The interplay of light and shadow resulting from these buttresses intensifies their majestic dimension. They often rest on a built terrace. The entrance portal is flanked by pilasters, a porch roof, and conical battlements with a round tip. More generally the doors are enframed by pilasters. The so-called "Djennian" façade is composed of a *mihrab* tower and lateral towers. The *toron* of the towers and walls are collected in bundle of branches. The towers have stepped parapets. In some mosques, finally, the main façade and that of the courtyard have a panelled structure. The *mihrab* tower with steps is fairly recent and characterises the entire region of the river Niger. This group of mosques is defined by a verticality of the elements composing it with towers, pilasters,

124 Idem, 71–73.

125 Nixon, *Essouk – Tadmekka. An Early Islamic Trans-Saharan Market Town* (2017): 108–110.

corner pillars and battlements, the whole forming a symmetry around a central axis. It is illustrated by numerous Malian mosques, such as the ones in Djenne, Bouna, Kamaka, Koa, Kolenze, San, Sanse, Sofara, Somadougou, Dire and Goundam.

1.7.3.2.1 *The Great Mosque of Djenne*

Djenne is the largest town in the Inner Niger Delta. According to the *Ta'rikh al-Sudan*,[126] the first great mosque of Djenne (n°1) was built in the twelfth century by King Koy Konboro on the site of his palace (Fig. 47).[127] The successor of Konboro, Mahala Tanapo, is supposed to have destroyed the old mosque and to have built a new one (n°2) to the west with two sections, one for the Muslims and another for the traditionalists. This information is interesting and suggests that the first converts were not Sunni but possibly Ibadi, regarded as "traditionalists" by the orthodox Muslims. Askia Muhammad allegedly destroyed the syncretic and "heretical" mosque of Mahala Tanapo and rebuilt the one of Konboro to the east (n°3). Then, the Moroccans are said to have torn down the mosque of Askia Muhammad in 1591 and to have rebuilt the mosque of Mahala Tanapo to the west (n°4). Finally, the French completely rebuilt the old mosque (n°5). The traditions intersect and contradict each other, and only new archaeological excavations will tell us more. What is sure is that the old mosque (n°1–3) was in a poor state in the early nineteenth century. Almost in ruins, the building

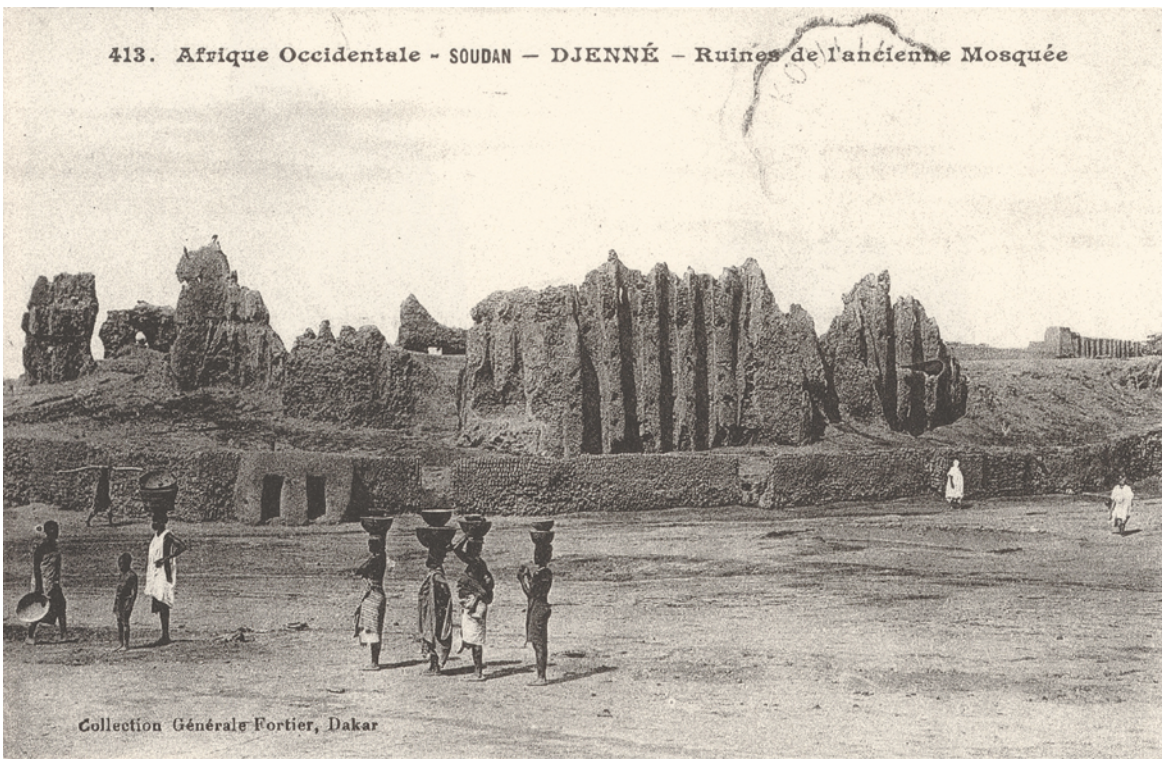


FIGURE 47 Postcard showing the ruins of the old great mosque of Djenne in 1906

126 Es-Sa'di, *Tarikh es-Sudan* (1900, reed. 1964): 23–26.

127 Bourgeois, "The history of the great mosques of Djenné" (1987): 54; Bourgeois & Pelos, *Spectacular vernacular. The adobe tradition* (1989): 133.

had not been maintained since the eighteenth century. René Caillé described it in 1828:

> A large mosque in mud, dominated by two massive low towers. It is coarsely built despite its size. It has been abandoned to thousands of swallows which are constantly nesting there, producing a ghastly smell. This has led to the habit of praying in a small external courtyard.[128]

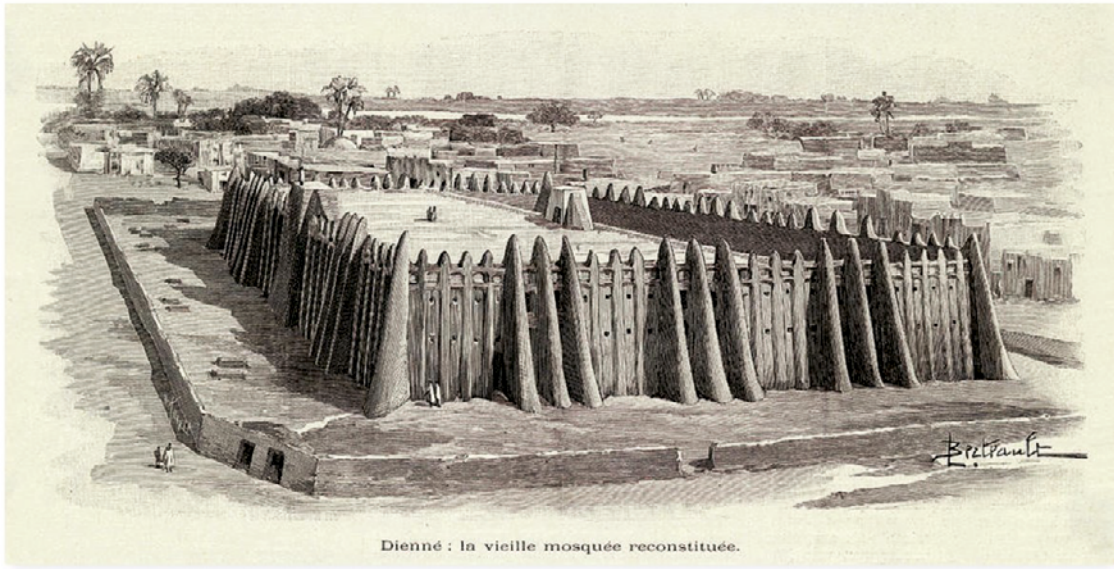
Some years later Dubois described it as follows:

> It was a huge block, strictly square, the sides of which were 56 m in length and 11 m. in height. In addition to the habitual longitudinal ornaments, each façade had a symmetrical arrangement of three groups of buttresses, each including one or three large edges with a projection of three metres at the base and which tapered upwards. The walls were crowned with triangular battlements intermingled with the ends of the edges, of a similar shape but taller. Each façade was oriented towards one of the cardinal points. They were not entirely identical to one another. The north and south façades also had two rows of windows and doors. To the east the sacred façade looking towards Mecca appeared as a blind wall, with no doors or windows, and simply had pilasters and three groups of buttresses. Similarly, the west façade was full except for a single door. The two rows of windows suggested that the interior consisted of two floors, but this was not so. The windows gave light to a closed gallery (2.50 m wide by 10 m high) which ran round the square. Then, parallel to the sacred façade to the east, came a series of nine bays.
>
> These bays were covered and formed the true body of the building, the sanctuary. Inside there was a subdued darkness, and it was lit only by some openings in the elevated ceiling, by the parsimonious beams of light coming from two passages and a few windows open onto the great gallery, and finally by two doors which led to the courtyard. The courtyard occupied the empty space in front of the ninth bay. At the centre of the monument, between the seventh and the ninth bay, stood a quadrangular tower with sides measuring 8 metres at the base. A stairway had been built in. It ended above the terrace roof with an aedicule, from the top of which the marabout called the faithful to five daily prayers. The terrace had another similar aedicule serving a similar purpose but standing in the middle and on the edge of the east façade. A low wall ran round the building, 5 metres away. But in front of the façade looking towards Mecca, this enclosure observed a respectful distance of 20 metres to form a spacious esplanade. There, on sacred ground, the revered marabouts, the scholars, and the men of mark rested in their last earthly sleep. It was the pantheon of Djenne. This well-located cemetery was in harmony with the high walls looking towards the Kasbah, where the rostrums of the buttresses only alternated with the pylonic fillets without a door or a window breaking the uniform grandeur, with no sign of life. This façade was obviously intended to give the impression of a mausoleum. The mosque stood in the south part of the town where the ground rises slightly. At its feet lay a vast pit, which provided the building materials, and which is now a green marsh, and which made the mosque stand out still more [...].[129]

What is very interesting in the description and the engraving published by Dubois is the fact that the old mosque was extremely different in style compared to the present-day mosque in Djenne (Fig. 48). In fact, the old mosque of Djenne was

128 Caillié, *Journal d'un voyage à Temboctou et à Jenné, dans l'Afrique centrale* (1830): 148.

129 Dubois, *Tombouctou la mystérieuse* (1897): 176–8.



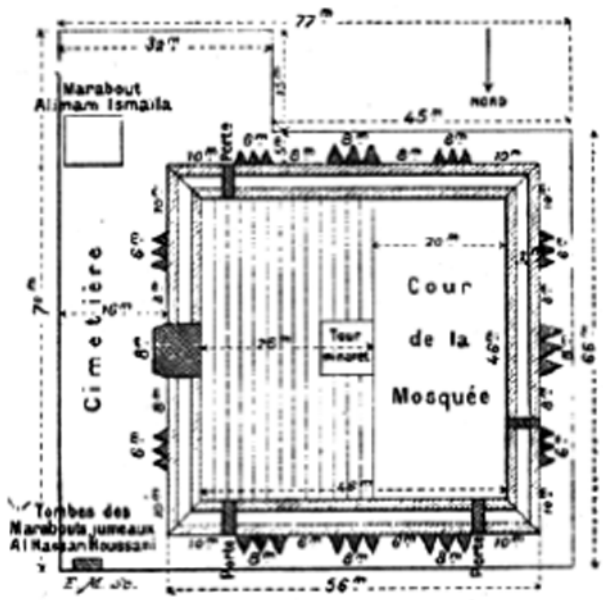


FIGURE 48 Engraving of the old great mosque of Djenne in 1897

very similar in style to the group of mosques that we call "Dyula mosques", especially with the elongated and narrow group of winged buttresses attached to the façades of the mosques. The only explanation that comes to my mind is that the group of the Middle Niger, especially from the inner Delta, is a recent group strongly influenced by the Moroccans, and later by the French during the colonial period. Therefore, the Dyula mosques group witnesses of earlier traditions in the Middle Niger. These architectural traditions moved with people to the South where they are still preserved.

In 1830 Seku Ahmadu ordered the mosque to be closed. Since Islamic law forbids the destruction of a mosque, he decided to destroy the building by blocking the gutters evacuating the rainwater. The weight of the water on the terraces led to its collapse. The oral tradition defends his decision, invoking the fact that local mosques catered to the vanity of the egotistical marabouts and that the proliferation of these figures led to practices which diverged from a classical and pure Islam.[130] This rigorist approach was obviously an excuse for introducing a new practice of Islam sustained by the Fulbe *jihad*. According to tradition, there were at least eleven mosques in Djenne. True to a radical Fulbe Islam, Seku Ahmadu had them all destroyed. Their ruins were transformed into cemeteries after a cholera epidemic in 1868. The fifth great mosque of Djenne (n°5) was thus the work of Seku Ahmadu and dates from 1834.[131] It had no towers or minaret, like the first mosques of Arabia. Inside there were no mud pillars but simple wooden poles. The ceiling was three metres high, whereas the wide building contained ten north-south bays. The building in its entirety was impregnated with the simplicity and the ideological austerity which accompanied the religious reform of the Fulani *jihad*.

The present Friday Mosque of Djenne is considered as the third great mosque to be built in the town.[132] It is situated to the east of the market square and dates from 1907. In fact, this mosque is the fifth (n°5) built in the city. The present mosque was built on a large podium covering the remains of the early great mosque. The new building has a surface of 3200 m², 85 m long by 65 m wide, with a height below the ceiling of 8 m. The north and south façades are decorated by two rows of *toron*. The walls are divided by corner pillars and internal pilasters and external buttresses. Tombs of marabouts stand between the enclosure wall of the mosque and the external façade of the *qibla*, and the most important grave is in the north-east corner near the ablution well. The west courtyard has a portico to the north, west and south, the width of an aisle. The west gallery is reserved for women. In the prayer hall the ten bays are parallel to the *qibla* and connected to each other by ogive arcades (Fig. 49) and 90 pillars. The *mihrab* is small and deep with a rounded abside. The niche of the *minbar* consists of two steps. The roof is pierced by 104 ventilation holes covered by potteries. The *mihrab* tower is enframed by lateral towers which taper upwards into a point in the higher parts. They are surmounted by steps in the corners with a central conical point with two ostrich eggs. The *mihrab* tower, 18.5 m high, has corner battlements and eleven rows of *toron*. The lateral towers are 17.5 m high and are decorated by five rows of *toron*. The staircase towers, finally, are quadrangular elements 13 m high, situated to the north and south of the mosque. This great mosque is impressive for its verticality, its isolation on the marketplace, and

130 Monteil, *Une côté soudanaise : Djenné, métropole du Delta central du Niger* (1932): 150–151.

131 Maas & Mommersteeg, "De moskee van Djenné, morfologie en onderhoud van een Afikaans monument". *Bulletin K.N.O.B.* 88–6 (1989): 24–30; Maas & Mommersteeg, « une architecture fascinante ». *Djenné, une ville millénaire du Mali* (1994): 80–83.

132 Unen van, *Een Onderzock naar de Architectuur van het Dorp Sirimou nabij de stad Djenné* (1987); Velden van der, *Moskeën en Metselaars in de Regio van Djenné* (1989); Snelder, "The Great Mosque at Djenne" (1984): 66–74.

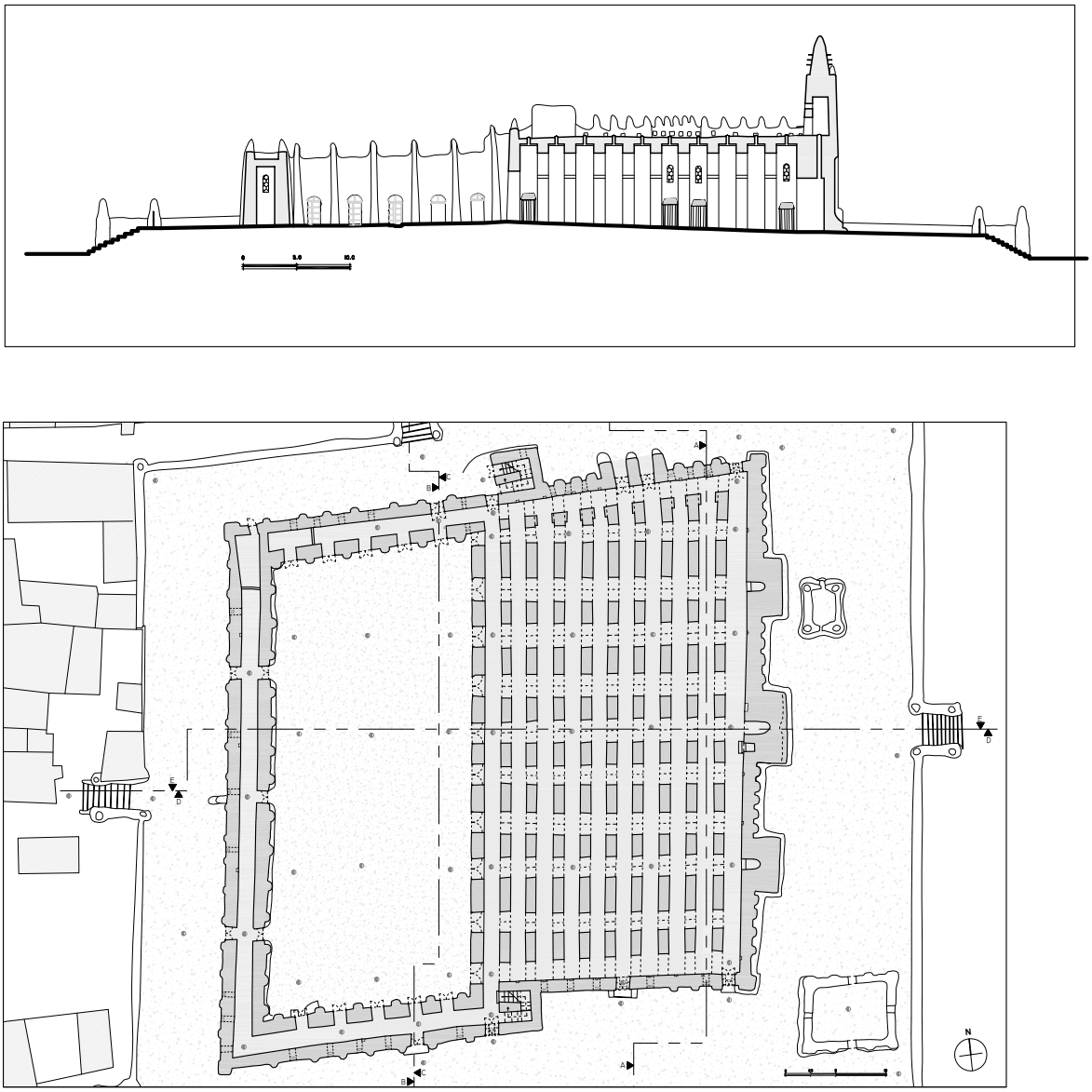


FIGURE 49 The great mosque of Djenne

the emphasis given to its symmetrical façade composed of three towers (Fig. 50).

The tripartite façade and the symmetrical organisation of space have been attributed to the influence of European colonisation, but this seems unlikely if we look at the mosques in the neighbouring regions and the models of earlier religious buildings which all tend towards this Djennian late model. Besides, the tripartite façade of the Djennian mosque recalls the *potige*, a monumental portal characteristic of the houses of the town of Djenne (Fig. 51). It consists of massive cones enframing an entrance door, delimited by two pilasters and overhung by a window. The



FIGURE 50 The front façade of the great mosque of Djenne after restoration

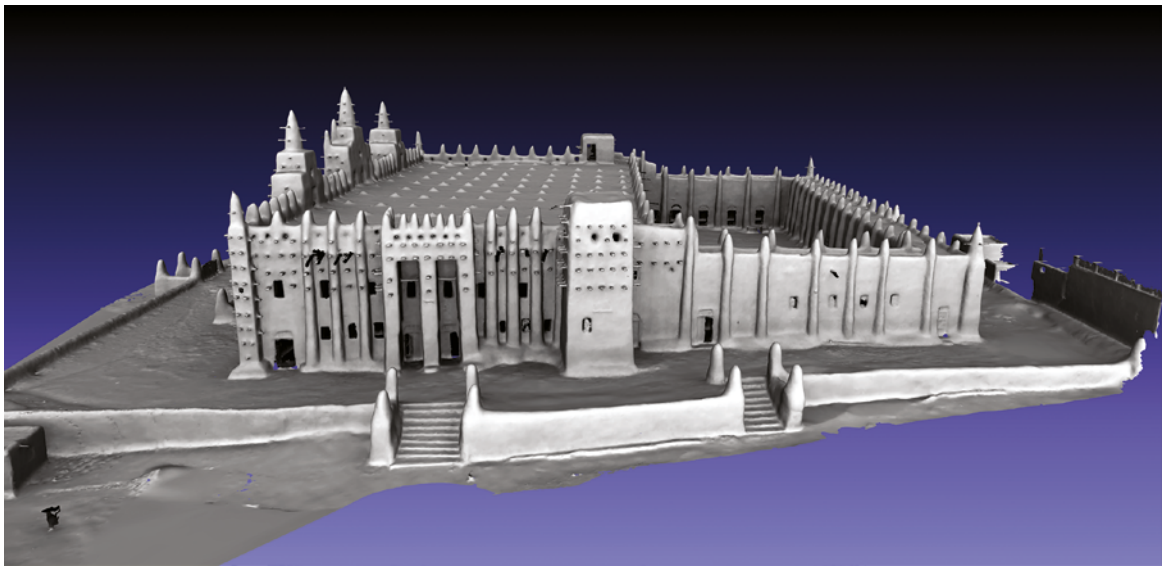


FIGURE 51 The potige, monumental Djennean traditional gate

upper part of the portal is decorated by *toron*. This monumental composition is very symmetrical. The doors of the Pular houses have a porch roof, as in the stairways of the mosques of the Delta. In Mopti the west façade is identical to the east façade and makes the building symmetrical. The recent mosques of Dire and Goundam are comparable to the Djennian style, with a massive rectilinear portal which gives them a refined appearance.

1.7.3.2.2 *The Mosque of Mopti*

The town of Mopti is at the confluence of the Niger and the Bani rivers. It was a small Bozo establishment until the end of the nineteenth century. In 1905 the town was occupied by the French colonial administration and is now a large commercial centre connected with Bamako. The Friday mosque is situated in the district of Komoguel (Fig. 52). It dates from 1933–35 but was restored in 1980 with the addition of baked bricks on the points of the towers and the corner pillars, while cement has been added to the upper quarter of the façades. The building has a surface of 530 m² and rises to 17 m in height for the *mihrab* tower and 13.5 m for the lateral towers (Fig. 53). The is no courtyard attached to the mosque, but an enclosure enframes the building in its entirety. A large space has been arranged before the eastern façade in front of the *mihrab* tower. The symmetrical façades are interrupted by corner pillars and buttresses with a long point. The north and south entrances have a Djennian portal. The prayer hall consists of four bays which run parallel to the *qibla*. They are constituted by rows of seven pillars with sides of 1 m. The square *mihrab* has sides of 2 m, in contrast to the narrow *minbar* which is 70 cm wide. The *mihrab* tower is flanked by two identical but lower lateral towers and is decorated with nine rows of *toron*, square blind niches, and corner battlements. The corner towers have five rows of torons (Fig. 54). The mosque has the same tripartite arrangement on the western wall, with



FIGURE 52 Friday mosque of Mopti, Komoguel district

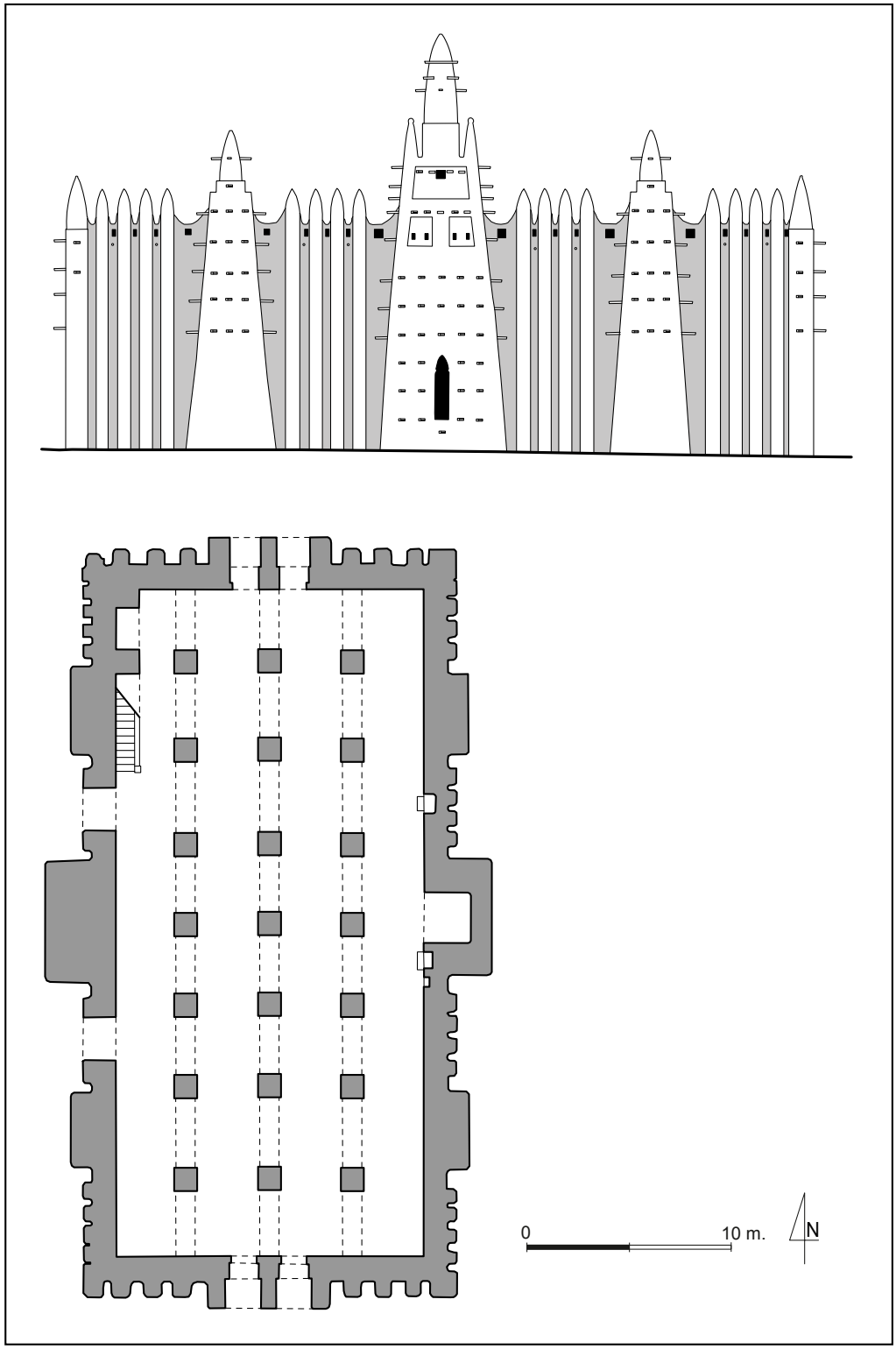


FIGURE 53 Plan of the great mosque of Mopti and façade of the qibla wall



FIGURE 54
Friday mosque of Mopti, Komoguel district

one central massive tower and smaller towers in the corners. This east-west symmetry is attributed to the French colonial influence, and it doesn't correspond to a vernacular style from the Niger valleys. The towers have a trapezoidal spire which tapers at the summit, and they rest on a rectangular base. They are composed of steps, segments, a central point, and are capped on top by a ceramic cap with two ostrich eggs.

1.7.3.2.3 *The Mosques of Koro, Dire and San*

The town of Koro is situated in the region of Mopti, at the foot of the cliff of Bandiagara. The great mosque was restored in 1964. Extending over 500 m^2, it is divided into six bays parallel to to the *qibla* wall (Fig. 55). The niches of the *mihrab* and the *minbar* are rectangular. The mosque consists of a west courtyard wider than the prayer hall, which is protected by sunshades made of bifurcated poles and branches. The outer wall is decorated with corner towers, a pyramidal *mihrab* tower 12.5 m high, *toron*, ostrich eggs, buttresses, and a structure of panels on the west façade. The parapet is decorated with triangular openings and battlements (Fig. 56).

The town of San is situated south of the Niger Delta in the region of Segou. The agglomeration included seven district mosques and one great mosque. The Friday mosque stands in the market place. It dates from 1941, but it is the reconstruction

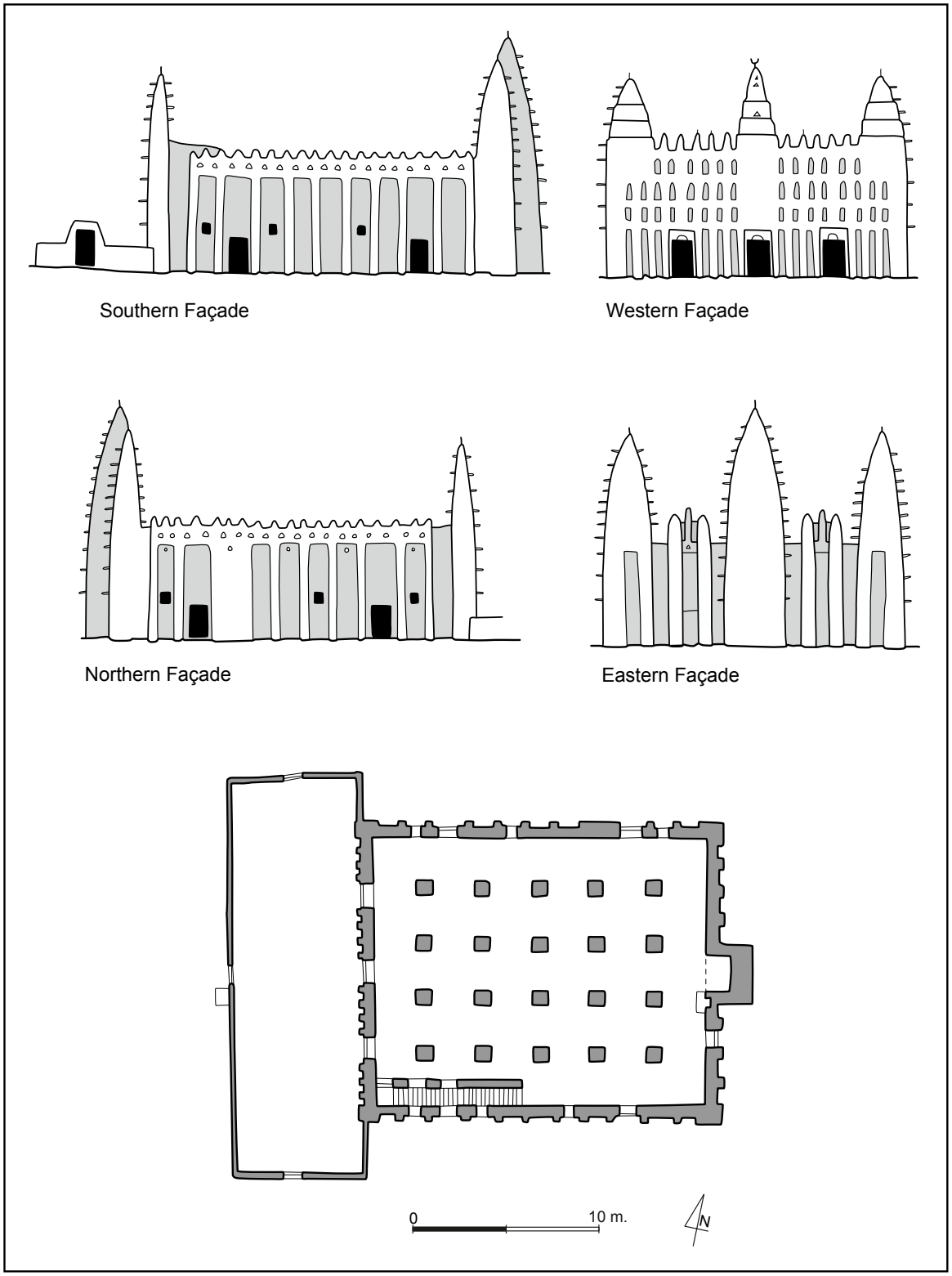


FIGURE 55 Mosque of Koro, footsteps of Bandiagara cliffs



FIGURE 56 The great mosque of Koro, Mali

of a building of 1875. It covers a surface of 1300 m² with a height of 14.8 m for the *mihrab* tower and 14 m for the lateral towers. The west courtyard is enframed by galleries to the north, south and west, with a little prayer hall for the women. The main prayer hall has five bays parallel to the *qibla*. The rectangular *mihrab* is overhung by a semicircular arch, as is the *minbar* with two steps. The tomb of an imam called Thera stands in the north of the courtyard. The *mihrab* tower is surmounted by four corner battlements and a central cone. Ceramic gutters serve to evacuate the rainwater.

The town of Dire is located north of the Niger bend in the region of Timbuktu. The first great mosque of Dire was built under Mansa Musa reign in the fourteenth century. After that a new building was set up under Askia Muhammad at the beginning of the sixteenth century. The present Friday mosque dates from 1930 and is close to the town market. It covers a surface of 1362 m², with a maximum height of 11 m on the level of the *mihrab* tower. The west courtyard contains a well. The quadrangular *mihrab* tower is decorated by three pairs of buttresses. The deep *mihrab* is rounded and vaulted, like the *minbar* which has a small plinth and a wooden seat. The seven bays of the prayer hall are parallel to the wall of the *qibla*. The mosque was reinforced in 1974 by a coating of the façades with baked bricks and cement up to the points of the roof. The doors are in corrugated iron, a compromise with modernity. The refined shape of the building is reminiscent of the mosque of Goundam.

1.7.3.3 The Sub-group of Lake Debo

In the region of Lake Debo, the mosques have a simple and smooth east façade. All the other façades are richly worked. The buttresses present a surface in panels, and false or blind niches decorate the façade of the courtyard. These mosques

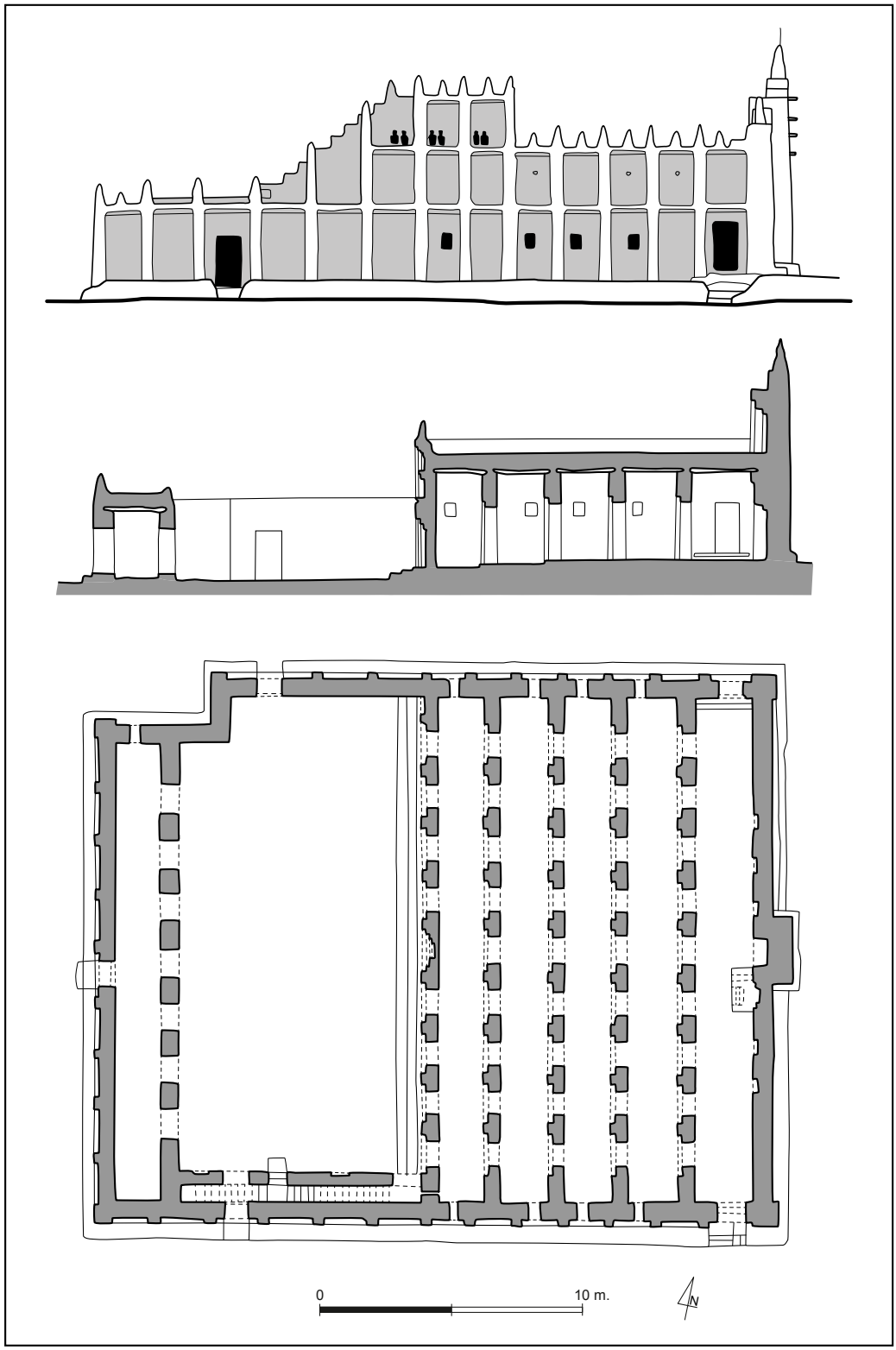


FIGURE 57 Great mosque of Guindio-Sare, Mopti region

are built on a platform which raises them above the level of the neighbouring streets and squares. The sub-group of Lake Debo is characterised by the mosques of Bia, Guindio-Sare, Koumaira, Sa and Sibo in Mali. They include a large gallery of horseshoe arches which runs round the inner courtyard or the western part. The courtyard has an external *mihrab*. The east outer façade is usually simple and flat, sometimes with a panel structure which also extends to the courtyard. Podiums or *adhans* raise the access to the prayer hall. The *minbar* and the *mihrab* of the prayer hall are rectangular and surmounted by simple or horseshoe arches. The stairwell, in the south, has a parapet with pointed battlements and pinnacles. The *mihrab* tower is surmounted by a central conical point and is not flanked by lateral towers.

The Friday mosque of Sa is in the region of Mopti in Mali. The town has been the headquarters of the Bambara of Segou ever since the eighteenth century. The mosque stands in the Bambara district and, according to the oral tradition, was founded by Soriba in the fourteenth century. Nevertheless, the date of reconstruction of the present mosque is 1934. The three bays parallel to the *qibla* are composed of columns connected by semicircular arches. The courtyard and the galleries cover a larger surface than the prayer hall. A staircase leads to the roof at the junction between the south of the prayer hall and the courtyard. The *mihrab* tower, of a pyramidal shape, is 6.9 m high and is overhung by a conical point ending in a ball and decorated by two rows of *toron* on the upper half. The pilasters, the buttresses and the panels of the façades all serve the same purpose: they break the regularity of the walls and produce an effect of light and shade.

The Friday mosque of Guindio-Sare is situated on the north bank of Lake Debo in the region of Mopti. The town was founded by the Bozo and destroyed in the second half of the nineteenth century by the Fulbes. The mosque was rebuilt in 1950 by masons from Djenne. It covers a surface of 507 m^2, with a height of 8.1 m on the level of the *mihrab* tower. This rectangular tower is surmounted by two segments and a central conical point ending in a star (Fig. 57). It is furrowed by four rows of *toron*. The north and south façades



FIGURE 58 Great mosque of Guindio-Sare, Mopti region

of the courtyard are embellished by panels (Fig. 58). The *mihrab* of the courtyard is composed of a niche surmounted by a horseshoe arch. The west gallery, running along the courtyard, is reserved for women. The five bays parallel to the *qibla* are connected to each other by horseshoe arcades. The rectangular *mihrab* also has a horseshoe arch. The niche of the *minbar* contains three steps and a small seat. Small mural niches have been added on each side of the *mihrab* and the *minbar*.

1.7.3.4 The Sub-group of Segou

The group of Segou presents a style of transition between the mosques of the Middle Niger group and those of the Volta-Niger. The mosques of the Segou group can be compared with those of Kong and Bobo-Dioulasso. The style of Segou is defined by massive corner pillars which protrude beyond the roof. The inner pillars are broad and often form veritable supporting stacks. The west gallery is always reserved for women. There is no parapet on the roof and there are no buttresses. The stairway of the courtyard has no porch roof. The *mihrab* tower forms a reversed flattened half-cone in a "sugar loaf" and has several windows and openings. The towers are mainly conical in shape and, more rarely, are stepped or pyramidal. The Malian mosques of Banankoro, Bamako, Bambougou, Ke-Massina, Segou, Si and Zinzana, are representative of the sub-group of Segou.

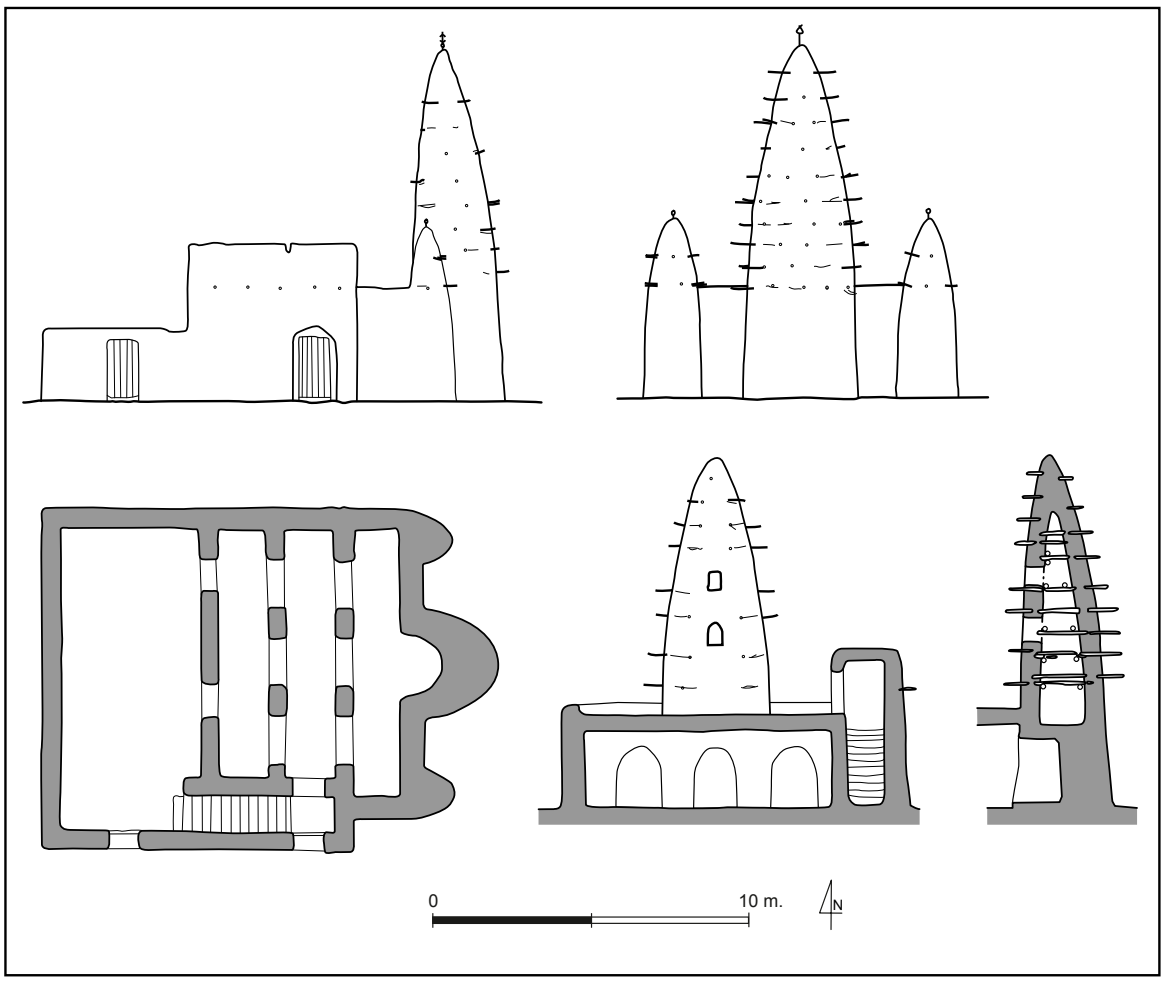


FIGURE 59 Mosque of Banankoro

The mosque of Segou was built in 1933. The west gallery of the courtyard is used by women. The ablution area is situated in the north-west corner, opposite a staircase on the south wall. The *mihrab* is hemispheric in plan. The three bays parallel to the *qibla* are connected by wooden stacks to simple arches. The *mihrab* tower in a sugar loaf is attached to the eastern façade which is very smooth, without pilasters and pinnacles. Ostrich eggs are placed on the *mihrab* tower.

The mosque of Banankoro stands on the right bank of the Niger, in the region of Segou in Mali. It was built in about 1930. The total surface of the mosque is 145 m^2. The west courtyard has almost the same surface as the prayer hall. The three inner bays are composed of stacks connected by rounded arches. The *mihrab* tower is shaped like a sugar loaf 11 m high (Fig. 59). The *toron* are assembled in pairs on the upper half of the tower. The *mihrab* tower is enframed by the top part of the corner pillars of the mosque, which are reduced models of the lateral towers in the Djennian style.

1.7.4 *The Pular Mosques of Futa Toro*

1.7.4.1 The Mosques of Northern Senegal

The group of Futa Toro is a late regional group of the north-east of Senegal in the department of Podor with the mosques of Bode, Doumga Ouro Alfa, Doumga Ouro Thierno, Guede, Halwar, Kobilo, Seno Palel, Mboyo, and Tielao. They are all the work of the Fulani populations.[133] The mosques of Futa Toro are simple and massive. They are characterised by a simple rectangular plan and façades without *toron*. Massive buttresses with conical summits have been placed at the four corners of the building. The west, north and south median buttresses are pierced by a door. Access to the roof is reached by a ladder, an external or an internal staircase. The internal staircase is built in the north-west and is indicated by a little stairwell that protrudes above the roof. The *mihrab* is semicircular and protrudes outside the mosque. The name of God is calligraphed on certain *mihrabs*, in Tielao, Guede and Halwar. The *minbar* is sometimes placed inside the *mihrab*, with two or three adobe steps. When it exists the *mihrab* tower produces a flattened protuberance. The decorations are organised in triangular and semi-circular motifs placed on the pilasters. Ceramic receptacles, with openings turned towards the exterior, are inserted in the walls.

Jean-Pierre Bourdier studied nine Senegalese mosques, four of which date from the 1760s (Bode, Kobilo, Seno Palel, and Doumga Ouro Thierno).[134] These square mosques form a small cubic structure capped with a conical thatched roof which surmounts one of the corners and encloses a staircase. In Doumga Ouro Thierno this aedicule is counterbalanced by a second identical structure in the righthand corner. The mosques of Guede, Tielao, and Halwar, built in the second half of the nineteenth century, are closer to the style of the Niger valleys, with massive buttresses and corner pillars ending in pinnacles. The most recent mosques of Madina Torobe and Doumga Ouro Alfa, built between 1940 and 1960, resemble the preceding ones but have decorative horizontal perforations in the walls. The arrow-shaped elements, influenced by the Soninke, are added to the triangular and semicircular motifs more common to the domestic architecture of Futa.

1.7.4.2 The Mosques of Bode, Doumga Ouro Thierno and Halwar

Bode is a mosque dating from 1760–70. It corresponds to the first movement of Islamic fundamentalist reformation launched by Sulayman Baal. The rounded *mihrab* is wide and deep. The four bays are parallel to the *qibla*. Each façade is pierced by an entrance. The courtyard stretches in front of the west façade and is surrounded by a palisade. The aedicule, formed by the summit of the staircase minaret in the north-west corner, is capped by a thatched roof.

133 Cantone, *Making and Remaking Mosques in Senegal* (2012).

134 Bourdier, "Houses of Light: Rural Mosques of Senegal and Mali" (1991): 61–67.

The mosque of Doumga Ouro Thierno accompanied the first Islamic reformation of Abdul Kader Kan. It was built at the end of the eighteenth century and was unfortunately restored with concrete in 1930 and 1980. Two symmetrical aedicules were placed in the right and lefthand corners of the west façade, the lefthand one being capped with a thatched roof. The windows are square-shaped or semicircular. Triangular openings have been arranged in circles and in zigzag and serve for the ventilation and the ornamentation. These triangles recall the decorative elements in the Mauritanian mosques and houses.

The mosque of Halwar dates from the time of al-Hajj 'Umar's *jihad*, between 1851 and 1891. The massive buttresses end in pinnacles pointed on the four corners and rounded above the entrances and the *mihrab*. A square aedicule surmounts the staircase in the north-west corner. The austere *mihrab* is only decorated with the calligraphed name of Allah. The *minbar* consists of three steps.

1.7.5 *The Group of Hausa Mosques*

1.7.5.1 Hausa Mosques of the Caliphate of Sokoto

The mosques of this group are scattered between the south of Niger and the north of Nigeria – in Argungu, Bebeji, Birnin Kebbi, Jega, Sokoto, and Zaria in Nigeria and Chiginawen, Gao Safon Gari, Tancinat, and Zinder in Niger. This style of mosque is attributed to the Hausa populations, although they were in fact nearly all built under the caliphate of Sokoto. They are characterised by an irregular plan in Nigeria or a rectangular one in Niger, possibly under the influence of the Niger-Sahel group. The prayer hall is surrounded by a courtyard on three or four sides in Nigeria or attached to a simple courtyard to the west in Niger. The ceiling is composed of finely worked wood and mud cupolas. The *adhan* is used as a minaret or a podium built at the roof level. The outer walls are smooth and without buttresses. The merlons or *zanko* of the roof parapet are tapering. The *mihrab* is massive and spacious, with a little platform, and is combined with the *minbar*. The prayer hall is divided by numerous massive square or cruciform pillars, while circular columns are rare. Numerous doors open onto the courtyard.

The Hausa mosques are distinguished from the other mosques of the Niger valleys by a ceiling composed of domes, their even façades without buttresses or corner pillars (the roof is supported solely by the walls and massive inner pillars), and the absence of *toron*. The bays are far wider. The mosques of Tancinat, Chiginawen or Gao Safon Gari all have a covering of cupolas, interior arcades, smooth walls with no buttresses, a plaster marked by fingerprints, bays as long as they are wide (generally five north-south bays), and a spacious rectangular *mihrab* niche. The Friday mosques have a *minbar* associated with the *mihrab* in the form of two steps built against the south wall of the *mihrab* niche, as in Gao Safon Gari and Chiginawen. The Hausa mosques of Nigeria differ from those of Niger by their plan and the technological treatment of the cupola roof. These are false cupolas made of a framework in palm tree wood coated with mud. The arches are decorated with clay or plaster friezes. The courtyard, which is often absent in the mosques of Niger, surrounds the building on three sides. While in most of the mosques of the Niger valleys the niche of the *mihrab* is too small to be used by the imam, in the Hausa mosques it can be up to 8 m^2 and its height reaches that of the prayer hall. It has a passage in the north wall which can only be used by the imam. This large *mihrab*, furnished with a podium called *adhan*, also serves as a *minbar*. In the Hausa region the *adhan* is impressively high.

The Hausa mosques are a late phenomenon. These religious buildings in earthen material seem to have been influenced by the religious architecture of the neighbouring Chad and Sudan and probably by the Nubian architectures of the Nile valleys.

1.7.5.2 The Mosque of Zaria

The town of Zaria is situated in the north of Nigeria. The mosque Masallaci Juma'a is located to the right of the esplanade in front of the palace

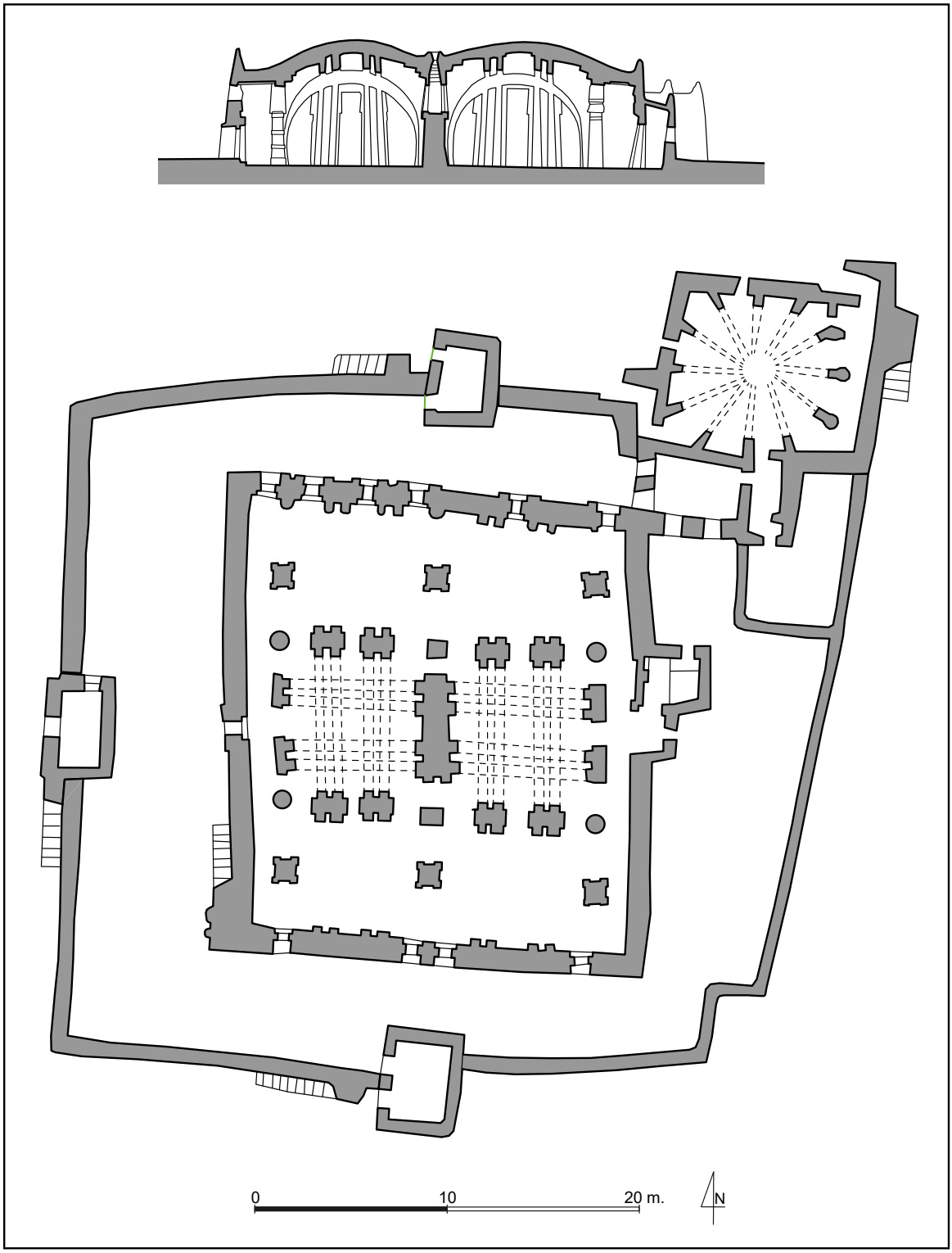


FIGURE 60 Plan and section of the mosque of Zaria, Northern Nigeria, 1834–46



FIGURE 61
Moulded decorations on the piers and arches of Zaria Mosque, Nigeria

of the emir. It was built by the mason Mallam Mikhaila, during the reign of Sarkin 'Abdulkarim (1834–46) of the Fulani dynasty of Katsina, on the orders of the sultan of Sokoto, Muhammad Bello (1817–37).[135] This religious complex contains a prayer hall, a courtyard and ablution chambers all round a surrounding wall (Fig. 60). The prayer hall has six square bays with sides of about 7.2 m covered by a roof with six domes. The cruciform pillars consist of a rectangular newel and pairs of pilasters on each longitudinal side. The mud barrel vaults, 4.6 m high, form an overhang between the supports. The rich interior decoration is adapted to Hausa architecture, with deep vertical incisions, a decoration in relief, triangular and round geometrical motifs, losanges on the stacks, and horizontal lines on the "bakan gizo" arches (Fig. 61). There are no figurative motifs except perhaps for an S-shaped element. The treatment of the surface is done with the fingers, by pressing and slipping, then with a coat of painting consisting of mica in a water solution which gives a brownish colour. In the parts that have been remade recently the original impressions are hidden by a white paint and the reflection of artificial light. There is a great similarity between the mosque of Zaria and that of Sokoto, which both date from the same period. It would seem that the latter was built by the same mason or by the same school of builders.

135 Moughtin, "The friday mosque, Zaria city" (1972): 143.

1.7.5.3 The Mosques of Niger and Nigeria

Chiginawen is located in the region of Niamey in the south-west of Niger. Its Friday Mosque was rebuilt in 1984. The building, which is almost square, is surrounded by a courtyard with an enclosure. The covering is composed of a large flat dome. At the centre of the dome a symbol in mud has been fashioned into the shape of a crescent. A podium or *adhan*, one metre high, has been installed on the west façade. The outer walls are smooth and with no ornaments. The quadrangular *mihrab* protrudes outwards and has an outlet in the north wall. The main entrance is in the south side and is richly decorated with geometrical motifs in relief.

The great mosque of Gao Safon Gari was renovated in 1984–6. It presents the same features as that of Chiginawen. The terrace roof is surmounted by a central cupola, its height under the cupola reaching 5 metres. The parapet is decorated with *zanko*.

The mosque of Tancinat is situated in the south-west of Niger, in the region of Niamey. The present rectangular building dates from 1982 but is probably earlier. The prayer hall has no bays, and a single pillar stands in the centre of the hall. The roof consists of two flat domes, a small one on the aedicule of the *mihrab* and a large one on the prayer hall (Fig. 62). The *zankos* mark the corners of the building and the west side. The entrance door in corrugated iron is surmounted by a lintel richly decorated with motifs in relief, such as arches of concentric circles and so-called "Hausa knot". The west side has small windows in the shape of crosses and crescents. A podium or *adhan* was built halfway up the side of the west wall. The staircase is protected by a balustrade in mud.

The town of Zinder is in the north of Niger. The mosque described is part of a complex which includes the sultan's palace to the east and a large modern mosque to the north. The mosque of 1870 has a rectangular plan with a courtyard to the west.

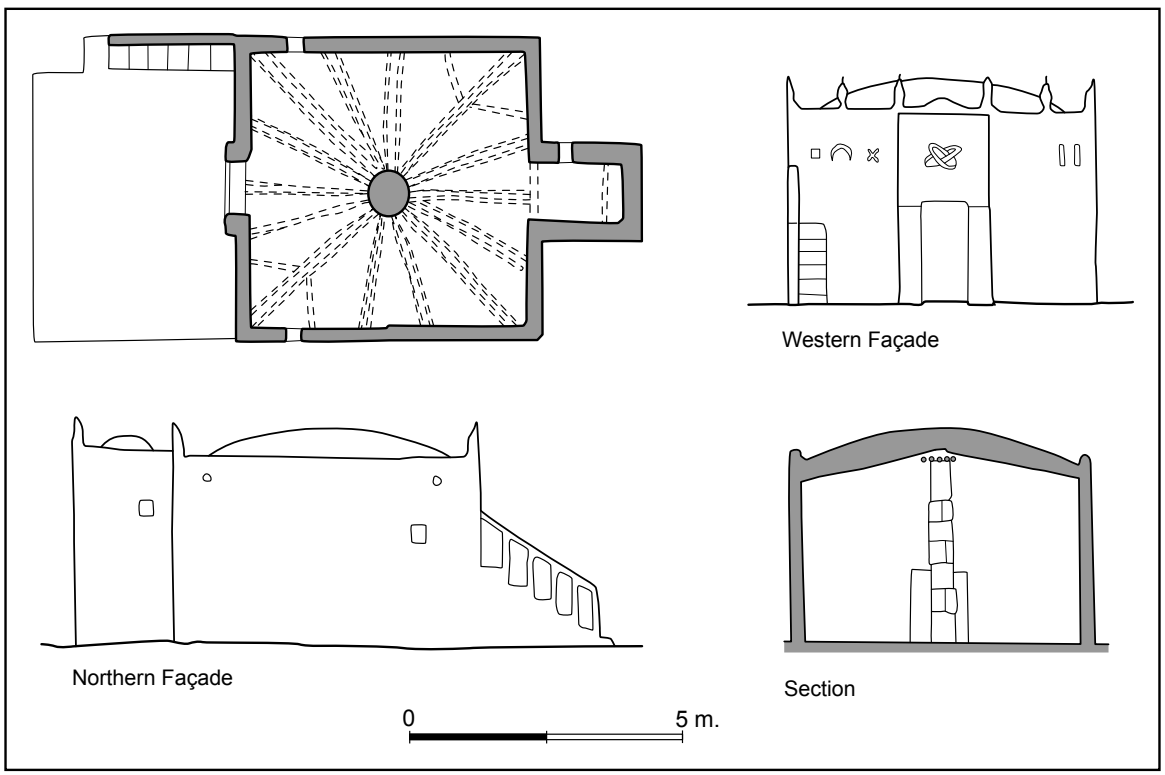


FIGURE 62 Mosque of Tancinat, Niamey region

A minaret of a pyramidal shape is attached to the south wall. It consists of three steps with ascending corniches, but, 13 m high, it collapsed in 1950. The *mihrab* has a semi-circular protrusion. The *minbar* consists of two steps between the *mihrab* and the wall of the *maqsura*.

The minaret of Gobarau in Katsina is situated in the north of Nigeria.[136] It is a massive square tower with three stairheads. A short parapet staircase runs along the north and east faces and leads to the terrace of the first stairhead of the tower. On this solid masoned base the central block contains a chamber accessible by the staircase on the east side. The domed summit of the minaret was capped by rounded merlons and pointed *zanko* in the corners, which have now partly disappeared. This minaret is said to date from the fifteenth century but was reconstructed in 1702 and was completely demolished by the Fulbes at the beginning of the nineteenth century. An identical tower existed in the town of Bauchi. The present-day minaret of Katsina was restored under European supervision in 1927.

1.7.6 *The Group of Dyula Mosques*

1.7.6.1 The Mosques of the Volta-Niger Valleys

The mosques of the Volta-Niger geographical area were essentially the work of the Mandinka Dyula traders. This group of mosques stretched along the west of Burkina Faso, the north of the Ivory Coast and the north of Ghana (Fig. 63). The mosques of Burkina Faso, such as Boromo, are attached to the Volta-Niger group, even if they are closer to the Segou type with their slim conical *mihrab* tower, an austere prayer hall, and a courtyard in the west.

The architecture of the Dyula mosques is characterised by a compact structure, oblique walls and vertical buttresses connected by horizontal wooden beams. The outer buttresses look like little turrets which give the buildings a massive and organic appearance in contrast to the geometric style of Goundam or Dire in the Inner Niger Delta.



FIGURE 63 Mosque of Nakori

136 Portch, "Minarets in Nigeria" (1980): 7.

The *toron* are irregular and thick, placed horizontally between the buttresses. These mosques have no courtyard and include a small step minaret in the north-west corner and a pyramidal *mihrab* tower in the east. The bays of the prayer hall are divided by massive supports, piers. There are no openings or windows. Located on the edge of, or within, the forest area, these mosques, squat constructions with numerous buttresses, are the last architectural manifestations of Islam in the periphery of the forest peoples and tropical areas. The most representative sites of the Volta-Niger group are Bobo-Dioulasso in Burkina Faso, Kong and Seguela in the Ivory Coast and Larabanga in Ghana. About the village mosque of Lanfiera, the political capital of Dafina, Monteil wrote in 1894:

> "The Almamy [...] built a superb mosque, in mudbrick admittedly, but embellished with numerous pinnacles surmounted by ostrich eggs. It is surely the most artistic of all the ones I have seen in the Sudan, without excepting that of Waghadougou which is nevertheless also very beautiful." [...] "The mosque, with a profusion of little pinnacles surmounted by elegant vases in pottery, some of which are decorated by ostrich eggs, is the most beautiful I have seen so far."[137]

The town of Bobo-Dioulasso is in the south-west of Burkina Faso, on the road connecting Djenne to Kong. The mosque was built between 1817 and 1832. The initial mosque had seven bays parallel to the wall of the *qibla*. Two west bays were added in 1952 and cement was added in 1982 to consolidate the building (Fig. 64). In the south-east and north-west corners stairways lead to the roof. A *minbar* with two steps is on the right of the *mihrab*. The west courtyard has the same surface measurement as the prayer hall. Most of it is covered by a sunshade of matting. Horizontal beams or *yiri* are arranged between the buttresses. The *mihrab* tower and the staircase tower are pyramidal, with *toron* on all the facades and ceramics and eggs on the summits (Fig. 65). The two towers are 19 m high.

Kong is an agglomeration in the north of the Ivory Coast. It was founded in the eleventh century by the Senufo and, in the eighteenth century, it became a great commercial and Islamic centre thanks to the Dyula merchants. The Friday mosque is situated in the Saghanughu district, north-east of the market. A first mosque was created by Kunatay-Dyula. It was restored in 1785 by Saghanughu and destroyed in 1897 by Samory. According to Binger there were five similar mosques during the reign of Samory.[138] The present mosque dates from 1910. The building did not have a courtyard. A minaret, 12.5 m high, stands in the north-west corner. The corner pillars and the buttresses taper upwards (Fig. 86). The walls are covered with a white plaster.

Only nine traditional mud brick mosques still exist in the north of present-day Ghana, to which we can add two mosques that have now disappeared, Dakrupe (destroyed in 2010) and Gambaga (destroyed in 2016).[139] Denis Genequand has defined two stylistic sub-groups in Ghana:[140] the group represented by the mosques of the Gonja territory, notably those of Bole and Larabanga, and the group of the Wa region which includes the mosques of Wa Dondoli and those of Nakori,[141] Wechiau and Banda Nkwanta (Figs. 66 & 67). According to the oral tradition the Wechiau mosque was built over three hundred years ago.[142] The mosque of Dondoli is the only

137 Merlet, *Textes anciens sur le Burkina* (1995): 166.

138 Binger, *Du Niger au Golfe de Guinée par le pays de Kong et le Mossi, vol.1* (1892): 295–9.

139 Domian, *Architecture soudanaise* (1989): 124; Morris, & Preston Blier, *Butabu. Adobe architecture of West Africa* (2003); Genequand & Apoh, "Old Buipe (Ghana, Northern region): Some observations on islamization and urban development at the South-Western margins of the Dar el-Islam" (2017): 155–157.

140 Genequand & alii, "Preliminary Report on the 2019 Season of the Gonja Project, Ghana" (2020): 272–289; Denis Genequand & Christian de Reynier are preparing a guidebook on the mosques of Ghana.

141 Genequand & alii, "Preliminary Report on the 2017 Season of the Gonja Project (Ghana, Northern Region)" (2018): 291–302.

142 Genequand & alii, "Preliminary Report on the 2019 Season of the Gonja Project, Ghana" (2020): 272–289.

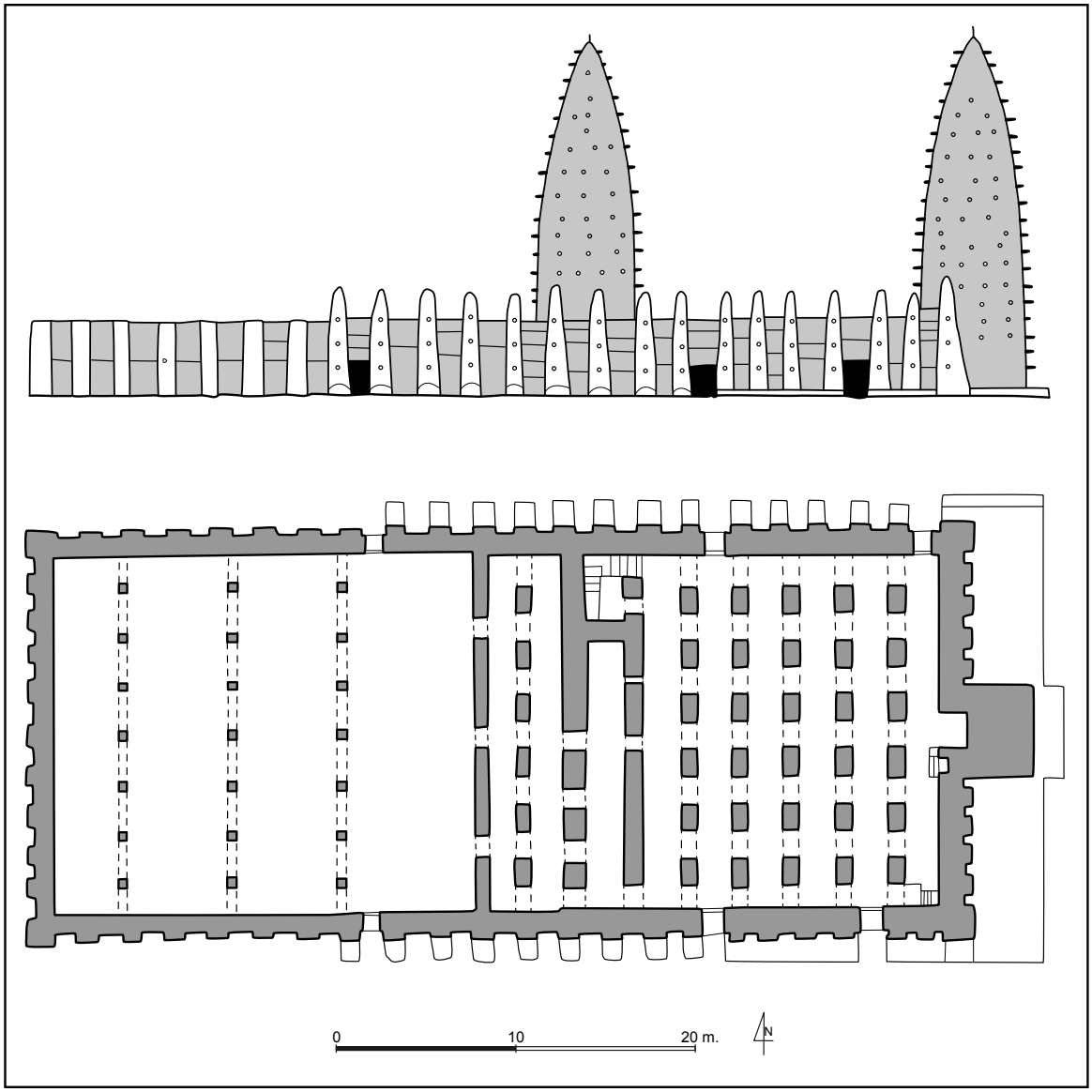


FIGURE 64 Plan and southern façade of the great mosque of Bobo Dioulasso

early mosque in the town of Wa, and dates from the end of the nineteenth century.[143] The mosque of Bole, dated to the early twentieth century[144] by carbon-14, belongs to a category of buildings characterised by the lack of a courtyard and a quadrangular salient *mihrab* tower with a fusiform silhouette (Fig. 68). The mosques of Ghana have a compact structure without an inner courtyard, but with thick pilasters wider at the base and connected by horizontal tree trunks, a *mihrab* tower and a pyramidal staircase tower. This first group shares numerous features with the mosques of the Kong region, and can even be regarded as an indicator of the area of influence of this important commercial and religious centre in the eighteenth

143 Genequand & alii, "Preliminary Report on the 2018 Season of the Gonja Project (Ghana, Northern Region)" (2019): 297–310.

144 Genequand & alii, "Excavations in Old Buipe and Study of the Mosque of Bole (Ghana, Northern Region): Report on the 2015 Season of the Gonja Project" (2016): 53–64.



FIGURE 65 Great mosque of Bobo Dioulasso, Burkina Faso

and nineteenth centuries. The mosques of Bobo-Dioulasso in Burkina Faso, Kong in the Ivory Coast, and other Dyula establishments are also characteristic of a little group of mosques in the north-west of Ghana.

The second group of Ghanaian mosques (Fig. 68) seems more disparate and includes the mosques of different sub-groups such as the mosque of Maluwe (bult in 1930), the mosque of Wuriyanga close to the style of Djenne, with façades with no buttresses, and the presence of a *mihrab* tower,[145] and the Babayiri mosque, a circular construction in cob close to the hut-mosques of the forest area.[146]

Another mosque is well known in Larabanga, "the village of the Arab", since an Arab merchant, Ibrahim, was regarded as the founding ancestor, and, according to local tradition, the Ibrahim mosque dated from the seventeenth century but was reconstructed in the nineteenth century (Fig. 69).[147] It is flanked by 21 external buttresses with irregular shapes. The roof is carried by four solid mud pillars and by a play of wooden forks supporting the beams. The mosque of Larabanga shares a certain number of elements with the mosque of Nkwanta: a square plan measuring between 10 and 12 m; wide façades structured by buttresses surmounted by pinnacles and connected to each other; a prayer hall subdivided into three aisles and three bays by four massive pillars

145 Genequand & alii, "Preliminary Report on the 2019 Season of the Gonja Project, Ghana" (2020): 272–289.

146 Genequand & alii, "Preliminary Report on the 2018 Season of the Gonja Project (Ghana, Northern Region)" (2019): 297–310.

147 Apotsos, *Architecture, Islam, and Identity in West Africa: Lessons from Larabanga* (2016); Prévost, « Les mosquées ‹ soudanaises › expression de l'Islam africain » (2003): 113–130.

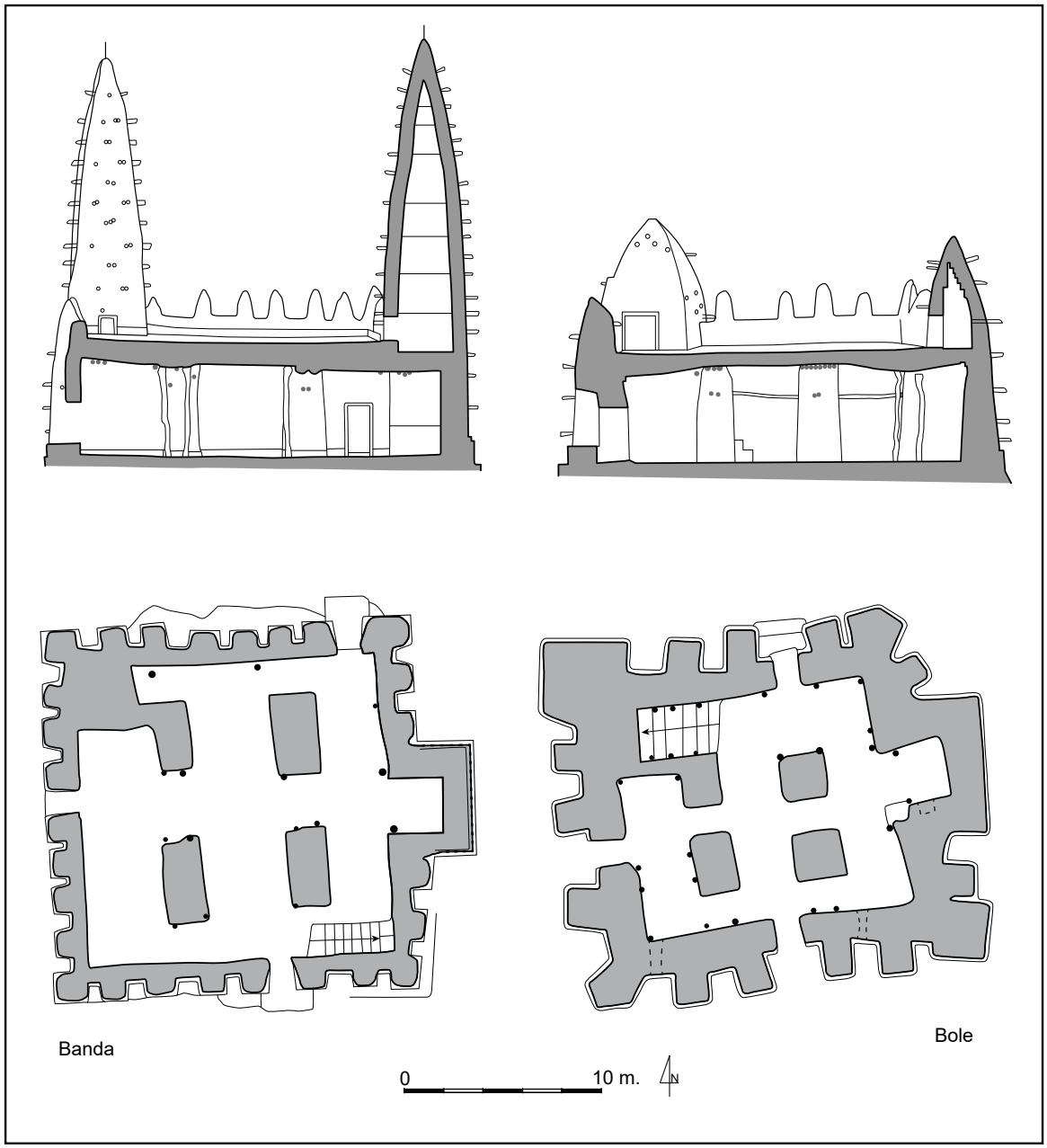


FIGURE 66 Plans and elevations of the mosques of Banda Nkwanta and Bole



FIGURE 67 Mosque of Banda Nkwanta



FIGURE 68 Mosque of Bole



FIGURE 69 Mosque Ibrahim, Larabanga

and accessible through three doors; a terrace roof accessible by a stairway situated in the north-west corner and covered by a dome; and finally a quadrangular salient *mihrab* surmounted by a covered tower situated at the centre of the *qibla*.[148] Like the Bole mosque, the Larabanga mosque was built with balls of mud (cob/clay and straw mortar), while the shape of the building is influenced by a classical model of the architecture of the Niger valleys.[149] According to Genequand, there are two different types of masonry in north Ghanian architecture: cob (Bole and Larabanga) and mud brick (Banda Nkwanta).[150] The introduction of mud brick, moreover, is traditionally attributed to the arrival of the Malinke conquerors.[151] The mosques of Bole, Larabanga and Nakori have a peculiarity in the ornamentation of the façades with friezes of losanges or triangles in sunk incisions surmounting the doors. These decorations are associated with the group of mosques in cob.

148 Genequand & alii, "Preliminary Report on the 2016 Season of the Gonja Project (Ghana, Northern Region)" (2017): 96–106.

149 Olympio & al. *Larabanga* (2004): 16–21.

150 Genequand & alii, "Preliminary Report on the 2017 Season of the Gonja Project (Ghana, Northern Region)" (2018): 291–302.

151 Genequand & alii, "Preliminary Report on the 2016 Season of the Gonja Project (Ghana, Northern Region)" (2017): 96–106.

1.7.6.2 The Bougamena Sub-group

The decorations just cited reveal the influence of the sub-group of Bougamena localised in the Gurunsi country in Ghana. The mosques of this sub-group are characterised by walls with pierced motifs consisting of triangles, losanges and chevrons sunk in fresh clay. The smooth façades are interrupted by doors and blind niches. Little pinnacles surmount the summit of the walls, sometimes transforming themselves into *zanko* or jagged merlons. The Gurunsi and Mossi mosques are small compact buildings. Contrary to the mosques of the neighbouring regions they have a geometrical plan consisting of two connected quadrilateral enclosures, one forming the courtyard, the other the prayer hall. The other principal characteristic of these mosques, apart from the perforated motifs, is the use of volumes and vertical space. These constructions are organised on three levels: first there is a high wall enclosing a little courtyard to the west, then comes the roof of the prayer hall, and finally the summit of the pyramidal *mihrab* tower. They give the impression of an arrow pointing towards Mecca.

This type of mosque can be found above all in Ghana, but also in present-day Burkina Faso, where we have the mosque of Nam-Ymi situated near Kombissiri. The town of Nam-Ymi is an ancient Mossi capital. The mosque was built in 1857 by the sovereign Naba Masi.[152] The prayer hall with two floors is preceded by a square courtyard. To the left is a circular service building with a conical vegetal roof. The principal prayer hall is composed of three rows of two stacks which sustain the ceiling. In the south corner, a staircase leads to a first terrace. The second terrace is reserved for a limited number of followers of the Naba or local chief. A third staircase leads to a little terrace reserved for the imam calling to prayer. The *mihrab* tower and the terraces appear as a structural element with successive visible beams on the east façade.

1.7.6.3 The Sub-group of Dougouba-Kawara

The rural mosques of Dougouba and Sibila in Mali or of Kawara in the Ivory Coast are an original group. This type of mosque is represented too seldom for it to be attached to another different type. It has similarities in its compact and rounded forms with the Volta-Niger group and with the animist sanctuaries of the forest area. These low mosques, with a compact structure and very thick walls, have oblique façades and are surmounted by numerous merlons. The courtyard is often absent, and the inner chambers are small and with massive pillars. The external walls of certain Senoufo mosques are painted white, as in Kawara.[153] The hemispheric and low *mihrab* towers are fairly rare, and are mainly in isolated allotments such as Dougouba and Sebi dating from the eighteenth and nineteenth centuries or Kawara dating from the seventeenth century. The traditional mosques of the north of the Ivory Coast are compact and have no courtyard. They have a double tower: a staircase tower in the north-west corner of the prayer hall and a *mihrab* tower. The linear surfaces are oblique, and this accentuates the impression of a great verticality. The façades are punctuated by corner pillars and buttresses, and the tower is pyramidal. Inside large pillars divide the little chambers. There is an abundant use of wood for the *toron*, and inside, for the beams connecting the supports to each other or for billets with no plaster for the covering.

The Friday mosque of Dougouba is situated in the region of Segou in Mali. It was founded in the eighteenth century and enlarged in 1970. It has no courtyard. The building is compact, with neither rectilinear walls nor a smooth surface. The terrace roof is circular. The sugarloaf tower is attached to the west façade. Battlements surmount the walls, capped by ceramics and ostrich eggs. A new square prayer hall has been added with a roof in corrugated iron and stacks in cement. In Dougouba there is also a district mosque with the same external appearance and a courtyard to the west.

152 Ago, *Moschee in adobe. Storia e tipologia nell'Africa Occidentale* (1982): 111.

153 Idem: 74.

The mosque of Kawara is situated in the north of the Ivory Coast on the road of Bobo-Dioulasso. Kawara is one of the rare early mosques dating from the seventeenth century still to be found in the Ivory Coast. This low building has a compact silhouette with curved lines. It is surrounded by a low wall made of mud cones, covered by a white plaster and cement on the points and the wall of the courtyard. The conical *mihrab* tower is 6 m high, like the minaret installed in the north-west corner. The square building has three bays parallel to the wall of the *qibla*.

1.7.7 *The Group of Fulbe Mosques of Futa Jalon*

The mosques of Futa Jalon are mainly located in the Upper Niger, in Guinea, in the relatively un-Islamised domain of the Senoufo. These mosques date back to the eighteenth century when the Fulani Muslims of Massina settled in the region. Other buildings are from the period of Islamic reforms inspired by the movement of Seku Ahmadu in the second half of the nineteenth century. These mosques have a square plan under a dome of straw, palms and thatch, which gives them a circular appearance. The summit is capped by a second smaller hut roof (with leather) fitted onto the first one which descends to the ground (Fig. 70). This vegetal roofing is supported by a central wooden pillar and two circles of bifurcated poles. The rectangular niche of the *mihrab* is in the middle of the east wall (Fig. 71). A low mud wall or a wooden palisade borders the outer courtyard.

The group of mosques with a conical roof is on the edge of the forest area and of Islamic influence. The mosques are implanted in the south of Senegal, with the mosque of Medina el-Hadj Ali at Kolda in Casamance;[154] in Guinea at Dinguiraye, Namou, Timbi Touni, Tountaman, Fougoumba and Koloman-Kambaya;[155] in the west of Mali at



FIGURE 70 Mosque of Dinguiraye

154 Monteil, *L'Islam Noir : une religion à la conquête de l'Afrique* (1964): 112.

155 Prussin, *Hatumere: Islamic design in West Africa* (1986): 228–231.

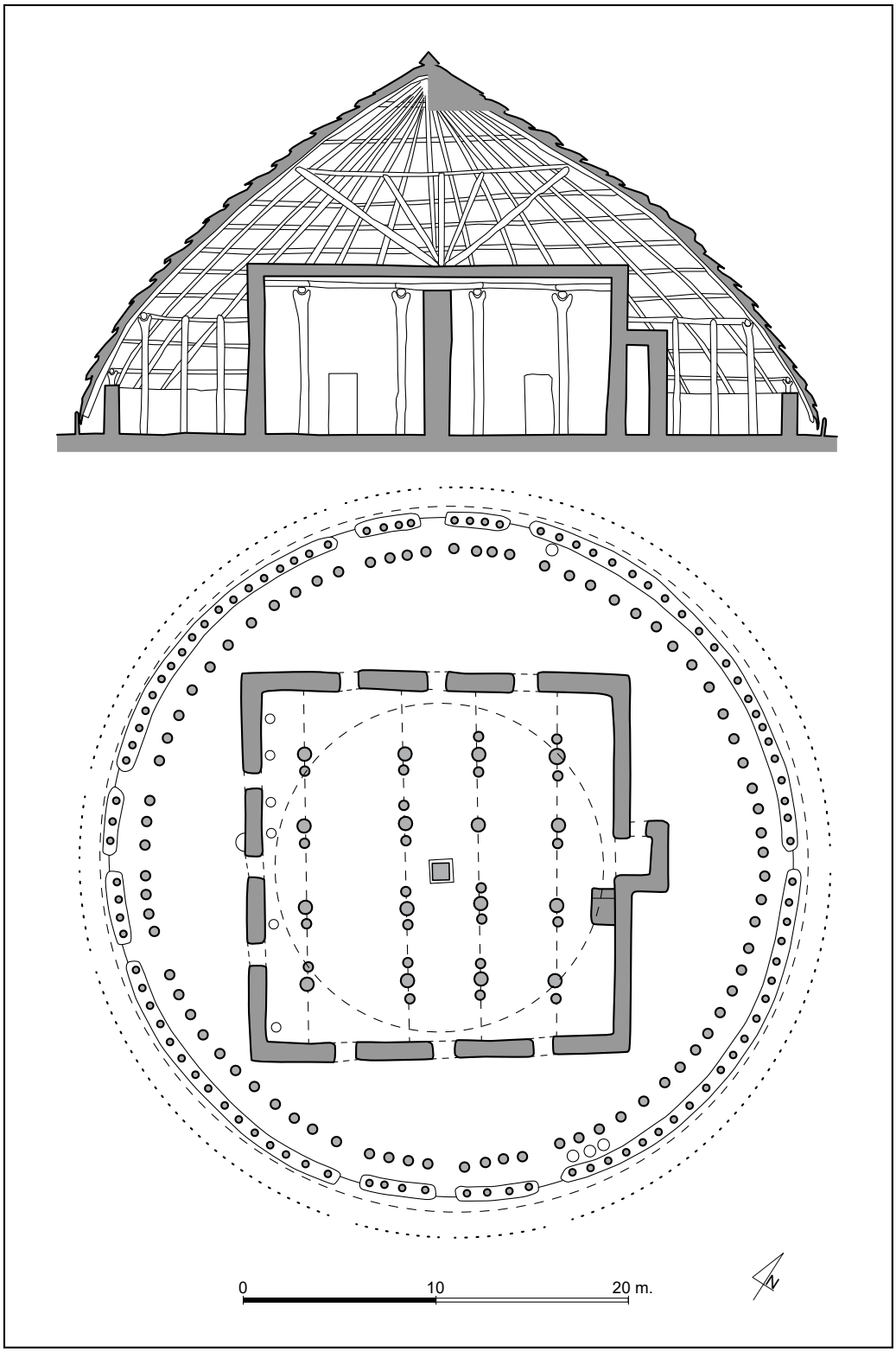


FIGURE 71 Circular mosque of Dinguiraye, Futa Jalon

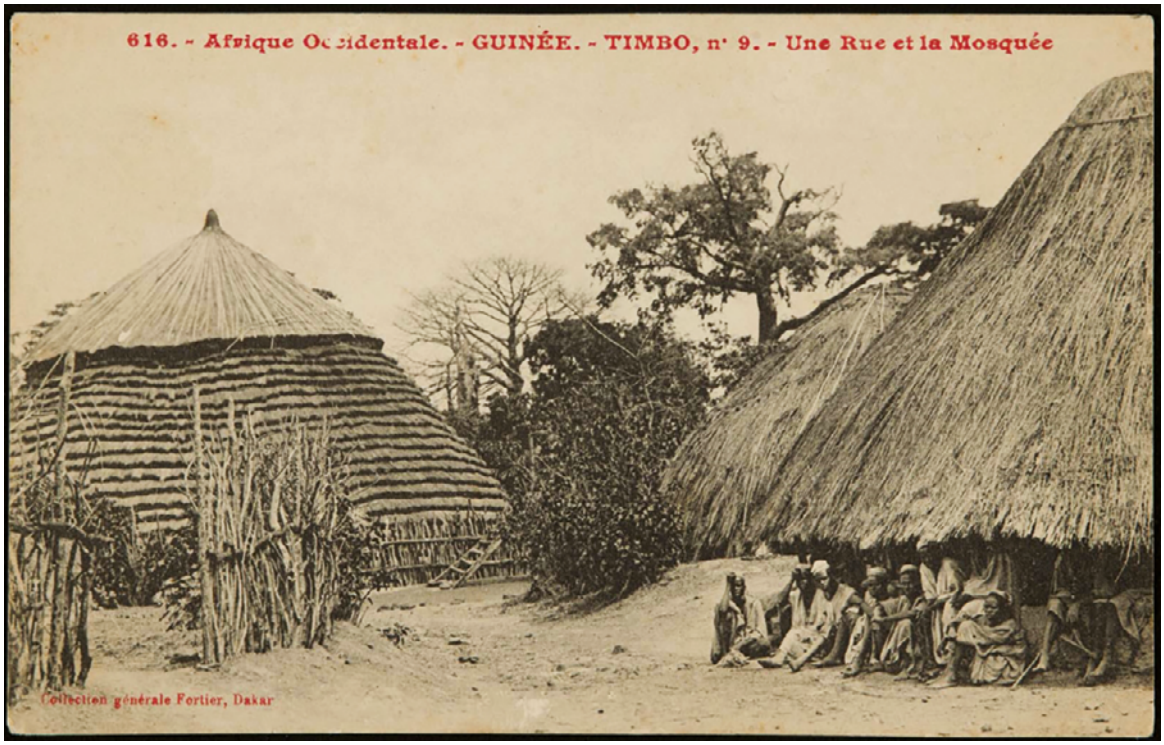


FIGURE 72 Great mosque of Timbo, Guinea

Kamale Sibi, in the region of Koulikoro; and in Burkina Faso at Sare Boido, near Youkounkoun. The area extends of the frontier of present-day Nigeria. In the north-east of Sierra Leone, the Yalunka populations also build circular mosques. Fulbe circular mosques are also observed in Northern Cameroon, between Chad and Nigeria. They are clearly local architecture adapted for the Islamic religious practices of the newcomers.[156]

A few atypical circular examples exist in the North, out of the forest zone. There are two circular mosques which have been observed in the region of Gao, on the island of Oueigoun and in Foullodji-Kolo.[157] Also, in the region of Gao, Jean Rouch observed in Aribinda a circular structure in dry stone called a mosque by the Songhay.[158] This enclosure is used for the Friday prayer by the Malikites. In fact, it is an area of worship, a *ziara*, marked off by stones. The round shape indicates a synthesis between animism and Islam, frequent in the rural areas. In other villages the prayer area is a simple quadrangular space demarcated by tree trunks, as in Koumpentoum in the region of Tambacounda in Senegal.

Labelle Prussin proposed an interesting theory about the circular mosque design. According to her, the plan of the Friday Mosque of Dinguiraye is based on a magic seal, *khatim* in Arabic, or *hatumere* in Fulfulde. These protective seals are connected to esoteric numbers, and geometric symbols, most of the time with surates from the Qur'an and the names of Allah. The *hatumere* design is roughly a square with four polylobes and a central circle. Prussin thinks that the *hatumere* was a unifying template for Islamic design across West Africa.[159] These two-dimensional geometric

156 DeLancey, "Localizing fulbe architecture" (2014): 8–11.

157 Insoll, *Islam, Archaeology and History in Gao Region (Mali) ca AD 900–1250* (1996): 11.

158 Rouch, "Contribution à l'histoire des Songhay" (1953): 264 and Fig. 1-IV.

159 Prussin, *Hatumere: Islamic design in West Africa* (1986): 72–100; Prussin, "Architectural Facets of Islam in the Futa- Djallon" (1995): 21–56.

drawing was then expanded into the third dimension to build mosques under the divine and magic protection. The mosque of Dinguiraye has a square plan with a central pillar, covered by a circular dome, and according to Prussin follows the *hatumere* design was used in the construction of the Friday Mosque of Dinguiraye. In 1850 al-Hajj ʿUmar ordered the mosque in Dinguiraye to be built by a relative, Samba Ndiaye. It was twice restored, in 1862 and in 1904. If the idea of the plan of the circular mosque connected to al-Hajj ʿUmar and the *hatumere* is very seductive for some Art historians and Africanists, unfortunately this theoretical model doesn't resist to the critic, first, the notion of a circle in a square is the basic plan for dome construction from the late Antiquity to the Ottomans. Second, non-Muslim local African architectures are using this plan, and they precede the arrival of Islam. This religious architecture on a circular plan is related to the sanctuaries and the domestic dwellings. The mosques consist essentially of vegetals and a bit of clay for the bases of the walls. They reveal a pronounced taste for an architecture of proximity, close to the people and to the animist traditions. The palm roofs have been adapted to the elevated rainfall of this humid zone (Fig. 72).

1.8 History and Chronology of the Mosques of the Niger Valleys

1.8.1 *Architectural Styles, Environmental and Human Constraints*

Sociocultural and natural factors are very important in the genesis of the mosques of the Niger valleys. The date of construction, the source of stylistic inspiration, and the creativity of the masons all come into play. Various aspects of the diffusion of the style of the Niger valleys must be studied: environmental, religious, sociological, and historical. Different synchronic factors must be considered, such as religious confession; the available building materials; the climatic adaptation in a humid or dry environment; and the techniques and rules of construction.

The resources present in the environment condition the building materials, but without limiting the architectural forms. The use of mud implies formal features connected with the peculiarities of the material itself, such as flexibility and fragility. The African structures are massive, without right angles, and arches with cylindrical, round, or conical bricks. The mosques require buttresses and supporting pilasters for the façades. Rectangular mud brick, on the other hand, allows variations in the construction, such as the imitation of certain types of masonry in stone or baked brick, and zigzag and triangular decorations. The regular maintenance necessary for the façades gives a slightly distorted image of the original structures, since few of the original materials are visible on the surface of the walls.

On the edge of the forest areas, wood is to be found in abundance, but gnarled and twisted trunks cannot always be used for building, in contrast to the fan palm with a straight trunk in the north which can be made into straight beams. Wood is used in horizontal reinforcements (torons) in the mosques of the Volta-Niger group, such as Bobo-Dioulasso in Burkina Faso, Kong and Seguela in the Ivory Coast or Larabanga in Ghana. For Sergio Domian, the climatic factors do not explain everything. Until the nineteenth century, for example, the low squat shapes were also to be found in the north, which had a Sahelian climate.[160] This was the case of the mosque of Dougouba in Mali. And yet these cases are rare and must be associated with a withdrawal of vegetal coverings owing to desertification. The volumes of prayer halls were reduced in width because of the rarity of large trunks of wood which conditioned the narrowness of the bays. In the humid savanna of the southern regions close to the forest, the architecture was adapted to the rainy season with conical roofs in palm leaves or with broad gutters for the flat terrace roofs.[161]

160 Domian, *Architecture soudanaise* (1989): 26.

161 Prussin, "The Architecture of Islam in West Africa" (1968): 72.

Where the building techniques are concerned, the literature has a great deal to say about the Islamic rules for religious architecture. According to Maas and Mommersteeg, however, these laws were not necessarily known to the African masons and marabouts.[162] The oral traditions, functions and usages of the buildings ought to be regarded as more important in the search for interpretations of the morphology of the mosques. It is better to understand the building techniques, materials and the composition of the plans and the façade, as a knowledge transmitted from master to apprentice. The mosque might have been built by a marabout in a rural context and was sometimes the memorised replica of a mosque seen elsewhere, without a pattern, a model, or a technological know-how. In the south, there was less rigour in the application of rules prescribed by Muslim orthodoxy, contrary to the mosques of the north and the area of the Niger valleys.

The architectural type is also linked to the nature of the Islam practised and its degree. In Djenne, for example, the history of the early mosque is hidden by Seku Ahmadu's justification of the construction of a new one.[163] This building fits into a style with no minarets, as in the first mud brick mosques in Islam, without mud pillars but with simple wooden posts and ten bays surmounted by a low roofing. The building gives an impression of simplicity and ideological austerity. As for the present mosque of Djenne, it incarnates local politics and interethnic rivalries. The new mosque of Sanfo-Djenne rejected the rigorism of Seku Ahmadu by building towers identical to the ones of Timbuktu, by raising the height of the roof to about 12 m as opposed to the 3 m of the previous mosque, and by including a gallery for women.

According to Prussin, a sociological factor could explain the diffusion of the style of the mosques of the Niger valleys. In the construction of the rural mosques the treatment of the surface and the mural decorations, together with the restoration of the surface plastering, were often activities performed by women. In most West African patrilocal societies' marriage was necessarily exogamous, and the woman had to move from her home, taking with her a knowledge which included the architectural and decorative particularities of her first home.[164]

The urban mosques, situated on the axes of circulation and trade, often reflected, in their monumentality and verticality, the wealth of a town and its political, social, religious, economic and cultural importance. In the countryside, on the other hand, rarely frequented by travellers and merchants, the mosques were smaller and simpler. Certain mosques, situated near the large urban centres, copied the architectural style of their neighbours. The village mosques of Sirimou and Worondjikoy, for example, built in the 1960s, are replicas on a reduced scale of the mosque of Djenne. The spread of the mosques of the style of the Niger valleys towards the south has been attributed partly to trade and to Malinke travellers, particularly to the Dyula merchants. The localisation of the mosques, moreover, indicates old trade routes. The mosques of North Ghana, such as Larabanga, illustrate the transformation engendered by contact with the forest area. From the Inner Niger Delta, the region where the style of the Niger valleys originated, with its mosques of a vertical and symmetrical shape and battlemented parapets, we pass to the south, with mosques which are compact, low, massive, rounded and modelled irregularly, often compared vulgarly to "termite mounds".[165] In the peripherical territories on the edge of the humid forest to the south, the African territorial traditions resisted the influences of a North African Islam.[166] The morphology of the mosques is also a symbol of the degree of

162 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 147.

163 Bourgeois, "The history of the great mosques of Djenné" (1987): 56.

164 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 159.

165 Prussin, *Architecture in northern Ghana* (1969): 92–93.

166 Idem.

Islamisation in a particular region, as is the case with the hut mosques of Futa Toro in the Guinean area, which display a late Islamisation adapted to the climate and the population tastes.

The political expansion of the West African kingdoms and empires certainly plays a part in the spread of the architecture of the Niger valleys. On his return from Mecca the king, Mansa Musa, ordered the construction of mosques in the main Sahelian towns through which he passed. In Tendirma, 500 *Bari* masons from Djenne were sent to build a provincial and administrative capital of the Songhay empire. Djenne then had a dominant influence and the *Bari* were often called upon for important regional buildings. But apart from these exceptional cases, political power only affected the architecture of the capital. The rôle of the sultan is visible even in the organisation of certain great mosques, such as Agadez.[167] The palace of the sultan of Agadez also had an oratory of its own, as well as another mosque built by Sultan Tegama in the nineteenth century. As in all the Friday mosques, the prayer was said in the name of the sovereign. The sultan had a personal enclosure of his own, the *maqsura*. At the base of the minaret, just above the staircase, a space was arranged for the nightly recitations of the Qur'an by the sultan or in his presence during the cold season. In the hot season the recitation took place in the courtyard.

The localisation of the mosque also attested the importance of political power connected with religion. Most of the medieval West African mosques were not always situated in the urban centre, but they were close to the palace of the ruler. This was the case, for example, in Agadez, Timbuktu, Gao, and the second *jamia* of Djenne, but also in Kumbi Saleh, Awdaghust, Chinguetti, Walata, and Teghaza.[168] The twentieth-century mosques, on the other hand, were often in the centre of the town, near the marketplace The present mosque of Djenne, rebuilt in 1907, the new *madrasa*, and the administrative centre of the French colonies, for example, were erected round the central square.[169] This western and colonial conception of space drew a greater attention to the public open spaces surrounding the great mosques.[170] After independence in 1960, the square of Djenne rediscovered its pre-colonial spatial features with the insertion of commercial buildings and new dwellings intended to meet the growing density of population in the city centre.

1.8.2 *Vernacular and Traditional Architecture of West Africa*

The style of the Niger valleys was not only an architecture limited to mosques. Certain distinctive elements can be seen in other buildings in the African towns and villages, such as the façade with a tripartite portal in Djenne or the façades with Dogon panels. Similarly, the *zanko* or pointed merlons on the roofs of the Hausa mosques are also a characteristic feature of the domestic and palace architecture of city states like Kano.

According to Maas and Mommersteeg, the plan of a mosque is determined according to its function, in contrast to the façade in elevation which has a more symbolical purpose.[171] It is on such a façade that we find truly African influences. Basing themselves on the history of the *mihrab* tower of Djenne, Maas and Mommersteeg established a relationship between the Djennian portal, the square tower, and the ancestral throne. The *mihrab* tower of the present mosque was thus based on the model of the traditional portal consisting of three buttresses situated one next to the other, on which was placed a component surmounted by three little pinnacles, the tallest of which was decorated with *toron*. During the twentieth century,

167 Cressier & Bernus, « La grande mosquée d'Agadez (architecture et histoire) » (1984): 28.

168 Mauny, *Tableau géographique de l'Ouest africain au Moyen-Age* (1961): 472–3.

169 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 16.

170 Prussin, *Hatumere: Islamic design in West Africa* (1986): 184–5.

171 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 148.

the traditional portal disappeared, and the niches were filled with clay. *Toron* were added in the inner part of the tower and the three pinnacles disappeared to be replaced by corner pinnacles. Maas and Mommersteeg deduced from these transformations that "the portal, like the square tower in clay, can be considered a formal variant of a single element, [...] the ancestral pillars".[172]

According to Prussin, we can compare the traditional Bobo places of worship with certain rural mosques. The conical ancestral pillars were thus syncretised in the form of pilasters with swollen bases, pillars and roof pinnacles, as in the mosque of Bobo-Dioulasso.[173] The mosques of recently converted villages, moreover, were often built on the site of sacrificial altars, of which they reproduce the low and conical appearance. Amongst the Bobo Fing, north of Bobo-Dioulasso, a sacrificial altar, the *Wietougou*, was dedicated to the god of fertility. Shaped like a pyramidal or conic tower in clay, it resembled the towers of the mosques in the Niger valleys. The *Wietougou* was built next to a sacred tree, the symbol of the local genie, *Wuro*. The association of the mud building with the sacred tree often reappears in the courtyard or in the square in front of a mosque. In the Friday mosque of Kano, dating from the fifteenth century, the minaret was built to replace the sacred tree.[174]

Elsewhere the minaret often marks the tomb of a person of distinction, as in the case of the Sidi Yahya mosque in Timbuktu. In the first mosque of Djenne, there was a tomb under the *mihrab* tower. In this connection Maas and Mommersteeg write:

> We can suppose that the Islamic tradition, in which important religious figures are buried in monumental tombs of a conical shape, and the African tradition in which the cult of the ancestors is symbolised by a clay pillar, have engendered in West Africa a modern architectural form: the mihrab tower.[175]

This would explain why, in the mosques of the Niger valleys, special attention is paid to the *mihrab* tower, in contrast to the Arab world where the minaret and the dome predominate. Nevertheless, it must be added that the *mihrab* tower serves the same visual purpose as the minaret.

The Dogon were hardly influenced by Islam, any more than by Christianity. They reached the cliffs of Bandiagara at least 600 years ago and their resistance to Islam was particularly active in this region. In the very rare islamised Dogon villages, the mosque of Nando illustrates the mixture between the animist forms and decorative motifs and an Islamic plan with bays parallel to the *qibla*. The building was surmounted by phallic forms which recall the Dogon sanctuaries. There are also motifs in the shape of a female breast on the west door and the wall of the *qibla*.[176] These decorations in relief symbolise fertility and are the object of a pilgrimage in the case of sterility. According to the inhabitants of Nando, the building goes back to the twelfth century. Unfortunately, this dating is most unlikely. The mosque dates from the fourteenth century at the earliest, at the time when Islam was established in the region. We also know Dogon mosques of the Niger valley type, as in Kani Kombole or Koporo-Kenie-Na. They have panelled façades with buttresses with pinnacles. The Dogon domestic structures are often compared to the mosques of the Niger valleys – the dwellings of Banani, for example, with their hollow circular pillars protruding above the roof in the areas of the kitchens which can also be found in the sanctuaries used as store houses. The comparison between the Djennian portal and the Dogon or Bambara masks has also been made (Figs. 73 & 74). The façade of certain houses in the Niger valleys, moreover, recalls the features of the human face. For the

172 Idem: 151–152.

173 Prussin, *Hatumere: Islamic design in West Africa* (1986): 172.

174 Ago, *Moschee in adobe. Storia e tipologia nell'Africa Occidentale* (1982): 98.

175 Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 154.

176 Lauber, *L'Architecture dogon* (1998): 170–173.



FIGURE 73
Djennean gate of the great mosque of Mopti



FIGURE 74
Comparison between the Djennean gate and Dogon ceremonial mask the antilope (*walu*)

masons of Timbuktu, the façade represented the face of the house, with the door symbolising the mouth.

The panel mosques of Lake Debo and the Inner Niger Delta are reminiscent of the façades of the Dogon *ginna* or "mother-houses", which have the same type of panel: eight rows of ten niches, with eight pinnacles above the roof, the number varying according to the size of the building. The *ginna* is the house of the extended family in which the eldest son has to live. Each district of a town has its own motherhouse, around which are gathered the houses of the brothers, sons and grandsons of the founding ancestor. The pinnacles represent the places of pilgrimage, and the niches symbolise the houses of eight ancestors and their descendants in Dogon mythology.[177] The *ginna* had as their model the Dogon sanctuary of Binu in the region of Dale. This type of building may have inspired the mosques of the Niger valleys.

The buttresses and the panel façades are frequent in the old houses of Segou which was the capital of the Bambara kingdom in the seventeenth century. These low and massive structures have a façade giving onto the street and decorated with deep niches and low reliefs. The parapet of the roof is capped by pinnacles. Judging from the drawings produced by Binger in 1892, the houses of the territories in the south of the region of Bamako had the same type of façade.

In the Bozo architecture of the Inner Niger Delta, the *saho* were community houses for the young. They dominated the village just as the mosque did. In this type of building elements typical of the architecture of the Niger valleys were also present: buttresses, pinnacles, corner pillars, and *toron*, as, for example, in the *saho* of Kolenze and Kouakourou.[178]

Certain mosques of Doumga Ouro Alfa and Madina Torobe in Futa Toro, finally, have walls perforated by triangular and semicircular motifs common to the dwellings of Futa, next to arrow-shaped niches and windows, which, according to Bourdier, are Soninke elements.[179] These triangular motifs also appear in other mosques like the Mossi mosque of Nam-Yami. The triangular decorative motifs served too as a ventilation system, frequent in the stone architecture of the medieval towns south of the Sahara, such as Walata and Tichitt, but also in the mosque of Sankore in Timbuktu. As mentioned by De Lancey, Fulbe mosques and architecture were sometimes dissociated from local cultures and identities to create artificial divisions between the different provinces of Cameroon.[180] These differences were encouraged by religious and ethnic authorities and then were supported by colonialists to divide and classify African cultures, North/, South, Muslims/ non-Muslims. Unfortunately, this way of thinking still exist until our days, locally and internationally and it is important to avoid this pitfall, first to contextualise African mosques in their local contexts, second to see how regional contexts interact with each other's.

1.8.3 *How to Establish a Chronology?*

The dating of the mosques in mud brick is particularly difficult since most of the buildings have been entirely rebuilt and restored over the centuries (Figs. 75 & 76). The documents and methods at our disposal for establishing a relative chronology of the mosques of West Africa are of various kinds.

First, we have the methods of historians of architecture who use morphological and stylistic comparisons of the mosques with other better-known monuments in order to estimate the period in which certain mosques were built. The date range which this suggests, however, is often inaccurate. The insertion of the mosque in the town, and its chronology with respect to it, is also an important element. Our study has concentrated above all on mosques, but for a more accurate chronology we should make a comparison with domestic and urban architecture. That is what Labelle Prussin

177 Bourdier, "The rural mosques of Futa Toro" (1993): 41.
178 Domian, *Architecture soudanaise* (1989): 158.
179 Bourdier, "The rural mosques of Futa Toro" (1993): 35.
180 DeLancey, "Localizing fulbe architecture" (2014): 39–41.



FIGURE 75 Removing additional layers of earth creating overloading

proposed in her thesis on Djenne.[181] We would then have to replace the mosque in its urban context, to integrate it in the town, the village, or the district, in order to establish an inner chronology of the site. The medieval mosques are often in the periphery and close to the palace of the ruler. In contrast to contemporary mosques which occupy a central position and influence the entire urbanisation, they thus create a pole towards which all the axes of circulation converge. This distribution is particularly marked around the modern mosques built in the marketplace, as in Djenne.

Then, there is a discipline known as "building archaeology". The architectural analysis of the characteristics of a building and construction phases may allow us to date it. In this case building techniques are precious indications when they emerge from the erosion of the walls or are visible on archaeological vestiges. They enable us to distinguish the type of working applied to the bricks, such as the Djeney-Ferey building techniques. In the mosque of Assode, for example, Cressier studied the superposition of different phases of construction, bringing out above all the dimensions and the distribution of the openings between the bays.[182] The west bays of the oratory seem to have been shortened to allow the construction of the minaret or to isolate the main building, and the *mihrab* has been moved south. Building archaeology makes it possible to define the development and chronology of a monument.

181 Prussin, *The architecture of Djenné: African synthesis and transformation* (1973): 153.

182 Cressier, "La grande mosquée d'Assodé" (1989): 143.



FIGURE 76
Building chronology and mud coating

Unfortunately, the physical methods applied to archaeological remains are rare in the case of the West African mosques. In 1984 a first attempt at carbon-14 dating was applied to the "palace of the twin sultans" close to the town of Agadez.[183] The remains of organic material contained in the mud brick of the building and dating from its construction were dated by Jean-François Saliège at the laboratory of dynamic geology of the University of Paris VI. The experiment was then attempted again on the great mosque of Assode. The sampling of materials was carried out by the team of Patrice Cressier on the oratory and the minaret. The carbon-14 dates obtained for the minaret were, respectively, 1515–1650 and 1642–1660.[184] The construction of the mosque of Assode thus goes back to the first half of the seventeenth century. The minaret may have been later than the oratory. In any case these results provide a broad enough date range and must be compared to historical data.

The historical sources, such as Arab texts, the accounts of European travellers, and the African oral traditions are obviously of value for research. Epigraphical elements *in situ*, notably on tombs enclosed in the precincts of the mosques, also allow us to date a monument chronologically. In Old Gao, Raymond Mauny discovered a marble stele with the date of 766 of the Hejira, or 1364 of

183 Idem, 156–7.

184 Ibid, 133–162.

the Christian era. Judging from the type of marble, the stele of Gao Saney came from Almería in Andalusia.[185] According to Mauny, the tombs are contemporary or later with the mosque he excavated in Old Gao (dated from 1130–1364). This dating coincides with the events reported in the *Ta'rikh al-Sudan* which states that the mosque was built on Mansa Musa's return from pilgrimage in 1325. Timothy Insoll excavated the building in 1993 and confirmed that the mosque in banco was indeed built at the end of the thirteenth century. And yet, according to him, the *mihrab* in baked brick dates from the end of the twelfth century.[186] The mosque of Old Gao was built and used between the end of the twelfth and the early fourteenth century, and the monument needs further investigation.

1.8.4 *Diffusion of the Style of the Niger Valleys*

Between the eighth and the twelfth centuries Saharan Africa experienced simultaneously Islamisation, urbanisation, and the emergence of political entities. The earliest mosques of which we have traces are those of Kumbi Saleh and Awdaghust (ninth to thirteenth centuries), which belong to the Mauritanian group of stone buildings from the Saharan domain. In the region of the Niger river the mosques of Niani and Djenne date back to the thirteenth century. Djinguere Ber and Sankore in Timbuktu, Dire and Goundam and the mosques of Old Gao date from the tenth to the fourteenth century. These sites are connected to trans-Saharan trade and constitute the largest urban poles of the medieval West African kingdoms.

There is a controversy concerning the mosque of Niani, which once stood on one of the slopes of the mountain south of the town, and the oral traditions.[187] For Jean Devisse there is no certain evidence of relations between Niani, the capital of Mali, and the trans-Saharan circuits.[188] Wladyslaw Filipowiak, however, notes three phases of occupation with the arrival in the tenth century of Arab traders who introduced the technique of banco in Niani.[189] The building of the mosque would date back to the fourteenth century, during the third phase of occupation of the town. The *mihrab* and the minaret rest on a stone base. The mosque was 16 m long by 12 m wide, with a courtyard to the west. The building ceased to be used in the sixteenth century.[190] Devisse had reservations about the connection between architecture in banco and the arrival of Arab traders. I share his reservations since the capital of Mali in the thirteenth and fourteenth centuries was in fact Dakajalan.[191] Niani was a later capital, as is corroborated by the shards of pipe dating from the sixteenth century discovered on the site. The case of Niani is an example of the unfortunate use of oral traditions applied to archaeological remains.[192]

The origin of the style of the Niger valleys must be sought in the region between the capital of the kingdom of Ghana, Kumbi Saleh, and the Niger bend between Segou and Gao.[193] It seems to have been derived from the stone mosques of Mauritania, founded as early as the eleventh century in Kumbi Saleh, in the twelfth century in

185 Mauny, "Notes d'archéologie au sujet de Gao" (1951): 844; Mauny, *Tableau géographique de l'Ouest africain au Moyen-Age* (1961): 492.

186 Insoll, *Islam, Archaeology and History in Gao Region (Mali) ca AD 900–1250* (1996): 16 et 55. *The Archaeology of Islam in sub-Saharan Africa* (2003): 235–236.

187 Fauvelle-Aymar, "La correspondance entre Raymond Mauny et Władisław Filipowiak au sujet de la fouille de Niani (Guinée), capitale supposée de l'empire médiéval du Mali" (2013): 331–355.

188 Devisse, "Routes de commerce et échanges en Afrique Occidentale en relation avec la Méditerranée" (1972): 42–73, 357–397.

189 Filipowiak, *Etudes archéologiques sur la capitale médiévale du Mali* (1979): 189.

190 Filipowiak, "Le complexe du palais royal du Mali" (1981): 71–89.

191 Conrad, "A town called Dakajalan: the Sunjata tradition and the question of ancient Mali's capital" (1994): 355–377.

192 Fauvelle-Aymar, "La correspondance entre Raymond Mauny et Władisław Filipowiak au sujet de la fouille de Niani" (2013): 331–355.

193 Domian, *Architecture soudanaise* (1989): 25–6.

Wadan and Walata, then in Chinguetti in the thirteenth century and Tichitt in the fourteenth century. The construction of mosques in stone could have been introduced before the eleventh century in the south-west of the Sahara, in a context of a slow and progressive Islamisation through the intermediary of the western trade routes. After the Almoravid conquests the building techniques would have been transmitted to the towns of the northern Niger bend and the Inner Niger Delta, like Dia and Djenne, after the exodus of the Saghanogho with the fall of the kingdom of Ghana where they originated. The Almoravid movements would spread this architecture in the Niger valleys. The encounter between the forms of the stone mosques of the desert and the African earthen architecture traditions gave birth to the "West African" style represented by the mosques in mud brick of Djenne, Gao or Timbuktu in the thirteenth and fourteenth centuries. Over the years, with the popularisation of Islam, the mosque became increasingly important and distinguished itself from the other buildings. The first mud brick mosques of the Niger valleys, such as Djinguere Ber and Sankore in Timbuktu, were similar to the surrounding urban landscape and merged with the other buildings, with their low and featureless shapes except for the minaret – in contrast to the mosques of the region of Djenne, which have an impressive structure, vertical and isolated in the marketplace. There were no minarets in Mali before the second half of the sixteenth century. These early monuments were clearly impregnated with the sobriety of the Ibadi mosques of the M'zab. The rôle of the Ibadis (Kharijites) seems to have been essential in the first centuries of the Islamisation of West Africa. The mosque of Agadez, together with its neighbour of Azelik-Takadda dating from the sixteenth century, were the first mosques with a minaret of the Niger valley type south of the Sahara. The mosques with a minaret of the group of the pre-Saharan steppe are somewhat austere. They indicate a powerful Islam at the time of the great trading posts of trans-Saharan commerce. The *mihrab* tower of the Niger valley style seems to have evolved from the low hemispheric form of Gao into a slim rectangular tower characteristic of the group of the Middle Niger. The mosques of the first type are rare today. They are only to be found in isolated sites such as Dougouba and Sebi, dating from the eighteenth and nineteenth centuries, or in Kawara, dating from the seventeenth century. The step tower typical of the entire region of the river Niger is far more recent.

The spread towards the south and the east of the river Niger was the work of Malinke and Dyula travellers and missionaries in the fourteenth century who reached the Hausa country in the fourteenth and fifteenth centuries. The Hausa style developed at the end of the second decade of the eighteenth century. The morphology of the Hausa mosques changed in the nineteenth century, at the time when the country was marked by the Fulani reforms. Up to the period of the *jihads* the mosques had a tower, as we see in Katsina, Bauchi, Zaria and Kazaure. According to Moughtin, the tower served a defensive purpose in the struggle for the control of the commercial points on the trans-Saharan caravans of the south.[194] The presence of an Arab type of narrow window or loophole supports this hypothesis. Besides, the structure of the mosque of Zaria is close to that of the fortified town surrounded by a wall flanked by bastions, resembling the wall vestibules of the mosque. After the *jihads*, the disappearance of these towers would indicate a period of relative peace.

The eighteenth century saw the rise of a rigorist Islam that was liberating with respect to the so-called "pagan and corrupt" African monarchies, which were animist or only partially Islamised and were dealing with the European slave traders. Theocratic states came into being where the *shari'a*, or Muslim law, was fully observed. Two great Muslim sufi confraternities developed which had connections with Algeria and Morocco. The first confraternity was the Tijaniyya, spread above all by al-Hajj 'Umar in the high basins of Senegal,

194 Moughtin, *Hausa architecture* (1985): 153.

and then of the Niger as far as Timbuktu. The second important Muslim confraternity was the Qadiriyya which engendered highly active reforming movements. The first great religious movement was organised under Osman dan Fodio, in Hausa territory, at the beginning of the nineteenth century. A second movement of a lesser geographical amplitude, but very rigorous, was led by Seku Ahmadu between 1818 and 1864. The Pular empire installed itself in Massina in the Inner Niger Delta. Between the eighteenth and the nineteenth centuries the great Islamic reform movements built new mosques. The second great mosque of Djenne, for example, built under Seku Ahmadu, is a building impregnated with simplicity and austerity which illustrated the current reforms. Among the recently converted Bambara the mosques date mainly from the twentieth century, apart from those of Segu Sikorro and Bla in Mali, dating from the second half of the eighteenth century.

The great Fulbe *jihads* of the eighteenth and nineteenth centuries strengthened and advanced the spread of the Niger valley style as far as the forest areas of the south. According to a local tradition recorded by Jean Boulègue, the mosques of the Niger valley type were introduced to Futa Toro by Fulbes returning to Mali after the French conquest and the destruction of the empire of al-Hajj ʿUmar at the end of the nineteenth century.[195] Another version was the introduction of this style by al-Hajj ʿUmar himself on his return from pilgrimage to his native village of Halwar. The tradition also tells us that the village of Halwar was burnt down in 1859 as the result of a refusal by the Pulars to follow al-Hajj ʿUmar to Segou and to serve him. After the fall of the Fulbe empire, the dwellings and the mosque were allegedly rebuilt. Of nine sacred mosques surveyed by J.-P. Bourdier in Futa Toro, four can be dated to the first movement of Islamic reform led by Sulayman Baal in the 1760s – the mosques of Bode, Kobilo, Seno Palel and Doumga Ouro Thierno. Three other mosques, Guede, Tielao and Halwar, are more characteristic of the Niger valley style and can be placed in a period running from the *jihad* of al-Hajj ʿUmar to the French conquest of the Pular territory between 1851 and 1891. Madina Torobe and Doumga Ouro Alfa are two more recent mosques built between 1940 and 1960. Ago adds two other Senegalese mosques: Kidira and Ambidedi of the Futa Toro group.[196] Certain mosques of Futa Jalon in Guinea, such as Timbo and Dinguiraye, had a wooden minaret built a few metres away from the mosque or in a corner of the building. The minaret was made of beams supporting a wooden platform, sometimes capped by a roof. The same type of minaret existed in certain Senegalese mosques – Tivaouane, Rufisque and Thies. According to Cleo Cantone it could be connected to the Tijaniyya confraternity.[197]

In the new concrete mosques of Senegal and West Africa the symmetrical minarets come in pairs. J.-P. Bourdier deduced from this fact a parallel with the double minaret capped with thatch of certain mosques of Futa Toro, such as Doumga Ouro Thierno.[198] The mosques of Futa Djalon, finally, also stem from this period of Islamic reform inspired by the movement of Seku Ahmadu in the second half of the nineteenth century. And yet they do not correspond to the criteria of the architecture of the Niger valleys. They are round and capped with a conical straw roof. The mosques of Futa Jalon were located in the barely Islamised territory of the Senufo, in the Upper Niger in Guinea, but also in the west of Mali, in Kamale Sibi in the region of Koulikoro, and in Senegal at Medina el-Hadj Ali, in the region of Ziguinchor. This religious architecture must be seen in the context of the structures of dwellings in vegetals in the intermediate area between the savanna and the forest.

195 Boulègue, « Mosquées de style soudanais au Fuuta Tooro (Sénégal) » (1972): 119.

196 Ago, *Moschee in adobe. Storia e tipologia nell'Africa Occidentale* (1982): 123.

197 Cantone, "À la recherche de l'origine du minaret en AOF" (2012): 13–17.

198 Bourdier, "The rural mosques of Futa Toro" (1993): 45.

1.8.5 *Al-Sahili and the Myth of Egyptian Influences*

According to this West-African myth, Mansa Musa returned from his pilgrimage to Mecca in 1325 in the company of an Andalusian poet and architect named Abu Ishaq al-Sahili al-Tuejin. He supposedly commissioned al-Sahili to build the great mosques of Gao and Djinguere Ber in Timbuktu.[199] According to Barth, Delafosse and Mauny, al-Sahili introduced Islamic architecture as well as the baked brick of the south of the Sahara,[200] and would thus have been the founder father of the architecture of the Niger valleys. Another rumour circulated, parallel to this myth: al-Sahili was allegedly influenced by Egyptian architecture at the time of his journey.[201] The myth of the Ancient Egyptian origin of the Songhay originated from the Nile valley was sustained during the colonial period, notably by Desplagnes and Dubois.[202] The latter was amazed by the architecture of the town of Djenne:

> How can it have arrived here over such distant centuries? How can it decorate to this day a town that is still living? What was this Egyptian colony whose existence nobody has mentioned until today? [...] And I can now say how ancient Egypt, the mother of all our western civilisations, spread its beneficent influence as far as the heart of the negro countries.[203]

This myth has been fiercely criticised since the 1960s.[204] Jacques-Meunié reminded us that al-Sahili was an Andalusian poet rather than an Egyptian architect.[205] He would thus have been expected to introduce an Andalusian plan with wings perpendicular to the wall of the *qibla*, as in the mosque of Cordoba. The mosques of the Niger valleys, however, have bays parallel to the wall of the *qibla*. Prussin added that an architectural style is rarely due to a single man outside his own cultural area, and that we are dealing above all with a foundation myth intended to legitimise the new powers and to provide the cities of Sub-Saharan Africa with a prestigious genealogy.[206]

Nevertheless, it seems that the criticisms of the 1960s and 1970s were excessive, probably because of a political context of decolonisation. The myth of al-Sahili was not created by Europeans but by local traditions of Timbuktu and Gao. Besides, Barth discovered an almost effaced inscription on one of the doors of the mosque of Djinguere Ber, which attributed the monument to al-Sahili, with the date of 1327. Other oral traditions ascribe the origin of Djenne to founders who arrived from the Yemen. Here too we are dealing with foundation myths, but we cannot dismiss the presence of Yemeni preachers or of Andalusian or Egyptian travellers. To my mind, the most important thing is not to deny, or forget, local history, which is an integral part of the untangible heritage of African societies, but we must be able to detach ourselves from it to analyse the architecture of a monument, its style, its origins, and its influences.

The plan of the mosques of the Niger valleys would thus have been inspired partly by models from North Africa.[207] The merchants of Sub-Saharan Africa were in constant relationships with the Maghreb, and the pilgrims of West Africa went to Mecca passing through Walata, Tuat and then Cairo. Sijilmasa, above all, was an important commercial and caravan centre frequented by the merchants of West Africa. In the ninth

199 Barth, *Voyages et découvertes dans l'Afrique septentrionale et centrale pendant les années 1849 à 1855* (1859): 34.

200 Idem: 662; Delafosse, "Les relations du Maroc avec le Soudan à travers les âges" (1924): 159–60; Mauny, "Notes d'archéologie sur Tombouctou" (1952): 902; Moughtin, *Hausa architecture* (1985): 24, 150.

201 Delafosse, "Les relations du Maroc avec le Soudan à travers les âges" (1924): 159–60.

202 Desplagnes, *Le plateau central nigérien* (1907): 221.

203 Dubois, *Tombouctou la mystérieuse* (1897): *101–102.*

204 Aradeon, "Al-Sahili: the historian's myth of architectural technology transfer from North Africa" (1989): 99.

205 Jacques-Meunié, *Cités anciennes de Mauritanie* (1961): 118.

206 Prussin, "The Architecture of Islam in West Africa" (1968): 71.

207 Engeström, "Origin of preislamic architecture in west Africa" (1959): 64.

century the merchants settled in Tadmekka, in the south of Tunisia. Until the tenth century the commercial routes leaving from Tadmekka passed through Ghadames and Tripoli on the one hand, and through Ghat and the Fezzan on the way to Egypt on the other. It is thus hardly surprising to find North African influences in the mosques of the Niger valleys.

For numerous researchers, Morocco played an important part in the genesis of the architecture of the mosques of the Niger valleys. According to Trimingham:

> The so-called Sudanese style of architecture is not of Sudanese origin but is characteristic of ancient Mediterranean culture, and residues of this style exist in southern Arabia and in the south of Morocco.[208]

This diffusionist thesis can be explained by the importance attached by the author to the texts and probably to the myth of al-Sahili. The history of the architecture is also a reflection of a European ethnocentricity sustained by a desire to unite the north and the west of Africa in the vast French colonial empire. Nevertheless, there are indeed certain similarities with the mosques of North Africa. The mosques of the Niger valleys and the mosques of Mauritania have bays parallel to the *qibla*. In the Maghreb and in Spain, the plan with aisles parallel to the axis of the building and perpendicular to the wall of the *qibla* predominates. This plan developed in Andalusia and in North Africa.[209] And yet certain mosques of Fez and the mosques of the fortified villages of pre-Saharan Morocco, above all in the basins of the Guir and the Ziz, including Tafilalt, are smaller, square and without a courtyard.[210] Another similarity with the mosques of the Niger valleys is the pyramidal shape of the minarets of the mosques of Ghat and Kairouan in Tunisia.

1.8.6 *The M'Zab and the Rôle of the Ibadis*

The Mozabites are a people living between the south of Algeria and Tunisia, defined essentially by their geographical localisation, the M'Zab, and by their religious doctrine: Ibadism. They occupy a sandstone plateau in the northern and central Sahara, some hundred kilometres to the south-east of Laghuat, in a territory of 8,000 km^2. The Ibadi sect constitutes one of the branches of Kharijism, the earliest schism of Islam. The Ibadis are seldom mentioned in Arab sources and are regarded as heretics by orthodox Muslims. Their occupation of the M'Zab dates to the ninth century, at a time when they controlled numerous trading posts and caravan routes. Expelled from Kairouan, they created a commercial monopoly around Tahert. After the fall of this commercial empire in 910, the Ibadis withdrew to the Algerian and Tunisian Sahara and to the island of Djerba.[211] Certain Ibadis founded different settlements in the vicinity of the oasis of Wargla, but then they were again driven out and sought refuge in the M'Zab. This region, which is difficult enough to reach for oppressors to be discouraged, was chosen as a refuge for the menaced faith of the Ibadis. The country was situated outside the Saharan routes of exchange, but the Mozabites managed to attract caravans and develop palm groves. The M'zab then became the principal Ibadi centre from the tenth century on. Of the ancient towns of the M'zab, Melika, Beni-Isguen, Sadrata and Ghardaya are dated to 1053. Ibadi merchants from Tahert, Sijilmasa, Wargla, the south of Tunisia and the Jabal Nafusa settled in the towns of the Niger valleys such as Gao, Awdaghust or Tadmekka. The mountain range of Air was also crossed by the Ibadis of Tripolitania. It is halfway between and Katsina and Ghadames, an Ibadi centre from the mid-eighth to the eleventh

208 Trimingham, *A history of Islam in West Africa* (1970): 69.

209 Bloom, *Architecture of the Islamic West* (2020): 17–21 and 121–127.

210 Jacques-Meunié, *Cités anciennes de Mauritanie* (1961): 117.

211 Holod and Kahlauoi, "Jerba in the 3rd/9th century CE: Under Aghlabi Control?" (2017): 451–469; Derriks & Prevost, *Djerba les mosquées ibadites* (2018).

century. And so, the Ibadi influence reached Sub-Saharan Africa by the great trans-Saharan trade routes. Sijilmasa and Tadmekka remained Ibadi centres until 1083, when they were driven out by the Almoravid Berbers.[212] At the beginning of the twelfth century Ibadism was gradually replaced by an orthodox Sunni Islam of Malikite tradition.

The Ibadis played an important rôle as missionaries and traders. They penetrated the Sudan well before the orthodox Sunnis and, according to El Fasi and Hrbek "it is likely that the decision to adopt Islam of some of the first Sudanese converts was due solely to the proselytism of the Ibadis".[213] The traces of the dogmas of the Ibadi faith have disappeared in Sub-Saharan Africa. On the other hand, the influence of Ibadi architecture can still be seen in the religious architecture of the mosques of the Niger valleys[214] with which the Ibadi mosques of the Jebel Nafusa have analogies, notably the very austere *mihrabs* and the absence of a minaret with a simple stairway leading to the roof of the mosque for the prayer call.[215] The square plan of the prayer room, the absence of courtyard are ibadi elements that can be seen in West African mosques.[216] The large external buttresses of the West African mosques are also observed in the Ibadi mosques of Djerba.[217]

Certain towns of the M'zab are built around a single mosque dominated by a minaret known as the "guardian of the city". The pyramidal minarets of Metlili and Tuat are very high, about twenty metres, with a square plan, walls tapering upwards and an inner stairway. The tombs of the M'zab are decorated with pinnacles. A tower oriented in the direction of the prayer rises above the head of the deceased and ends in pinnacles on the four corners, like the minarets of the mosques. These pinnacles can be found on the façades of the houses or on the terraces. On the top of the minaret of Melika, Chinese porcelains replace the traditional ostrich egg. The pyramidal shape of the minarets is also present in the Mozabite defence or watch-towers, which display the same materials and techniques. The corner staircase of the mosques too occupies an important place and is sometimes protected by a roofed porch on the level of the roof of the mosque. The primary building material is a white gypseous sandstone conglomerated with pebbles. A reinforcement of palm branches is sometimes incorporated in the walls which are then pebble-dashed, smoothened, and white-washed with lime.

The minarets of the mosques of Agadez and Timbuktu, such as Djinguere Ber, Sankore and Sidi Yahya, bear a certain resemblance to the mosques and the tombs of the M'Zab (Fig. 77).[218] The Ibadi mosques of El-Golea and In-Salah have the same characteristics as those situated south of the Sahara: a mud architecture with rounded or pointed pinnacles, a pyramidal *mihrab* tower as at In Salah with the mosque of the seventy saints, or the truncated pyramidal tower of the *ksar* of the Merabtines. According to Schacht, the absence of the *minbar* in the Fulani mosques is the result of Ibadi influence.[219] And indeed, since the fall of the independent state of Tahert in 908, the Ibadis no longer had an imam and did not say the Friday prayer. Overall, the Ibadi mosques of the M'Zab do not have a *minbar* either. Nevertheless, the absence of a niche or a built staircase does not

212 Nixon, "The Sahara" (2020): 303–305.

213 El Fasi & Hrbek, "Etapes du développement de l'Islam et de sa diffusion en Afrique" (1990): 94.

214 Prévost, "Les mosquées « soudanaises » expression de l'Islam africain" (2003): 114.

215 Prévost, *Les mosquées ibadites du Djebel Nafûsa* (2016): 157–198.

216 Chekhab-Abydaya, "Une influence de l'ibadisme sur l'architecture religieuse au Sahara" (2007): 116–124.

217 Derriks & Prevost, *Djerba les mosquées ibadites* (2018).

218 Mercier, *La civilisation urbaine au Mzab* (1922) and Mercier, « Notes sur une architecture berbère saharienne » (1928): 413–429; Aradeon, "Al-Sahili: the historian's myth of architectural technology transfer from North Africa" (1989): 119–120; Ravereau, *Le M'Zab, une leçon d'architecture* (1981): 145; Prévost, "Les mosquées « soudanaises » expression de l'Islam africain" (2003): 119.

219 Schacht, « Sur la diffusion des formes d'architecture religieuse musulmane à travers le Sahara » (1954): 11.

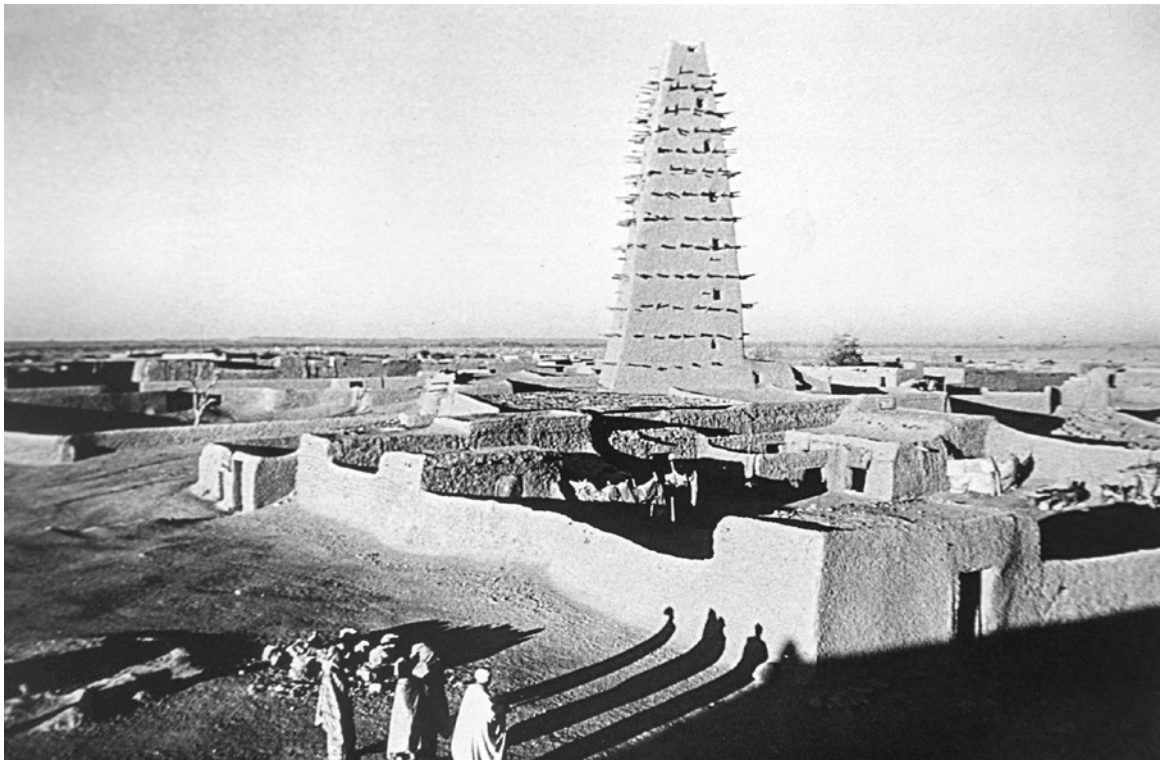


FIGURE 77 Minaret of the mosque of Agadez, Niger

necessarily imply a real absence of a *minbar*: the prayer pulpit could easily have been made of perishable materials, as we see in the case of Malikite wooden minbars in the Maghreb, and Leary thinks that the Fulani *minbars* were made of wood.[220]

1.8.7 *The Mosques of the Niger Valleys from the Colonial Period to the Present Day*

Before the end of the nineteenth century European colonial policy was limited to the coastal areas and the slave trade. The French entered the interior of Senegal in the 1880s and met with the opposition of the Fulbe (Fulani) empire. The greater part of West Africa was colonised by France and Great Britain between 1882 and 1903. The town of Djenne was conquered and dismantled by the French army in 1893. The great mosque was rebuilt in 1907. According to Prussin and Maas, the new mosque reflected the conception of the Parisian townplanners of the nineteenth-century Ecole Polytechnique et des Beaux-Arts, and followed a model introduced by the French military and colonial administrators.[221] The rôle of the open air marketplace, the free view of the mosque, the importance of the tripartite eastern façade together with the symmetry of the pilasters and towers, were the main elements displaying this European influence. The separation of the eastern and western parts of the town was then accentuated by the central square which formed a transition space. The square was enframed by the new administrative centre of the French colonies and the great mosque. This configuration of space contrasted with the traditional layout in West Africa, with mosques surrounded on all sides by narrow

220 Leary, *The Development of Islamic Architecture in the Western Sudan* (1966).

221 Prussin, *Hatumere: Islamic design in West Africa* (1986): 184–6; Maas & Mommersteeg, *Djenné, chef-d'œuvre architectural* (1992): 16.



FIGURE 78 Mosque of Missiri built in 1928, Fréjus, France

streets and houses. The mosque was regarded by the French as a "neo-Sudanese" prototype and became the symbol of French colonialism in West Africa. It was represented in Paris in the West African pavilions at the international colonial exhibition of 1931 and in the mosque of Fréjus built in 1928 (Fig. 78). The mosque of Missiri was built in one of the camps around Fréjus where Senegalese colonial troops were stationed. It is a replica of the mosque of Djenne built on the French Côte d'Azur.[222]

Bourgeois, however, contradicted the hypothesis of a French influence on the reconstruction of the great mosque of Djenne.[223] He believed that the French settlers were indifferent to it and more interested in the same year in building the *madrasa* (Qur'anic school). He observed the absence of the use of instruments of French topographical engineers such as the plumbline or the spirit-level. And indeed, the plan of the mosque is not regular. Bourgeois insisted on the representation of Sahelian elements in Djenne, which were part of the rivalry between the Djenneans and the Fulbes, and the desire of the inhabitants of the town for independence from the Fulbes can be seen in various features of the mosque – the increased height of the roof, the gallery for women and the presence of towers, forbidden by Seku Ahmadu. These last arguments support the idea of an influence in the region of the French colonial administration, above all in re-establishing an interethnic peace and an openness to a tolerant Islam. The great mosque of Mopti, built in 1935 on the islet of Komoguel, was inspired by the Djennian style, and according to local tradition it was built by the masons of Djenne. Since the main east façade was not visible from the dyke, a second identical façade was built in the west for tourists and visitors.[224]

The mosques of the late twentieth century were constructed in concrete and other industrial materials. The mosque of Segou, built in 1940 in the district of Tiero, was demolished in the late 1970s and replaced by a mosque in cement on the same plan, but the conical tower was replaced by a *mihrab* tower with three steps. The parapet was embellished by ornamental metal grills, and the white plaster of the complex contrasts with the red colour of the traditional regional plaster. Another innovation consisted in a sloping roof in corrugated iron, as in the Bambara mosque built in 1983 at Tingole in Mali. In the Ivory Coast the early mosques in the Niger valley style were demolished and replaced by mosques in cement. The façade of the wall of the *qibla* was composed of three towers, as in Djenne, but the shape of these towers was now inspired by the mosques of Morocco and Saudi Arabia.[225]

222 Gruber, "The Missiri of Fréjus as Healing Memorial" (2012): 25–37.

223 Bourgeois, "The history of the great mosques of Djenné" (1987): 60–2.

224 Prussin, "Sub-saharan West Africa" (1994): 186.

225 Domian, *Architecture soudanaise* (1989): 127.

CHAPTER 2

The Mosques from the Horn of Africa to the Valleys of the Nile

2.1 The Mosques of the Ethiopian High Plateau and the Somali Plains

2.1.1 *The Neglected History of the Muslim Horn of Africa*

In the last few years the research of Bertrand Hirsch and François-Xavier Fauvelle produced a mass of historical and archaeological evidence which made it possible to confirm the early existence of politically organised Muslim communities situated at the heart of the Horn of Africa, on the foot-hills of the central and eastern plateaus of the Rift.[1] Formerly Ethiopia had been seen from the perspective of the Christian kingdoms and a secular struggle between Christians at the centre of the high plateaus and Muslims on the periphery of the Horn.[2] In fact, these conflicts date back to a period between the fourteenth and the sixteenth century. The latest episode, of the 1520s and 1530s, was the *jihad* led by the imam Ahmad bin Ibrahim called "Ahmad Gran". After these conflicts the small Muslim kingdoms were regarded as epiphenomena and Islam was thought to have entered the region at a late stage along the caravan routes with the city state of Harar. This somewhat simplistic view places Christian Ethiopia at the centre of the historical dynamics without allowing for more complex movements, processes of political interaction and commercial competition with the Muslim kingdoms (Fig. 79).

Two ancient commercial axes facilitated the penetration of Islam into the Horn connecting the Ethiopian high plateaus to the sea.

First, from the ninth to the twelfth centuries, there was the early north-south axis stretching from the Dahlak islands via eastern Tigray to the slopes of the central high plateau (eastern Choa).[3] This was probably at the origin of the emergence of the local Muslim powers described by al-Idrisi, along the borders and below the level of the Christian country. This islamisation was supported by Fatimid commercial networks and Ismaili dâ'i activities, and paradoxically by the Egyptian Coptic connections with Christian Ethiopia. The church of Wuqro Cherqos might resume here the complex history of the islamisation in the Tigray region. This church possesses a Fatimid kufic inscription carved in stone and made locally during the second half of eleventh century. This inscription is considered as a spolia from a Fatimid Mosque reused in a fourteenth or fifteenth century church.[4] However, the surviving fragment was placed on the north impost, where the arch springs on an added wall closing the apse with the altar. It is very possible that the added walls and the inscription correspond to a conversion of a previous church into a mosque. It would explain to oddity of having a Muslim inscription placed in the middle of a church, and it would also explain the added walls. Then the mosque was abandoned or destroyed, and the place was reconverted into a church.

A second axe of islamisation was based on east-west roads which, from the late eleventh to the sixteenth century, connected the Gulf of Aden with

1 Fauvelle & Hirsch, « Etablissements et formations politiques musulmans d'Ethiopie et de la Corne de l'Afrique au Moyen Age : vers une reconstruction » (2008): 339–376; Fauvelle-Aymar & Hirsch, "Muslim Historical Spaces in Ethiopia and the Horn of Africa: A Reassessment" (2010): 25–53.

2 Cuoq, *L'islam en Éthiopie des origines au XVI^e siècle* (1981); Trimingham, *Islam in Ethiopia* (1952); Idem, *Islam in East Africa* (1961); Shinn, *Historical dictionary of Ethiopia* (2004).

3 Loiseau and alii, "Bilet and the wider world: new insights into the archaeology of Islam in Tigray" (2021): 521–526.

4 Muehlbauer, "From stone to dust: The life of the Kufic-inscribed frieze of Wuqro Cherqos in Tigray" (2021): 15–20.

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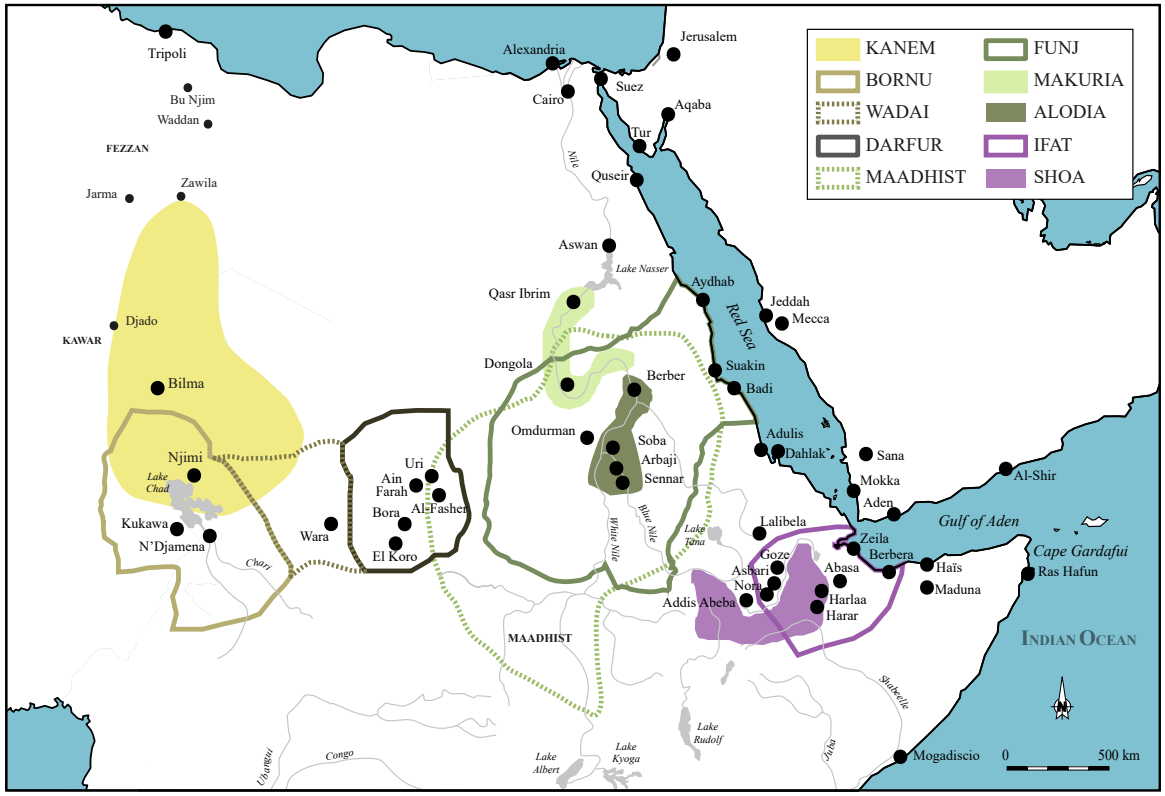


FIGURE 79 Map of historical mosques and kingdoms in the Horn of Africa (Ethiopia, Somalia, and Eritrea)

the highlands of the eastern plateau and the lakes of the Rift valley. The succession of sites forming a route of penetration and trade may correspond to the Muslim kingdoms described by al-ʿUmari at the beginning of the fourteenth century. He reported the existence of seven sultanates situated in Ethiopia and the north of Somalia. If this applied essentially to the city-states controlling small territories, certain sultanates were more important. These included the sultanates of Ifat and Adal which were frequently at war with the Christian kingdom of Ethiopia for the control of the trade routes passing south of Zeyla and plunging into the heart of the African Horn.

2.1.2 *The Sultanate of Ifat and the Mosques of Nora*

The Muslim kingdom of Ifat was situated on the slopes bordering the Rift valley, at an altitude of 1300 m, and lasted during a period between the tenth and the sixteenth century.[5] Ever since the thirteenth century the towns of the Somali plateau had been under the influence of the sultanate of Ifat, which rapidly extended its influence west while remaining within reach of its maritime outlet of Zayla.[6] Traditionally founded in 896, the sultanate of Shoa was absorbed by Ifat at the end of the thirteenth century.[7] This was followed by the settlement along the eastern plateau of the Rift of numerous Muslim agglomerations. The exact date

5 Fauvelle, Hirsch & Chekroun, « Le sultanat de l'Awfāt, sa capitale et la nécropole des Walasma. Quinze années d'enquêtes archéologiques et historiques sur l'Islam médiéval éthiopien » (2017): 254–257.

6 Fauvelle-Aymar, Hirsch, Bernard & Champagne, « Le port de Zeyla et son arrière-pays au Moyen Age. Investigations archéologiques et retour aux sources écrites » (2011): 43–50 and 60–64.

7 Cerulli, *"Il sultanato dello Scioa* nel secolo XIII secondo un nuovo documento storico" (1941): 5–14.

of this upheaval was supposedly 1285, given by the "Chronicle of Shoa" as the date of the destruction of the sultanate of Shoa by Ifat and the subjection of the Muslim populations of Shoa to the new power. Ifat was then ruled by the dynasty of the Walashma from 1285 to 1415.[8]

The Ethiopian province of eastern Shoa is situated in the southern half of the ledge which stretches from Shoa Robit to Kombolcha, on the slopes of the central plateau of Ethiopia. It is there that we find the sites of Goze and Faqi Dabbis, as well as various other recently discovered or re-discovered Muslim sites.[9] Chernet Tilahun led three missions to survey the region of Shoa-Robit between 1985 and 1988, and there found the sites of Asbäri and Nora.[10] These two sites were apparently founded by Argobba peoples. Situated 20 km north-east of the present town of Shoa Robit (region of Shoa), the site of Nora is halfway between the high plateau and the plain of Awash, at an altitude of some 1300 m. Numerous buildings have survived in elevation, notably five mosques which characterise the different districts of the town.[11]

The great mosque of Nora was homogeneous in its architectural style and its construction. The prayer hall had a surface of 43 m², and the building was almost square, measuring 13 m from east to west and 12 from north to south (Fig. 80). The mosque could hold up to eighty worshippers. It is exceptionally well preserved for a building of the fifteenth century (Fig. 81). The loadbearing walls have survived up to the base of the roofing. A single column still stands in what is almost its full height. It is situated in the north-east corner of the prayer hall close to the passage giving access to the roof. Several hypotheses can be advanced concerning the preservation of this column (Fig. 82). First of all, the diameter of the supports varies significantly. This was one of the largest in diameter, and consequently the most solid. A second argument, which might complement the first, is that the column which still stands was in a corner containing one to two doors. The presence of these doors gave the walls of the north-east corner a greater flexibility and may have affected the survival of the column in the hypothetical case of an earthquake. The coping at the summit of the walls consisted of large panels of rhyolite of 50 cm. These panels placed at the edge of the wall served as a counterweight for the beams of the ceiling supporting a roofing in perishable materials, wood and branches – a system of roofing which has been seen in the Argoba mosques to this day.[12] If the entire roof had been composed of stone panels, we should have found more debris than that, either inside the mosque or outside. The large panels that have come to light were not numerous enough to cover the whole of the prayer hall. Besides, the absence of holes used to fix the beams at the summit of the walls also confirms the fact that we are dealing with a light roofing. The discovery of a gutter to the south-east of the mosque indicates a flat roofing. It allowed the rapid evacuation of rainwater which would have accumulated on a flat roof even if it had a slight slope. In the same sector I observed the presence of a large quadrangular stone cut with a channel in its central part. This very heavy stone was not a gutter but could have been meant to facilitate the drainage of the rainwater evacuated by the gutter into a basin to the south-east. The basin or reservoir was used for ritual ablutions before the prayer.

8 Lidwien, "Ethiopia and the Horn of Africa" (2000): 228–230.

9 Tilahun, "Traces of Islamic Material Culture in North-Eastern Shoa" (1990): 303–320; Kebedde, « A Survey on Argobba Sites in Northern Shoa » (2000): 185–194; Poissonnier, « Fäqi Däbbis » (2005): 49; Poissonnier & alii, « Les mosquées médiévales de Goze et Fäqi Däbbis » (2011): 103–139; *Fäqi Däbbis* in *Encyclopaedia Aethiopica* (2005): 491; Fauvelle-Aymar, Hirsch, Bruxelles, Chekroun, Deresse & Chalachaw, « Reconnaissance de trois villes musulmanes de l'époque médiévale dans l'Ifat (Éthiopie) » (2008): 133–175.

10 Tilahun, "Traces of Islamic Material Culture in North-Eastern Shoa" (1990): 303–320.

11 Pradines, "The Medieval mosques of Nora. Islamic architecture in Ethiopia" (2017 a): 33–79.

12 Ahmed and Miran, "Mosques" (2007): 1028–1032.

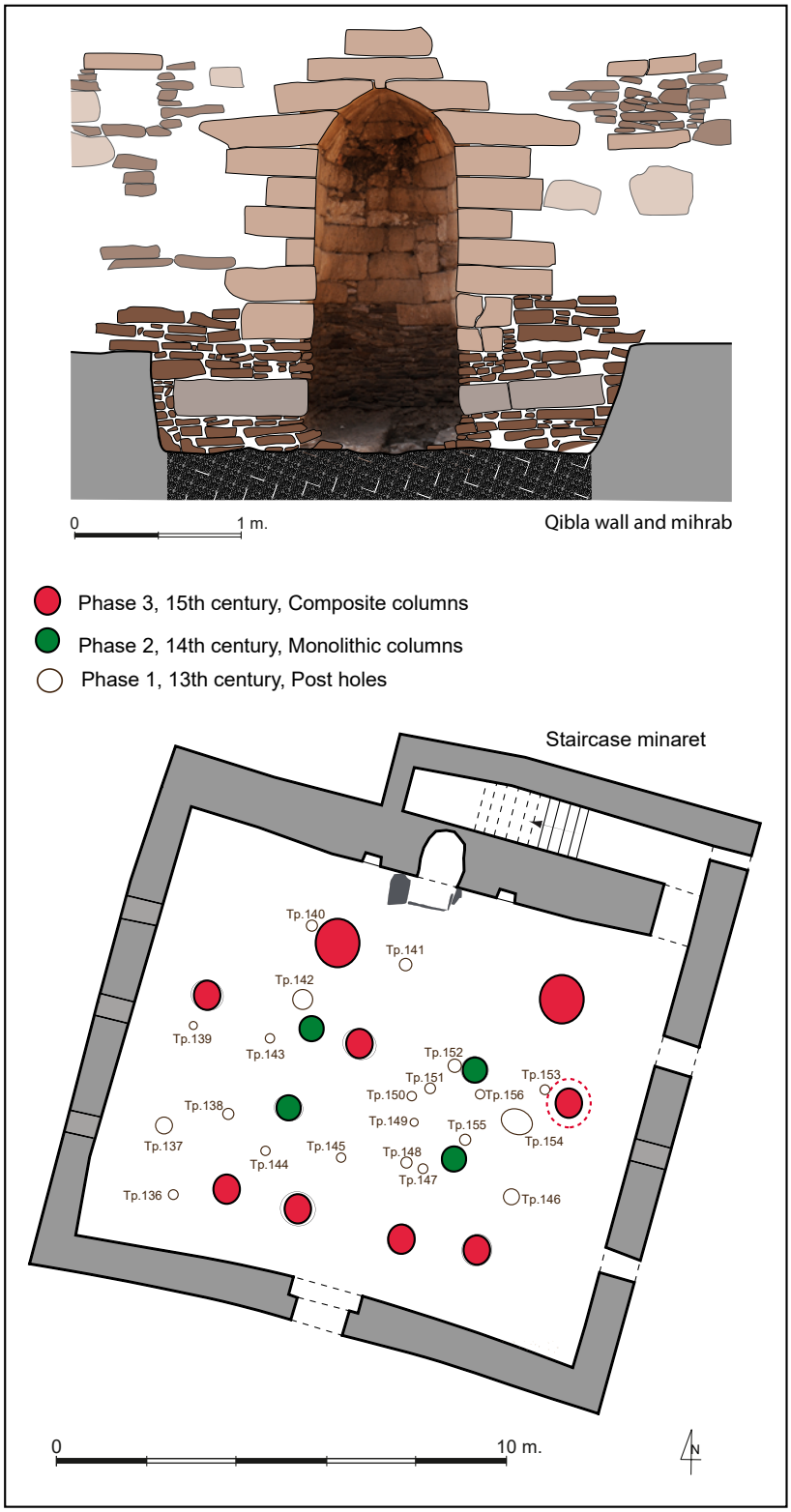


FIGURE 80 Plan of the great mosque of Nora, Ethiopia



FIGURE 81 Great mosque of Nora



FIGURE 82 Excavations in the prayer room of the great mosque of Nora

It seems that the mosque of Nora only had a single gutter to the south-east. This means that the roof was sloping towards the south to facilitate the discharge. The evacuation of the rainwater on a single side of the building is an interesting element since it indicates that this was the ablution area connected to a water tank. The diameter of the columns and their arrangement in the hall varies significantly and shows that we are dealing with builders and masons rather than with architects. It is a local Islamic architecture and not an external contribution. Besides, the rare examples of medieval mosques studied in Ethiopia and Somalia display the same disinterest in the arrangement of the supports. This feature is quite surprising when we think that, even in archaic societies, the organisation of space was mastered, as was the symmetrical arrangement of pillars or columns. It seems to be regional cultural facies: an organisation of the asymmetry of the supports!

Most of the elevation of the qibla wall is preserved, approximately 5 m above the current ground. The wall measures 1.25 m thick. Large rhyolitic blocks create several horizontal string courses which stand out from the rest of the masonry by their uniformity and homogeneity. In the centre of the wall, the mihrab, facing north, constitutes the main element of the wall. The niche is located slightly to the east compared with the main entrance axis. Ogival-shaped, the niche opening measures 227 cm high, as from the level of the original floor, by 94 cm wide at the bottom and 76 cm at its high point starting at the beginning of the vault. The depth of the recess is 96 cm. The keystone was cut in the shape of a 'T' and this monolithic element is characteristic of the mosques of this region and this element can represent a cultural or a chronological benchmark (Fig. 83). Two small quadrangular niches have been set into both sides of the mihrab, at a human height. The western niche measures 40 cm wide by 35 cm high and is covered by a rhyolitic lintel measuring 48 cm long. Its depth is 40 cm and two slabs have been used to create the lintel system at this depth. The eastern niche measures 43 cm wide by 35 cm high under a rhyolitic lintel measuring 52 cm long.

At the time of the re-occupation of the mosque, the columns in the prayer hall which had collapsed were withdrawn, the ancient floors were removed, and a part of the debris was thrown in front of the entrance of the mosque where there is a little mound. We excavated this mosque in 2008, and an embankment of grey earth was found along the entire extent of the prayer hall, and bits of the panels of the columns and the roofing were used to create the level of a makeshift floor. The covering, which was not rebuilt, attests the absence of pillars or any support for the roofing. The *mihrab* alone received a special treatment, with panels which protected the entrance. But all these arrangements were improvised, and the mosque was used as an open air *ziara*. There were no major works or architectural revival. Everything suggests that the inhabitants of Nora in the modern period were either impoverished or were not the people who built the mosque.

The history of the great mosque of Nora can be divided into four phases. The first phase, dated stratigraphically, goes back to the thirteenth century, and presents a pre-Islamic level characterised by post holes. Sample 31 gives us a radiocarbon date of between 1030 and 1230, the maximal probability being the early thirteenth century. The second phase corresponded to the first mosque built in the fourteenth century. We do not know the plan of the building despite the survival of a few patches of flooring. The supports of the prayer hall consisted of wooden post columns on circular stone bases. The third phase was characterised by a second level of flooring and composite stone columns. The mosque of Nora, as we know it, was thus built in this period, probably in the early fifteenth century. The change, from the wooden post columns to the composite stone support, has also been observed for identical periods in the great mosque of Kilwa in the south of present-day Tanzania. The fourth phase, finally, the abandonment of the building and its makeshift reoccupation, occurred in the sixteenth and seventeenth centuries after the Christian presence in the region.



FIGURE 83 Keystone of the mihrab of the great mosque of Nora

The town of Nora also had four district mosques (Fig. 84). Mosque M2 stands on a densely urbanised spur to the west of the great mosque. The building measured 6 m from east to west and 5.3 m from north to south. The prayer hall had a surface of 19 m². The east and west walls were each perforated by a window. The north wall or *qibla* was pierced by a niche-*mihrab* with a base 68 cm wide and a depth of 98 cm. A tomb was attached to the *mihrab*, in the north-east corner on the exterior of the building. The ceiling of the prayer hall was supported by a central column. A little courtyard was set up in front of the main entrance of the mosque to the south. A circular basalt slab has been discovered in the south-west of the courtyard, measuring 60 cm in diameter and 45 cm in height. It probably indicates the location of the ablution area. Mosque M3 is situated next to the slope, to the south of the great mosque. The building had a square plan of 10.5 m each side and the prayer hall a surface area of 98 m². This district mosque was built on a terrace wedged between two lanes parallel to the slope. The *mihrab* is clearly recognisable, built into the wall of the *qibla* which also borders the street below. Its opening at the base was of 62 cm by a depth of 70 cm. A circular basalt slab was found to the south-east of the mosque, 45 cm high and with a diameter of 70 cm, indicating the presence of an ablution area to the south of the religious building. Mosque M4 was built on an abrupt promontory to the south-east of Mosque M3. The building measured 6 m on each side, with a prayer hall of 20 m² (Fig. 85). The niche of the *mihrab* has been identified. It was 56 cm wide by 68 cm deep. A circular basalt slab has also been recognised to the south of the building; 45 cm high by a diameter of 65 cm. The dominant position of this mosque is interesting since the building could be seen by anyone arriving at the site of Nora from the south. Mosque M5 stood in sector 3, to the north-east of the great mosque, in an area traditionally reserved for graves. The building measured 6 m from east to west by 5 m from north to south, with a prayer hall of 18.5 m². Two windows were pierced respectively in the east and west walls. The *mihrab* had an opening 72 cm wide at its base and a niche 100 cm deep. The *qibla* was surrounded by an outer wall, which might point to an area reserved for tombs or a little stairwell in a staircase minaret. A courtyard was set up in front of the main entrance to the south of the mosque. A basalt pumice stone has come to light in the south-east of the mosque, with a diameter of 60 × 55 cm, and a height of 30 cm. To conclude, the district mosques of Nora were square with 6 m sides and had a prayer hall with an average surface area of 20 m². A central column supported a roof in perishable materials. The very simple *mihrab* had no decoration. The main entrance of the mosque was situated to the south opposite the *mihrab*. The mosques were preceded by a little courtyard to the south with an ablution area to the south-east. The muezzin reached the roof of the mosque by way of a small staircase on the exterior of the wall of the *qibla*, in the north-east corner.

The site of Asbäri covers 40 hectares, as opposed to the mere 10 hectares of Nora. The great mosque measured 30 by 27.5 m. Its plan is surprising since the supports were concentrated to the north of the building leaving an empty space in the south, possibly a courtyard. The stacks and pillars were of different sizes and their average spacing was not respected. There is none of the regularity we found in the supports of the great mosque of Nora. It is

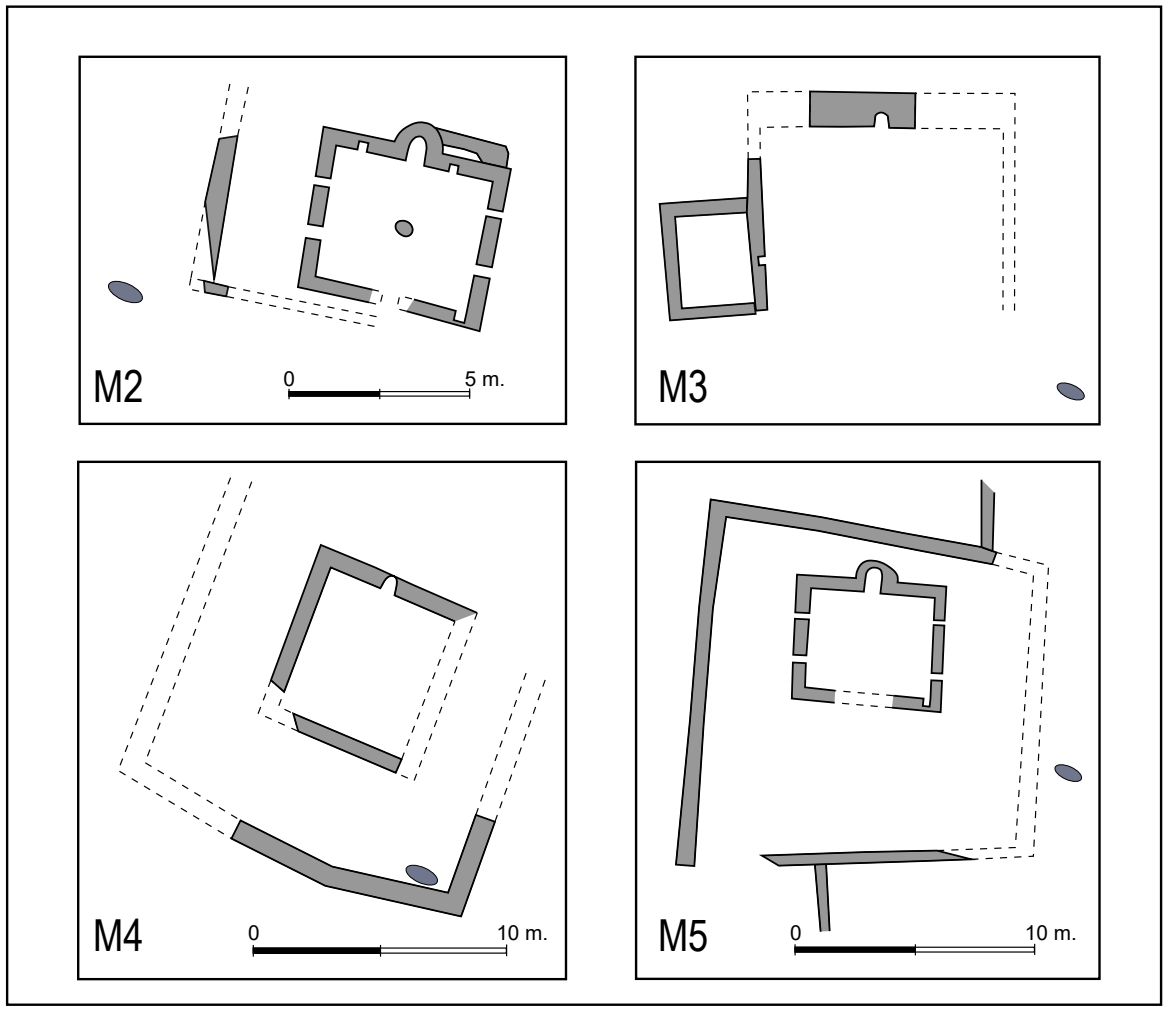


FIGURE 84 District mosques of Nora (M4 and M5)

an element worth noting since, we might wonder whether there is not some order in the disorder, in other words an Ethiopian style which consists in having no symmetry in the plan of the bays and the implantation of the supports in the prayer hall. The prayer hall of the mosque of Asbäri also had a door in the north-east corner of the wall of the *qibla*, as at Nora. We might wonder whether this is a regional peculiarity – the presence of a door giving onto a staircase minaret in the north-east corner. In a district mosque of Asbäri the arch of the *mihrab* consisted of a bent monolithic lintel. In the great mosque of Asbäri, the stone composing this arch has been removed, but it is the same sort of stone.[13] This extremely original type of lintel could serve as architectural evidence and allow us to date other buildings in the region. The niche of the *mihrab* of Faqi Dabbis, for example, was surmounted by an arch composed of two dressed stones arranged in a triangle. At the summit there was a split. Was this a single broken

13 Fauvelle-Aymar, Hirsch, Bruxelles, Chekroun, Deresse & Chalachaw, « Reconnaissance de trois villes musulmanes de l'époque médiévale dans l'Ifat (Éthiopie) » (2008): 133–175.



FIGURE 85
Small mosque (M4), Nora, Ethiopia

stone? In this case, this type of arch would be close to the ones seen at Asbäri and would allow us to draw up a regional typology based on specific architectural features.

Two medieval mosques of Ifat – Goze and Faqi Dabbis – were excavated in 2000.[14] The mosque on the site of Goze had sides of 8 m and the masonry consisted of basalt blocks bounded with a thin earthen mortar. The construction technique of the walls was makeshift. The walls had a variable thickness between 85 cm and 1 m and were 3.80 m high under the ceiling. The oblong semicircular *mihrab* measured 75 cm at its base, 2.1 m in height and 1.1 m in depth. The blind arcade of the *mihrab* niche was supported by two worked stones identical to those in the *mihrab* of the great mosque of Nora. A wooden gutter, finally, has been seen on the south side of the mosque. The second mosque to have been excavated is Faqi Dabbis. The building measured 16.5 by 14.3 m. Some tombs, marked by recessed panels set on their side, were arranged around the mosque. The walls of the building were 85 cm thick, with a total height of 4.5 m up to the beam holes for fixing the carpentry of the roofing. Three niches are visible in the east wall, measuring 40 by 50 cm. A door was built into the wall of the

14 Poissonnier et alii, 2007: Fig. 22 and 25.

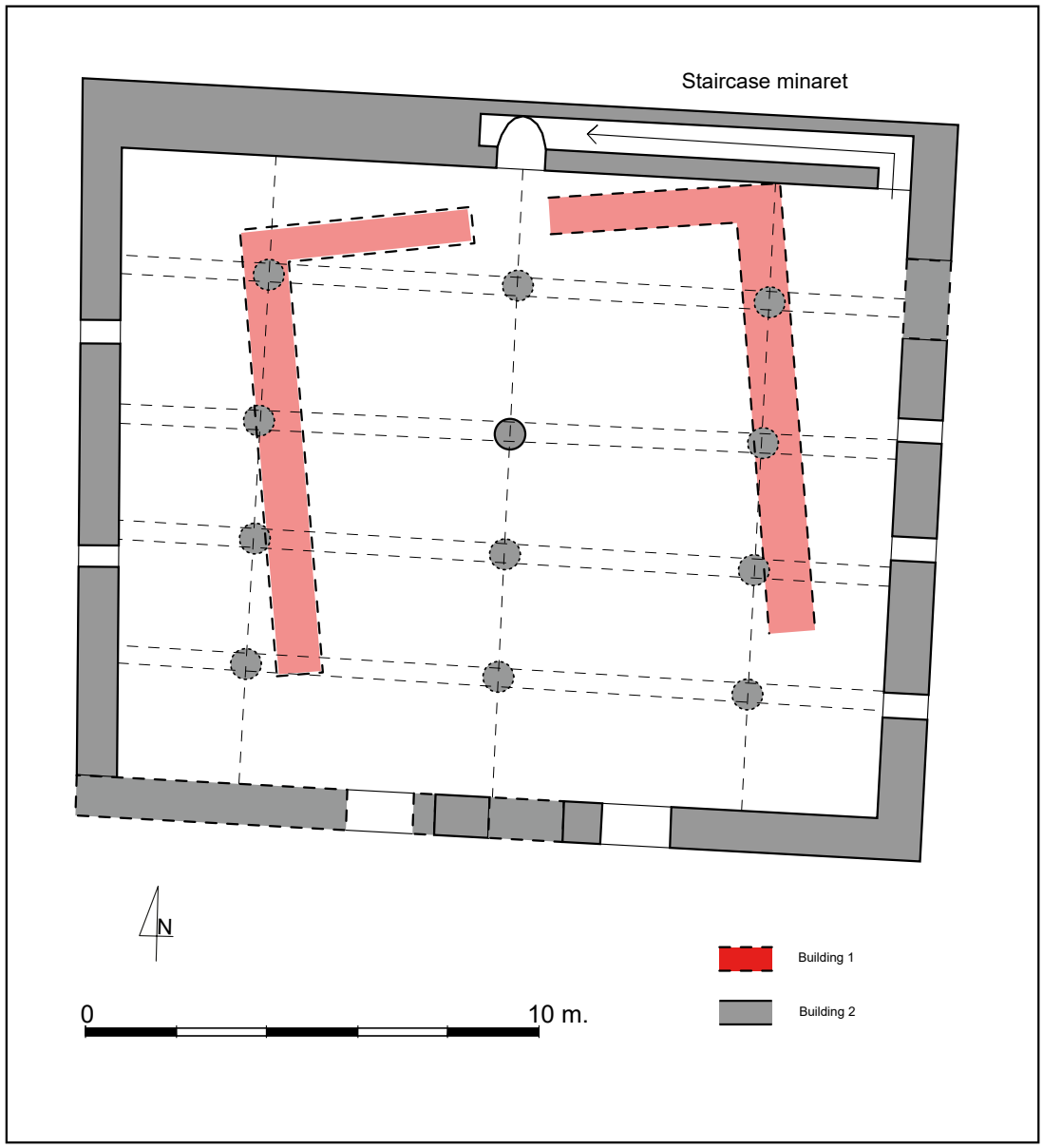


FIGURE 86 Faqi Dabbis, Ethiopia

qibla, to the north-east, with an opening of 1.3 m. It led to a passage of 60 cm giving access to the roof – a staircase minaret. A gutter was placed on top of the south wall. There too the ablution area seems to have been installed to the south of the building near the main door. The plan of the mosque of Faqi Dabbis is close to that of Nora, with three windows in the east and west walls and above all three north-south rows of four pillars. The south-east corner of the mosque was clamped, as in the great mosque of Nora. Two major phases have been observed at Faqi Dabbis, the last corresponding to the present building, with three post holes of 50 cm in diameter. This mosque seems to have

been destroyed by a fire, possibly a pyroclastic flow connected with volcanic activity. The radiocarbon dates indicate that the mosque was used in the early fifteenth century. Another level of occupation has been identified, with an earlier mosque which was smaller and with a different orientation (Fig. 86). This level would date from the fourteenth century. The change in the orientation could be connected with new populations of a different Islamic confession. In the case of the Swahili mosques there was a passage from Shiism and Ibadism to Sunnism. Judging from the cemetery of Hajii Mansur this might also have been the case in Ethiopia. An inscription on a monumental tomb says that Muhammad and ʿAli are the messengers of Allah. If ʿAli is a messenger of God, might we not be dealing with a Shiite Ismaili community? The construction of the mosque of Nora and the establishment of a Muslim community in this region of Ethiopia could correspond to changes which took place in the Near East and on the east coast of Africa in the early thirteenth century, with the re-establishment in the Yemen of Sunni dynasties, the Ayyubids and then the Rassulids. Nevertheless, the Islam of Nora seems to be a more recent Islam than the one that entered the north of Ethiopia.[15]

2.1.3 *The Mosques of the Plains of Bilad al-Barbar*

The Ethiopian mosques of Ifat can be connected stylistically with the establishments of the plains extending towards Zeyla and Berbera in the west of Somaliland (the former British Somaliland, independent of Somalia since 1992),[16] but also on the heights of the Chercher mountains, comprising Harar and various other sites situated along a segment of the eastern plateau of Ethiopia.[17] Thanks to the excavations in Nora and the study of the sites inventoried, we were able to identify a style of mosque which can be called the "style of Adal". These mosques were characterised by a masonry in dry stones bounded by a mud mortar, a very simple *mihrab* and a staircase minaret. The supports were not standardised, and the alignment of the bays were not respected. The main entrance of the prayer hall was situated to the south and the ablution area to the south-east. It was a simple and refined architecture without any exogeneous influence. The simplicity of the techniques used for the construction of these religious buildings was essentially connected to the rarity of the available materials and the difficulty in their application. This type of mosque can be found along the old commercial axes connecting the high plateaus to the sea in a territory corresponding to the kingdom of Adal.

In the Horn of Africa, the nomadic tribes of the Afars, Danakils and Somalis started to convert to Islam as soon as Muslim merchants penetrated in the hinterland. These groups of shepherds then spread the Muslim faith in the Somali interior along the caravan routes linking the ports of Zayla and Berbera in the Gulf of Aden to the Ethiopian plateau. Certain nomadic populations such as the Oromo, however, were Islamised later, towards the sixteenth century. Besides, Islam was not accepted by all the agricultural peoples of the highlands. Christianity had remained firmly entrenched in the Ethiopian high plateaus ever since the conversion of the Axumite king Ezana between 320 and 350.[18]

The merchant caravans set out from the ports of Zeyla and Berbera in the Gulf of Aden in the direction of the Ethiopian high plateaus of Shoa and Wollo. The port of Zeyla is situated in the south

15 Fauvelle & Hirsch, « Etablissements et formations politiques musulmans d'Ethiopie et de la Corne de l'Afrique au Moyen Age : vers une reconstruction » (2008): 339–376.

16 Curle, "The ruined towns of Somaliland" (1937): 315–327; Chittick, "An archaeological Reconnaissance in the Horn" (1976): 117–133.

17 Azaïs & Chambard, *Cinq années de recherches archéologiques en Ethiopie, province du Harar et Ethiopie méridionale* (1931): 31–56.

18 Insoll, "The Archaeology of Islam in sub-Saharan Africa: a review" (1996): 444–449.

of present-day Djibouti, while Berbera is even further south. In the thirteenth century the port of Zeyla attained its importance at the expense of the archipelago of the Dahlak islands, and it was at this point that many early Islamic sites on the Red Sea, such as ʿAydhab and Badi on the island of al-Rih in the Sudan, were abandoned.[19] It was in this period too, and thanks to Zeyla, that a myriad of little sultanates and Islamic settlements came into being on the trade routes as far as the Ethiopian high plateaus. The excavations carried out in Zeyla show that the present day mosques in the town date from the seventeenth and eighteenth centuries. And yet the dates of the earlier ones confirm the prosperity of the port since the thirteenth century.[20] Zeyla was burnt down by the Portuguese in 1516 and never regained its former wealth. The arrival of the Europeans in the Indian Ocean thus had an influence on the trade in the region and the abandonment of certain sites on the routes of the desert and the high plateaus.

Some thirty towns have been surveyed on the plateaus to the south of Zeyla in Somalia.[21] These were Islamic settlements with mosques in stone with a mud mortar. The most important agglomerations were undoubtedly Maduna, Abasa, Rugayi and Amud. Some of these mosques have been the object of a summary description and provide a certain amount of information. The mosque of the little town of Rugayi was on a rectangular plan with an internal courtyard. The mosque of Amud was divided into two parts with a main chamber measuring 5.7 by 3.3 m and an antechamber of 7 by 5.7 m. The building consisted of a bay parallel to the wall of the *qibla* and was preceded by an antechamber or ablution area with a well 8 m deep. The square *mihrab* was enframed by pilasters supported by ogee arches and mouldings similar to the ones in the Swahili mosques or the Ethiopian churches. The aedicule of the *mihrab* formed a semicircular external protuberance.[22] The supports of the mosque had a top square element of transition which acted as a capital. In Nora we were unable to confirm the presence of a capital on the only column still in place. Nor did we notice any element ensuring the transition between the support and the roofing. The stone towns that have been inventoried were small agglomerations of 1000 m^2, situated on the hill in a defensive position.[23] The Islamic sites of Hawd and Ogaden must have been founded by the Somali-speaking Harba and Argobba populations. In contrast to the sites of the Danakil, the Muslim sites of Hawd and Ogaden were not on fortified hills,[24] but open to the exterior and certainly more propitious for trade. The towns of Amud and Abasa each contained almost 200 houses in stone with rooms decorated with niches. The archeological material collected dates these settlements back to between the thirteenth and the sixteenth century, as in Nora. A single column is visible in the north-east corner of the mosque of Darimo north of Jijiga.[25] The only visible architectural difference with respect to Nora is that this column is surmounted by a square capital. In Derbiga the old mosque, in ruins, continues to be used by the autochthonous populations who burn

19 Hebbert, "El-Rih, a Red Sea Island" (1935): 308; Kawatoko, « Preliminary Survey of ʿAydhâb and Badi sites » (1993): 203–225.

20 Fauvelle-Aymar, Hirsch, Bernard & Champagne, « Le port de Zeyla et son arrière-pays au Moyen Age. Investigations archéologiques et retour aux sources écrites » (2011): 74.

21 Révoil, *La vallée du Darror, Voyage au Pays çomalis* (1882); Chittick, "An archaeological Reconnaissance in the Horn" (1976): 117–132; Curle, "The ruined towns of Somaliland" (1937): 315–327; Fattovich, "The development of urbanism in the northern Horn of Africa in ancient and medieval times" (1996): 1–30.

22 Huntingford, "The town of Amud, Somalia" (1978): 182.

23 Azaïs and Chambard, *Cinq années de recherches archéologiques en Ethiopie, province du Harar et Ethiopie méridionale*. 1931: 49; Wilding, « The desert trade of Eastern Ethiopia » (1980): 379–380; Insoll, *The Archaeology of Islam in sub-Saharan Africa* (2003): 67–73.

24 Wilding, « The desert trade of Eastern Ethiopia » (1980): 379–380.

25 Curle, "The ruined towns of Somaliland" (1937): 315–327.

incense in it as in Nora. This practice is common to all the early African mosques which I have been able to visit in East Africa. Recently several early Islamic sites have been surveyed and excavated in the same region. The mosque of the site of Harlaa north-west of Harrar, for example, was built and used from the twelfth to the fourteenth century. According to Insoll, the building techniques and materials were similar to those of the early Swahili mosques with quadrangular ashlar blocks of sea coral with horizontal foundations.[26] These results propose an early arrival of Islam in Ethiopia, not only along the north-south routes, but also from a second east-west axe of penetration from the Gulf of Aden. According to the published plans and photographs, the mosque of Harlaa suggests to me that the *mihrab* niche was built into the wall of the *qibla* and that the mosque had a niche *minbar*, two characteristics of the Ibadi mosques of the Swahili coast.

In 1420, the kingdom of Ifat passed under the domination of the sultanate of Adal (1420–1560). The kingdom of Adal controlled the entire Afar plain from Suakin as far as Shewa and the Chercher mountains. Certain mosques in the regions of Harar and the Chercher were probably connected with the sultanate of Adal.[27] In the north-west of present-day Somalia two important Islamic settlements have been studied, Abasa and Maduna on the way to Zeyla. The town of Abasa was part of the emirate of Adal, incorporated in the kingdom of Ifat. The great mosque of the site of Abasa measured 18 by 16 m. The prayer hall contained twelve T-shaped cruciform pillars and columns supporting a roof of branches (Fig. 87).[28] The cruciform pillars were arranged in two rows, one in the centre and the other to the east. One of these cruciform supports was wider at the top than at the bottom, a deformity reminiscent of the large column of the mosque of Nora. The *mihrab*, which protrudes on the exterior, was surmounted by a quadrilobal arch. The pillars of the niche were decorated by flaps in undressed stone selected for their form and quality. The niche of the *mihrab* was deep and rectangular. Niches were arranged on either side of the *mihrab*. The side walls of the prayer hall also had two niches each. The entrance door was facing the *mihrab* to the south. A door was pierced in the wall of the *qibla* west of the *mihrab*, probably to reach a staircase minaret. The Islamic and Chinese pottery collected on the surface dates from between the fourteenth and the sixteenth centuries.[29] The town of Maduna is quite different from the other medieval sites since the houses built in dry stone had curved walls. Only the mosque was rectangular. This is an interesting element since it recalls the circular structures of Nora and shows that an Islamised community could have a domestic architecture on a circular plan. In the same region, finally, the site of Boramo covers a surface of 10 hectares which dates to a period between the sixteenth and the eighteenth centuries.[30] The masonry of the buildings consists of stone blocks undressed but with a regular module, as in Nora. Concave walls and circular enclosures were arranged around the houses. The mosque had an ablution area to the west. Pilasters enframed the opening of the *mihrab*. An extension of the prayer hall was built to the south with square pillars, and the bays were parallel to the wall of the *qibla*. The opening of the square *mihrab* was enframed by mouldings. In the same area, the ruins of Hafdar include a mosque in dry stone and circular structures associated with rectangular buildings.[31] Most of these sites were ruined or

26 Insoll, MacLean & Engda, "Archaeological Survey and Test Excavations, Harlaa, Dire Dawa, and Sofi, Harari Regional State, Ethiopia, August 2015" (2016): 23–32.

27 Insoll, "The Archaeology of Islam in sub-Saharan Africa: a review" (1996): 447.

28 Curle, "The ruined towns of Somaliland" (1937): 315–327.

29 Chittick, "An archaeological Reconnaissance in the Horn" (1976): 128–129.

30 Huntingford, 1978: 181–186.

31 Révoil, *La vallée du Darror, Voyage au Pays çomalis* (1882): 285–317.

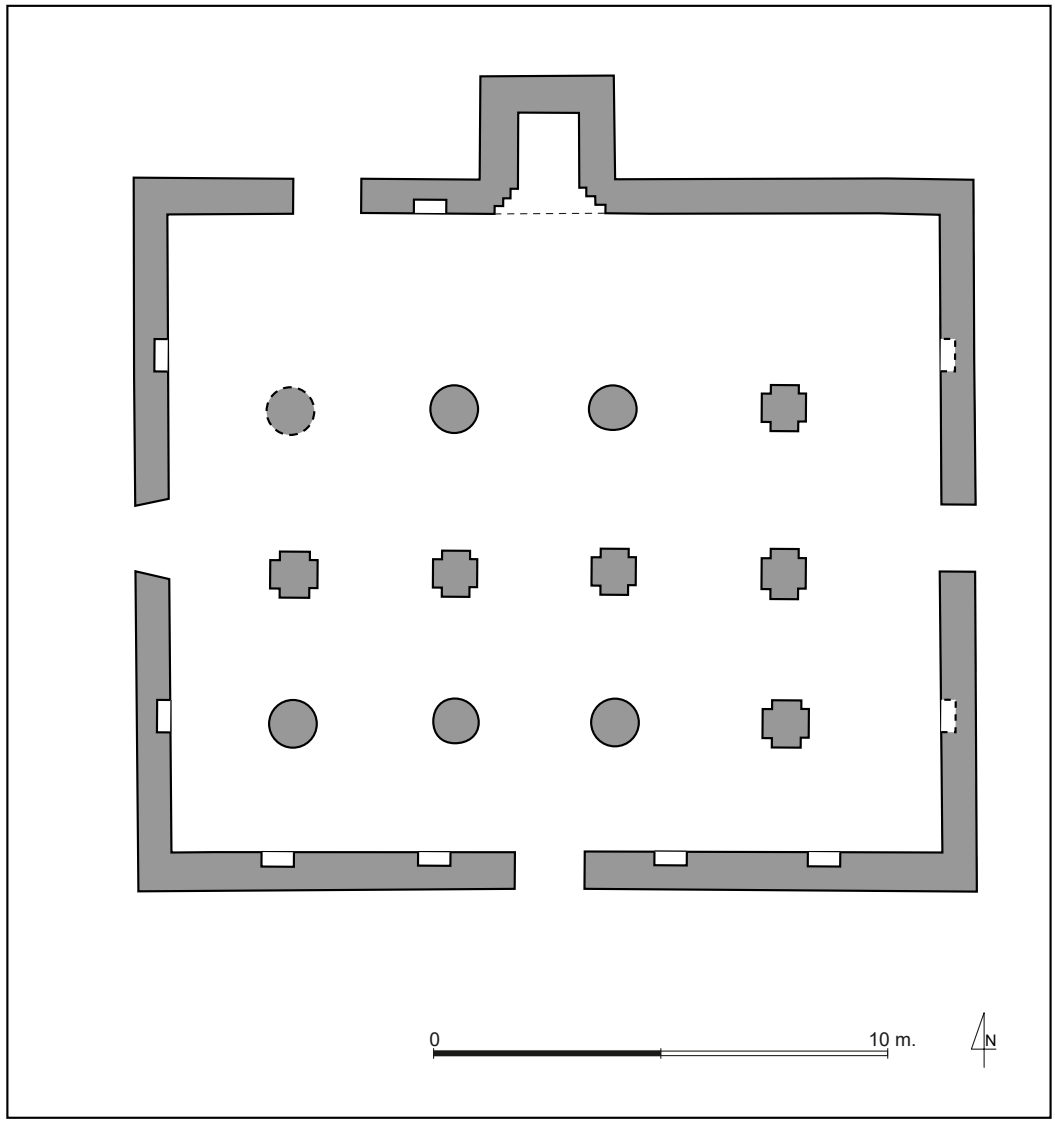


FIGURE 87 Mosque of Abasa, Somaliland

abandoned during the *jihad* of Ahmad Gran in the first quarter of the sixteenth century, and then by the Christian counteroffensive. And indeed, in 1516 the town of Zeyla was burnt down by the Portuguese. Ahmad Gran launched the *jihad* and won the battle of Shimbra-Kure in 1529. He then occupied the plateau of Shoa. The Portuguese gradually gained control of the entire east coast, and the port of Massawa was occupied in 1541. They then came to the assistance of the Christians of Ethiopia. Together they massacred Ahmad Gran and his troops in 1543, and finally annihilated the kingdom of Adal.

Of the Muslim states scattered along the trade routes, the best known was probably that of Harar in Ethiopia. From the second half of the sixteenth

century, Harar took over the regional trade and affirmed itself as the true commercial hub between the central high plateau, where a Christian power was reconstituted, and the Gulf of Aden. Harar thus became the pole of Muslim Ethiopia between the seventeenth and the nineteenth century, the seat of an independent and prosperous emirate, a city-state governed by the dynasty founded by ʿAli bin Dawud (1647–1662). The local traditions of Harar distinguish between two periods in the foundation of the city state. First comes a mythical foundation in the middle of the ninth century. This date is certainly exaggerated since no building earlier than the fifteenth century has been discovered in Harar.[32] Then we have a second period, in the reign of the emir Nur (1552–1568), the successor of the imam Ahmad. That was when the town was surrounded by a wall and divided into five districts, each one corresponding to one of the five city gates, and forming an administrative, religious and social unit, while the area surrounding the town was also divided into five large territories.[33]

Harar has over eighty mosques founded before 1887. According to tradition the town once had as many as 99 mosques.[34] The remarkable presence of numerous tombs of saints and mosques, which amounted to almost a hundred, can be better understood if we regard Harar as a town of pilgrimage, the heir of a vanished urban world, which drew to itself and incorporated in its urban landscape the principal religious figures who marked the history of early Islam in the Horn.[35] According to Mark Horton, two mosques date back to the sixteenth century and five other buildings date from the thirteenth century.[36] The traditional Harari mosques were built in granite and limestone. The granite foundations were 1 m wide. The masonry was bounded with a mud mortar known as *guguba*. The walls were 50 cm thick and were reinforced at every metre by horizontal girders which provided a counter thrust in the case of the earthquakes so frequent in the area. The walls rose to a height of 4 m and were covered with mortar and then with white lime. We do not know whether the walls of the mosques of Nora were coated, but in view of the rarity of limestone in the region of Shoa-Robit it is hard to imagine the sort of lime facing we find in Harar. The beams of the framework rested on wide square pillars. The terrace roofs were made of mud and agglomerated stones. They were not completely insulated and often had to be remade. The district mosques of Harar consisted of a rectangular prayer hall between 24 and 35 m^2, with two pillars and an ablution area in a courtyard to the south. Very few minarets have been seen in Harar, and those that are there are often recent. The Friday mosque has an oblong prayer hall. The wall of the *qibla* was modified during the reign of Amir Abdullah in 1880 with a new T-shaped *mihrab*. Beside the *mihrab* stands a wooden *minbar* dated 1761. The double pointed minaret of this mosque is also a modern addition since minarets were generally unknown before 1935 and the Italian occupation.[37]

2.2 The African Mosques of the Red Sea

The African shores of the Red Sea had been occupied by ports ever since the Antiquity, notably by sites from the Pharaonic, Greco-Roman and Aksumite periods (Fig. 79).

The kingdom of Aksum, which stretched as far as present-day Tigray and Eritrea, was officially

32 Insoll & Zekaria, "The Mosques of Harar: An Archaeological and Historical Study" (2019): 81–107.

33 Cerulli, *La lingua e la storia di Harar, Studi etiopici I* (1936): 35–36; Waldron, *Social organization and Society Control in the Walled City of Harar* (1975).

34 Santelli, "Harar: The fourth holy city of Islam" (2008): 625–641.

35 Burton, *First Footsteps in East Africa, or an Exploration of Harar* (1856).

36 Horton, « East Africa ». *The Mosque. History, Architectural development and regional Diversity* (1994): 197.

37 Fauvelle-Aymar, Hirsch, Ménard, Mensan & Pradines, « Archéologie et histoire de l'Islam dans la Corne de l'Afrique : état des recherches » (2010): 29–58.

Christianised in the fourth century,[38] and we know that the African shores of the Red Sea were in contact with Islam at a very early stage because of the geographical proximity of Arabia. Certain islands experienced an extremely precocious Islamisation. Perhaps we should envisage a narrower overlapping of the religious communities than is normally presented. Even before the Hejira, for example, relatives to the Prophet Muhammad sought refuge with the sovereign of Aksum.[39] In 702, the Arabs seized and destroyed the Aksumite port of Adulis.[40] The churches of Adulis were then turned into mosques in about 750. The Eritrean Muslim buildings retained their Christian plan of Byzantine origin (Figs. 88 & 89).[41]

Off the coast of present-day Eritrea, the towns of the Dahlak archipelago were, if not founded, at least Islamised, by the ninth century. The main island of the archipelago, Dahlak al-Kebir, was the capital of a small independent sultanate with a town in basaltic stone and two mosques.[42] Our knowledge of Dahlak comes from Madelaine Schneider's epigraphical study of 200 funerary stelae in Kufic Arabic dated between 911 and 1539.[43] The sultanate reached its apogee in the eleventh century, but, connected with the Fatimids, it collapsed rapidly after 1250, as did the Fatimid port of Badi on the island of Al-Rih.

Where the port of Suakin (present-day Sudan) is concerned, the first written source goes back to the Fatimid period, but the town was certainly earlier. The mixed population was composed of Muslims and Christians until the early thirteenth century and the town continued to prosper in the Mamluk period. In the sixteenth century, however, it went into decline, but had a brief renaissance with the opening of the Suez Canal in 1869. The mosques of Suakin were built with octagonal minarets in the south-west corner, surrounded at the summit by a stone parapet (Fig. 90).[44] The entrance porches surmounted by *muqarnas* are typical of the Mamluk and Ottoman styles of Egyptian architecture and can also be found in Jedda.[45] The octagonal minarets too betray the influence of Egypt (Fig. 91). The minarets of the mosques of Mogadishu were also part of this cultural sphere of influence and mark an architectural border between the Swahilis in the south and the Egyptians in the north.

Further north, in the region of Halayeb (the frontier between present-day Egypt and the Sudan), ʿAydhab was an important port from the eleventh to the thirteenth century in direct contact with the town of Aswan thanks to the Wadi Allaqi. The surveys of Elisséeff and Hakim alone allow us to establish a plan of the site, but no mosque has been excavated to this day.[46] Further north, the Egyptian ports of Berenike and Quseir provided protective roadsteads for boats returning from the Gulf of Aden.[47] ʿAydhab, however, was supplanted in the Mamluk and Ottoman periods by the ancient port of Quseir al-Qadim. The cargo which was disembarked was carried overland along the *wadis* (dried riverbeds) to the town of Qus and the Nile valley, and was then transported by felucas to Cairo and Alexandria. The commercial importance

38 Munro-Hay, *Aksum. An African Civilisation of Late Antiquity* (1991).

39 Paribeni, « Ricerche nel luogo dell'antica Adulis (colonia Eritrea) » (1907): 437–571; Bowersock, *Throne of Adulis: Red Sea wars on the eve of Islam* (2013): 106–119.

40 Cerulli, « Relations de l'Ethiopie avec le monde musulman » (1990): 613–623.

41 Paribeni, « Ricerche nel luogo dell'antica Adulis (colonia Eritrea) » (1907): 437–571.

42 Insoll, "The Archaeology of Islam in sub-Saharan Africa: a review" (1996): 444–446.

43 Schneider, *Stèles funéraires musulmanes des Îles Dahlak* (1983).

44 Greenlaw, *The coral building of Suakin*. (1976): 66–70 & 85–86; Horton, « East Africa ». *The Mosque. History, Architectural development and regional Diversity* (1994): 196.

45 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 89.

46 Hakim & alii, « Preliminary Report of the Multi-Disciplinary Missions of the Joint Sudanese-French Expedition to the Red Sea Region » (1981): 36–41.

47 Whitcomb & Johnson, *Quseir al-Qadim* (1982).



FIGURE 88 Church-mosque of Adulis

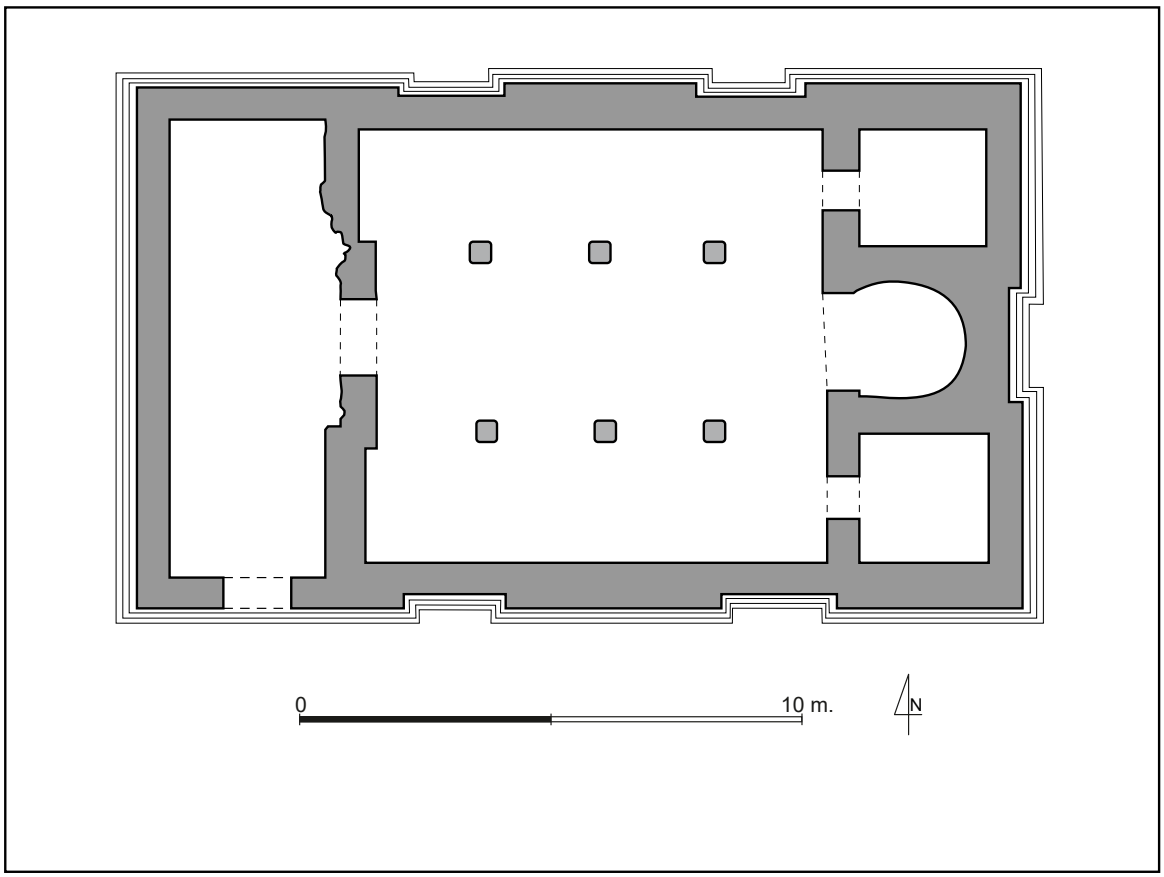


FIGURE 89 Plan of the church-mosque of Adulis

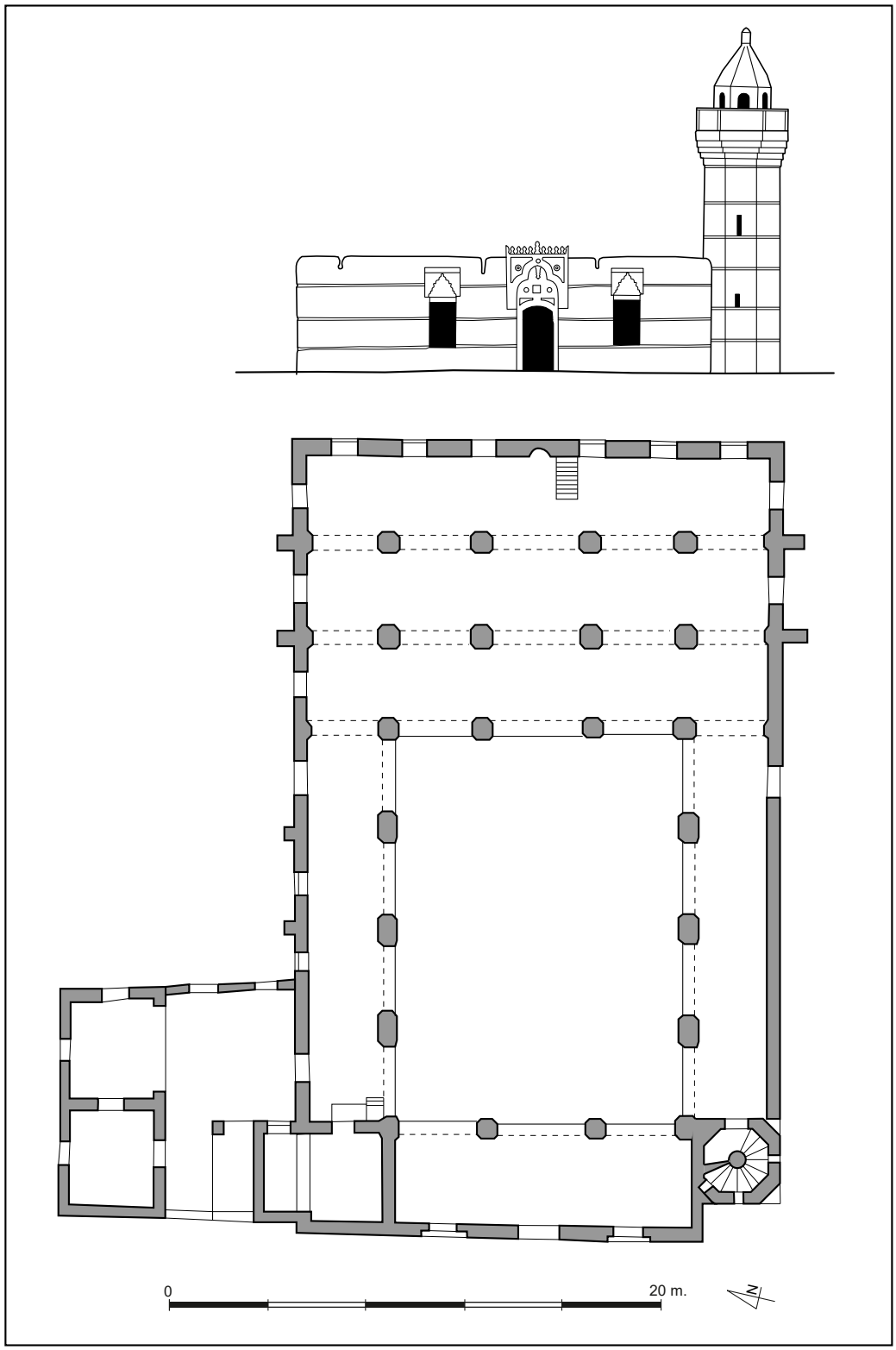


FIGURE 90 Shafa'i mosque of Suakin, Red Sea harbour



FIGURE 91 Hanafi and Shafa'i mosques of Suakin, Red Sea harbour

of Alexandria persisted from Antiquity to the early sixteenth century when the route of the Indies opened by Vasco da Gama enabled Europe to break the monopoly of the Venetian and Egyptian trading posts. The economic relations between the Red Sea and Africa reached their apogee between the tenth and the twelfth centuries under the Fatimids.[48] The Mamluks simply maintained these commercial ties with the Indian Ocean up to the arrival of the Portuguese.

In short, we have very little information about the African mosques of the Red Sea. Some of them seem to have been the mere conversion of Byzantine / Axumite buildings. Other mosques date from the Fatimid period but have not been excavated, and finally, certain mosques built after the fifteenth century were derived from Egyptian models, first Mamluk and then Ottoman.

2.3 The Mosques of the Nile Valleys, from Nubia to Darfur

2.3.1 *The Church-Mosques of Nubia*

Nubia and Ethiopia shared a common and difficult history of relations between Christians and Muslims. The Arabs invaded Egypt as far as Aswan in 641. But the Muslims had difficulty in imposing themselves in the Nile valley, in Upper Egypt, and in Nubia (Fig. 79). In 651, an army of Egyptian Muslims tried to take the Christian kingdom of Nubia, but they were repelled. At the end of the eleventh century the vizir Badr al-Jamali reinforced the Fatimid presence in the region and around the town of Aswan, above all in order to facilitate trade with the Red Sea and the port of ʿAydhab. But it was not until the fourteenth century and

48 Rapoport, & Savage-Smith eds. *The 'Book of Curiosities'* (11th c.); Pradines, "Islamic Archaeology in the Comoros: The Swahili and the Rock Crystal Trade with the Abbasid and Fatimid Caliphates" (2019): 109–134.

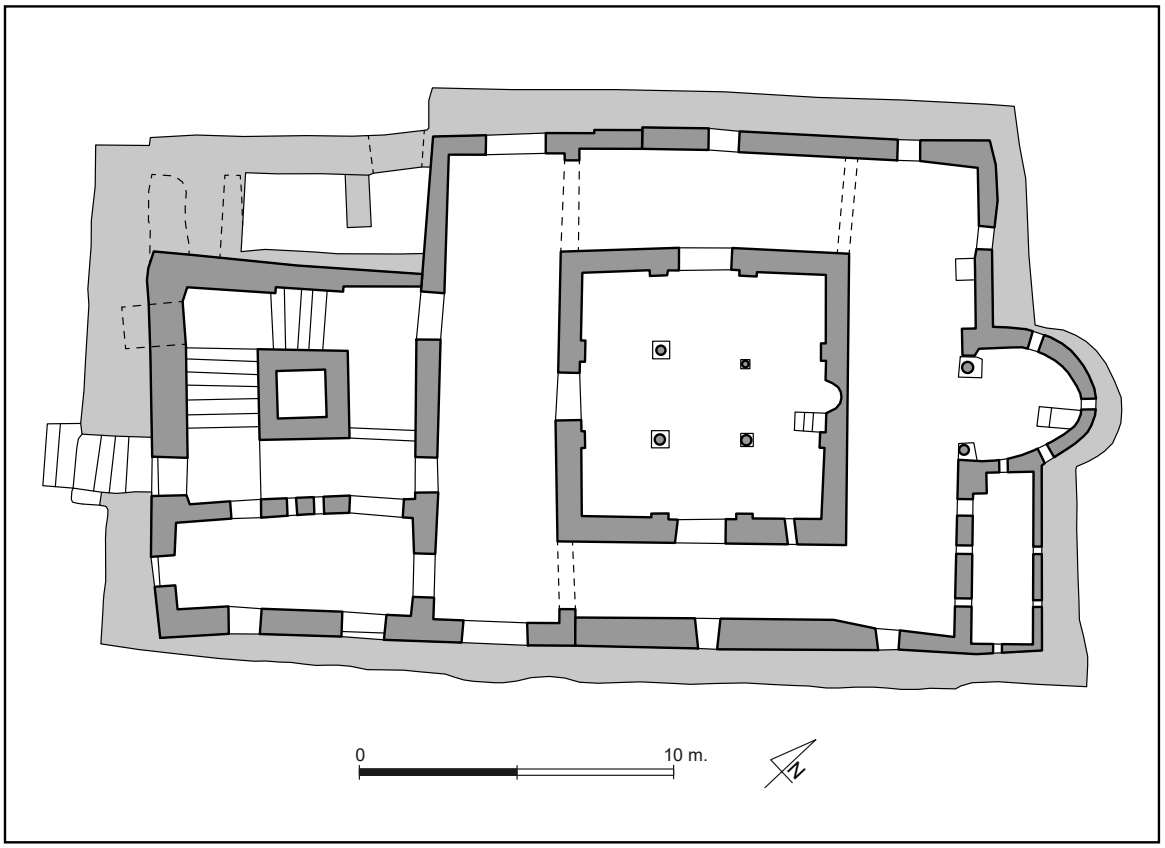


FIGURE 92 Palace-church-mosque of Dongola, Nubia

the Mamluks that we see a true attempt to annex these territories.

In 1312, a Mamluk expedition managed to install a Muslim king on the throne of the Nubian kingdom of Makuria. The churches of the ancient capital of Dongola were re-utilised and converted into mosques.[49] The palace-church of Old Dongola, built in the first half of the ninth century, was turned into a mosque by the Mamluks in 1317. The religious building was essentially composed of baked bricks, but there was also some mud bricks (Fig. 92). The clamps of certain corners, four columns, and the frame of the main door were in stone, particularly granite. This mixture of building material was customary in Nubia. The outer walls were massive, 1.10 m thick. The building consisted of two floors (Fig. 93). The ground floor had storerooms surmounted by large barrel vaults which served as a caravanserai.[50] A monumental stairway led to the upper floor. This level was re-utilised as a mosque with an original floor panelled with ceramic tiles. The roof of the square prayer hall was sustained by four columns, one in wood and three in stone with Byzantine capitals. The semicircular arches had a curvature which made them slightly oval. The *mihrab* was built in a large semicircular apse (Fig. 94). According to local tradition, the building was restored by Sheikh Sati Hamid Sawar el Dahab in the second

49 Horton, « East Africa ». *The Mosque. History, Architectural development and regional Diversity* (1994): 197–198.

50 Godlewski & Medeksza, "The so-called mosque building in Old Dongola (Sudan)" (1987): 188.



FIGURE 93 Palace-church-mosque of Dongola, Nubia

half of eighteenth century. Then, the mosque was restored again in 1907–1908 by Ahmed Helmi, naib of the mamur of Debba.[51] Still around Dongola, the little mosque of Abu Sarh was built in baked brick and basaltic stones.[52]

Further south, between the fifth and the sixth cataract, many churches, constructed in the Christian kingdoms of Makuria and Alwa between the thirteenth and fourteenth century, seem to have been converted into mosques. The stone churches of al-Kab and Artul were also converted into mosques.[53] Provided with a minaret, Artul mosque had no *mihrab*.[54] The mosques of Wad Saleh in El-Koro and el-Bishup in Artul share the same architectural tradition with churches made of stone and transformed later into mosques with added fired brick walls during the fifteenth century. The minaret of el-Bishup in Artul is very similar to pylons of Nubian pharaonic temples and tombs from the Meroitic period, and it seems to me that it is a regional feature of Nubian

51 Obłuski and alii, "The Mosque Building in Old Dongola" (2013): 261–263.

52 Eisa, "The so-called Abdallah Ibn Abi Sarh's mosque at old Dongola" (1992): 275–279; Elzein, *Islamic archaeology in the Sudan* (2004): 85–88.

53 Soghayroun El Zein, "The Nilotic Sudan" (2020): 398–401.

54 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 88.



FIGURE 94 Palace-church-mosque of Dongola, Nubia

and Sudanese Islamic architecture (Fig. 95). The mosques of Gandeisi, el-Usheir, el-Kuru, and Atar en-Nabi belong to same conversion of Christian buildings to Muslim spaces. Unfortunately, it's not possible to affirm with certainty that the mosques of el-Koro, Artul and Gandesi were previous old churches. Mallinson thinks that these mosques might have been inspired by Christian secular buildings rather than converted into Islamic monuments.[55] We can even speculate that the present-day mosques were built with reused building material from earlier sites. The most important is to note the long survival tradition of building techniques and styles of local Christian populations. Only archaeological excavations would bring us more information.

Despite the Mamluk incursions, Nubia remained prevalently Christian until the sixteenth, and even for some places until the early seventeenth century. Qasr Ibrim, for example, was under Christian control until 1560. This fortified town is situated in the Nile valley 190 kilometres south of Aswan. The site was perched on a rocky spur dominating the river and marked the frontier between Christian Nubia and Islamic Egypt (Fig. 96). The Ottomans took Qasr Ibrim and kept a garrison there until 1811. The two mosques of the site are indeed repurposed cathedral and church. The cathedral was converted into a mosque by a shift of the mihrab axis of 90°. The prayer hall was covered by a cupola, and a *mihrab* in baked brick

55 Mallinson, "Mosque/Churches of the Sudan" (2004): 225–241.

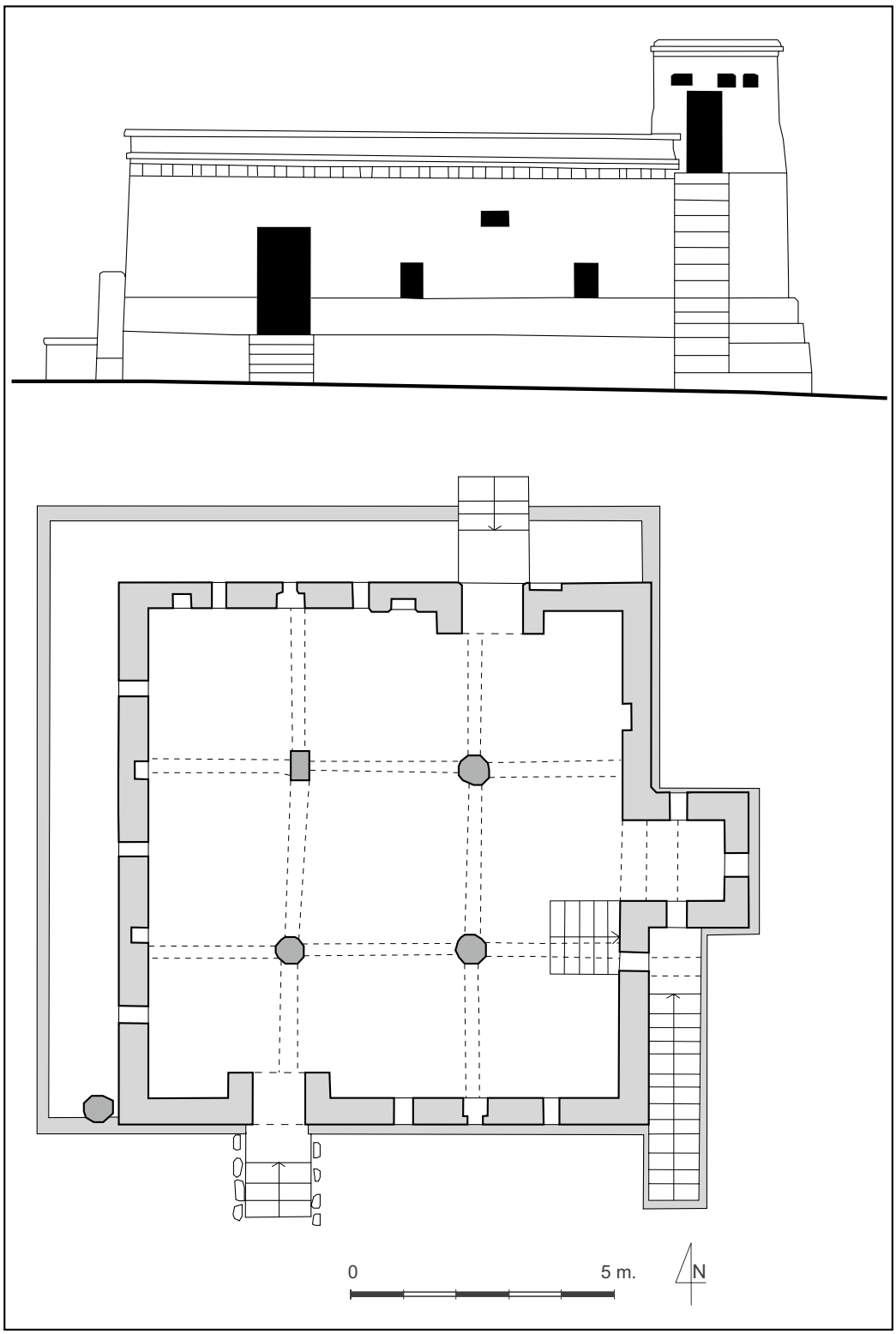


FIGURE 95 Church-mosque of Artul



FIGURE 96 Qasr Ibrim, Nubia

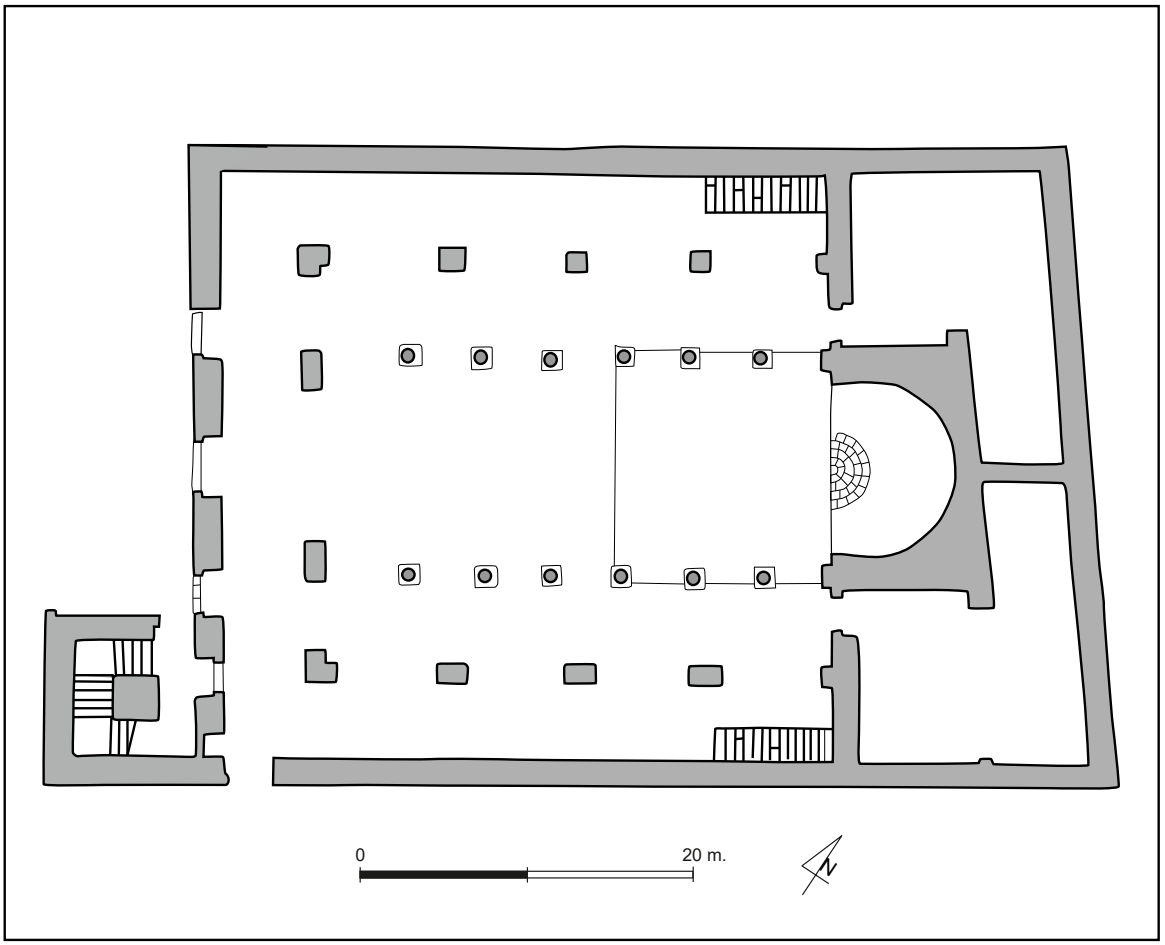


FIGURE 97 Cathedral-mosque of Qasr Ibrim

was added to the eastern wall (Fig. 97).[56] Again in Nubia, but further south, the island of Sai was occupied by the Ottomans who built a fort and a mosque.

2.3.2 *The Mosques of the Valley of the Blue Nile*

In 1504, Soba, the capital of the Christian kingdom of Alwa, was destroyed, and a new Muslim kingdom emerged from the ruins of the Christian kingdoms of Alwa and Makuria: the sultanate of Funj.[57] The Funj, former nomads in the south of Nubia, converted to Islam and settled down. They established a permanent capital in Sennar on the Blue Nile in 1523. A great mosque was (re)constructed in Sennar between 1616 and 1645. The building measured 15 by 10 m (Fig. 98). The walls were in baked brick reinforced by horizontal beams. The pillars in the interior of the building were very close to each other, creating feeble spaces between the bays. The mosque was dominated by two large square minarets both sides of the qibla wall.[58] I think that the shape of these towers is reminiscent of the pylons of Nubian pharaonic temples and the tombs from the Meroitic period. The entry porch of the mosque was built later. The trilobal arch with oculi and squinches with *muqarnas* is typical of the Mamluko-Ottoman buildings of the fifteenth and sixteenth centuries. Clearly, the mosque of Sennar presents some architectural similarities with coastal mosques of Suakin and shows a late Egyptian influence.[59] More recently, 2017–2022, the members of the Slovak Archaeological Mission in Sudan started surveys and excavations on the Sudan's second-largest historical mosque still preserved at Duweym Wad Haj.[60] The building was made of mud-brick masonry walls and pillars and it dated from the seventeenth and eighteenth centuries. The Funj kingdom disappeared progressively in the eighteenth century after the Egypto-Ottoman colonisation of the region.[61] Sennar was finally occupied by Egyptian forces in 1821. Later in 1840, the Ottomans built a new mosque in the town of Kassala, an important trading centre on the road from Suakin to the Nile valleys. The mosque, made of backed brick, became the headquarter of the Khatmiyah, one of the most important Sufi orders in Sudan. The octagonal base minaret presents some similarities with Ottoman minarets from Yemen, and the pointed pinnacle is very similar to the late Swahili minarets from Lamu and Zanzibar. The mosque is surmounted by a huge dome and a series of arcades. The façade is characterized by large blind niches and openings with plain arches (Fig. 99). Overall, the building presents some astonishing similarities with an older mosque dated from 1571, Sinan Pasha Mosque in Bulaq, Cairo.

After the Ottoman invasion the Sudan was governed by an Egyptian administration. The Egyptians were hard on the local population and levied exorbitant taxes. The Mahdist army,[62] also called the dervish army, fought against the Anglo-Egyptian colonial authorities. The dervishes were Muslim mystics involved in a *jihad* against foreign occupation. The self-proclaimed *Mahdi*, Muhammad Ahmad bin ʿAbd Allah, was born in Dongola around 1844. In 1861 he joined a Sufi order and became a Summaniya dervish, leaving a life of austerity and devotion. Later he moved to another *Tariqa* (Sufi branch), the Mesallamiya. In 1880, he claimed to have had a revelation from God during his trances and proclaimed himself to be the *Mahdi*, the "Guided One". To justify and strengthen his new creed, in 1881 he started to preach the liberation of the land, the renewal of

56 Pradines, "Maintien de la paix et protection du territoire : le réseau fortifié des Ottomans en Egypte" (2019): 261–263.

57 Insoll, *The Archaeology of Islam in sub-Saharan Africa* (2003): 117–122.

58 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 89–91.

59 Greenlaw, *The coral building of Suakin*. (1976): 66–70 & 85–86; Horton, « East Africa ». *The Mosque. History, Architectural development and regional Diversity* (1994): 196–198.

60 Hudec, Cheben & Kovar, "Report on surveys in Duweym Wad Haj" (2019): 174–177 and 426–428.

61 Horton, « East Africa ». *The Mosque. History, Architectural development and regional Diversity* (1994): 198.

62 Pradines & Khorasani, "Sufi in War: Persian influence on African weaponry in 19th century Mahdist Sudan" (2018): 254–279.

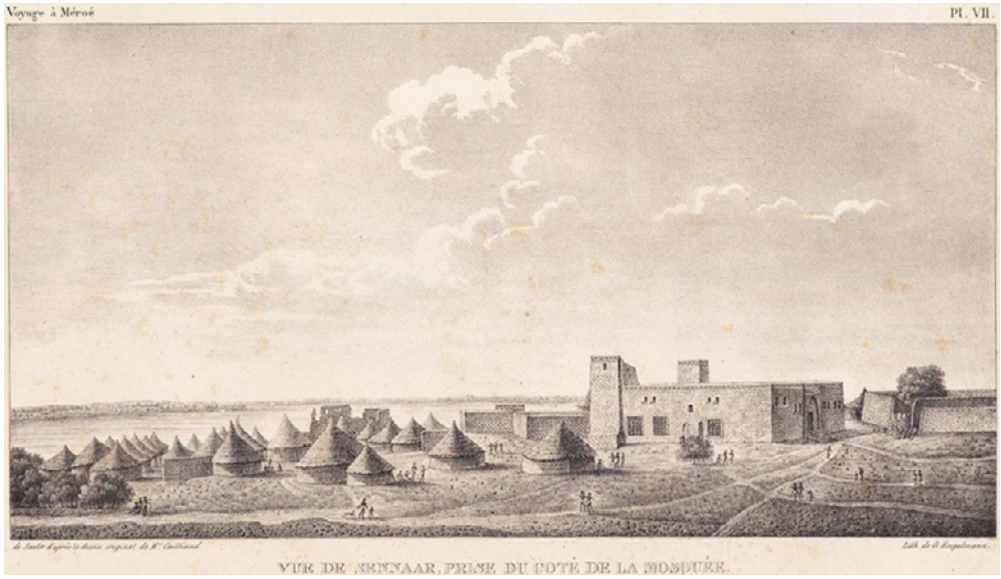


FIGURE 98 Great mosque of Sennar in 1821



FIGURE 99 The Kathmiyya Hassan Mosque in Kassala, Sudan



FIGURE 100 Omdurman, the Khalifa's entrance to Mahdi's Tomb in 1898

the faith, and a "holy war", and began to attract followers. In the end a simple regional revolt, namely the Mahdi revolt, turned out to be a huge rebellion. The "Anglo–Sudanese War" represents 18 years of Sudanese resistance to colonialism from 1881 to 1898. To fight against this rebellion an Anglo-Egyptian expedition commanded by Horatio Herbert Kitchener was organised in 1898 with 8,200 British and 17,600 Egyptian and Sudanese soldiers. The Mahdist forces amounted to more than 60,000 warriors but lacked modern weapons. After defeating a Mahdist army in the Battle of Atbara in April 1898, the Anglo-Egyptian forces reached Omdurman, the new Mahdist capital, in September. Omdurman and Khartoum were located in the same area, one on each bank of the Nile. Omdurman was captured and destroyed, and the Mahdist state came to an end. Sadly, we have very little data about the architecture and the mosques of this period, whereas we do have a few information about the mosques produced by the Fulani *jihads* in West Africa.[63] Nevertheless, a typical feature of Sudanese mausoleums and mosques from the nineteenth century is the use of elongated conical domes. This type of domes is present in funerary architecture since the Fatimid period in Nubia and the region of Aswan. The monumentality of the late Sudanese domes is most probably a local influence as it recalls the shape of the ancient pyramids of Meroe (Fig. 100).

63 Sadly, some other old mosques are mentioned in historical sources, but they left no traces, such as the mosque of Arabnarti close to Old Dongola, and the mosque of Damer at Kutranj 58 km South of Khartoum (Soghayroun El Zein, "The Nilotic Sudan" (2020): 398–401).

2.3.3 *The Mosques of Darfur*

Further east the kingdom of Daju in the Jebel Marra north of Darfur was a small state progressively occupied by the Tunjurs who came from the west, possibly from Bornu.[64] Converted to Islam, they founded their own kingdom with its capital at Uri, where they built a first stone mosque between 1150 and 1200. The mosque of Uri, dating from the twelfth century, had a central uncovered courtyard, walls with continual buttresses on the outside, and an off-centre *mihrab* to the north.[65] The stone mosque had a quadrangular plan of 38.5 m with a courtyard with sides of 30 m. This stone building contained 48 columns in an east-west arrangement in rows of eight columns.[66] Still in the Jebel Marra, the city mosque of Bora was a building with sides of 21 m which must have been built at the end of the twelfth century according to the local traditions. The Tunjur then changed capital, but Uri remained as an important administrative centre until the Ottoman era thanks to trans-Saharan trade. The new capital of Darfur was ʿAin Farah also had a great mosque in baked brick, square with sides of 17 m, external buttresses in stone,

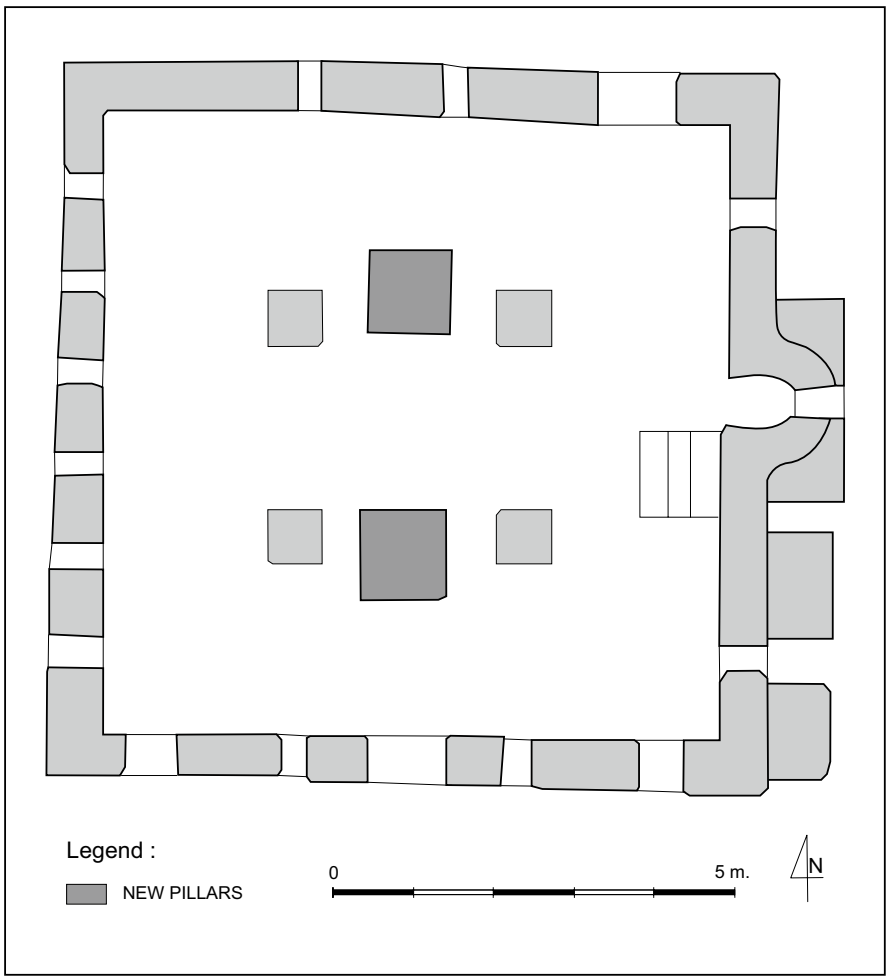


FIGURE 101 Mosque of el-Koro, Sudan

64 Insoll, *The Archaeology of Islam in sub-Saharan Africa* (2003): 128–129.

65 Balfour-Paul, « Islam at Uri » (1954):139–140.

66 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 85–99.

and large L-shaped pillars in the prayer hall.[67] Another Tunjur mosque at Umm al-Sultan had a very reduced prayer hall and is dated from the fourteenth century.[68] And the mosque of al-Koro, a converted church, in the Wadi Saleh, was built in dry stone.[69] In fact, it was the conversion of a former church in which the apse was transformed by the addition of a *mihrab* in mud bricks (Fig. 101).[70] It had triangular windows formed by two panels of brick or stone.[71] The stone masonry was bounded by a mud mortar which recalls certain architectural features of the Mauritanian mosques. These influences demonstrate the permanent movements of the nomadic populations in the area of the Sahara and the Sahel.

From the early seventeenth century on the dynasty of the Keira Fur emerged in the region with the town of Kobb as their capital. The second capital of the Fur, Shoba, had a great mosque, built by Sultan Tayrab in 1760. The building had 47 columns of baked brick in a prayer hall measuring 38.4 × 29.4 m on the sides. The plan of the mosque seems to have been influenced by that of the Tunjur mosque of ʿAin Farah.[72] Sultan ʿAbd-al-Rahman set up a third capital at al-Fasher in 1791. The eighteenth century was the heyday of this sultanate in open conflict with the neighboring kingdom of the Funj. At the beginning of the century Sultan Ahmad Bakr had the mosque of Turra built in mud brick with outer buttresses in stone in the early eighteenth century.[73] The mosque was restored later by Sultan ʿAli Dinar in 1910. Occupied by the Ottomans and then enfeoffed in the kingdom of the Mahdi at the end of the nineteenth century, Ali Dinar's Fur sultanate would not survive English colonial occupation and disappeared in 1916.

2.3.4 *The Mosques of Kanem, Borno and Wadai*

Traditionally the region of Lake Chad is associated with the history of West Africa. In fact this perception is a residue of the colonial period. Our chapter will show that it is quite wrong and that the mosques of this region are more closely connected with neighbouring Darfur than with Mali.

The kingdom of Kanem was formed in the north-eastern regions of present-day Chad.[74] Kanem had been known from texts ever since 872, but it reached its apogee in the eleventh and twelfth centuries.[75] The kingdom was Islamised in the second half of the eleventh century, but it was not until the thirteenth century that Islam actually took root in the population. The kingdom controlled the Kawar and the Fezzan, and had relations with Tunisia and Egypt. At the end of the fourteenth century the reigning dynasty was overthrown by the Bulala, a population to the east of Lake Chad. The survivors of the empire abandoned Kanem and sought refuge west of the Chad where they formed the empire of Borno in 1391. Situated between the Chad and the north-east of present-day Nigeria, at the crossroads of the trade routes which cross Africa from east to west and of the trans-Saharan tracks, Borno controlled the exchanges between the Sahel and the Sudan. Its main export was slaves to the central Sudan and the Mediterranean. The heyday of the sultanate of Borno was between 1585 and 1710.[76] The eighteenth century was marked by a weakening of Bornoan power. It was a Borno in full decline which collapsed under the assaults of the

67 Balfour-Paul, History and Antiquities of Darfur (1955); McGregor, "An Introduction to the Archaeological Heritage of the Sultanate of Darfur" (2011): 129–141.

68 Soghayroun El Zein, "The Nilotic Sudan" (2020): 398–401.

69 Idem (2020): 398–401.

70 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 86.

71 Crawford, *Castles and Churches in the Middle Nile region* (1961): 33.

72 Soghayroun El Zein, *Islamic archaeology in the Sudan* (2004): 94.

73 Soghayroun El Zein, "The Nilotic Sudan" (2020): 398–401.

74 Bivar & Shinnie, "Old Kanuri Capitals" (1962): 1–10.

75 al-Ya'Qubi, al-Muhallabi, al-Bakri, al-Idrisi, Ibn Sa'id, al-Umari in Cuoq, *Histoire de l'Islamisation de l'Afrique de l'Ouest* (1984): 231–270.

76 Dewière, *Du lac Tchad à la Mecque : Le sultanat du Borno et son monde* (2017): 257–296.

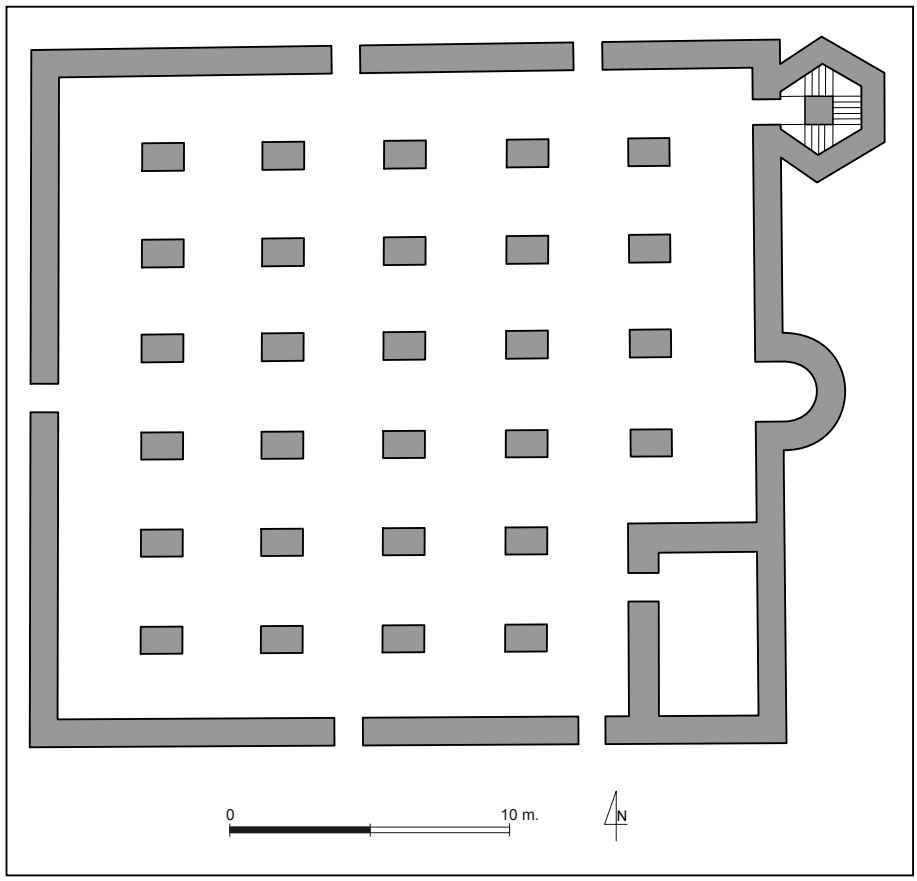


FIGURE 102 Mosque of Wara, capital of Wadai, Chad

Fulbe *jihad* in the early nineteenth century under the leadership of Osman dan Fodio. According to a nineteenth-century Arabic manuscript, the mosques of N'Djamena, the new capital of the region, amounted to 38.[77]

To the north-east of the present capital of Chad, N'Djamena, the little kingdom of Wadai was enfeoffed in the kingdom of Darfur. The capital of Wadai, Wara, was founded between 1635 and 1655 and abandoned towards 1845–1852. The principal revenues of the kingdom were ensured by the traffic of Ottoman fire arms between Tripoli and the kingdoms of Borno and Darfur.[78]

The mosque of Wara was a large construction in red brick on a quadrangular plan of 25 by 27 m on the sides (Fig. 102).[79] The prayer hall was composed of seven bays 2.4 m wide, divided by five rows of nine rectangular double pillars measuring 1 by 1.5 m. The building was roughly oriented east and not in the exact direction of Mecca. The walls in baked brick were almost a metre thick. The masonry is based on regular horizontal courses alternating with two backed brick headers. On the upper part, the walls have ventilation systems made of openings in triangular chevrons characteristic of the pre-Saharan steppe and Mauritania. Certain rectangular baked bricks bear the date 1796 (converted from Hijri) and the

77 Lebeuf & Rodinson, « Les mosquées de Fort-Lamy » (1952): 970–974.

78 Lebeuf & Immo Kirsch, *Ouara, ville perdue* (*Tchad*) (1989): 25 & 40.

79 Idem, 66–67.

symbols of the brick-makers.[80] They show that a part of the mosque was rearranged and renovated at the end of the eighteenth century. It was surrounded by a vaguely circular wall 85 m long. The hexagonal minaret on a square base is in ruins, only 8 m in height survive of the original 12. The inner spiral staircase is entirely in brick with reinforcements on which the fittings are supported by crosspieces in rônier palm.

The kingdoms of Kanem, Borno and Wadai were open to the east of the Maghreb and Egypt, and above all to the capitals of Tunis, Tripoli and Cairo, in contrast to the great empires of West Africa, Manding or Songhay, which were turned towards the west of the Maghreb. These connections and different commercial routes are visible by notable differences in the plan and the building materials of the mosques, as we see in Wadai. Egyptian influence is significant in the architecture in baked brick and the hexagonal minarets of the Chadian mosques of Kanem-Borno.[81] Baked brick, moreover, is a characteristic element of the architectures of Borno and Wadai.[82] The Chadian region had been in contact with the kingdom of Darfur since the thirteenth century at the latest. Darfur, Islamised in about 1000, had relations with Egypt. Unfortunately, it is very hard to establish comparisons between the mosques of Kanem-Borno and those of Darfur due to the scarcity of the documents at our disposal.[83] For me, the *mihrab* in baked brick of Old Gao, dating from the thirteenth or fourteenth century, is a manifestation of this oriental architectural school.

80 Ibid, 81.

81 Insoll, "The Archaeology of Islam in sub-Saharan Africa: a review" (1996): 480.

82 Dewière, *Du lac Tchad à la Mecque : Le sultanat du Borno et son monde* (2017): 278–282.

83 Balfour-Paul, « Islam at Uri » (1954): 139–140.

CHAPTER 3

The Mosques of the Indian Ocean Coast

3.1 The Swahilis, a Cultural Model of Multiple Origins

Swahili culture extends from Mogadishu to Somalia,[1] up to the bay of Sofala in Mozambique, passing through Kenya, Tanzania and the north of Madagascar, connected to the African continent by the Comoros archipelago (Fig. 103). These coastal populations shared the same social organisation, the same architecture, the same religion, Islam, and the same language, Kiswahili. Over 450 Swahili archaeological sites have been recorded, scattered over 3,000 kilometres of coast. The ways of life on the east African coast, in Comoros and northern Madagascar, were homogeneous since people navigated freely, spreading new ideas and techniques.

Etymologically *wa-swahili* means *those of the coast*, from the Arabic *sawahil*. The Arabo-Persian geographers preferred the term *Zanj*, which designated the inhabitants of the coasts of East Africa.[2] The Portuguese too had noticed a difference between the Africans of the continent and the coastal peoples, whom they associated with Moors or Kaffirs on account of their religion and their customs. It was at the beginning of the nineteenth century that the word Swahili first appeared as the designation of a local population, when the European colonisers needed to classify, and distinguish between, the African peoples. The term Swahili, however, does not in fact designate a population but a culture composed of various groups of Swahili speakers. Moreover, it was not used by the coastal populations who preferred to refer to the name of their city or region of origin. The Swahilis have recognised themselves as such since the colonial period, but they name each other after their region of origin, their island or their town – the Wa-Mvita of Mombasa, for example. The Swahilis living around Mombasa in the sixteenth century were divided into various clans or tribes, *kabila* or *taifa*,[3] such as those of Kilifi, Mtwapa, Jomvu, Mvita, Malindi, Kilindini, Tangana, Changamwe, Vumba or Shirazi.[4] They also distinguished themselves according to their ancestors, their rank, their neighbourhood, their ethnic origin and their religion.[5] One sign of division was that the Swahili groups did not have the same system of descent. Another example is the Bajun or *Wa-Gunya* living in a territory between the island of Pate in Kenya and Kisimayo in the south of Somalia.[6] The Bajun illustrate this heterogeneousness of the Swahilis, and represent an Islamised rural group, but which remains strongly attached to the African traditions. Their membership of a community was based on their territory, in contrast to the Swahilis of the large towns who defined themselves by their city. This region includes the archipelago of the Bajun islands, inhabited by fishermen living in little villages. With a rural tradition, and despite an early Islamisation, they resisted the Omani Arabisation of the nineteenth century. Some recently Islamised African groups, such as the Giriama, the Digo and the Segeju, are undergoing a process of Swahilisation which started

1 Ibn Madjid in Tibbetts, *Arab Navigation in the Indian Ocean before the coming of the Portuguese* (1971): 422; Ibn al-Mugâwir in Ducatez, « Aden et l'océan Indien au XIII^{e} siècle » (2003): 137–156.

2 Stigand, *The Land of Zinj* (1913).

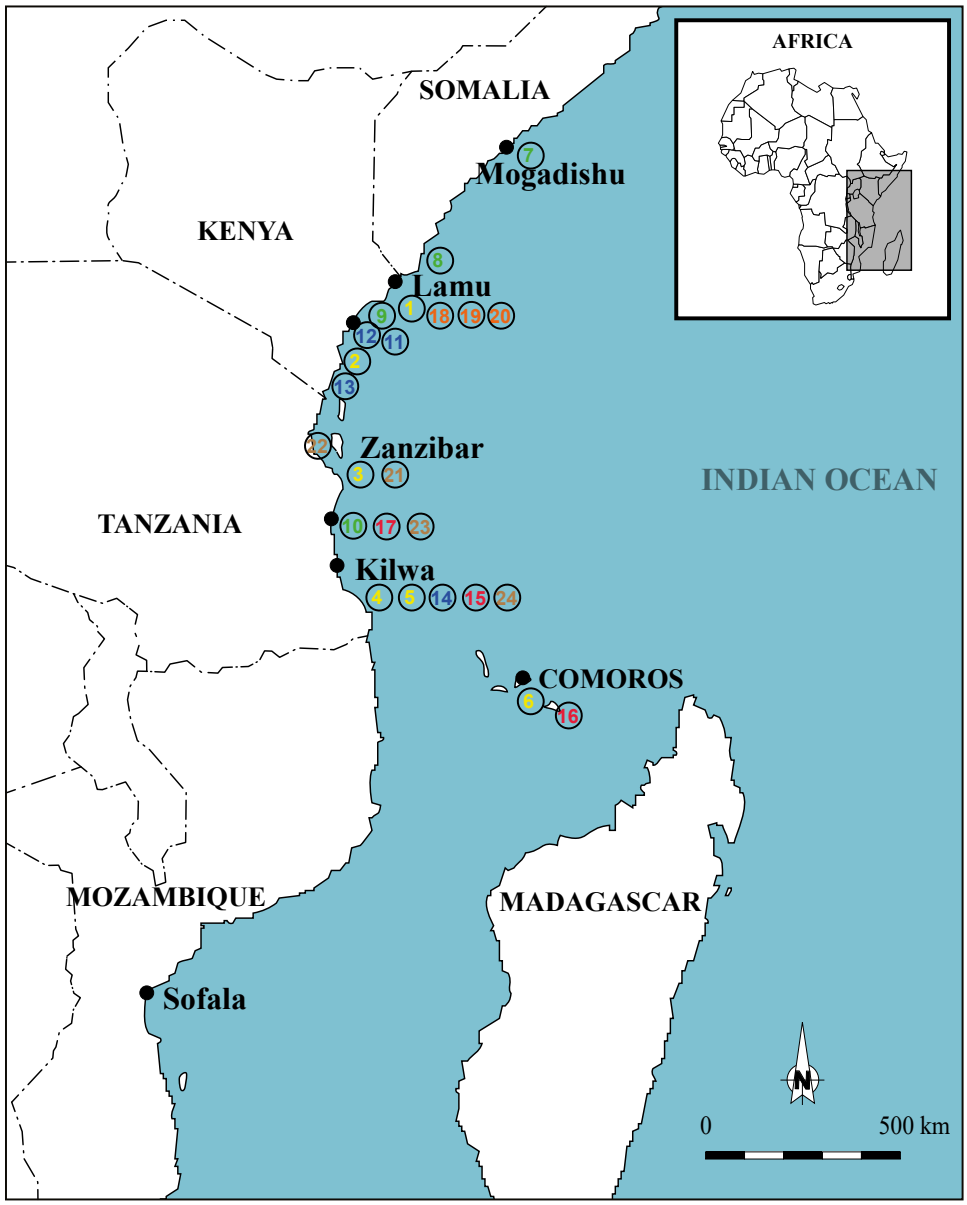
3 Pouwels, *Horn and crescent: cultural change and traditional Islam on the East African coast* (1987): 78.

4 Sperling, *The growth of Islam among the Mijikenda of the Kenya coast* (1988).

5 Middleton, "The Towns of the Swahili Coast of East Africa, The diversity of the Muslim Community" (1987): 104.

6 Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961): 314.

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East African, Swahili mosques

11th-12th c. Group
1 - Shanga
2 - Gedi
3 - Kizimkazi
4 - Kilwa Kisiwani
5 - Sanje ya Kati
6 - Sima & Domoni

13th c. Group
7- Mogadishu
8 - Rasini
9- Shaka
10 - Kisimani, Mafia

14th c. Group
11- Ungwana
12- Gedi
13- Mnarani, Kilifi
14 - Kilwa Kisiwani

15th- Mid 16th c. Group
15- Songo Mnara
16- Tsingoni
17 - Kua

Mid 17th-18th c. Group
18 - Siyu
19 - Pate
20- Lamu

19th c. Group
21 - Zanzibar
22 - Mboamaji
23- Chole
24 - Sanga Rungu

FIGURE 103 Map of the East African coast and Swahili mosques groups

in the seventeenth century.[7] In Kiswahili, finally, *U-ungwana* means "civilisation", and gentlemen and notables are called *mungwana*, a term used until the nineteenth century and which was then replaced by *ustaarabu* or "civilised Arab".[8] This change of vocabulary which occurred in the 1860s and 1870s shows how relatively late the Arabisation of Swahili society was.

While ethnologists are aware of the multiple origins of the Swahilis,[9] historians have often overexploited the results of the archaeologists in order to demonstrate the African origin of the Swahilis.[10] This ethnogenesis was inevitably affected by political ideology and, as Claudio Moffa has pointed out, the revision performed by post-colonial historiography led to a disproportionate rehabilitation of the African civilisations based on dubious data and controversial radiocarbon datings.[11] The *Histoire générale de l'Afrique*, published by UNESCO in 1985, demonstrates this denial of any external contribution where the Swahili cities are concerned.[12] According to Félix Chami, Swahili culture originated at the beginning of the first millennium of the Christian era, and such Afrocentric theories are being developed up to this day.[13] In fact, Swahili civilisation only started at some time between the ninth and the tenth century, when it presented distinctive cultural and social features, notably the adoption of Islam. The preceding so-called *formative* or proto-Swahili period regrouped peoples of Cushitic/Nilotic and Bantu origin at the dawn of Swahili culture.[14] The formation of Swahili culture was not due to a specific ethnicity or of a single nationality.[15] The marginal character of the Swahili population which emerges from the historiography is connected to our vision of the Indian Ocean which separated Africa, Arabia and Asia, at a time when it appeared as a formidable link between very varied cultures. From this point of view, the Swahilis were dynamic actors in trans-oceanic relations, on a par with the Arab, Persian and Indian merchants. This civilisation on the periphery of the Muslim and African worlds occupied a position which was highly propitious for the development of an original littoral culture based on commercial relations and the spread of Islam. The building of mosques testifies to the progressive Islamisation on this very long coastal strip.

3.2 Historiography of Research on the Swahili Mosques

The explorers of the late nineteenth century were the first to collect archaeological and historical data concerning the Swahili mosques. In 1856, Charles Guillain produced the first historical survey of the east coast. Richard Burton mentioned ruins in Zanzibar and Tanganyika in 1872. But it was Georges Révoil who undertook the first archaeological investigation when he dug various trenches in the town of Mogadishu in 1882.[16] Nor was Révoil's contribution only material and textual.[17] He made a number of sketches and

7 Le Guennec-Coppens & Parkin, *Autorité et pouvoir chez les Swahili* (1998): 163–165; Sperling, *The growth of Islam among the Mijikenda of the Kenya coast* (1988).

8 Pouwels, *Horn and crescent: cultural change and traditional Islam on the East African coast* (1987): 72–73.

9 Rolingher, "Constructing Islam and Swahili identity: Historiography and theory" (2005): 9–20.

10 Le Guennec-Coppens, « Les Swahili : une singularité anthropologique en Afrique de l'Est » (2002): 55–70; Allen, *Swahili Origins* (1993): 220.

11 Moffa, *L'Afrique à la périphérie de l'histoire* (1995): 33, 41 & 79.

12 Masao & Mutoro, « La côte d'Afrique orientale et les Comores » (1990): 644.

13 Chami, "A Review of Swahili Archaeology" (1998): 199; Fleisher, and alii. "When Did the Swahili Become Maritime?" (2015): 1–16.

14 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 137.

15 Constantin, "Condition swahili et identité politique" (1989): 352.

16 Pradines, « L'archéologie swahili et la collection Révoil au Musée de l'Homme (Paris) » (1999 a): 22–23.

17 Révoil, *Voyage au cap des aromates* (1880); *La vallée du Darror, Voyage au Pays çomalis* (1882) and Révoil, « Voyage chez les Bénadirs, les Somalis et les Bayouns » (1885 & 1888).

took a number of photographs.[18] John Kirk did some photographs of Gedi and Lamu in 1897. In 1913, Capitain J. Stigand published photographs of Lamu, Takwa and Pate. F.B. Pearce carried out the first research on Zanzibar and Pemba in 1920, and was followed by W.H. Ingrams in 1931 and L. Buchanan in 1932.[19] The ruins of Kilwa were declared to be a protected monument and were restored by the Germans in 1935.[20] The pre-war period was marked by the appreciation of the historical value of the Swahili mosques.

"Scientific" research on the East African coast only started properly after the War, in 1948. A disciple of Mortimer Wheeler, James Kirkman, was sent to Kenya in order to excavate and preserve the site of Gedi.[21] In 1952, he started excavating at Kilepwa.[22] He then went on to excavate numerous archeological sites on the Kenyan coasts, including the famous Gedi and Ungwana.[23] In 1964, he summed up his achievements in a general survey, *Men and Monuments on the East African Coast*, in which he maintained that the medieval coastal sites were Arab trading posts rather than African towns.[24] The second important personality in the study of Swahili architecture, Neville Chittick, became the director of a new Anglo-Saxon research institute, the British Institute in Eastern Africa, in 1960. During the 1960s and 1970s Chittick carried out two major excavations, one at Kilwa, in the south of Tanzania, and the other at Manda, in northern Kenya.[25] He also excavated at Songo Mnara, Kisimani on the island of Mafia, and Pate in the Lamu archipelago, made surveys in Somalia, and Mogadishu.[26] The only defect of his work is the lack of any interest in the layers of ancient occupations of Kilwa and the classification of African ceramics in a group called *kitchen pottery*. This attitude was connected with earlier research, and the towns of the African coast were still studied on the basis of their imported material and monumental architecture, while the African contributions were minimised or overlooked. Nevertheless Chittick developed the concept of a coastal Swahili culture. In 1962, G.S.P. Freeman-Grenville enumerated some hundred medieval sites on the coasts of Tanzania, which included the ruins of 69 mosques.[27] In 1963, Gervase Mathews and Freeman-Grenville admitted that the Swahili towns could be of African origin.

In 1966, Peter Garlake's book, *The Early Islamic Architecture of the East African Coast*, marked a decisive stage in the study of Swahili architecture. His work was mainly on the mosques, and for every building he provided a general plan and an elevation of each *mihrab*. He inventorized and plotted all the ruins of mosques dating from between the twelfth and the nineteenth century on the coasts of Kenya and Tanzania. He presented a descriptive analysis of the decorative and architectural elements, but he never studied these elements on the basis of the historical sources. Nevertheless, he drew up a short sequence of Swahili *mihrabs* divided into pre-classical, classical, neoclassical

18 Révoil, *La vallée du Darror, Voyage au Pays çomalis* (1882): 101. Photo library of the Museum of Quai Branly, Paris, n°1687–1771 (1879–90) and prints B. 75, 134–135.

19 Stigand, *The Land of Zinj* (1913, reed. 1966); Ingrams, *Zanzibar, its history and its people* (1931); Buchanan, *The Ancient Monuments of Pemba* (1932).

20 Chittick, "Notes on Kilwa" (1959): 179–203.

21 Martin, *Malindi, A Geographical Analysis of an East African Coastal Town* (1973): 40–41.

22 Kirkman, "The Excavations at Kilepwa" (1952): 168–184.

23 Kirkman, *The Arab City of Gedi* (1954) & *Ungwana on the Tana* (1966).

24 Kirkman, *Men and monuments on the East African coast* (1964): 22.

25 Chittick, Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974) & *Manda: excavations at an island port on the Kenya Coast* (1984).

26 Chittick, *Kisimani Mafia* (1961); "An archaeological reconnaissance of the Southern Somali Coast" (1969 b): 115–130; "An archaeological Reconnaissance in the Horn" (1976): 117–132; "Medieval Mogadishu" (1982): 45–62 and Sanseverino, "Archaeological remains on the southern Somali coast" (1983): 151–164.

27 Freeman-Grenville, "Some preliminary observations on medieval mosques near Dar es Salaam" (1954): 64–70; Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962).

and mannerist periods.[28] Garlake was the first scholar to realise the difficulty of charting the influences on the east coast, for we are dealing, after all, with an autochthonous architecture, to which he ascribed a certain originality.

In 1974, James de Vere Allen affirmed the African origin of the Swahili town in his study *Town and Country in Swahili Culture*, presented at the Leo Frobenius symposium in Cologne. In his article "Swahili culture and the nature of East coast settlement", he specified that Swahili urbanisation and culture were exclusively African phenomena.[29] In 1979, J. de V. Allen and Thomas Wilson proposed the hypothesis of an autochthonous architecture.[30] This was a revolutionary vision in the history of the archaeology of the east coast. Hitherto the African origin of the coastal sites had been challenged and the appearance of urbanisation was explained solely by Arab influence. Unfortunately, however, this research into the Africanity of the Swahili sites led to the aberrations of the 1980s. James de Vere Allen's posthumous study mentioned the presence of an African state in the ninth century, the great Shungwaya. This mythical kingdom, situated in the south of present-day Somalia, was composed of Cushitic-speaking populations who were then thought to have been dispersed and their diaspora founded the Swahili towns.[31] Allen's Afrocentric vision was pure phantasy and is not supported by any archaeological or historical evidence. The *General History of Africa* published by UNESCO was more moderate but revealed the state of mind of the moment, according to Henri Mutoro:

> The material forms of Swahili culture show no analogy with those of the civilisations of Arabia or Persia. There are no precise concordances between the stone buildings of the Swahili and Near Eastern architecture, be it Arab or Persian, which allow us to say that the latter was its source of inspiration.[32]

The early 1980s were marked by the inventory of the Swahili monuments of Kenya by Thomas Wilson.[33] In addition to his excavations at Takwa and Pate, Wilson provided a new vision of the Swahili sites by trying to understand their spatial distribution and the political ties uniting the different urban centres.[34] He surveyed between 450 and 500 settlements in stone from Warsheikh, north of Mogadishu, to the bay of Sofala in Mozambique. His works were the beginning of a study of the urbanisation and hierarchy of the Swahili territories. Also, in the 1980s the excavations of Mark Horton at Shanga, in the Lamu archipelago in Kenya, transformed our knowledge of the Islamisation of the east African coast.[35] Horton examined the passage from an architecture in perishable material to an architecture in coral stone. He also criticized the so-called "Shirazi" myth and the trade monopoly of the Arabo-Persian Gulf over Africa, and he emphasized the importance of the Egyptian merchants of the Red Sea. Horton was the first archaeologist to take an interest in the early phases of the coastal sites while concentrating on

28 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 59–75 & 116.

29 Allen, "Swahili culture and the nature of East coast settlement" (1981): 306–334.

30 Allen & Wilson, "Swahili houses and tombs of the coast of Kenya" (1979); Horton & Mudida, "Exploitation of marine resource: evidence for the origin of the Swahili communities of East Africa" (1993): 673–693.

31 Allen, *Swahili Origins* (1993): 51 et 135.

32 Masao & Mutoro, « La côte d'Afrique orientale et les Comores » (1990): 645.

33 Wilding, *A report of the archaeological fieldwork on the north kenyan coast* (1973): 31 & 74; Wilson, *The Monumental Architecture and Archaeology North of the Central and Southern Kenya coast* (1980, reed. 2016).

34 Wilson, "Spatial analysis and settlement patterns on the East African coast" (1982): 201–219; "Sites and settlement patterns of coastal Jubaland, southern Somalia" (1984): 73–106 and Wilson & Athman Lali, "Archaeological Investigations at Pate" (1997): 31–76.

35 Horton, "Early muslim trading settlements on the East African coast: new evidence from Shanga" (1987): 290–323; Horton, M. "Primitive Islam and architecture in East Africa". *Muqarnas 8*. Leiden: Brill (1991): 103–116.

African research questions and keeping in mind the historical continuity connecting the Islamised populations with the sites of the first millennium. In 1982, H. Sasson published in the journal *Azania* the account of his excavations of the mosque of Mbaraki on the island of Mombasa.[36] He also provided valuable information on the building and structure of the mosques on the east coast. In 1986, Paul Sinclair, professor at the university of Uppsala, launched a research project on the *urban origins of East Africa* and particularly in Mozambique.[37] The Swedish programme combined the institutions of Botswana, Comoros, Kenya, Madagascar, Mozambique, Namibia, Somalia, Zimbabwe, Tanzania and Zanzibar. This pioneer work in sustainable development led to the emergence of great African archaeologists in the 1990s, such as George Abungu for Kenya,[38] Felix Chami for Tanzania,[39] Ricardo Duarte for Mozambique,[40] Chantal Radimilahy for Madagascar, Ahmed Jama for Somalia[41] and Abdurahman Juma for Zanzibar.[42] In the late 1990s and the beginning of the new millennium new research into the Swahili sites was undertaken by Adria LaViolette, Jeff Fleisher and Mark Horton on the island of Pemba,[43] Stéphane Pradines at Gedi in Kenya, Songo Mnara, Sanje ya Kati and Kua in Tanzania, and Stephanie Wynne-Jones in the Kilwa region.

The peripheries of the Swahili world have been explored in Madagascar in the 1970s by Pierre Vérin.[44] His work was innovative since he extended the south-eastern limits of Swahili culture to the great island of Madagascar. The Madagascan mosques were related to the ones on the African coast. In 1992, the American Henry Wright published a summary of his excavations on the islands of Anjouan and Mayotte in the Comorian archipelago.[45] Thanks to his research we know that the Comorians built mosques from the tenth century on and that their mosques of the fourteenth century were by no means aesthetically inferior to those of the African coasts. Claude Allibert, Daniel Liskowski, Martial Pauly and Stéphane Pradines continued the work of Henry Wright in Mayotte.[46]

3.3 The History of the East Coast of Africa

3.3.1 *The Abbasid Explorers and the First Muslim Communities between the Seventh and the Ninth Century*

In 615, after the persecutions in Mecca, the Prophet sent a group of refugees to Axum. This was the first emigration or *hijra* to Africa. According to the *Kitab al-Zanj* and the Chronicles of Pate, the Islamisation of the Swahili coast can be dated

36 Sassoon, "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island" (1982 b): 79–97.

37 Sinclair & Duarte, "A perspective on archaeological research in Mozambique" (1993): 409–431.

38 Abungu, "New finds along the Kenya coast" (1994): 41–48.

39 Chami, *The Tanzanian Coast in the First Millenium AD* (1994).

40 Duarte, *Northern Mozambique in the Swahili World* (1993); Sinclair & Duarte, "A perspective on archaeological research in Mozambique" (1993): 409–431.

41 Jama, *The Origins and Development of Mogadishu AD 1000 to 1850* (1996).

42 Juma, *Unguja Ukuu on Zanzibar. An archaeological study of early urbanism* (2004).

43 Fleisher & LaViolette, "Elusive wattle-and-daub: Finding the hidden majority in the archaeology of the Swahili" (1999): 87–108; Laviolette & Fleisher, "The Urban History of a Rural Place: Swahili Archaeology on Pemba Island, Tanzania, 700–1500 AD" (2009): 433–455.

44 Vérin, « Observations préliminaires sur les sites du Mozambique » (1970): 184–189; « Histoire Ancienne du nord-ouest de Madagascar » (1972); *Les Echelles Anciennes du Commerce sur les côtes nord de Madagascar* (1975).

45 Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th-XV th centuries a.d)" (1992): 81–128; "Early seafarers of the Comoro Islands (The Dembeni phase of the IX th-Xth centuries a.d)" (1984): 13–59.

46 Wright, "Early seafarers of the Comoro Islands (The Dembeni phase of the IX th-X th centuries a.d)" (1984): 13–59; Pauly, « La diffusion de l'Islam à Mayotte à l'époque médiévale » (2014): 63–89; Liszkowski, *Mayotte et les Comores. Escales sur la route des Indes aux XV^e^ et XVIII^e^ siècles* (2000): 244–295.

back to 696, when the caliph ʿAbd al-Malik bin Marwan is supposed to have built 35 towns on the African littoral. The Annals of Oman report facts which are certainly closer to reality:[47] the brothers Sulayman and Saʿid left Oman with their relatives in order to seek refuge in Africa at the time of the conquest of their country by ʿAbd al-Malik in 692. The Ibadis, expelled from the Persian Gulf and southern Arabia, formed one of the first Muslim communities of refugees in Africa.[48] And the first Muslims to occupy Pemba and Kilwa were probably Ibadis.[49] The Chronicles of Kilwa state specifically that two brothers professed the Ibadi doctrine in the city. When the Shirazis arrived in Kilwa in 957, a mosque had already been built on the island and was directed by an *infidel*. The term *infidel* does not necessarily mean that that local leader followed African animist practices. According to the Chronicles of Kilwa, it could mean that he simply belonged to a Muslim sect or confession different from that of the newcomers, and might have also been Ibadi or Zaydi.[50]

Shiite groups were violently repressed by the Abbasid rulers, particularly from 762 to 799, but as early as 739 a wave of emigrants left the coasts of Iran and Iraq for the south of Somalia. In the following year, they were joined by Zaydi Shiites.[51] The Zaydis were one of the Shiite groups persecuted by the Abbasids who emigrated to the Red Sea and the African coasts. They are reported to have been in Pate in 760[52] and in the Yemen in the tenth century, where they formed a community which exists to this day.[53] João de Barros too mentioned this wave of Zaydi migrants who adapted themselves to the local usages and customs. João de Barros and then Charles Guillain[54] also said that a Shiite sect left the port of al-Hasa and founded the cities of Mogadishu, Barawa, Merka and Zanzibar between 887 and 924. These forced migrations show that Africa had been a place of refuge for persecuted Muslim minorities ever since the seventh century. The first Swahili communities were therefore born from the union of Muslim refugees and merchants with the daughters of local African chieftains. These interethnic marriages constituted a political strategy: the Muslims acquired the protection of the African chieftains, while the latter received in return manufactured products which increased their social status. The adoption of a new religion, Islam, led to an opening onto the worlds of the Indian Ocean, which reinforced the authority and the prestige of the local rulers still further. Nevertheless, in the first centuries of Islam, the Swahili coast was only feebly Islamised, despite the arrival of political refugees and religious minorities. In the tenth century, Ibn Hawkal and al-Masʿudi said that the Zanj adored numerous gods and idols.[55] In the twelfth century the situation had hardly changed, and al-Idrisi declared that most of the Zanj towns, such as Mombasa and Malindi, still had a pagan majority in 1154, and that the inhabitants of Barawa worshipped erected stones.[56] The first wave of Islamisation in East Africa was due to exchanges based on the ancient trade routes, while Africa welcomed migrants

47 Wilkinson, "Oman and East Africa: new light on early Kilwa history from the omani sources" (1981): 272–304.

48 Sheriff, "Mosques, Merchants and landowners in Zanzibar Stone Town" (1995): 46–66.

49 Horton & Middleton, *The Swahili* (2000): 64–67; Horton, *Shanga* (1996): 421–422.

50 De Barros, *Decadas Da Ásia* I, vol. VIII in Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 32 & 81; Horton & Middleton, *The Swahili* (2000): 64–67; Gaube & Al Salimi, *The Ibadis in the region of the Indian Ocean* (2013): 21–121.

51 De Barros, *Decadas Da Ásia* (1552): 335.

52 Trimingham, *Islam in East Africa* (1964); Horton, *Shanga* (1996): 422–423.

53 Pouwels, "The East African Coast" (2000): 256.

54 De Barros, *Decadas Da Ásia* (1552) in Guillain, *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale* (1856): 6–7; Strandes, *The Portuguese Period in East Africa* (1899, reeds. 1961/68): 73.

55 Ibn Hawkal, *Kitâb al-Masâlik wa 'l-mamâlik*, 356/967 *in* Mathew, « The East African coast until the coming of the Portuguese » (1963): 105.

56 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 41.

from the religious minorities. This first "surface" Islamisation affected above all the ruling classes who adapted themselves to a new culture and a new language of particular use for trade: Arabic.

The most important ports of the Persian Gulf were Basra and Siraf. The relations with the Islamised merchants were of a different nature since they did not hesitate to settle in Africa and to encourage African urbanisation. One of the most extraordinary early medieval testimonies is that of Du Huan, an officer in the Chinese army. Captured during a battle in Tashkent in 751, Du Huan was enslaved and taken to the region of Baghdad. In 761, he accompanied some Persian dignitaries to the coasts of Sudan and Eritrea. In the following year he managed to return to Canton where he wrote an account of his journeys, the *Jingxingji*.[57] This adventure shows that the African coasts were visited as early as the eighth century by crews coming from the area of Baghdad. Already in the ninth century under the Tang dynasty, therefore, the Chinese were well acquainted with the shores of Berbera and Somalia, which they call the land of Bipaluo.

From the ninth century on geographers such as al-Mas'udi referred to commercial relations with Zanzibar, Pemba and Sofala. The Arab geographers[58] revived the Greek term of *Zengis* "arid or dry lands" to designate the black peoples from East Africa and the Indian Ocean. The coast of the Zanj was divided into four regions: the navigators first encountered the land of the Barbarians, or the *Bilad al-Barbar*, followed by the land of the *Zanj*, or *Bilad al-Zanj*, between the Shebelle River and the island of Zanzibar, and then arrived in the land of Sofala, *Bilad al-Sufala*, an area between the mouths of the Zambezi and the Limpopo, also called Sofala of gold or *Sufala al-Dhahab*. Certain sailors, finally, went still further to the land of the *Qumur*, which includes Comoros and probably even to the mysterious land of the *Wak Wak*, the great island of Madagascar.[59] Mogadishu was the northern limit of the Swahili cultural area. The coastal stretch between this city and the Lamu archipelago was called Banadir, apparently a word of Persian origin meaning "the coast of the ports". As they went south the navigators could stop off in the Bajun islands, or further on, in the Lamu archipelago made up of the islands of Pate, Manda and Lamu. The southern limit of Swahili culture corresponded to the bay of Sofala in present-day Mozambique. It was in this region that the Arab and Persian Muslims came to search for the gold which they needed.

The Persian ships set sail mainly from Siraf, the port of Shiraz. The earthquake which destroyed Siraf in 977 seems to be the *terminus ante quem* of the phantastic tales of Persian sailors, since this catastrophe is never mentioned in these legends. The best-known story of a Persian navigator remains that of Sindbad the Sailor.[60] The adventures of this sailor and trader supposedly took place between 806 and 807.[61] The account of his travels was drawn up later, between 835 and 840, during the reign of the caliph Harun al-Rashid. During his second voyage Sindbad arrived in the region of al-Qumur which comprised the Comoros archipelago and the north of Madagascar. In the port of Hormuz, he referred to the sale of tusks of African ivory. During his fifth voyage Sindbad visited Somalia and the east coast as far as Anjouan and the island of Muya (Sri Lanka?) where cinnamon and pepper were grown.[62] The aloes wood was supposed to come from the island of Shaji located five days from Comoros, undoubtedly the Maldives. Sindbad passed by the African coasts and then, via Comoros, he made straight for the

57 Smidt, "A Chinese in the Nubian and Abyssinian Kingdoms (8th century)" (2001): 17–28.

58 Al-Masudi (950), Yâkût (1210) and Ibn Khaldun (14th c.).

59 Bacqué-Grammont, *L'arbre anthropogène du Waqwaq, les femmes-fruits et les îles des femmes* (2007).

60 Zehnacker, *A la Rencontre de Sindbad, la route maritime de la Soie* (1994).

61 Casanova, « Notes sur les voyages de Sindbad le marin » (1922): 172; Khawam, *Les Aventures de Sindbad le Marin* (1985): 18.

62 Khawam, *Les Aventures de Sindbad le Marin* (1985): 67, 170–171 & 211.

Maldives and up to the coasts of India. This important information is corroborated by other texts by contemporary Arab geographers[63] such as ʿUbayd Allah bin Khorradadhbih in 846 et Jaʿfar al-Marwazi in 887. Ever since the ninth century there thus existed two great maritime routes between Asia and Africa, one along the Arabian Peninsula, making the ships the tributaries of the Omani and Yemeni coasts, and the other which crossed the Indian Ocean directly (Fig. 104).[64]

Problems arose at the end of the ninth century. Between 866 and 883 the great revolt of the Zanj,[65] in the region of Basra (in the south of present-day Iraq), and they devastated the most important ports. During this period *Zanj* designated all the black slaves used in Iraq for works of irrigation. In 869, the Zaydi ʿAli ibn Muhammad al-Basri managed to convince nearly ten thousand slaves to rebel against the central government based in Samarra by emphasizing their unjust treatment and promising them freedom and wealth. The revolt of the Zanj involved not only the Africans but united all the slaves and populations of the Shiite minority. Nicknamed Sahib al-Zanj, al-Basri claimed to be the heir of the Shiites and at war with the Abbasids.[66] The Zanj won several battles against the armies of the caliph, notably in Basra which they destroyed. The revolt lasted for fourteen years and al-Masʿudi tells us that there were almost 500,000 deaths. Thanks to a reinforcement of Egyptian troops, the vizir al-Muwaffaq suppressed the rebellion in 883. The Zanj withdrew to their capital at al-Mukhtara in Lower Iraq where they were defeated, and their leader executed. After the revolt, Baghdad was cut off from the Persian Gulf and trade with East Africa. The revolt of the Zanj provides very valuable information both about the number of African slaves in the Persian Gulf and about their religion. For example, the Dey of Kufa proposed an alliance to the "prince of the blacks", but the latter, who was an ʿAlid (Shiite), refused[67] – a fact that also demonstrates a deep division between contemporary Shiite groups.

3.3.2 *The Shiite Merchants in East Africa from the Tenth to the Twelfth Century*

After the great revolt of the Zanj, the Persian Gulf again became the scene of dramatic events. The Qarmatians, members of a religious movement based on the messianic ideas of radical Shiism, created a powerful and prosperous state independent of the Abbasid caliphate. This state was centred in Bahrain and extended its influence on the east coast of Arabia as far as the south of Iraq. The Qarmatian kingdom was supreme in the Persian Gulf from the tenth to the eleventh century. The Qarmatians possessed the port of al-Hasa. In 920, the Qarmatians of Bahrain sacked the port of Basra. The regional antagonisms increased and, in 942, as a retaliation, the ruler of Basra had the Omani fleet set on fire. The Qarmatians invaded the Yemen in 883, sacked Mecca in 929, and occupied Oman in 930. In 971, finally, they besieged Cairo, but unsuccessfully. In 1004, they are said to have owned up to 30,000 black slaves from the lands of East Africa. The dynasty ended in 1077, and numerous Qarmatians emigrated to the coasts of Banadir.[68]

The pivotal years between the tenth and the twelfth century were a period of change in the Muslim world. The fall of the Abbasids led to the partitioning of the Muslim world into a mosaic of rival states which disrupted trade in the Persian Gulf. It was also the golden age of the Shiite kingdoms. Between 932 and 1062, the Buyids settled in Baghdad, and there was a temporary return of

63 De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^e–XX^e siècle* (2000): 93.

64 Sauvaget ed., *Relation de la Chine et de l'Inde* (851).

65 Talib, « La diaspora africaine en Asie » (1990): 749–778.

66 Devic, *Le Pays des Zendjs* (*ou la Côte Orientale d'Afrique au Moyen-Age*) (1883): 160–166.

67 De Goeje, *Mémoire sur les Carmathes du Bahraïn et les Fatimides* (1886): 9 & 26.

68 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 140–141; Pouwels, "Tenth Century Settlement of the East African Coast: The Case for Qarmatian/Isma'ili Connections" (1974): 68–70.

a Shiite dynasty. The power of the Abbasids of Baghdad declined to the advantage of a great new Islamic metropolis, Fatimid Cairo. The Egyptian merchants availed themselves of the collapse of the Abbasid empire since the essential part of African trade was now with the Red Sea. The Sulayhid dynasty in the Yemen was to have close dealings with Fatimid Egypt from 1084 to 1138.[69] An Ismaili dynasty controlled Sindh in Pakistan from 980 and had political and religious relations with the Fatimid caliphs of Egypt. Economically and diplomatically, the Fatimids of Egypt became immensely powerful thanks to trade in the Indian Ocean. Later the Mamluks would pursue the same commercial policy and reinforce their control over the western coast of the Red Sea and the ports of Suakin, Massawa and Assab. The merchants of the Persian Gulf remained active, but other ports were preferred, often on islands such as Kish, Hormuz and Bahrain. The sailors on the island of Kish committed acts of piracy in the whole of the Indian Ocean, attacking Aden in 1135 and making slave raids on the coast of the Zanj.

Numerous African urban centres were created in the tenth and the eleventh centuries and architecture in stone developed, first affecting mosques and the large storehouses of merchants. This period saw the establishment of the Swahili city states. Already in the tenth century the Arabs noticed that the Zanj spoke a dialect different from the one spoken by the Africans of the hinterland, which could mean that the Swahili language assumed its present form at this moment: "The Zanj have an elegant language and the men pray in this language […]".[70]

The written sources regarding Africa become more frequent in the course of the tenth century. The accounts of al-Masʿudi are our main historical source for the east coast. Al-Masʿudi thus tells us that numerous merchant boats belonged to the Omani sailors and ship owners.[71] He describes the African coastal towns which had not yet been Islamised in 916. The city of Qanbalu was the most important port on the African coast in this period. Al-Masʿudi found that the population consisted of as many Muslims as pagans, but it was a Muslim family that reigned in Qanbalu with a king, the *Mfalme*. Qanbalu is mentioned again in 945 by Jaʿfar bin Rashid, known by the name of Ibn Lakis, the famous pilot. Ibn Lakis reports the attack on Qanbalu by some thousand pirate vessels from the land of the Wak Wak.[72] The latter were said to have originated from Madagascar, and to have sailed up the African coast for a year, where they looted many towns on the Zanj shores, particularly Sofala. Qanbalu, built in the middle of an estuary and surrounded by a wall, managed to repel them.[73] According to certain authors this important city was situated on the island of Pemba, while others place it in the Comorian archipelago. However, it could have been a site in the bay of Kilwa, possibly Sanje ya Kati.[74]

Another account by a sailor in the Persian Gulf was written in the middle of the tenth century. Buzurg bin Shahriyar came from the port of Hormuz and wrote the *Kitab ʿAja'ib al-Hind*.[75] The "Book of the Marvels of India" was compiled in about 956–957. It provides highly important information about the products exchanged between

69 Moncelon, "La Da'wa fatimide au Yémen" (1995): 29–30.

70 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 16.

71 Al-Masûdi *in* Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 14–15.

72 De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^e–XX^e siècle* (2000): 113–114.

73 Al-Masûdi (916) and et Buzurg bin Shahriyâr (945) in Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 9–17 & 39–40; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 39–40.

74 Horton & Middleton, *The Swahili* (2000): 66; Shepherd, "The making of the Swahili" (1982): 133; Pradines, "Madagascar, the Source of the Abbasid and Fatimid Rock Crystals" (2020): 35–50.

75 Ibn Hawqal edited by Van der Lith, Sauvaget, *Relation de la Chine et de l'Inde* (1948); Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 9; De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^e–XX^e siècle* (2000): 101; Ducène, "Une nouvelle source arabe sur l'océan Indien au X^e siècle" (2015).

Africa and Persia. It mentions the gold mines in the land of the Zanj, but also the trade in African slaves in the tenth century. Having left Oman for Qanbalu in 922, Buzurg ibn Shahriyar's ship was blown off course by violent winds and came to Sofala, a town in the land of the Zanj. The sailors were well received and started to barter. Taking advantage of the hospitality and the naivety of their hosts, Buzurg decided to kidnap the king of the Zanj and people from the town when his boat set sail. The king was put in the hold together with 200 other captives. The king of Sofala was then sold as a slave in Basra, where he converted to Islam, and was sent to Baghdad. During a pilgrimage to Mecca, he managed to escape to Egypt and returned to his own country after a long voyage. Many years later Burzug and his companions were again blown by the winds to the same spot in Africa. Because of their cowardice and the crime, they had committed they took fright when they recognised the king they had once captured, but the king, touched by grace, forgave the men who had sold him as a slave. Was he not destined to become a Muslim? The Book of Marvels also indicates that the king had converted his people. This fact is most interesting since it is one of the earliest pieces of evidence of Islamisation in East Africa.[76]

The destruction of Siraf, the port of Shiraz, by an earthquake in 977, followed by the fall of the Buyids in the eleventh century, led to a massive exodus of Persians who emigrated to the islands of Kish and Hormuz in the Persian Gulf, but also to Jedda on the Red Sea. According to Ibn al-Mujawir the people of Siraf emigrated after the decline of the town at the end of the tenth century.[77] The inhabitants of Siraf reached the Yemen, and then Jedda, from where they were expelled in 1081 by a decree of the religious authorities in Mecca.[78] Their emigration seems to come to an end in the last years of the eleventh century. Wherever they went, they appear to have been formidable builders: walls, caravanserais, wells and cisterns.[79] A similar tradition exists on the island of Pemba in Tanzania concerning the populations called Wa-Debuli, said to have originated in Daybul in the Indus Delta (Banbhore). In the Yemen, Axelle Rougeulle discovered and excavated an Islamic site founded in about 980 and occupied until 1150.[80] The trading post of Sharma, situated on the shores of Hadramawt, was allegedly founded by a diaspora of communities from the Persian Gulf after the decline of Siraf.[81] This exodus of Shirazis appears to have been a phenomenon which affected the whole of the Indian Ocean since numerous oral traditions of Swahili cities claim to have been of Shirazi origin.[82] According to local traditions the first mosques in stone are associated with the Persians, the best known being the one in the town of Kilwa.[83] The Chronicles of Kilwa tell us that the sultan ʿAli ibn Sulayman and his six sons, or his six brothers, fled from their city of Shiraz as a result of persecution and left the country from the port of Siraf in seven ships.[84] At each port of call on the African coast one of the seven individuals founded a town, from north to south: Mandakha, Shaughu, Yanba, Mombasa, Pemba, Kilwa and Hanzuan.[85] The town of Kilwa would have been founded in 957 by Hassan bin ʿAli, one of the sultan's six sons. The father, ʿAli bin Sulayman, was the last one to

76 Pradines, « L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel » (2009): 49–73.

77 Ducatez, "Aden et l'océan Indien au XIII^{e} siècle" (2003): 139 & 147, note 65.

78 Ducatez, "Aden aux XI^{e} et XIII^{e} siècles selon Ibn al-Mugâwir" (2004): 165.

79 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 52.

80 Rougeulle, "Le Yémen entre Orient et Afrique: Sharma, un entrepôt du commerce médiéval" (2004): 224–225 & 233–234.

81 Rougeulle, *Sharma. Un entrepôt de commerce médiéval sur la côte du Hadramawt* (2017): 145–150.

82 Spear, "The Shirâzi in Swahili Traditions, Culture and History" (1984): 291–305.

83 De Barros, *Decadas Da Ásia* (1552); Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974).

84 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 45–59; Ducatez, "Aden et l'océan Indien au XIII^{e} siècle" (2003): 147.

85 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 75.

stop off in the island of Anjouan in the Comoros archipelago in 985. Other traditions for the Somali towns of Mogadishu, Barawa and Merka mention nine brothers, all Shiites, who left on three ships from the port of al-Hasa in the Persian Gulf between 908 and 924, or on two boats which left from the port of Hormuz.[86]

In 1999, Chapurukha Kusimba wondered about the Shirazi myth and spoke of James Kirkman and Neville Chittick in these terms: "Archaeologists accepting these traditional narratives attempted to affirm them archaeologically".[87] This sentence sums up the entire historiography of the archaeological and historical research on the Swahili mosques published in the 1980s and 1990s. Any external influence on African development was seen as an intellectual construction grounded in the colonial period.[88] In order to obliterate exogenous influences, a number of these Africanist researchers appealed to a theory developed by James de Vere Allen in the 1980s according to which the Shirazi myth was the Islamised version of a far earlier African foundation myth, the myth of Shungwaya.[89] The region of Shungwaya would have been the homeland of various African groups such as the Mijikenda, the Pokomo and the Bajun. The oral traditions of these peoples situate Shungwaya close to Bur Gao on the Somali coasts of Banadir or more globally in the region of Barawa, between the Juba and the Shebelle rivers.

The story of the Shirazi ancestral founders of numerous Swahili towns is obviously a foundation myth, and yet it would be wrong to deny its historical interest and the permanence of oral traditions on the whole of the East African coast, as Abdul Sheriff has pointed out.[90] From an archaeological point of view there is a collection of serious archaeological evidence of the rôle and the impact of the communities of the Persian Gulf on the societies of the Swahili littoral.[91] In fact the term "Shirazi" designates far more than the town of Shiraz or the Persian port of Siraf. It covers a number of populations from the Persian Gulf who arrived in East Africa at a very early stage and shared common religious values such as Kharidjism and Shiism (Ibadis, Qarmatians, Zaydis and Ismailis). Consequently, the term "brothers" in the Chronicles of Kilwa could be interpreted as *ikhwan*, "religious brothers", and the sultan as a spiritual leader.[92] Yakut, for example, reports that in 1116 the leaders of Pemba were Shiite refugees from Kufa.

From 957 to 1131, the city of Kilwa launched numerous attacks on neighbouring coastal towns, particularly Shagh (Sanje Ya Kati),[93] Mafia and Zanzibar.[94] Kilwa had difficulty in imposing its sovereignty on these local potenates on the southern stretch of the coast under the reign of Dawud bin Sulayman (1131–1170).[95] In the end Kilwa enriched itself by acquiring the monopoly of the gold trade of Sofala. According to al-Mutahhar bin Tahir al-Maqdisi, the land of the Zanj had provided a great deal of gold for the Arab countries ever since the tenth century.[96] The sultan Sulayman bin Hasan (1170–1189) renovated the city and had several important buildings constructed which

86 Guillain, *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale* (1856): 6–7; Strandes, *The Portuguese Period in East Africa* (1899, reed. 1968): 73.

87 Kusimba, *The Archaeology and Ethnography of Iron Metallurgy on the Kenya coast* (1993): 57.

88 Chami, *The unity of African ancient history: 3000 BC to AD 500* (2006).

89 Allen, "Swahili culture and the nature of East coast settlement" (1981): 306–334; Spear, "The Shirâzi in Swahili Traditions, Culture and History" (1984): 291–305; Pouwels, "Oral Historiography and the Problem of the Shirâzi in East African Coastal History" (1984): 236–66.

90 Sheriff, "The historicity of the Shirâzi tradition along the East African coast" (2001): 21–41.

91 Pradines, "L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel" (2009): 49–53 & 71.

92 Strandes, *The Portuguese Period in East Africa* (1899, reed. 1968): 73.

93 Mathew, "The East African coast until the coming of the Portuguese" (1963): 107.

94 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 37–39.

95 Idem: 86–87.

96 Miquel, *La géographie humaine du monde musulman* (1967): 32.

included a large fortress with towers, Husuni Ndogo.[97]

At the end of the twelfth century, the Swahili towns were urbanised and became veritable city states on the gold route. The islands of Mafia and Kilwa were the main merchant regions in the south of the Swahili area, and the town of Mogadishu obtained a political and commercial supremacy in the northern part of the East African coast. Malindi and Mombasa were already two other large African towns mentioned in 1154 by al-Idrisi, who also refers to the island of Angazija (Anjouan) and to Sufala, the land of gold (the bay of Sofala),[98] as well as to the iron trade from Malindi: "Malindi stretches along the beach at the mouth of a river of sweet water" [...] "[the people of Malindi] own and exploit iron mines ...".[99] The inhabitants of the coast spoke the same language, Kiswahili, and adopted the Arabic script. Mosques of coral stone were built all along the coast, from the Lamu archipelago to Comoros.

3.3.3 *The Apogee of the Swahili City States from the Thirteenth to the Fifteenth Century*

A new balance of power emerged in the thirteenth century. The small Shiite groups in East Africa were replaced by massive waves of Sunni emigrants, mainly of the Shafiite rite. Yakut described numerous Muslim communities on the African shores. The Shirazi dynasty of Kilwa was replaced in 1277 by the dynasty of the Mahdalis, a Hadhrami clan from the south-west of the Yemen.[100] This new power was connected with the Rasulids of the Yemen, who themselves had close ties with the Mamluks of Egypt, the Seljuqs of the Persian Gulf and the Indians of the Sindh, Gujarat and Malabar. The Swahili littoral was divided into various independent principalities, such as Kilwa, Mombasa, Malindi, Pate, Merka and Mogadishu, which were described briefly by Yakut. According to Joaõ de Barros, each town had its king and none were vassals of another. The *Periplus of the Erythraean Sea* also mentioned the political autonomy of the cities on the African coast ever since the beginning of the first millennium.[101]

The general spread of Sunnism on the east coast could be attributed to contacts with the merchants of the Hadramawt.[102] The inhabitants of Kilwa were converted to Sunnism in the thirteenth century with the arrival of the Mahdali dynasty. They were Shafiites and, according to Ibn al-Mujawir, the Shafiite doctrine was professed in a school in Kilwa.[103] In the fourteenth century, all the Shiite groups seem to have been absorbed by the Sunni Shafiites, for, in 1331, Ibn Battuta encountered Sunni Shafiites on the entire coast.[104] He has left a description of the cities on the coast of the Zanj. Zeyla was the capital of the Berbera. Then came Mogadishu, the home of many camel breeders. The sultan of the city was Sheikh Abu Bakr bin Sheikh Omar and his *qadi* was an Egyptian eunuch. The religious rites were identical to those in the

97 De Barros, *Decadas Da Ásia* (1552, reed. 1945): 227; Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961): 75; Pradines, "L'art de la guerre chez les Swahili : les premiers forts d'Afrique orientale" (2002): 71–87.

98 al-Idrisi in Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 19–20; Guillain, *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale* (1856): 205–206.

99 al-Idrisi *in* Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 41.

100 Wilkinson, "Oman and East Africa: new light on early Kilwa history from the Omani sources" (1981): 272–304; Mathew, "The East African coast until the coming of the Portuguese" (1963): 123; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 45.

101 De Barros, *Decadas Da Ásia*, vol. II (1552, reed. 1945): 21; Mauny, "Le périple de la mer Erythrée et le problème du commerce romain en Afrique au sud du Limes" (1968): 28.

102 Al-Malik al-Ashraf (1271) and Abu al-Fidâ (1342) edited by Reinaud (1848): 206–208; Abu al-Mahâsin (1441) in Guillain, *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale* (1856): 299–300; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 23 & 33.

103 Wilkinson, "Oman and East Africa: new light on early Kilwa history from the Omani sources" (1981): 272–304.

104 Ibn Battûta, vol. 2 (1331, ed. 1949): 179–196; Sheriff, *op. cit.*, p. 29.

Yemen. Ibn Battuta also reported that Mombasa was a great town whose district mosques were built in wood. Kilwa was one of the most beautiful cities in the world, with stone houses covered by roofs made of palm leaves, *makuti*. Only certain mosques and the palaces had a terrace roof.[105] The inhabitants of Kilwa, like all the inhabitants of the coast, were Sunni Shafiites. From the fourteenth to the fifteenth centuries, Kilwa had the monopoly of the gold trade, and Ibn Battuta specified that the gold of Sofala came from *Yufi*, in the land of the *Limis*, a month's march away from the coast. Sofala, the vassal of Kilwa, had commercial relations with the kingdom of the Great Zimbabwe where the gold mines were located.[106] This state came into being in the eleventh century in the Limpopo valley, and the rise of the Great Zimbabwe remained intimately connected with the gold trade with the Muslims in the fourteenth and early fifteenth centuries. It was a period of splendour for Kilwa: the sultan, al-Hasan bin Sulayman II (1331–1332), enlarged the Friday Mosque and had a sumptuous palace built at Husuni Kubwa.[107]

The political situation on the coast developed still further in the early fifteenth century. Some city states started to acquire extensive territories, and efforts were made to stratify certain cities states such as Pate, Mombasa and Kilwa. Between 1466 and 1476, Kilwa was shaken by dynastic problems and wars of succession which ended in the auto-emancipation of certain vassal towns such as Sofala or Zanzibar.[108] The new rulers restored the situation, but the power of the city state had diminished considerably when the Portuguese arrived in Africa.[109] The city of Pate took the towns of Shanga, Siyu and Faza[110] and continued to extend its territories towards the north with the conquest of Kismayu, Barawa, Merka and Mogadishu. Pate first overran territories in the northern area, less contested by other Swahili emporiums. The sultan Fumomari of Pate then attacked Manda and Malindi. According to the Chronicles of Pate, the entire coast was conquered, apart from Zanzibar.[111] These territorial conquests and state formation ended abruptly again with the arrival of the Portuguese.

Over the fifteenth century, a marine technical literature was developed to promote navigation with a detailed description of the African coast. The best-known nautical textbooks were those of Ibn Majid (1475–1478 and 1495–1496) and of Sulayman al-Mahri (1511–1512). Besides a geographical description of the places, these texts contain abundant information about the participants in the trade of the Indian Ocean. Born in Oman in about 1432, Ahmad Ibn Majid published a navigation treaty in 1490. In the *Sofaliyya*, he noted that a great many pilots were Zanj. This remark is important. It tells us that Africans were sailing the southern seas beside the masters of navigation who, according to Sulayman al-Mahri, were Arabs from Hormuz, and Indians, Gujaratis and Cholas.[112]

3.3.4 *The East African Coast under the Portuguese and the Omanis from the Sixteenth to the Nineteenth Century*

Vasco da Gama discovered the route to the Indies and the east coast of Africa in 1498. The Europeans had two important technological advantages which ensured their supremacy in the Indian Ocean: firearms and large, swift boats, the caravelles.[113] Portuguese sources of the sixteenth and

105 Ibn Battûta in Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 27 and 31.

106 Senna-Martinez, "The Swahili interface, urban trajectories, and state formation in East Central Africa" (1998): 133–134.

107 Chittick, "Notes on Kilwa" (1959): 179.

108 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 151.

109 *Vasco da Gama* (1502), Gaspar Correa, *Lendas da India* (1514) in Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 66.

110 *The Chronicles of Pate in* Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 244–248.

111 *Idem*, 253.

112 Ducatez, "Aden et l'océan Indien au XIII^{e} siècle" (2003): 139; De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^{e}–XX^{e} siècle* (2000): 115–117.

113 Pearson, *Merchants and Rulers in Gujarat. The response to the Portuguese in the sixteenth Century* (1976): 30.

seventeenth centuries are very numerous and rich in detail about the commercial alliances and the political intrigues between the Portuguese and the Swahilis. The Portuguese occupied the Kenyan and Tanzanian littorals for some two hundred years, from the sixteenth to the seventeenth centuries. In spite of a few trading posts, they made no attempt to obtain a political or religious hegemony and were content to retain control of the maritime routes thanks to fortresses built first in Sofala, Kilwa and Malindi, and then in Mozambique and Mombasa.[114] In the seventeenth century, the Portuguese domination of the Indian Ocean was disrupted by the competition of the English and the Dutch. The sultanate of Oman freed itself of Portuguese protection in 1650 and tried to destabilise the Portuguese harbours in East Africa. Zanzibar, which had remained allied with the Portuguese at the time of the 1631 uprising, joined the Omanis in 1652. The sultans of Zanzibar and Pemba destroyed all the Portuguese installations on their land. In revenge Zanzibar was again razed to the ground by the Portuguese. In this period the city of Pate acquired the main part of the commercial revenues of the coast. After the rebellion of Mombasa, the sultan of Pate tried to free himself from the Portuguese taxes and customs, known as *fandikani*, and appealed to the Omanis.[115]

The first Yaʿrubi imam, Nasir bin Murshid al-Yaʿrubi, was elected in Rustaq in 1624.[116] Nasir reunited the different tribes of the interior and of the coast and restored the naval power of Oman. In 1650, his successor, Sayf al-Yaʿrubi, reconquered Muscat once and for all, thus marking the end of Portuguese hegemony in the Indian Ocean. He provided the country with a powerful navy and laid the basis for the future empire of the Bu Saʿidi dynasty.[117] Once Oman was free of Portuguese protection, ships set sail for Pate in 1652. The Portuguese reports of 1658 describe an Omani fleet which arrived at the request of Pemba and Zanzibar.[118] The Portuguese reaction was immediate, and a large expedition was mounted against Pate in 1678. The town was burnt, and the sultan was executed together with the sultans of Lamu, Siyu and Manda. The Europeans returned to the Lamu archipelago in 1686 and 1688. Once again, an Omani fleet arrived with the monsoon winds, and the Portuguese were forced to retreat.[119] In 1696, Sayf bin Sultan I decided to send a large expeditionary force to Mombasa and laid siege to Fort Jesus. Despite the reinforcements from Goa, Fort Jesus fell, and the Portuguese had to fall back on Goa and Mozambique early in 1698. After the fall of Mombasa, the imam of Oman decided to send governors and garrisons to important cities such as Pate, Lamu, Mombasa, Zanzibar and Kilwa.[120]

Pate and Mombasa continued to confront each other in an effort to obtain as much territory and as many commercial resources as possible. Pate even tried to acquire the sovereignty of Pemba. In 1735, Muhammad bin ʿUthman bin al-Mazrui was appointed governor of Mombasa.[121] He refused to acknowledge the new Omani dynasty of the Bu Saʿidi and declared his loyalty to the old dynasty of the Yaʿrubi, while he himself founded the dynasty of the Mazrui who would rule the cities of Mombasa, Malindi and Pemba, together with the chiefdoms of Bagamoyo, Pangani, Tanga and Vumba. Pate had already declared independence after the fall of Fort Jesus, paying allegiance to the Nabhani and refusing to recognise either the Yarubi or the Bu Saʿidi. In 1744, the sultanate of Oman installed a governor in Zanzibar who cohabited with the Shirazi traditional ruler, Mwinyi Mkuu. The Omani governor of Zanzibar,

114 Strandes, *The Portuguese Period in East Africa* (1899, reed. 1968): 99.

115 *Idem*: 256.

116 Le Cour Grandmaison, "Présentation du Sultanat d'Oman" (1982): 275–276.

117 Stevens, *Oman, citadelles entre sable et mer* (1990): 26.

118 Kirkman, "The Early History of Oman in East Africa" (1983): 50.

119 Freeman-Grenville, "The Coast, 1498–1840". *History of East Africa* (1963): 141.

120 Kirkman, 1983: 52.

121 Pate's Chronicles in Stigand, *The Land of Zinj* (1913, reed. 1966); Mathew, "The East African coast until the coming of the Portuguese" (1963): 52 & 104.

al-Harthi, controlled the coast facing the island as far as Cape Delgado, apart from the region of Kilwa which remained independent from 1700 to 1785. The Mazrui had a territory which extended from Tanga to the Sabaki, while the Nabhani of Pate exercised their hegemony from north of the Sabaki as far as the mouth of the Juba River in Somalia. The frontier between the two city states would be situated between the mouths of the Kilifi and Sabaki rivers. In 1779, Ahmad bin Saʿid restructured his country and moved his capital from Rustaq to Muscat. Muscat, Sur and Sohar became the great Omani ports harbouring large fleets that sailed from Africa to Indonesia.[122] Little by little the sultanate of Oman started to take an interest in the island of Zanzibar which had become a pivot in the slave trade and from where, each year, between six and ten thousand human beings were deported to Muscat, India, and the islands of the Indian Ocean. The war of succession which followed the death of the ruler of Pate, Fumomadi, allowed the Mazrui to take control of the north of Kenya.[123] Lamu, isolated, resisted and confronted both the Mazrui of Mombasa and the Nabhani of Pate. Lamu won the battle of Shela in 1812. Amazed and almost startled by this success, the rulers of Lamu requested the protection of the sultanate of Oman. In 1822, Sayyid Saʿid sent a war fleet to Africa under the command of Hamid bin Ahmad al-Bu Saʿid. The forces organised a blockade of Mombasa and would undoubtedly have taken the town had they not been dissuaded by a British warship commanded by Captain Owen after the Mazrui requested English support from Bombay. But the British preferred to take no action against Sayyid Saʿid who showed them official documents confirming his authority in the area.[124]

The sultan decided to transfer his capital from Muscat to Zanzibar in 1832. In 1837, Sayyid Saʿid bin Sultan (1804–1856), a great manoeuvrer and the founder of the sultanate of Zanzibar, reigned over the coast from Mogadishu to Cape Delgado. Only the towns of Pate and Siyu retained a measure of independence which was regularly repressed by the Omanis in order to prevent the autonomy of local principalities such as Siyu in 1836 and in 1842.[125] On an economic level, the sultanate of Zanzibar needed a great amount of slaves to keep up the clove plantations, their main export product. The slaves were also destined to be re-sold to the French slave owners of La Réunion and to the Arab and Asiatic countries. Large caravans were organised by the Omanis who destroyed the economy of the autochthonous populations by introducing firearms, exchanged for slaves and ivory. The slave caravans were financed by rich Indian merchants, the Banians. In 1873, Sir Bartle Frere observed that all branches of trade, from Cape Guardafui to Madagascar, were in the hands of the Indian community which exercised a virtual monopoly on the east coast visible up to this day. These Indian Muslims, often Shiite Bohras, introduced a new style of mosque which broke entirely with the Swahili architectural tradition. The Khoja and the Bohra resumed their control of the maritime trade with the independence of the sultanate of Oman and re-introduced the Ismaili schism into Africa between the eighteenth and the nineteenth centuries. This, however, would have little effect on a coast which had been converted definitively to Sunnism.

And yet the commercial strength of the sultanate of Zanzibar was also its weakness, since its predatory economy rested solely on slavery and the export of certain tropical products such as ivory and cloves. The limited number of these products accentuated the precariousness of the system in force. The direct trade entailed important social changes since the Swahilis were already pursuing similar activities but were using intermediary populations and were not moving outside

122 Kirkman, "The Early History of Oman in East Africa" (1983): 53.

123 Freeman-Grenville, "The Coast, 1498–1840". *History of East Africa* (1963): 159 & 220.

124 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 280.

125 Kirkman, "The Early History of Oman in East Africa" (1983): 54.

their coastal domain. For the first time in the history of East Africa, Islam took root in the hinterland of Kenya and Tanzania as far as the region of the great lakes. The first Muslim merchant is said to have arrived in the kingdom of Buganda in 1844 by way of the Tabora road.[126]

With the death of Sayyid Saʿid in 1856, the Omani possessions were divided between his two sons: Muscat went to Thuwayni bin Saʿid and Zanzibar to Masjid bin Saʿid.[127] There was a complete split between the sultanate of Oman and the sultanate of Zanzibar. The prohibition of the slave trade and the use of steamships put an end to the supremacy of the Omani fleet. The opening of the Suez Canal dealt a final blow to the sultanate by depriving it of its main outlets. Sultan Saʿid Barghash died in 1888 and Zanzibar became a British protectorate in 1890, while the coastal strip opposite the island was left to the Germans who founded the Tanganyika.[128]

3.4 Trade and Islam in the Indian Ocean

3.4.1 *The Swahili City*

The Swahili towns were built on peninsulas, islands, or at the end of channels protected by thick mangroves. Their relative isolation with respect to the interior of the countries and their political autonomy means that they can be qualified as thalassocracies. The Swahili cities, above all, were situated at the mouths of rivers or on islands forming channels through which all shipping was bound to pass. Placed on the routes of communication of ocean navigation and river trade, they were bound to take over the resources of trade with the populations of the hinterland. The rivers served as major axes of communication and it is not unusual to find Swahili sites at their mouths, as in the case of the Tana River in Kenya. Numerous Islamic sites were founded on the mouths of rivers and certain agglomerations were abandoned because of a displacement of estuary, such as Gedi which was on the banks of the Sabaki before the sixteenth century. In the region of Sofala the demand for gold and copper by the Islamised was satisfied by the kingdom of Zimbabwe on the high plateaus of the hinterland. The coast of Banadir and Mogadishu depended on the Shabelle and Juba rivers.[129] In Kenya, the major rivers were the Tana and the Sabaki. The most important rivers of Tanzania were the Pangani, the Ruvu, the Rufiji and the Ruvuma.

The great Swahili cities all had a Friday mosque or *jamia*. This main mosque was situated, most of the time, in the centre of the town and the entire congregation of the faithful met there for the Friday noon prayer. The construction of a great mosque attests not only the economic activity of a region, but also the wealth accumulated by the local kings, *mfalme*, and sultans. The mosques of Kilwa and Mogadishu are a perfect example. The rulers had mosques built for their subjects but also as a proof of their piety.[130] The great merchants thus paid for the construction of the district mosques, *masjid*, in order to reinforce their authority over a family or a group in the city.[131]

Numismatics provides an example of the political dimension of the Swahili cities. The only Islamic coinage struck south of the Sahara were Swahili coins and symbolised the power of the city states of the east coast. These coins are a historical source which is particularly valuable for the study of Swahili dynasties. According to Helen Brown, five stylistic groups of Islamic coin were struck in East Africa.[132] The first is the

126 Insoll, "Mosque architecture in Buganda, Uganda" (1997): 180.

127 Le Cour Grandmaison, "Présentation du Sultanat d'Oman" (1982): 240–241 & 264.

128 Idem, 278–279.

129 Jama, *The Origins and Development of Mogadishu AD 1000 to 1850* (1996): 28.

130 Sheriff, "Mosques, merchants and landowners in Zanzibar stone town" (1992): 1–20.

131 Fleisher, and alii. "When Did the Swahili Become Maritime?" (2015): 1–16.

132 Brown, "Coins of East Africa, an introductory survey" (1993): 9–16.

Shanga group which consists of silver coins dating from between the eighth and the tenth century. The second group corresponds to the 500 silver pieces found at Mtambwe Mkuu on the island of Pemba[133] and dates from the tenth to the eleventh century. The third group is characterised by the copper pieces of the sultans of Kilwa who reigned from the twelfth to the fourteenth century. The fourth group is quite close to the style developed in Kilwa and consists of pieces in a copper alloy coming from Zanzibar and used from the twelfth to the fourteenth century. Finally, the golden coins from Kilwa make up the fifth group which dates from the fourteenth century. And to this classification we can add the coins struck in Mogadishu between the early twelfth and the late thirteenth century.[134] In the end, the Swahilis wrote up five local chronicles reporting the events which took place in the coastal towns: the book of the kings of Pate (1204–1885); the chronicles of Mombasa, seventeenth to nineteenth centuries; the *diwans* of Vumba-Kuu, seventeenth to eighteenth centuries; and the chronicles of Kilwa (with the Shirazi and Mahdali dynasties, 975–1502). These autochthonous archives consist of more than 30,000 pages of written documents. Such a written culture also helped to accelerate the formation of the city states since the chronicles were written to legitimise the power of local rulers.[135]

The main city states controlled entire regions. When the Portuguese disembarked on the east coast at the end of the fifteenth century they discovered a series of independent principalities, such as Kilwa, Mombasa, Malindi, Pate and Mogadishu, which were engaged in long-distance maritime trade. The economy, which depended on long-distance trade, was at the centre of Swahili society (Fig. 104). The coastal cities formed an interface between the Africans of the high plateaus and the merchants of the Indian Ocean. The Swahilis were thus extremely vulnerable to fluctuations in the market, and the port remained a decisive factor in urbanisation. It was there that the merchandises arrived and left, and it was there that the taxes were paid, and the exchanges made. The port was where wealth was concentrated, and cultural and technical developments were encouraged. Unfortunately, it is impossible to define the physical characteristics of the Swahili ports since a small stretch of shore was sufficient to beach a boat with a weak draft. The merchant vessels used by the Swahilis were boats with lateen sails and a weak draft known as *dhows*, which had no difficulty in running aground on the beaches facing the Swahili cities. The vessels set off from the Persian Gulf between November and December, put in at Merka and Barawa, and then went down towards Lamu and Mombasa, before reaching Zanzibar and Kilwa at the end of February. They left again in the spring with the reversal of the monsoon winds.[136]

The local economy of the Swahili towns depended on agriculture and fishing. Fishing was done on dugout boats known as *mtumbwi* or on stitched canoes, *mitepe*. Its products were fish, shells and sea turtles whose shells would be exported. Food was also composed of sorghum, yam, bananas, coconuts, rice, goats, sheep, and large bovines.[137] The inhabitants of the towns on the east coast had economic and political relations with the populations of the interior. The Swahilis obtained the raw materials which they needed through intermediaries, populations of breeders and farmers such as the Mijikenda, in touch with the hunter-gatherers who killed the elephants for their ivory or exploited the salt close to the great lakes of Tanzania in Uvinza and Ivuna.[138]

133 Clark & Horton, *Zanzibar Archaeological Survey* (1985): 27 et 79.

134 Freeman-Grenville, "The Coast, 1498–1840". *History of East Africa* (1963): 181.

135 Moffa, *L'Afrique à la périphérie de l'histoire* (1995): 96.

136 Miège, "L'Oman et l'Afrique orientale au XIX[e] siècle" (1982): 298.

137 al-Mas'udi (10th c.); Ibn Battuta, 14th c., de Barros, 16th c. and Burton, *Zanzibar city, island and coast* (1872).

138 Niane, "Les relations entre les différentes régions : échanges entre les régions" (1985): 669–691.



FIGURE 104 Map of the trade routes in the Indian Ocean

3.4.2 *The Importation of Foreign Products: New Tastes*

The Swahilis first exported raw materials, but these commercial products are largely invisible to the eye of the archaeologists since they were organic materials such as ivory, leopard skins, textile or wood. Mangrove lumber was exported on a large scale to the lands of the Persian Gulf under the Arabic name of *saj*, or *mwangati* in Kiswahili.[139] The Swahilis also provided Oman and Kuwait with carved wood such as doors and lintels.[140] Al-Idrisi, moreover, refers to various large iron mines between Malindi and Mombasa. This iron seems to have been the first source of income of the region and the Indians imported vast quantities of it in order to make steel weapons.[141]

The Swahilis traded in three great products – gold, rock crystal and ivory.[142] According to al-Maqdisi, the land of the Zanj had provided the Arabs with a great deal of gold ever since the tenth century.[143] Kilwa had the monopoly of the gold trade from the twelfth to the fifteenth centuries.[144] Sofala, the vassal of Kilwa since the twelfth century, had commercial relations with the kingdom of the Great Zimbabwe, which exploited the local mines. The town of Sofala, situated in the eponymous bay, was one of the most important ports for the gold trade coming from Zimbabwe, and worked with the satellite town of Quelimane to ensure its regional exchanges.[145] Kilwa did not owe its wealth solely to the gold trade but also to the trade in rock crystal. And indeed, Kilwa was situated exactly on a crossroad between the gold mines of Zimbabwe in the south and the mines of crystal rock of Madagascar in the east, the redistribution of these products being ensured by the ports of Mayotte and Anjouan. The wealth of Kilwa was thus the result of a specialisation in a trade of products with a high added value. The strategic location of the island guaranteed a total control of the commercial flows. The rock crystal exported by the Swahilis of Comoros came from the mines of Madagascar. The great island had long been known as one of the world's main sources of natural crystal, and Contadini had already suggested the possibility that the crystal of the Islamic world might have come from there.[146] Where the localisation of the main deposits of Madagascan rock crystal are concerned, they were well known and situated in the north of the island. Although rock crystal was often said to have come from Vohemar or Nosy Be, these were only the ports of embarcation and not the places of extraction.[147] Numerous Arab and Persian authors mention a rock crystal from the islands of East Africa, and according to al-Biruni (973–1048)[148] the imported crystal came from the islands of the Zanj. He went on to say that it was exported and carved in the port city of Basra in Iraq. This was the main centre in the Abbasid period.[149]

One of the goods most valued by Muslims was ivory. Despite the presence of Asiatic elephant's, African ivory was preferred by the Indians and the Chinese and was considered superior in size and quality. As al-Masʿudi wrote.[150] the ivory generally exported to Oman and then to India and China, came from Africa. Also in the tenth century, al-Muqaddasi too mentioned the export of

139 Chittick, "L'Afrique de l'est et l'orient : les ports et le commerce avant l'arrivée des Portugais" (1980 b): 19.

140 Bonnenfant & al-Harthi, "Architecture and Social History at Mudayrib" (1977): 116; Lewcock, *Traditional Architecture in Kuwait and the Northern Gulf* (1978).

141 Al-Idrisi (1154) *in* Freeman-Grenville, 1962.

142 Connah, *African Civilizations: an archaeological perspective* (2016): 243.

143 Moffa, *L'Afrique à la périphérie de l'histoire* (1995): 96.

144 Mathew, "The East African coast until the coming of the Portuguese" (1963): 112.

145 De Torres, Ruiz-Galvez & Fernandez, "The Quirimbas Islands Project (Cabo Delgado, Mozambique)" (2016): 61–62.

146 Contadini, *Fatimid Art at the Victoria and Albert Museum* (1998): 16–18.

147 Pradines, "Madagascar, the Source of the Abbasid and Fatimid Rock Crystals" (2020): 44–46.

148 Contadini, *Fatimid Art at the Victoria and Albert Museum* (1998): 17–18.

149 Idem, 20.

150 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 15–16.

ivory to Oman. The elephant tusks were usually sold in a raw state by the towns of Sofala, Vumba Kuu, Mombasa, Malindi, Lamu and Pate.[151] The ivory was then worked in the importing countries, such as Fatimid Egypt according to the Geniza archives.[152]

The trade in human beings was another category of trade. Ibn Battuta explains that the holy wars of Kilwa against the infidels were carried out mainly to capture some slaves.[153] The captives were not intended for domestic but for commercial slavery. The *jihad* against the pagans was in fact a pretext for slave trade. Before the fifteenth century most of the slaves came from Kenya and the Horn of Africa, where the ports of Zeyla and Berbera were known for this infamous trade.[154] The quantity of slaves exported to the Persian Gulf must have been very significant ever since the advent of Islam since it led to the revolt of the Zanj under the Abbasids. The sad quest for slaves had started under the Sassanids in the fifth century and turned into a proper industry in the nineteenth century under the sultanate of Zanzibar. The slavers, or *jallab*, searched for slaves in the ports of Masselage west of Madagascar, in the Kerimba archipelago, in Mozambique, in Kilwa Kisiwani and in Zanzibar. The dhows then sailed up, via Pate, to Jedda and Mocha on the Red Sea. The other slaves were sent on to Turkey, Muscat, Sur and the Sindh.[155]

In exchange, the Swahilis imported manufactured goods produced on a large scale for the eastern markets of the Red Sea, the Persian Gulf, India and China. Kilwa imported textiles, the inhabitants of Dembeni Islamic ceramics and Chinese porcelains. More generally, the Africans imported large quantities of textiles, ceramics, beads and glass-ware. These objects also served as currency. Consequently, the elephant hunters were generally paid in pieces of cloth and glass beads.

The Red Sea or *bahr al-Qulzum* contracts at its southernmost point where the Guf of Aden forms a narrow channel, the famous "Gate of Tears", *bab al-Mandab* (Fig. 104). This strait allowed the Yemenis to control the merchandise which came from the Indian Ocean and Africa. The Yemen had two sides, one turned towards the Red Sea with the ports of Mocca and Aden, and the coast of Hadramawt turned towards the Indian Ocean with the ports of Sharma and al-Shihr, trading hubs between Africa and India.[156] Between 1149 and 1484, the city of Aden was a veritable nexus between the Red Sea and the Indian Ocean.[157] The city exported numerous products, such as incense, pearls, coral, myrrh, grapes and pottery.[158] The export market of Islamic ceramics was entirely dominated in Africa by the black and yellow Yemenis wares in the thirteenth and the fourteenth centuries.[159] At the end of the sixteenth, and for the whole of the seventeenth century, Mocha imposed itself as the first port of the Yemen and the main exporter of coffee (produced in Ethiopia).[160]

151 Pradines, "Du nouveau à l'ouest de l'océan Indien : le cristal de roche et l'ivoire swahilis" (2018): 153–167.

152 Goitein, *The Jewish communities of the Arab world as portrayed in the documents of the Cairo Geniza* (1983): 38 & 224.

153 Moffa, *L'Afrique à la périphérie de l'histoire* (1995): 97.

154 Freeman-Grenville, "The Coast, 1498–1840". *History of East Africa* (1963): 152.

155 Keswani, "Influences culturelles et commerciales indiennes dans l'océan Indien, de l'Afrique et Madagascar à l'Asie du sud-est" (1980): 47.

156 Hardy-Guilbert & Ducatez, "Al-Sihr, porte du Hadramawt sur l'océan Indien" (2004): 95–157; Rougeulle, "Le Yémen entre Orient et Afrique : Sharma, un entrepôt du commerce médiéval" (2004): 201–253.

157 Hardy-Guilbert & Rougeulle, "Ports islamiques du Yémen. Prospections archéologiques sur les côtes yéménites" (1997): 166; Margariti, *Like the place of congregation on judgment day: Maritime trade and urban organization in medieval Aden* (2002): 1–30.

158 Tomé Pires, *Suma Oriental* (1511–15) in Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961).

159 Horton, *Shanga* (1996): 291–292; Pradines, "Rituels funéraires swahili : les sépultures islamiques du site de Gedi (Kenya)" (2000): 167.

160 Tuchscherer, "Les échanges commerciaux entre les rives africaine et arabe de l'espace mer Rouge golfe d'Aden aux XVI^{e} et XVII^{e} siècles" (2004): 159; Ducatez, "Aden et l'océan Indien au XIII^{e} siècle" (2003): 141.

In the north, the Red Sea ends in a Y, its two arms represented by the Gulf of Suez in the west and the Gulf of Aqaba in the east. From the tenth to the twelfth century, the ports were situated at the far end of these arms, with Aqaba in the east and the port of al-Qulzum in the Gulf of Suez.[161] The western shores of the Red Sea had been occupied by different ports ever since Antiquity, notably by Quseir and Berenike which provided protected harbours for the boats returning from the Gulf of Aden. ʿAydhab was an Egypto-Sudanese port which was very active from the eleventh to the fourteenth centuries and which was replaced by Tur, in the south-west of the Sinai Peninsula. Quseir al-Qadim had an economic revival under the Mamluks in the thirteenth and fourteenth centuries.[162] The African merchandise was disembarked mainly in the Egyptian ports and sent on either by river or overland to Alexandria, the terminal link in the Red Sea traffic and the great centre of exchanges between the Mediterranean and the Indian Ocean. Its commercial importance persisted until the fifteenth century when the route of the Indies opened by Vasco da Gama meant that Europe no longer had to buy spices from Alexandria. The relations between the Red Sea and Africa reached their apogee between the tenth and the twelfth century under the Fatimids.[163] The Mameluks retained these commercial ties until the end of the fifteenth century.

The relations between the Swahilis and the Persian Gulf can be traced back to the Sassanid period, if not earlier. The Arab conquest led to a surge in the volume of the merchandise exchanged with China and Africa from the eighth century on. The relations between the Persian Gulf and Africa were marked by the sale of products such as dates or Hormuz carpets, but above all of the ceramics exported from the time of the Sassanids to the nineteenth century.[164] Sohar was one of the main ports of Oman. It served as a port of call at the entry of the Gulf and functioned together with the ports of Siraf and Basra. Despite the Qarmatian invasion in 899, it remained a vital point in the economy of the Gulf for the whole of the tenth century, and al-Masʿudi speaks of the ships of Sohar which sailed as far as the African island of Qanbalu. It was destroyed by the Buyids (Buwayhids) of Shiraz in 971.

The port of Siraf, situated 200 kms south of Shiraz, became more important than Basra towards the middle of the ninth century. Al-Masʿudi tells us that the ships of Siraf set sail for Sofala and the land of the Wak Wak (Madagascar). Siraf was a major port of call in the Persian Gulf under the Buyids. In the middle of the eleventh century, Nasir-i Kusraw wrotes that Bahrain and its port of al-Hasa were the centre of trade in the whole of eastern Arabia, its only rival being the port of Siraf. The earthquake of 977 and the fall of the Buyids in 1050 weakened Siraf which was replaced by Qays in 1060–1080.[165] But despite these events Siraf continued to be an active port until the twelfth century.

At the end of the tenth century, the decline of Baghdad and the rise of regionalisms led to a reduction of ports in the Persian Gulf. According to numerous authors it was at this point that the Gulf was supplanted by the Red Sea, but this theory has been largely disproved by archaeological evidence which shows that the ports were continuously active in the Gulf from the Sassanids up to our days. The Red Sea did not replace the Gulf but competed with it for a brief period.[166]

161 Rougeulle, "Le Yémen entre Orient et Afrique : Sharma, un entrepôt du commerce médiéval" (2004): 201–253.

162 Whitcomb & Johnson, *Quseir al-Qadim* (1978, 1980, 1982).

163 Bramoullé, "The Fatimids and the Red Sea (969–1171)" (2012): 127–136; Allen, *Swahili Origins* (1993): 30–31.

164 Tomé Pires, *Suma Oriental* (1511–15) in Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961); Senna-Martinez, "The Swahili interface, urban trajectories, and state formation in East Central Africa" (1998): 129; Pradines, "Rituels funéraires swahili : les sépultures islamiques du site de Gedi (Kenya)" (2000): 171–172.

165 Ducatez, "Aden et l'océan Indien au XIII^{e} siècle" (2003): 147; De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^{e}–XX^{e} siècle* (2000): 96.

166 Kervran, "Forteresses, entrepôts et commerce : une histoire à suivre depuis les rois sassanides jusqu'aux princes d'Ormuz" (1994): 349.

In 1063, Oman was conquered by the Seljuqs; Sohar was supplanted by Bahrain, Hormuz and Julfar, which became the great maritime powers of the fourteenth century;[167] and Muscat finally replaced the trading stage of Sohar during the fifteenth century. The great ports from the far end of the Arabo-Persian Gulf moved to its opening onto the Indian Ocean and the Sea of Oman.

The commercial ties between India and Africa date back to the first centuries of the Christian era, at a time when India imported and redistributed all sorts of products: rice, corn, sugar, sesame oil, cinnamon, copal, cotton fabrics, tortoise shells and rhinoceros horns. The Swahilis used the term *Wa-Hindi* to designate the populations from the Punjab, Sindh, Gujarat and Deccan. The general term of *Banian* covered six sub-groups of Indian merchants: the Bhattias, the Lohana, the Vanias, the Khojas, the Momens and the Bohras. The Indus Delta had numerous ports, the best known of which was Daybul (Banbhore). Situated at the mouths of the Indus, the port of Daybul experienced an intense commercial activity from the first to the thirteenth century, during the Parthian, Sassanid and Hindu-Buddhist periods and during the Islamic era. It was conquered in 711 by the emir Muhammad bin Qasim. Two inscriptions dating from 727 and 907 were discovered in the great mosque in the centre of the citadel.[168] The town was abandoned in the middle of the fourteenth century with the diversion of the Indus and the invasion of Sindh by Jalaluddin Khawrezm Shah.

Further south, the region of Gujarat is cut up into two gulfs separated by the Kathiawar peninsula. In 1000, al-Biruni reports that the Indian port of Somanat, in the Kathiawar peninsula, traded with the town of Sofala in the land of the Zanj.[169] The gulf of Kutch to the north, and the gulf of Cambay to the south, were very important commercial poles. Bombay on the coast of the Deccan and Calicut were also merchant regions and ports which were highly active as far as the Malabar coast.[170] Indian sailors ensured the transport of merchandise from China and the Far East through the straits of Malacca. In the Middle Ages, Cambay produced a vast number of garments in cotton and silk.[171] These textiles were exchanged for ivory in the towns of Zayla, Berbera, Malindi, Mombasa and Kilwa.[172] Certain Swahili cities, such as Pate, specialised in the redistribution of Indian materials and textiles in the seventeenth century. The monopoly of Indian silk fabrics would end in the mid-nineteenth century owing to the fierce competition of American and English fabrics. Beads were the second product exported by the Indians to East Africa. Mentioned by al-Masʿudi in the tenth century, this particular trade started far earlier and had its roots in Antiquity. Indian beads consisted essentially of cameo glass from Cambay, agates, and cornelians from Bombay.[173] In 1512, Duarte Barbosa described the inhabitants of the islands of Pemba and Zanzibar in these terms:

> In these islands they live in a state of great luxury and abundance. They wear beautiful garments of silk and cotton which they buy from the merchants of Cambay who reside in Mombasa.[174]

From the end of the thirteenth to the middle of the fifteenth century, Gujarat and the city of Cambay (Khambhat) also exported finely carved

167 Whitcomb, *Quseir al-Qadim* (1975): 123–157; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 126; Rougeulle, "Le Yémen entre Orient et Afrique : Sharma, un entrepôt du commerce médiéval" (2004): 201–253.

168 Khan, "Excavations at Banbhore" (1993): 49–55.

169 Salvadori, *Through open doors. A view of Asian Cultures in Kenya* (1989): 8.

170 Keswani, "Influences culturelles et commerciales indiennes dans l'océan Indien, de l'Afrique et Madagascar à l'Asie du sud-est" (1980): 44.

171 Alpers, 1976, p. 25–26.

172 Idem, 24; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 16.

173 Chittick, "Indian relations with East Africa before the arrival of the Portuguese" (1980a): 15–25.

174 Gray, *History of Zanzibar from the middle age to 1856* (1962).

tiles of white marble. These slabs were used in the mosque of Fakhr al-Din in Mogadishu.[175] Besides the ones in Mogadishu, two other plaques have been recorded, one in the mausoleum of the sultans of Kilwa in Tanzania, and the other in Kingany in Madagascar.[176] The Portuguese observed several 200-ton boats from Cambay at anchor in the roadsteads of Mombasa and Malindi.[177] According to Tomas Pires and Duarte Barbosa, Cambay was the largest port of Gujarat between 1514 and 1517.[178] In the course of the sixteenth century, however, the silting up of the bay and the tides made the approach increasingly difficult. The port was replaced by Diu on the Kathiawar peninsula and Surat at the mouth of the Tapti river south of Cambay. In 1510, the viceroy Albuquerque chose Goa as his capital and the commercial flows of Gujarat were diverted towards the ports of Bombay, Goa and Calicut. The Portuguese were only too pleased to destroy the Indian commercial networks between 1515 and 1560 and were determined to eliminate the Muslim merchants of the Indian Ocean.[179] This policy was a windfall for the Hindu and Jain traders, the *Vanias*, who were not affected by the religious exclusion.[180] At the beginning of the seventeenth century the flow of merchandise was taken over by Surat and the Muslim Bohra merchants, returned in force to replace the Vanias of Diu.[181] The Indian communities settled in all the ports of the Red Sea, notably in Mocha in the Yemen and on the African coast.[182] Surat was the main port of the Moghols which allowed luxury goods to be redistributed in the Safavid and Ottoman empires.[183] Its rôle declined in 1741 with the rise of the Bu Sa'idi dynasty of Muscat. In the nineteenth century the group of Hindu Bhattia merchants replaced the Vanias.[184]

With regard to the connections between Africa and China, finally, the existence of Africa had been known in China since the ninth century at the latest. Chinese called it Po-P'a-li.[185] In 1060, the *Hsin T'ang-shu* of Ouyang Hsiu mentioned the African coasts and the town of *Ma-lin* which can only be Malindi.[186] In 1226, Zhao Rugua described the coasts of Berbera (Bipaluo) and present-day Somalia; and in 1295, Marco Polo referred to a Chinese description of Mogadishu and Zanzibar in 1295.[187] Nevertheless, it was not until the first years of the fifteenth century that the emperor

175 Lambourn, "Carving and communities. Marble Carving for Muslim Patrons at Khambhat and around the Indian Ocean Rim" (2004): 105–126.

176 Lambourn, "The decoration of the Fakhr al-Dîn mosque in Mogadishu and other pieces of Gujerati marble carving on the East African coast" (1999): 71 & 77; Pradines, "L'archéologie swahili et la collection Révoil au Musée de l'Homme (Paris)" (1999a): 23–26.

177 Alpers, "Gujarat and the trade of East Africa c. 1500–1800" (1976): 30–32; Chittick, "L'Afrique de l'est et l'orient : les ports et le commerce avant l'arrivée des Portugais" (1980b): 120.

178 Pearson, *Merchants and Rulers in Gujarat. The response to the Portuguese in the sixteenth Century* (1976): 10; Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 132 & 125.

179 Chaudhuri, *Trade and Civilisation in the Indian Ocean. An Economic History from the Rise of Islam to 1750* (1985, reed. 1989): 66.

180 Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961): 130, 138 & 173; Alpers, "Gujarat and the trade of East Africa c. 1500–1800" (1976): 32 & 36; Newitt, *East Africa. Portuguese Encounters with the World in the Age of the discoveries* (2002): 216 et Pearson, *Merchants and Rulers in Gujarat. The response to the Portuguese in the sixteenth Century* (1976): 158.

181 Alpers, "Gujarat and the trade of East Africa c. 1500–1800" (1976): 43; Das Gupta, "Indian Merchants and the Western Indian Ocean: The Early Seventeenth Century" (1985): 490–491.

182 Um, *The merchant houses of Mocha* (2009).

183 Chaudhuri, *Trade and Civilisation in the Indian Ocean. An Economic History from the Rise of Islam to 1750* (1985, reed. 1989): 106; Das Gupta, *Indian Merchants and the Decline of Surat c. 1700–1750* (1994).

184 Alpers, "Gujarat and the trade of East Africa c. 1500–1800" (1976): 26 & 44; Keswani, "Influences culturelles et commerciales indiennes dans l'océan Indien, de l'Afrique et Madagascar à l'Asie du sud-est" (1980): 45.

185 *Idem*: 8.

186 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 38; Strandes, *The Portuguese Period in East Africa* (1899, reed. 1961): 81–103; Chabrol, *L'Afrique orientale dans les sources géographiques chinoises du IX^e au XV^e siècle* (1998): 65 & 77.

187 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 42.

Yong Le launched several fleets commanded by the admiral Zheng He[188] towards the western Indian Ocean. These expeditions were not regular liaisons, but embassies dispatched to raise the prestige of imperial China. In 1417–1418, Zheng He passed by Hormuz, Aden and Malindi. On his sixth crossing in 1421–1422, he visited Barawa and Mogadishu. Apart from these diplomatic voyages China never had direct commercial relations with Africa, but it remained the principal exporter of ceramics on the Swahili shores. The Indian coast of the Deccan was the area of intermediate reloading for the large Chinese junks. In 1219, as the result of monetary problems, the Chinese government ordered its employees only to pay for imported commodities with silk, lacquer, and porcelain. This explains the increase in volume of ceramics intended for export in the Song period. The most active ports were Wenzhu, Fuzhu and Quanzhu south-east of Fujian.

3.5 Technology and Construction of the Swahili Mosques

3.5.1 *Builders and Materials*

The simplicity of the materials used for the construction of the Swahili mosques only required the mobilisation of a very few craftsmen: a carpenter for the doors and the roof, a mason known as *fundi*, and a craftsman specialised in the manufacturing of lime (often the mason himself). Iron tools were used for the dressing of the coral and the wood needed to build the mosques. The Swahili masons and carpenters used picks, axes, saws, adzes, planes, scissors, and trowels.

The Swahili towns were surrounded by mangroves which supplied a formidable potential of raw materials for the building of roof frames in mangrove wood. The coconut plantations provided palm leaves which were woven and hooked onto a frame 40 cm long. The panels thus obtained (*makuti*) were used to cover the roofs of the smaller mosques.

For their masonry, the Swahilis also used sea coral, an extremely original material peculiar to the cultures of the Indian Ocean, notably in the Maldives and Sri Lanka.[189] According to our first observations, the origin of architecture in sea coral can be placed between India and Indonesia. The Maldives and Sri Lanka were situated at the epicentre of this technique and coral architecture may well have come from this region. Its diffusion by the Abbassid sailors in the western Indian Ocean, and particularly in Africa in the ninth century, like its globalization under the Buyids and the Fatimids in the eleventh century, was closely connected with international Muslim trade.[190]

The boulders of madrepore or porite corals were collected at a low tide in the lagoons between the beach and the great coral reef. The largest blocks of coral were fished in the sea around the reef and sometimes measured several metres in diameter. Divers tied ropes round the blocks which were then hoisted onto boats. Sea coral has a fine and very dense structure. It is soft and easy to work when it is damp and fresh, but it hardens as it dries. This fine-grained coral was used to make the walls of which it formed the bond, but it was used above all for the moulding and the decorations of the mosques, especially for the *mihrab*. Each briquette of coral had a width of between 6 and 10 cm; each block was placed in a notch of the block behind it. With this assembly technique there was no need of mortar. The briquettes were perfectly jointed and cut according to their position, with no standardisation and wastage of raw material. The mouldings were performed by adding a second series of briquettes of 6 cm sunk behind the first one and forming a right angle. Sometimes the angles were chamfered from 2 to 3 cm in order to

188 Gungwu, "Les Chinois et les pays situés de l'autre côté de l'océan Indien" (1980): 69–75.

189 Pradines, "Islamic archaeology in the Maldives", *Journal of Material cultures in the Muslim world* (2021): 200–201.

190 Pradines, "Coral stone: an Indian Ocean architecture" in *Oceanic Circularities: The Indian Ocean in the Modern World*, Georgetown University, Qatar, forthcoming.



FIGURE 105
Coral limestone quarry, lamu archipelago, Kenya

obtain salient angles. A single craftsman could suffice for this work, but the unique character of each block to be assembled made it a relatively long task.

From the eighteenth century on the use of sea coral was abandoned and the decorations on the doors, the *mihrabs*, and the little niches (*zidaka*) were made in stucco, as in the Yemen and Oman.

Coral limestone, finally, is the commonest geological substratum in East Africa. It is a sedimentary limestone formed by a conglomerate of dead coral, shells and sand cemented by a carbonate of calcium. The coralline limestone fossil is a large-grained vacuolar rock with a rough structure that can only stand a somewhat rough cutting. It is exploited in open quarries. The limestone on the immediate edge of the sea was not used since it was too porous and too hard to be cut. When the bedrock was not close to the surface the workmen had to reach it by removing the vegetal earth on its top. Since coral limestone is a very soft material the techniques for extracting it were fairly makeshift. The workmen isolated the blocks on the quarry face by digging furrows all round them with the help of picks (Fig. 105).[191] The blocks were levered away from the substratum with an iron bar and a hammer, and were squared with a gradine

191 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 229–231.

or a machete (*panga*). The coral blocks which had been roughly cut were then taken either on a man's back or by boat to the building site. They were easy to transport since their cellular structure made them very light. The blocks were sometimes squared and dressed to be used as quoins for doors, windows and niches. The two visible salients were properly cut while the rest of the irregular block was drowned in the masonry. Coral limestone has been used in Swahili architecture from the thirteenth century to the present day.

Lime is the main element used to make mortar, plaster and stucco, obtained in East Africa from the combustion of sea coral or fossil coral. It is produced by calcination at a high temperature (1000° C) of blocks of sea coral or limestone. The calcium oxide obtained is then hydrated to become slaked lime. The fabrication of lime is described in 1505 and according to a member of Almeida's expedition to Kilwa:

> The lime is prepared as follows: great masses of wood are piled up in a circle, dead coral is placed on the wood, and everything is then burnt. After that the process is the same as it is in Portugal.[192]

Lime is prepared in this way to this day. The combustion of the coral takes place in the open on the beach. The coral is piled up to a height of 50 cm on top of a heap of wood 5 metres in diameter and one metre high; the fire lit can burn for anything between 12 and 34 hours, sometimes even for three or four days. According to Allen,[193] the lime can be prepared by burning dead coral in wells ventilated by lateral pipes. These are the pitlike kilns. The calcareous substance obtained after combustion is ground into a fine powder to produce lime. The limestone mortar is the basic binding material for the walls built in coral and limestone. It consists of one third of lime and two thirds of sand. The mortar made next to the site is transported in wicker baskets or calabashes.

For the fabrication of gypsum, a plant juice was added, *lauraceae filiformis*, known in Swahili as *kowe*.[194] In the eighteenth century, the masons made a sort of stucco by adding sand to the preparation in order to harden the plaster to be used for eventual sculptures or incisions. A coat of plaster was often placed with the help of trowels on the inner and outer walls of the mosques, sticking easily to the porosities of the fossil coral. The plaster protected the walls in coral stone which tended to harden in the sun and to crack. The outer sheath was often repaired because of the heat and the rain which split the coating. Garlake observed the presence of five layers of plaster, each 1 cm thick, on the outer walls of the mosque of Kaole n°1. These walls were sometimes decorated with graffiti, as in Songo Mnara, Gedi and Kilwa n°1 where engravings in the plaster represented boats.

3.5.2 *The Foundations and the Floors*

The foundations of the Swahili mosques were characterised by a total lack of care or planning. The walls rarely had a footing and reposed directly on the limestone bedrock, on an earlier building, or on the sand.[195] This is why these buildings were so short lived, since the walls could not resist the strong pressure of a very heavy roof in panels of coral held in place by mortar. There are thus numerous examples of mosques which collapsed: the great mosque of Kilwa, the *jamia* of Ungwana, the *masjid* Mbaraki … The foundation trenches of the walls can sometimes be detected, but they were shallow: about 20 cm, except in the case of the *jamia* of Gedi, where a footing is to be found at one metre under the level of the medieval floor. In certain cases the walls were "lucky enough" to rest on an earlier building, as in Shanga. The columns

192 Garlake, *The Early Islamic Architecture of the East African Coast* (1966).

193 Allen, "Swahili architecture in the later middle ages" (1974 a): 42–47 & 66–68.

194 Allen, "Swahili ornament: a study of the decoration of the 18th century plasterwork and carved doors in the Lamu region" (1973): 1–14 & 87–92.

195 Pradines, *Gedi, une cité portuaire swahilie* (2010): 44–45.



FIGURE 106 Plaster floor of the thirteenth century mosque in Gedi

inside the mosques, on the other hand, were provided with solid foundations, as we see in the great mosque of Kilwa. They had circular foundations in coral concrete which were 30 cm in diameter. In Mosque n°2 in Kaole, the pillars with a diameter of 26 cm rest on masoned bases 60 cm in diameter and 95 cm in depth.

In order to make up for the weakness of the foundations, the Swahili builders used two techniques. The first was the use of buttresses to prop up the high walls and the heavy roofs on a weak foundation, as in the great mosque of Kilwa, Kaole n°1 or Shanga. The second technique made up for the absence of foundation trenches for the walls with an internal and external filling to create an artificial podium. The building was half buried, and the prayer hall was reached by a flight of stairs, as in the mosque of Fakhr al-Din. Its floor level is 3 m lower than that of the adjacent streets and one has to go down a few steps to enter the building. This is not a phenomenon of urban stratification but rather a technique of pitlike construction which compensates for the absence of foundation trenches.

The floors of the Swahili mosques are made up of a layer of plaster 2 or 3 cm deep on top of a primer masonry made of quarry stones and mortar which prevents the plaster from absorbing the water of the natural ground (Fig. 106). In Mosque n°2 of Kaole, the plaster coating lies directly on the natural ground. These plaster floors have often been restored and it is not uncommon to find, as in Shanga or Domoni,[196] two or three layers of plaster one on top of the other which provide valuable information about the relative chronology. The floors of the mosques of the Swahili coast were thus raised with respect to the outer ground level, except, of course, in the case of mosques such as

196 Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XIth–XVth centuries a.d)" (1992): 81–128.

Fakhr al-Din where the ground level is 3.25 metres below that of the street.

3.5.3 *The Walls and Masonry*

The walls of the mosques on the Swahili coast were between 40 and 56 cm thick. This corresponded to a basic Arab unit of measurement, the *dhira*, a cubit or the length of a forearm from the elbow to the index finger, according to multiples of which every mosque was built.[197]

The technology of the stonework in sea coral appeared in East Africa between the ninth and the tenth century in Shanga in the Lamu archipelago and in Dembeni in the archipelago of Comoros.[198] During this period, only little uncut blocks of coral were used, bounded by a mud mortar (Fig. 107). The blocks of coral were collected at a low tide in order to be used in their raw state in the walls of houses and mosques. They were the base courses of the walls and were sometimes used together with wickerwork. Mortar of red clay can also be seen in ancient sites of the ninth and tenth centuries, and later still, up to the fifteenth century in Gedi and Ungwana.[199]

Between the eleventh and the twelfth century the techniques of construction changed radically and became extremely elaborate. The principal characteristic of the mosques of this period was the exclusive use of sea coral well cut into little quadrangular blocks of horizontal courses with lime mortar to build the walls (Fig. 108). This type of masonry was typical of the site of Sanje ya Kati



FIGURE 107 Natural raw blocks of coral bounded by a mud mortar, Dembeni, ninth to tenth century

197 Greenlaw, *The coral building of Suakin*. (1976); Ghaidan, *Lamu* (*a study of the swahili town*) (1975).

198 Horton, *Shanga* (1996): 224–242; Pradines and alii, "Irone Be (Dembeni, Mayotte) Rapport de mission 2015" (2016): 44–54.

199 Pradines, *Gedi, une cité portuaire swahilie* (2010): 111–157; Kirkman, *The Arab City of Gedi* (1954); Kirkman, *Ungwana on the Tana* (1966).



FIGURE 108 Eleventh to twelfth century masonry with sea coral ashlars and regular courses, Sanje ya Kati

and of the first great mosque of Kilwa Kisiwani.[200] The same technique would be used along the entire Swahili coast during the whole twelfth century. If the collection and utilisation of natural resources such as coral was the work of local populations, the introduction of new elaborate techniques of masonry has been the result of external influences due mainly to the sailors of the Persian Gulf and the coasts of India. The dry laid assembly (dry stone) was used to build the mouldings of the frame of the mihrab. There was no need of mortar or just very little. The briquettes were well jointed and cut for their position, and there was no standardisation and waste of building material. The mouldings were made by placing a second series of briquettes of 6 cm behind the first one and forming a right angle.

The thirteenth century was a period of transition in which Swahili masons abandoned the use of blocks of sea coral and preferred ashlar blocks of fossil coral limestone. The masons continued to cut quadrangular ashlar blocks connected by a lime mortar with regular levelling courses every 90 centimetres. The stonework of the caravanserail of Husuni Ndogo in Kilwa Kisiwani, Fakhr al-Din and the *jamia* of Mogadishu are representative of this technique and period of transition (Fig. 109). Sea coral, however, continued to be used until the seventeenth century, notably in Kua, but would only be used for fine sculpture, particularly for the *mihrabs*, door jambs and window pillars, rope mouldings, friezes, niches or *zidaka*, and inscriptions.

In the fourteenth century, the Swahili masons realised that the cutting of standardised blocks in coral limestone had few advantages in view of the waste of time and manpower. With the expansion

200 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974); Pradines, "L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel" (2009), Pradines, *Gedi, une cité portuaire swahilie* (2010): 27.



FIGURE 109 Thirteenth century masonry with regular courses of fossil coral limestone ashlars, walls east of the great mosque of Kilwa

of Swahili cities, the builders opted for new building techniques which were both simpler and faster. The walls were built with irregular small blocks of coral limestone held by a framework in coral concrete which completely replaced the earlier bonded walls. The clamping of the corners of the walls was still performed with good, dressed stones. The Swahili masons added gravel and fragments of fossil coral to the mortar which thus became more resistant. This true coral cement was used during the Middle Ages and the modern period. The masonry consisted of beds of mortar with irregular limestone blocs (fossil coral) which formed a little polygonal stone facing about 20 cm in diameter. This display of irregular blocks presented a stacking bounded by clay or lime mortar.

It was a simple building material, easy to install thanks to the technique of coffering. Coffering consisted in pouring concrete between planks of wood where it would be left to dry and then in removing the planks. This technique made it possible to raise cupolas or even pillars in which rectangular plaques of coral were inserted, as in Kilwa Kisiwani or Songo Mnara.[201] The walls had a stratified appearance since they were set up in a wooden framework which had shrunk from

201 Pradines & Blanchard, "Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie" (2005): 28; Pradines & Blanchard, "Songo Mnara. Etude architecturale d'une ville swahilie médiévale" (2018): 9–33.



FIGURE 110 Fifteenth century formwork masonry with fossil coral limestone walls bounded in mortar (concrete), eastern wall of the southern extension of the great mosque of Kilwa

drying. They would often fall in blocks of between 60 cm and 1 m, leaving a face which was flattened at the summit and corresponded to the lit d'attente of the upper portion of the wall. The lateral faces of the walls bore the imprint of the coffering and the circular or square holes arranged horizontally every metre. In the early fifteenth century, the houses of Gedi were pierced by a series of square holes, their sides 20 cm long, spaced horizontally at a distance of between 1 and 1.4 metres (Fig. 110). These putlog holes served to attach the framework and corresponded to the position of the lower cramps after allowing the shuttering panels to be kept in place during the works.[202] The shuttering panels were the wooden planks between which the layers of mortar and stones had been deposited. The wooden putlog holes, which crossed the walls entirely, could also serve to prop up scaffolding with no vertical support. Such scaffolding was indispensable as a support for the masons and their tools when they were working at a height. Wooden elements were sometimes inserted in the walls of certain mosques, as at Ungwana n°1, Kunduchi and Kilindini in Mombasa. These were circular poles, 11 cm in diameter, arranged horizontally at a vertical interval of 65 cm. They had no connection with the doors or windows but gave a flexibility to the building and made it possible to control the horizontality and unicity of the wall that had been set up.[203] In the mosque of Mbaraki in Mombasa, the walls rested on low beams, the wood in this case being used as a foundation footing.

202 Pradines, *Gedi, une cité portuaire swahilie* (2010): 125–134.

203 Sassoon, "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island" (1982 b): 79–97.

3.5.4 *The Openings: Doors and Windows*

The aesthetics of the symmetry between the main bays and the entrances of the mosque was not always respected. The main doors of the Swahili mosques did not open systematically between two arches. They gave onto a row of columns, as in the *jamia* of Mnarani or Mosque n°2 of Ungwana. All that remains of the doors are the stone sills. There is no trace of a hinge, an iron pivot or a wooden jamb-lining. The threshold of the mosques of



FIGURE 111 Blocked windows transformed into niches, great mosque of Kilwa, twelfth to thirteenth century



FIGURE 112
Window and niche for Qurans, Tsingoni, Mayotte

Tongoni, Mbweni and the *jamia* of Gedi was marked by a rectangular beam 18 to 27 cm thick, raised 5 cm above the ground level of the mosque and wedged between two coral blocks at the base of the supports which were cut in the shape of an "L" to fix a wooden door sill.

The columns and the arch of the doors were sometimes decorated with three or four mouldings on a folded edge. This edge with an acute angle of between 75 and 80° gave a greater depth to the doors. The same technique was also used for the *mihrabs* of Tongoni. A little disconnection can be seen at the beginning of the pointed arch surmounting the doors of the mosques of Fakhr al-Din or the great mosque of Kilwa. This vertical crack is typical of the doors of the mosques and the *mihrabs* of the groups of Tongoni and Mogadishu in the thirteenth and fourteenth

centuries. A broken or ogee arch generally overhung the entrance doors of the mosques. Lintelled openings, as in the *jamia* of Ungwana, were very rare.[204]

The oblong quadrangular window was the most frequent on the east coast. There were also very narrow windows which looked like arrow slits, such as those which enframed the *mihrab* of Takwa. The other windows varied according to the shape of the arch which surmounted them: an ogee arch for the windows of the mosque of Dege and eccentric or recticurvilinear arches for the windows of the lateral chambers of the mosques of Takwa and Kua. As in the case of the windows, there were different models of niches which corresponded to a variation of the arch crowning them (Fig. 111). These niches, *zidaka* or *vidaka* in Swahili, probably served to shelve copies of the Qur'an or as receptacles for the built-in wooden furniture, but certainly not for oil lamps since the carbonic gas emitted by the flame would have blackened the ceiling of each niche – and this has never been seen (Fig. 112).[205]

The stucco windows were made off site. The craftsman would spread a thick layer of plaster on a large plank of wood, trace the decorative patterns required, and then clear out the open spaces with a sharp blade in a half dry plaster. The doors of the mosques and their supports were often decorated with incised geometrical and arabesques patterns. Numerous examples from the eighteenth and nineteenth centuries are still visible in the towns of Lamu and Zanzibar.[206]

3.5.5 *The Supports: Columns, Pillars and Arches*

The first type of support used to sustain the archways or, directly, the roof of a mosque, was the wooden column known as monoxyle, attested ever since the twelfth century in the mosques of Shanga, Gedi and the first mosque of Kilwa (Fig. 113).[207] At the time of its renovation in the fourteenth century the great mosque of Kilwa experimented with octagonal monolithic pillars cut from a single block of fossil coral 40 cm long and 140 cm high (Fig. 114). These octagonal monolithic pillars were placed on square bases, and attached to the ceiling by arches. Later, the composite support of coral panels inserted in concrete was introduced, sometimes together with an internal wooden post. Eight panels were needed to form an octagonal pillar, each panel being no more than 50 cm high. This meant that many drums had to be set up in order to obtain a pillar. Each panel was only cut on one face, while its irregular back was lodged in the concrete. The sides were well cut in order to facilitate the junctures between each panel. The composite support could be octagonal, like the one of the great mosque of Kilwa or Tongoni, square as in Ungwana, or rectangular as in Gedi (Fig. 115). The octagonal pillars of the mosques of Mnarani and Kitoka had little niches to contain the oil lamps (Fig. 116). The pillars rested directly on the ground or were set in an octagonal base in dressed coral, as is the case for the wooden columns in Mosque n°2 of Kaole (Fig. 117). The pillars often had a square or octagonal base, but this was concealed by a rise in the floor inside the mosque, as in the great mosque of Kilwa.

The columns were connected to each other by arches, a capital sometimes ensuring the transition from the arch to the column. In the mosque of Kilindini in Mombasa, the capitals were in direct contact with the ceiling. The archways were not systematic on the east side, but always consisted

204 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 27–29.

205 Vérin, *Les Echelles Anciennes du Commerce sur les côtes nord de Madagascar* (1975): 184–186.

206 Allen, "Swahili ornament: a study of the decoration of the 18th century plasterwork and carved doors in the Lamu region" (1973): 1–14, 87–92; Allen, "Swahili culture reconsidered: some historical implications of the material culture of the Northern Kenya Coast in the Eighteenth and Nineteenth centuries" (1974b): 105–138.

207 Horton, *Shanga* (1996); Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 62–74.



FIGURE 113 Octagonal wooden (monoxyle) column base, fourteenth century in the mosques of Gedi



FIGURE 114 Fourteenth century octagonal monolithic pillars, great mosque, Kilwa Kisiwani



FIGURE 115 Octagonal pillars, great mosque, Kilwa Kisiwani, fifteenth century

of broken arches, except in the nineteenth century when, under Indian influence, they became polylobal. They made it possible to raise the ceiling of the prayer hall and delimit the east-west bays. In order to support the master beams of the great mosques, such as Gedi and Ras Mkumbuu, they were attached to the east-west walls by pilasters. The spacing between the columns depended on the length of the beams in mangrove wood. An original characteristic of the mosques on the



FIGURE 116 Octagonal pillars of the small mosque, Mnarani of Kilifi, Kenya

east coast can be seen in Tongoni, Ras Mkumbuu, Ungwana n°1 and 2, Ndumi, Gedi n°1, Kilwa n°3, the *jamia* of Mogadishu and many other buildings. All these mosques had in common one or three rows of columns, the central row always facing the *mihrab*. This arrangement had two possible functions: it could either allow an extension of the range of the beams in mangrove wood, in which case the useful would have precedence over the aesthetic, or it could be the result of a Zaydi religious influence, since we know that a row of pillars also concealed the *mihrab* of the mosque in Aden.[208]

208 Serjeant, "Mihrab" (1959): 439–453.



FIGURE 117 Wooden columns set in sea coral octagonal base socket, mosque n°2 of Kaole, Tanzania

3.5.6 *Roofing and Covering: from Palm Leaves to Cupolas*

Most of the Swahili mosques had a flat terrace roof. The simple coverings in mortar consisted of a cross brace of wooden rods with a diameter of between 2 and 4 cm. The wooden brace was then covered by a wickerwork of stretched matting, and, after that, by rammed earth or mortar, and finally by two layers of plaster for the insulation of the roof. The heavier roofs consisted of carved rectangular coral panels laid on parallel wooden beams, all fastened by a coat of mortar between 20 and 40 cm thick. This type of covering was very frequent from the thirteenth to the fifteenth century. It can be found, for example, in Ras Mkumbuu, Kilwa, Kilindini and Mbaraki of Mombasa and Mnarani of Kilifi. The medieval mosques had heavy roofs resting on walls with inexistent foundations, often built on sandy and unstable terrain. The tropical rains and the sun soon split the roofs. Weakened, they collapsed after a century or two. The roofs were plastered on the two faces in order to isolate the structure and to make it more aesthetic, but this covering underwent frequent renovation because of the rains. The terrace was never completely horizontal. A system of grooves in the plaster allowed the rain water to be caught and evacuated by coral gargoyles cut in a rectangular block between 15 and 25 cm wide, 10 to 15 cm deep, and 45 cm long. A canal 7 cm wide and 3 cm deep was dug in the block.[209]

209 Sassoon, "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island" (1982 b): 79–90.



FIGURE 118 Ceiling with mangrove poles, Chole, Mafia Island

The flat terrace roofs of the mosques on the east coast were supported by square or rectangular beams between 15 by 5 to 40 by 15 cm for the master beam of the mosque of Takwa. Judging from the negatives left on the summit of the walls just above a little corniche the beams were spaced from one another at a distance of 23 cm and placed at a height of between 1.80 and 2.25 m.[210] They came from the mangroves close to the coastal sites. Mangrove wood (*terminalia brevipes*) was the most widely used, called by the Swahilis *mwangati* (Fig. 118). The extent of the beams was always between 1.80 and 2.80 m, a limited range which explains the squat shape of the medieval mosques. Large buildings needed numerous pillars to sustain the small longitudinal and transversal beams which supported the roof. Furrows at the top of the pillars were introduced to prevent the movement of the beams, as in the mosques of Kilindini and Mbaraki in Mombasa.[211]

The small, or the earliest, Swahili mosques have not left any fragment of a roof in concrete or in mortar and must have been covered in wattle and daub or by a wooden framework with palm leaves (*makuti*) (Fig. 119). The covering was in palm leaves fastened on fine poles of mangrove wood, a type of light roofing that required constant upkeep.

210 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 23–26; Kirkman, "Takwa, the Mosque of the pillar" (1957c): 175–182.

211 Sassoon, "Mbaraki Pillar & related ruins of Mombasa Island" (1982 a): 26–33; Kirkman, "The friday mosque at Kilindini, Mombasa" (1982): 99–105.



FIGURE 119 Makuti panels for vegetal roof, Songo Mnara

The cupola was a type of covering introduced into East Africa with the mosque of Fakhr al-Din in Mogadishu (Fig. 120). No earlier prototypes are known before the thirteenth century. The polygonal cupola with flat corners of the mosque of Fakhr al-Din was composed of admirably adjusted quarry stone. In the north of Kenya, the mosque of Mwana, situated at the mouth of the river Tana, had a system of covering very similar to that of the mosque of Mogadishu, but with conical domes made of coral concrete formworks.[212] The mosque measures 10 by 20 m with three rows of columns,[213] those at the end of prayer hall being octagonal. The prayer hall was covered by eight bulbous domes and was a local interpretation of the mosque of Fakhr al-Din. Mwana exploited this form of conical dome to cover the entire prayer hall (Fig. 121) in a mosque which was famous for the quality of its roofing. The mosque can be dated to the fourteenth century on the basis of fragments of Iranian bowl inserted in the apex of a dome. Each dome was decorated in the same way, the intrados being ornamented with inlay ceramics.

212 Wilding, "A preliminary note on the second mosque at Mwana" (1975): 149–150; Ghaidan, *Lamu. A study in conservation* (1976): 30.

213 Wilding, "A preliminary note on the second mosque at Mwana" (1975): 149–150.

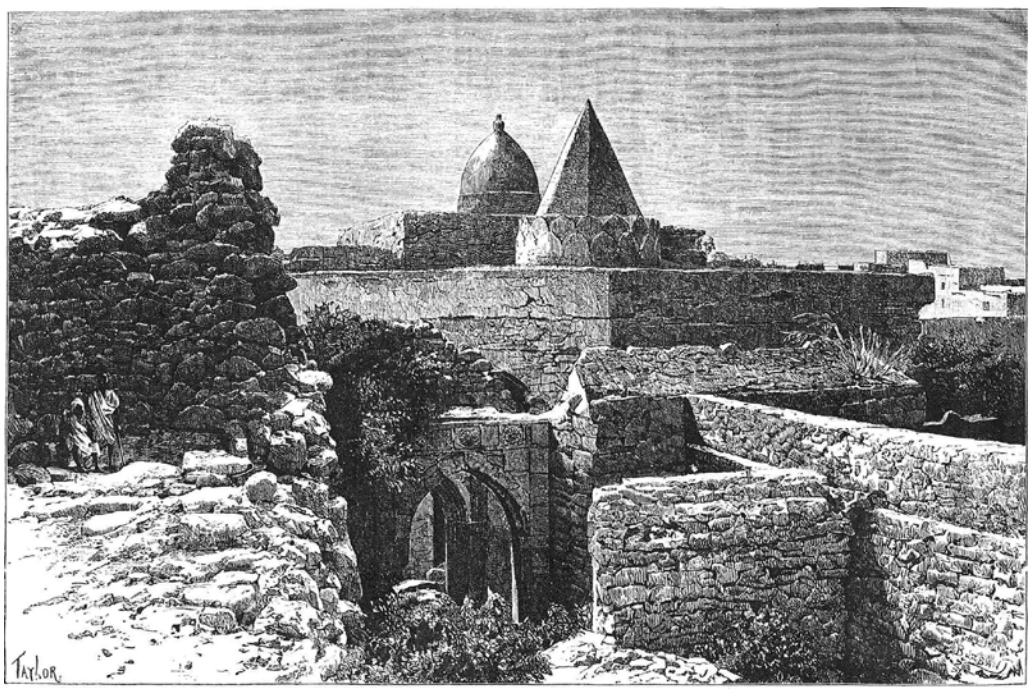


FIGURE 120 Conical dome of Fakhr al-Din mosque in Mogadishu



FIGURE 121 Mosque of Mwana, northern Kenya

This archaeological site may have been the town of Quitau mentioned by the Portuguese and situated at the entrance of Formosa Bay.

Not far from Mwana, the town of Ungwana was the largest establishment of the delta of the Tana river, with an intramural surface of 18 hectares and eight mosques.[214] The great mosque of Ungawana dated from the thirteenth century. This rectangular building had four doors to the west and another four symmetrical ones to the east. The walls were in coral ashlar blocks held in place by red clay and covered by plaster. The roofing of the prayer hall must have consisted of the same material since the debris in the central hall was very important. In the fourteenth century, the original mosque was reconstructed with thicker walls. The four western doors gave onto an antechamber divided by a row of six pillars. The prayer hall consisted of three longitudinal wings and four bays. The roofing of this prayer room was made up of ten little domes and, in the north-south extremities, by barrel vaults.[215] Celadons were inserted in the intrados of the coupolas, and a small vase surmounted the extrados. This organisation of the roofing may have been influenced by the neighbouring mosque of the town of Mwana unless it was the other way round and Ungwana influenced Mwana. Archaeological excavations in Mwana alone could solve the problem. The second mosque of the town of Ungwana (n°2) had a rectangular plan, it was characterised by its conical vault surmounted on the extrados by a little vase as in the mosque of Fakhr al-Din in Mogadishu. The mosque was built in the thirteenth or fourteenth and restored in the fifteenth century (Fig. 122).

The simple cupola known as hemispheric was attested on the east coast as early as 1302 with the enlargement of the great mosque of Kilwa (Fig. 123).[216] Since the octagon was the best transition towards the circle of the cupola, the interposition of pendentives between the calotte and the square cage carrying the cupola placed the thrust of the structure in the corners.[217] The cupola on corner squinches had been known in Iran and Egypt ever since the twelfth century.[218] The cupolas were made with coral concrete, moulded on a wooden preform. They were supported by a wooden arch which allowed a coral concrete between 20 and 30 cm thick to dry. The intrados of the cupolas was encircled by a cornice in two mouldings. Sometimes the intrados was decorated with inlay ceramics as in Kilwa n°2 and Jangwani, or with triangular section mouldings in the plaster which descended from the summit, as in the cupolas of the great mosque of Kilwa in 1430. The space was divided into six north-south bays and five east-west ones. Each bay was covered by a hemispheric cupola. The cupolas were arranged in the central north-south axis and all round the prayer room. Two domes had a moulded vault in the central bay, and the remaining eight bays were capped by barrel vaults (Fig. 124).

This chapter ends with the barrel vault. It rested on master archways and covered a larger space than the hemispheric cupola. It was rare in East Africa, where we find it, for example, in the sites of Kongo (Tiwi) (Fig. 125),[219] Kilwa n°2, Ungwana n°1 and Sanje Majoma in Kilwa (Fig. 126). The mosque of Kongo was situated to the south of Mombasa, not far from Diani. Dating from the late fifteenth century, it is of interest since it was covered by a series of barrel vaults,[220] and its walls were

214 Kirkman, *Ungwana on the Tana* (1966); Abungu, *Islam on the Kenyan coast: an archaeological study of mosques* (1986): 55–56; Wilson, *The Monumental Architecture and Archaeology North of the Tana river* (1978): 58–65.

215 Ghaidan, *Lamu. A study in conservation* (1976): 27 & 30; Wilson, *The Monumental Architecture and Archaeology North of the Tana river* (1978): 70–73.

216 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 65–66.

217 Rumpler, *La coupole dans l'architecture byzantine et musulmane* (1956).

218 Pradines, S. "Burg al-Zafar, architecture de passage des Fatimides aux Ayyoubides" (2016): 100.

219 Garlake, *The Early Islamic Architecture of the East African Coast* (1966).

220 Knipe, *The Kongo Mosque* (1985).

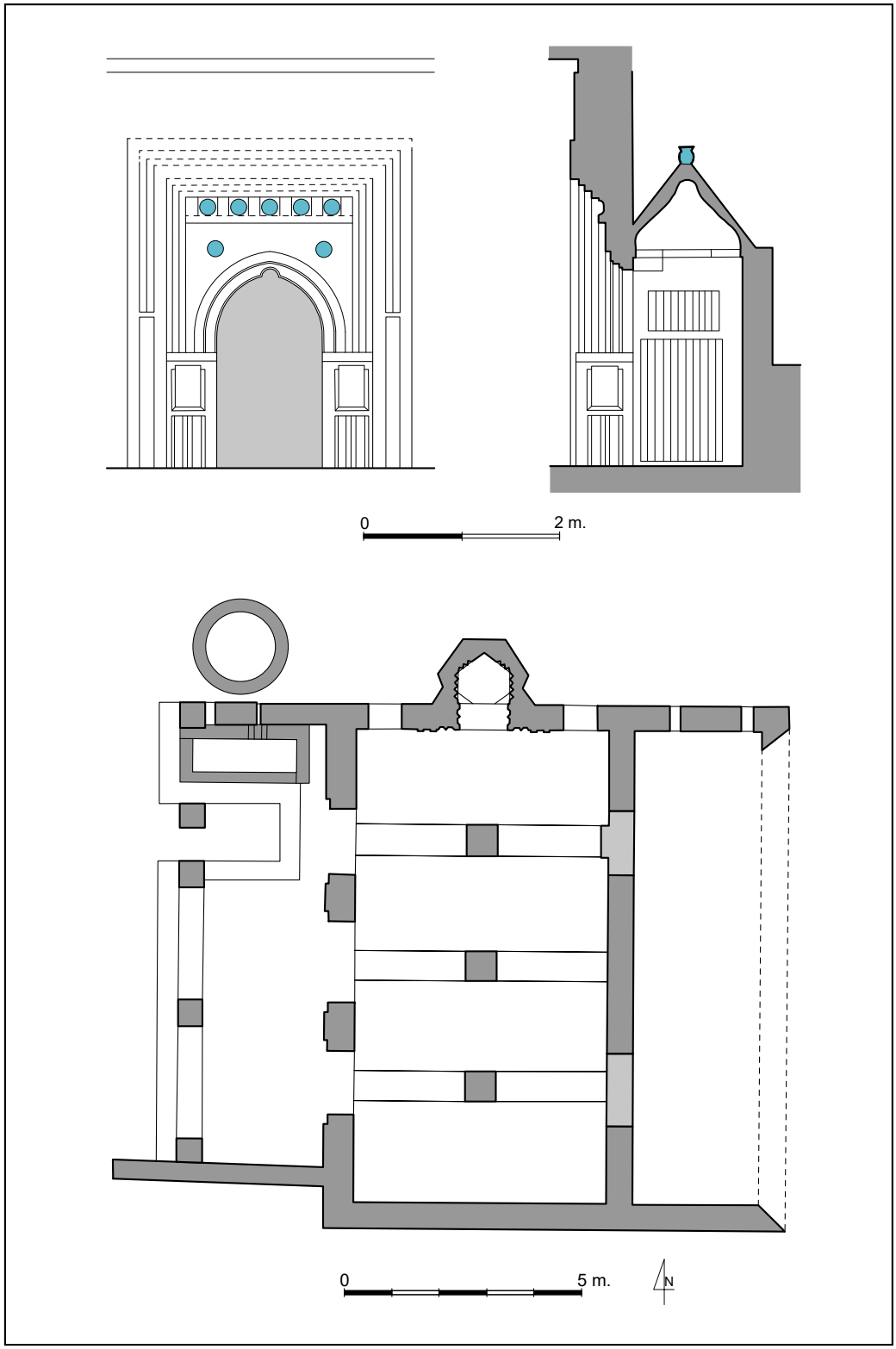


FIGURE 122 Plan and section of the small mosque (n°2) in Ungwana



FIGURE 123 Main entrance of the southern extension of the great mosque in Kilwa, 1302 AD



FIGURE 124 Barrel vaults and domes, Great Mosque of Kilwa Kisiwani



FIGURE 125 Barrel vaults of Kongo mosque (Tiwi)



FIGURE 126 Barrel vaults of the mosque of Kilwa n°2

supported by large buttresses to bear the weight of such a covering.[221]

3.6 Morphology of the Swahili Mosques

3.6.1 *The Plan of the Swahili Mosques*

The Swahili mosques were generally small square or rectangular buildings. The prayer room had a north-south orientation and was flanked by narrow lateral wings generally a third of the width of the prayer room. The Swahili mosques did not have a central courtyard but were sometimes flanked by small courtyards with a well reserved for ablutions. They did not have a minaret tower. The prayer was called from the roof to which access was gained by way of a little staircase behind the *mihrab*. The niche of the *mihrab* formed a quadrangular protuberance jutting out from the mosque. The Swahili mosques had similarities with the mosques in southern Arabia, Yemen, and Oman, with a longitudinal prayer room, hardly any courtyards, flat terrace roofs and sometimes a row of pillars on the axis of the *mihrab*.[222]

As already mentioned, most of these mosques had symmetrical lateral chambers to the east and the west. Very long and narrow, they gave the mosque the shape of an elongated rectangle (Fig. 127). This addition was visible when the thickness of the walls of the most recent chambers differed from the thickness of the walls of the prayer hall, when the jamb-lining and the arch of a door contrasted with the style of the doors of the primitive prayer hall, or when an early plastering was interrupted by an added wall or by the reconstruction of a part of the wall. Archaeological research provided information about the evolution of these mosques. Horton, for example, could demonstrate that the lateral chambers of the mosque of Shanga were built in about 1280.[223]

What were the reasons for the creation of lateral wings provided with secondary *mihrabs*? The first logical explanation would have been demographic: with the economic expansion between the thirteenth and the fifteenth century the population of the towns increased and required larger religious buildings. This was the case with the great mosque of Kilwa, enlarged and restored in the fifteenth century. For the *jamia* of Ungwana, on the other hand, there was a later reconstruction of the prayer hall with a new *mihrab*. The mosque of Mbaraki stretched along an east-west axis and had a second *mihrab* in the east chamber. This *mihrab* may have been erected in order to replace the first after the collapse of the roof of the prayer hall.[224] Archaeological excavations of a Friday Mosque on the island of Tumbatu brought to light the thirteenth-century building.[225] The roof was supported by nine octagonal wooden columns which have left traces in negative. A *mihrab* was built into the thickness of the wall of the east wing: it was not added but was part of the original plan. The same observation was done on a twelfth century mosque in Sanje ya Kati.

According to Garlake, the lateral room was reserved for women who could thus pray separately from the men.[226] However, I tend to agree with Donley-Reid, Swahili women did not go to the mosque and their domain was limited to the home.[227] For Horton, it was not a wing reserved for women but an indication, rather, of the

221 Wilson, "Spatial analysis and settlement patterns on the East African coast" (1982): 201–219.

222 Costa, *Historic Mosques and Shrines of Oman* (2001): 223; Lewcock, "Architectural connections between Africa and parts of the Indian Ocean littoral" (1976): 13–23.

223 Horton, "Primitive Islam and architecture in East Africa" (1991): 103–116; Horton, *Shanga* (1996).

224 Sassoon, "Mbaraki Pillar & related ruins of Mombasa Island" (1982 a): 26–33; Sassoon, "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island" (1982 b): 79–97.

225 Horton, "Islamic architecture of the Swahili coast" (2018): 490.

226 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 82–83.

227 Donley-Reid, "A structuring structure: the swahili house" (1990): 114–126.



FIGURE 127
Side room in Tsingoni, Mayotte

presence of Ibadis. His hypothesis rests on the similar practice still observed by the Ibadi community of Zanzibar.[228] And it is true that these lateral rooms precede the arrival of Sunni Shafiite on the coast. According to Ibn al-Mujawir, the city of Kilwa passed from Ibadism to Shafiism. Later most of these lateral rooms must have served other purposes such as Qur'anic schools, *madrasa* where pupils were taught the Arabic script and language, but also law and religion.

The portico, a raised gallery the roof of which was supported by columns, was also a frequent element in the mosques on the east coast. It opened onto a courtyard on the main street, as in the mosque of Fakhr al-Din, the *jamias* of Gedi, Shanga, and Songo Mnara, and Mosque n°2 of Ungwana.

228 Horton, "Archaeology and the Early History of Zanzibar" (1992): 6–10.

3.6.2 *The Ablution Area*

Every Swahili mosque had an area reserved for the ritual ablutions of the hands, forearms, and feet. This installation could range from a simple rectangular basin fed by rainwater to a complex system of canals, as on the site of Gedi. The ablution area had not only a religious rôle but also a social one. Men from the city could meet there, talk to one another, refresh and clean themselves, as in a *hammam*. The localisation of the area of ablutions was not standardised but depended on the space left around the mosque by private dwellings and the implantation of water wells. Nevertheless, the installation in the east remained the most frequent one between the thirteenth and the fifteenth century. The Friday mosques had an ablution complex consisting of a well, basins, foot rubbers and occasionally latrines. The latrines were simply a hole dug in the ground above a gutter of wastewater, as in the great mosque of Kilwa or Mosque n°3 of the same town (Fig. 128). A courtyard extended to the south of the great mosque of Kilwa, furnished with a large ablution area composed of latrines, reservoirs, a square well and sandstone foot rubbers. Two channels for the supply of rainwater led to a reservoir and a little basin. In the north, two stairways led to the raised part of the courtyard. A small stairway in the east provided access to the roof for the muezzin. In the south-west of the ablution area a little chamber was surmounted by an overhanging roof – a roofing technique of Deccani origin and unique in East Africa.

The wells, circular or square, were mounted in ashlar blocks of fossil coral fastened by mortar, sometimes with a little plaster lip. The well and water tank were sometimes used for profane



FIGURE 128 Water tank and foot rubbers in the great mosque of Kilwa

purposes and was then divided into two parts by a wall. One part was for the ablutions of the men in the mosque and the other for domestic use by women. This type of partition can be seen in Mosque n°4 in Gedi (Fig. 129), n°2 in Ungwana, and in the *jamia* of Mnarani.

The *jamia* of Mnarani at Kilifi consisted of a rectangular prayer hall. It was divided by two rows of five pillars and a pair of three symmetrical doors in the east and west walls. These openings gave onto two longitudinal halls to the east and the west. The two halls to the east had an entrance in the north-east and may have been a Qur'anic school or simply a place reserved for the imam. The main entrance, to the south of the prayer hall, was surmounted by two beautiful embossments in carved coral and gave onto a little portico which opened onto a courtyard occupied by two cisterns fed by a well by way of a channel. The eastern reservoir had two small internal steps at each end. A north-south wall cut the reservoir in two either for religious and profane purposes or to separate the men from the women. Around the reservoir coral bosses fixed to the ground served as foot rubbers. This mosque seems to have been built at the beginning of the fifteenth century. Reconstructed in the sixteenth century, it was finally destroyed in the early seventeenth century by the Oromo peoples. Kirkman supported a very personal interpretation with the discovery of twelve oil lamps associated with traces of fire and arrow heads inside the mosque. According to his somewhat romantic and orientalist vision, the inhabitants of Mnarani took refuge in the mosque and preferred to be burnt to death rather than to fall into the hands of the invaders.

The water reservoirs or *birika* were rectangular basins cut in coral stone or fossil coral concrete, the inside of each basin being isolated by a plaster coating. The inner corners of these reservoirs were often consolidated by quarter-colonnettes in coral. Steps were sometimes introduced in order to descend into the interior of the basins. These reservoirs were fed by wells thanks to a masoned canalisation, as in the *jamias* of Gedi and Ungwana and Mosque n°2 in Kilwa.

The great mosque of Gedi had a rectangular prayer hall divided by three rows of stacks. Against the east and west walls pilasters connected the walls to the stacks by way of archways. Little square niches had been fitted into the pilasters. The terrace roof was made of coral panels bounded by lime cement. Along the west wall, a narrow platform could be reached by a little semi-circular stairway. The ablution area consisted of a wall with a channel which fed a reservoir (Fig. 130). Two celadons were inserted in the interior of each side and at the bottom, in the centre of the reservoir, a large cavity shows that a plate had been imbedded there. Four coral bosses or foot rubbers lined the east side of the reservoir which was reinforced in the corners by quarter-columns. The well providing the water was divided into two by a low wall, one side feeding the basin of the mosque, the other, to the north-east, having been put to domestic use by the inhabitants of Gedi. This low wall rose a metre above the lip of the well. Latrines were set up against the east wall of the courtyard, close to the main entrance of the mosque.

The basins sometimes served as rainwater cisterns in regions where the underground water was very weak or inexistant. The mosque of Mvinje, for example, in the north-east of the island of Kilwa, had two cisterns against its south wall. At Mbaraki on the island of Mombasa,[229] reservoirs situated against the east and west walls made it possible to collect the rainwater from the roof by way of an ingenious system of furrows on a flat roof with a weak slope, the water collected in the furrows being evacuated by coral gutters. In this mosque, two coral gutters sent the rainwater from the roof to cisterns or large jars. A large cistern to the north-east was reinforced inside by quarter-pilasters in the corners and provided with a rectangular coral sill. The ablution area west of the prayer hall was composed of latrines, a reservoir and four foot-rubbers. A little plaster canal passed under the west wall for the evacuation of the wastewater. The mosque of Jangwani in Kilwa must have

229 Sassoon, idem.

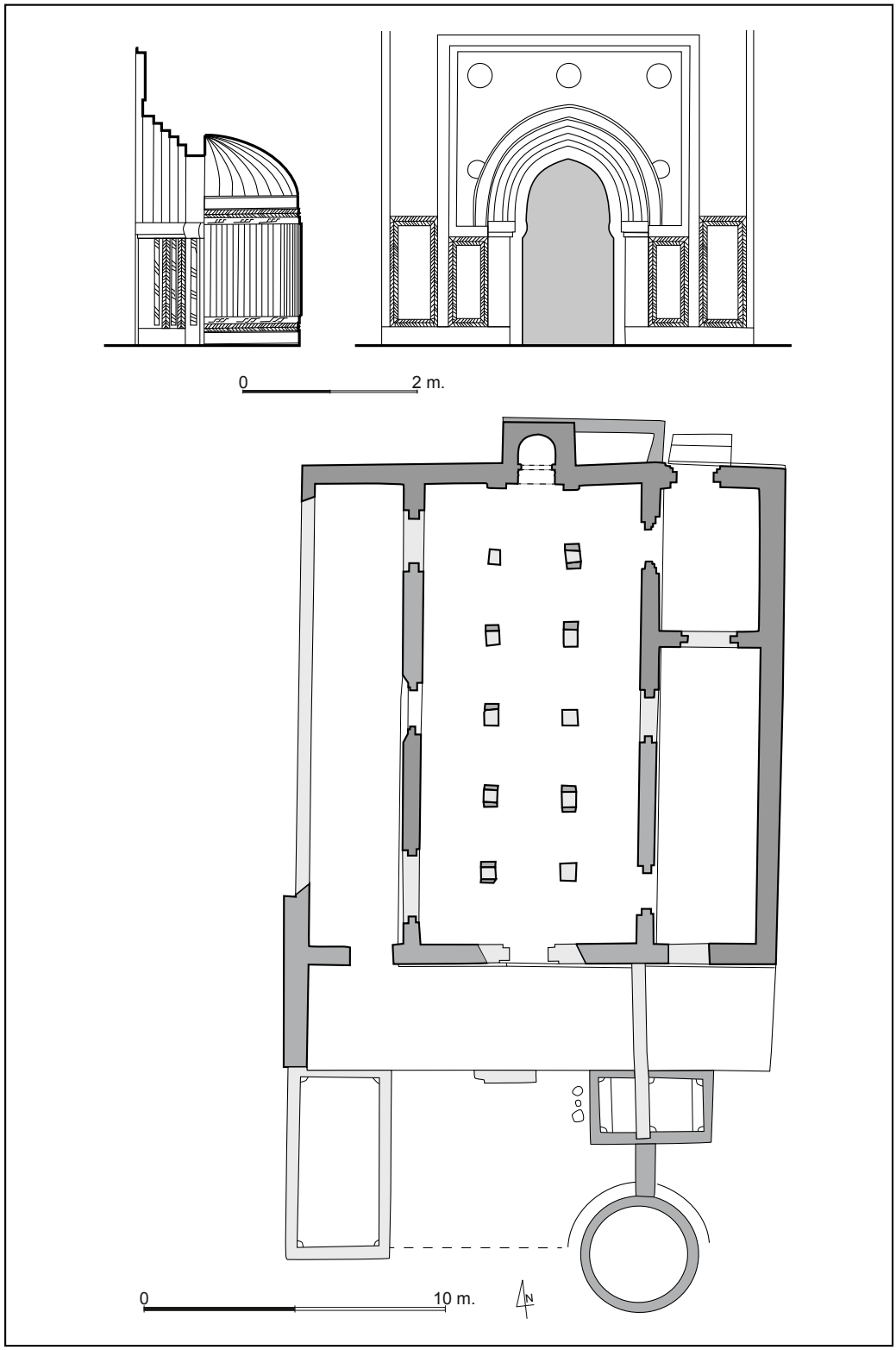


FIGURE 129 A north-south wall cutting in two the water tank of the Jamia of Mnarani, Kilifi



FIGURE 130 Fifteenth century ablution area of the great mosque of Gedi

used the same system, but the water was collected in large ceramic jars wedged into a little plaster platform east of the mosque.

Hemispheric stones were often arranged around the basins. They could be used to dry one's feet or to remove corns. These foot rubbers were placed around the basins in rows of three or four, in a hollow sometimes surrounded by a little plaster lip to prevent the water from spilling into the courtyard. The hemispherical coral foot rubbers were a typical element of the Swahili mosques from the thirteenth to the sixteenth century. Different varieties of stone were used with different degree of abrasion.

3.6.3 *The Minarets*

The minaret, as a tower "*mnara*", from which the muezzin calls the faithful to prayer was almost unknown in East Africa, and indeed, the first mosques had no minaret. In the age of the Prophet the prayer call was uttered from the roof of a house. The presence of a minaret was established under the Umayyads, more as a territorial and political marker, and it subsequently became a religious symbol. Among the Swahilis, the muezzin called to prayer from the roof which was reached by a small stairway in the north-west corner of the mosque, as in Kilwa n°3 or in the north-east as at Ras Kiambone or the *jamia* of Gedi.[230] This very simple form of minaret spread from the thirteenth century on to the mosques of Tongoni or of Kaole n°1. Sometimes the stairway led to a platform on the extreme projection of the *mihrab* (Fig. 131). That was the case of the mosques of Chwaka and Shengejuu on the island of Pemba.[231]

230 Schacht, "Further notes on the staircase minaret" (1961): 137–141.

231 Laviolette & Fleisher, "The Urban History of a Rural Place: Swahili Archaeology on Pemba Island, Tanzania,



FIGURE 131
Staircase minaret in the north-west corner of the projection of the mihrab of Tsingoni, Mayotte

The mosque of Ras Mkumbuu at Pemba dated from between the eleventh and the fourteenth centuries and, according to Horton,[232] would have had a minaret. To the west of the *mihrab* a rectangular door led to this circular structure with a diameter of 3 m which must have been the base of a minaret. When he excavated this quadrangular base, Kirkman discovered the remains of a small, latticed window in plaster. According to him the mosque dated from the end of the fourteenth century.[233] I believe, like Horton, that this mosque with a minaret tower was built in the thirteenth century – a date supported by the style of the *mihrab* which belongs to group of Tongoni, and by

700–1500 AD" (2009): 449–452; Horton, "Islam, archaeology and Swahili identity" (2004): 79–80.

232 Horton, "Archaeology and the Early History of Zanzibar" (1992).

233 Kirkman, "Excavations at Ras Mkumbuu on the Island of Pemba" (1959): 161–178.



FIGURE 132 Minaret of the Jamia in Mogadishu in Shangani district

Kirkman's frequent habit of giving a late date to all Swahili sites.

Mogadishu marks the northern limit of of the Swahili style mosques. The *jamia* of Mogadishu, in the district of Hamar Wani, had a cylindrical minaret with a door decorated by an inscription in Nashki characters, dating from 1238. The entrance arch was formed by five ogee arches with a slit at the summit. A conical boss surmounted the summit of the arch. This door, and the elements which compose it, are typical of the Mogadishu style. The mosque in the Shangani district consisted of a quadrangular minaret with corner loop-holes (Fig. 132). The mosque of ʿAbd al-ʿAziz, finally, was surmounted by a circular minaret on a square base dating from the fourteenth century, located in the Shangani district in Mogadishu. A small wooden balustrade ran round the summit of the tower. The minaret towers were more frequent in the northern periphery of the Swahili area, as in Kismayo.



FIGURE 133
Pseudo-minaret of the mosque of Mbaraki "pyramid of the Moors", Mombasa Island

Their morphology was close to the minarets with balconies on the west coast of the Red Sea and Egypt,[234] notably the octagonal minarets of Suakin south of Port Soudan.[235] The mosque of Abu Bakr Siddiq, in the town of Barawa in Somalia, had a quadrangular minaret with a summit in the shape of an ovoid hat and a magnificent wooden lattice window. The minaret was built between the fifteenth and the eighteenth century. An inscription in the great mosque gives a date of the fifteenth century. But Tristan da Cunha destroyed the town of Barawa in 1506, and most of the mosques in this city were rebuilt from the seventeenth and eighteenth centuries.

The mosque of Mbaraki was built on a height in the south of the island of Mombasa. Guillain mentions a monument built in memory of a sheikh who controlled the surrounding area south

234 O'Kane, *The mosques of Egypt* (2016): 47, 66–69.
235 Greenlaw, *The coral building of Suakin*. (1976): 66–70.



FIGURE 134 Minaret of Shela Mosque on Lamu island

of Mombasa.[236] According to the French explorer, only the minaret survived in the middle of the ruins of a mosque. The mosque, however, does not figure in the Portuguese plans of 1636 and 1728 which indicate the presence of a large pillar, *piramida dos mouros*, but never a mosque. Besides, the ceramics discovered in 1977 in the excavations of Sassoon date from the fourteenth or fifteenth centuries. This pillar or "pyramid of the Moors" was a pseudo-minaret, in other words a tower without a stairway (Fig. 133). It was too large to be a pillar tomb and there were windows at the summit as on the ogive minarets. The minaret of Mbaraki dates probably from the seventeenth century and its shape is comparable above all to the

236 Guillain, *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale* (1856): 219; 242; Sassoon, "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island" (1982 b): 79–97.



FIGURE 135
Mandhry Mosque, Mombasa

most recent models of the mosque of Mandhry in the old town of Mombasa, the mosque of Shela on the island of Lamu, and the Mnara mosque of the town of Zanzibar.[237] The Friday mosque of Shela was overhung by a minaret 18 m high on an octagonal base and with an internal spiral staircase (Figs. 134 & 135). The building was founded in 1829, and has a magnificent *minbar* in wood which was brought back from Manda with an inscription dated 1820.[238] In Zanzibar, in the Malindi district, a mosque was called *Mnara* because of the presence of a minaret, a very rare element in the city.[239] This eighteenth-century mosque was restored in 1834, the period in which the minaret was added (Fig. 136).

237 Hobley, "An Arab Minaret on Mombasa" (1932): 79.

238 Ghaidan, *Lamu. A study in conservation* (1976).

239 Sheriff, "Mosques, Merchants and landowners in Zanzibar Stone Town" (1995): 46–66.

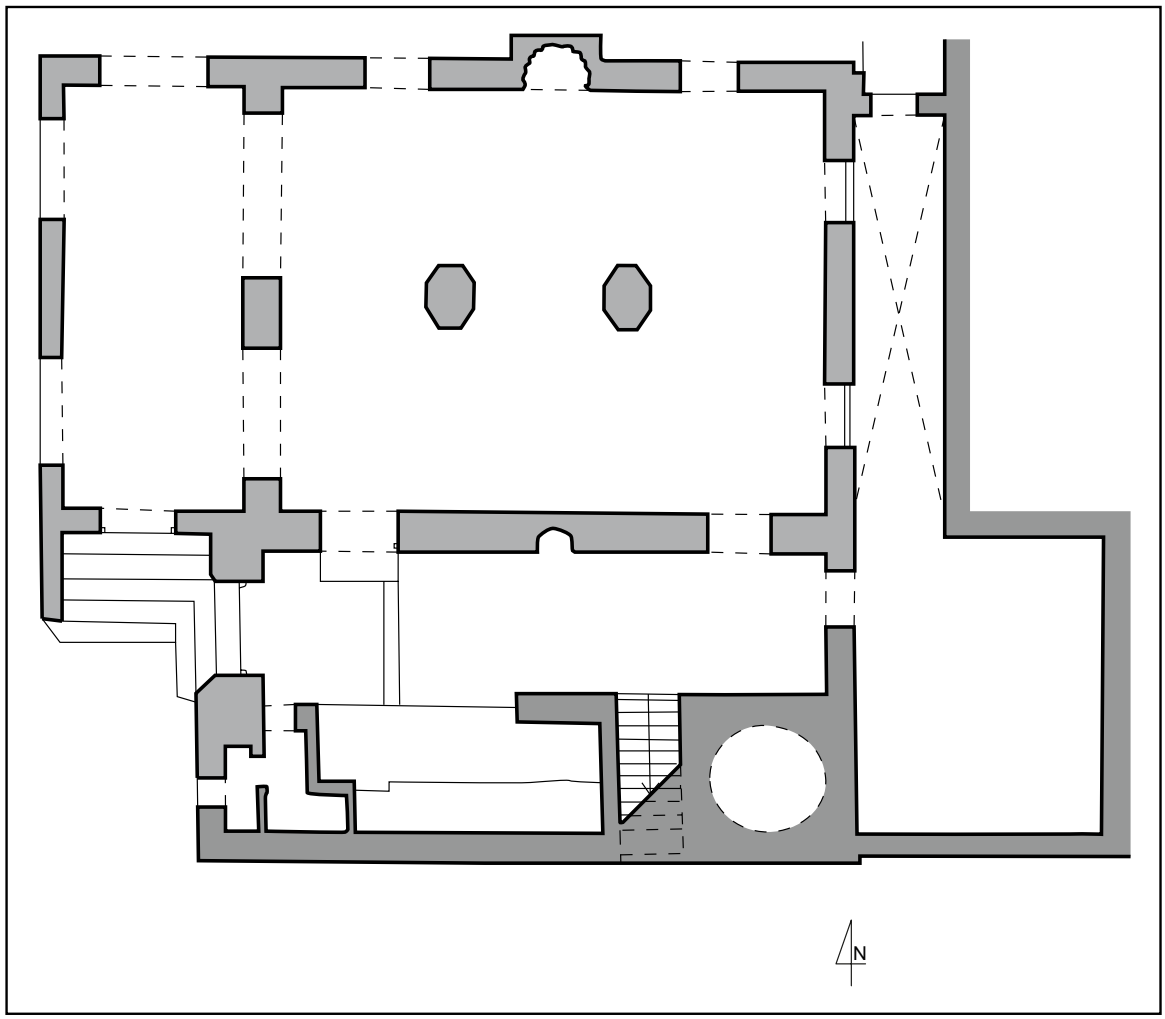


FIGURE 136 Plan Mnara mosque in Malindi district, Zanzibar old town

The so-called ogive or conical minarets made a relatively late appearance on the coast between the seventeenth and the nineteenth centuries. Their morphology is close to the minarets found in the Hadhramawt and the Arabian Peninsula.[240] Recently Prita Meier, basing herself essentially on the pillar of Mbaraki,[241] claimed that this type of minaret and the Swahili pillar tombs were typically African architectural features. Unfortunately, she seems to be unaware of the mosque excavated close at Mbaraki[242] and the existence of pillar tombs in almost the whole of the Muslim world from North Africa to Turkey.[243]

240 King, "Notes on Some Mosques in Eastern and Western Saudi Arabia" (1980): 251–276.

241 Meier, *Swahili port cities. The architecture of elsewhere* (2016): 86–93.

242 Sassoon, "Mbaraki Pillar & related ruins of Mombasa Island" (1982 a): 26–33.

243 Pradines, "Rituels funéraires swahili : les sépultures islamiques du site de Gedi (Kenya)" (2000): 169–171.

3.6.4 *The Funerary Mosques*

A few mosques on the east coast can be classed in this category. These are monuments built in the memory of a sheikh. Certain mosques were associated with funerary pillars – the mosque of Takwa in Kenya and the small domed mosque of Kilwa kisiwani in Tanzania.

The Friday Mosque of Takwa is on the island of Manda. It consisted of a rectangular prayer room lined by two east-west chambers. The lateral chambers gave access to the prayer room by two doors, one west and three east. The windows in the shape of loopholes were arranged in pairs on each side of the *mihrab*. Other windows of this type were condemned when the east chamber was built. The terrace roof, made of ashlar blocks of coral drowned in mortar, was supported by square beams. The roof was entirely flat and rose slightly in the south. The covering of the side chambers must have been made of perishable materials: palm leaves (*makuti*) or wattle and daub roofs. The *mihrab* consisted of a pointed arch with two segments and supports interrupted by three mouldings. The frame, formed by the architrave and the



FIGURE 137 Mihrab of the funerary and great mosque in Takwa, Lamu archipelago

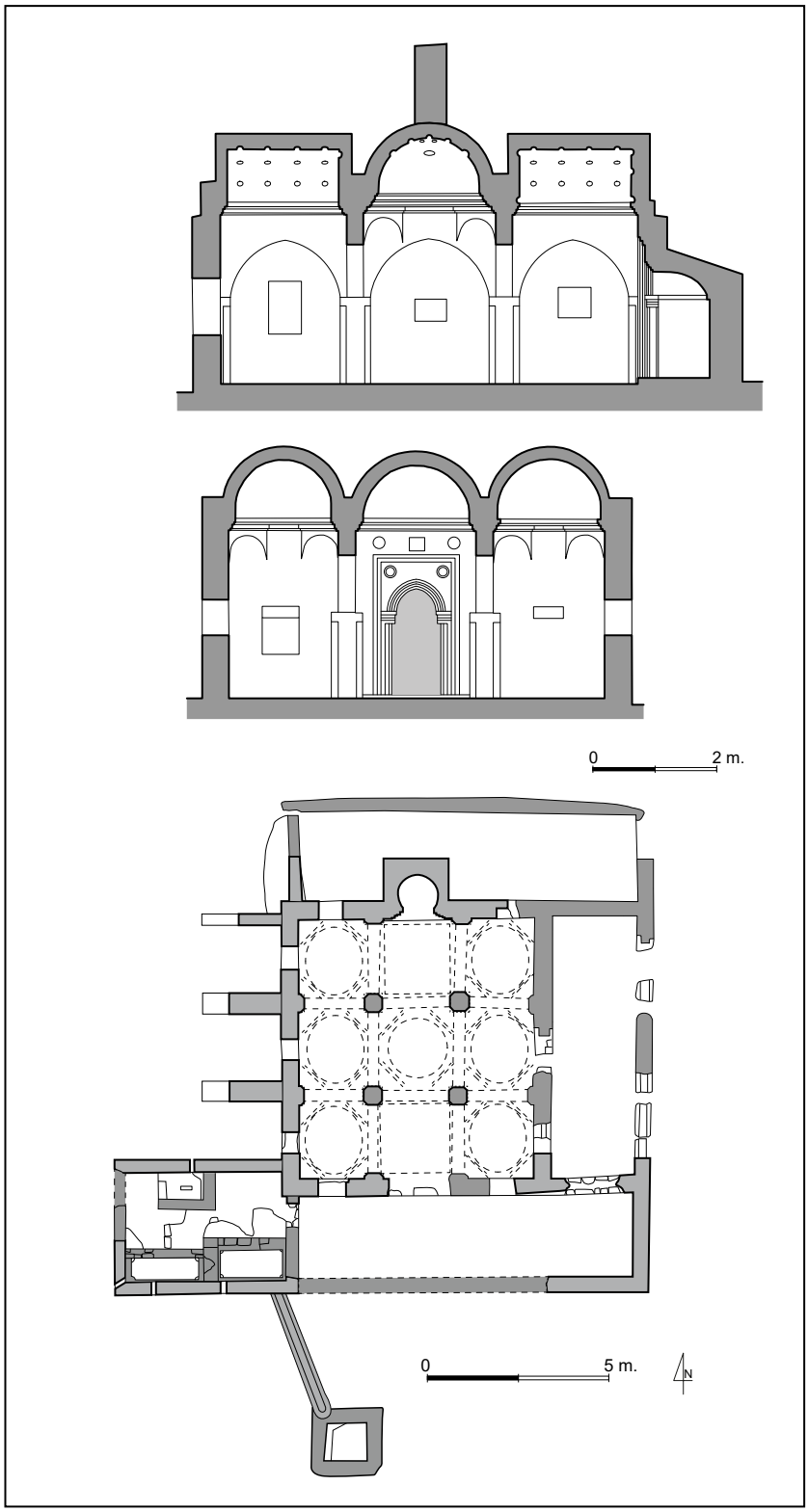


FIGURE 138 Funerary octagonal pillar overhung the small domed mosque in Kilwa Kisiwani



FIGURE 139 Mosque of Mnarani connected to large panel tombs and pilar tomb, fourteenth century, Kilifi, Kenya

lintel, was decorated by fish-bone motifs. Putlog-holes in the east wall of the *mihrab* indicated the presence of a fixed wooden *minbar*. The wall of the *qibla* formed a triangle above the level of the terrace roof. At the summit of this triangle and at the vertex of the *mihrab* stood a square pillar (Fig. 137). The mosque of Takwa was surmounted by this large central pillar and two small pillars in the north-west and north-east corners. Very similar to the pillar tombs, these architectural elements suggest a funerary or commemorative function of the mosque which was founded in the sixteenth century and abandoned in the seventeenth.[244]

The central dome of the prayer hall of the little mosque of Kilwa (n°2) was also overhung by a broken octagonal pillar (Fig. 138). What was the origin of this pillar so often associated with panel tombs? Was it built under the influence of Mamluk and Ottoman Egypt where marble pillars were erected to signal the tombs? Was it derived from the Iranian mausoleum towers?[245] Was it an Egypto-Greco-Roman influence from the late Antiquity and the monumental pillars of Axum (Ethiopia) or was it the result of earlier pre-Islamic african traditions, such as the erected stones of Barawa (Somalia)? It is most probably a "little bit of everything", in other words, an adaptation of local funerary practices to Muslim architectural traditions.

244 Kirkman, "Historical Archaeology in Kenya (1948–1956)" (1957); Wilson, T. *Swahili Monumental Architecture and Archaeology North of the Tana River* (2016).

245 Wilber, *The architecture of Islamic Iran* (1955).

Certain mosques, finally, were not surmounted by pillars but were coupled in the north to large panel tombs. In this case the interpretation of the funerary mosques is more difficult, as in the case of the mosque of Ras Kiambone in Somalia or Mnarani at Kilifi in Kenya (Fig. 139). A door gave onto a narrow chamber that ran along the wall of the *qibla* of the great mosque of Kilwa and included the protrusion of the *mihrab*. According to Chittick this chamber without a roof was divided into compartments containing tombs of incinerated individuals. The unusual Muslim practice of incinerating the dead along the wall of the *qibla* is only known on the site of Kilwa, but it is known in Egypt during plague epidemics.[246]

3.6.5 *Swahili Minbars and Mihrabs*

The medieval Swahili mosques, in contrast to the mosques of the nineteenth and twentieth centuries, had no niche *minbar* even though the south of the Arabian Peninsula had been familiar with this tradition ever since the eighth century. In Aden, the imam sat in the niche of the *mihrab* on a wooden *minbar*.[247] The niches *minbar* cannot be seen in the medieval Swahili mosques either because they never existed or because these mosques were only built of perishable material. This hypothesis could be confirmed by the declaration of Ibn Battuta about the Swahilis of Mombasa: "They profess the Shafiite doctrine and are pious, chaste and virtuous. Their mosques are built very solidly in wood."[248]

The masoned *minbars* multiplied between the thirteenth and the fifteenth centuries. They were little stairways of between three and eight steps in coral stone bounded with mortar and sometimes covered by plaster. They were always situated to the right of the *mihrab*, perpendicularly to the *qibla*. The *minbar* was an element peculiar to the great mosques (Fig. 140). Connected with the Friday prayer, it was used for the sermon of the imam.

Often overlooked in the general works on Islamic architecture,[249] the Swahili *mihrabs* had a style of their own on both an architectural level and in their ornamentation. In East Africa the *mihrab* is oriented towards the north and is the main part of the decoration of the mosque. In 1966, Peter Garlake's work, *The Early Islamic Architecture of the East African Coast*, marked a decisive stage in the study of Swahili architecture. Garlake drew up a systematic inventory of all the ruins on the Tanzanian, Kenyan and Somali coasts. He was the first scholar to establish the autochthonous character of Swahili architecture and presented a simplified evolution of the shape of the Swahili *mihrabs* divided into four groups: preclassical, classical, neoclassical and mannerist.[250] The chronological study of the Swahili *mihrabs*, which I undertook in 1993, was based on architectural and decorative elements of a corpus of 70 *mihrabs*.[251] The nine criteria introduced regard the forms of decoration and the architectural technique: niches in the supports, inner wall with a blind arcade, rope mouldings, inlay ceramics, simple broken arch, trilobal arch, *minbar* niche, grooved inner wall and stucco decorations. The results of this typo-chronology have made it possible to identify eight styles of *mihrab* which I have associated with an eponymous model. The groups of *mihrab* identified were dated by the stratigraphy of the archaeological excavations and by the study of dated inscriptions when they were part of the stylistic unity of the building. Since 1993, I changed and improved this typology with new elements that I'll present in the next chapters.

246 Pradines, "Plague Epidemics and the Ruin of Fourteenth-Century Cairo" (2021): 119–170.

247 Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173; Serjeant, "Mihrab" (1959): 439–453; King, *The Historical Mosques of Saudi Arabia* (1986).

248 Ibn Battuta (1331) in Freeman-Grenville, *The East African Coast* (*select documents*) (1962).

249 Papadopoulo, *Le Mihrab dans l'architecture et la religion musulmanes* (1988).

250 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 59–75 & 116.

251 Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003).



FIGURE 140 Minbar of the jamia of Ungwana

3.7 The Decorative Programme of the Swahili Mosques

3.7.1 *The Inlay Ceramics*

The inlaying of ceramics in the *mihrabs* and the vaults of the Swahili mosques was a decorative tradition which took root in East Africa in the thirteenth century. At the time when Swahili trade reached its apogee, between the fourteenth and the fifteenth century, inlay ceramics multiplied on the tympanum, the lintel and the architrave of the *mihrabs* and sometimes even in the niche. This tradition was to persist until the end of the seventeenth century. Twelve, for example, decorated the squinches and the jambs of the *mihrab* of the *jamia* of Chwaka (Fig. 141); thirteen *blue and white* porcelain ones were inserted in the tympanums and the intrados of the *mihrab* of the *jamia* of Gedi, seventeen in the *mihrab* of Mafui, while the mosque of Tundwa held the record with over fifty ceramics inlaid in the wall of the *qibla*.

By ceramic, I mean the potteries whose primary function was not to decorate the *mihrabs* and mosques, to the opposite of the glazed tiles produced for the architecture. These ceramic bowls or hollow plates were inlaid in the coating of the cupolas surmounting the prayer hall or on the circumference of the *mihrabs* (Fig. 142). Neville Chittick distinguished three categories of incrusted ceramic in Kilwa.[252] The little Persian cups, with a diameter of 6 to 7 cm, were often

252 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 161–166 & 306–308.

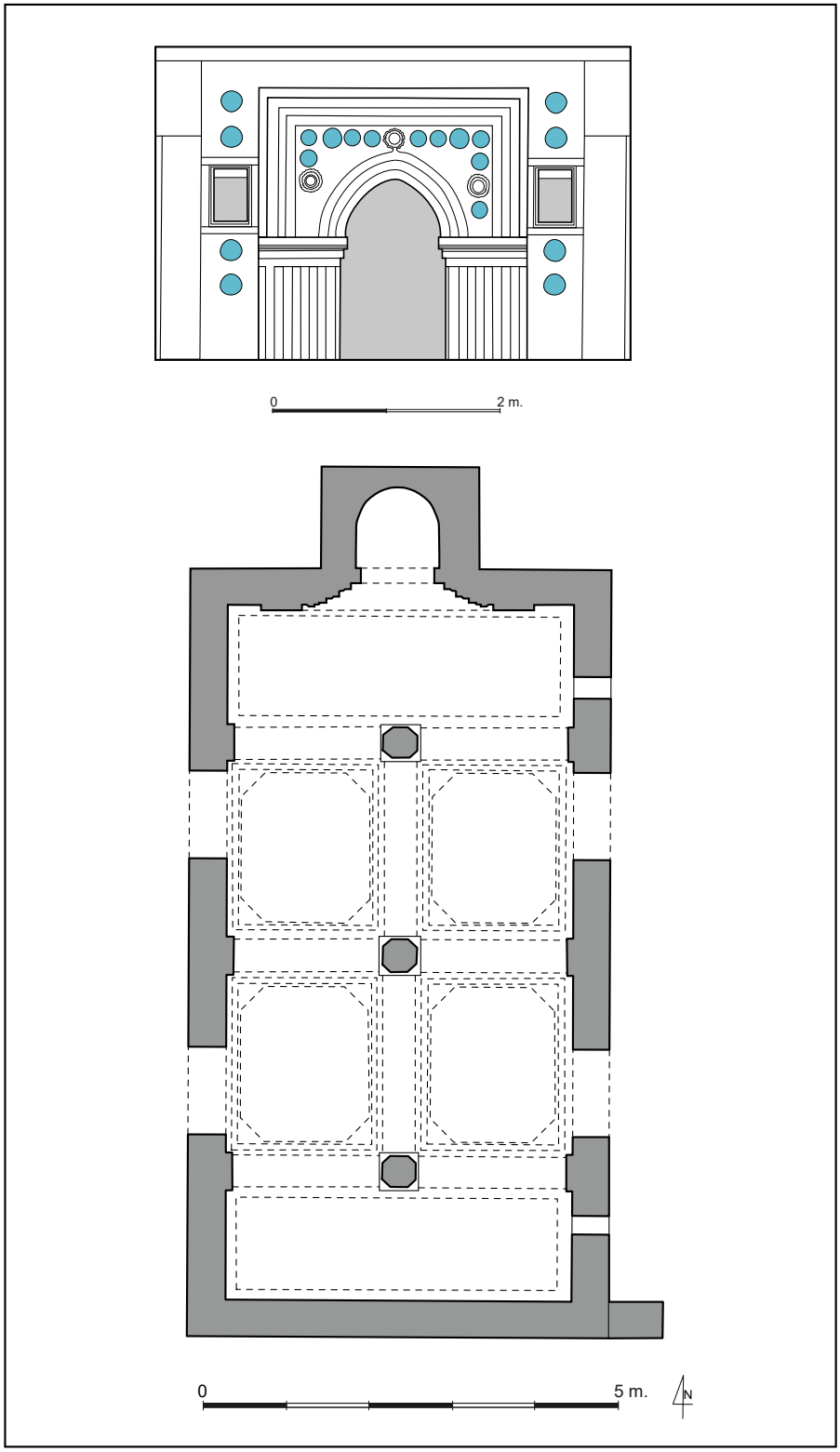


FIGURE 141 Twelve ceramic bowl inlays in the mihrab of Chwaka, Pemba Island



FIGURE 142 Ceramic plate inlays in the mosque of Makutani, Kilwa Kisiwani

covered by a turquoise blue glaze on a setting of black silhouettes with floral or palmette motifs. The Persian bowls with a diameter of between 9 and 13 cm, were coated either with a turquoise blue glaze under which the floral or bespangled motifs in the centre of the bowl were drawn in black, or by a white clay slip coating under a lightly coloured glaze sometimes with black and blue floral motifs. Finally large hollow Chinese plates with a diameter between 18 and 29 cm were represented by the famous blue and white porcelains and sometimes celadons (Fig. 143).

Why were these ceramics introduced into the mosques? Between the eleventh and the fourteenth century there was a veritable craze for plates and cups inlaid in the coating of religious or civic buildings. This oriental fashion, known as that of the *bacino*,[253] spread across the entire Mediterranean basin in contact with the Muslim countries – to Spain, to the south of France and to northern Italy (Tuscany and Venice). It led to a public display of the wealth of a town or an individual since the inlay ceramics came from far off, often from a Muslim country.[254] This custom seems to have originated in the East, and can be explained by the fact that the Islamic and Chinese potteries of this period were of the highest quality and could serve as a decorative element. The fashion of buildings covered in ceramics must have come from Seljuq Anatolia (1219–1237), as we see in the town of Konya. Later, under the Timurids in the fifteenth century, covering tiles in ceramic reached their apogee. Certain Swahili cities, such as Mogadishu, were strongly influenced by Seljuq architecture.[255] The use of inlay ceramics in the

253 Watson, *Ceramics from Islamic Lands* (2004).

254 Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 355–381.

255 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 114.



FIGURE 143 Fourteenth century mihrab of Kua and bowl inlays (mosque n°1)

mosques of the East African coast was a part of this fashion and of a cultural movement peculiar to the Turco-Arab and Mediterranean world.[256]

This use of bowls and plates in Chinese blue and white porcelain as a decorative element for the *qiblas* or the *mihrabs* was also known in Oman,[257] in the mosques of the sixteenth century such as the mosque of al-ʿAyn in Manah of 1505 and those of the town of Nizwa,[258] al-Shawadhna dating from 1529, al-Sharja of 1518 and al-Jinah of 1519.[259] The great Omani mosque of Bahla had a plan very similar to that of the great Kenyan mosque of Gedi. It formed a rectangle of 18 by 30 m, with bays parallel to the wall of the *qibla*, and dates from 1511. Chinese Ming porcelains were also inlaid in the *mihrab* of the mosque of al-ʿAyn in Manah, dating from 1505.[260] The fashion of inlay ceramics in the *mihrabs*, however, seems to have been earlier in East Africa than in Oman and was on the rise. And yet there was a far earlier substratum of influence of Omani *mihrabs* going back to the Nabahani kings. Ruba Kana'a suggested that the Omani *mihrabs* were influenced by Fatimid Egypt and the Yemen.[261] The decorative repertoire, certainly, is sometimes similar, but the dates are very different, and one could object that it was the Fatimids who were influenced by the Abbasid repertory. Another

256 Meier, "Chinese Porcelain and Muslim Port Cities: Mercantile Materiality in Coastal East Africa" (2015): 702–717; Schulz, "Artistic Dynamics across the Seas" (2018): 191–194.

257 Kervran, "Mihrabs omanais du 16e siècle" (1996): 126–127.

258 Costa, *Historic Mosques and Shrines of Oman* (2001): 223.

259 Kervran, "Mihrabs omanais du 16e siècle" (1996): 126–127; Costa, *Historic Mosques and Shrines of Oman* (2001): 59.

260 Costa, idem: 73 & 223.

261 Kanaan, "The carved stucco mihrab of Oman, forms, styles and influences" (2008): 251–257.

scholar, Soumyen Bandyopadhyay, connected the decorative motifs in stucco of the Omani *mihrabs* with the symbolism of the Persian Sufis and the conception of time with the endless knot motif and the reticular tree.[262] Bandyopadhyay thinks that this type of *mihrab* was introduced into Oman in the tenth century by way of Sohar. The great port of Sohar was visited by al-Muqaddisi who described the *mihrab* of the mosque decorated by polychrome earthenware. In this case the Swahili mosques and *mihrabs* would have been influenced by two waves, first under the Buyids between 945 and 1055, then under the Seljuqs between 1038 and 1118. The ports of Fars and Siraf played a far from negligible part in the exportation of these models, first to Oman and then to Africa.

3.7.2 *The Bosses and Mouldings in Sea Coral*

The carved bosses in sea coral are the hemispheric decorative elements which we find on the tympanums of the Swahili *mihrabs*. These hemispheres in relief were engraved with floral or geometrical motifs forming harmonious arabesques. Their diameter was generally between 8 and 10 cm or, for the larger ones, 20 to 30 cm. The finest coral bosses were in the *jamia* of Mnarani, in Ungwana, Mnara Siyu and Kilwa n°2 (Figs. 144 & 145). According to Garlake the inlay ceramics in the walls followed the coral bosses,[263] but his hypothesis is not supported by any chronological source, and we know that these two decorations appeared at the same moment between the thirteenth and the fourteenth century.

In Somalia, there exists a regional variant of hemispheric bosses in coral. These are the conical bosses with engraved lines descending from the point. They can be seen above the doors of the mosque of Fakhr al-Din, and on the door of the minaret of the *jamia* of Mogadishu and of the *mihrab* of Rasini (opposite the Bajuni archipelago) (Fig. 146). But they can also be found in the mosque of Mgangani in Kenya and above the doors of the "palace" of Somana in Mozambique.[264] This is very interesting and shows economic and cultural ties between Somana and Mogadishu, and it confirms the architectural dynamism of the ports of Mozambique. The conical bosses carved in coral stone in Mogadishu, Somana and Mnarani recall the shields of the Somali warriors. It is a type of decoration that dates from the thirteenth and fourteenth centuries. The pointed bosses are reminiscent of African weapons: the lanceolated form above a door of the great mosque of Gedi, for example, is identical to the spear points used in northern Kenya and Somalia.

Sea coral was also carved in a little bricks in order to produce mouldings. From the fourteenth century on the mouldings cut on fine grain coral resumed a simple or double rope motif 5 cm wide, in relief or sunken. They can be found on the entire coast, in Gedi, Takwa, Shengejuu and even Mahilaka near the bay of Ampasindava in Madagascar.[265] In Mnarani of Kilifi, a unique type of moulding was decorated with a sunken S. The second most common type of moulding is the fish-bone moulding. For Garlake, the fish-bone is a degeneration of the rope motif (Fig. 147).[266] However, these are two different technical solutions: on the one hand a more elaborate rope motif which thus took longer to make and on the other an engraved fish-bone motif which could be executed rapidly. The economic and political importance of the site prevailed where more elaborate decorative motifs were concerned and gave rise to regional differences.

262 Bandyopadhyay, "From Another World! A possible Bûyid origin of the decorated Mihrab of central Oman" (2008): 374–379; Kervran, "Mihrabs omanais du 16e siècle" (1996): 112.

263 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 46–48.

264 Duarte, *Northern Mozambique in the Swahili World* (1993): 118–119.

265 Vérin, "Histoire Ancienne du nord-ouest de Madagascar" (1972): 627–628.

266 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 42–44.

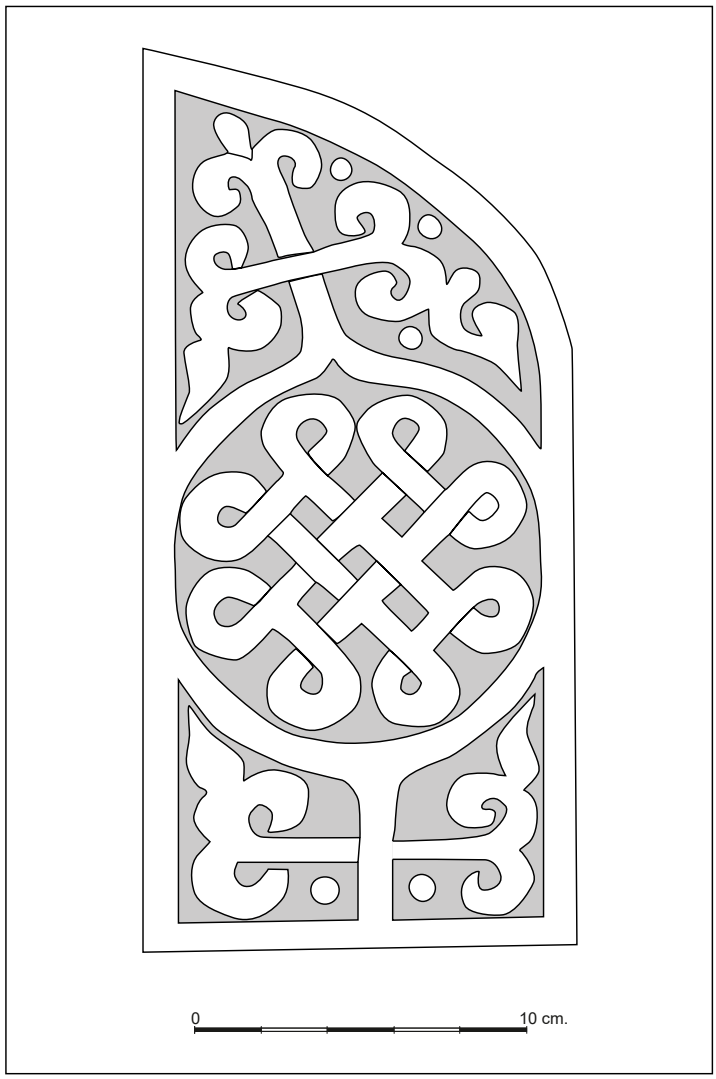


FIGURE 144
Carved sea coral engravings in the jamia of Mnarani

The mouldings were used to create a decorative repertory of panels round the apse of the *mihrab* and were also used inside the apse of the *mihrab*. Finally, in the fifteenth century, the pilasters enframing the entry of the apse of the Swahili *mihrabs* disappeared in favour of blocks of columns interrupted by mouldings in cut edges or engraved with V-shaped furrows. Sometimes simple moldings alternated with rope mouldings or mouldings decorated with engravings in fishbone, as, for example, in the *mihrabs* of Takwa or the *jamia* of Gedi.

The *mihrabs* of the seventeenth century were still decorated with coral mouldings the upper face of which was interrupted by a double V-shaped furrow. In the Lamu archipelago the coral panels enframing the *mihrab* sometimes have incisions which form geometrical motifs, for example the rhombuses in relief in the mosque of Manda.



FIGURE 145 Carved sea coral bosses and mouldings in the jamia of Mnarani, Kilifi

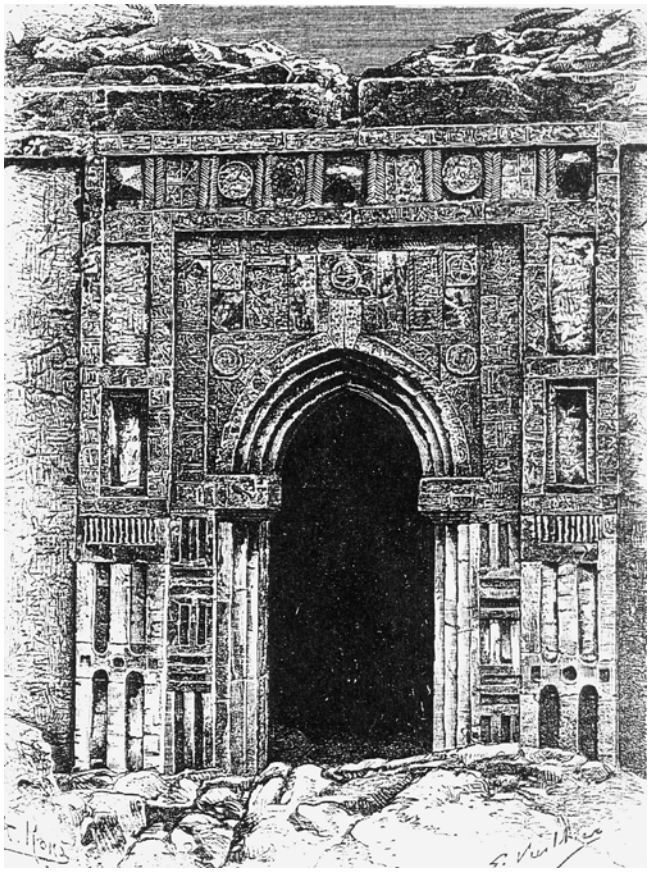


FIGURE 146
Mihrab of Rasini (Kikoni), Ciula (Chula) Island, Bajuni archipelago



FIGURE 147 Rope mouldings in Kua

3.7.3 *The Stucco Decorations*

Between the seventeenth and the eighteenth centuries, decorative bosses in stucco progressively replaced the hemispheric bosses in coral and the inlay ceramics. Plaster had been used on the East African coasts since the tenth century, but the eighteenth century marks its true apogee. The friezes and the decorations cut in the stucco were accomplished performances from the start and were derived essentially from the wood carving applied to the doors of Swahili houses. The chain motifs on the mouldings recall elements of navigation just as the corded mouldings cut in coral stone recall the mooring cables of boats, similar to the Gujarati marble carvings.

The mosques in the Lamu archipelago provide evidence of this change. The *mihrabs* of Fort Siyu or Pate n°3, for example, were decorated with plaster bosses with four concentric circles irradiating from the centre (Fig. 148). A new shape of boss known as "spearhead" spread across the Lamu archipelago between the middle of the seventeenth century and the nineteenth century. It was always situated at the summit of the arch of the *mihrabs*, except in the mosque of Gedi and at Ndumi where it surmounted the entrance doors of the mosques (and were carved in fresh coral). This lanceolated decorative element had a political significance since its distribution was limited to the Lamu archipelago, and above all to the towns of Pate and Lamu, whose political and economic importance at the time is well known. These regional connections with the north of Kenya and Somalia can be seen in the architecture of Gedi.[267] According to James Kirkman, the assegai head and the shield were elements displaying African

267 Horton, *Shanga* (1996): 268.



FIGURE 148
Stucco decorations in the mosque of Fort Siyu, Pate Island

influence. However, in the Muslim world, the spear is often associated in Islam with the *mihrab*.[268]

The slight variations in the representations of floral motifs in the same building proves that the decorations were not moulded serially. The decorative elements were engraved in the stucco.[269] First, the craftsmen designed a modular grid divided into squares and triangles. Using these basic elements, they could create geometrical patterns (stars, friezes with curvilinear motifs,

268 Papadopoulo, *Le Mihrab dans l'architecture et la religion musulmanes* (1988).

269 Ghaidan, "Swahili plasterwork" (1973): 46–49.

zigzags, waves, etc.), or a stylised vegetation (lotuses, flowers, palmettes, etc.). The modular grid acted as a rigorous framework for the artist's imagination and allowed an almost faithful reproduction of each engraving. All the stucco decorations were then covered with a fine and brilliant cream of white lime. Nowadays the early *mihrabs* are unfortunately decorated with paintings in bright colours, but coloured glazing may also have existed in the Middle Ages.

The exuberance of the decorations on the stuccoed panels is the result of an influence of Indian origin.[270] The Indians themselves had been influenced by Buyid Iran in the tenth century as had the stuccoed *mihrabs* in Oman.[271] The mosques of Lamu and Pate were thus influenced by Indian craftsmen mainly from Kutch, who also influenced Yemeni architecture in the same period, notably in Zabid and Mocha.[272]

3.7.4 *The Epigraphic Plaques and Inscriptions*

Rectangular panels were sometimes attached in the *mihrabs* of the east coast for a decorative purpose. Many of these little plaques of small dimensions (less than 50 cm^2) have disappeared, as in the mosque of Ungwana n°1, in Shaka, or in Mosque n°2 in Kilwa. Nevertheless, they have left traces: a negative in the plaster or mortar which held them. These missing plaques were probably glazed like the one of the *mihrab* of Fakhr al-Din in Mogadishu which bore epigraphic inscriptions. There are no epigraphical studies of the plaques carved in marble of the mausoleum of the sultans in Kilwa and the tombs of Kingany on the island of Makamby in Madagascar.[273] These marble plaques were generally exported from India.

In Mogadishu, for example, the circumference of the main entrance door to the courtyard of the mosque of Fakhr al-Din was decorated with marble plaques with floral and calligraphic motifs. A plaque in white marble was recorded at the Musée de l'Homme in 1886. It was 22 cm tall, 33.5 cm wide and 7 cm thick (Fig. 160). It was taken from the mosque by George Révoil who wrote as follows: "Formerly, on the back walls and on the two sides, Shirazi inscriptions with verses of the Qur'an and different decorations of a remarkably accomplished workmanship were carved on plaques of white marble".[274] Two plaques were inserted in the back wall of the *mihrab* of Fakhr al-Din, one in white marble and the other in glazed ceramic. The plaque in marble with a low-relief represented a mosque lamp hanging by a chain from the summit of an arch with six lobes. The lamp referred to a verse of the Qur'an on light (24:35). Qur'anic verses were also carved round the plaque. Above the marble plaque a glazed tile showed a recticurvilinear *mihrab* with an inscription in the name of Hajji bin Muhammad b. ʿAbdallah, dated 1269. This was probably the name of the artist, since tradition had it that the mosque was founded by the first sultan of Mogadishu, Abu Bakr bin Fakhr al-Din.

The inscriptions in Arabic in the Swahili mosques reproduced verses of the Qur'an or the praises of a patron who financed the works. These dedications to the contractor were sometimes accompanied by the date of the creation or the restoration of the building. The epigraphic stelae were cut in sea coral, fossil coral, stucco or sometimes imported marble. Nashki and Kufic script were used invariably. The interlaced writing in a floriated Kufic was considered an esoteric Ismaili element of Fatimid origin. Sometimes it was a mere pseudoscript arranged around medallions and interlacing. Freeman-Grenville and Martin

270 Bonnenfant, "La marque de l'Inde à Zabîd" (2000).

271 Costa, *Historic Mosques and Shrines of Oman* (2001): 212–222.

272 Bonnenfant, *Les Maisons de Zabid* (2008): 313–321.

273 Vérin, "Histoire Ancienne du nord-ouest de Madagascar" (1972): 304–305.

274 Révoil, "Voyage chez les Bénadirs, les Somalis et les Bayouns" (1885): 53–54.

were the first to establish a corpus of Arabic inscriptions that overlooks natural and political frontiers and takes in the entire Swahili cultural area from Somalia to Comoros.[275] A catalogue of Somali inscriptions, moreover, has at last been re-edited by Martin.[276] These inscriptions, which have been scarcely studied, could provide very valuable historical and archeological information about the medieval period in East Africa.[277]

The earliest dates, written in Arabic, go back to the twelfth century with the *mihrab* of the mosque of Kizimkazi in Zanzibar, dated 1107, and the mosque of Barawa of 1104. The *mihrab* of Tumbatu also had a text in Kufic, probably from the twelfth century.[278] Only the inscription of the *mihrab* of Kizimkazi has been the object of an epigraphical study.[279] And there are other inscriptions in Mogadishu from the thirteenth and sixteenth centuries.[280] In Kenya the texts in Nashki were engraved on the circumference of the *mihrab* of Mnarani dating from the fourteenth century.[281] In the town of Lamu, the Pwani mosque had an inscription dated 1370.

3.8 Regional Groups and the Chronology of the Swahili Mosques

3.8.1 *The Swahili Mosques from the Ninth to the Twelfth Century*

3.8.1.1 The Mosque of Shanga

From 1981 to 1989, Mark Horton carried out archaeological research on the site of Shanga in the Lamu archipelago in the north of Kenya.[282] During his excavation of the great mosque Horton observed nine phases of construction. The first phases do not tell us whether it was a mosque or even a religious building. Nevertheless, Islam is attested with certainty in Shanga at the beginning of the ninth century, with a first mosque that covered a rectangular surface of 7.24 by 3.61 m.[283] It was composed of a square prayer hall preceded by a little vestibule to the south. The main south entrance was demarcated by two square post-holes. A post-hole in the centre of the prayer hall would have had to support a light roof in palm leaves. The walls in wickerwork and cob have left traces in negative: regularly spaced holes of sticks drowned in cob. The mosque rested on a platform of clay, which gave it a dominant position in the centre of the village of Shanga. Two technological innovations were introduced at the end of the ninth century. The first was the use of plaster as a floor coating. The second was the desire to construct a more solid building, different from the traditional private dwelling. The walls were made of wooden poles placed in a foundation trench. The surface of the mosque was then 7.25 by 4.14 m, but the bipartite plan remained the same. The roofing was always sustained by a central column, and a ditch at the centre of the north wall of the mosque might indicate the foundations of a wooden *mihrab*. The surface of the mosque, finally, had increased to 9.7 by 5.4 m. Between 1015 and 1035, the mosque of Shanga was reconstructed with foundations 54 cm thick constituted by a double coral facing. The blocks of coral were fished in the sea, carved on their outer face, and bounded with clay. The external faces of the walls were coated with plaster. Horton discovered in Shanga a quadrangular foundation in coral stone at the centre of the *qibla* which indicated the presence of a coral *mihrab* in

275 Freeman-Grenville & Martin "A Preliminary Handlist of the Arabic Inscriptions of the Eastern African Coast" (1973): 98–122.

276 Martin, *Malindi, A Geographical Analysis of an East African Coastal Town* (1968, reed. 1973).

277 Ritchie and Sicard, *An Azanian Trio. Three East African Arabic Historical Documents* (2019).

278 Horton, "Archaeology and the Early History of Zanzibar" (1992): 7.

279 Flury, "The kufic inscriptions of Kizimkazi Mosque, Zanzibar, 1107 A.D." (1922): 257–264.

280 Monneret de Villard, "I minareti di Mogadiscio" (1943): 121–130.

281 Kirkman, "Mnarani of Kilifi: the mosques and tombs" (1959): 95–112.

282 Horton, "Primitive Islam and architecture in East Africa" (1991): 103–116; Horton, "Early Islam on the East African Coast" (2017): 262–267; Horton, "East Africa" (1994): 194–207.

283 Horton, *Shanga* (1996): 209–223.

the eleventh century.[284] The plan of the mosque of Shanga in phase H was identical to that of the previous mosques in perishable materials of the ninth century. The building formed a rectangle of 10.28 by 7.23 m, always with a little chamber in the south. To the east of the mosque there was a rectangular water reservoir. The main entrance was probably in the east. The reservoir was used for the ritual ablutions before entering the mosque.

The mosque of Shanga was reconstructed between 1160 and 1172. It was built on a platform of white sand, the floor being covered by three layers of plaster. The roofing was supported by two rows of columns connected to the pilasters of the side walls by archways or master beams. The walls were made up of an installation of blocks of worked coral bounded by mortar. The east and west walls had three symmetrical doors which corresponded in the inner space of the prayer hall to three bays parallel to the wall of the *qibla*. The same arrangement can also be seen in the great mosque of Kilwa in the same period. The *mihrab* of the mosque of Shanga was rebuilt in the middle of the twelfth century and then restored in the fourteenth century, the final state of the mosque before it was abandoned.

3.8.1.2 Kizimkazi and the First Swahili Mihrabs

If a quadrangular foundation in ashlar blocks of sea coral indicates the presence of a built *mihrab* in Shanga as early as the eleventh century,[285] the earliest Swahili *mihrabs* that we know, still in elevation, can be dated to the twelfth century. The *mihrab* of the mosque of Kizimkazi, in the south of the island of Zanzibar, is the earliest known Swahili *mihrab* still preserved. It is decorated and bears the date 1107 (Fig. 149). The entry of the niche of the *mihrab* was framed by engaged columns and engaged twisted colonettes. The colonettes carried a trilobal arch. The interior of the niche was interrupted by oblong blind arcades surmounted by a frieze of geometrical motifs, little blind niches, and miniature *mihrabs*. The salient *minbar* in coral stone was composed of two steps and a seat, dating, according to Schacht, from the twelfth century (Fig. 150). The *mihrab* was decorated with inscriptions in floriated Kufic which ran along each side and in the interior of the niche. These inscriptions were cited by Pearce in 1920, and then studied by Flury in 1922.[286] The text to the right of the *mihrab* is a passage of the Quran dated 1107. Another inscription, however, indicates that the *mihrab* was restored in 1772. There is some disagreement about the dating of Kizimkazi and particularly about the trilobal arch surmounting the niche of the *mihrab*. For Peter Garlake, the arch and the frieze of miniature *mihrabs* date from the restoration of the mosque in the eighteenth century. For Mark Horton, the trilobal arch and its Kufic inscriptions were an integral part of the *mihrab* of the twelfth century. In my own view the walls with the mini-*mihrabs* and the inscription are original, but there is nothing to prove that the arch dates back to the twelfth century.

In 1991, on the site of Tumbatu in the north of the island of Zanzibar, Cathrin Clark and Mark Horton excavated an early fourteenth-century *mihrab* in a stratigraphical context, but according to Horton the mosque dates from the twelfth century.[287] The niche of the mihrab was decorated with grooves, motifs in fish-bone, and floriated Kufic inscriptions on the level of the capitals and in the interior of the apse. Five trilobal niches surmounted the epigraph in the niche.[288] The entrance of the restored niche of the *mihrab* presented a structure composed of a trilobal arch with three segments, capitals supported by three polygonal pilasters, and a twisted colonette. The niche was decorated with grooves, fish-bone motifs and inscriptions. All these architectural elements are reminiscent

284 Idem: 200–208.

285 Ibid. 203–208.

286 Flury, "The kufic inscriptions of Kizimkazi Mosque, Zanzibar, 1107 A.D." (1922): 257–264; Lowick, "The Coins and Monumental Inscriptions" (1985): 84–85.

287 Horton, "Archaeology and the Early History of Zanzibar" (1992): 7; Horton, *Shanga* (1996): 423–425.

288 Clark & Horton, *Zanzibar Archaeological Survey* (1985).



FIGURE 149
Mihrab of Kizimkazi, 1107 AD

of Kizimkazi. This is why Horton thought that the arch of Kizimkazi was an original part of the twelfth-century mosque and not a restoration of 1772.[289] Nevertheless Horton's dating of the arch of the *mihrab* poses some considerable problems and nothing allows us to certify such an early dating, especially since the Tumbatu's mosque in its final stage dates from the fourteenth century.

Other archaeological sites also pose a problem where dating is concerned. Kisimani Mafia, for example, is a site which has three ruined mosques. All that remains of the first mosque is the *mihrab*, the walls of the niche of which were interrupted by eleven blind arcades surmounted by a frieze of rounds and small lobes. The second mosque is

289 Horton, "Archaeology and the Early History of Zanzibar" (1992): 7.

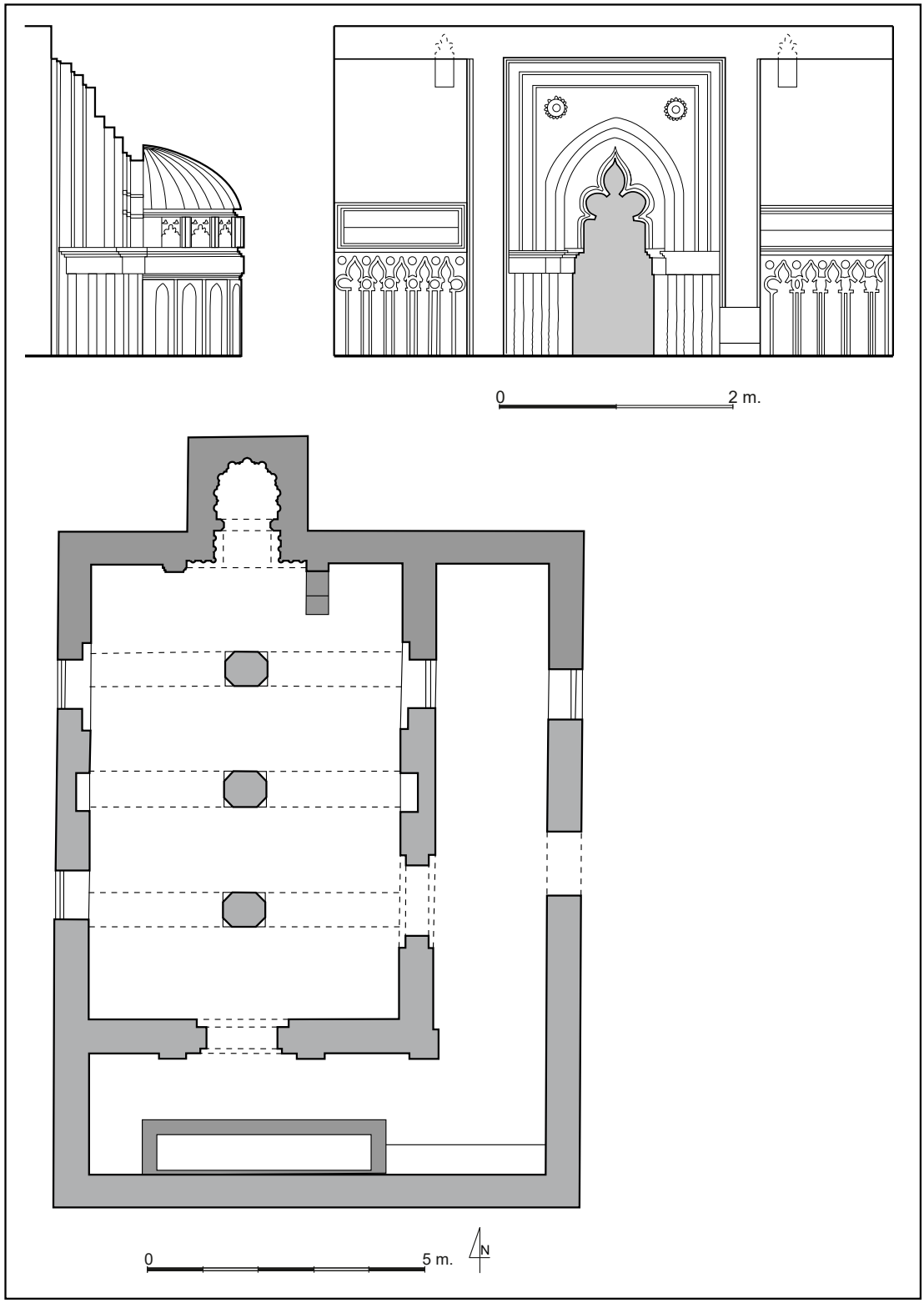


FIGURE 150 Mosque and mihrab of Kizimkazi, Zanzibar Island

a building measuring 9.25 by 7.25 m. The *mihrab* was composed of an apse with steps surmounted by a frieze in plaster. The coins discovered in five layers of plaster have allowed Neville Chittick to date the building to between 1240 and 1290,[290] but it is most likely that this mosque was built in the twelfth century and that Chittick only dated the mosque in its final state.

The *mihrabs* of the style of Kizimkazi are clearly defined morphologically by a niche with trilobal blind arcades surmounted by a frieze of geometrical motifs, small blind niches, or miniature *mihrabs*.[291] As previously mentioned, the chronology, on the other hand, presents a problem. This group starts in the twelfth century and persists until the fifteenth, notably in Tumbatu, Kisimani Mafia and Songo Mnara.[292] This type of *mihrab* is situated essentially in the south of the Swahili coast, around the islands of Zanzibar and Mafia, as well as in Madagascar with the mosque of Nosy Manja in the bay of Mahajamba.[293]

The style of the *mihrab* of the Kizimakazi type was recognised by Monik Kervran in an Uyunid mosque in Bahrain, dating from the first half of the twelfth century. The mosque of the Suq al-Khamis had an inscription in floriated Kufic with a dedication to the third emir of the Uyunid dynasty who reigned between 1131 and 1149. It contained the Shiite *shahada* and mentions the Twelve Imams. The mosque was also mentioned in the last decades of the Qarmatian empire towards 1050 and was founded in 1107 at the time when Abu Sinan restored the mosque of the Suq al-Khamis.[294] *Mihrab* plaques with Kufic characters can also be seen in the Fatimid rearrangements of the mosque of Ibn Tulun in Cairo. Therefore, the first Swahili mihrabs were probably linked to Shia'a communities.

3.8.1.3 The First Mosque of Kilwa in the Twelfth Century

The great mosque of Kilwa is divided into two parts. The northern part corresponds to the earliest mosque, dating from the twelfth century, and the southern part is a later extension. According to the Chronicles of Kilwa, the first mosque was built between 1131 and 1170.[295] It had a rectangular plan measuring 11.8 by 7.8 m (Fig. 151). All that remains are the loadbearing walls whose foundations were composed of regular arrangement of quadrangular ashlar blocks in coral limestone. This type of masonry was typical of this period. Three symmetrical vaulted doors opened in the east and west walls. The flat roof was supported by nine hexagonal monoxyle columns ordered in three rows, the bases of which, in sandstone in the ground, are still visible.[296] In 1530, the roof collapsed. Judging from the archaeological excavations the debris were thrown into the western antechamber. The roof consisted of coral tiles drowned in mortar. These tiles were engraved with motifs of concentric circles with a diameter between 8.5 and 10.5 cm. Chittick noted traces of red paint on the ceiling, so the mosque may have been painted in red and black colours.[297] The *mihrab* seems more recent than the building of the twelfth century. Its pointed archrests on capitals and pilasters. The niche was decorated with oblong friezes and surmounted by a fluted half-dome vault. Four coral blocks jut out east of the *mihrab*, indicating the

290 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962).

291 Pradines, "Le mihrab swahili: Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 355–381.

292 Kervran & Kalus, "La mosquée al-Khamis à Bahrain: son histoire et ses inscriptions" (1990): 31–45 & 48–49.

293 Vérin, *Les Echelles Anciennes du Commerce sur les côtes nord de Madagascar* (1975): 543–544; Poirier, "Terre d'Islam en mer Malgache" (1954): 71–116.

294 Kervran & Kalus, "La mosquée al-Khamis à Bahrain : son histoire et ses inscriptions" (1990): 31 & 48.

295 Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 122–125; Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 65–66.

296 Idem, 61–65.

297 Aga Khan University "Indian Ocean Painted Ceilings" project (https://www.aku.edu/ismc/research/mcio/Pages/heritage.aspx).



FIGURE 151 First Shirazi mosque of Kilwa, 1131–1170 AD

attachment of a fixed *minbar*, probably in wood. I have also observed traces of oblong niches in the niche of the *mihrab*. These elements, which recall the *mihrabs* of Kisimani in Mafia and of Kizimkazi in Zanzibar,[298] were part of the original Shirazi *mihrab*, but only the upper parts seem to have been refitted in the fifteenth century. The ablution area of this first mosque was situated in the west. During the restoration, Pierre Blanchard discovered an elaborate system of canalisation with tubes of baked clay.

3.8.1.4 The Mosque of Sanje ya Kati in the Twelfth Century

Sanje ya Kati is a small circular island in the centre of the bay of Kilwa[299] and is occupied by the eponymous archaeological site. It was a fortified trading post protected by a quadrangular wall measuring 100 by 340 m and flanked by towers.[300] The great mosque was established in the south-east of the site. It was founded in the second half of the eleventh century and renovated during the twelfth century. The building technique is comparable to that of the first Shirazi mosque of Kilwa

298 Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 360–361.

299 Pradines, "L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel" (2009): 49–73.

300 Pradines, "La bipartition des cités swahili : l'exemple de Gedi (Kenya)" (2002): 71–87.

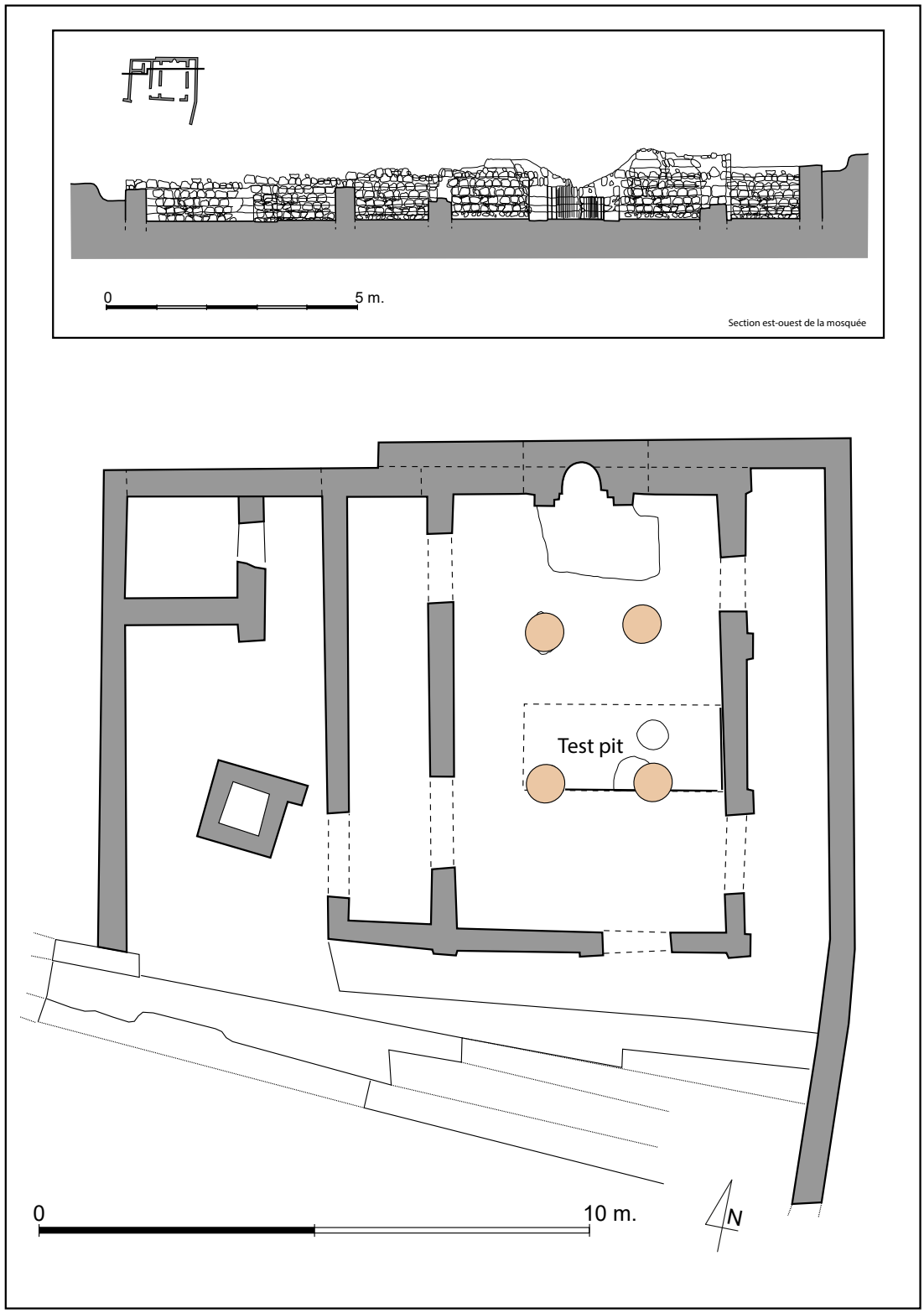


FIGURE 152 Plan of the mosque of Sanje ya Kati in the twelfth century



FIGURE 153 Mosque of Sanje ya Kati during restorations

Kisiwani,[301] with regular bedding and a masonry composed of fresh coral blocks cut in a small square module measuring between 16 and 24 cm, and an average of 22 cm (Fig. 152). Together with its lateral wings, the mosque of Sanje ya Kati measures 10.21 by 9.46 m. The east and west walls of the prayer hall had two symmetrical doors. The wall of the mosque was supported by four wooden columns of which we found the foundation bases in ashlar blocks of coral limestone. These supports were placed on the axis of the opening of the *mihrab*. The floor of the mosque rested on an artificial terrace of several beds of blond sand which made it possible to raise the level of the building (Fig. 153). According to our excavation, the stratigraphic analysis and the archaeological material associated with it, these levels date from the beginning of the eleventh century. The *mihrab* was constituted by a semi-circular niche inserted in the wall of the *qibla*. The entrance was enframed by pilasters on the axis of the columns in the prayer hall. The transition between the pilasters and the niche was ensured by two simple square mouldings. The wall of the *qibla* was lined on its northern façade by another wall which was in the continuation of the east wall of the eastern wing. The *mihrab* was not typical of a Swahili mosque since it did not protrude of the building. It was, rather, completely integrated in the wall of the *qibla*, which was lined for this purpose, and we may wonder which Muslim confession used this type of *mihrab* (Fig. 154). For Horton, it is similar to the one of the mosques of Ras Mkumbuu on the island of Pemba, which he dates to the tenth century and attributes to the Ibadi communities.[302]

301 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 61.

302 Laviolette & Fleisher, "The Urban History of a Rural Place: Swahili Archaeology on Pemba Island, Tanzania, 700–1500 AD" (2009): 449–452; Horton, "Islam, archaeology and Swahili identity" (2004): 79–80.



FIGURE 154 Qibla and mihrab of Sanje ya Kati

The rectangular prayer hall of the mosque of Sanje was bordered by two lateral wings of the same width. The east wing extended south to incorporate the main entrance of the mosque, and the south side of the building was bordered by a masoned platform preceded by a long step in yellow sandstone, a rock which can also be found in Songo Mnara and Kilwa Kisiwani. A series of three walls was added clumsily against this step at the end of the twelfth century. It was a rustic feature completely different from anything in the mosque. The west wing was composed of two cells to the north and a little square courtyard to the south-west with a well in the middle. The little chamber in the north-west corner must have been the area of the latrines. The well is oriented in a different way from the mosque. It is earlier than the mosque visible today and dates from the same period as the dressed blocks discovered in the arrangement of the floor of the prayer hall. These re-used blocks were cut in sea coral and had a stucco coating of excellent craftsmanship. They all came from an earlier building, probably the first mosque of Sanje, built in the middle of the eleventh century.

3.8.1.5 The Mosques of Comoros in the Twelfth Century

The Comoros archipelago too has some ancient mosques with the sites of old Sima and Domoni on the island of Anjouan.[303] The Mkiri wa Shirazi mosque, situated in the town of Domoni, measures 11.8 by 7.4 m. The present mosque is the result of four rearrangements, the most important one carried out in the fourteenth century, but the first mosque dates from the eleventh or twelfth century. In Mayotte, on the island of Petite Terre, the site of Bagamoyo, which is situated on the islet

303 Wright, "Early seafarers of the Comoro Islands" (1984): 13–59; Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th–XV th centuries a.d)" (1992): 81–128.

of Pamanzi Keli, corresponds to an occupation between the tenth and the thirteenth centuries. In fact, the site of Bagamoyo is a large necropolis which extends on either side of the islet of Mirandole on a littoral cordon connecting the islet of Dzaoudzi to the Badamiers. The inhabited site is on the islet of Mirandole on the west side of which has yielded ceramics dating from between the ninth and the thirteenth centuries. When I was prospecting it, I observed walls with a masonry characteristic of the twelfth century. It consisted of perfectly cut quadrangular ashlar blocks arranged on regular horizontal foundations and may have been a mosque.[304] On the west side of the main island of Mayotte, the site of Akwa also yielded the remains of a mosque with the same system of masonry, and probably dating from the twelfth century.[305]

3.8.1.6 The Mosques of Gedi of the Twelfth and Thirteenth Centuries

The first mosque to be identified with certainty in Gedi can be dated between 1100 and 1150, with a second phase between 1150 and 1180.[306] Unfortunately, it was entirely obliterated when a new mosque was built in the fourteenth century (Fig. 155). All that remains are a few bare walls and a floor level in plaster oriented towards Mecca. An ablution area with bosses in sea coral was discovered to the south-west of this mosque. Its north-north-west axis suggests that the building followed the orientation of the so-called Shirazi type of mosques built between the tenth and the twelfth centuries. The earliest layers discovered on top of the geological bedrock go back to the middle of the eleventh century. The first mosque was situated just under the thirteenth-century mosque. The second great mosque was built between 1200 and 1230. It covered completely the earlier building, which was first demolished. The thirteenth-century mosque was about ten metres long and oriented north-north-west. Unfortunately, the *qibla* wall was re-used for the foundation base of the pillars of the fourteenth-century mosque. All that remains of the almost demolished mosque is a north-south wall, a part of the plaster floor of the prayer hall, and the plaster floor of the lateral east wing. The mosque was shifted slightly to the east. The north-west orientation of the thirteenth-century mosque suggests that the building followed a traditionally Shirazi orientation, like the mosque of the eleventh or twelfth century. The thirteenth-century mosque was bordered to the west by a series of tombs oriented according to the Muslim rite. The paving covering the grave pits included ritual deposits of black and yellow Yemeni bowls and a Kashan bowl from the first half of the thirteenth century. The mosque was renovated at the time of the second phase between 1240 and 1280 (Fig. 156). This mosque, finally, was later completely demolished and covered by an enormous clay terrace which served as a foundation for the great mosque of the fourteenth century. The identical orientation of the mosques of the twelfth and thirteenth centuries could indicate that Gedi did not follow the general change adopted by the majority of Swahili sites with a conversion to the Sunni Shafiite rite, a conversion seems to have been later in Gedi and goes back to the fourteenth century.

3.8.1.7 Common Features of the First Swahili Mosques

The use of blocks of sea coral was attested in Shanga in Kenya and at Dembeni in the Comoros as early as the ninth century.[307] It was a turning

304 Pradines & Blanchard, *Sites islamiques et mosquées de Mayotte* (2009).

305 Pauly, "La diffusion de l'Islam à Mayotte à l'époque médiévale" (2014): 82–85.

306 Pradines, *Gedi, une cité portuaire swahilie* (2010): 35–60 & 81–104; Connah, *African Civilizations: an archaeological perspective* (2016): 233–234.

307 Pradines and alii, "Irone Be (Dembeni, Mayotte) Rapport de mission 2015" (2016): 44–46.

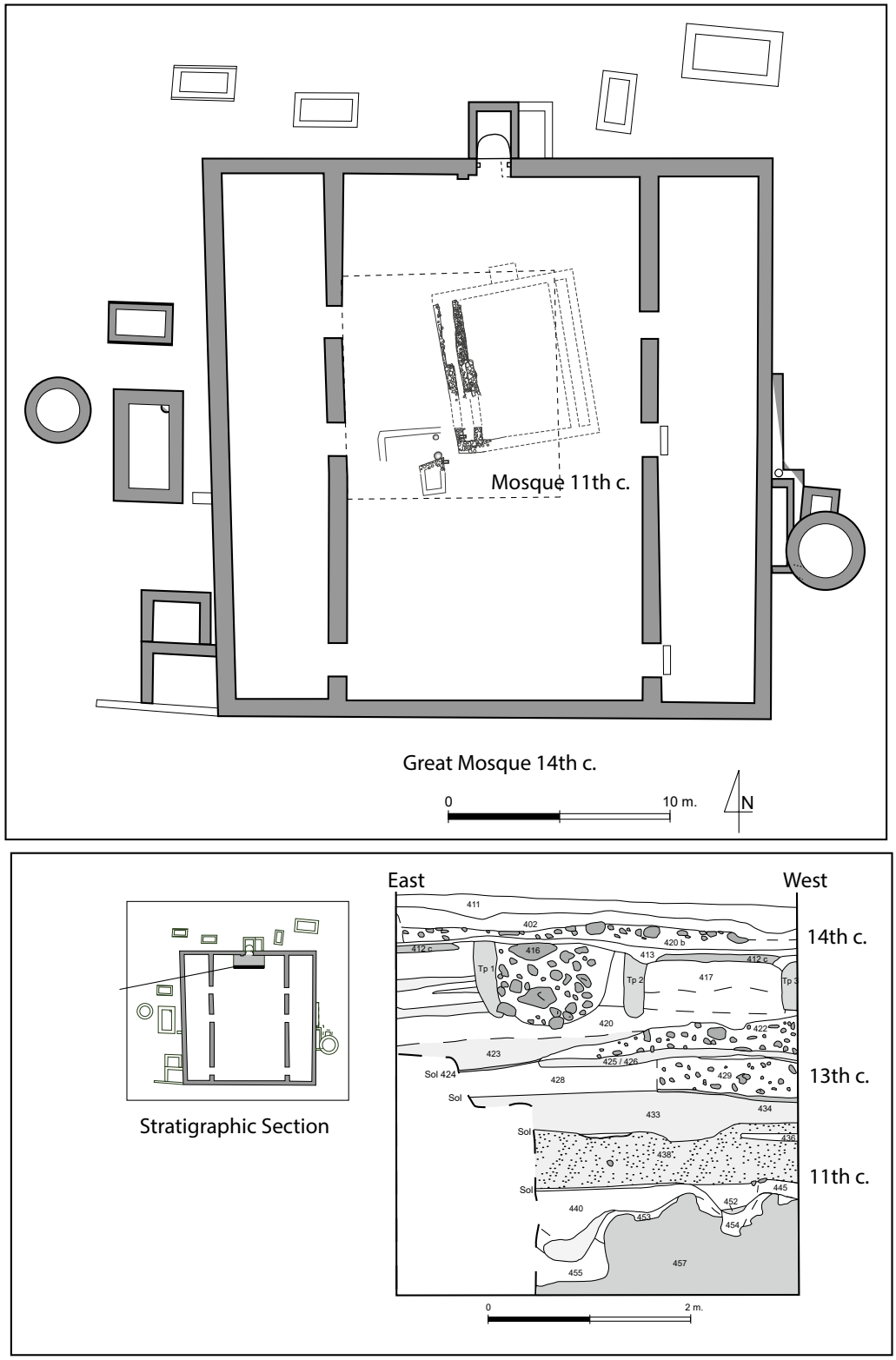


FIGURE 155 Plan of the great mosque(s) of Gedi, 1100–1150 and 1150–1180 AD



FIGURE 156 Great mosque(s) of Gedi, 1100–1150 and 1150–1180 AD

point, with the arrival of new architectural technologies on the Swahili coast. In my opinion, the use of this raw construction material spread across the Indian Ocean thanks to Abbassid sailors and merchants.[308] The use of sea coral in architecture is attested in the Maldives and Sri Lanka at least since the fifth century of our era.[309]

According to Mark Horton, the introduction of coral as a building material of the Swahili mosques can be connected with the Fatimid merchants from the Red Sea.[310] He believes that the Fatimids were innovators with respect to their predecessors in their use of stone for military and religious architecture rather than the brick commonly used in Egypt since the beginning of the Islamic era. This is wrong since the Fatimids also used earthen architecture. In fact, stone architecture only really spread in Egypt with the Ayyubids.[311] In order to prove his point Horton unfortunately takes as his example the town of Suakin which only reached its apogee in the sixteenth century, in the late Mamluk and early Ottoman era. Besides, most of the sites on the Red Sea were built in fossil coral limestone and not in fresh sea coral. According to Horton, the most important proof of Fatimid architectural influence on the east coasts of Africa is the *mihrab* of the mosque of Kizimkazi on the island of Zanzibar, which, decorated with Kufic inscriptions, can relate to the Fatimids of Egypt. In

308 De Planhol, *L'Islam et la mer, La mosquée et le matelot VII^e–XX^e siècle* (2000): 91–148; Pradines, "Coral stone: an Indian Ocean architecture", *Oceanic Circularities: The Indian Ocean in the Modern World*, Georgetown University, Qatar, forthcoming.

309 Pradines and Balestra, "Excavations on the Coral Mosques of the Maldives" (2021): 200–202.

310 Horton, "Primitive Islam and architecture in East Africa" (1991): 103–116; Pradines, "Madagascar, the Source of the Abbasid and Fatimid Rock Crystals" (2020): 35–50.

311 Pradines, "Ethnicity and architecture. The Fatimid town walls in Cairo" (2018): 104–145.

fact, Kufic inscriptions also relate to the Gulf, Iraq, Iran, and Sindh for the same period and earlier.

It was indeed in the eleventh century that Swahili builders started to cut sea coral for the construction of their mosques.[312] This material would be used to build walls until the end of the twelfth century. The excavations of Sanje ya Kati allow us to contradict entirely the earlier schemes of urbanisation intended to show a slow and local evolution of Swahili architecture.[313] The houses, the mosque, and the fortifications of Sanje ya Kati form a homogeneous architectural complex, between the eleventh and the twelfth century, in their techniques of construction with horizontal bedding, a system consisting of quadrangular ashlar blocks cut in a dense but soft sea coral. The mortars were very thick and deposited in beds. Sanje ya Kati was a well defined and planned architectural project. The building techniques were remarkably accomplished. The first Swahili *mihrabs* were astonishing because they displayed a great expertise in stone cutting. There was no phase of "apprenticeship" in the techniques. The *mihrabs* were constructed independently of the wall of the *qibla*. They were built first, and the walls of mosque would be integrated around them. And yet this type of *mihrab* would soon be rejected by the populations of the coast because it required important technical knowledge, and no longer corresponded to the demand of the religious movements that would succeed it. During the thirteenth century, we see a degeneration of these techniques with materials of less good quality. With the expansion of the Swahili city states the dressing of coral stone was abandoned in favour of constructions in limestone rags and mortar in coffrage (coral concrete).

Between the eleventh and the twelfth century, the Swahili mosques adopted a plan which they were to follow until the nineteenth century: a rectangle, crossed by bays parallel to the *qibla*, a space enframed by two long parallel narrow chambers making up a third of the surface of the prayer hall. The Swahili mosques of the twelfth century seem to have had the same proportions, as we see in the mosque of Shanga[314] which forms a rectangle of 11.22 by 7.21 m, and in Gedi where the first mosque measured some 10 by 7 m.[315] In Tanzania the great mosque of Kilwa built between 1131 and 1170 has a rectangular plan of 11.8 by 7.8 m.[316] Always in the bay of Kilwa, the mosque of Sanje ya Kati founded in the second half of the eleventh century measured 10.21 by 9.46 m.[317] The mosque of Domoni, on the island of Anjouan (Comoros) measured 11.8 by 7.4 m. The first Swahili mosques had a light roof in wood and palm leaves. The supports of the roof were usually in wood and were unable to carry large weights. The roof of the mosque of Tumbatu was supported by nine octagonal columns in wood which have left negative traces in the ground. Wooden columns were also used in Kilwa and in the mosque of Gedi.[318] The roof of the mosque of Shanga was apparently supported by columns in wood. The Comorian mosques of Sima and Domoni also had columns in wood in their first phases of the eleventh and twelfth centuries and organised both sides of the niche of the *mihrab*.[319]

312 Horton, "Primitive Islam and architecture in East Africa" (1991): 103–116; Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th–XV th centuries a.d)" (1992): 81–128.

313 Horton & Middleton, *The Swahili* (2000).

314 Horton, *Shanga* (1996): 218–223 & 224–229.

315 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 27.

316 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 61, 65–66; Freeman-Grenville, *The Medieval History of the Coast of Tanganyika* (1962): 122–125.

317 Pradines, "Sanjé ya Kati, Kilwa, Tanzanie" (2006): 64–70.

318 Pradines, *Gedi, une cité portuaire swahilie* (2010): 47–48 & 93–95.

319 Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th–XV th centuries a.d)" (1992): 81–128.

The ancient Swahili mosques had a north-north-west orientation instead of being turned directly north towards Mecca. Mark Horton thought that the north-north-west orientation of the primitive mosque of Shanga was due to a lack of geographical knowledge on the part of the builders.[320] But his hypothesis was only based on the example of Shanga, while we now have more information and have inspected a similar case: the great mosque of Gedi.[321] The builders of the first Swahili mosques were certainly of a different ethnic origin or confession than the builders of the thirteenth century mosques. There may have been a change of confession, and a passage to Sunnism was connected to a reconstruction of certain places of worship between the thirteenth and the early fourteenth century.[322] Judging from their different orientation, the Swahili mosques of the twelfth century may have been Shiite or Kharijite. This change must be seen in the global perspective of the Islamic world. At the end of the twelfth century, the Yemen was conquered by the Ayyubids who spread Sunnism in the area. In the thirteenth century the Rasulid princes continued to spread this doctrine in the Yemen and beyond the seas. The spread of Sunnism on the Swahili coast can thus be attributed to contacts with merchants from the Hadramawt. Kilwa would be a perfect illustration, since its inhabitants converted to Sunnism in the thirteenth century with the advent of the Mahdali dynasty of the Shafiite confession, and according to Ibn al-Mujawir there was a school that professed this doctrine in Kilwa.[323] As from the fourteenth century, all the Shiite groups seem to have been absorbed by the Sunnis, for, in 1331, Ibn Battuta met Shafiite Sunnis on the whole of the coast.[324]

So, by whom were the first Swahili mosques influenced? Kizimkazi, the earliest Swahili *mihrab* known in elevation, revealed these trans-oceanic influences. This architectural example, together with the recent archaeological discoveries, allow us to understand the origin and the rôle of the communities of the Persian Gulf in the Islamisation and urbanisation of the east coast of Africa. The first *mihrabs* were erected by master masons who had probably come from the Gulf and the north of India. The populations of the Gulf were generally called "Shirazis" by the Swahilis.[325] Between the beginning of the eleventh and the end of the twelfth century, the Shirazis developed an elaborate architecture in East Africa with the introduction of *mihrabs* and finely carved Kufic inscriptions, such as the *mihrabs* of Kizimkazi and Tumbatu. By "Shirazis" we must understand the essentially Shiite populations from the Persian Gulf: Iran-Iraq, Bahrain, and the Sindh Delta and the port city of Daybul (Banbhore), but also Ibadis from Oman. In the oral traditions these Shirazis would become the mythical ancestors of numerous Swahili city states, and particularly of Kilwa. The little mosques of Siraf in the tenth century were fairly similar to the first Swahili mosques. They had an inner space divided by arcades parallel to the *qibla* and internal dimensions going from 5.4 by 5.5 m to 9.7 by 10.2 m.[326] Swahili architecture also presented great stylistic affinities with the decorations and arches of the *mihrabs* of the north-west of India which was home to various Ismaili merchants, particularly in the Sindh Delta, and Gujarat with the gulfs of Kutch and Cambay.[327]

320 Horton, *Shanga* (1996): 229.

321 Pradines, *Gedi, une cité portuaire swahilie* (2010): 31–104.

322 Horton, *Shanga* (1996): 170–208.

323 Wilkinson, "Oman and East Africa: new light on early Kilwa history from the Omani sources" (1981): 272–304.

324 Ibn Battûta (1357) in Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 28–30.

325 Pouwels, "Tenth Century Settlement of the East African Coast: The Case for Qarmatian/Isma'ili Connections" (1974): 65–4; Pouwels, "The Medieval Foundations of East African Islam" (1978): 201–226 & 393–409.

326 Whitehouse, "The smaller mosques at Sirâf" (1984): 166–168.

327 Khan, "Introduction et propagation du mihrâb dans l'architecture islamique du Pakistan" (1988): 158–159.

According to the Portuguese,[328] Indian communities settled on the entire east coast. Shiite Gujarati merchants were thus seen in Mombasa in 1504. These Ismaili Indians belonged to the Nizari (Aga Khani) branch and the Bohras or Tayyibi-Mustali branch. The Gujarati Muslims became a minority with the Portuguese domination of the Indian Ocean and the preference for networks of non-Muslim Indians such as the Hindu Banias. The Shiite traders and the Ibadis would return to Africa from the eighteenth century on with the colonisation of the area by the Omanis.

3.9 The Swahili Mosques of the Thirteenth Century

3.9.1 *The Mosque of Fakhr al-Din in Mogadishu*

In 1222, Yaqut observed that Mogadishu was the most important town on the east coast of Africa. At the time the city was experiencing an economic prosperity resulting from the expansion of maritime trade with the Red Sea. If commercial relations with the Persian Gulf and Seljuq Iran were still significant, the essential part of trade was now with the Red Sea controlled by the Ayyubid and Rasulid dynasties of Egypt and the Yemen and then by the Mamluks. In 1331, Ibn Battuta too pointed out that Mogadishu remained one of the most important towns on the coast.[329] This growth entailed profound alterations of the city, notably by the creation of a new urban centre in the thirteenth century, Hamar Wani.[330]

Several mosques of Mogadishu can be dated by thirteenth-century inscriptions and reveal the architectural vitality of the city at the time. Some of these mosques have minarets, such as Haaji Muusa (Adayga) and Abdul Aziz. A plaque above the entry of the minaret of the jamia of Mogadishu bears an inscription dated 1238 in the name of *Khusru, son of Muhammad al-Shirazi*. The minaret of the Jamia is from the thirteenth century, but the plan of the mosque seems to belong to early Swahili mosques group, from the twelfth century. During some restoration works in 2013, an old mihrab was discovered behind a previously walled up area. In total, the Friday mosque of Mogadishu had three mihrabs.[331] The function of these two lateral mihrabs can be explained by the social uses and the long history of the building. One aisle of the mosque was probably reserved for women, and another mihrab was certainly an extension of the prayer area, or a space reserved for a school (Madrasa).

The mosque Muhammad Taani has an old Kufic inscription over the mihrab, but unfortunately without a date. The mosque Shikh Rumani was dated by an inscription on a carved beam with a date 1419, an Iranian glaze tile with an inscription in naskhi was recently discovered in the mihrab. The mosque Mataano (the "Twin") is composed of two small mosques Masjid Aw Muqtaar and Masjid Shaykh Umar. Local traditions report that Aw Muqtaar is from the thirteenth century and Shaykh Umar from the eighteenth century. These two small mosques share the same courtyard and the same ablution area, but they have two separate muezzin and khatib. The mosque Arba'a Rukun beared an inscription from 1269, unfortunately the building was recently completely renovated and, de facto, almost destroyed by Turkish government.[332] Finally, archaeological excavations have been made on an ancient mosque in the Shangani district, the first urban settlement in Mogadishu. The mosque of Sheikh Ahmed Sharif was restored in 1827 according to an inscription, and two earlier mosques were found under the nineteenth century building. The mosque was studied in 1986 at the time when foundations were being dug for a new mosque. The excavations

328 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 32.

329 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 28–30.

330 Pradines, *Fortifications et urbanisation en Afrique orientale* (2004): 338.

331 Scikei, *Exploring the Old Stone Town of Mogadishu* (2017): 53–66.

332 Idem, 53–66.

revealed a stratigraphic sequence running from the thirteenth to the nineteenth century.[333]

The town of Mogadishu has one of the jewels of Islamic architecture of the Swahili coast: the mosque of Fakhr al-Din, situated in the eastern part of the Hamar Wani district.[334] The square mosque measures 18.4 m in length (Fig. 157) and has a prayer hall enframed by two east-west side chambers. According to Neville Chittick, the ancient pillars bearing the roof of the prayer hall were at the intersection of the main beams. There would thus have been four pillars in the primitive mosque rather than the two pillars which are there now. The *mihrab* of Fakhr al-Din has a semicircular arch similar to the one in the *mihrab* of Msuka Mjini in Pemba. A plaque in Indian marble with a low relief is inserted in the niche of the *mihrab* and represents a mosque lamp suspended by a chain hanging from the summit of an arch with six lobes. The lamp represented refers to the Qur'anic verse 24:35. Above it there is a glazed tile decorated with a recticurvilinear *mihrab* bearing an inscription dated 1268–9, and signed in the name of Hajji bin Muhammad bin Abdallah (Fig. 158). This date corresponds to the year of the foundation of the sultanate of Mogadishu by Abu Bakr bin Fakhr al-Din. The prayer hall opens south onto a small inner courtyard. Three doors to the south of the courtyard give onto the street. The circumference of the main door is decorated with plaques in white Gujarati marble carved with floral and calligraphic motifs (Figs. 159 & 160). These finely carved white marble tiles were made in, and exported from, Gujarat.[335] Two of the doors of the mosque of Fakhr al-Din were condemned. They both had lintels with three conical bosses decorated with fine fluting, as on the sites of Somana in Mozambique and Rasini in Somalia. A reversed U in relief enframes the top of these entrance doors. The frame consists of square blocks separated by small and very fine rectangular briquettes on which are carved rope mouldings. The border delimits the lintel and the architrave. The door, which is further north, is surmounted by a pointed arch with six curves forming a trumpet entrance. The mosque of Fakhr al-Din, finally, has a particularly original covering with a bulbous cupola and a conical dome, as in the mosques of Mwana and Ungwana. The bulbous cupola which surmounts the prayer hall is capped by a celadon bottle.

The conical dome and polygonal vault with flat surfaces are typical of the Seljuq buildings in northern Iran and Iraq between the eleventh and the thirteenth century. The plan and the covering of this building, altogether atypical on the Swahili coast, but recalls the religious buildings of post-Seljuq Anatolia (Mengujekid dynasty), notably the mosque of Divrigi dated 1228[336] with its conical vault preceding a square chamber capped by a central cupola. The very Anatolian plan and the refinement of the techniques of stone dressing for the conical cupola suggest a strong Seljuq architectural influence. In Mosul, monuments dating from the first half of the thirteenth century have similar coverings,[337] as we see in the *Mashhad* Yahya bin al-Qasim of 1239 and the *Mashhad* Imam ʿAwn al-Din, dating from 1248. Some of these monuments were built under Badr al-Din Lu'lu who was of Armenian origin. The vast Seljuq Empire (1037–1194) was the support of the dissemination of Armenian stone building construction know-how in the Muslim world, from Anatolia to the Indian Ocean. The connection

333 Jama, *The Origins and Development of Mogadishu AD 1000 to 1850* (1996): 61–65.

334 La Lomia, *Antiche Moschee di Mogadiscio* (1982); Abdulkadir, Restaino, & Spina, *Mogadiscio e la sua evoluzione storico-urbanistica* (2018): 78–89.

335 Pradines, "L'archéologie swahili et la collection Révoil au Musée de l'Homme (Paris)" (1999): 23–26; Lambourn, "The decoration of the Fakhr al-Dîn mosque in Mogadishu and other pieces of Gujerati marble carving on the East African coast" (1999): 71–77.

336 Pancaroglu, "The Mosque-Hospital Complex in Divriği" (2009): 169–198; Terrasse, "Les synthèses de l'Anatolie turcomane" (1981): 256–257.

337 Tabbaa, "The Politics of Patronage in Medieval Mossul: Nur al-Din, Badr al-Din and the Question of the Sunni Revival" (2020): 98–107.

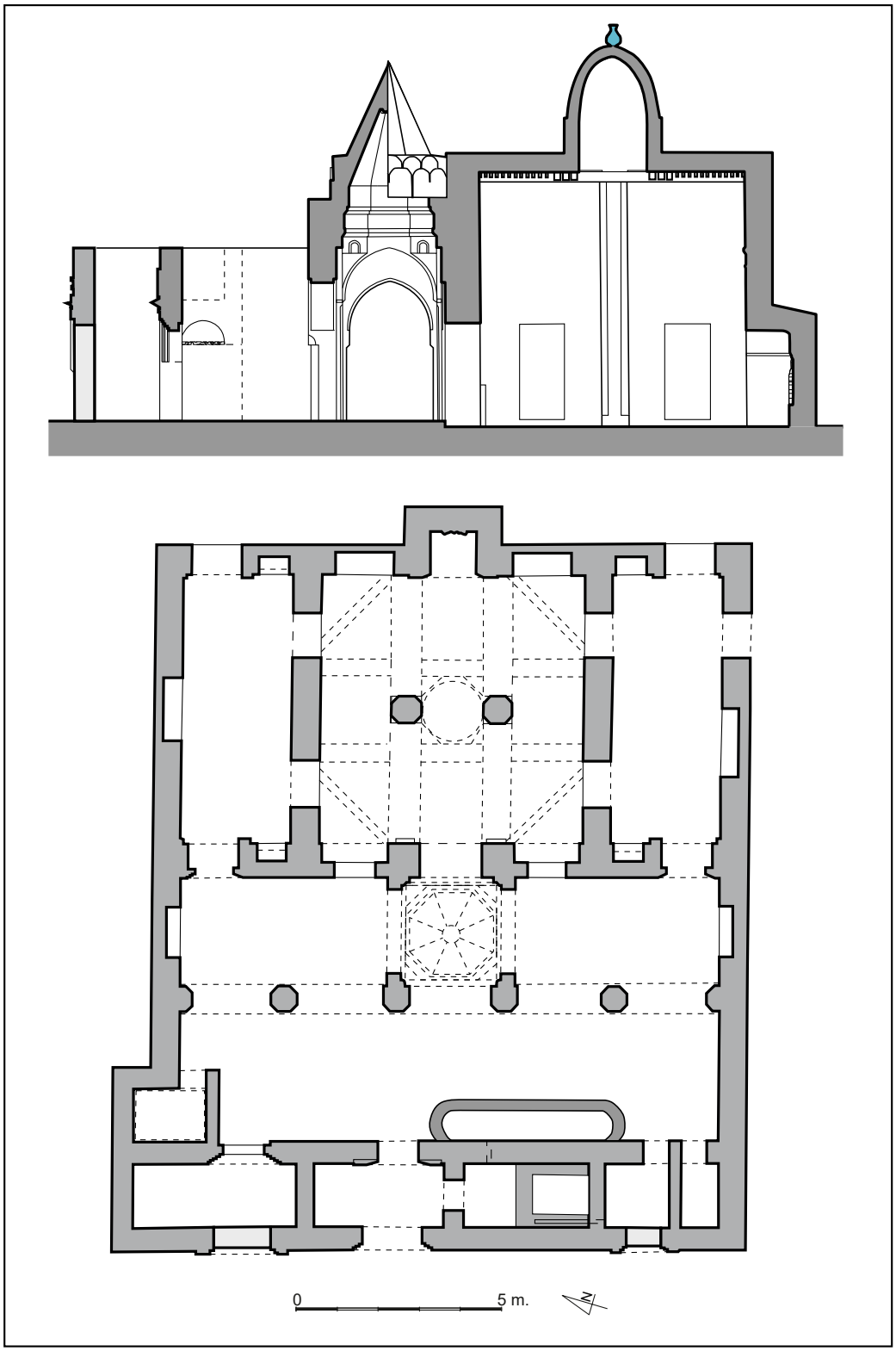


FIGURE 157 Mosque of Fakhr ed-Din, Mugadishu



FIGURE 158
Mihrab of Fakhr al-Din, Mugadishu

between Anatolia and Somalia is probably what I would call the "Iraqi corridor".

These influences are also visible in Yemen for the same period. In Ta'izz, three Rasulid mosques present some similarities with Anatolia. Lewcock supposes that an architect with a Turkish background worked on the Jamia al-Muzaffar.[338] According to him, the external decorations have some close parallels with the basketweave frieze in Anatolia (Mosque of Sahib Ata, Konya, 1258, and the mosque of Kiziltepe, 1204); the double-blind arches also occur in eastern Anatolia (Ahlat, Ulu Kumbed, 1273). The scalloped decoration in the squinches and the scalloped domes are similar to those in Divrigi Mosque in Anatolia (1228). The great southern portal, with pointed arches held with cusped arches can be compared to Anatolian work in Kiziltepe, in the thirteenth century. The bands of chevron ornament, the star patterns of straight lines, and the knotting decorations are present in Anatolian Seljuq architecture. According to Lewcock, these Yemeni mosques were influenced by the Turkomans.[339] I do believe that these influences visible in Fatimid Egypt and in Seljuq Iraq are first related to Armenian builders, and therefore these influences are also visible in Eastern Anatolia. The Yemeni example is closely related to our Somalian Mosque.

338 Lewcock & Smith, "Three medieval mosques in the Yemen" (2018): 37–39 and 57.

339 Idem, 65–66.

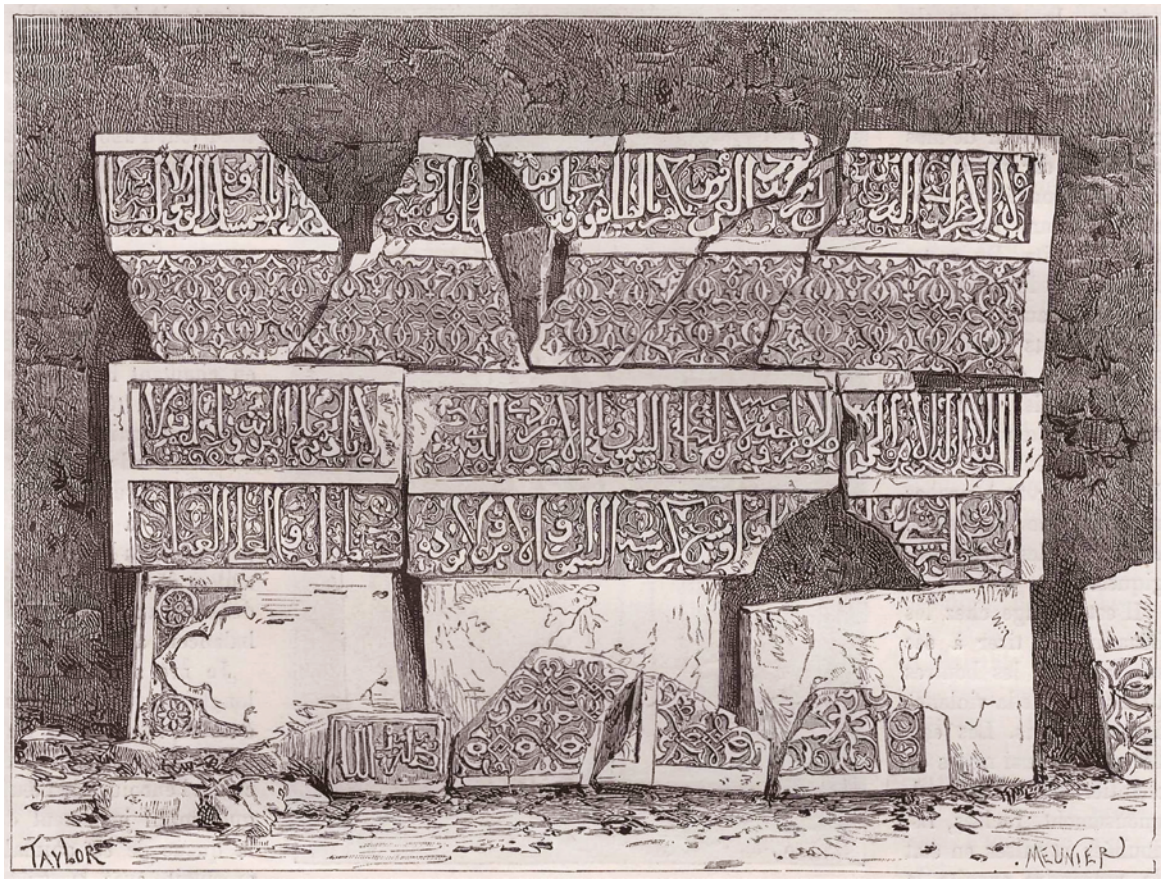


FIGURE 159 Main gate of Fakhr al-Din mosque with Gujarati white marble plaques



FIGURE 160
Gujarati white marble plaque with Arabic inscription

Were master masons invited from the Persian Gulf by the sultans of Mogadishu?[340] Were the portal and the plan of the mosque of Mogadishu representative of eastern Anatolian or of Armenian models? Were Armenian craftsmen working in the service of the sultan of Mogadishu, as they were working for the Fatimid Caliphate on the gates of Cairo?[341] And finally, were these craftsmen Muslims or Christians? Could it possible that the mouldings of the jambs and archivolts of the Swahili mihrabs might have been influenced by Christian architecture and how? These questions are important since the mouldings and the ogee arches of the *mihrabs* in the Somali style also recall

340 Wilber, *The architecture of Islamic Iran* (1955); Gray, "The Wadebuli and the Wadiba" (1954): 22–42.

341 Pradines, "Ethnicity and architecture. The Fatimid town walls in Cairo" (2018): 129–135.



FIGURE 161
Simple niche mihrab in Kaole mosque n°1

certain portals and windows of the Ethiopian churches dating from the early thirteenth century, such as a window of Lalibela enframed by two mouldings and surmounted by an ogee arch. In Ethiopia, the church of Saint George of Lalibela, Beta Giyorgis, has windows enframed by two mouldings and surmounted by an ogee arch as in the Swahili *mihrabs*. Unfortunately, the architectural connections between Christian Ethiopia and the Islamised coast have not yet been studied.[342] The Armenian builders also influenced Crusader and Muslim architecture from the Fatimid to the Ayyubid period.[343] They spread their style and their architecture in the whole Middle East and Egypt. Some Armenians were born Christians but converted to Islam such as the famous Fatimid Vizier Badr al-Jamali, others stayed Christians but worked for Muslim rulers. They influenced Fatimid architecture and the Coptic church had permanent religious and diplomatic links with Ethiopia.

342 Pradines, "Le mihrab swahili: Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 362, note 45; Munro-Hay, *Ethiopia, The Unknown Land. A Cultural and Historical Guide* (2002): 121; Hespeler-Boultbee, *Story in Stones. Portugal's Influence on Culture and Architecture in the Highlands of Ethiopia 1493–1634* (2006); *Lepage* & Mercier, *Lalibela*: *Wonder of Ethiopia: The Monolithic Churches and Their Treasures* (2012).

343 Pradines, "Burg al-Zafar, architecture de passage des Fatimides aux Ayyoubides" (2016): 51–119; Pradines, "Ethnicity and architecture. The Fatimid town walls in Cairo" (2018): 104–145.

Therefore, the Armenian architectural traditions might have come up to Somalia, by land through the river Nile and the desert caravan roads, or by sea with the Red Sea and the Indian Ocean.

3.9.2 *The Mihrabs of the Tongoni Group*

The *mihrabs* of the *Tongoni* group appeared at the beginning of the thirteenth century. The *mihrab* of Tongoni has an inscription dated 1214. Unlike its predecessor in Kizimkazi, this type of very austere *mihrab* had no incised or carved decoration. The entrance of the niche was surmounted by a pointed arch resting on two or three mouldings which flanked the sides of the niche. The salient rectangular frame was not decorated. Sometimes two niches enframed the opening of the *mihrab*. The pilasters enframing the opening supported small rectangular capitals on which stood a broken or an ogee arch with two mouldings. The summit of the arch was two metres above ground level. The little rectangular niches inserted in the pilasters were the repositories of Qur'ans. The earliest form of niche was a rectangle enframed by a moulding forming a right angle 2 cm wide, as at Tongoni and Ras Mkumbuu. The niches in the pilasters of the mosques of Kaole n°1, Shengejuu and Chwaka had two flaps. The four coral plaques making up the niche were not encased but assembled in the corners, the lower parts of the two vertical plaques being embedded in the base block (a mason's cowl). The semicircular apse of the *mihrab* had an average depth of 1.25 m and projected a square aedicule on the exterior of the mosque. The niche was surmounted by a half-dome vault. This type of fairly simple *mihrab* can be found in certain small mosques until the arrival of the Portuguese, particularly at Kitoka, Kimbiji, Mbweni and Kaole n°2 (Fig. 161).

3.9.3 *The Somali-Style Mihrabs*

The *mihrabs* of the Somali group appear in the middle of the thirteenth century and were characterised by the presence of boss decorations in carved coral and ceramics inserted in the tympanums, and by an ogee arch slit at the summit. The conical coral bosses with engraved lines can be seen above the *mihrab* of Rasini, the doors of the mosque of Fakhr al-Din, the door of the minaret of the *jamia* of Mogadishu (Fig. 162), but also in the mosque of Mgangani in Kenya and above the doors of the "palace" of Somana in Mozambique.[344]

The *mihrabs* of Mbweni and Shengejuu are the most representative of the Somali group (Fig. 163) which had its roots in the *mihrabs* of Tongoni, and the *mihrabs* of Kiburugeni, Tumbatu and Kisimani Mafia mark a transition between the thirteenth and the fourteenth century. The mouldings multiplied around the arch and the columns, and this increased the depth of the *mihrabs*, as in Mnarani, Shengejuu, Dege, Bandarini, Jibondo and Kilwa (Fig. 164). The tympanums of the *mihrab* of Mbweni received the first inlay ceramics. On a morphological level, this group has an ogee arch split at the summit. This split is particularly visible in the Mogadishu-style *mihrabs*. The Swahili arch did not have a keystone and the two segments of arches rest on one another – a technique which has been qualified by some scholars as corbelling and which shows a characteristic split at the summit of the arch. It was a false arch held by the lateral counterthrusts and can be found in the Sindh Delta architecture.[345] In the mosque of Kaole n°2, the arch of the *mihrab* was formed by two segments of arches in the shape of a reversed Y, which was the projection of the two blocks of tympanums (Fig. 165). It was a proper voussoir arch which made full use of the lateral vertical thrusts and also existed at the end of the fourteenth and the beginning of the fifteenth century at Shengejuu, Gedi n°2, the *jamia* of Ungwana in Kenya and at Rasini in Somalia.

344 Duarte, *Northern Mozambique in the Swahili World* (1993): 118–119.

345 Khan, "Introduction et propagation du mihrâb dans l'architecture islamique du Pakistan" (1988): 158–159.

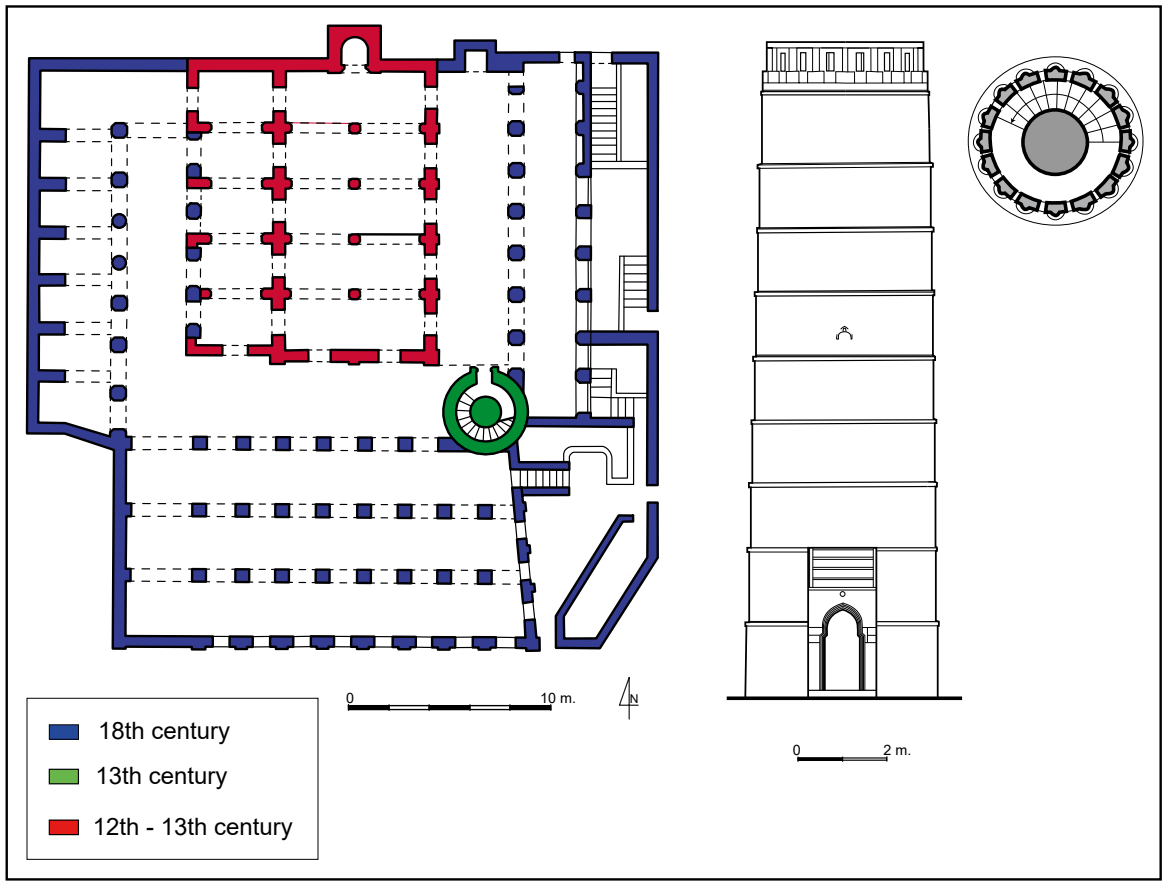


FIGURE 162 Jamia of Mugadishu and minaret

The arch shaped like a reversed Y seems to have originated from Banadir. The Somali *mihrab* of Rasini, moreover, was an intermediary regional element between the thirteenth and the fourteenth centuries.[346] Its ogee arch and its conical bosses in coral were directly connected to the style of Mogadishu. The circumference of the niche was covered with carved plaques forming an exuberant background of geometrical motifs. The jambs were decorated with coral panels engraved with floral and geometric decorations. The arch shaped like a reverse Y surmounted various mouldings of ogee arches. The *mihrab* of Sita-Mgangani had a similar decoration, very elaborate with a semicircular niche with ribbed walls.[347] The beautiful *mihrab* of the old mosque alone is still in elevation. The rest of the building is no longer visible.[348] The mosque of Sita-Mgangani is at the northernmost point of the bay of Mida and 3.4 km away from the ruins of Gedi. This establishment was therefore on the edge of a fluvial axis connecting Gedi to the ocean.

346 Révoil, "Voyage chez les Bénadirs" (1888): 402–403.

347 Kirkman, *Men and monuments on the East African coast* (1964): 128; Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 73–74; Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 363.

348 Pradines, *Gedi, une cité portuaire swahilie* (2010).

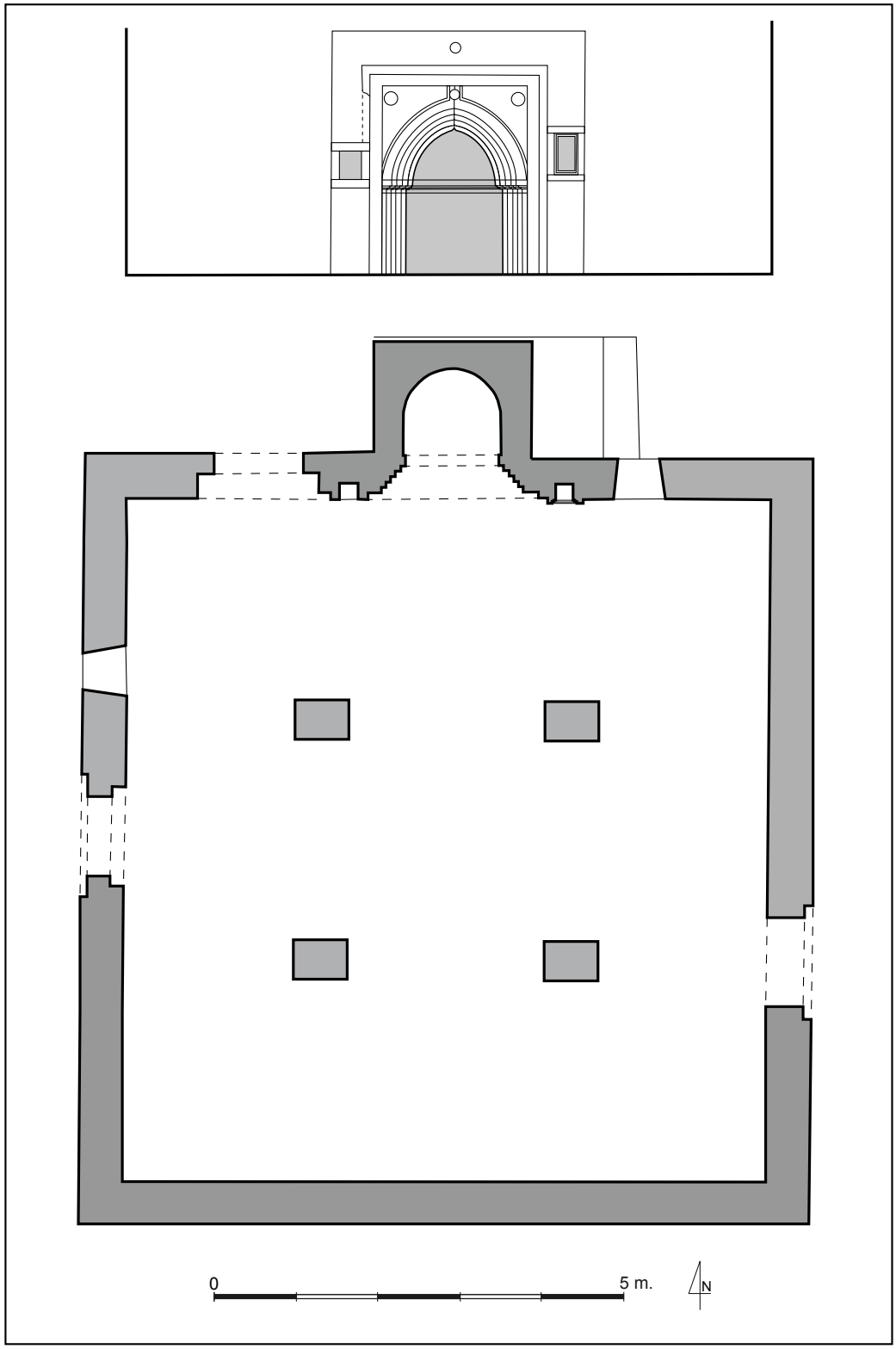


FIGURE 163 Mosque and mihrab of Shengeju



FIGURE 164 Fourteenth century mihrab in the Shirazi mosque of Kilwa Kisiwani

To the south of the great island of Mafia, the site of Kisimani contains the ruins of three mosques. All that remains of Mosque n°1 at Kisimani Mafia is the *mihrab* on a plaster floor. The walls of the niche were interrupted by eleven blind arches surmounted by a frieze of rounds and small lobes. This *mihrab* is very similar to the one in Nosy Manja in Madagascar.[349] The *mihrab* of Kisimani Mafia probably dates from the end of the thirteenth century. The mosque n°2 of Kisimani Mafia has been excavated by Neville Chittick. It is a building measuring 9.25 by 7.25 m, built on a platform of 1.30 m. The walls hardly protrude above the plaster floor because the stones of the mosque were re-used by the inhabitants. The *mihrab* alone has survived. It consists of an apse with steps surmounted by a plaster frieze. The coins discovered in the five plaster floors allow Chittick to date the building between 1240 and 1290 with renovations between 1360 and 1400.[350]

3.10 The Swahili Mosques of the Fourteenth and Fifteenth Centuries

3.10.1 *Mnarani and the Swahili Mihrabs from the Fourteenth to the End of the Fifteenth Century*

Swahili trade reached its apogee between the middle of the fourteenth and the end of the fifteenth century. This flourishing period saw the birth of three new types of *mihrab* covered with highly

349 Vérin, *Les Echelles Anciennes du Commerce sur les côtes nord de Madagascar* (1975): 543–544.

350 Chittick, *Kisimani Mafia* (1961); Freeman-Grenville, *The East African Coast* (*select documents*) (1962).



FIGURE 165
Y reversed arch of the mihrab of Kaole n°2, Tanzania

refined decorations.[351] These groups can be dated to the fourteenth and fifteenth centuries on the basis of historical documents such as the chronicles of Kilwa, the archaeological excavations of James Kirkman, Neville Chittick, Henry Wright, Mark Horton and Stéphane Pradines, and thanks to the stylistic study done by Peter Garlake.[352]

The group of *mihrabs* of the "Tundwa" style dates from the fourteenth and the fifteenth centuries (Fig. 166). The peculiarity of this type of *mihrab* resides in the shape of its arches, ogee or with a semicircular arch, as at Tundwa, Kilindini of Mombasa, Msuka Mjini, Kilwa n°4 and Ungwana n°2. Between the fourteenth and the fifteenth centuries another group, known as the *mihrabs* "of Mnarani", appears, also decorated with bosses and mouldings in sea coral and with

351 Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 355–381.

352 Kirkman, *Ungwana on the Tana* (1966); Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974); Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th–XV th centuries a.d)" (1992): 81–128.

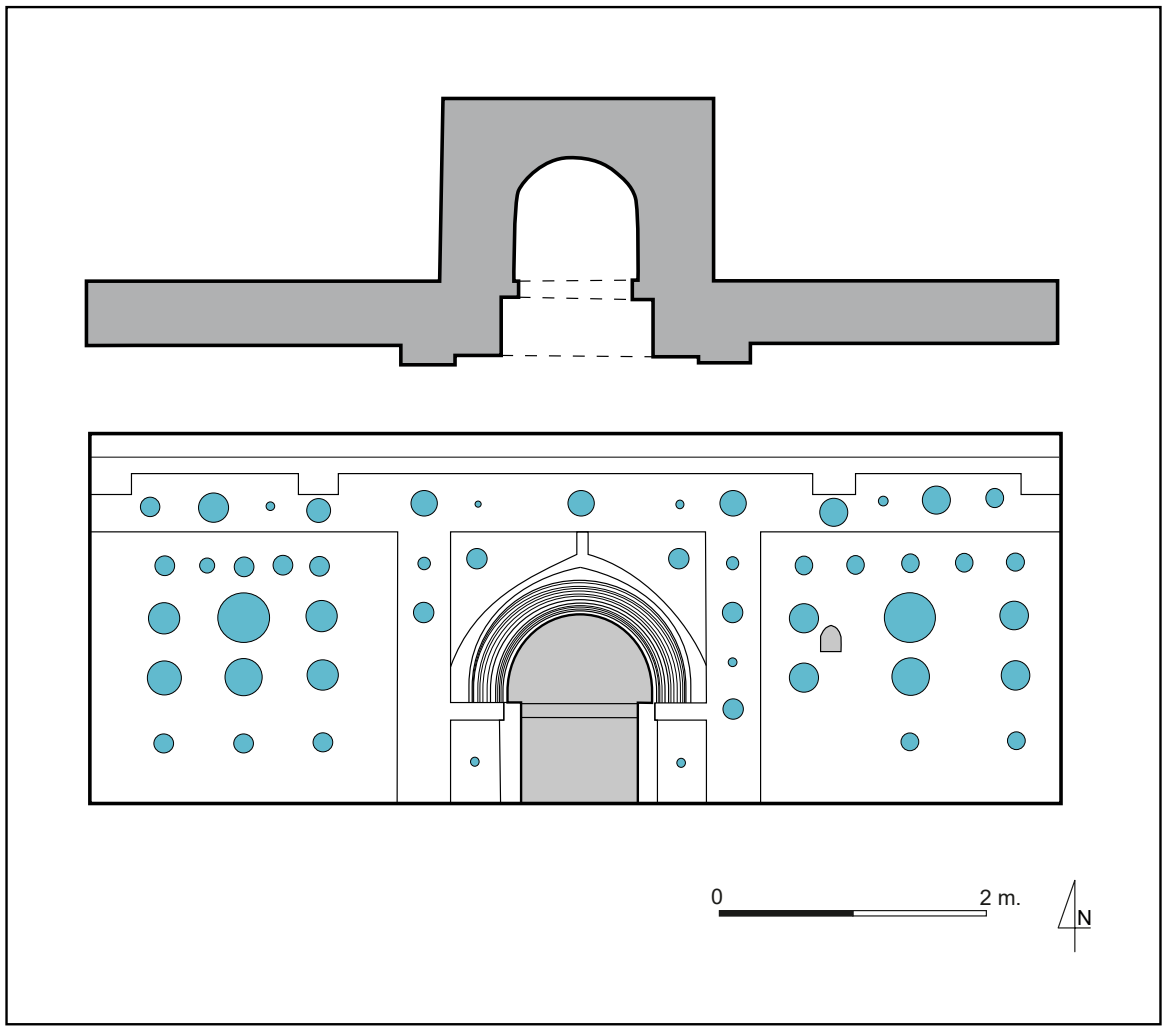


FIGURE 166 Mihrab of Tundwa

inlay ceramics (Fig. 167). The *mihrab* of Mnarani of Kilifi was the most representative of this group. It was surmounted by a pointed arch with five mouldings,[353] the tympanums decorated with coral bosses in which were interlaces, volutes and vegetal motifs. The arch was supported by pilasters with capitals and the walls of the niche were completely fluted as was the half-dome vault. Qur'anic verses in Naskhi script were carved on the architrave, the columns of the *mihrab*, and along the arch. These panels were enframed by rope motifs carved in briquettes of sea coral. The peculiarity of the *mihrabs* in the style "of Mnarani" comes from the apse interrupted by mouldings with a triangular section. Its half-dome vault was also scored with grooves. The salient frame was slightly larger than in the preceding period. At Ungwana n°2 it measured 3.3 by 2.85 m, with an apse 1.65 m deep. The floor of the niche was often raised with regard to the floor of the prayer hall. This group is represented by the *mihrabs* of the mosques of Jemadari, Mafui, Kilwa, Mnarani, Sima and Domoni.

353 Kirkman, *Men and monuments on the East African coast* (1964).



FIGURE 167 Mihrab in the great mosque of Mnarani, Kilifi

3.10.2 *Domoni, Tsingoni and the Comorian Mihrabs*

The fifteenth century was a period of expansion for the mosques of the Comorian archipelago, particularly on the island of Ngazidja (Grande Comore) with the construction of the mosques of Mtswa Mwindza and Djumbe Fumu at Ntsaweni, of Bandamadji, and of Fe Mte wa Kandzu at Buuni.[354] The great mosque of Moroni has a plaque to the right of the *mihrab* with an inscription bearing the date of 1426.

354 Gou, *Monuments de la civilisation islamique aux Comores* (2000): 22–44; Viaut & alii, *Le patrimoine bâti d'époque classique de Ngazidja* (2020): 107–121.



FIGURE 168
Mosque Mkiri wa Shirazi, Domoni, Anjouan Island

On the island of Anjouan, the *Mkiri wa Shirazi* mosque is situated in the town of Domoni. The old building was renovated at the end of the fourteenth century.[355] The wooden columns of the Shirazi period were replaced by a single row of pillars opposite the *mihrab*. These four octagonal pillars rested on a square base of 87 cm. The *mihrab* dates from the renovation in the late fourteenth century and was made up of briquettes of dressed coral. It is unquestionably the finest and earliest *mihrab* of Comoros (Fig. 168). It had a semicircular arch enframed by ogee arches and surmounted by four openings finely cut between the two, resembling oculi. The architrave and the lintel were made up of rectangular panels, deep set and separated by segments of rope moulding. Each panel

355 Wright, "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XI th–XV th centuries a.d)" (1992): 81–128.

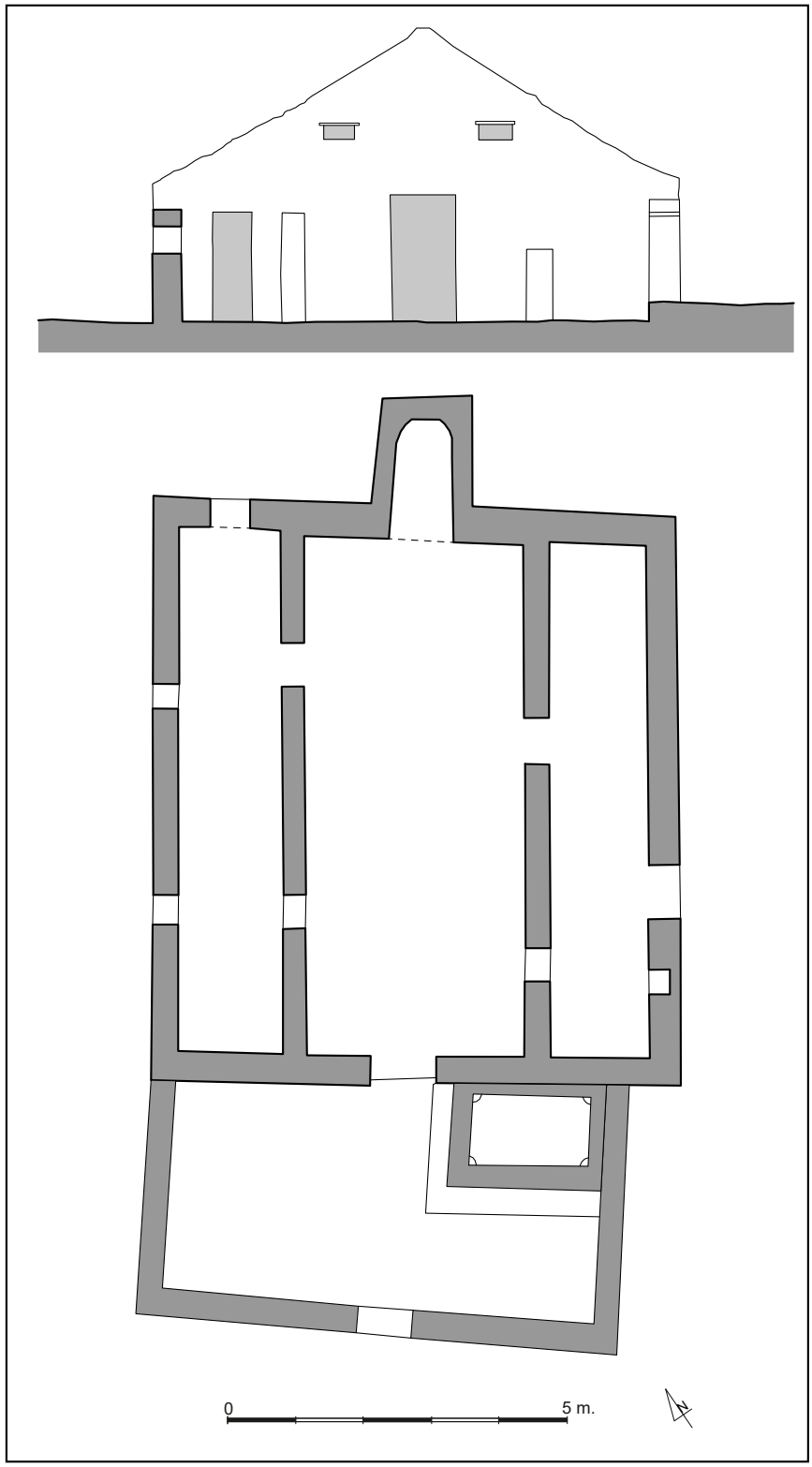


FIGURE 169 Plan of the mosque of Pole, Petite terre Island, Mayotte

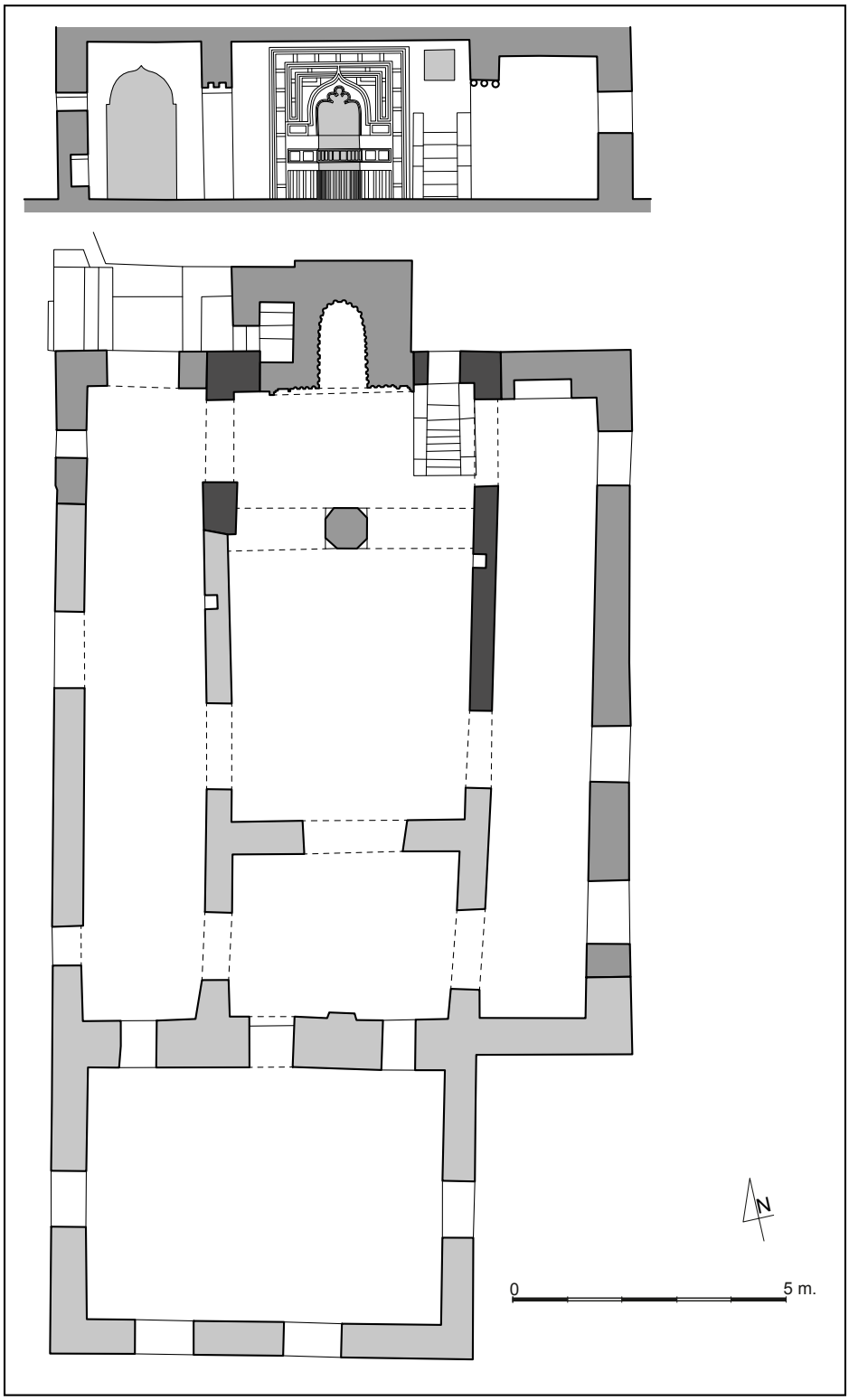


FIGURE 170 Plan of the mosque of Tsingoni, Mayotte



FIGURE 171
Mihrab of Tsingoni, Mayotte

was a plaque of coral engraved with two types of geometrical interlacing. The tympanums were deep set but only decorated in the part enframing the ogee arches, where we find segments of rope mouldings. The columns enframing the entrance of the niche were ornamented with rope mouldings and listels. Above the imbedded capitals light layers contained imbricated coral plaques decorated with the same geometrical motifs as the architrave and forming a frieze which ran round the interior of the apse 1.65 m deep and 97 cm wide. Under the frieze the wall was interrupted by listels with a rope moulding at regular intervals. The half-dome vault was fluted. The Omani great mosque of Bahla, dating from 1494, has a similar type of *mihrab* with a semicircular niche and a ribbed half-dome vault.[356]

In Mayotte, the medieval mosques generally measure 13 by 9 m. Certain smaller buildings

356 Kervran, "Mihrabs omanais du 16e siècle : un curieux exemple de conservatisme de l'art du stuc iranien des époques seljouqide et mongole" (1996): 121.

measure 8 by 5 m.[357] In the north-east of the island, close to Buyuni, the mosque of Maweni dates from the fifteenth century. The mosque of the site of Domweli is also well preserved with a fine *mihrab*. On the island of *Petite Terre*, the site of Pole dates from the fourteenth to the eighteenth century, followed the occupation of the early site of Mirandole, abandoned in the thirteenth century. The inhabitants chose a sloping site behind the lagoon, which was better protected and less exposed to pirates. The well-preserved mosque of Pole dates from the fifteenth or sixteenth century (Fig. 169).

On the west coast of the great island the mosque of Tsingoni is dated by two blocks with epigraphic blocks carved in sea coral and sealed on either side of the niche of the *mihrab* (Fig. 170). They commemorate the construction or reconstruction of the mosque in the reign of Sultan ʿAli, the son of Sultan Muhammad in 1538. Tsingoni was the capital of the sultanate of Mayotte from the sixteenth to the eighteenth century. The first mosque seems to have gone back to the fifteenth century. In his *Kitab-i-Bahriye* of 1521, Piri Reis described a town called Shikuni (Tsingoni) on the island of Magota (Mayotte). It had a shah (indo-persian title for ruler). The inhabitants were Shafiite Muslims.[358] The *mihrab* of Tsingoni is stylistically very close to that of Domoni in Anjouan founded by the father of Sultan ʿAli, Muhammad bin Hasan; with cordate mouldings form panels around the niche with geometrical decorations; a trilobal arch surmounts the entrance of the *mihrab*; and a fluted half-dome surmounts the apse (Fig. 171).

3.10.3 *The Second Great Mosque of Kilwa and the Influence of the Deccan*

According to the *Sofaliya*, compiled in 1491 by Ahmad ibn Majid, Kilwa Kisiwani was unquestionably the largest Swahili metropolis before the arrival of the Europeans in the Indian Ocean.[359] After a succinct description by Ibn Battuta,[360] the most precise information which we have about the history of the great mosque of Kilwa comes from a local source, the Chronicles of Kilwa, written in about 1530 and retranscribed by De Barros in his work *De Asia* in 1552.

The first so-called Shirazi mosque was built between 1131 and 1170. According to the Chronicles of Kilwa and the archaeological excavations of Neville Chittick, the great mosque of Kilwa was enlarged towards the south between 1294 and 1302 and reached its present limits.[361] This rearrangement corresponded to a change of dynasty. Kilwa had first been ruled by Shirazis, but they were replaced by the Mahdalis, who originated from the Hadramawt on the south coast of the Yemen.[362]

The plan of the south extension has been the object of debate among archaeologists. For Peter Garlake, the extension was a courtyard with a portico bearing a continuous half-dome vault. His hypothesis is based on the text of Ibn Battuta who mentions an enclosure in which Sultan al-Hasan said his prayer. Even if this arrangement is very frequent in the Islamic world, this would be the only courtyard with a portico known in the medieval Swahili world.[363] For Neville Chittick, the

357 Liszkowski, *Mayotte et les Comores. Escales sur la route des Indes aux XV^e^ et XVIII^e^ siècles* (2000): 257–295; Pradines & Blanchard, *Sites islamiques et mosquées de Mayotte* (2009); Pauly, "La diffusion de l'Islam à Mayotte à l'époque médiévale" (2014): 82–85.

358 Jégouzo, Romon, Pauly, Daussy & Dalle, "La mosquée de Tsingoni (Mayotte) Premières investigations archéologiques" (2018): 65–70.

359 I would to thanks Guy Ducatez for the translated parts of the text that he shared with me.

360 Freeman-Grenville, *The East African Coast* (*select documents*) (1962): 122–125.

361 Gray, "The Wadebuli and the Wadiba" (1954): 22–42; Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 61–66.

362 Ducatez, « Aden et l'océan Indien au XIII^e^ siècle », *Annales Islamologiques 37*, 2003; Devic, *Le Pays des Zendjs* (1883, reed. 1975).

363 Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 359 et 373.

extension resumed a traditional plan with a space divided into square bays. There would have been no central courtyard. According to Pierre Blanchard, the south wall of the mosque still retains pilasters from this period and the third bay is marked by an enlargement corresponding to the central bay. The mosque thus returned to a classical Swahili plan except for its central bay which was wider.[364] The solution to this enigma would be to undertake further excavations to discover traces of the foundations of the fourteenth-century pillars.

Possibly the result of an earlier tradition of monoxyle wooden columns, the octagonal columns of the fourteenth-century mosque were monolithic. The roofing of the building extension was a remarkably well-preserved barrel vault to the east constructed with prepared arch-stones. A corridor followed the east wall of the old mosque and was covered by barrel vaults. To the south-east, a little porch with an individual entrance contained a reservoir, a bench, and a foot rubber. This porch led to the hall of the great cupola (Fig. 172). It was probably the sultan's private oratory or the mausoleum of Sultan al-Hasan bin Sulayman.[365] The south extension of the mosque collapsed in 1331 because of an earthquake. The rigidity of monolithic supports certainly played a part at the time of the collapse, for only the great cupola of Sultan al-Hasan bin Sulayman remained standing. After the earthquake, the mosque was restored by Sultan Sulayman bin Hasan, who paid 1000 gold mithkals for the renovation.

Between 1421 and 1442, Sulayman bin Muhammad had the mosque renovated and the whole of the southern area covered in domes (Fig. 173).[366] The space was divided into six bays from north to south and five from east to west. The covering consisted of an alternation of cupolas and barrel vaults. The cupolas were arranged on the central north-south axis and parallel to the outer walls. In the easternmost bay, two cupolas had a fluted vault. The eight remaining bays situated in the second and third spans were capped by barrel vaults. A corridor followed the wall of the first mosque and was also covered by a barrel vault. The roof of the mosque was surrounded by a crenellated parapet (Fig. 174). It was supported by composite octagonal columns made of coral panels bounded by mortar and coral concrete.

The great mosque of Kilwa had two *mihrabs*. The old *mihrab* was situated in the early mosque to the north and seems to have been restored at a later period. Our own observations tend to support the hypothesis of Dorman who thought that the wall of the *qibla* had been entirely reconstructed in the fifteenth century.[367] In the seventeenth century, the northern part of the great mosque was disaffected and would never be reconstructed. A very basic and simple *mihrab* was then set up between two pillars in the north of the extension with cupolas. It was a late addition of the eighteenth century (Fig. 175).

The mosque had two ablution areas. There too the first ablution area was connected with the old mosque in the north-west. The new area was in the south and had a western part that was covered. The covering of one of the rooms was supported by a series of well arranged overhangs reminiscent of certain Indian buildings of the Deccan. Each of the ablution areas consisted of several rectangular basins, with foot rubbers and water wells (Fig. 176). Their localisation depended above all on the free spaces around the mosque and the implantation of the wells. Hemispherical stones in sea coral were arranged around the basins in rows of three or four and were used for drying one's feet. The sea coral bosses stood in a sunken court surrounded by a step to avoid the water being spilt into the

364 According to Pierre Blanchard, architect in charge of the conservation works from 2003 to 2011; Pradines & Blanchard, "Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie" (2005): 25–80.

365 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 65–66.

366 De Barros, *Decadas Da Ásia* (1552).

367 Dorman, "The Kilwa civilization and the Kilwa ruins" (1938): 61–71.

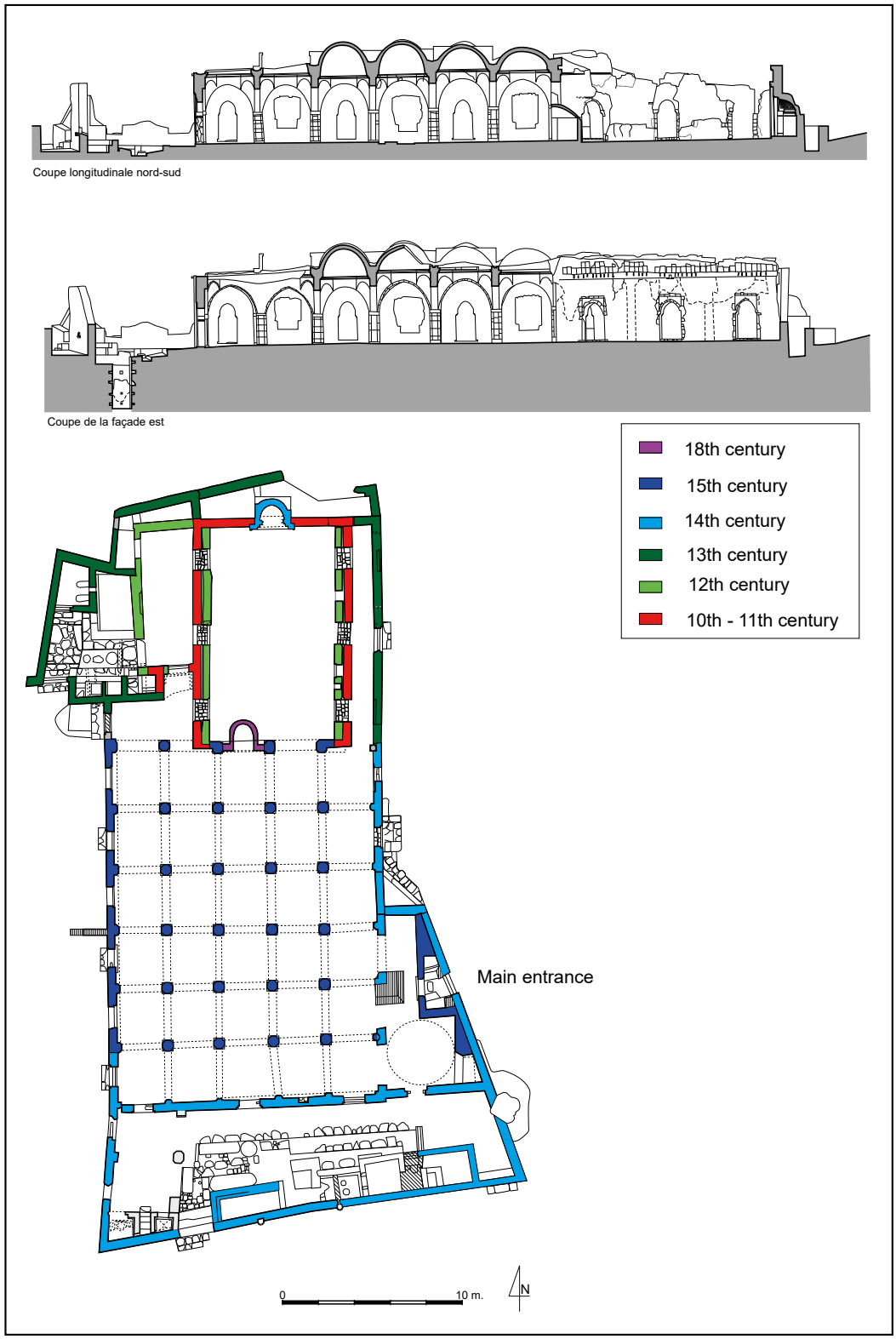


FIGURE 172 Southern extension of the great mosque of Kilwa between 1421 and 1442



FIGURE 173 3D laser scan of the great mosque of Kilwa



FIGURE 174 The great mosque of Kilwa



FIGURE 175 Basic mihrab of the eighteenth century in the great mosque of Kilwa

courtyard of the mosque. The square wells were masoned and coated. Holes in the walls allowed access to the bottom of the wells and provided for their regular upkeep.

John Gray was the first scholar to detect an influence of Bahmani India in the Swahili hemispheric cupolas. According to him, the great mosque of Kilwa can be compared with the mosque of Gulbarga in the Deccan, dated between 1358 and 1377.[368] However aesthetic it may be, the extension of the great mosque of Kilwa was makeshift, out of centre and badly arranged. The vaults were too high and the space of their covering too limited to be visual. Everything suggests that it was a local Swahili interpretation of Indian architecture. The octagonal columns and the cupolas of Kilwa are reminiscent of certain mosques in Bangladesh, above all the one of Shaitgumbad in Bagerhat dating from the mid-fifteenth century.[369] The multiplication of the domes and their alternation with barrel vaults recalls primarily the Indian mosques of the Deccan – Tughluq of the fourteenth century[370] and the Bahmani buildings of the fifteenth century, possibly built after the models of the Solah Khamba mosque in Bidar,[371] all contemporary with the restoration of the great mosque

368 Gray, "The Wadebuli and the Wadiba" (1954): 22–42.

369 Hasan, *Sultans and mosques: the early Muslim architecture of Bangladesh* (2007): 48–49 & 114–117.

370 Eaton, "Muhammad bin Tughluq and Temples of the Deccan, 1321–26" (2011): 178–187; Michell & Philon, *Islamic Architecture of Deccan India* (2018): 48–57; Burton-Page, *Indian Islamic Architecture: Forms and Typologies, Sites and Monuments* (2008): 138–139.

371 Philon, "The Solah Khamba Mosque at Bidar as a ceremonial hall of the Bahmanis" (2011): 188–203.



FIGURE 176 Ablution area of the great mosque of Kilwa with sea coral bosses in a sunken court

of Kilwa.[372] Dabhol south of Bombay was one of the main ports of the Deccan ruled by the Bahmani dynasty in the fourteenth and fifteenth centuries.[373] The culture of the Deccan clearly influenced certain buildings of Kilwa Kisiwani. Various elements support this thesis, such as the coins discovered in Kilwa which imitate those of the Bahmani sovereigns.[374] The chronicles of Kilwa of 1502 mention Muhammad Rukn al-Din al-Dabali, a rich merchant and minister of finance of the sultanate of Kilwa. His *nisba* suggests that he was an Indian from Dabhol, the port of the Deccan on the Malabar coast. Known as, and called, Muhammad Ankoni by the Portuguese, he would later play an important part in politic of the city.[375]

372 Lewcock, "Architectural connections between Africa and parts of the Indian Ocean littoral" (1976): 13–23; Michell, *The Islamic heritage of Bengal* (1984); Burton-Page, *Indian Islamic Architecture: Forms and Typologies, Sites and Monuments* (2008): 19–23, 43–49.

373 Das Gupta, "Indian Merchants and the Western Indian Ocean: The Early Seventeenth Century" (1985): 492 & 495.

374 Chittick, "Indian relations with East Africa before the arrival of the Portuguese" (1980a): 119 & 207.

375 Alpers, "Gujarat and the trade of East Africa c. 1500–1800" (1976): 31.

3.10.4 *The District Mosques of Kilwa*

Two district mosques in Kilwa have been the object of excavation and of architectural surveys.[376] The first, known as the "Malindi" mosque, was associated with a little cemetery which dominated the northern beach of Kilwa. Malindi was the name of an old district of Kilwa and might relate to the ethnic origin of its residents, immigrants from the town of Malindi in Kenya. The mosque, dating from the fifteenth century, was surrounded by a cemetery, and built on the summit of a height dominating the sea in the centre of the present-day village of Kilwa Kisiwani.[377]

The second mosque, called by Neville Chittick the "little mosque" or the mosque "with cupolas", was situated between the great mosque and the Makutani enclosure in the west. It is built on a platform at 1.6 m above the level of the medieval street. This little mosque dates from the mid-fifteenth century.[378] I regard this building as a funerary mosque built in memory of an important figure in Kilwa. Such an interpretation is based on the presence of a pillar surmounting the central dome. As we saw earlier, the pillar or the column was always associated with funerary structures and was an element which stemmed either from a Seljuq Islamic tradition in Persia or a Fatimid tradition in Egypt. To the east of the prayer hall a door opened onto a narrow lateral chamber. To the south a courtyard corresponded to the main entrance of the mosque and gave onto the ablution area in the south-west. This space contained two wide rectangular basins with internal corners reinforced by quarter colonnettes in sea coral. A small channel brought the water of a well situated outside the mosque to the reservoirs. The prayer hall was divided by three bays and three aisles separated by four octagonal pillars on a quadrangular base. The broken archways with two mouldings were attached to the walls by pilasters crowned by rectangular capitals. The summit of the arches was 2.5 m. above ground level. There was no keystone, and the arches were held in place by the weight of the lateral thrusts. The central cupola was supported by four rows of corniches and decorated by three circles of ceramic bowls inlaid in the vault. The central cupola was enframed by two barrel vaults which also have ceramics inlaid in the masonry. These vaults allowed for some extra space above the *mihrab*, which was composed of an arch resting on two pilasters with a half-dome vault. It was decorated with inlay ceramics, a plaque, and hemispheric bosses in sea coral. The mouldings of the arch and the columns of the *mihrab* were cut in briquettes of sea coral, with no ornamentation. Only the capital was decorated with fish-bone engravings. Each briquette was between 6 and 10 cm wide and was set in a wedge of the block behind it.

3.10.5 *The First Great Mosque of Gedi*

The site of Gedi (Gede) is situated in the south of Malindi. Ever since 1948 excavations have been directed by a British archaeologist, James Kirkman, who made a survey of the site, brought numerous buildings to light, and concentrated his excavations on the great mosque and the palace built in the fifteenth century.[379] The site includes two great mosques, six district mosques, two town walls, monumental tombs, a palace, and nearly 300 stone houses (Fig. 177).[380]

Between 1999 and 2003, we discovered and excavated a new great mosque in Gedi, earlier than the one studied by James Kirkman in the 1950s. This

376 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974); Pradines & Blanchard, "Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie" (2005): 25–80.

377 Chittick, *Kilwa an Islamic Trading City on the East African Coast* (1974): 171–172.

378 Idem, 161–166.

379 Kirkman, *The Arab City of Gedi: Excavations at the Great Mosque* (1954); Kirkman, *Gedi, the Palace* (1963).

380 Kirkman, *Men and monuments on the East African coast* (1964): 107.

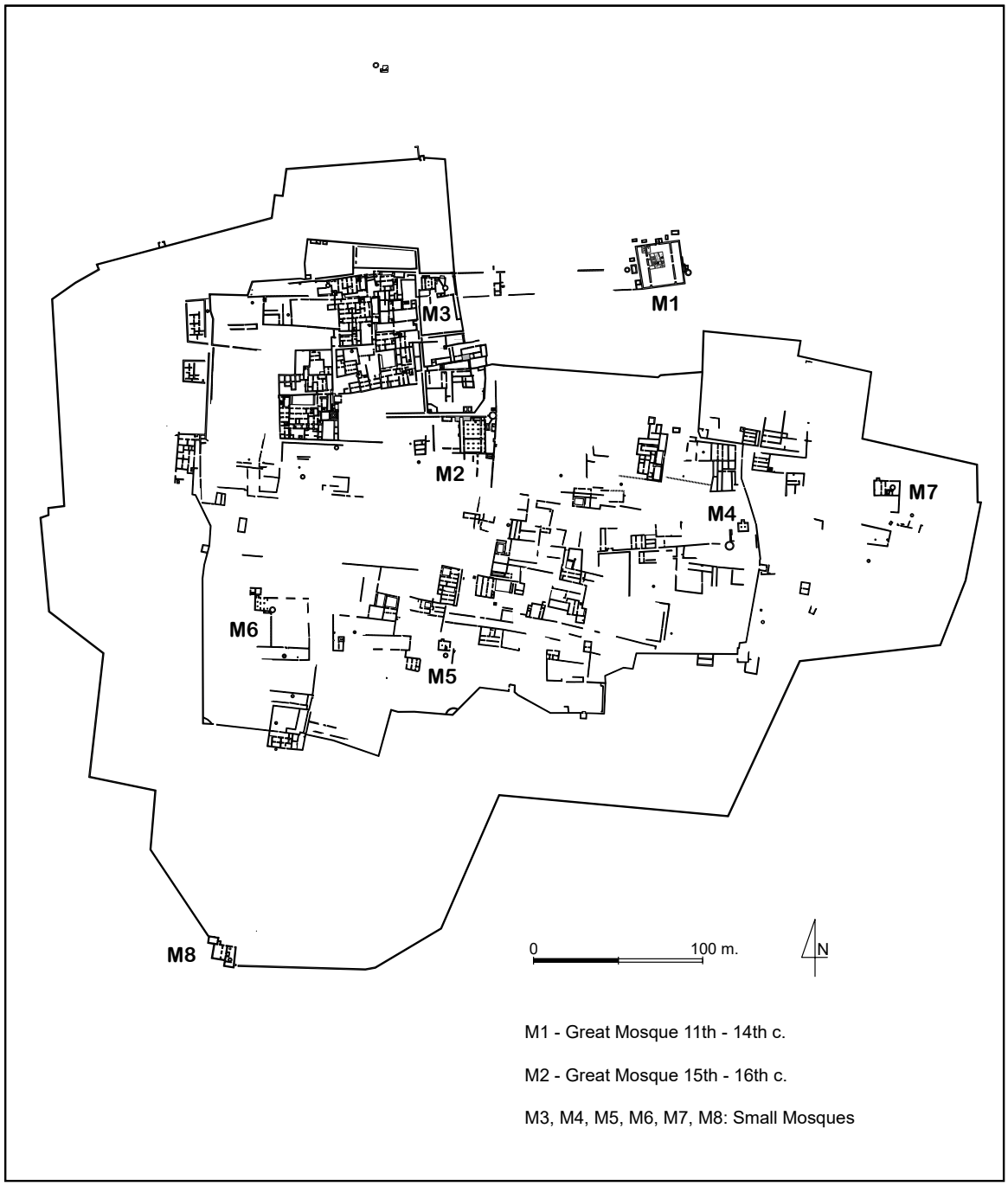


FIGURE 177 Plan of the site of Gedi with two great mosques and six district mosques

mosque had a square plan 26 m long from north to south and 25 m wide, in other words 6 metres longer than Kirkman's great mosque dating from the fifteenth century. It was also earlier and went back to the fourteenth century in its final stage. Test pits were made inside the mosque, in front of the *mihrab*, to obtain stratigraphic and chronological elements. The foundation trench of the wall of the *qibla* was dug down to the level of the natural rock and can be dated to the fourteenth century based on wooden charcoals. This radiocarbon dating confirms the construction of the great mosque in the fourteenth century.[381] The mosque was renovated during the same century with the addition of new pillars in mortar and fossil coral limestone instead of the columns in wood. It was built on the earlier mosques described above, one dating from the thirteenth century and the first from the twelfth century. The third great mosque, the one dating from the fourteenth century, went through three phases. It was built between 1300 and 1340, rearranged between 1340 and 1380, and abandoned after a final reorganisation between 1380 and 1400. The mosque to the north-east of the town had a *mihrab* which formed a quadrangular protuberance of 2.42 m outside the *qibla* wall. The semicircular niche was 1.84 m deep and the filling between the end of the niche and the wall of the *mihrab* 83 cm thick. Two levels of plaster floors have come to light. The first was connected with the last phase of the mosque's activity. A tomb attached to the side of the *mihrab*, was undoubtedly the grave of a personage of religious or political significance. Another tomb published by Kirkman included an inscription bearing the date 802 of the Hejira, or 1399. This funerary construction seems to have been isolated in the north of the site, but its date and its position suggest that it was in fact situated on a west-east circulation axis which led towards the fourteenth-century mosque. The entrance of the *mihrab* of the fourteenth century mosque was enframed by two pilasters facing the supports of the roof. The western pilaster was visible before the excavation. A part of its stucco coating has survived despite some major cracks. No minbar has been found in the building. The *minbar* must have been a light structure in wood, possibly movable. The base of the polygonal engaged colonnette is identical to that of the great mosque of the fifteenth century. A three-faced fragment of the colonnette and a fragment of rope moulding attesting the ornamentation of the *mihrab* were found in an archaeological layer. The mosque was renovated between 1340 and 1380, with foundations of pillars associated with this period – nine octagonal poleholes dug in a plaster floor and surrounded by a square base in rectangular limestone. At the end of the fourteenth century the wooden columns were replaced by square pillars in panels of coral limestone 40 cm high, these discoveries allowed us to restitute a complete plan of the mosque which consisted of four north-south bays and two side wings. These supports were attached to pilasters attested to have been against the wall of the *qibla* and, in view of the average space observed between the pillars, certainly against the south wall. In the east wing of the mosque, we examined a large block of roofing consisting of well-cut coral tiles inserted in thick mortar bed. These coral stones have an average dimension of 25 × 30 cm, 25 × 25 cm, 20 × 25 cm, and are between 8 and 10 cm thick. The fourteenth-century mosque thus had a massive roof, flat like the other buildings of the period. The main entrance was to the east, as in the case of the great mosque of the fifteenth century. The religious building had two ablution areas, one to the east and one to the west. The eastern one consisted of a circular well with an overflow-shoot by which it could be filled with the rainwater collected in the adjoining reservoir. The quadrangular reservoir was attached to the east wing of the mosque. This ablution area seems to have been the earliest of the two since it contained a second reservoir now almost entirely demolished and separated by the one described previously. This second reservoir had a very good hydraulic plaster.

381 Pradines, *Gedi, une cité portuaire swahilie* (2010): 39.

A circular coral stone served as a foot rubber near the ablutions. The western ablution area consisted of a circular well and a large rectangular reservoir measuring 5.2 by 3.2 m. The upper level of the low walls was 1.19 m. The north-west corner was closed by a quarter pilaster, a common architectural element in the Swahili water tanks of the fourteenth and fifteenth centuries. The mosque was also surrounded by tombs on its north and west flanks. They were all oriented parallel to the *qibla*.

The great mosque of Gedi of the fourteenth century can be compared to the mosques of the larger Swahili city states such as Kilwa and Mogadishu. In Kilwa, the new mosque of the fourteenth century measured 26.7 m in length with the ablution area to the south. These dimensions are almost identical to those of Gedi. In the Lamu archipelago the great mosque north of Manda measured 23 m in length. Its size is very close to the mosque of Gedi, but it is above all its situation in the urban tissue which is almost identical. The city of Manda has two great mosques, one placed in the centre of the seventeenth century agglomeration surrounded by a wall, and another situated in the middle of the old city of the ninth century, to the north-east of the site, exactly as in Gedi.[382]

3.10.6 *The Mosques of Ungwana*

In northern Kenya, the city of Ungwana, situated at the mouth of the river Tana, has two mosques which have similarities with the history of the great mosques of Gedi.

The Friday mosque of Ungwana measured 17 m in length from north to south. The *mihrab* was surmounted by an ogee arche. The coral bosses and the negative mark of a square plaque (in ceramic or marble) decorated the lintel. Fragments of ceramics were recovered when the *mihrab* was excavated and date from the fourteenth century. Two other negative marks of glazed plaques were found in the tympanums. According to Georges Abungu, the mosque was built between 1200 and 1350.[383] Early in the fifteenth century, the mosque was enlarged in the east on a platform 61 cm high. This rectangular building, of the same length as the preceding *jamia*, was slightly wider. The prayer hall was divided by four bays separated by three rows of six square pillars. Four doors to the west led to the old *jamia*, while two doors with an ogee arch to the east led to an antechamber and two rectangular doors on either side of the *mihrab*. An octagonal pillar was constructed opposite the *mihrab* and a masoned *minbar* was added against the *qibla*.[384] There were thus three rows of pillars opposite the wall of the *qibla*. The pillar in front of the *mihrab* was shifted to allow access to the large, masoned *minbar* which had seven steps with, at the summit, a seat, its back decorated with plaster mouldings. Little holes on the sides indicate the presence of a wooden balustrade. These modifications took place between 1400 and 1450 (Fig. 178). We might wonder about such a coincidence with the construction of the new great mosque of Gedi, probably connected with a religious and political change on the northern part of the coast at the mouth of the river Tana in the bay of Mida. The third pillar added opposite the *mihrab* may not have been due to considerations of utility but provided, rather, an architectural indication of the influence of a different Muslim sect.

The second mosque of the town of Ungwana (n°2) still has wooden lintels which survived in the north part. They are in Indian teck carved with alveolar motifs. The arch of the *mihrab* was an ogive cut by a semi-circle at the summit. The lintel and the tympanums were decorated with inlay ceramics. The architrave was ornamented with mouldings with engraved fish-bone motifs. The columns were made in a single block of coral with inlaid panels. The triangular apse plan was decorated with triangular mouldings. The *mihrab* was not surmounted by a half-dome vault but was

382 Chittick, "Indian relations with East Africa before the arrival of the Portuguese" (1980 a): 18, 51 et 52.

383 Abungu, *Islam on the Kenyan coast: an archaeological study of mosques* (1986).

384 Kirkman, *Ungwana on the Tana* (1966): 78–79.

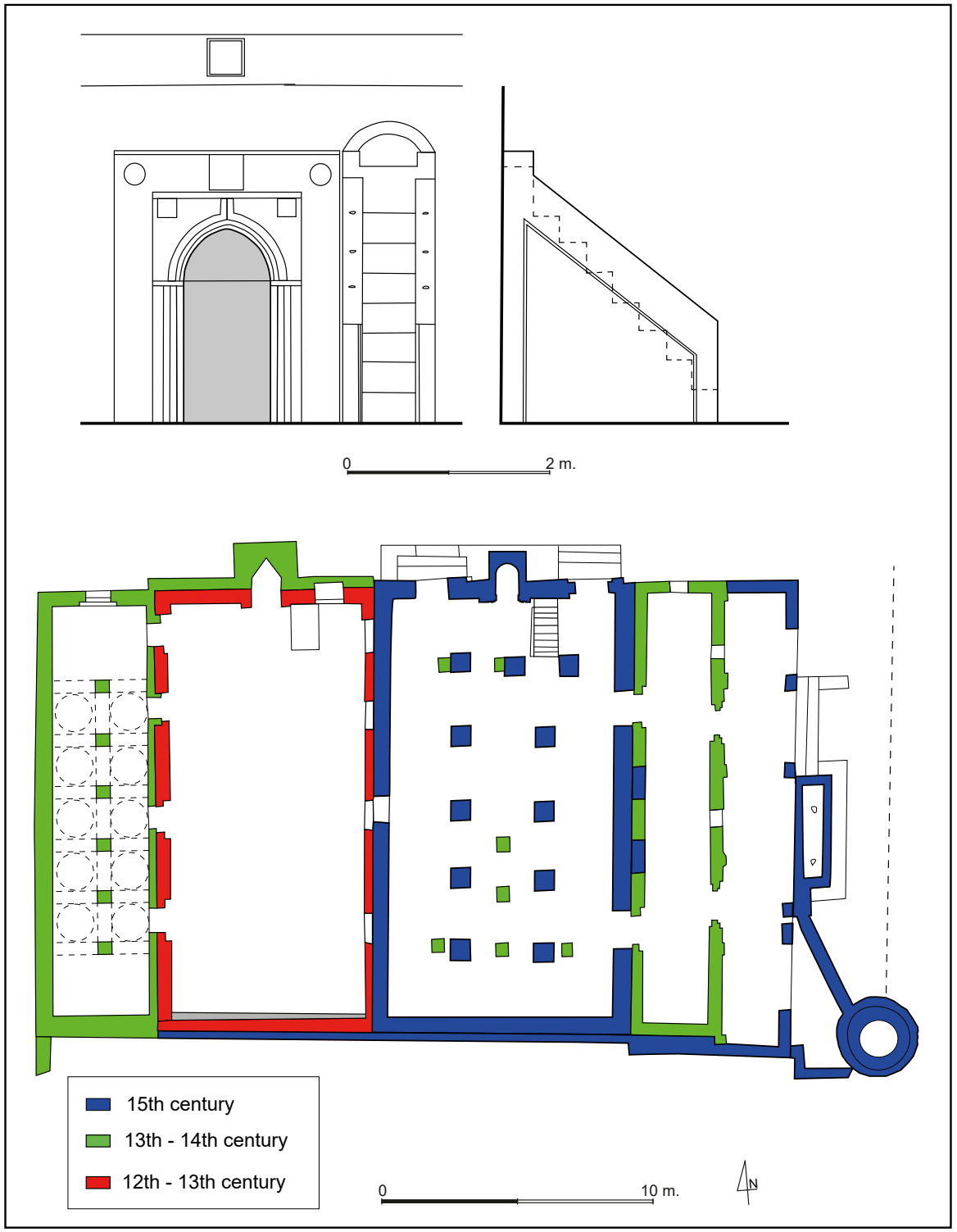


FIGURE 178 The plan of the great mosque of Ungwana

covered by a bulbous dome with, at the summit of the extrados, a ceramic celadon bottle which recalls the one on the mosque of Fakhr al-Din. There was thus a diffusion of the idea of a bulbous dome, but there was no general adoption of it on the Swahili coast for the obvious reason that it required a technology which was far too elaborate for a common mason (*fundi*). It is quite possible that the so-called second mosque of Ungwana was, in fact, the first great mosque of the thirteenth century and was subsequently replaced by the great mosque built in the fourteenth century and renovated in the fifteenth century.

3.10.7 *The Second Great Mosque of Gedi*

The second great mosque of Gedi was built to celebrate the re-foundation of the centre of the new town in the first half of the fifteenth century.[385] Since the great mosque of the fifteenth century was smaller than the previous one, it cannot have been a problem of space. The early great mosque was not abandoned for architectural reasons: its foundations were solid, and its size allowed the entire community to attend the prayer. It was a religious change with the arrival of new populations in Gedi in the fourteenth century (and in the thirteenth century for most of the Swahili sites). Certain architectural elements are radically different in the two great mosques of Gedi. The fifteenth-century mosque had a pillar opposite the niche of the *mihrab* and a masoned *minbar* to the right, while the fourteenth century *mihrab* was visible to all since it was enframed by pillars and did not have a stone *minbar* or even no minbar at all.

The new Friday mosque was built in about 1425, and then renovated between 1500 and 1550. The surface of the prayer hall was reduced between 1550 and 1600. The makeshift arrangement of a dividing wall corresponded to an impoverishment and a retraction of the town at the end of the sixteenth century. The mosque was bordered to the west by a little platform. The main entrance opened onto an ablution complex to the east, containing latrines and a large well connected by a channel to a rectangular water reservoir adjoining the foot rubbers (Fig. 179). The courtyard was dominated by a portico which was an elevated gallery with a roof supported by pillars. The entire building was raised 70 cm above the level of the courtyard.[386] The foundation seating of the walls of the mosque sank to 1 m below the level of the medieval floors. A little staircase minaret leant against the north façade of the portico.

The mosque had six symmetrical openings, or three doors on each flank, east and west. All that remains of the doors are the stone jambs. There seems to be no trace of a hinge, an iron pivot, or a wooden jamb. The thresholds of the great mosque of Gedi were marked by a rectangular beam 18 to 27 cm thick and raised 5 cm above the level of the floor. It was wedged in by two blocks in coral limestone at the base of the columns cut in an L-shape to fit it. The corner-stones of the north-east door were decorated with coral plaques with an incised representation of a shield on the left and a spearhead on the right. The motif drawn as a shield has now almost disappeared.

Three rows of six rectangular stacks supported the roof of the building. The composite supports consisted of limestone cornerstones inserted in a conglomerate of mortar and irregular small limestone blocks (coral concrete). Each cornerstone was about 50 cm high. It was only cut on one face, the irregular back being invisible since it was wedged in the masonry. The sides were well cut to facilitate the attachment between each element. The arches of the stacks were attached to the east-west walls by pilasters. They supported the master beams of the building. The flat roof, 30 cm thick, consisted of paving stones of coral limestone, measuring 15.3 cm each, and connected by a thick mortar bed.

An original characteristic of the Swahili mosques has been observed in Gedi, but also in Ungwana. These mosques contained a central row

385 Pradines, *Gedi, une cité portuaire swahilie* (2010): 31–35 & 75–80.

386 Kirkman, *The Arab City of Gedi* (1954): 2–3.

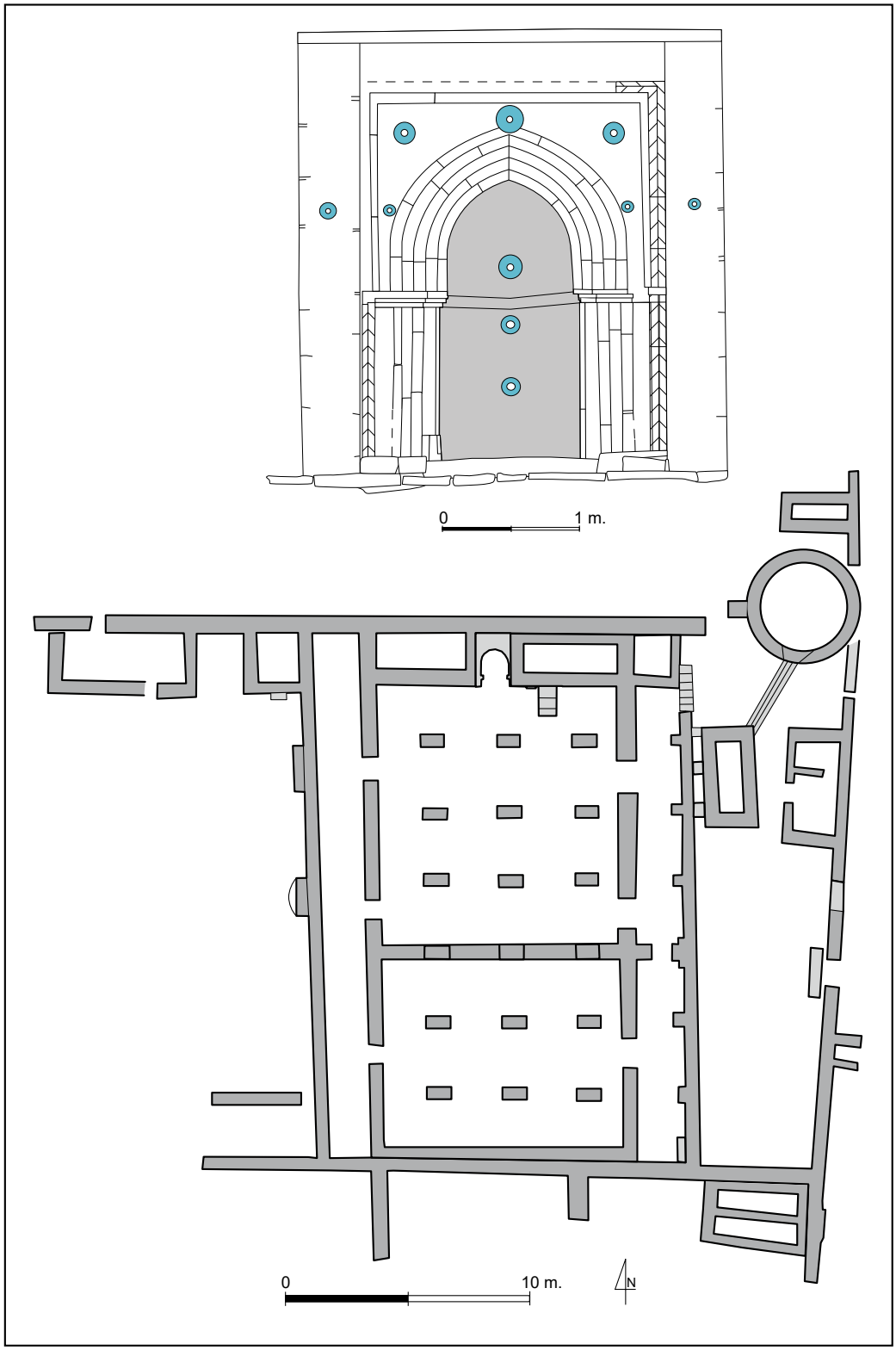


FIGURE 179 Second great mosque of Gedi (M2), built in 1425–1450 and renovated in 1500–1550



FIGURE 180
Minbar with three steps in the great mosque of Gedi

of pillars facing the *mihrab*. This arrangement had two possible functions: it could be utilitarian and allow a prolongation of the range of the beams in mangrove wood, but it could also be an aesthetic arrangement initiated by a Muslim sect eager to propagate an egalitarian and discreet Islam in the architecture and the religious rites. A masoned *minbar* of three steps stood at the right of the *mihrab* (Fig. 180), its presence confirming the fact that we are dealing with the Friday mosque of Gedi.

The *mihrab* of the great mosque of Gedi was characterised by a rich ornamentation composed of inlay ceramics. Thirteen negatives of bowls can be seen on the circumference of the *mihrab*, while numerous fragments of the bowls inserted in the cornerstones and the columns of the prayer niche have been found at the foot of the *mihrab*. These were blue and white Chinese porcelains. The *mihrab*, therefore, was decorated with 13 porcelains inlaid in the tympanums and the intrados of the apse. It was surmounted by an ogee arch formed by a square projection at the summit in the shape of a reversed Y, which was the head of the tympanums, and using to the full the lateral vertical thrusts. The arch shaped like a reversed Y was characteristic of the north of the Swahili area. The frame of the architrave and the lintel were enframed by a moulding engraved with a fish-bone motif. The engaged pilaster of the Friday mosques in Gedi was at the junction between the niche and the moulded columns. It rested on a base in sea coral composed of a square plinth surmounted by a pentagonal base (Fig. 181). The mouldings of the architrave of the *mihrab* formed finely adjusted blocks of briquettes in sea coral. Simple mouldings alternated with rope mouldings, simple or double, 5 cm wide, and cut into a fine-grained coral. This autochthonous architecture stemmed from the first Swahili *mihrabs* where twisted pilasters enframed the entrance of the prayer niche. In the thirteenth century the pilasters disappeared in



FIGURE 181
Mihrab of the great mosque of Gedi, fifteenth century

favour of door jambs and voussoirs decorated by a series of simple rectangular mouldings.

In the fifteenth century, the *mihrabs* of the Chwaka group were typical of the *mihrab* described in Gedi, with a rich ornamentation composed of inlay ceramics, medallions, rosettes and mouldings in sea coral. The covering decorations were increasingly refined, and in the fifteenth century the inlay ceramics multiplied on the tympanums, the lintel, the spandrels, and the architrave. On the frame the simple mouldings alternated with rope mouldings or carved fish-bone mouldings, as in the *mihrabs* of Takwa, Gedi and Chwaka. There were as many as twelve ceramics decorating the cornerstones and the piedroits of the *mihrab* of the *jamia* of Chwaka, and seventeen in the *mihrab* of Mafui, but the record was beaten by the mosque of Tundwa with over fifty ceramics inlaid in the wall of the *qibla* (Fig. 166).

3.10.8 *The District Mosques of Gedi*

The district mosques of Gedi amount to six.[387] They all have a distinctive name given by James Kirkman in the 1950s, such as the mosque "of the long conduit" (M3), the mosque "of the three bays" (M4), "the little mosque" (M5), the mosque "of the sarcophagus" (M6), the mosque "between the walls" (M7) and the funerary mosque called the mosque "against the south wall" (M8) (Figs. 182 & 183). The study of the Swahili mosques in the town of Gedi allows us to study the urban planning to understand the different districts in the heart of the medieval city. The district mosques give an indication of the division of the town into large sectors. The districts, or *mitaa*, had a strong identitary value in Swahili culture. They were often connected with the city gates and a well-defined cultural group. This group could be a Swahili clan from another town or a foreign community of Arab or Indian merchants. The members of the same clan were regrouped by district and each district was named after the place of origin of the inhabitants. The mosque *of the three bays* and the mosque "between the walls" were built round the fortified eastern gate and were placed on the same east-west communication axis. They were perfectly integrated in the orthogonal mesh of the urban wards (*insulae*). The mosque "of the long conduit" was connected to the Friday mosque by a north-south street.

The *mihrabs* of these district mosques had a salient frame without ornamentation and moulded pilasters or columns surmounted by small flat capitals. The pilasters merged with the columns by the multiplication of orders on the jamb of the entrance to the *mihrab*. Our research has shown that this type of *mihrab* is very close to the *mihrabs* of the Somali group or Mogadishu style. This group appeared in the thirteenth century but seems to have persisted in the north of the Swahili area until the end of the fifteenth century.[388]

The district mosques of Gedi had an area reserved for the ritual ablutions of the hands and the feet. This installation could range from a simple rectangular cistern fed by rainwater to a complex system of canalisation. Certain reservoirs were fed by the wells thanks to a masoned canalisation, as in the mosque *of the long conduit*, the great mosque, or the mosque "of the three bays" (Fig. 184). The localisation of the ablution area was not standardised. It depended on the implantation of the well and the space left around the mosque by domestic dwellings. The emplacement to the east was nevertheless preferred in Gedi. Only the great mosque of the fourteenth century had an ablution area to the west, as in the mosque "of the three bays", the well and the reservoir of which were to the south-west. The well was sometimes used for profane purposes. In that case, it was divided into two parts by a low cross-wall, a part serving for the ritual ablutions of the men in the mosque and the other used by the women for domestic consumption. This type of partition can be seen in the mosque "of the long conduit". A Chinese porcelain and a polychrome Islamic plate of the early sixteenth century were discovered in the cistern of this mosque. Kirkman recorded various graffiti in Arabic on a side of the *mihrab*. One of the inscriptions could be deciphered: it was the Quranic verse 3:93 which says that food is sacred for Muslims. The mosque was surrounded by three streets and a little square to the east. These streets, allowing both circulation and rest with stone benches (*baraza*), provided the mosque with a relative isolation in a densely populated district and enhance visually the building. A tomb was built in the prolongation of the *mihrab*, on the border of an east-west lane which runs behind the mosque. This axis is parallel to the street connecting the

387 Pradines, *Gedi, une cité portuaire swahilie* (2010): 31–35 & 75–80.

388 Pradines, "Enceintes urbaines swahili et forts omanais" (1998): 3; Pradines, "Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne" (2003): 362.

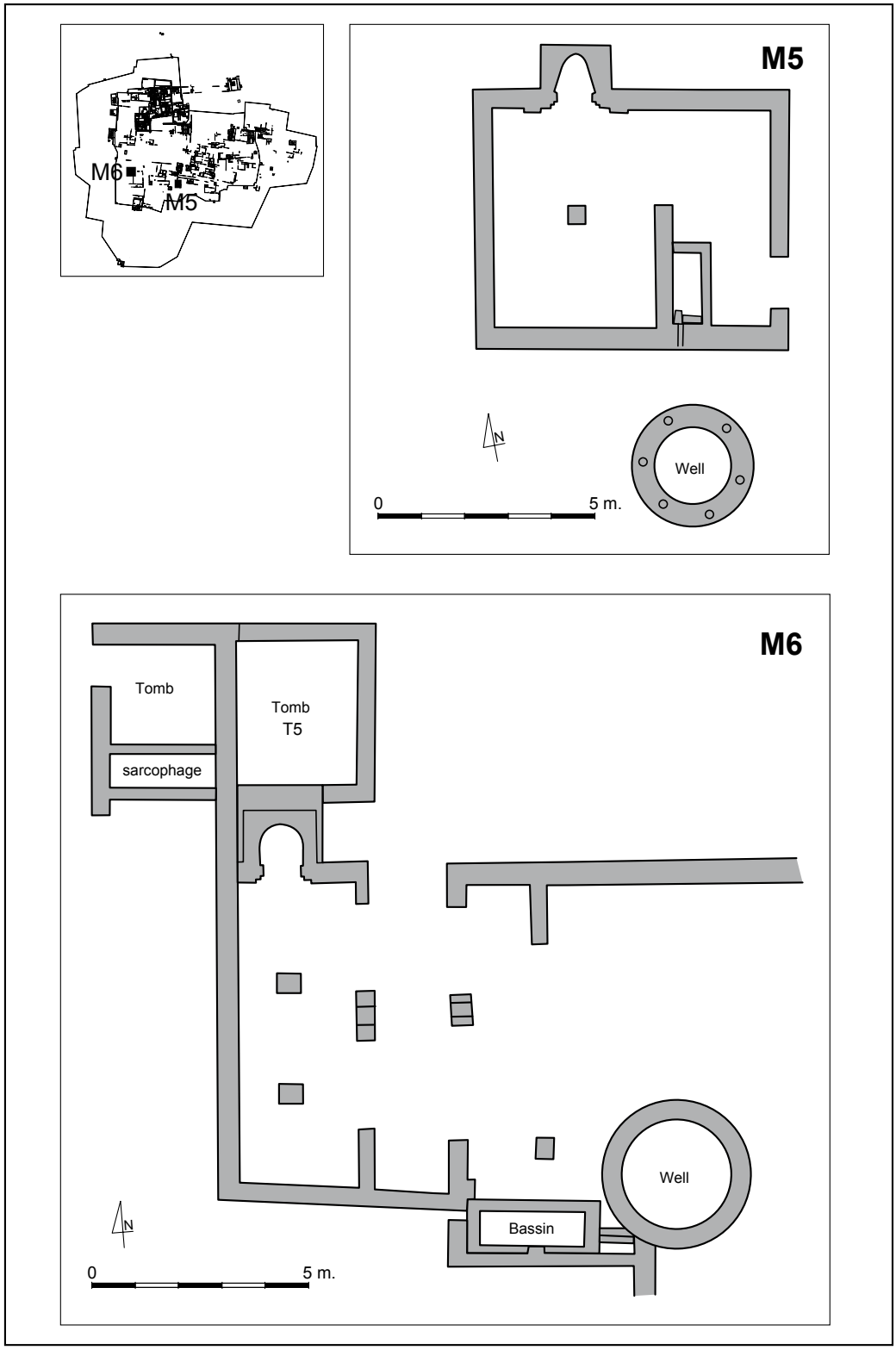


FIGURE 182 Small mosque (M5) and the mosque "of the sarcophagus" (M6), Gedi

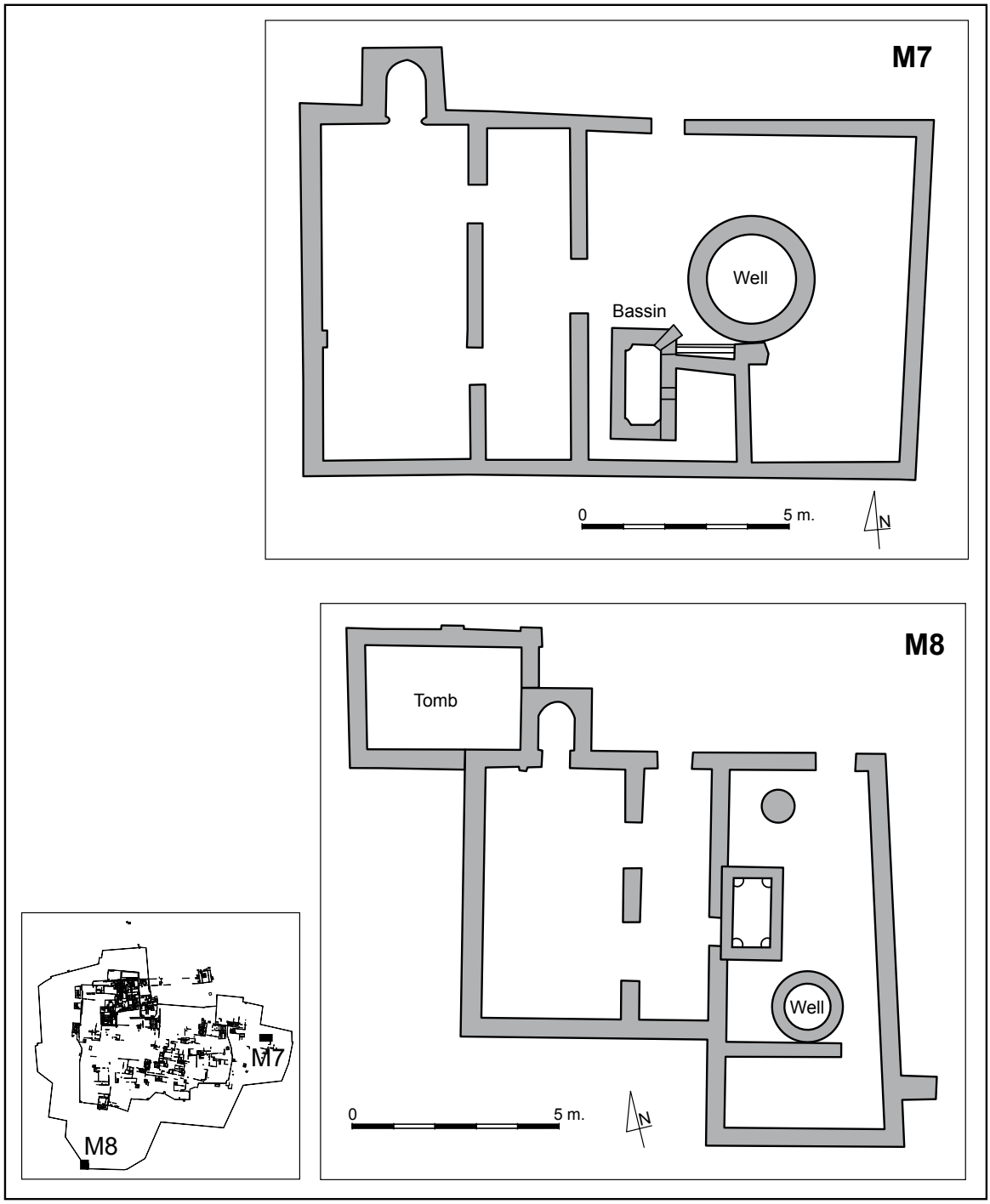


FIGURE 183 Mosque between the walls (M7) and funerary mosque on the southern wall (M8), Gedi

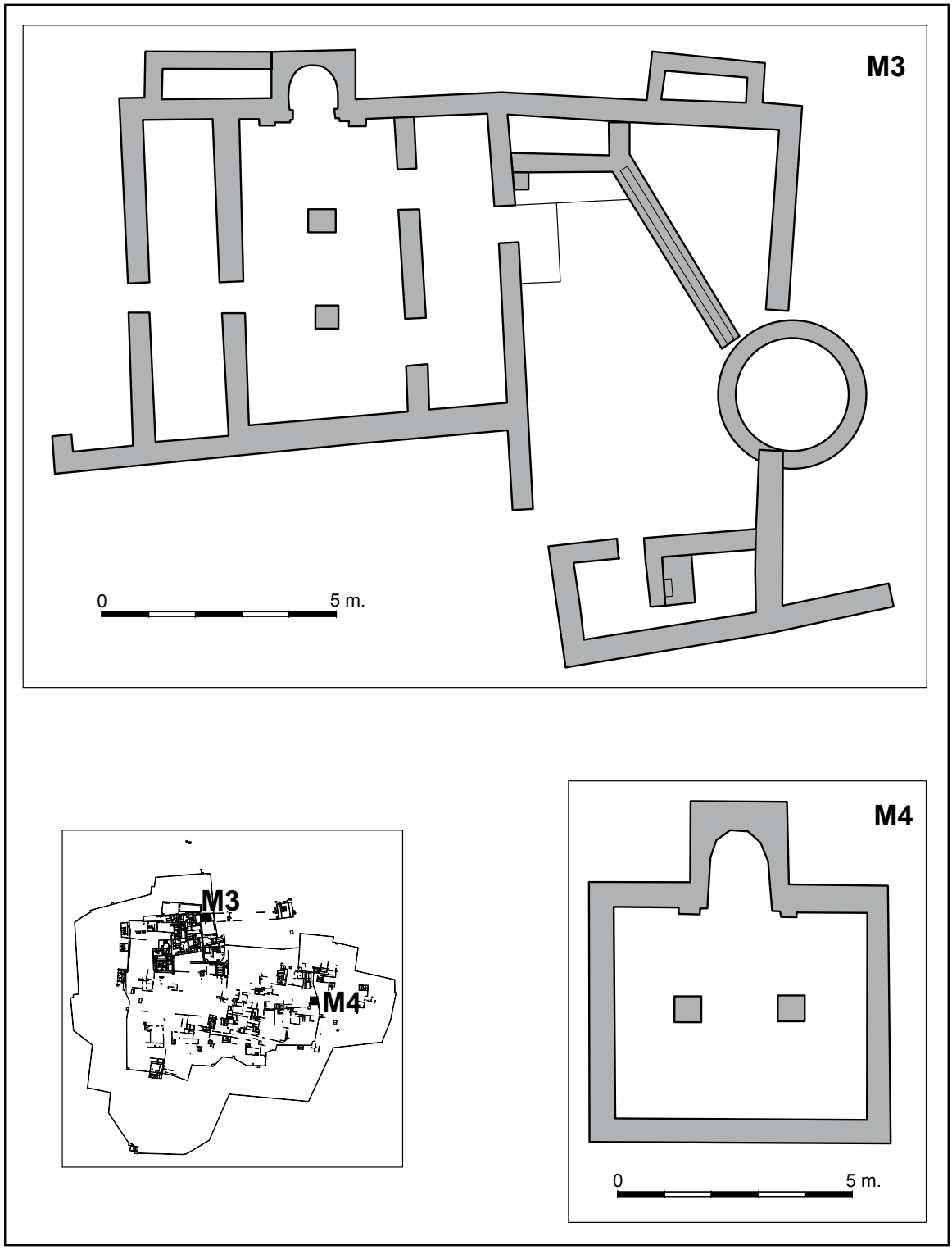


FIGURE 184 Water channel of the mosque of the long conduit (M3) and the mosque of the three bays (M4), Gedi

great mosque to the palace and is evidence of the planification of the city of Gedi.

3.10.9 *The Mosques of Songo Mnara*

The medieval town of Songo Mnara is situated in the south of Tanzania on the eponymous island in the bay of Kilwa. It was a foundation of the fifteenth century. The plan we carried out in 2004 included six mosques (Fig. 185).[389]

The so-called "district" mosques of Songo Mnara were placed mainly on the sea front, as was often the case in port cities. Of the six mosques, four, M1 to M4, must have been for sailors who were passing by. Mosque M2 was even built on the beach and is now in the mangrove. For Mark Horton and Stephanie Wynne-Jones, these two mosques were connected to the habitat built in perishable materials for the poors and working classes of the urban community since they are situated in an empty space between the sea and the built-up area of stone houses.[390] Indeed, this empty area could contain dwellings in perishable materials as was normally the case with the Swahili settlements, but unfortunately no serious open area excavations have been undertaken to confirm this hypothesis. In my view the mosques of Songo Mnara may also have had a religious rôle in the Sufi confraternities important up to this day. *Mawlidi* are still organised in Pande on the mainland, opposite the island of Songo Mnara.[391] Mosque M1, with its minaret base, was probably the signalling point, prominently built on the top of a hill overlooking the sea. *Mnara* means "tower" in Swahili, Arabic and Persian. This tower was mentioned in the French admirals' charts of 1777 and corresponds to the mosque built on the rocky promontory behind the palace.[392]

It is extremely important to situate the Swahili mosques in their urban setting. Recently, Horton, Fleisher and Wynne-Jones wanted to regard Mosque M5 as the main mosque of Songo Mnara because of its central position in the heart of the town.[393] Unfortunately, there is no architectural or chronological evidence to support this argument. Besides, it reflects an "orientalist" vision of the Muslim towns where the great mosque was always situated next to the palace and in the city centre.[394] This outdated model, which developed in the Near East, does not correspond to the African towns, mainly because of the bipartition of the Swahili agglomerations and their evolution in space and time. An example could be the great mosque of Kilwa situated far from the palace of Husuni Kubwa.

The Friday mosque of Songo Mnara (M6) is situated to the north-east of the town (Fig. 186). It was 11 m long, from north to south, and 8.5 m wide, from east to west,[395] and was built on a podium constituted by two levels of masonry filled with an embankment of yellow sand. This platform, which raises the mosque above the level of the street, allows it to emerge from the town. A long façade stairway solemnized the entrance. The prayer hall was divided into three aisles supported in the centre by four octagonal pillars and connected to engaged pillars in the side walls. The main entrance was to the south, the two doors being preceded by a veranda with two pillars. Each side wall of the hall also had a door. The ablution area was marked by the presence of a well to the south-west. The mosque was encircled to the north by a group of tombs contemporary with the building. A funerary enclosure was attached to the *mihrab* in the north-west corner.

389 Pradines, "Les villes médiévales swahilies : une perspective est-africaine" (2014 a): 17–35.

390 Horton, Fleisher & Wynne-Jones, "The mosques of Songo Mnara in their urban landscape" (2017): 181–184.

391 Pradines & Blanchard, "Songo Mnara. Etude architecturale d'une ville swahilie médiévale" (2015): 30–31.

392 Freeman-Grenville, *The French at Kilwa Island* (1965): 206.

393 Horton, Fleisher & Wynne-Jones, "The mosques of Songo Mnara in their urban landscape" (2017): 181–184.

394 Raymond, "Ville musulmane, ville arabe: Mythes orientalistes et recherches récentes" (1998): 23–50.

395 Pradines, "L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel" (2009): 63–67.

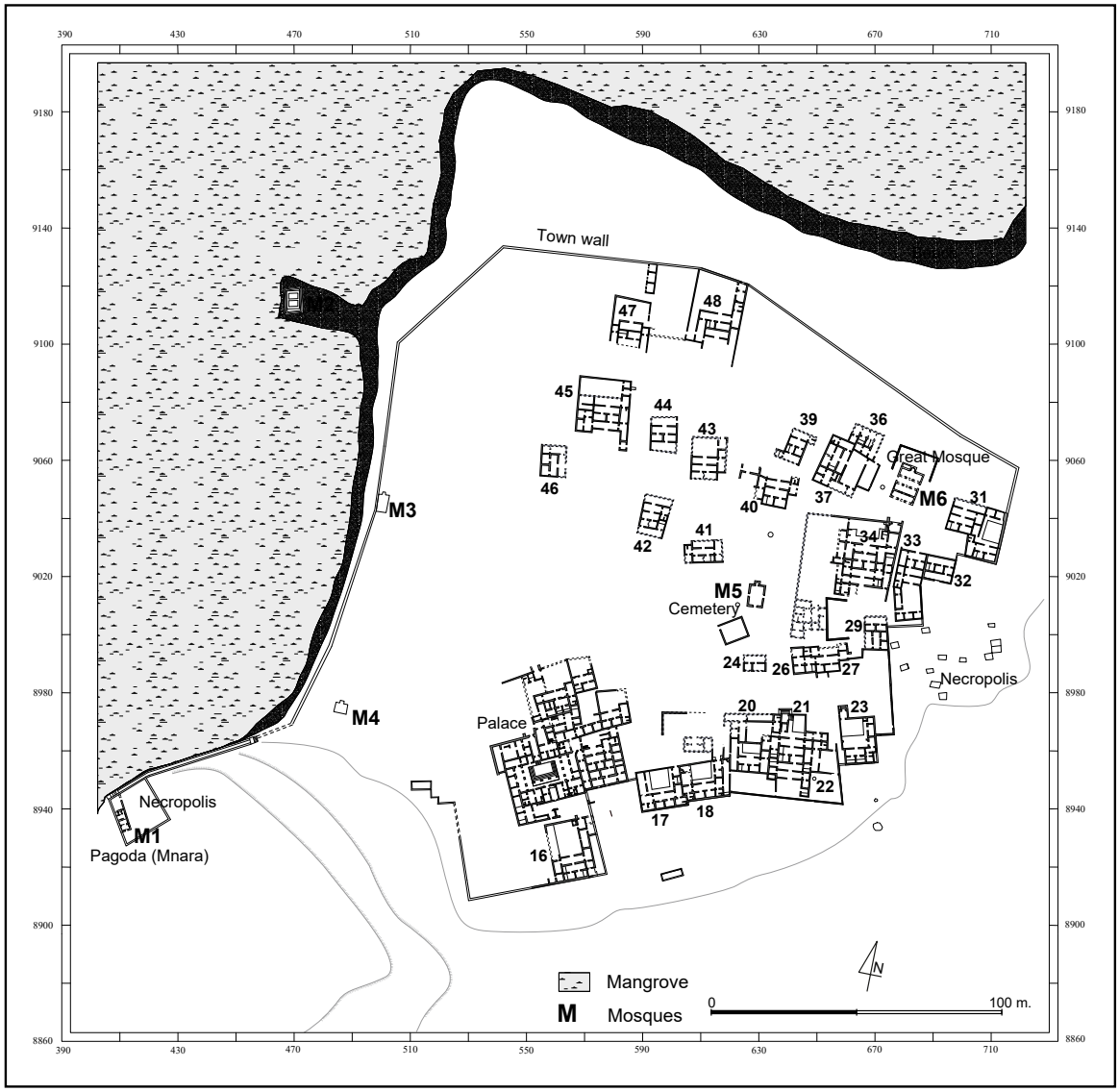


FIGURE 185 Plan of Songo Mnara and location of the mosques in the town

The *mihrab* was of an exceptional quality. It displayed a remarkable workmanship with stones cut with great precision (Fig. 187). Enframed by engraved fish-bone mouldings and a trilobal arch which has partly disappeared, the interior of the niche was decorated with a frieze of twelve miniature *mihrabs* on a series of archways and colonnettes. The niche was covered by a fluted half-dome vault. Judging from our archaeological excavations, the mosque dates from the early fifteenth century.[396] It does not seem to have been rearranged since only a single level of floor has come to light. It was still active at the time of the brief re-occupation of the site in the eighteenth century, and Mathew discovered Chinese

396 Pradines & Blanchard, "Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie" (2005): 44–51.

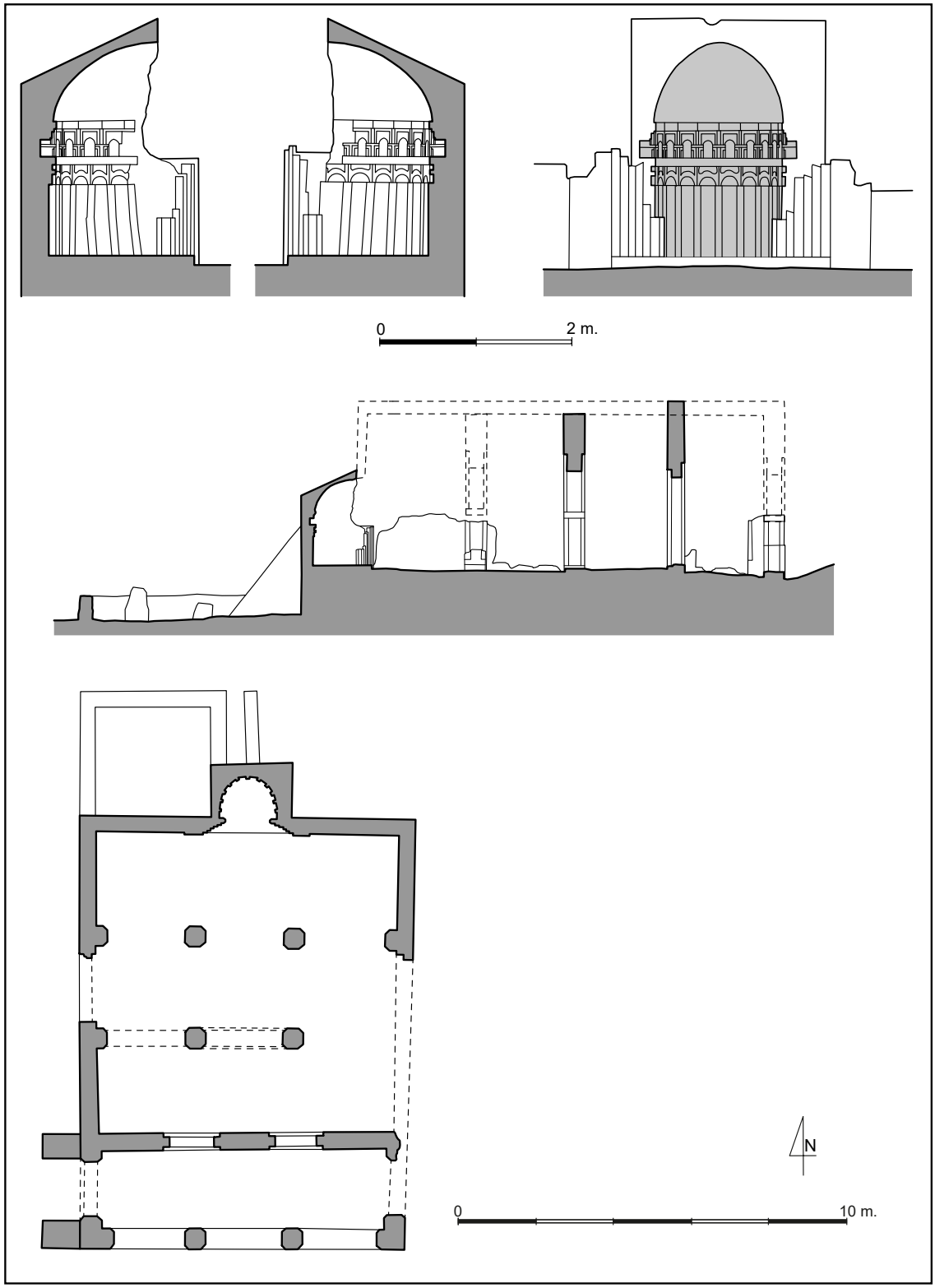


FIGURE 186 Great mosque of Songo Mnara (M6)



FIGURE 187 Mihrab of the great mosque of Songo Mnara

porcelains of this late period. In the early twentieth century a notable from the village in the south of the island was even buried in the adjacent cemetery. Animal offerings were still being practised in front of the *mihrab* and on the tombs in the 1950s.[397] Although the archaeological site had been abandoned for over two centuries, these few signs of activity showed that the ruins were still a place of worship for local animist rituals and black magic. Even today two cemeteries on the site are used for personal devotions: that of the Friday mosque and that of the "Pagoda" mosque. The worship in these places is the responsibility of women who inherited it from their mothers.[398]

3.11 Portuguese Domination and the Style of Lamu, Sixteenth to Seventeenth Centuries

3.11.1 *The Great Mosque of Kua, Mafia Archipelago*

In the sixteenth century, the architectural activity of the Swahilis slowed down because of the Portuguese presence in the Indian Ocean. Very

397 Mathew, "Songo Mnara" (1959): 154–60.

398 Pradines and Blanchard, "Songo Mnara. Etude architecturale d'une ville swahilie médiévale" (2015): 23–33.



FIGURE 188 Kua, Small Mosque n°3

few mosques appear to have been built at this time. And yet the Swahilis retained their architectural traditions, for the mosques of the town of Kua off the coast of Mafia are representative of this period of transition from about 1500 to 1650 (Fig. 188). The mason's basic unit was larger than in the Middle Ages, being between 50 and 56 cm, and conditioned the thickness of the walls and pillars which were far more massive, like those of the great mosque of Kua (Fig. 189). The *mihrab* of this mosque consisted of seven oblong blind niches dominated by a frieze of miniature *mihrabs*. The *mihrab* of the *jamia* of Kua had a blind arcade of eight long niches separated by vertical rope mouldings (Fig. 190). The *minbar* was built into a niche in the wall of the *qibla* as in the mosques of the nineteenth century.

In the seventeenth and eighteenth centuries, the mosques adopted a general plan that was square rather than rectangular. The prayer hall was smaller and more compact than at Kua, Kisikimto and Bwana Tamu in the town of Pate (Fig. 191). The ceiling was supported by two to three rows of wide octagonal pillars, as in Shala Fatani in Faza. The pillars were connected to each other by massive, raised arches which replaced once and for all the use of master beams, as in the mosques of the fort of Siyu, Chole and Kisikimto. The mosques of Lamu consisted of a rectangular prayer hall crossed by two to four bays separated by square, rectangular or polygonal pillars. The ablution area was often situated to the south of the religious buildings, as in Shala Fatani or Mosque n°3 of Pate.



FIGURE 189 Mihrab and minbar of the great mosque of Kua (n°2)

3.11.2 *The Mosques of Pate and the Lamu Archipelago*

The spread of the new style of Swahili *mihrab* was connected with the emergence of a new political force in the Lamu archipelago: the city of Pate, which opposed the Portuguese domination of Mombasa.[399] Between 1750 and 1820, the Lamu archipelago was also an important religious centre for the Swahilis: 22 mosques were built in the town of Lamu and twelve in the town of Pate alone (Fig. 192). Numerous painted and illuminated Qur'ans were produced in Siyu on the island of Pate.[400] Until 1976, the town of Lamu contained 24 mosques, in other words a mosque for every three hundred inhabitants.[401] Seven mosques also

399 Lienhardt and Phil, "The mosque college of Lamu and its social background" (1959): 228–242.

400 Hirji, "The Siyu Qur'ans: three illuminated Qur'an Manuscripts from Coastal East Africa" (2019): 431–471.

401 Ghaidan, *Lamu. A study in conservation* (1976): 35.

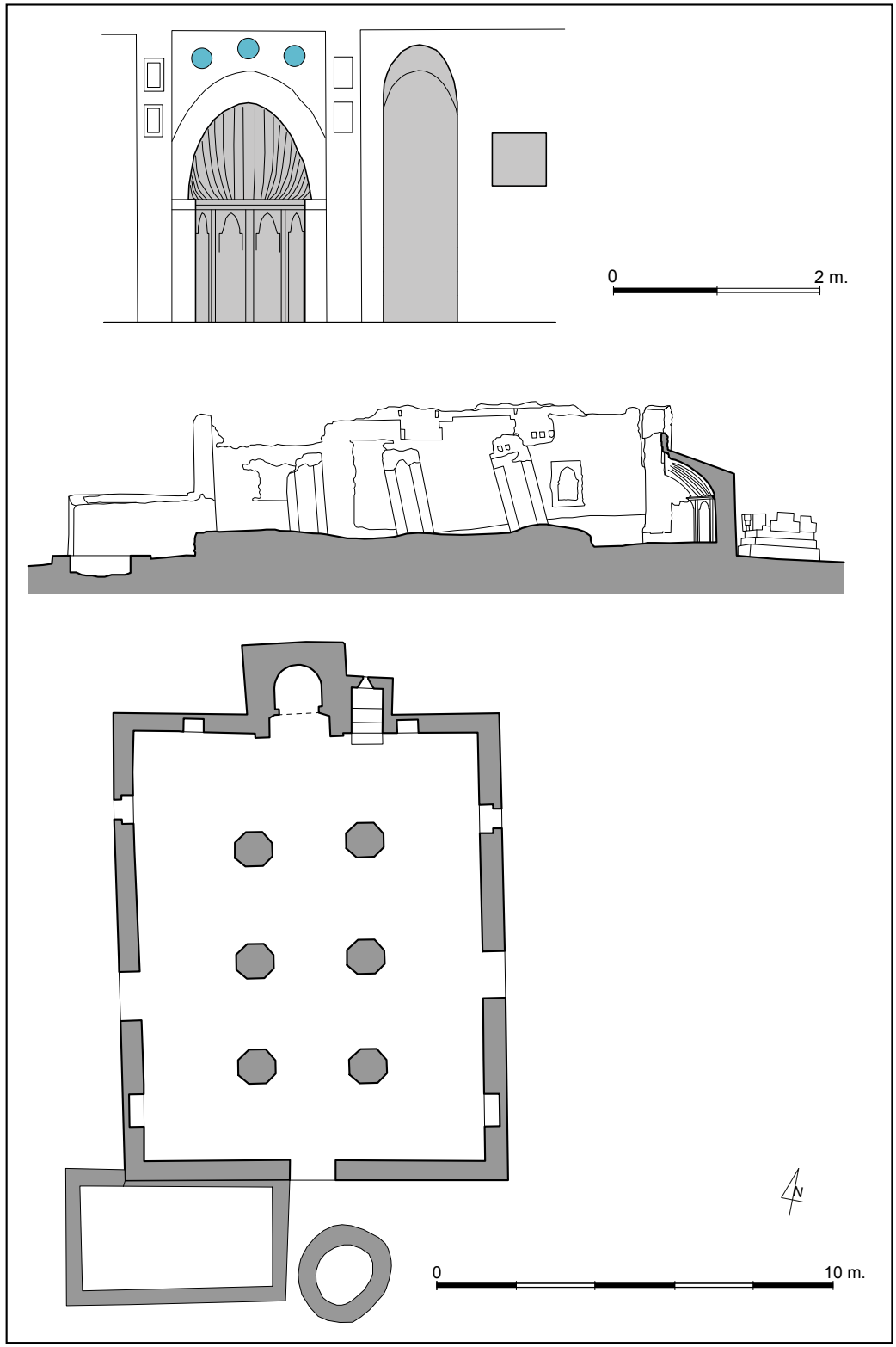


FIGURE 190 Plan of the great mosque of Kua (n°2)

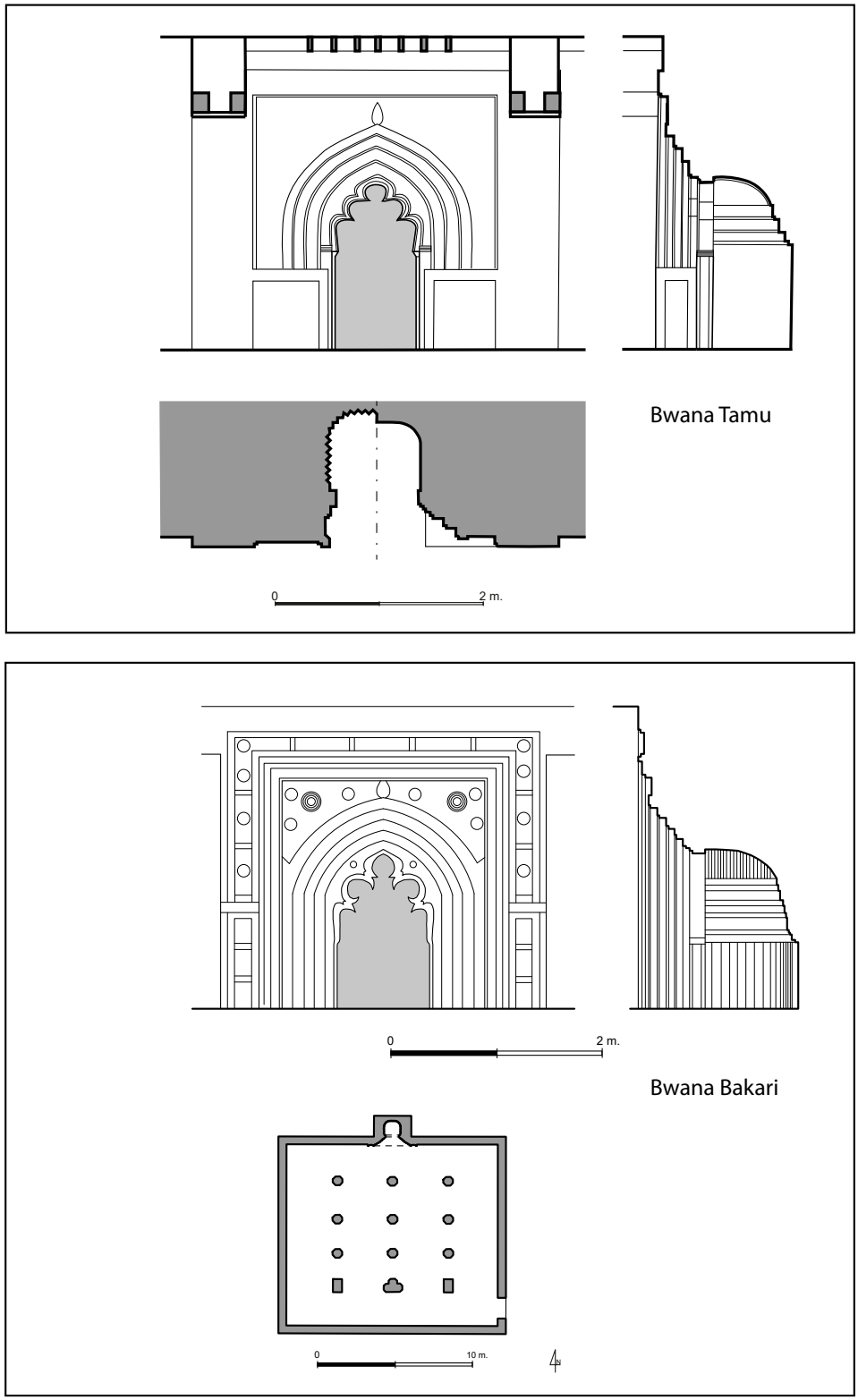


FIGURE 191 Bwana Tamu and Bwana Bakari mosques, city of Pate

served as Qur'anic schools. Lienhardt observed the cultural influence of the town though its *madrasa*, *ribat al-riyadah*, which, on the birthday of the Prophet, drew visitors from the coasts of Somalia, Mombasa, and even Zanzibar and Pemba.[402]

The new Swahili mosques are defined based on the group of mosques in the Lamu archipelago and especially those of the towns of Siyu, Faza, Pate and Lamu (Figs. 193 & 194). The *mihrabs* of this group were characterised by the utilisation of stucco in the decorations and the widespread adoption of the trilobal arch.[403] The trilobal arch had been known in Africa since the twelfth century, and yet the Swahilis only adopted this technical solution, which was more elaborate than the broken arch, in the seventeenth century under the influence of the Indian merchants. The trilobal arch became polylobal at the end of the eighteenth century. The arches of the *mihrabs* of the mosques of the Lamu archipelago consisted of ashlar blocks of coral bounded by mortar and covered by a thick layer of stucco, surmounted by between six and ten segments of a pointed arch with a lanceolated boss at the summit. The tympanums of the *mihrab* were still decorated with inlay ceramics as in Pate. The bosses in stucco tended to replace coral. The frame of the *mihrab* was frequently decorated by stucco panels with incised geometrical motifs. This complex covering ornamentation no longer had the representative quality of the panels of the fourteenth century. The pilasters were absent from the entrance to the apse of the *mihrab* and were replaced by a block of pillars decorated with panels, as in the *jamia* of Siyu. The interior of the apse was decorated by triangular plaster mouldings and the half-dome vault also had a fluted inner surface.

The *mihrabs* of the Lamu style persisted into the nineteenth century. The Tanzanian *mihrabs* of Simambaya and Utondwe have inscriptions dated respectively 1796 and 1782, while the one at N'nalalo in Lamu goes back to 1753 (Fig. 195).[404] The Omani mosques of the same period were very close to the Swahili models with bays parallel to the *qibla* and a protuberant *mihrab*. One of these Omani mosques is also called Simambaya and dates back to between 1725 and 1765.[405] The Swahili mosque of Wa Deule, now a ruin, is situated in the town of Shela, in the north of the island of Lamu. According to an inscription in the *mihrab*, it was built in 1848. The trilobal arche of the *mihrab* was enframed by semicircular mouldings and by panels incised with floral and geometrical motifs.[406] The blossoming of this new architectural type can also be seen in the Yemen, notably in Surat where the *mihrabs* also have trilobal arches, finely carved, and reveal the influence of increased economic relations with India.[407] In 1985, Richard Wilding and George Abungu excavated a little mosque in the old town of Mombasa, some hundred yards away from Fort Jesus.[408] The mosque of Ndia Kuu had a square plan with two bays separated by an octagonal pillar in the centre. The fondations were more than 2 m deep and rested on earlier structures. The small *mihrab* was decorated with volutes and blind arcades in an Indian style. On the outer wall two little pillars were joined to the protuberance of the *mihrab*. According to Wilding and Abungu, this district was occupied by a community of Vania or Banian Indians from Gujarat, who founded the mosque in the seventeenth century. The mosque

402 Lienhardt & Phil, "The mosque college of Lamu and its social background" (1959): 228–242.

403 Allen, "Swahili architecture in the later Middle Ages" (1974): 42–47, 66–68, 83–84; Ghaidan, "Swahili plasterwork" (1973): 46–49.

404 Siravo and Pulver, *Planning Lamu: conservation of an East African Seaport* (1986): 57.

405 Costa & Kite, "The Architecture of Salalah and the Dhofar Littoral" (1985): 148–149.

406 Ghaidan, *Lamu. A study in conservation* (1976).

407 Bonnenfant, « La marque de l'Inde à Zabîd » (2000). Pradines, "L'influence indienne dans l'architecture swahili" (1999 b): 103–120.

408 Abungu, *Islam on the Kenyan coast: an archaeological study of mosques* (1986).

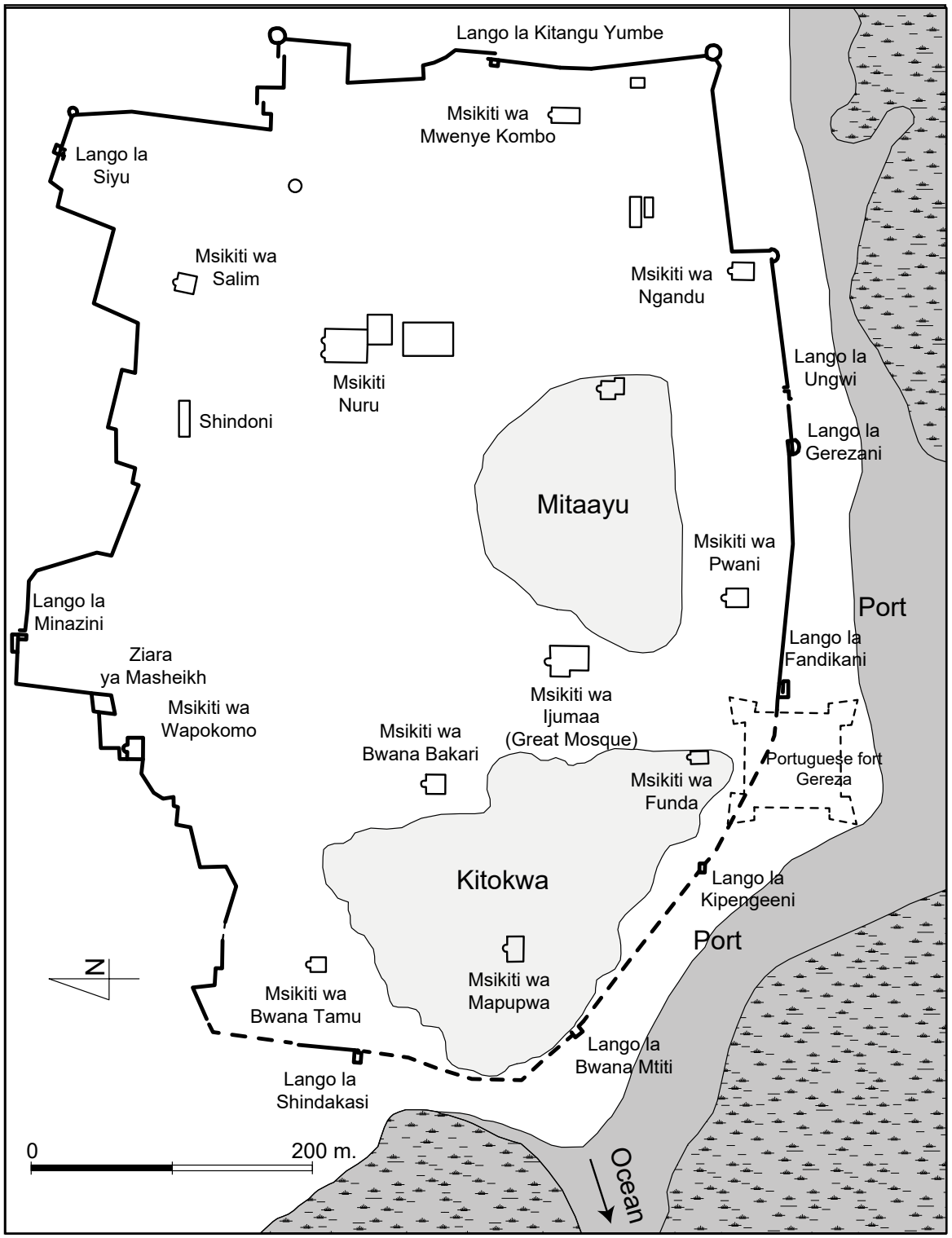


FIGURE 192 Localisation of the mosques in the town of Pate, Lamu archipelago

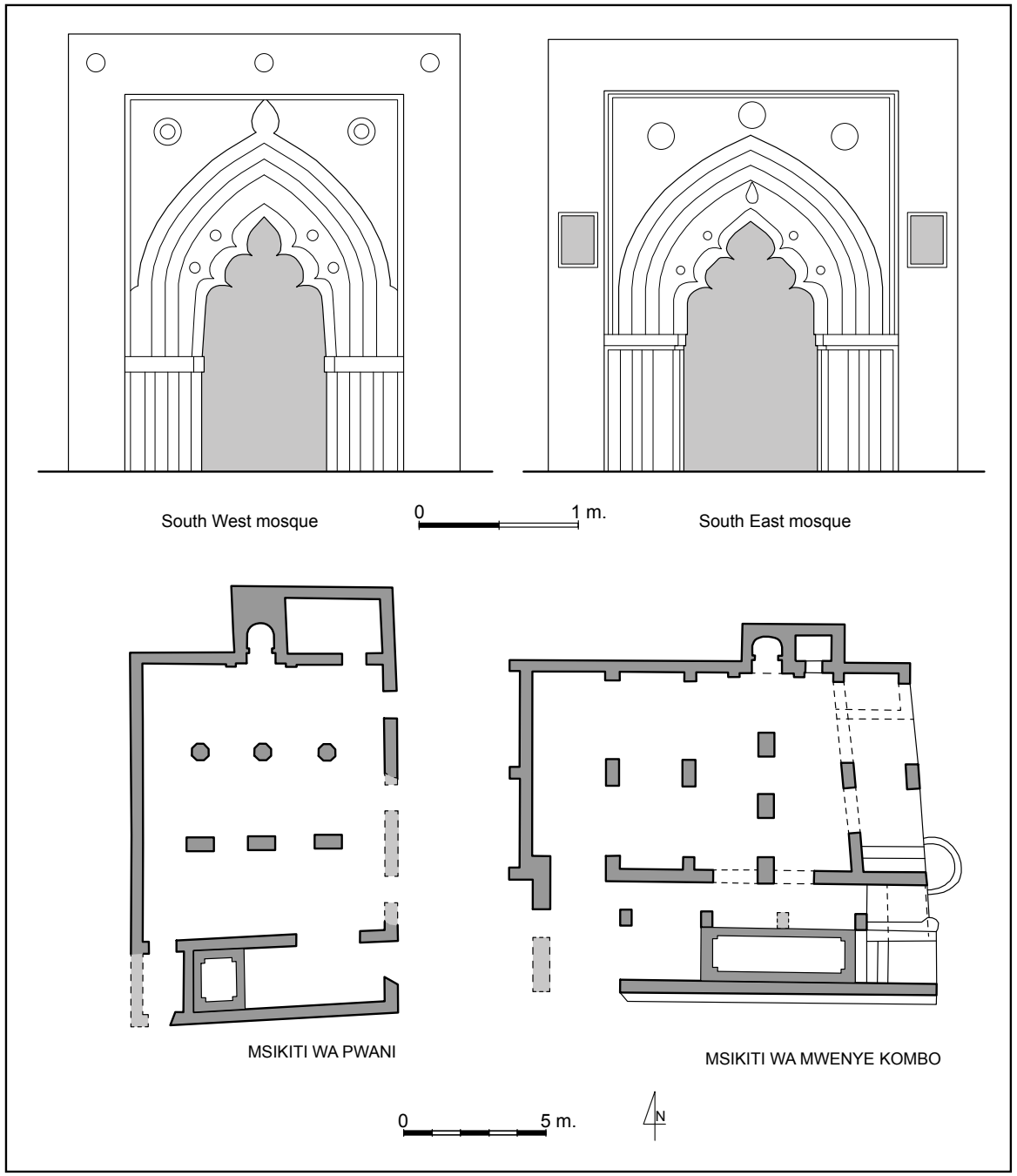


FIGURE 193 Mosques of wa-Pwani, and wa-Mwenye Kombo, city of Pate

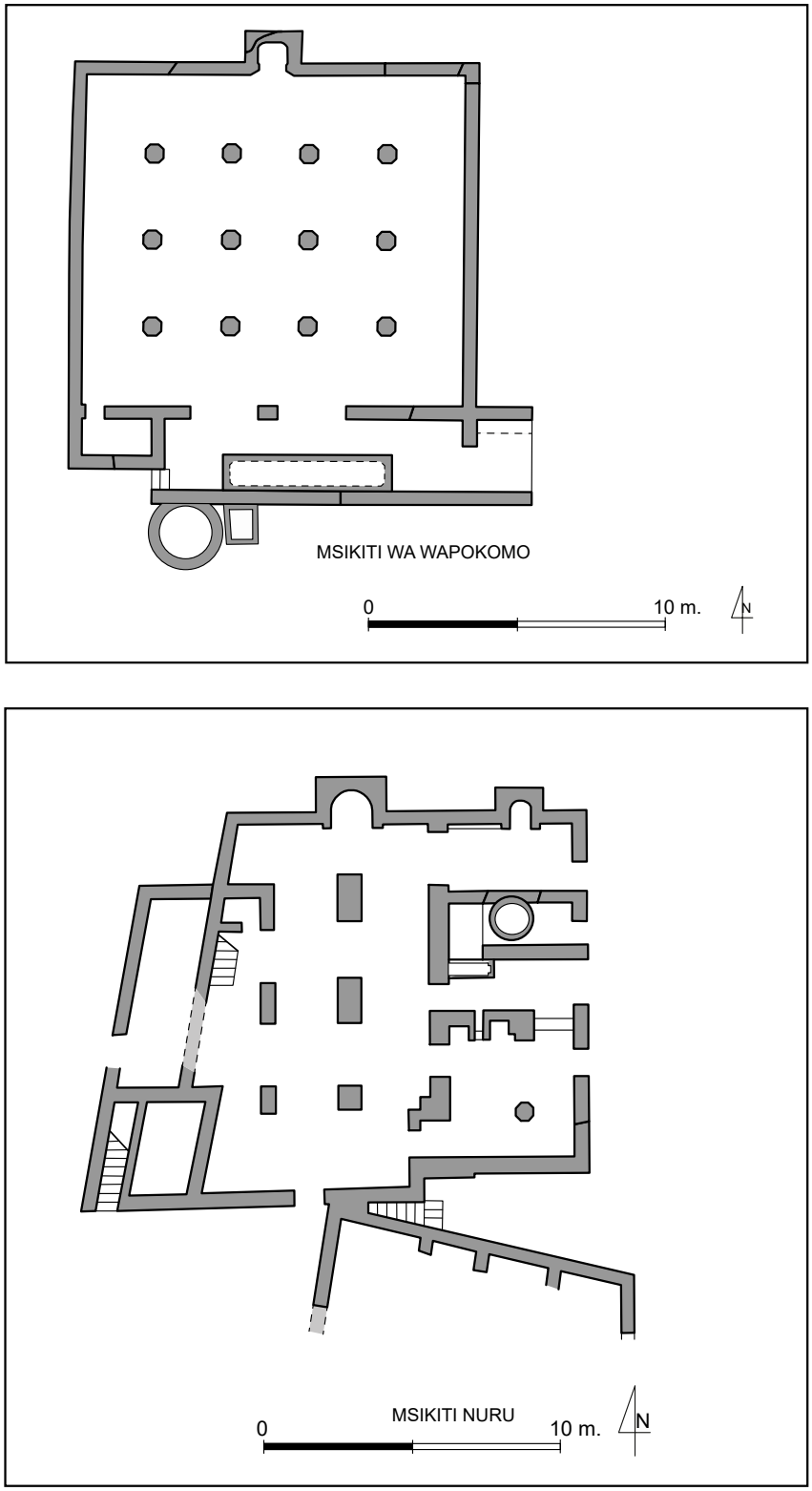


FIGURE 194 Mosques wa-Pokomo and Nuru, city of Pate



FIGURE 195
Stucco mihrab in the great mosque of Shela, Lamu Island

would then have been used by Baluchis from the frontier region between present-day Iran and Pakistan – mercenaries stationed in Fort Jesus and serving the Mazrui governor and later the sultan of Zanzibar.

3.12 The Swahili Mosques of the Nineteenth Century

3.12.1 *The Mosques of the Sultanate of Zanzibar*

Swahili architecture went through a final phase under the sultanate of Zanzibar in the nineteenth century with a group of *mihrabs* of the Zanzibar type situated mainly on the coasts of Tanzania (Fig. 196).

The capital of the former sultanate, the old city of Zanzibar (Stone Town), had 51 mosques during the nineteenth century. 27 of them were Sunni Shafiite while the others were Kharijite Ibadi, Shia Ismaili: Bohra, Ithnasheri and Nizari.[409] Zanzibar was divided into eight districts, each mosque corresponding to a district of the town or *mitaa*. The mosque of Gofu built in 1800 is one of the

409 Siravo, *Zanzibar: A plan for the historic Stone Town* (1996): 40–44.

earliest. There are two Friday mosques, the first at Forodhani, while the second and later one is the mosque of Malindi built in 1860 over an earlier mosque dating from 1831. One of the most iconic is the Mnara mosque with its famous conical minaret. This mosque was built in 1834 by Muhammad ibn Abdulkadir al-Mansaby from Banadir, then the building was enlarged in 1841, and restored in 1890 by Seyyid Ali bin Said. There is also the mosque of Mbaye at Sokomuhogo and the Barza mosque at Kajificheni.

The Zanzibari-style mosques or "ibadi revival" are characterised by *mihrabs* with polylobal, festooned or twisted arches, and by decorations carved in the stucco.[410] A new form of moulding appeared which Garlake called the key-hole motif, a semicircle surmounted by a triangle (Fig. 197). Pilasters capped by capitals enframed the entrance of the apse. A simple sloping roof covered the niche of the *mihrab* and replaced the usual half-dome vault. Joseph Schacht recorded various mosques of this type in Tanzania dating from the nineteenth and early twentieth centuries: Mboamaji of 1856–1870, Bweni Kuu of 1850–1870, the *jamia* of Pangani of 1902, Furdani of 1897, and the mosque of Tambareni of 1907. In Kenya, Mambrui dates from 1880, the *jamia* of Malindi from 1893, and a mosque in Lamu from 1920.[411]

The most interesting mihrab from this period is probably the one of Mnyange mosque in Chole. The mihrab is of an exceptional quality with a



FIGURE 196 Mihrab-minbar of Mkuje mosque, Songo Mnara Island

410 Freeman-Grenville, "Some preliminary observations on medieval mosques near Dar es Salaam" (1954): 64–70.

411 Garlake, *The Early Islamic Architecture of the East African Coast* (1966); Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173.



FIGURE 197 Mosque of Sanga Rungu, Songo Mnara Island

remarkable stonework. The *mihrab* of had a deep blind arcade of six niches or mini-*mihrabs* under a frieze of squares. The polylobal arch of this *mihrab* suggests that it dates from the end of the eighteenth century (Fig. 198). Chole on the eponymous island off the island of Mafia, was a regional capital from the eighteenth century until the end of the nineteenth century and the German occupation. Chole has several mosques including the Ijumaa or Friday Mosque built in the nineteenth century by the al-Bu Saidi, Chole Mjini, Kilimani Mosque. An Ismaili Jamat Khana was also built in the nineteenth century by an Indian family, the Gulamali.[412]

The mosques of Mboamaji and Mkwaja are truly representative of the Zanzibar period. They are small square buildings with walls 50 cm thick (Fig. 199). The roof of the prayer hall was supported by large octagonal pillars or stacks connected with the pilasters of the lateral walls by arcades with broken arches. The wall of the *qibla* was occupied by three cells forming a tripartite arrangement. The *mihrab* was enframed to the west by a door going to a backroom reserved for the imam, and to the east by a niche for the *minbar*. The *minbar* was often built in a niche communicating by a door with the *mihrab*, and the two elements sometimes shared the same niche.[413] The ablution area

412 Blanchard, *Chole* (2020).

413 Smith, "A recessed minbar in the mosque of Simambaya" (1973): 154–156.



FIGURE 198 Mihrab of Chole, Mafia archipelago

was frequently limited to the southern part of the mosque.

Two architectural elements are characteristic of the Zanzibari-style mosques – the niche *minbar* and the frieze of mini-*mihrabs* on the walls in the niche of the *mihrab*.

The frieze of mini-*mihrabs* inside the quadrangular apse of late *mihrabs* recalls the tradition of the early *mihrabs* of Kizimkazi. The *mihrab* of Kizimkazi seems to have been at the origin of all the Swahili *mihrabs* decorated with a frieze of mini-*mihrabs* in the intrados of the niche. A troubling fact is that the *mihrabs* of the Kizimkazi style appeared when Zanzibar and Pemba had commercial relations with Shiite Indian merchants, but also with Omani Ibadis, and it seems to me that the similarity between the early and the later groups reveals the presence of Ibadis,

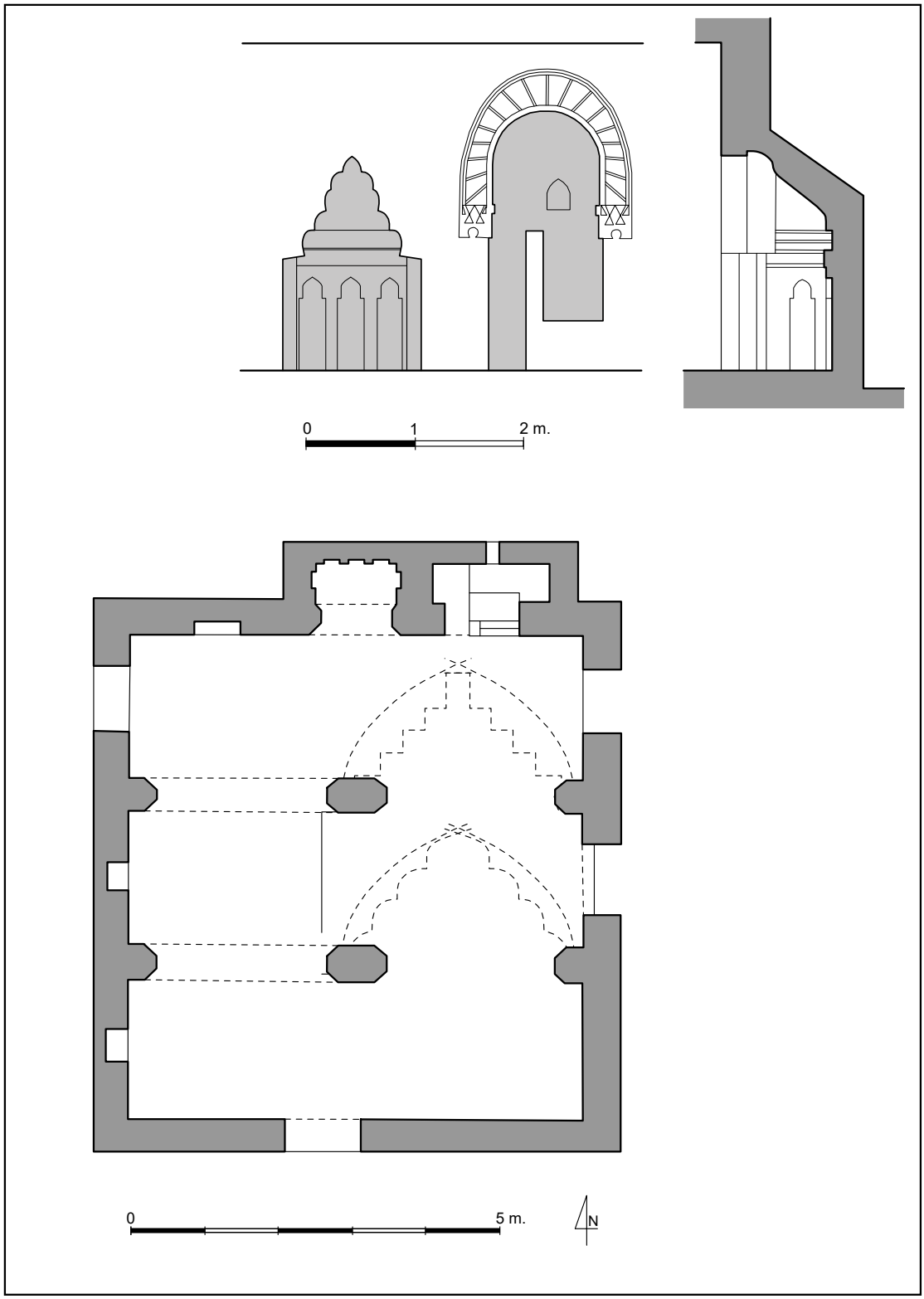


FIGURE 199 Mosque of Mboamaji

and Shiite Ismailis in East Africa,[414] since numerous Omani and Indian *mihrabs* were produced by this same movement. The quadrangular *mihrab* of Kisimkimto had a blind arcade of eleven niches surmounted by a frieze of miniature *mihrabs*. It is one of the few *mihrabs* of the East African coast to have a recticurvilinear arch and bears a strong resemblance to the *mihrab* of Kipumbwe dating from the nineteenth century.[415] The mosque of Sanga Rungu in the north of the island of Songo Mnara dates from the end of the nineteenth century. This little mosque has a prayer hall divided by two rows of pillars connected by two types of different arches, one of which is polylobal. The mosque has a niche *minbar* and a *mihrab* niche decorated by mini-*mihrabs*, two characteristics of the late Swahili mosques.[416]

The niche *minbar*, known as "partitioned", consisted of a masoned stairway placed in a niche to the right of the *mihrab* with a window or a wooden balustrade, which allowed the *khatib* to deliver his sermon.[417] According to Garlake, the Swahili *minbars* underwent a local development between the masoned *minbar* built against the wall of the *qibla* and the niche *minbar* built into the wall of the *qibla*.[418] He appeals to a single case: the *minbar* of the great mosque of Kua where a stairway penetrated the wall of the *qibla* perpendicularly. The minbar in Kua is a type of transition between the simple stairs against the qibla wall, and the niche *minbar* as in Mboamaji, while in the final stage the *minbar* was linked to the *mihrab* in the same niche as at Kipumbwe. Garlake's theory is questionable. Admittedly the medieval Swahili *minbars* were not in a niche and the site of Kua was indeed a site of transition dating from the sixteenth and seventeenth centuries. The niche *minbars*, however, were characteristic of the nineteenth century, when the Omanis created new mosques or transformed the old ones, as they did in 1893 with the *jamia* of Malindi where the protuberant stone *minbar* was replaced by a niche *minbar*. The niche *minbars* seem to have been used indifferently by the Sunni Shafiite Swahilis and the Omani Ibadis.

Indian, as well as Yemeni, immigrants also influenced the Swahili mosques with the introduction of ogival minarets, as in Zanzibar and Lamu.[419] The mosques of the town of Lamu were founded between 1840 and 1900. Most of them are still active and go beyond the chronological limits of this study. In the town of Shela, next to Lamu, the Friday mosque dating from 1920 has a conical minaret with a spiral stairway of 58 steps (Fig. 200).[420] In Tanzania, the great mosque of Pangani is dated 1902. It has an ogival minaret revealing Yemeni influence.[421]

3.12.2 *The Return of the Shi'ite and Ibadi Communities to East Africa*

The seventeen Ibadi mosques of the town of Zanzibar were built in the second half of the nineteenth century and fourteen are still in use to this day.[422] It is the largest concentration of

414 Penrad, "La présence isma'ilienne en Afrique de l'est" (1988): 221–235; Berg & Walter, "Mosques, population and urban development in Mombasa" (1968): 47–100.

415 Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173.

416 Pradines, "Le mihrâb swahili" (2003): 366–367.

417 Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173.

418 Garlake, *The Early Islamic Architecture of the East African Coast* (1966): 74–75.

419 Sheriff, "Mosques, merchants and landowners in Zanzibar stone town" (1992): 1–20.

420 Ghaidan, *Lamu* (*a study of the swahili town*) (1975): 22.

421 Schacht, "An unknown type of minbar and its historical significance" (1957): 149–173.

422 Siravo, *Zanzibar: A plan for the historic Stone Town* (1996): 45–46.

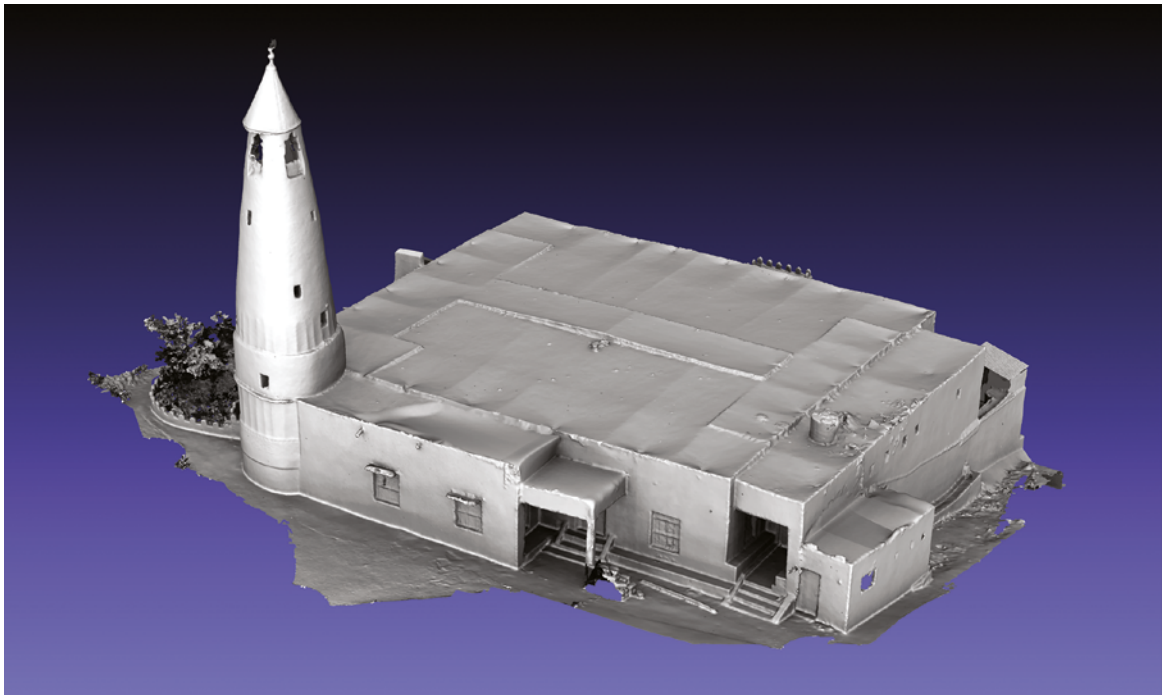


FIGURE 200 Conical minaret of Shela Mosque, Lamu Island

Ibadi mosques in East Africa where, however, this confession was always in a minority on the Swahili coast. The most emblematic are the Ibadi mosques of Laghbari and Mandhiri in the district of Sokomuhogo (Fig. 201). The main characteristic of these mosques is their discretion: it is almost impossible to distinguish them from the houses in the dense urban tissue. In contrast to the traditional Swahili mosques, the *mihrab* does not protrude into the street with a quadrangular aedicule. In the Ibadi mosques, the *mihrab* is built into the thickness of the wall of the *qibla*. The mosque of Laghbari was raised above the level of the adjacent streets. The ground floor or podium of the mosque was plain, and only an ablution area was set up at this level with a stairway leading to the prayer hall (Fig. 202). Among the Ibadis there is no Friday mosque. The mosques are small with a prayer hall divided by rows of columns, a few decorated stucco panels, and a *minbar* which is often concealed and built in the wall.

When the Omanis came back to East Africa, their economy and business activities were supported by Indian merchants, most of them from shia'a sects, mainly Ismaili Bohras. Relations between Omani Ibadis, Indian Bohras, and the Swahili Sunnis Shafiite have always been cordial and tolerant.[423] The Bohras participated in the financing and the building of new mosques, and the large octagonal pillars connected by polylobal arches are reminiscent of Indian architecture from Gujarat and the Deccan (Fig. 203).[424] The Ismailis built several Jamatkhana on the coast, including one in Forodhani, Zanzibar stone town, in 1838 (and renovated in 1905). The mosque has typical Gujarati carved wooden doors; the rest of the building is very much influenced by early colonial

423 Sheriff, "Mosques, Merchants and landowners in Zanzibar Stone Town" (1995): 46–66.

424 Burton-Page, *Indian Islamic Architecture: Forms and Typologies, Sites and Monuments* (2008).

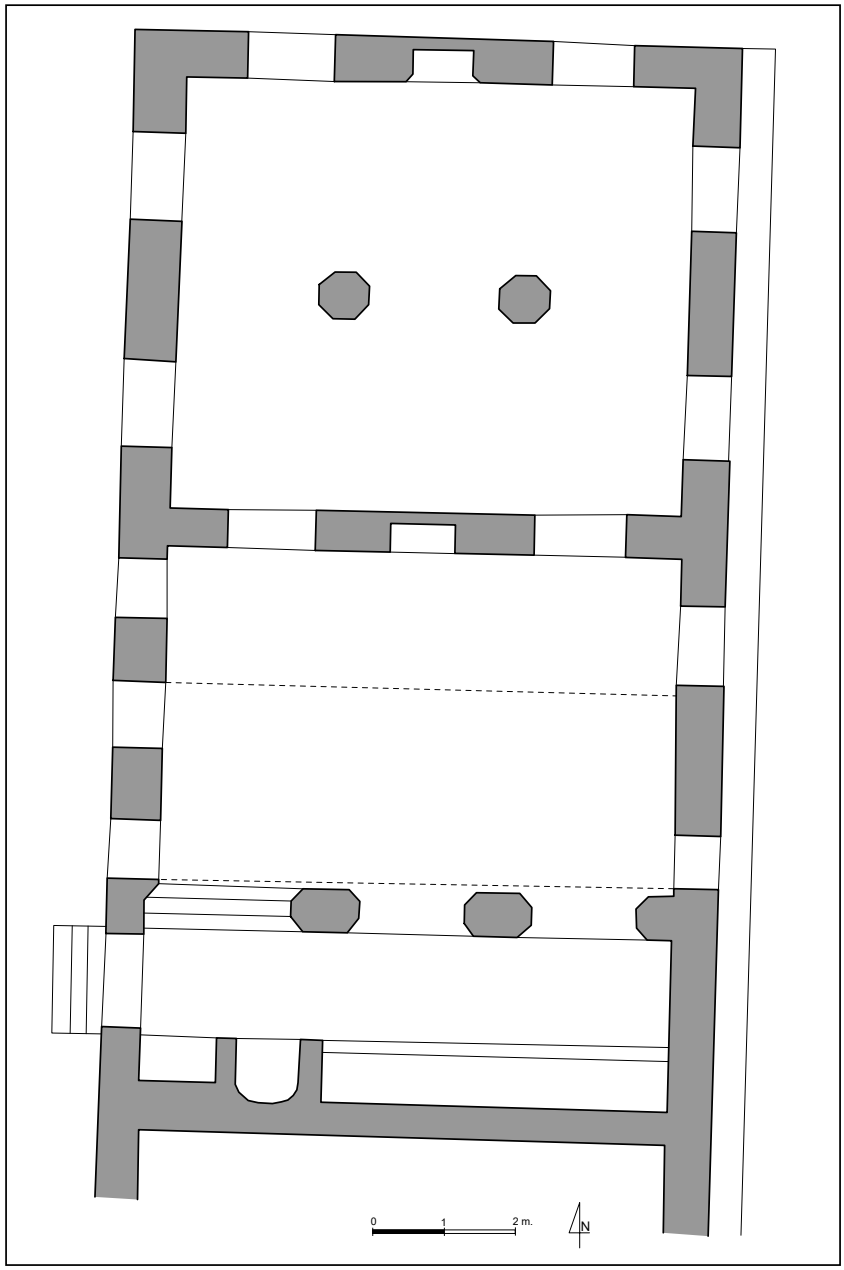


FIGURE 201 Ibadi mosque of Mandhiri, Sokomuhogo district, Zanzibar old town

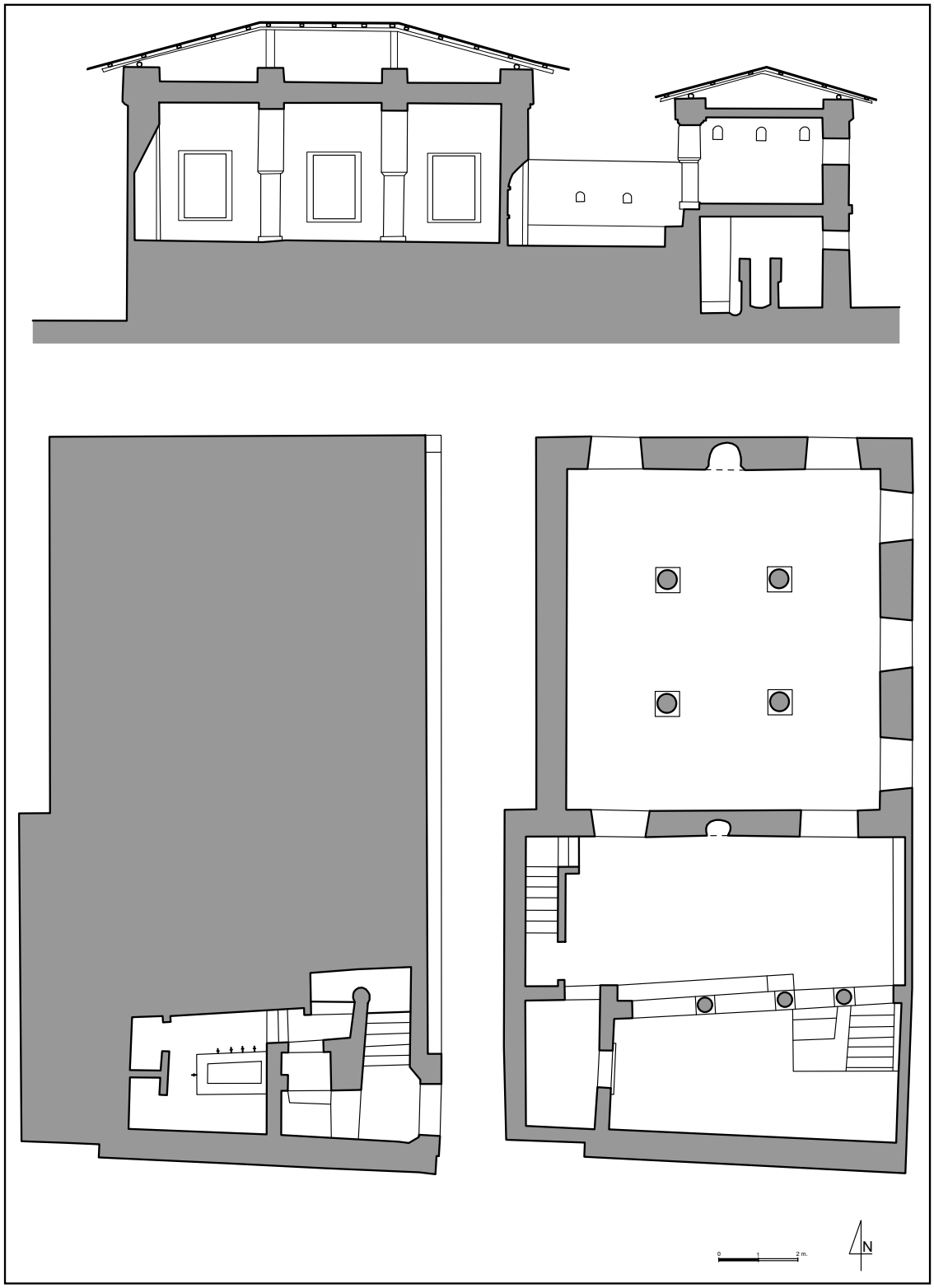


FIGURE 202 Ibadi mosque of Laghbari, Sokomuhogo district, Zanzibar old town



FIGURE 203 Aga Khan Jamat Khana Mosque Zanzibar, Tanzania

architecture and it looks like a house more than a mosque.

After 1840, Indian merchants financed most of the Omani slave caravans and monopolised the coastal trading posts in East Africa. In the second half of the nineteenth century, Swahili architecture penetrated the interior with the slave caravans organised by the Indian and Omani merchants. To the west of Lake Victoria, the mosques of the towns of Kasubi, Kyakakwere, Kibumba and Ibngabwa present similar characteristics: they are small, very simple rectangular buildings with roofs in palm leaves and mud walls actually very similar to Swahili domestic architecture in perishable materials.[425]

The Indian communities would influence Swahili religious architecture before replacing it altogether at the end of the sultanate of Zanzibar. According to the study by Berg and Walter,[426] all the mosques of Mombasa were of Swahili origin before 1837. Between 1837 and 1895 there were as many Arab mosques as there were Swahili ones, and over 80% of Indian mosques. Finally, between 1895 and 1966, the Indian mosques dominated the religious life of Mombasa completely. With colonisation completely exogenous forms of mosque appeared in East Africa, based mainly on models from the Arabian Peninsula and India. This period really does see the end of the Swahili traditional mosques.

425 Insoll, "Mosque architecture in Buganda, Uganda" (1997): 179–188.

426 Berg & Walter, "Mosques, population and urban development in Mombasa" (1968): 47–100.

Epilogue: The Mosques of Sub-Saharan Africa in the History of Islamic Architecture

In East Africa, the first Muslims were merchants and political refugees from the Persian Gulf, particularly from Iran, Bahrain, and Oman. They settled in Africa between the eighth and the ninth centuries. The first African converts to Islam seem either to have been Shiite Twelvers, especially Ismailis, and Kharijites, essentially Ibadis. Oman contributed to the stylistic formation of the plan of Swahili mosques with a longitudinal prayer hall; the absence or the small size of outer courtyards; the absence of minarets; and the organisation of a row of pillars opposite the *mihrab* or the association of the *mihrab* and the *minbar* forming a characteristic protuberance on the outside of the mosque. The Omanis had been in Africa ever since the first centuries of Islamisation. The influence of the Shiite groups increased in the eleventh century thanks to links with the Fatimids. On the Indian side the port of Daybul (Banhore) in Sindh had been involved for several centuries in the trade of the Indian Ocean and favoured the export of Asian architectural models to Africa in the twelfth century. The Ismailis of Daybul had politico-religious affiliations with the Fatimid caliphs of Egypt. The first *mihrabs* and the first mosques in worked sea coral appear above all in Kizimkazi (Zanzibar), Kilwa and Sanje ya Kati. The merchant communities of the Persian Gulf continued to trade with Africa and to exert a strong influence on African architecture. The Buyids, and then the Seljuqs of Iran and Iraq, had a fundamental influence from Mogadishu in Somalia to Somana in Mozambique. The thirteenth century marked a turning point in East Africa. There were mass conversions to Islam and the coast became Sunni Shafiite under the influence of the Rasulids of the Yemen and the Mamluks of Egypt. In the fifteenth century the city of Kilwa alone symbolises the growing influence of India, not of Gujarat but of Malabar. The mosques with Swahili cupolas all indicate Tughluq and Bahmanid influences and a shift of maritime trade towards the south of India. In the sixteenth century, the Portuguese presence in the Indian Ocean slowed down the architectural activities, even if the Swahilis continued to trade and to build new mosques, notably in the cities of Pate and Kua. Although Mombasa became the administrative capital of the east coast in the seventeenth century, it was in the Lamu archipelago that a Swahili renaissance occurred, marked by an ever-greater influence of the Indian and Yemeni builders, with *mihrabs* with stucco decorations and large polylobal arches. In the nineteenth century, finally, the return of the Omanis to East Africa dealt a decisive blow to the Swahili mosques, and from then on mosques would be built mainly after models in the Arabian Peninsula and India. The study of the Swahili mosques thus provides invaluable information about the Islamisation of Sub-Saharan Africa and enables us to chart historical relations in the Indian Ocean.

There is a common denominator amongst the mosques of East Africa and those of West Africa: the preponderant rôle of what are now called the religious minorities of Islam, notably the Ibadis and the Ismailis. These groups, which emerged from the Shiite and Kharijite movements, were at the origin of the Islamisation of Sub-Saharan Africa, but also of the introduction of mosque architecture. Sub-Saharan architecture has retained these earliest forms of Islamic architecture. The legacy of the Ibadi and Ismaili, or more globally the kharijites and the shiaa is immense for the diffusion of Islamic architecture in Sub-Sahara Africa, between the ninth and twelfth. After the thirteenth century, Africans adopted sunnism in mass, Sunni shafi'i in East Africa and Sunni Maliki in West Africa. From this period and onward, the sufi movements became extremely popular in sub-Sahara Africa and I strongly argue that Sufism

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became a philosophical and moral substitute to the previous religious sectarian movements Ibadi and Ismaili. It is also supported by the permeability between sufism and shiaa spirituality.

In West Africa, the history of mosques in mud brick is connected with the great African empires, but also with the trans-Saharan commercial networks. The Mediterranean influences are visible beyond the Sahara, in the architecture of the Niger valleys. And yet the mosques of the Niger valleys were not solely the product of external contributions. The forms and technological traditions remained African. "The Art" of the mud mosques reached its apogee between the fourteenth and the sixteenth centuries. This Islamic architecture then spread to the south and the east of the river Niger, through the intermediary of Mandika and Dyula travellers and missionaries in the fourteenth century and Hausa ones in the fourteenth and fifteenth centuries. Trans-Saharan commercial relations were altered in the sixteenth and seventeenth centuries by the arrival of Moroccans, and then of Europeans. The religious reforms and the great *jihads*, finally, took place in West Africa in the eighteenth and nineteenth centuries. These events were at the origin of regional variants of the mosques of the Niger valleys, especially in the peripheral Islamised areas.

Our study of the mosques of the Niger valleys reveals the existence not of one style but of various West African styles, from the great mosques of Mali, Burkina Faso, and Niger, passing by the compact buildings of the area of Ghana and the Ivory Coast, up to the hut-mosques of the forest edge of Nigeria and the north of Senegal. The groups of the Niger valleys evolved according to the history of trans-Saharan trade and the *jihads*. And yet the scarcity of the archaeological data concerning the birth and diffusion of this earthen architecture requires the greatest caution as soon as we approach the chronology of these monuments. The style of the Niger valleys, finally, was not limited exclusively to mosques. Research should thus be pursued into the relationship between the religious architecture on the one hand and domestic and palace architecture on the other. Detailed excavations and architectural studies of the mosques might yield more elements necessary for establishing a better chronology for West Africa which is sadly in need of a scientific archaeological investigation of its mosques. I hope that this survey will be completed in the future by monographs on the main sites described in this book, not only in the Niger valleys but also in the Sudan.

My book also has its limits, for the second part, the absence of scientific knowledge and literature must be emphasized. Serious research into the mosques of the Horn of Africa only started a few years ago under the impulse of Professors Bertrand Hirsch and François-Xavier Fauvelle. I took part in these activities with the excavation and study of the mosques of Nora in Ethiopia. More recently, Timothy Insoll started excavating the mosque of Harlaa. If the state of our knowledge is developing rapidly in Ethiopia, this is not the case for the Sudan. We still know far too little about the mosques of the Red Sea, the converted churches in Nubia and Darfur, and the great kingdoms and jihadist states between the sixteenth and the nineteenth centuries. For the area stretching from the Red Sea to Chad everything still needs to be done.

In West Africa the situation is different. Numerous works and articles have been published on the so-called "Sudanese" mosques, a colonial term which must be avoided in favour of a more neutral geographical term, "the mosques of the Niger valleys". The word "valleys" in the plural includes the tributaries and the sources of different African waterways and can thus cover the entire West African area. There too my study has its limits. These are chronological, apart from the mosque of Kumbi Saleh excavated by Serge Robert, the mosques excavated by Patrice Cressier in Niger, and the mosque of Timbuktu excavated by Pascal Poissonnier, there have been no serious archaeological excavations of the West African mosques.

In fact, these mosques have all been relegated to the end of the nineteenth century, or even the beginning of the twentieth century and the

colonial era. And yet again, as in the Sudan, West Africa had great kingdoms which were Islamised precociously. But where then are the ancient mosques? Two excuses are currently advanced by archaeologists. First of all, the mud mosques were periodically renovated, sometimes even reconstructed, and it is thus difficult to study them and examine them from a chronological point of view. None of this is new. The Swahili mosques also went through different phases of reconstruction which can be seen in stratigraphic excavation and in building archaeology. The second argument is that mud architecture leaves hardly any traces and that the early mosques are consequently invisible to the eyes of archaeologists. That, however, is a problem of experience and method, since few archaeologists working in Africa have received proper training in archaeology, and in the discipline of Islamic archaeology. They find themselves having to excavate for their doctoral thesis without having acquired any method and experience in the field, and their knowledge is thus derived mainly from books. The excavation of mud brick, pole holes, structures in negative, is complicated and must be learnt on training sites in Europe and North America. A good training would correct these defects and allow the collection of more data, as well as instilling a respect for the African sites and monuments which ought to be excavated more seriously. Verbal, theoretical, and conceptual archaeology will one day give way to a serious field archaeology, more difficult, but also producing more gratifying scientific results.

The architecture of the African mosques, finally, is threatened by its decline: climatic warming, drought in the Sahel, alterations in the way of life, and the influences of western consumer society with the introduction of industrial products. Economic problems and mass emigration are both factors in the disappearance of traditional techniques and craftsmanship. The mud mosques have given way to concrete and corrugated iron. More recently fundamentalist Islamist groups started to destroy the mausoleums of Gao and Timbuktu, claiming that these monuments did not conform to a rigorous Islam. Fiercely opposed to the cult of saints and Sufism, members of Al-Qaida tore down various mausoleums of Muslim saints in Timbuktu in 2012. Fortunately, the support of UNESCO enabled the eight mausoleums of Gao to be rebuilt in 2015. These unfortunate actions are far from new and repeat the destructions at the time of the great Fulbe *jihads* in the nineteenth century. They demonstrate a deep division within the different Muslim communities, the flexibility of African Islam as opposed to a fundamentalist Islam, but also the link between politics and religion. Different Muslim groups have been fighting over Africa ever since the advent of Islam and to the detriment of its heritage and its prestigious history.

Fortunately the conservation and the renewal of mud architecture have been sustained and encouraged by UNESCO and numerous NGOs, such as the World Monument Fund, and the Aga Khan Trust for Culture. In West Africa, following the signing of an Agreement of Cooperation between the Government of Mali and the Aga Khan Development Network (AKDN) in 2003, the AKTC began the Earthen Architecture Programme.[1] The works of the AKTC in West Africa started with the Earthen architectural conservation programme for the re-vitalisation of historic-cultural assets, such as the earthen mosques of Mopti, Djenne and Timbuktu. The programme focused on key monuments, but also the surrounding urban areas, to improve the quality of life of the residents in neighbouring communities. The AKTC worked with local masons and communities to improve local capacity to build and manage these previous architectural heritage sites, training local masons in the skills of building with earth and reviving the traditions of handing down knowledge of restoration methods and materials to future generations.[2]

1 Siravo and Bouleau in Jodidio, *The Aga Khan Historic Cities Programme. Strategies for urban Regenerations* (2011): 214–233.

2 Bouleau in Faruque Aly, *AKDN: Contributions to development in West Africa* (2021): 38–45.

These projects ended in 2011 and were a significant economic driver in these communities by sourcing local supplies, creating local employment and drawing tourism into the region. After carrying out the restoration of the Komoguel Mosque of Mopti, the Djenne Great Mosque and the Djingereyber Mosque, AKTC turned to the construction of the Centre for Earthen Architecture in Mopti. The Earthen Architecture Programme began by identifying the best practices of mud building grounded in local traditions and materials, introducing conservation methods and processes. The AKTC created a database of architectural, archaeological, and technical documentation via first-hand knowledge of these unique historic sites. In East Africa, the Aga Khan Trust for Culture (AKTC) launched a programme in partnership with the Zanzibar authorities. From 1992 to 2009, the AKTC restored the old dispensary of Zanzibar Stone Town, improve facilities and public infrastructures for local community on the seafront and Forodhani park.[3] From 2002 to 2014, the Tanzanian government, the Unesco, the World Monument Fund (WMF), the French and Japanese Embassies had a huge conservation programme in Kilwa Kisiwani, Songo Mnara and Sanje ya Kati. Many monuments were restored such as the great mosque of Kilwa, the Gereza, or protected from the sea erosion such as Husuni Kubwa. The main objectives were to support local development in the South of Tanzania through cultural tourism, and to remove Kilwa from the world heritage list in danger.

To conclude: the architecture of the mosques of Sub-Saharan Africa is an original architectural expression in its techniques, its forms, and its materials. But the history of Africa will only be a great history if it assumes an international dimension. The African mosques are extremely important in the history of Islamic architecture. Sub-Saharan Africa has always been open to other cultures, notably to those of the Mediterranean and the Indian Ocean. The African mosques have a unique and original character which will only find meaning in their existence at the heart of our World heritage.

3 Siravo, *Zanzibar: A plan for the historic Stone Town* (1996).

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Annex 1: Historical Chart of the Main Dynasties and Kingdoms in Sub-Saharan Africa and Their Neighbours (the dates mentioned are not always the date of reign, but the periods of influence in Sub-Saharan Africa)

North Africa & Sahara	Midrarid, 758-977 Rustamid, 761-909	Fatimid, 909-1171 Almoravid, 1040-1147	Ayyubid, 1171-1250 Mamluk, 1250-1517	Saadian, 1554-1636	Ottoman, 1453-1908		
West Africa	Ghana / Wagadu, 4th-12th c.	Tekrur, 850-1285	Mali, 1230-1670	Songhay, 1464-1591	Hawsa, 15th – 18th c.	Sokoto, 1786-1903 Gonja, 17th - 19th c.	Diula, 1710-1898 Massina, 1818-1862 Futa Jalon, 1725-1897 Futa Toro, 1776-1877
Nile Valleys & Horn	Aksum, 80 BC-960 AD. Makuria, 5th – 15th c. Alodia, 350-1504	Dahlak, 9th – 13th c. Shoa, 896 – 1285	Ifat, 1185-1403 Adal, 1415-1577 Suakin, 14th - 16th c.	Kanem, 700–1380 Borno, 1391-1905	Tunjur, 1400-1650 Wadai, 1501-1912 Dar Fur, 1603-1916	Funj, 1504-1821 Mahdi, 1881–1898	Harar, 17th - 19th c.
Europeans		Venetians, 1082-1509	Portuguese West-Africa, 1440-1460	Portuguese East Africa, 1498-1698	Atlantic slave trade 17th – 18th c.		Colonisation
East Africa	Shirazi of Kilwa, 957-1277		Mahdali of Kilwa, 1277-1513		Nabahani of Pate, 1688-1812	Mazrui of Mombasa, 1741-1812	Sultanate of Zanzibar and Bu'saidi, 1749-Present
Arabia, Persia, & India	Abbassid, 750-945 Qarmatian, 894-1067	Buyid, 945-1055 Great Seldjuqs, 985-1194	Rasulid, 1229-1454	Tughluq, 1320-1413 Bahmanid, 1347-1527	Nabhani, 1154-1624 Ya'rubid, 1624-1742		

FIGURE 204

Annex 2: Inventory and Atlas of Historical Mosques in Sub-Saharan Africa Listed by Contemporary States

Part 1: Niger Valleys, Adrar and Futa Toro

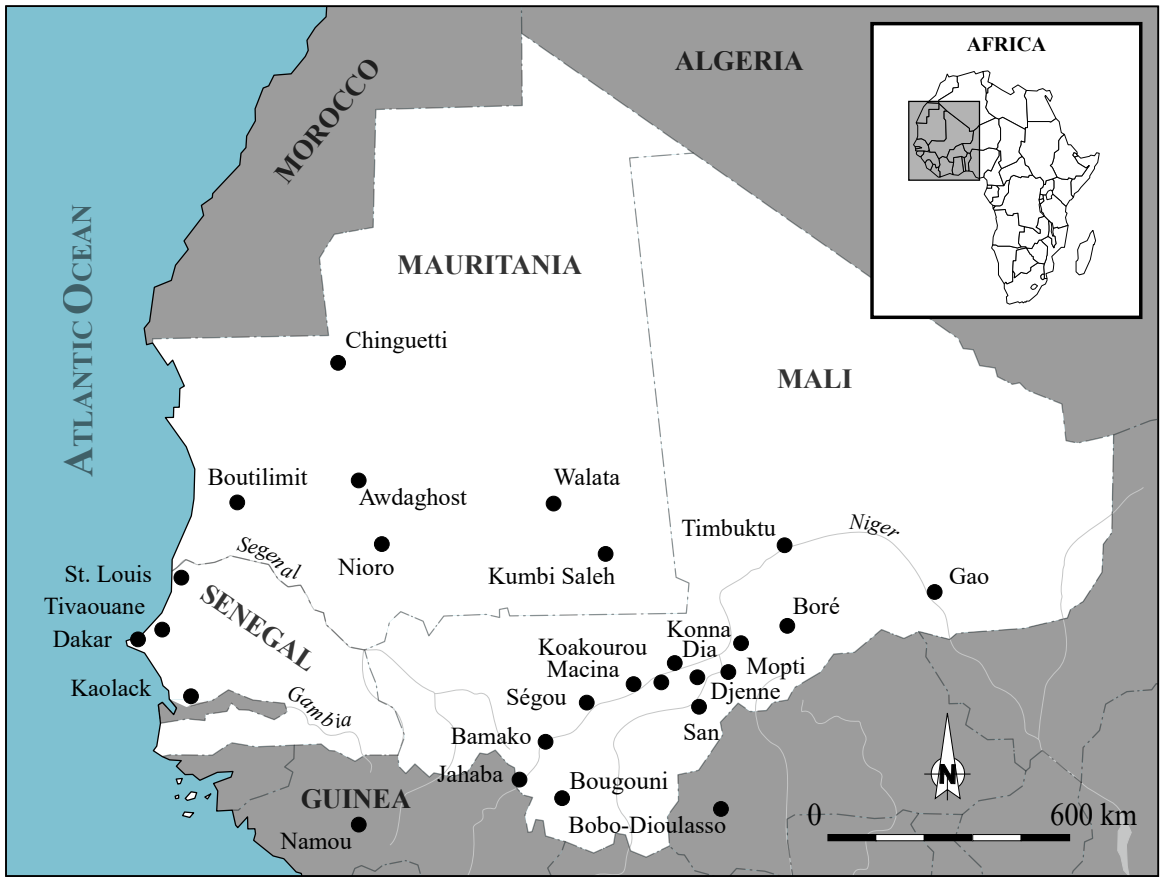


FIGURE 205 Map of the historical mosques of Mali, Mauritania, Senegal, and Guinea

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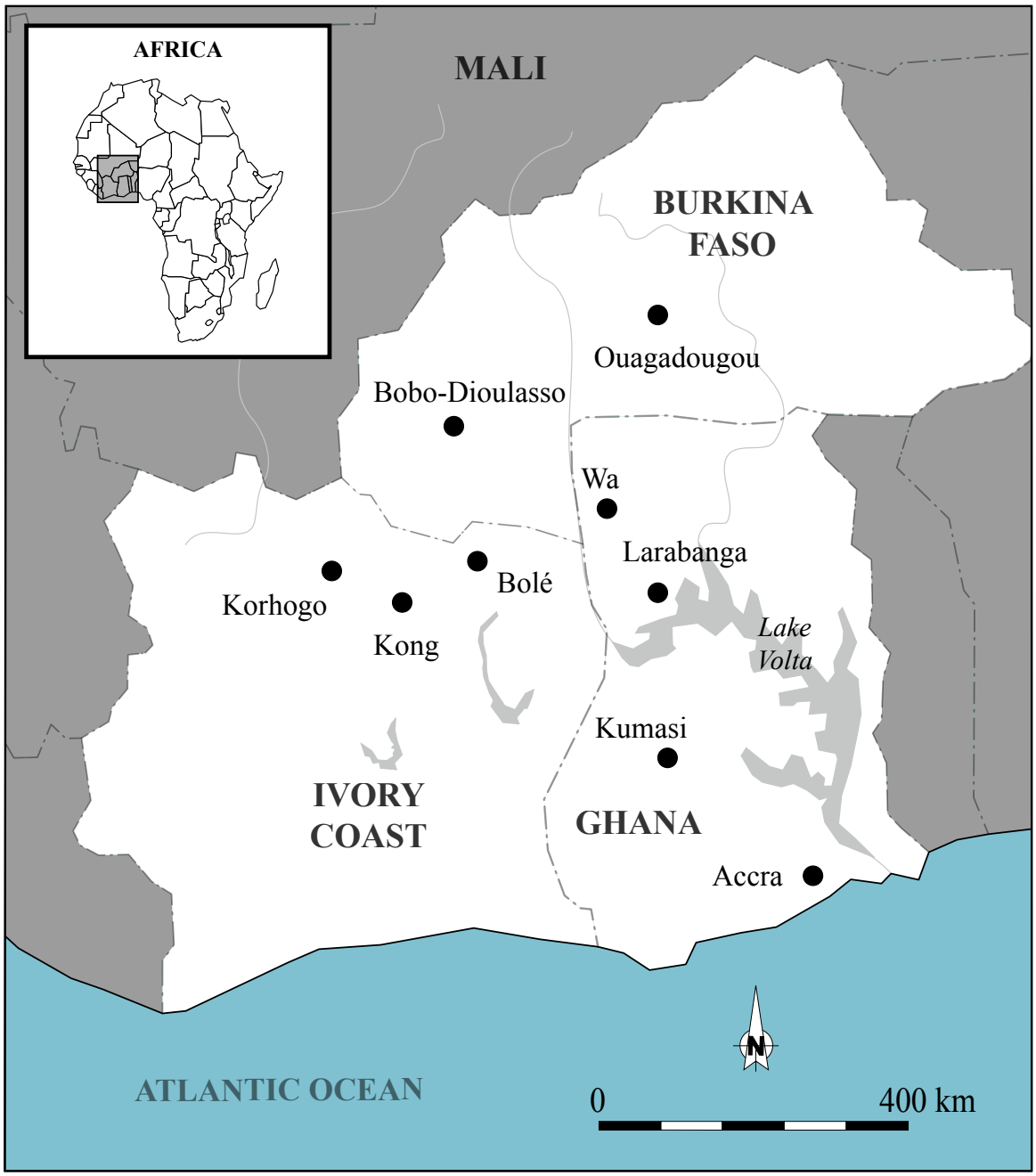


FIGURE 206 Map of the historical mosques of Burkina Faso, Ivory Coast and Ghana

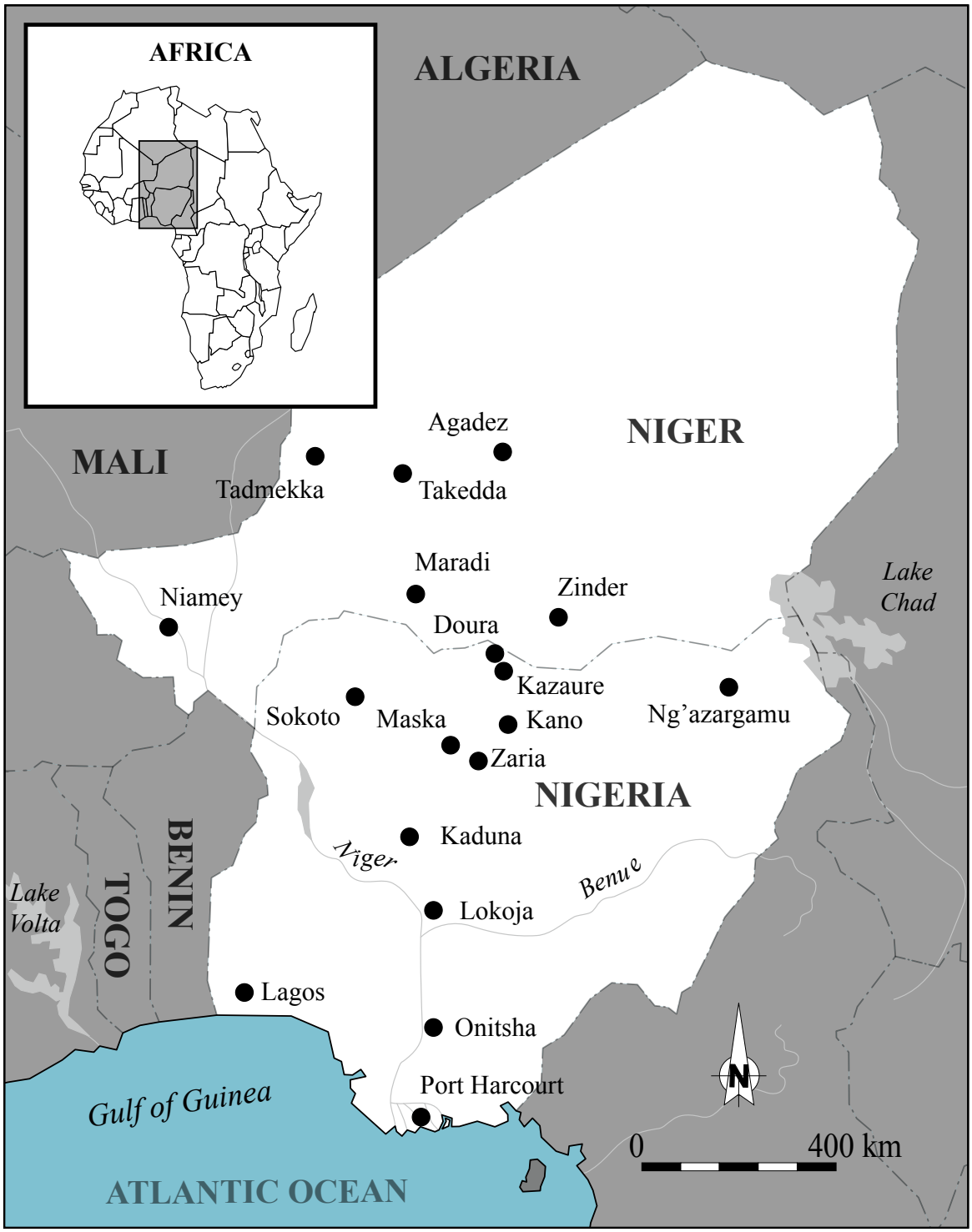


FIGURE 207 Map of the historical mosques of Niger, Nigeria

Mauritania

Awdaghust (Tegdaust)
Jami al-Kabir, Chinguetti
Kumbi Saleh
Nema
Qasr el-Barka
Synthiane Diama Alwaly, Kaedi
Teghaza
Tichitt
Tijikja
Wadan
Walata

Mali

Aribinda
Askia Mohammed, Gao
Bamako
Bamba
Bambougou
Banankoro
Bandiagara
Batamani
Bia
Bla
Bore
Bouna
Daka Womira
Dia
Diafarabe
Dire
Djenne jamia
Djinguere Ber, Timbuktu
Douentza
Dougouba
Doukoure
Es-Suk (Tadmekka), Adrar Ifoghas
Foullodji-Kolo
Gania
Gao, Old Gao
Gao Saney
Gossi
Goundam
Guindio-Sare
Hombori
In-Teduq, Adrar Ifoghas
Kaka
Kamaka
Kamale Sibi
Kani Kombole
Ke Macina (Massina)
Kidal
Koa
Kolenze
Komara
Kona (Konna)
Koporo-Kenie-Na
Korientze
Koro
Kou
Koumaïra
Kounari
Meana
Mopti
Neguena
Niabougou
Niafunke
Oueigoun
Poromani
Sa
San
Sankore, Timbuktu
Sanse
Sarafere
Say
Sebi
Segu (Segou), Tiero ward
Segu Korro
Segu Sikorro
Shi-n Wasagharan, Adrar Ifoghas
Si
Sibila
Sibo
Sidi Yahya, Timbuktu
Sofara
Somadougou
Tabelot
Tefis, Adrar Ifoghas
Teghaza

Tendirma (Tindirma)
Tingole
Togonrogo
Tombouctou
Zinzana

Burkina Faso
Bobo-Dioulasso
Nam-Ymi
Sare Boido

Senegal
Ambidedi, Futa Toro
Bode, Futa Toro
Doumga Ouro Alfa, Futa Toro
Doumga Ouro Thierno, Futa Toro
Guede, Futa Toro
Halwar, Futa Toro
Kidira, Futa Toro
Kobilo, Futa Toro
Koumpentoum, Tambacounda region
Madina el-Hadj Ali, Kolda, Casamance
Madina Torobe, Futa Toro
Mboyo
Seno Palel, Futa Toro
Tielao, Futa Toro

Nigeria
Argungu
Bauchi
Bebeji
Biram
Birnin Kebbi
Bouza
Daura
Gibir
Gobir
Gobarau, Katsina
Jega
Kafin Madaki
Kano
Katsina
Kazaure
Kebbi
Kobilo
Nupe
Rano
Sokoto
Zaria

Niger
Agadez
Assode, Air
Chiginawen
In-Gall
Mirria
Tancinat
Zangarata
Zinder

Ghana
Babayiri, Gambaga
Banda Nkwanta
Bole
Buipe
Dakrupe
Dondoli, Wa Banda Nkwanta
Gambaga
Ibrahim, Larabanga
Lanfiera
Larabanga
Maluwe
More Nakore
Nakori = Nakore, Wa Region
Salaga
Wechiau
Wuriyanga

Ivory Coast
Borono
Kawara
Kong
Korhogo
Satama Sokoura
Seguela
Sorobango
Worondjikoy

Guinea, Futa Jalon
Dinguiraye
Fougoumba
Koloman-Kambaya
Namou
Timbi Touni
Tountaman

Part II: Horn of Africa, Nile Valleys and Darfur

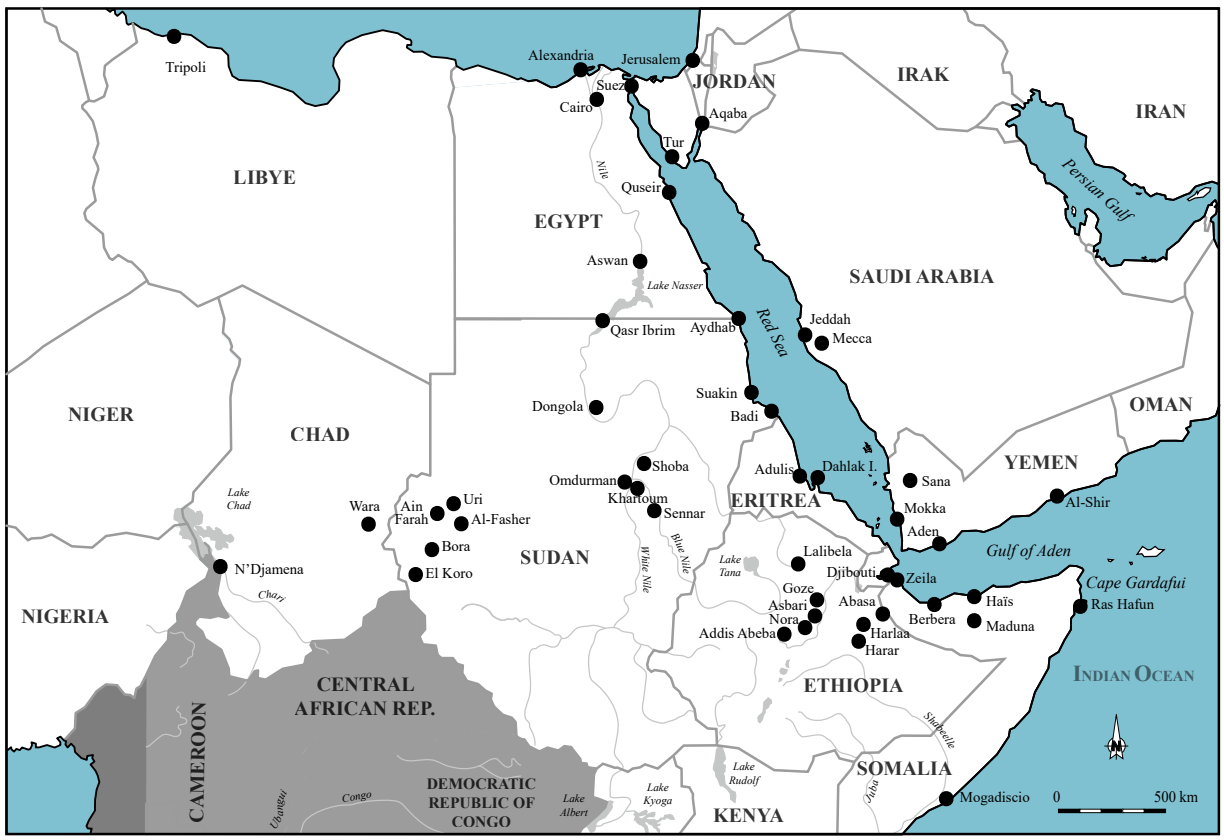


FIGURE 208 Map of the historical mosques of Chad, Sudan, Erythrea and Ethiopia

Ethiopia/Somalia

Abasa
Amud
Asbari
Berbera
Boramo
Darimo, Jijiga region
Derbiga
Faqqi Dabbis, Ifat
Goze, Ifat
Hafdar
Harlaa
Hawd
Imam Ahmed, Harar
Jamia, Harar
Maduna
Nora jamia (M1)
Nora Masjid (M2 to M5)
Ogaden
Rugayi
Sharif Abdi Nour, Harar
Zeyla

Sudan/Egypt/Eritrea/Chad

Abu Sarh, Nubia
Adulis, Red Sea
Ain Farah, Darfur
As-Sahabah, Massawa (Mitsiwa)
Atar en-Nabi, Nubia
Aydhab, Halayeb region
Badi, Er-Rih Island
Bora
Dahlak ed-Kebir, Dahlak Archipelago
Dongola, Nubia
Duweym Wad Haj, Nubia
El-Kuru
El-Bishup, Artul, Nubia
El-Fasher, Darfur
El-Usheir, Nubia
Gandeisi, Nubia
Khatmiyah, Kassala
Kobb, Darfur
Koro, Darfur
N'Djamena
Omdurman
Qasr Ibrim, Nubia
Sai, Nubia
Sennar
Soba
Suakin
Turra, Darfur
Umm al-Sultan, Darfur
Uri, Darfur
Wad Saleh, El-Koro, Nubia
Wara, Wadai

Part III: Swahili Coast and Indian Ocean



FIGURE 209 Map of the historical mosques of Somalia

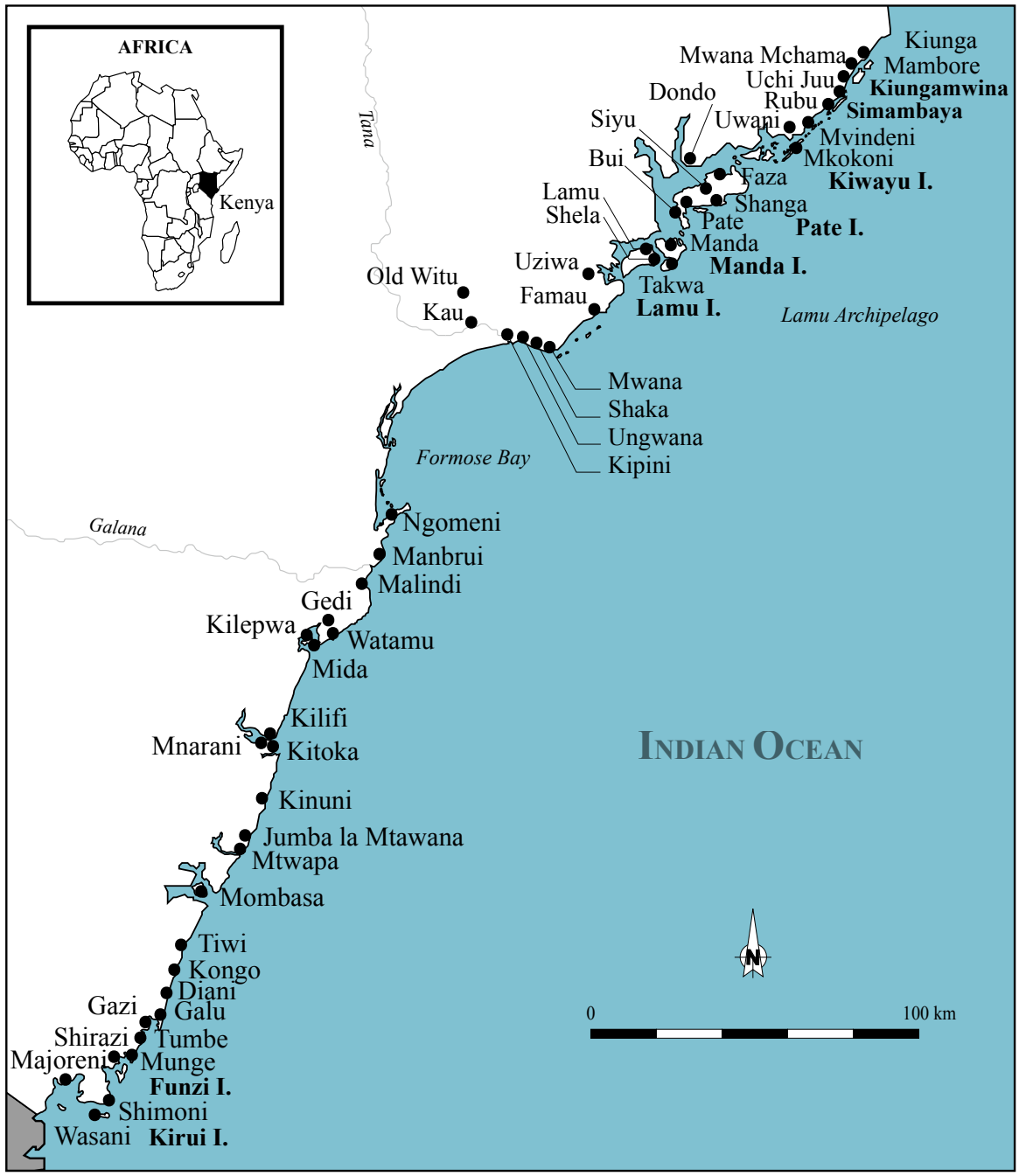


FIGURE 210 Map of the historical mosques of Kenya

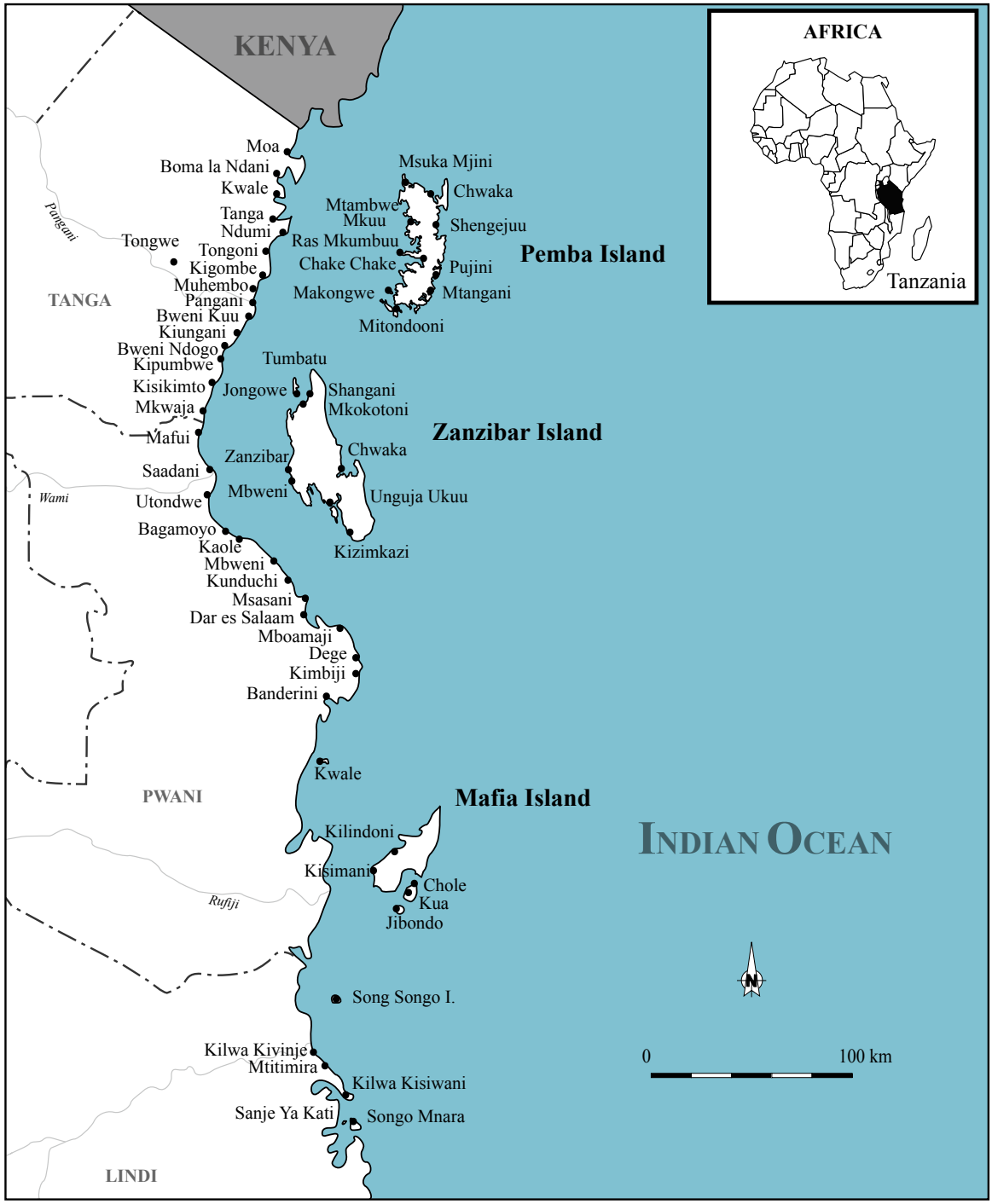


FIGURE 211 Map of the historical mosques of Tanzania and Zanzibar

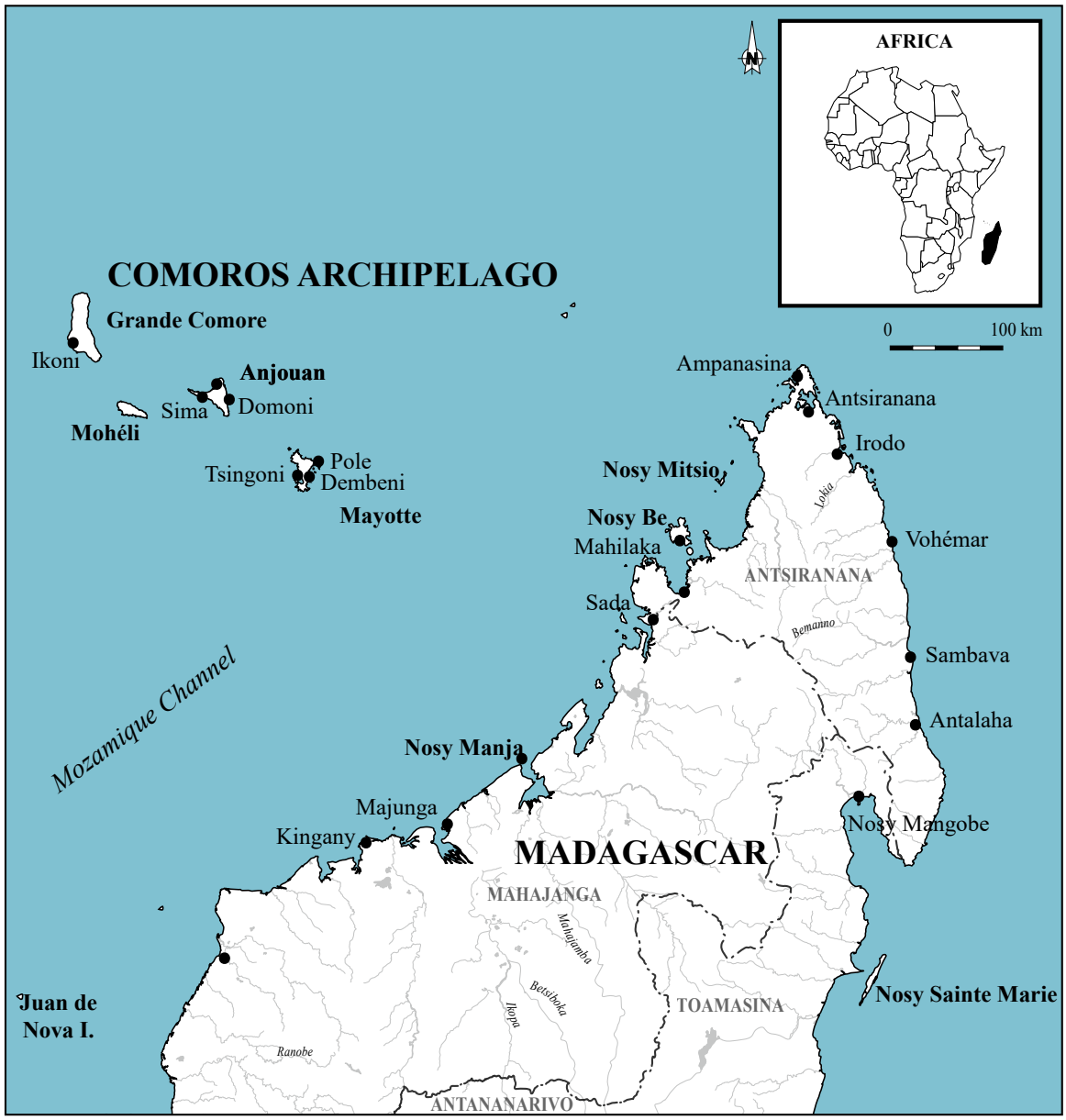


FIGURE 212 Map of the historical mosques of Comoros and Madagascar



FIGURE 213 Map of the historical mosques of Mozambique

***Somalia* (*South*)**
Abd al'Aziz, Mogadishu
Arba'a Rukun, Mogadishu
Barawa (Brava)
Bur Gao
Ciula (Chula)
Fakhr al-Din (Fakhuddin Fakhr ed-Din), Mogadishu
Haji Musa (Adayga), Mogadishu
Hannassa
Jamia, Jama'a, Mogadishu
Kiskichini
Kismaayo
Mataano (Aw Muqtar & Shaykh Umar), Mogadishu
Merka
Mnara Abdul Aziz, Mogadishu
Muhammad Tani, Mogadishu
Munghia
Myaandi
Ngumi
Nimmu
Ras Kiamboni
Rasini (Kikoni), Bajuni archipelago

Kenya
Ba Shaykh, Mombasa
Bui
Bwana Bakari, Pate city
Bwana Tamu, Pate city
Chwaka jamia
Dondo
Faza, Pate island
Funda, Pate city
Garike
Gedi, between the walls (M7)
Gedi, funerary or on the South wall (M8)
Gedi, jamia (M2)
Gedi, long conduit (M3)
Gedi, Old jamia (M1)
Gedi, sarcophago (M6),
Gedi, small (M5)
Gedi, three aisles (M4)
Ijumaa, Pate city
Jemadari, Malindi city
Jumba la Mtwana
Khonzi, Mombasa
Kibirikani
Kiburugeni
Kilepwa
Kilindini, Mombasa
Kimuni
Kiponozi
Kitoka
Kiunga
Kongo (Diani/Tiwi)
Lamu
Mafui
Malindi Jamia
Mambrui
Manda jamia
Mandri (Mandhry), Mombasa
Mapupwa, Pate city
Maungwana wa Mashaa
Mbaraki, Mombasa island
Mgangani
Mida creek
Mjana Heri
Mnarani, Kilifi
Msumarini
Muungi
Mvindeni
Mwana
Mwana Mchama
Mwenye Kombo, Pate city
Ndia Kuu, Mombasa old town
Ng'andu, Pate city
N'nalalo, Lamu city
Nuru, Pate city
Pwani, Pate city
Ras Shaka
Ras Uwani
Riyadha, Lamu city
Sabaki Ngomeni
Salim, Pate city
Sendeni
Shala Fatani, Faza
Shanga
Shaykh Mubarak al-Mazrui, Mombasa
Shee Jafari
Sheikh Mohammed bin Ali, Lamu city
Shela jamia, Lamu island

Simambaya
Sindeni
Sita-Mgangani, Mida creek
Siyu fort, Pate island
Takwa
Tundwa
Uchi Juu
Ungwana (N2)
Ungwana jamia (N1)
Uwani
Uziwa
Wa Deule, Shela town, Lamu island
Wange
Wapokomo, Pate city
Watamu
Watangana, Mombasa

Tanzania

Bagamoyo jamia
Bandarini
Barza, Kajificheni district, Zanzibar old town
Buntu
Bweni Kuu
Chake Chake, Pemba
Chambani Mjini, Pemba
Chwaka, Pemba
Dar-es-Salaam
Dege
Forodhani, Zanzibar old town
Furdani
Gofu, Zanzibar old town
Ijumaa (Friday), Chole, Mafia
Jamat Khana Ismaili, Bagamoyo
Jamat Khana, Chole, Mafia
Jangwani, Kilwa
Jibondo, Mafia
Kaole (n°1)
Kaole (n°2)
Kichokochwe, Pemba
Kilimani, Chole, Mafia
Kilomo
Kilwa Kisiwani jamia (n°1)
Kimbiji
Kipakoni, Kilwa
Kipumbwe
Kisikimto
Kisimani, Mafia
Kiuyu, Pemba
Kiwani
Kizimkazi, Zanzibar island
Kokoto
Kua jamia, Mafia
Kunduchi
Laghbari, Sokomuhogo district, Zanzibar old town
Mafui
Makutani, Kilwa Kisiwani (n°4)
Malindi, Kilwa Kisiwani (n°3)
Malindi, Zanzibar old town
Mandhiri, Sokomuhogo district, Zanzibar old town
Mbaye, Sokomuhogo district, Zanzibar old town
Mboamaji
Mbweni
Menani, Bagamoyo
Mjimwema
Mjini, Chole, Mafia
Mkwaja
Mnara, Songo Mnara
Mnara, Zanzibar old town
Mnarani
Mnyange, Chole, Mafia
Mnyanjani
Msasani
Msuka Mjini, Pemba
Muhembo
Muskitini
Mvinje, Kilwa region
Myenzini, Bagamoyo
Mzinga
Ndogo (small domed mosque), Kilwa Kisiwani (n°2)
Ndumi
Pangani jamia
Ras Mkumbuu
Sadani
Sanga Rungu, Songo Mnara island
Sanje Majoma
Sanje Ya Kati
Sayyidi Hamûd, Zanzibar old town
Shengejuu, Pemba
Simambaya
Songo Mnara miskiti (M2 to M4)

Songo Mnara, jamia (M1)
Stahibu
Tambareni (Tambarini)
Tanga
Tongoni
Toten
Tumbatu
Utondwe
Wawi, Pemba

Uganda

Ibngabwa Victoria Lake
Kasubi, Victoria Lake
Kibumba Victoria Lake
Kyakakwere, Victoria Lake

Comoros

Ajangoua, Mayotte
Akwa (Acoua), Mayotte
Bandamadji, Ngazidja
Bandrele, Mayotte
Bangwa Kuuni
Baugoi-Koune
Chaoueni
Chiconi, Mayotte
Chingoni
Chirongui, Mayotte
Djoumbe Foumnaou
Djumbe Fumu, Ntsaweni, Ngazidja
Domweli, Mayotte
Dzaoudzi (Petite terre), Mayotte
Dzoumogne, Mayotte
Fe Mte wa Kandzu, Buuni, Ngazidja
Foumboni
Hagnoundrou, Mayotte
Jimawe, Mayotte
Kangani, Mayotte
Koungou, Mayotte
Male
Maweni (Maoueni), Mayotte
Mirandole (Petite terre), Mayotte
Mirontsi
Mitsamiouli
M'Kira Djoumbe, Mutsamudu
Mkiri Bomani Ziraruni, Itsandra, Ngazidja
Mkiri wa Shirazi, Domoni, Anjouan island
Moroni jamia, Ngazidja
M'Saoere
Mutsamudu
Msiri Ali wa Ipvanga, Itsandra, Ngazidja
Msiri wa Boina, Iconi, Ngazidja
Mwali Mdjini
Mzamboro
N'Beni
Ntibe Mlanao, Iconi, Ngazidja
Pole (Petite terre), Mayotte
Sima Ziarani, Anjouan island
Tsingoni, Mayotte
Tsoamoue Hinza, Mtsaweni

Madagascar

Ambanoro
Ambodimadiro
Andoka
Antsakomanêra
Antsoheribory
Baly
Katsepe
Kingany
Mahilaka
Majunga
Manomba
Mitsio
Nosy Mamoko
Nosy Manja

Mozambique

Cabaceira Grande
Cabaceira Pequena
Capim
Kiuya
Matemo, Kerimba archipelago
Moçambique island
Pangane
Quisiva
Somana
Tungi

Glossaries

Non-European Vocabulary

Adal Bar Saʿad dīn, Ethiopian-Somalian Sultanate, 1415–1577

Adhan Clay podiums or small platforms attached to houses and mosques

Aga Khani Shi'ia community, Nizari branch of the Ismailis

Ahl al-Sunna Those who are faithful to the tradition of the prophet, the Sunni

Aksum Christian kingdom, Red Sea, Eritrea-Ethiopia, Roman/Byzantine ally, 80 BC–960

Almoravid al-murabitun, people of the ribat, Berber dynasty, Morocco and Spain, 1058–1147

Alwa (Alodia) Christian Nubian kingdom, capital city Soba, 350–1504

Al-Sahili Egyptian poet and presumably architect

Angazidja Anjouan Island, Comoros archipelago

Argobba People, ethnic group from Ethiopia, Muslims

Askia Askiya, King in Songhay

Azara Palm wood beams for ceiling and roof, from doum and deleb palm trees

Bab al-Mandab The Doors of lamentations, Strait of Aden

Bacino Ceramics plates and bowls inlaid in the coating of religious or civic buildings in Italy

Bahmanid Muslim dynasty from Deccan in South India, 1347–1527

Bajuni wa-Gunya, people from the Bajun archipelago, South of Somalia

Bakan gizo Hausa arches with moulded decorations and thick plaster (Zaria)

Balutchi People from Baluchistan, between modern days Iran and Pakistan, mercenaries working for the Sultanate of Oman/ Zanzibar during the 18th–19th c.

Bambara Bamanan, Mandingo ethnic group, mainly Muslims and located in Mali

Banadir The land of the harbours, Southern Somalia, from Bandar in Farsi

Banco Stirred and damp clay, in small clod to build walls and floors in West Africa

Bandarini Swahili port, from Bandar in Farsi

Banian Indian merchants with seven religious subgroups, the Lohana, Momen, Vania, Bhattia, Khoja, Bohra and Ismaili

Bari Masons from Djenne region, mainly Bozo from Middle Niger

Bhattia Hindu merchants, mainly from Gujarat and Deccan

Bilad al-Barbar Country of the Berbers, located in the Horn of Africa, modern days coasts of Sudan, Eritrea, Northern Somalia and part of Ethiopia

Bilad al-Sudan Lands to the South of Sahara Desert, Sahelian belt, mainly West Africa

Bilad al-Sufala Country of Sufala, Sufala bay and modern days Mozambique

Bilad al-Zanj Lands of the Swahili people, modern days coastal Kenya and Tanzania

Binu Religious traditional sanctuary for the Dogon

Birika Swahili water tank, from the Arabic, birka

Bohra Shi'ia merchants from India, belong to the musta'lite branch of the Ismailis

Borno Empire, around lake Chad, 1395–1901

Bozo Mande ethnic group, from the Djenne region, mostly fishermen, mainly Muslims

Bure West African region with gold mines and kola nuts

Busaidi Bu'saidi, al-Bu Said, Omani dynasty (1749-Present), moved their capital from Muscat to Zanzibar in 1840

Cadi Muslim law magistrate, judge

Cafe Black earth wall coating extracted from wells

Caravanserail Commercial building with a central courtyard, storage rooms and bedrooms for travellers and merchants, sometimes fortified with towers

Daju Kingdom from the Daju people, in Darfur (Sudan), 12th–15th c.

Dar al-Islam Land of Islam or Muslim territories

Dar Fur The land of the Fur people, today's Darfur

Dhira Arabic unit of measurement, a cubit, elbow to index

Dhow Swahili boat with Latin sail, dhowni in Maldivian

Diwan Local Swahili chronicles, from the Arabic, chancelry

Djallab Slave traders in Arabic

Djinguere Village or neighbourhood mosque in Songhay

Dogon Kaado, People from the Bandiagara cliffs in Mali

Dyakhanke West African ethnic group, from the Soninke (Mandingo)

Dyula Juula, Dioula, Manding ethnic group, Muslim merchants from West Africa

Emir Military leader, equivalent to a general or provincial governor

Fandikani Swahili custom house, from Arabic Funduk

Fatimid Shi'a Ismaili Caliphate, capital city Cairo, 969–1171

Ferey Djenne ferey in Songhay, round or cylindrical mud bricks shaped by hand, Upper Niger Delta

Fulbe Fulani, Peul, Ethnic group from West African Sahel, originally pastoral tribes

Fulfulde al-Pular, language of the Fulbe

Fundi Swahili builders, masons and carpenters

Funj Sultanate, Muslim kingdom from Darfur, capital cities Uri, Ain Farah, Sennar, 1504–1841

Futa Jalon Fulbe Theocratic state in the Guinean mountains, capital city Timbo, 1776–1897

Futa Toro Fuuta Tooro, Fulbe Theocratic state in the Senegal valley, capital city Silla, 1776–1877

Ghana Wadagu kingdom, capital city Khumbi Saleh, converted to Islam in 1050, located between modern days Mauritania and Mali, 830–1240

Ginna Mother-houses of the Dogon, in which the oldest boy must live

Guguba Mud mortar used in Ethiopian masonry around Harar

Hammam Muslim Baths, public or private, on the model of Greco-Roman baths

Haram Forbidden, by extension private rooms, sacred shrine, or prayer hall in a mosque

Hatumere Hatumare, protective and magic seal in Fulfulde

Hausa Largest ethnic group in West Africa, Muslims, around modern days Niger and Nigeria

Hijra Date of Mohammed's emigration from Mecca to Medina in 622. The Muslim calendar begins on this date and is based on the lunar year

Himyarite Himyar, Jewish kingdom in Yemen, 275–525

Ibadat Obligation, religious duty for every Muslim

Ibadi Sect of Kharidjism, today present mainly in the South of Algeria and in Oman. Minority in Islam today, the Ibadi were extremely active and present in all the Sahara, West and East Africa from the 9th to the 11th c.

Ifat Awfat, Sultanate, on Modern days Eritrea and Nord-East of Ethiopia, 1185–1403

Imam Guide of the Muslim community, stands on the minbar when he addresses the faithful

Ismaili Shi'a sect who follows the seventh imam, Ismail, created their own dynasty in Tunisia and Egypt, the Fatimids, also merchants from the Indian Ocean diaspora located in Yemen, Sindh, Gujarat, and Malabar coast

Jamia Friday mosque, main mosque in a city or jami masjid

Jihad Djihad, Holy war to protect or increase the Dar al-Islam, Muslim territories, during the 19th c. anticolonial wars from the Fulbe in West Africa and the Mahadist in Sudan

Jinn Spirit, sometimes evil forces

Kanem Kingdom, Muslim after 1085, North of modern days Chad, 8th–16th c.

Karmatians Qarmati, Shi'a Ismaili State in Arabia, capital city Bahrain 894–1067

Katib Friday preacher

Kawkaw Arabic name for the city of Gao (Mali)

Keira Kayra, Sudanese dynasty, rulers of the Sultanate of Fur (Dar Fur), capital cities Kobb, Shoba and al-Fasher, 1600–1916

Khalifa Caliph, sovereign, and religious ruler descendant of the Prophet

Kharijit Kharidjism, first Islamic sect created in 657, before the schism, today only one group

of Kharijit survived the Ibadi, many of them migrated to Africa, where they controlled trading routes and favoured the diffusion of an early Islam

Khatib Preacher

Khatim Protective and magic seal in Arabic

Khoja Shi'ia Indian merchants, mainly from Gujarat and Deccan (Malabar coast)

Khutba Friday sermon pronounced by the khatib, the imam or the Caliph, by extension the Khutba mosque is the Friday Mosque

Kiswahili Swahili language spoken in all East Africa, with some local dialects

Kowe Juice from a coastal plant, lauraceae filiformis, added to plaster to do Swahili gypsum

Kasr ksur pl. Fortified Saharan settlements, from Qasr in Arabic, Qastrum in Latin, the castle

Kufic First early monumental Arabic script, distinguished by its angular letters and the use of a baseline, originated from Kufa, Abbasid Iraq

Laso Hausa wall coating of purple indigo deposit recovered from the dye vats

Lohana Loharana, Hindu merchants, from the Gujarat, Kutch and Sindh

Madrasa Medersa, religious school to teach the Koran and Muslim thought, law, science, philosophy, poetry, medicine, mathematics, astronomy

Mahdali Dynasty from Kilwa, originated from the Hadramawt in South Yemen, 1277–1513

Mahdist Mahdiyah, Sudanese caliphate, capital city Omdurman, 1881–1899

Maksura Sultan's lodge, in the prayer room, close to the mihrab

Makuba Dark brown-purple wall coating

Makuria Christian Nubian kingdom, capital city Dongola, 5th–15th c.

Makuti Coconut palm leaves panels, for Swahili roofs

Mali West-African empire, capital city Niani, 1230–1670

Maliki Maleki, Sunni branch of Islam, one of the four juridical school, common in North Africa and Morocco

Mandika Malinke Muslim ethnic group from West Africa

Mande Language of the Mandingo

Mandingo Group of people from Western Africa such as the Bambara, Malinke, Soninke

Mansa king in Manding, Empire of Mali

Masjid village or neighbourhood mosque

Massina Macina, Fulbe Jihadist kingdom, capital city Hamdullahi on the Bani river, 1818–1862

Mesallamiya Tariqua or Sufi brotherhood, popular in Sudan

Mfalme Chief or Swahili king

Mihrab Decorated niche in the middle of the qibla wall that indicates the direction of Mecca

Minbar Steeps or staircase in Friday mosques for the imam or the khatib

Miskiti Swahili mosque, masjid in Arabic

Mnara Swahili tower, minaret, from manar, minar in Arabo-Persian

Momen Memon, Muslim Hanafi Indian merchants from Gujarat, Kutch and Sindh

Mossi Yarse Mossi, Ethnic group from Burkina Faso and the Volta valley

Mozabites People from the M'Zab region, Southern Algeria and Tunisia, most of them Ibadi

Mtaa Mitaa, pl. Swahili town district or ward

Mtepe Mitepe, Swahili sewn boats, on the Southern Swahili coast, Tanzania, Comoros and Madagascar

Mtumbwi Swahili monoxyle pirogues

Muezzin The man who call for prayer, from a minaret or the roof of a mosque

Mujahidin Religious fighters, defend the territories of Islam, Dar al-Islam

Musalla Built up prayer room in mosque, sometimes simple space delimited by stones in the desert

Mwangati Mangrove wood in kiswahili, terminalia brevipes in Latin, Saj in Arabic

Nabhani Bani Nabhan, Omani dynasty, capital city Bahla, 1154–1624

Nashki Cursive Arabic script used in monumental epigraphy from the 12th century and later

Ngazidja Grand Comore island

Potige Monumental portal characteristic of Djenne city housing

Qadiriya Qadariyya, Sufi brotherhood or tariqa, popular in North Africa

Qibla Direction, wall facing Mecca, to which Muslims must turn for prayer

Qumur Qmr, Islands of the Moon, Comoros archipelago

Qur'an Koran, Sacred book of the Muslims

Ribat Fortified convent for Mujahidin, with a mosque and caravanserail

Sahn Courtyard

Saho Community houses for young Bozo

Sanhadja Berber tribe, Sunni maliki, Mauretania

Sawahil Shores, al-Sahil in Arabic

Seljuq Great Seljuqs, Turkish dynasty and Empire, controlled the Persian Gulf trade 985–1194

Senufo Siena, Ethnic group, between modern days Ivory coast, Burkina Faso, and Ghana, most of them are animists

Serere Sereer, Ethnic group from Central Senegal, from the kingdoms of Sine and Salum, most of them were animists

Shafi'i Sunni branch, one of the four Sunni legal school

Sharif Noble person, descendant of the Prophet Muhammad

Shaykh Cheikh, chief, tribal notable

Shi'a Shia, Supporters and followers of Ali who refute the legitimacy of the first Umayyad and Abbasid caliphs, it is the Shi'ism

Shirazi Inhabitants of Shiraz, but also Persian merchants from the port of Siraf, by extension in the Swahili world, noble families from Persian descent

Sokoto Caliphate, Fulbe Jihadist State, 1804–1903

Songhay People and West African Empire, capital city Gao, 1493–1591

Soninke West African Mande ethnic group, the Muslim merchants Marka and Wangara are considered as sub-groups

Sorabe Arabic script used to transcribe the Malagasy language

Sufala al-Dahab Golden Sufala, the region of the gold mines, nowadays Zimbabwe

Sultan Muslim king, political title popular after the 12th c., linked military regimes

Sumi'a Hausa tower, like in Katsina and Bauchi

Sunni al-sunna, the tradition, Sunnis Muslims revere the first four caliphs, companions of the prophet. They are opposed to the Shi'a because they do not give any importance to the descendants of Ali. Sunnis are divided into four juridical schools: Hanafi, Maliki, Shafi'i and Hanbali

Taifa Swahili clans or tribes, from the Arabic

Tekrur kingdom, along the Senegal valley, capital city Silla, 9th–12th c.

Tidjaniyya Tijaniyya, Sufi brotherhood or tariqa, very popular in West Africa

Toron Wooden beams coming out of the façades, play a role of framework and decorative elements. They are also used as scaffolding beams to apply new mud coating on the façades

Toucouleurs Sedentary population from the Senegal valley, multiracial people from Fulbe and Serere origins

Tower-mihrab Tower built over the mihrab in West African mosques, replace the traditional dome

Tuareg Nomadic Berbers groups from Sahara and Sahel

Tubalu ferey (tubala pl.) in Hausa, "bricks of white people", moulded bricks. "White" refers to foreigners: Europeans, Arabs, or Berbers

Tubalu Songhay mud brick modeled by hand and dried in the sun

Tughluq Indian dynasty from Muslim Turkic origin, controlled the Deccan and most of modern days India, 1320–1413

Tunjur Tundjur, Ethnic group between modern days Chad and Sudan; and Muslim dynasty from Darfur, 1400–1650

Ulama Religious authorities

Vania Hindu and Jain Indian merchants from Gujarat and Deccan

Wadai Kingdom, capital city Wara, North of Lake Chad, 1635–1912

Wadebuli wa-Dabuli, Indians from Daybul (Dabhol/Banbhore) in the Sindh

Wahindi Indian populations from the Punjab, Sindh, Gujarat and Deccan

Wak-Wak limits of the Muslim world, Malagasy people in Africa or to the Extreme East, Japan

Wangara Name of the Dyula in Arabic sources

Wietougou Sacrificial altar, dedicated to the god of fertility

Wuro Sacred tree, where local spirit leaves

Ya'rubi Ya'rubid, Omani dynasty, with religious rulers, Imams, capital city Nizwa, 1624–1742

Yalunka Dialonke, people, originally from the Futa Jalon from nowadays Sierra Leone and Guinea

Zanata Ibadi Berber tribes from South Morocco

Zanj al-Bahr Sea of the Blacks, South of the Somali coast, later the island of Zanzibar

Zanj Africans from the Swahili coast, mainly modern days Kenya and Tanzania

Zanko Pointed merlons on parapet of the roofs from the Hausa region

Zaydi Zaydism, today mainly located in Yemen and sometimes called Houthi, the Zaydis are one of the oldest branches of Shi'a Muslims. They share many common beliefs with the Fatimid Ismailis and Ibadis

Ziara Sacred area for prayer, sometimes delimited by a simple line of stones

Zidaka Vidaka, kidaka, Swahili decorative wall niches for storage and display of Koran, books, lamps, ceramics

Zimba Ethnic group from Zambezi valley

Architectural Vocabulary

Adobe Mud bricks made in a wooden mold and dried in the sun

Arcade Serie of arches supported on piers or columns, row of arches

Arcature Serie of small decorative arcades under the cornice of the intrados of the mihrab

Arch curved part that surmounts an opening, formed of wedge-shaped blocks of bricks, stone (voussoirs) held together by mutuel pressure and supported only at the sides

Architrave Lowest of the main part of an entablature, between the frieze and the capital

Archivolt Mouldings of an arch

Barrel vault Uninterrupted vault of long semi-circular section

Battlement Indented parapet on a top of a wall or around a rooftop

Bossage large stones whose facing is cut in relief, hemispherical or conical (diamond point)

Boulin Hole left in a wall by the end of the wooden scaffolding pieces

Bulbous cupola Bulging cupola of Indo-Iranian origin, appeared in the 11th century in Mesopotamia

Buttress Mass of masonry or engaged pillar built against the façade outside the building, to give its stability or to counteract the outward thrust of an arch, roof or vault behind it

Calligraphy Decoration of inscriptions (dates, verses from the Koran, ruler's names) engraved in stone or carved in plaster, in bands or in cartouches

Cob Clay mixed with chopped straw and sand

Column Solid support circular or polygonal in section, employed to sustain the dead load from a beam, lintel ort rust of an arch

Concrete In Latin bitumen, designates a mixture of lime, sand, water, stones and gravel to build walls and pillars in wooden-preforms

Corner torus Bold convex moulding protecting sharp edges of the corners of a building

Cornice Moulded projection that crowns or finishes the part to which it is fixed, a wall, door, niche

Crapaudine Cavity in a stone in which the pivot of a door turns

Cruck frame (cintre) Wooden pre-form or scaffolding in an arc on which vaults and domes are built

Cul-de-four vault Hemispherical half-dome

Cupola on squinches (trompe d'angle) Small dome built on four squinch arches built across the corners of a square base

Engaged columns Half columns in the wall and on both sides of the mihrab to support the arch

Fluted column Twisted vertical grooves on cylindrical shaft with or without base and capital

Grooves Longitudinal and parallel grooves cut in stone or engraved in plaster

Horseshoe arch (outrepassé) Stilted arch with the masonry between the springing-line and imposts, inclined inwards

Jamb One of the vertical sides of an opening up to the spandrel, door or niche

Lintel large horizontal rectangular stone or wooden beam spanning an opening, placed above a door, a niche or a window

Merlon Raised parts of indented parapet

Mouldings Prominent part of sculpture which is used only for frame ornament, continuous bands of rectilinear, curved or multi-curved sections

Nave Main Bay flanked by aisles

Oculus Circular opening

Ogee Arch (accolade) Pointed arch or semi-circular arch with a point at the top and formed of two convex arcs above and two concave arcs below

Pendant Form of elongated boss, projecting downwards or suspended form a vault, curved triangle

Pendentive Surface between arches that meet at an angle, formed as part of a hemisphere and supporting a dome; decorative pendentive called Muqarnas in the Islamic World

Pier (pile/stack) Solid support, rectangular in section, employed to sustain the dead load from a beam, lintel, or rust of an arch

Pilaster Rectangular or semi-circular pier projecting slightly from the face of a wall that it buttresses, hold an arch inside the building

Pillar Detached upright support not conforming with the orders, square in section, or cruciform, employed to sustain the dead load from a beam, lintel ort rust of an arch

Pinnacle Tall thin pyramidal or conical termination of a buttress or a tower, in West Africa covered by terracotta pots or ostrich eggs

Podium High continuous base to a building, platform accessible by a flight of steps

Pointed arch Drop arch, arch whose span is greater than its radii, two arcs drawn from centres on the springing-line segment of a circle with an inflection point

Polyfoil arch Polylobed arches, a rounded or pointed arch with several lobes /foils, springing from the apexes of three or more separate half-arches

Rammed earth Wet earth mixed with chopped straw and dung, then threshed in wooden pre-forms removed after sun drying, very common construction methods used by Berbers in Morocco, Algeria, Tunisia and Lybia

Recticurvilinear arch Rounded or pointed arch with composed of segments of lines and arcs

Rope moulding cable or cordate moulding, related to chain moulding and Indian Ocean cultures

Scalloped arch (festonné) Trefoil or polyfoil arch characterized by small antennas which prolong the lobes and connect to their overstepped part by small windings

Segment Any stone that forms the vault itself, or the keystone of an arch

Semicircular arch (plein-cintre) Semi-circle having its centre on the spring-line

Span Horizontal distance between two supporting members such as walls, columns, pilasters, i.e. the span of a beam

Spout (gutter) Ceramic or wooden pipe projecting from the top of a wall to throw off rainwater from a roof

Squinch Arch or series of arches throw across an interior angle of a square structure to support a circular or polygonal superstructure such as a cupola, decorated squinch called Muqarnas in the Islamic World

Transom Set of moldings located at the top of a support without a capital on which the arch rests

Trefoil Arch Three-lobed arch, a rounded or pointed arch springing from the apexes of two separate half-arches

Tympanum triangular or segmental surface between the arch and the lintel

Vault Arched roof or ceiling

Voussoirs Wedge-shaped stones forming an arch

Credits

Figure 1: Pradines
Figure 2: Aga Khan Trust for Culture collection, Afrique occidentale française (AOF)
Figure 3: Pradines after Prussin, 1962 and Devisse & Vernet, 1993
Figure 4: Pradines
Figure 5: Pradines
Figure 6: Pradines after Triaud, 1973
Figure 7: Binger, *Du Niger au Golfe de Guinée par le pays de Kong et le Mossi*, 1892, p. 168
Figure 8: Aga Khan Trust for Culture, Christophe Boulot
Figure 9: Aga Khan Trust for Culture, Christophe Boulot
Figure 10: Aga Khan Trust for Culture, Christophe Boulot
Figure 11: Pradines after Gruner, 1990, pl. 66
Figure 12: Aga Khan Trust for Culture, Sebastien Schutyser
Figure 13: Aga Khan Trust for Culture, Christophe Boulot, 2006
Figure 14: Aga Khan Trust for Culture, Luis Monreal, 2005
Figure 15: Aga Khan Trust for Culture, Shuiten
Figure 16: Aga Khan Trust for Culture, Christophe Boulot
Figure 17: Aga Khan Trust for Culture, Christophe Boulot
Figure 18: Courtesy of the World Monument Fund
Figure 19: Pradines after Prussin, date, 351 and Dmochowsky, 1990, figs. 1.39–1.41
Figure 20: R. Keith Rowan, 1980, courtesy of Aga Khan Documentation Center, MIT Libraries (AKDC@MIT)
Figure 21: Courtesy of the Aga Khan Trust for Culture
Figure 22: Aga Khan Trust for Culture, Christophe Boulot
Figure 23: Courtesy of the Aga Khan Trust for Culture, Marco Dormino, United Nations, 2015
Figure 24: Courtesy of Heinz Ruther, Zamani Project
Figure 25: Aga Khan Trust for Culture, Gary Otte, 2005
Figure 26: Aga Khan Trust for Culture, Christophe Boulot
Figure 27: Aga Khan Trust for Culture, Christophe Boulot
Figure 28: Courtesy of Heinz Ruther, Zamani Project
Figure 29: Aga Khan Trust for Culture, Christophe Boulot, 2011
Figure 30: Courtesy of Denis Genequand, 2015
Figure 31: Pradines after Gruner, 1990, pl. 66.
Figure 32: Courtesy of Heinz Ruther, Zamani Project
Figure 33: Pradines after Devisse & Diallo, 1993, p. 111
Figure 34: Pradines after Mauny, 1955, p. 150
Figure 35: Courtesy of the World Monument Fund
Figure 36: Courtesy of the World Monument Fund
Figure 37: Pradines after Gruner, 1990, 19 & 281
Figure 38: Pradines
Figure 39: Pradines after Mauny, 1961 : 492; Takezawa and Cisse, 2012, fig. 10
Figure 40: Pradines after Aga Khan Trust for Culture; Gruner, 1990, p. 307 & Domian, 1989, p. 77
Figure 41: Pradines after Zamani Project
Figure 42: René Caillé, *Voyages en Afrique centrale à Tombouctou*, 1830
Figure 43: Courtesy of Aga Khan Trust for Culture
Figure 44: Courtesy of Heinz Ruther, Zamani Project
Figure 45: Pradines after Prussin, 1986, p. 149 & Gruner, 1989, fig. 3
Figure 46: Pradines after Gruner, 1990, p. 365
Figure 47: Fortier, CGF 413, Dakar, 1906
Figure 48: Dubois, *Timbuctoo the Mysterious*, 1897, p. 157, 177–179
Figure 49: Courtesy of Aga Khan Trust for Culture, République du Mali
Figure 50: Aga Khan Trust for Culture, Christophe Boulot, 2011
Figure 51: Courtesy of Heinz Ruther, Zamani Project
Figure 52: Courtesy of Aga Khan Trust for Culture & HCP Mopti GT
Figure 53: Pradines after Gruner, 1989, fig. 1; 1981, fig. 28–29 & 1990, p. 201
Figure 54: Courtesy of Aga Khan Trust for Culture, S925276
Figure 55: Pradines after Gruner, 1990, p. 323

Figure 56: John A. and Caroline Williams Archive, 1998, courtesy of Aga Khan Documentation Center, MIT Libraries (AKDC@MIT)
Figure 57: Pradines after Gruner, 1990, p. 249–51
Figure 58: Courtesy of Aga Khan Trust for Culture, Sebastian Schutyser, 2002,
Figure 59: Pradines after Gruner, 1990, p. 103
Figure 60: Pradines after Dmochowski, 1990, I : 2.18, 2.31, 2.24; and Moughtin, 1985, p. 91
Figure 61: R. Keith Rowan, 1980, courtesy of Aga Khan Documentation Center, MIT Libraries (AKDC@MIT)
Figure 62: Pradines after Gruner, 1990, p. 347
Figure 63: Courtesy of Denis Genequand, 2017
Figure 64: Pradines after Dethier, 1981, p. 55 & Gruner, 1990, p. 24, 385
Figure 65: John A. and Caroline Williams Archive, 1998, courtesy of Aga Khan Documentation Center, MIT Libraries (AKDC@MIT)
Figure 66: Courtesy of Denis Genequand
Figure 67: Courtesy of Denis Genequand
Figure 68: Courtesy of Denis Genequand
Figure 69: Courtesy of World Monument Fund, 2004
Figure 70: Lucien Marie Francois Famechon, Notice sur la Guinée francaise, Paris, 1900, p. 165
Figure 71: Pradines after Prussin, 1995 & De Lancey, 2014
Figure 72: Postcard by Edmond Fortier, 1900
Figure 73: John A. and Caroline Williams Archive, 1998, courtesy of Aga Khan Documentation Center, MIT Libraries (AKDC@MIT)
Figure 74: Ji-Elle, 2012, Musée Barrois, Wikimedia Commons
Figure 75: Courtesy of Aga Khan Trust for Culture, Christophe Boulot
Figure 76: Courtesy of Aga Khan Trust for Culture, Christophe Boulot
Figure 77: G. de Beauchêne, Musée du Quai Branly (Musée de l'Homme), C66–1087-723
Figure 78: Greudin, 2007, Wikimedia Commons
Figure 79: Pradines
Figure 80: Pradines
Figure 81: Pradines, 2008
Figure 82: Pradines, 2008
Figure 83: Pradines, 2008
Figure 84: Pradines
Figure 85: Pradines, 2008
Figure 86: Pradines after Poissonnier, 2007
Figure 87: Pradines after Curle, 1937
Figure 88: Serena Massa, Director of the Adulis Mission, Università Cattolica di Milano
Figure 89: Pradines after Paribeni, 1907
Figure 90: Pradines after Greenlaw, 1976, p. 67
Figure 91: Courtesy of the World Monument Fund
Figure 92: Courtesy of the Polish Centre of Mediterranean Archaeology of the University of Warsaw, Godlewski
Figure 93: Courtesy of the Polish Centre of Mediterranean Archaeology of the University of Warsaw, Godlewski
Figure 94: Courtesy of the Polish Centre of Mediterranean Archaeology of the University of Warsaw, Waldemar Jerke.
Figure 95: Pradines after Mallinson, 2004
Figure 96: Pradines, 2003
Figure 97: Pradines after Alexander & Adams, 2018
Figure 98: Frédéric Cailliaud, *Voyage à Meroé,* 1821
Figure 99: Fabian Lambeck Wikimedia common
Figure 100: Attributed to Francis Gregson, 1898, Royal Collection Trust / © Her Majesty Queen Elizabeth II 2022 (RCIN 2501872)
Figure 101: Pradines after *Neufville* and Houghton in Balfour, 1955.
Figure 102: Pradines after Lebeuf & Immo Kirsch, 1989
Figure 103: Pradines
Figure 104: Pradines
Figure 105: Pradines, 1998
Figure 106: Pradines, 2001
Figure 107: Pradines, 2015
Figure 108: Pradines, 2005
Figure 109: Pradines, 2005
Figure 110: Pradines, 2017
Figure 111: Pradines, 2017
Figure 112: Pradines, 2009
Figure 113: Pradines, 2001
Figure 114: Pradines, 2017
Figure 115: Pradines 2017
Figure 116: Pradines 2002
Figure 117: Pradines, 2003
Figure 118: Blanchard, 2018
Figure 119: Pradines, 2005

Figure 120: Engraving from Taylor in Révoil, 1882, p. 52
Figure 121: Pradines, 2002
Figure 122: Pradines after Garlake, 1966, p. 150–151
Figure 123: Pradines, 2018
Figure 124: Pradines, 2003
Figure 125: Pradines, 2002
Figure 126: Pradines, 2017
Figure 127: Pradines, 2009
Figure 128: Pradines, 2003
Figure 129: Pradines after Garlake, 1966, p. 149
Figure 130: Courtesy of Heinz Ruther, Zamani Project
Figure 131: Pradines, 2009
Figure 132: Engraving of D. Lancelot in Révoil, 1882
Figure 133: Pradines, 1998
Figure 134: Courtesy of Heinz Ruther, Zamani Project
Figure 135: Pradines, 1998
Figure 136: Pradines after Helen Little in Sheriff, 1995, p. 56
Figure 137: Pradines, 1998
Figure 138: Pradines, after Garlake, 1966, p. 136 & Chittick, 1974, p. 162
Figure 139: Pradines, 2002
Figure 140: Pradines, 2002
Figure 141: Pradines after Garlake, 1966, p. 143
Figure 142: Pradines, 2017
Figure 143: Pradines, 2018
Figure 144: Pradines after Garlake, 1966, p. 201
Figure 145: Pradines, 2002
Figure 146: Engraving of G. Vuillier in Révoil, 1885
Figure 147: Pradines, 2018
Figure 148: Pradines, 1998
Figure 149: Pradines, 1998
Figure 150: Pradines after Garlake, 1966, p. 170–171
Figure 151: Pradines, 2005
Figure 152: Pradines, 2005
Figure 153: Pradines, 2005
Figure 154: Pradines, 2005
Figure 155: Pradines, 2001
Figure 156: Pradines, 2001
Figure 157: Pradines after Garlake, 1966, p. 186–187
Figure 158: Nuredin Hagi Scikei
Figure 159: Engraving of Taylor in Révoil, 1885
Figure 160: Pradines from Musée de l'Homme collections (Quai Branly)
Figure 161: Pradines, 2003
Figure 162: Pradines after Garlake, 1966, p. 185 & 188
Figure 163: Pradines after Garlake, 1966, p. 143 & 147
Figure 164: Pradines, 2017
Figure 165: Pradines, 2003
Figure 166: Pradines after Garlake, 1966, p. 182
Figure 167: Pradines, 2002
Figure 168: Pradines, 2022
Figure 169: Pradines and Blanchard
Figure 170: Pradines and Blanchard
Figure 171: Pradines, 2009
Figure 172: Pradines and Blanchard
Figure 173: Courtesy of CyArk
Figure 174: Pradines, 2005
Figure 175: Pradines, 2003
Figure 176: Pradines, 2005
Figure 177: Pradines, 2001
Figure 178: Pradines after Kirkman, 1964, p. 25 and Garlake, 1996, p. 144
Figure 179: Pradines
Figure 180: Pradines, 2001
Figure 181: Pradines, 2001
Figure 182: Pradines
Figure 183: Pradines
Figure 184: Pradines
Figure 185: Pradines, 2004
Figure 186: Pradines & Blanchard
Figure 187: Pradines, 2003
Figure 188: Pradines / AKU / Zamani Project
Figure 189: Pradines, 2018
Figure 190: Pradines / AKU / Zamani Project
Figure 191: Pradines after Garlake, 1966, p. 155
Figure 192: Pradines, 2004
Figure 193: Pradines after Garlake, 1966, p. 155 & Ghaidan, 1976, p. 35
Figure 194: Pradines after Ghaidan, 1976, p. 35
Figure 195: Pradines, 1998
Figure 196: Pradines, 2004
Figure 197: Pierre Blanchard, 2018
Figure 198: Pradines after Garlake, 1966, p.173
Figure 199: Pradines, 2004
Figure 200: Courtesy of Heinz Ruther, Zamani Project
Figure 201: Pradines after Siravo, *Zanzibar: A plan for the historic Stone Town*, 45
Figure 202: Pradines after Siravo, *Zanzibar: A plan for the historic Stone Town*, 45

Figure 203: Courtesy of Aga Khan Visual Archive, Archnet, Kim Cuenco, 1985
Figure 204: Pradines
Figure 205: Pradines
Figure 206: Pradines
Figure 207: Pradines
Figure 208: Pradines
Figure 209: Pradines
Figure 210: Pradines
Figure 211: Pradines
Figure 212: Pradines
Figure 213: Pradines

Bibliography

Primary Sources, Edited and Compiled

Abulfida. 1342. *Géographie d'Aboulféda*. De Reinaud M. ed., Paris: Imprimerie nationale, 1848, vol. 2, 320 p.

Anonymous, 11th c. *Gharā'ib al-funūn wa-mulaḥ al-ʿuyūn, An Eleventh-Century Egyptian Guide to the Universe: The 'Book of Curiosities'*, Rapoport, Y. and Savage-Smith, E. eds. Leiden: Brill, 2014.

Bakri, al. 1094. *Description de l'Afrique septentrionale par Abou-Obeid el-Bekri*. Paris: Maisonneuve, 1858 (reed. 1965), 432 p.

Barros, J. de. 1552. *Decadas Da Ásia, dos feitos qie os Portuguezes fizeram no descubrimento, e conquista dos mares, e terras do Oriente*. Lisbon: Ministério das colonias, 1945, 2 vols., 443 p. and 474 p.

Battuta, Ibn. 1331. *Voyages d'Ibn Battuta*. Defremery C. and Sanguinetti B. eds. Paris: Imprimerie Nationale, 1853, 465 p.

Buzurg b. Shahriyâr. 953. « Les Merveilles de l'Inde ». Sauvaget, J. ed. *Bulletin de l'Institut Français de Damas 1*. Damascus: IFEAD (1954): 189–309.

Casanova, P. « Notes sur les voyages de Sindbad le marin ». *Bulletin de l'Institut Français d'archéologie orientale du Caire 20*. Cairo (1922): 113–98.

Cerulli, E. *Somalia: scritti vari editi ed inediti, Amministrazione Fiduciaria Italiana della Somalia*. Rome, 2 vols., 1957, 363p. and 392p.

Cuoq, J. *Recueil des sources arabes concernant l'Afrique occidentale du VIIIe au XVIe siècle*. Paris: C.N.R.S., 1975, 515 p.

Devic, L. *Le Pays des Zanjs* (*ou la Côte Orientale d'Afrique au Moyen-Age*). Amsterdam: Oriental Press, 1883, 280p.

Es-Sa'di, A. *Tarikh es-Soudan* (1900). Paris: Maisonneuve, 1964.

Freeman-Grenville, G.S.P. *The East African Coast* (*select documents from the first to the earlier nineteenth century*). Oxford: Clarendon Press, 1962, 314 p.

Hopkins, J. *Corpus of early Arabic sources for West African history*. Cambridge: University Press, 1981, 492 p.

Ibn Khaldoun. *Histoire des Berbères et des dynasties musulmanes de l'Afrique septentrionale*. De Slane & Casanova, P. eds. Paris: Geuthner, 1925–1956, 4 vols.

Idrisi, al. 1154. *Description de l'Afrique et de l'Espagne*. Dozy R. & Goeje M.J. eds. Leiden: Brill, 1968, 393 p.

Kâti, M. *Tarikh El-Fettâch* (1913–1914). Paris: Maisonneuve, 1981.

Levtzion, N. & Hopkings, J. *Corpus of early Arabic sources for west African history*. Cambridge: University Press, 1981, 492 p.

Masudi, al. *Les Prairies d'or* (10th c.). de Meynard B. & Courteille P. eds. Paris: Société asiatique, 1970, 9 vols.

Merlet, A. *Textes anciens sur le Burkina* (*1853–1897*). Paris: Sépia, 1995, 294p.

Nasir-i Khusraw. *Sefer Nameh. Relation du voyage de Nassiri Khosrau* (*1035–1042*). Schefer, C. Paris: Ecole des langues orientales, 1881.

Sauvaget J. *Relation de la Chine et de l'Inde* (851). Collection Arabe de l'Association des Belles lettres XLI, Paris: Budé, 1948, 81p.

Sindbâd, *Les Aventures de Sindbad le Marin* (840). Khawam, R. ed. Paris: Phébus, 1985, 242p.

Smidt, W. "A Chinese in the Nubian and Abyssinian Kingdoms (8th Century). The visit of Du Huan to Molin-guo and Laobosa". *Chroniques Yéménites*. Sanaa: Centre Français d'Archéologie et de Sciences Sociales (2001): 17–28.

Yakût. *Dictionnaire géographique* (1224). Paris: Maisonneuve, 1964.

Studies and Monographs

Abdulkadir, M., Restaino, G., & Spina, M. *Mogadiscio e la sua evoluzione storico-urbanistica: pagine di storia della città*. Catalogue of exhibition, Mogadishu: Reclaim the History International Research Group – Italian Agency for Development Cooperation, 2018, 75 p.

Abitbol, M. *Tombouctou et les Arma* (*De la conquête marocaine du Soudan nigérien en 1591 à l'hégémonie de*

l'empire peul du Massina en 1833). Paris: Maisonneuve et Larose, 1979, 295 p.

Abungu, G. *Islam on the Kenyan coast: an archaeological study of mosques*, University of Cambridge: Master, 1986, 62p.

Abungu, G. "New finds along the Kenya coast". *Kenya Past and Present* 26. Nairobi: National Museums of Kenya (1994): 41–48.

Ago, F. *Moschee in adobe. Storia e tipologia nell'Africa Occidentale*. Rome: Kappa, 1982, 146p.

Ahmed, H. and Miran, J. "Mosques". *Encyclopaedia Aethiopica 3*. Wiesbaden: Harrassowitz (2007): 1028–1032.

Allen, J.d.V. "Rhapta". *Tanganyika Notes and Records 27*. Dar es Salaam: Government Printer (1949): 52–59.

Allen, J.d.V. "Swahili ornament: a study of the decoration of the 18th century plasterwork and carved doors in the Lamu region". *Art and Archaeology Research Paper 3 & 4*. London: School of Oriental and African studies (1973): 1–14 and 87–92.

Allen, J.d.V. "Swahili architecture in the later middle ages". *African Arts 7–2*. Los Angeles: University of California (1974 a): 42–47, 66–68 et 83–84.

Allen, J.d.V. "Swahili culture reconsidered: some historical implications of the material culture of the Northern Kenya Coast in the Eighteenth and Nineteenth centuries". *Azania 9*. Nairobi: British Institute in Eastern Africa (1974b): 105–138.

Allen, J.d.V. "Swahili culture and the nature of East coast settlement". *The International Journal of African Historical Studies 14–2*, (1981): 306–334.

Allen, J.d.V. "The Shirazi problem in East African Coastal History". *From Zinj to Zanzibar, in Honour of James Kirkman, Paideuma 28*. Wiesbaden: Franz Steiner (1982): 9–27.

Allen, J.d.V. & Wilson, T. "Swahili houses and tombs of the coast of Kenya". *Art and Archaeology Research Paper*. London: The School of Oriental and African studies (1979): 46p.

Allen, J.d.V. *Swahili Origins*. Nairobi: Eastern African Studies, 1993, 272 p.

Allibert, C. *Histoire de Mayotte* (*ile de l'Archipel des Comores, avant 1841*). Paris: PhD Panthéon Sorbonne, 1977, 525p.

Alpers, E. "Gujarat and the trade of East Africa c. 1500–1800". *The International Journal of African Historical Studies 9–1* (1976): 22–44.

André, P.J. *L'Islam Noir*. Paris: Paul Geuthner, 1924, 131p.

Apotsos, M. *Architecture, Islam, and Identity in West Africa: Lessons from Larabanga*. Routledge, 2016, 216 p.

Ar Zoumanian, V. & Bardou, P. *Architectures de terre*. Marseille: Parenthèses, 1978, 98 p.

Aradeon, S.B. "Al-Sahili: the historian's myth of architectural technology transfer from North Africa". *Journal des Africanistes 59–2*. Paris: Société des Africanistes (1989): 99–131.

Azaïs, R.P. & Chambard R. *Cinq années de recherches archéologiques en Ethiopie, province du Harar et Ethiopie méridionale*. Paris: Geuthner, 1931, 348 p.

Bâ, A.H. & Daget, J. *L'empire peul du Massina* (*1818–1853*). Dakar: Nouvelles Editions Africaines, 1955.

Bacqué-Grammont, J.-L. et Kroell, A. Mamelouks, Ottomans et Portugais en mer Rouge. L'*affaire de Djeddah* en 1517. Supplément aux annales islamologiques 12, Cairo: Ifao, 1988.

Bacqué-Grammont, J.-L. éd. *L'arbre anthropogène du Waqwaq, les femmes-fruits et les îles des femmes. Recherches sur un mythe à large diffusion dans le temps et l'espace*. Napoli: Università degli Studi di Napoli "L'Orientale", Institut Français d'Études Anatolienne, 2007.

Balfour-Paul, H.G. « Islam at Uri ». *Sudan Notes and Records 35*, Liechtenstein: Kraus (1954):139–140.

Balfour-Paul, H.G. *History and Antiquities of Darfur*. Khartoum. Sudan Antiquities Service Museum, 1955.

Bandyopadhyay, S. "From Another World! A possible Bûyid origin of the decorated Mihrab of central Oman". *Intercultural relations between South and Southwest Asia*. Olijdam & Spoor eds. Oxford: BAR (2008): 372–382.

Barth, H. *Voyages et découvertes dans l'Afrique septentrionale et centrale pendant les années 1849 à 1855*. Paris: Bohné, 1859, 4 vols.

Bastard, G. « Une ville du Niger : Djenné ». *Le tour du monde 28*, Paris (1900): 129–32, 137–40.

Battistini, R. *Géographie de l'Afrique Orientale : Kenya, Ouganda et Tanzanie*. Paris v: Centre de documentation Universitaire, 1969, 174p.

Baumann, O. "Mafia Island". *Tanganyika Notes and Records 46*, Dar es-Salaam: Government Printer (1957): 1–24.

Beaudoin, G. *Architecture du fleuve* (*Le Niger de Djenné à Gao*). Mémoire U.P.6, 1978, 73p.

Bedaux, R.M.A. & van der Waals, J.D. Eds. *Djenné, une ville millénaire au Mali*. Leiden: Rijksmuseum voor Volkenkunde, 1994, 186 p.

Berg, F. "The Coast from the Portuguese invasion". *Zamani: a survey of East African History*. Nairobi: East African Publishing House (1968): 115–134.

Berg, F. &Walter, B.J. "Mosques, population and urban development in Mombasa". *Hadith 1*. Nairobi: East African Publishing House (1968): 47–100.

Berthier, S. *Recherches archéologiques sur la capitale de l'empire de Ghana. Etude d'un secteur d'habitat à Koumbi Saleh, Mauritanie*. BAR S680, Oxford: Archaeopress, 1997, 143p.

Binger, L.G. *Du Niger au Golfe de Guinée par le pays de Kong et le Mossi* (*1887–1889*). Paris: Hachette, 1892, 2 vols.

Birks, J.S. *Across the Savannas to Mecca*. London: Hurst, 1978, 161p.

Bivar, D.H. & Shinnie, P. "Old Kanuri Capitals". *Journal of African History 3–1*. Cambridge university press (1962): 1–10.

Blanchard, P. *Chole*. Unpublished report for the WMF & Tanzanian antiquities, Paris, 2020.

Bloom, J. *Architecture of the Islamic West. North Africa and the Iberian Peninsula, 700–1800*. New Haven: Yale University Press, 2020, 320 p.

Bonnenfant P., G. & Hamad ibn Sulayman al-Harthi S. « Architecture and Social History at Mudayrib ». *Oman Studies 3–2*. Muscat (1977): 107–135.

Bonnenfant, P. « La marque de l'Inde à Zabîd ». *Chroniques yéménites 8*, Sanaa: Centre français (2000).

Bonnenfant, P. *Les Maisons de Zabid*. Paris: Maisonneuve & Larose, 2008, 351 p.

Bonnel de Mézières, Ch. « Découverte de Tirekka ». *Bulletin du Comité des Travaux Historiques 29*. (1914): 132–135.

Boulègue, J. « Mosquées de style soudanais au Fuuta Tooro (Sénégal) ». *Notes Africaines 136*. Paris (1972): 117–119.

Bourde, A. « Un investissement contesté : la mosquée dans l'Océan Indien contemporain ». *Problèmes religieux et minorités en Océan Indien, Etudes et documents de l'Institut d'Histoire des Pays d'Outre-mer 14*. Aix (1981): 94–110.

Bourdier, J.P. "The rural mosques of Futa Toro". *African Arts 26–3*. Los Angeles (1993): 32–45.

Bourdier, J.P. "Houses of Light: Rural Mosques of Senegal and Mali". Mimar 39. London: Concept Media/Aga Khan (1991): 61–67.

Bourgeois, J.L. "The history of the great mosques of Djenné". *African Arts 20–3*. Los Angeles (1987): 54–63, 90–92.

Bourgeois, J.L. & Pelos, C. *Spectacular vernacular: A new appreciation of traditional desert architecture*. Salt Lake City: Peregrine Smith (1983), 109 p.

Bourgeois, J.L. & Pelos, C. *Spectacular vernacular. The adobe tradition*. New York: Aperture foundation, (1989), 192 p.

Bowersock, G.W. *Throne of Adulis: Red Sea wars on the eve of Islam*. Oxford University Press (2013), 181 p.

Bramoullé, D. "The Fatimids and the Red Sea (969–1171)". *Navigated Spaces, Connected Places. Proceedings of Red Sea Project V*. D. Agius ed. Oxford: Archaeopress (2012): 127–136.

Brasseur, G. *Les établissements humains au Mali. Mémoires de l'IFAN 83*. Dakar: Institut Fondamental d'Afrique Noire, 1968, 550 p.

Braumann, R. *African Islam*. Washington: Smithssonian Press, 1984.

Brown, H. "Coins of East Africa, an introductory survey". *Yarmouk Numismatics 5* (1993): 9–16.

Brown, P. *Indian Architecture* (*the Islamic period*). Bombay: Taraporevala, 1942, 146p.

Brown, W. *History of Siyu: the development and decline of a Swahili town on the northern Kenya coast*, Ph.D. Indiana University, 1985, 290 p.

Buchanan, L. *The Ancient Monuments of Pemba*. Zanzibar Museum, 1932, 41p.

Burton, R. *First Footsteps in East Africa, or an Exploration of Harar*, London, 1856.

Burton, R. *Zanzibar city, island and coast*. New-York: Johnson Corporation, 1872 (rep. 1967), 2 vols., 503p. & 519p.

Burton-Page, J. *Indian Islamic Architecture: Forms and Typologies, Sites and Monuments*. Michell, G. Ed., Leiden: Brill (2008), 194 p.

Cahen, C. *La Civilisation Musulmane du milieu du IXème au milieu du XIème siècle* (*Le commerce musulman*). Paris: Uneffgel, 1964, 29p.

Cahen, C. *Introduction à l'histoire du monde musulman médiéval, VII^e–XV^e siècles*, Paris: Maisonneuve, 1982, 216 p.

Caillié, R. *Journal d'un voyage à Tembouctou et à Jenné, dans l'Afrique centrale, précédé d'observations faites chez les Maures Braknas, les Nalous et autres peuples ; pendant les années 1824, 1825, 1826, 1827, 1828*. Paris: La Découverte, 1830 (rep. 1985), 4 vols.

Cantone, C. "À la recherche de l'origine du minaret en AOF". *Bulletin Images et Mémoires 31*, Orléans (2012): 13–17.

Cantone, C. *Making and Remaking Mosques in Senegal*. Leiden: Brill, 2012.

Cerulli, E. *La lingua e la storia di Harar, Studi etiopici I*. Rome: Instituto per l'Oriente, 1936.

Cerulli, E. "*Il sultanato dello Scioa* nel secolo XIII secondo un nuovo documento storico". Rassegna di studi Etiopici. Rome: Instituto per l'Oriente (1941): 5–14.

Cerulli, E. « Relations de l'Ethiopie avec le monde musulman ». *Histoire Générale de l'Afrique* III, Paris: Unesco-NEA (1990): 613–623.

Chabrol, F. *L'Afrique orientale dans les sources géographiques chinoises du IXe au XVe siècle*. Université de Paris I: CRA, 1998, 156p.

Chami, F. *The Tanzanian Coast in the First Millennium AD*. Uppsala: Societas Archaeologica Upsaliensis, 1994, 107 p.

Chami, F. "A Review of Swahili Archaeology". *African Archaeological Review 15–3*. New York: Kluwer-Plenum Publishers (1998): 199–218.

Chami, F. *The unity of African ancient history: 3000 BC to AD 500*. Dar es Salaam, Tanzania: African Books Collective, 2006, 260 p.

Chanudet, C. « Un site majeur de Mohéli : Mwali Mdjini ». *Etudes Océan Indien*. Paris: INALCO (1991): 9–123.

Chaudhuri, K.N. *Trade and Civilisation in the Indian Ocean. An Economic History from the Rise of Islam to 1750*. Cambridge: CUP, 1985 (reed. 1989), 269 p.

Cheikh, A.W. *Vie et Architecture Mauritaniennes de l'Adrar*. Paris: IMRS-Sépia, 1989, 48 p.

Chekhab-Abydaya, M. "Une influence de l'ibadisme sur l'architecture religieuse au Sahara". *Horizons Maghrébins 76*, Presses universitaires du Midi (2007): 116–124.

Chittick, N. "Notes on Kilwa". *Tanganyika Notes and Records 53*. Dar es-Salaam: Government Printer (1959): 179–203.

Chittick, N. *Kisimani Mafia* (*excavations at an islamic settlement on the East African Coast*). Occasional Paper 1, Dar es-Salaam: Government Printer (1961), 33p.

Chittick, N. "Kilwa and the Arab settlement of the East African Coast". *Journal of African history IV-2*. Cambridge University Press (1963): 179–190.

Chittick, N. "The Shirazi colonization of East Africa". *Journal of African history VI-3*. Cambridge University Press (1965): 275–294.

Chittick, N. "Kilwa: a preliminary report". *Azania 1*. Nairobi: British Institute in Eastern Africa (1966): 1–36.

Chittick, N. "Discoveries in the Lamu Archipelago". *Azania 2*. Nairobi: British Institute in Eastern Africa (1967): 37–67.

Chittick, N. "The Coast before the arrival of the Portuguese". *Zamani: a survey of East African History*. Nairobi: East African Publishing House (1968): 98–114.

Chittick, N. "A new look at the history of Pate". *Journal of African history X-3*. Cambridge University Press (1969 a): 375–391.

Chittick, N. "An archaeological reconnaissance of the Southern Somali Coast". *Azania 4*. Nairobi: British Institute in Eastern Africa (1969 b): 115–130.

Chittick, N. "The Mosque at Mbuamaji and the Nabahani". *Azania 4*. Nairobi: British Institute in Eastern Africa (1969 c): 159–160.

Chittick, N. *Kilwa an Islamic Trading City on the East African Coast*. Nairobi: British Institute in Eastern Africa, 1974, 2 vols.

Chittick, "An archaeological Reconnaissance in the Horn: The British-Somali expedition 1975". *Azania 11*. Nairobi: British Institute in Eastern Africa (1976): 117–132.

Chittick, N. "Indian relations with East Africa before the arrival of the Portuguese". *Journal of the Royal Asiatic Society 2*. London (1980 a): 117–127.

Chittick, N. « L'Afrique de l'est et l'orient : les ports et le commerce avant l'arrivée des Portugais ». *Relations historiques à travers l'océan Indien, Histoire générale de l'Afrique, Etudes et documents 3*. Paris: UNESCO (1980 b): 15–25.

Chittick, N. "Medieval Mogadishu". *Paideuma 28, From Zinj to Zanzibar, in Honour of James Kirkman*. Wiesbaden: Franz Steiner (1982): 45–62.

Chittick, N. *Manda: excavations at an island port on the Kenya Coast*. Nairobi: British Institute in Eastern Africa, 1984, 258p.

Chittick, N. & Rotberg, R.I. *East Africa and the Orient* (*cultural syntheses in precolonial times*). London: Africana Publishing Company, 1975, 343p.

Cissoko, S.M. *Tombouctou et l'empire songhay. Epanouissement du Soudan nigérien aux XV^e–XVI^e siècles*. Dakar: Nouvelles Editions Africaines, 1975, 243 p.

Clark, C. & Horton, M. *Zanzibar Archaeological Survey 1984/85*. Zanzibar: Unpublished report for the Ministry of Information, Culture and Sport, 1985, 79 p.

Clarke, P. *West Africa and Islam. A study of religious development from the 8th to the 20th century*. London: Edward Arnold, 1982, 275 p.

Connah, G. *African Civilizations: an archaeological perspective Third edition*. Cambridge University Press, 2016, 412 p.

Conrad, D.C. "A town called Dakajalan: the Sunjata tradition and the question of ancient Mali's capital". *Journal of African History XXXV-3*. Cambridge University Press (1994): 355–377.

Constantin, F. (ed). *Les voies de l'Islam en Afrique orientale*. Paris: Karthala, 1987.

Constantin, F. "Condition swahili et identité politique". *Les ethnies ont une histoire*. Chrétien J.-P. & Prunier G. eds. Paris: Karthala (1989): 337–355.

Contadini, A. *Fatimid Art at the Victoria and Albert Museum*, London: V&A Publications, 1998.

Coquery-Vidrovitch, C. & Moniot, H. *L'Afrique Noire* (*de 1800 à nos jours*). Paris: Presses Universitaires de France, 1974, 480 p.

Costa, P. *Historic Mosques and Shrines of Oman*. BAR 938, Oxford: Archaeopress, 2001, 270 p.

CRA Terre. *Construire en terre*. Paris: Alternatives, 1985.

CRA Terre. *Traité de construction en terre*. Marseille: Parenthèses, 1989, 355 p.

Crawford, O. *Castles and Churches in the Middle Nile region*. Occasional papers n°2, Khartoum: Sudan Antiquities service, 1961, 47p.

Cressier, P. « Architecture religieuse à Agadez et dans l'Air ». *Journal des Africanistes 52*. Paris: Société des Africanistes (1982): 171–172.

Cressier, P. « La grande mosquée d'Assodé ». *Journal des Africanistes 59*. Paris: Société des Africanistes (1989): 133–162.

Cressier, P. « Archéologie de la dévotion Soufi ». *Journal des Africanistes 62–2*, Paris: Société des Africanistes (1992): 69–90.

Cressier, P. & Bernus, S. « La grande mosquée d'Agadez (architecture et histoire) ». *Journal des Africanistes 54*, Paris: Société des Africanistes (1984): 5–40.

Creswell, K.A.C. *Early Muslim architecture*. Oxford University Press, 1932–1940, 2 vols.

Cuoq, J. *L'islam en Éthiopie des origines au XVI^e siècle*, Paris, 1981.

Cuoq, J. *Histoire de l'Islamisation de l'Afrique de l'Ouest. Des origines à la fin du XVI^e siècle*, Paris: Geuthner, 1984, 347 p.

Curle, A.T. "The ruined towns of Somaliland". *Antiquity 11*. Gloucester: Bellows (1937): 315–327.

Das Gupta, A. "Indian Merchants and the Western Indian Ocean: The Early Seventeenth Century". *Modern Asian Studies 19–3* (1985): 481–499.

Das Gupta, A. *Indian Merchants and the Decline of Surat c. 1700–1750*. New Delhi: Manohar, 1994, 309 p.

Datoo, B.A. "Rhapta: the location and importance of East Africa's first port". *Azania 5*. Nairobi: British Institute in Eastern Africa (1970): 65–75.

Decque, L. « Les chefs-d'oeuvre en terre du peuple de l'eau ». *Géo 181*, Paris (1994): 62–72.

Delafosse, M. « Les relations du Maroc avec le Soudan à travers les âges ». *Hespéris 4*, Paris (1924): 153–174.

DeLancey, M. "Localizing fulbe architecture". *Islamic Africa 5–1*, Brill (2014): 1–43.

Denham, D. Clapperton, H. & Oudney, W. *Voyage et découverte dans le nord et dans les parties centrales*

de l'Afrique au travers du grand désert jusqu'au 10° de latitude Nord et depuis Kouka dans le Borno jusqu'à Sackatou, capitale de l'empire des Felatah. Paris: Arthus Bertrand, 1826, 3 vols.

Denyer, S. *African Traditional Architecture*. London: Heinemann, 1978, 210p.

Derriks, A. & Prevost, V. *Djerba les mosquées ibadites*, Ceres Editions, 2018.

Deschamps, H. *Histoire de Madagascar*. Paris: Berger-Levrault, 1972, 358p.

Desanges, J. *Toujours Afrique apporte fait nouveau*. Paris: De Boccard/Scripta Minora, 1999, 406 p.

Dethier, J. (ed.). *Des architectures de terre*. Paris: Centre Georges Pompidou, 1981.

Dethier, J. *Architectures de terre: atouts et enjeux d'un matériau de construction méconnu. Europe, Tiers-Monde, Etats-Unis*. Paris: Centre Pompidou, 1986: 224p.

Dethier, J. *Architectures de terre : ou l'avenir d'une tradition millénaire*. Paris: Centre Pompidou/Centre de Création Industrielle, 1987, 192 p.

Dethier, J. & Gruner, D. *Banco, Adobe Mosques of the Inner Niger Delta*, Milan: Continents, 2003.

Devisse, J. « Routes de commerce et échanges en Afrique Occidentale en relation avec la Méditerranée. Un essai sur le commerce médiéval du XI^e au XVI^e ». *Revue d'Histoire Economique et Sociale* 50–1. Paris (1972): 42–73, 357–397.

Devisse, J. « L'Afrique Noire ». *Le Grand Atlas de l'Architecture Mondiale*. Paris: Encyclopaedia Universalis (1981): 72–83.

Devisse, J. « L'Afrique dans les relations intercontinentales ». *Histoire Générale de l'Afrique Noire 4*. Paris: Unesco (1985): 693–730.

Devisse, J. & Diallo, B. « Le seuil du Wagadu ». *Vallées du Niger*. Paris: Réunion des Musées Nationaux (1993): 103–114.

Devisse, J. & Robert, S. *Tegdaoust III. Recherches sur Aoudaghost, campagnes 1960 / 1965*. Paris: Recherches sur les civilisations, 1983, 569 p.

Devisse, J. & Vernet, P. « Le bassin des vallées du Niger: chronologies et espaces ». *Vallées du Niger*. Paris: Réunion des Musées Nationaux (1993): 11–37.

Dewière, R. *Du lac Tchad à la Mecque : Le sultanat du Borno et son monde* (*XVI^e–XVII^e siècle*). Paris: editions de la Sorbonne, 2017, 469 p.

Dieterlen, G. « Contribution à l'étude de l'architecture traditionnelle en Afrique Noire ». *Fonction et signification de l'art négro-africain dans la vie du peuple et pour le peuple*. Dakar (1966): 9 p.

Dmochowski, Z.R. *An introduction to Nigerian traditional architecture*. London: Ethnographica, 1990, 3 vols.

Domian, S. *Architecture soudanaise. Vitalité d'une tradition urbaine et monumentale : Mali, Côte d'Ivoire, Burkina Faso, Ghana*. Paris: l'Harmattan, 1989, 191 p.

Donley-Reid, L. "A structuring structure: the swahili house". *New Directions in Archaeology*. Cambridge University Press (1990): 114–126.

Donley-Reid, L. *The Social uses of Swahili space and objects*. PhD. University of Cambridge, 1984, 388p.

Dorman, M.H. "The Kilwa civilization and the Kilwa ruins". *Tanganyika Notes and Records 6*. Dar es-Salaam: Government Printer (1938): 61–71.

Duarte, R. *Northern Mozambique in the Swahili World* (*an archaeological approach*). Uppsala: CBNA, 1993, 154p.

Dubois, F. *Tombouctou la mystérieuse*. Paris: Flammarion, 1897, 420p.

Dubois, F. Notre beau Niger. Paris: Flammarion, 1911, 300 p.

Ducatez, G. « Aden et l'océan Indien au XIII^e siècle : navigation et commerce d'après Ibn al-Mugâwir ». *Annales Islamologiques 37*. Cairo: IFAO (2003): 137–156.

Ducatez, G. « Aden aux XI^e et XIII^e siècles selon Ibn al-Mugâwir, son passé légendaire, son histoire sous les zurayîdes et les ayyoubides, son site, ses monuments et ses aménagements », *Annales Islamologiques 38*. Cairo: IFAO (2004): 159–200.

Ducellier, A. Kaplan, M. Martin, B. *Le Moyen Age en Orient. Byzance et l'Islam*. Paris: Hachette, 1990, 320p.

Ducène, J.-C. « Une nouvelle source arabe sur l'océan Indien au X^e siècle : le *Ṣaḥīḥ min aḫbār al-biḥār wa-'aǧā'ibihā* d'Abū 'Imrān Mūsā ibn Rabāḥ al-Awsī al-Sīrāfī ». *Afriques* 6, Paris (2015) [En ligne] DOI: https://doi.org/10.4000/afriques.1746.

Eaton, R. "Muhammad bin Tughluq and Temples of the Deccan, 1321–26". *Sultans of the South: arts of India's Deccan Courts, 1323–1687*. Haidar, N. & Sardar, M. eds. New York: Metropolitan Museum of Art (2011): 178–187.

Eisa, K. "The so-called Abdallah Ibn Abi Sarh's mosque at old Dongola". *Etudes nubiennes 2*. Geneva (1992): 275–279.

El Fasi, M. & Hrbek, I. « Etapes du développement de l'Islam et de sa diffusion en Afrique ». *Histoire Générale de l'Afrique 3*. Paris: Unesco (1990): 81–116.

Elzein, I.S. *Islamic archaeology in the Sudan*, BAR, Oxford, 2004, 152p.

Engeström, T. « Contribution aux connaissances des styles de construction au Soudan français ». *Ethnos* 20, Paris (1955): 122–126.

Engeström, T. *Notes sur les modes de construction au Soudan*. Statens Ethnografiska Museum Smärre Meddelanden 26. Stockholm: Statens Etnografiska Museum, 1957, 41 p.

Engeström, T. "Origin of preislamic architecture in west Africa", *Ethnos 24*, Paris (1959): 64–69.

Esoavelomandroso, F. « Madagascar et les îles avoisinantes du 12ème au 16ème siècle ». *Histoire Générale de l'Afrique 4*, Paris: Unesco (1985): 651–668.

Faruque Aly, H. *Aga Khan Development Network report: Contributions to development in West Africa 2005–2020*. AKDN, 2021, 56p.

Fattovich, R. "The development of urbanism in the northern Horn of Africa in ancient and medieval times". *The Development of Urbanism from a Global Perspective*, P. Sinclair ed. Uppsala University (1996): 1–30.

Fauvelle-Aymar, F.X. Hirsch, B. Bruxelles, L. Chekroun A. Deresse, A. & Chalachaw M. « Reconnaissance de trois villes musulmanes de l'époque médiévale dans l'Ifat (Éthiopie) ». *Annales d'Éthiopie XXII*. Addis Abeba: Centre Français d'Études Éthiopiennes (2008): 133–175.

Fauvelle F.X. & Hirsch, B. « Etablissements et formations politiques musulmans d'Ethiopie et de la Corne de l'Afrique au Moyen Age: vers une reconstruction ». *Annales islamologiques 42*, Cairo: Ifao (2008): 339–376.

Fauvelle-Aymar, F.X. Hirsch, B. Ménard, C. Mensan, R. & Pradines, S. « Archéologie et histoire de l'Islam dans la Corne de l'Afrique : état des recherches ». *Civilta del mediterraneo 16–17*. Rome: Di Storia e Leteratura (2010): 29–58.

Fauvelle-Aymar, F.X. & Hirsch, B. "Muslim Historical Spaces in Ethiopia and the Horn of Africa: A Reassessment". *Northeast African Studies 11–1*. Michigan State University Press (2004–10): 25–53.

Fauvelle-Aymar, F.X. & Bertrand Hirsch, B. 'Muslim Historical Spaces in Ethiopia and the Horn of Africa : A Reassessment', *Northeast African Studies 11–1*, Michigan State University Press (2011): 25–54.

Fauvelle-Aymar, F.X. Hirsch, B. Bernard, R. & Champagne, F. « Le port de Zeyla et son arrière-pays au Moyen Age. Investigations archéologiques et retour aux sources écrites ». *Espaces musulmans de la Corne de l'Afrique au Moyen Âge*. Fauvelle-Aymar, F.-X. & Hirsch, B. (eds.), Paris: Centre Français d'Études Éthiopiennes-Éditions de Boccard (2011): 27–74.

Fauvelle-Aymar, F.X. « La correspondance entre Raymond Mauny et Władisław Filipowiak au sujet de la fouille de Niani (Guinée), capitale supposée de l'empire médiéval du Mali ». *Les ruses de l'historien. Essais d'Afrique et d'ailleurs en hommage à Jean Boulègue*. Fauvelle-Aymar, F.X. et Hirsch B. eds, Paris: Kharthala (2013): 331–355.

Fauvelle, F.X. Hirsch, B. & Chekroun, A. « Le sultanat de l'Awfât, sa capitale et la nécropole des Walasma. Quinze années d'enquêtes archéologiques et historiques sur l'Islam médiéval éthiopien ». *Annales islamologiques 51*. Cairo: Ifao (2017): 239–295.

Fergusson, J. *History of Indian and Eastern Architecture*. London: John Murray, 1910, vol.2, 521p.

Ferrand, G. *Les Musulmans à Madagascar et aux îles Comores*. Bulletin de correspondance de l'école des lettres d'Alger, Paris: Leroux, 1891, 3 vols., 163p. 129p. et 204p.

Ferrand, G. « Les Sultans de Kilwa ». *Publication de l'Institut des Hautes Etudes Marocaines 17*. Paris: Geuthner (1928): 239–260.

Fiedermutz-Laun, A. "Architekturforschung in Obervolta und ihre ethnologische Aussage". *Paideuma 29*. (1983): 141–220.

Fiedermutz-Laun, A. *Lehmbau in Afrika südlich der Sahara. Mit besonderer Berücksichtigung des Nigerbogens. Architektur der Dritten Welt*. Stuttgart: Birkhaüser, 1983, 254 p.

Filipowiak, W. *Etudes archéologiques sur la capitale médiévale du Mali*. Szczecinie: Museum Narodowe, 1979, 326 p.

Filipowiak, W. « Le complexe du palais royal du Mali ». *Le sol, la parole et l'écrit : mélanges en hommage à Raymond Mauny tome 1*. Paris: Société française d'Histoire d'Outre-mer (1981): 71–89.

Fiorani, V. & Besenval, R. « International Indian Ocean routes and Gwadar Kuh-Batil settlement in Makran ». *Pakistan Archaeology 25*. Karachi: Dept. of Archaeology and Museums (1990): 126–162.

Fleisher, J. & LaViolette, A. "Elusive wattle-and-daub: Finding the hidden majority in the archaeology of the Swahili". *Azania 39*. Nairobi: BIEA (1999): 87–108.

Fleisher, J. and alii. "When Did the Swahili Become Maritime?". *American Anthropologist*, American Anthropological Association (2015): 1–16.

Flury, S. "The kufic inscriptions of Kizimkazi Mosque, Zanzibar 1107 a.d.". *J.R.A.S.* London (1922): 257–264.

Foster, N. "A note on some ruins near Bagamoyo". *Tanganyika Notes and Records 3*, Dar es-Salaam: Government Printer (1937): 106–109.

Freeman-Grenville, G.S.P. "Some preliminary observations on medieval mosques near Dar es Salaam". *Tanganyika Notes and Records 36*. Dar es Salaam: Government Printer (1954): 64–70.

Freeman-Grenville, G.S.P. "Some recent archaeological work on the Tanganyika Coast". *MAN LVIII*. London: Royal Anthropological Institute (1958): 106–112.

Freeman-Grenville, G.S.P. *The Medieval History of the Coast of Tanganyika* (*with special reference to recent archaeological discoveries*). London: Oxford University Press, 1962, 238p.

Freeman-Grenville, G.S.P. "The Coast, 1498–1840". *History of East Africa*. Oliver, R. & Mathew G. eds. Oxford: Clarendon Press (1963): 129–168.

Freeman-Grenville, G.S.P. & Martin B.G. "A Preliminary Handlist of the Arabic Inscriptions of the Eastern African Coast". *Journal of the Royal Asiatic Society*. London (1973): 98–122.

Froelich, J.C. *Les musulmans d'Afrique Noire*. Paris: Orante, 1962, 407 p.

Gallais, J. *Le Delta intérieur du Niger, I et II*. Mémoire de l'IFAN 79. Dakar: Institut Fondamental d'Afrique Noire, 1967, 625 p.

Gallais, J. *Hommes du Sahel, espaces-temps et pouvoirs. Le Delta intérieur du Niger, 1960–1980*. Paris: Flammarion, 1984, 289 p.

Gallay, A. & al., *Hier et aujourd'hui : des poteries et des femmes. Céramiques traditionnelles du Mali*. Université de Genève: Document du Département d'anthropologie et d'écologie 22, 1996, 144 p.

Gallay, A. Huysecom, E. Honegger, M. & Mayor, A. *Hamdullahi, capitale de l'Empire peul du Massina, Mali*. Stuttgart: F. Steiner, 1990, 58p.

Gardi, B., Maas, P. Mommersteeg, G. Eds. *Djenné il y a cent ans*. Amsterdam: K.I.T, 1994.

Gardi, R. *Maisons africaines* (*l'art traditionnel de bâtir en Afrique Occidentale*). Paris: Elsevier Séquoïa, 1974, 248 p.

Garlake, P. *The Early Islamic Architecture of the East African Coast*. Nairobi: B.I.E.A., 1966, 207p.

Gaube, H. & Al Salimi, A. *The Ibadis in the region of the Indian Ocean. Section one: East Africa*, Olms: Hildesheim, 2013, 446 p.

Genequand, D. Apoh, W. Gavua, K. Amoroso, H. Hajdas, I. Maret F. & de Reynie C. "Excavations in Old Buipe and Study of the Mosque of Bole (Ghana, Northern Region): Report on the 2015 Season of the Gonja Project". *SLSA Annual report* 2015 (2016): 25–66.

Genequand, D. Apoh, W. Gavua, K. Gyam, S. Hajdas, I. Maret, F. de Reynie, C. & Ruben, I. "Preliminary Report on the 2016 Season of the Gonja Project (Ghana, Northern Region)". *SLSA Annual report 2016* (2017): 65–108.

Genequand, D. & Apoh, W. "Old Buipe (Ghana, Northern region): Some observations on islamization and urban development at the South-Western margins of the Dar el-Islam". *Journal of Islamic archaeology 4–2*. Sheffield: Equinox (2017): 139–162.

Genequand, D. Apoh, W. Gavua, K. Canetti, M. Gyam, S. Hajdas, I. Maret, F. de Reynier, C. & Ruben, I. "Preliminary Report on the 2017 Season of the Gonja Project (Ghana, Northern Region)", *SLSA Jahresbericht Annual report 2017* (2018): 257–303.

Genequand, D. Apoh, W. Gavua, K. Canetti, M. Gyam, S. Hajdas, I. Locatelli, D. Maret, F. de Reynier, C. & Ruben, I. "Preliminary Report on the 2018 Season of the Gonja Project (Ghana, Northern Region)", *SLSA Jahresbericht Annual report 2018* (2019): 267–312.

Genequand, D. Apoh, W. Gavua, K. Canetti, M. Champion, L. Gyam, S. Hajdas, I. Maret, F. de Reynier, C. & Ruben, I. "Preliminary Report on

the 2019 Season of the Gonja Project, Ghana". *SLSA Jahresbericht, Annual report 2019* (2020): 225–289.

Ghaidan, U. "Swahili art of Lamu". *African Arts 5–1*, Los Angeles: University of California (1971): 54–57 & 84.

Ghaidan, U. "Swahili plasterwork". *African Arts 6–2*. Los Angeles: University of California (1973): 46–49.

Ghaidan, U. *Lamu* (*a study of the swahili town*). Nairobi: East African Literature Bureau, 1975, 94p.

Ghaidan, U. *Lamu. A study in conservation*. Nairobi: East African Literature Bureau, 1976, 169p.

Giri, J. *Histoire économique du Sahel* (*des empires à la colonisation*). Paris: Karthala, 1994, 259 p.

Goeje, M.J. de, *Mémoire sur les Carmathes du Bahraïn et les Fatimides*, Leiden: Brill, 1886.

Godlewski, W. & Medeksza, S. "The so-called mosque building in Old Dongola (Sudan)". *Archéologie du Nil Moyen 2*. Association pour la Promotion de l'Archéologie Nilotique (1987): 185–205.

Goitein, S.D. *Mediterranean society. The Jewish communities of the Arab world as portrayed in the documents of the Cairo Geniza, Volume IV: Daily life*. Berkeley: University of California Press, 1983.

Golvin, L. *La mosquée*. Alger: Bibliothèque de l'Institut d'Etudes Supérieures Islamiques d'Alger XV, 1960, 150 p.

Golvin, L. *Essai sur l'architecture religieuse musulmane*. Paris: Klincksieck-CNRS., 1970, 4 vols.

Gottheil, R.J.H. "The origin and history of the minaret". *Journal of the American Oriental Society 30–2* (1910): 132–154.

Gou, A.M. *Monuments de la civilisation islamique aux Comores*. Rabat: Isesco, 2000, 79p.

Gray, J. "The Wadebuli and the Wadiba". *Tanganyika Notes and Records 36*. Dar es Salaam: Government Printer (1954): 22–42.

Gray, J. *History of Zanzibar from the middle age to 1856*. London: Oxford University Press, 1962, 314p.

Greenlaw, J.P. *The coral building of Suakin*. Stocksfield: Oriel Press, 1976, 132p.

Gruber, Christiane, "The Missiri of Fréjus as Healing Memorial: Mosque Metaphors and the French Colonial Army (1928–64)". *International Journal of Islamic Architecture 1–1*. Intellect (2012): 25–60.

Gruner, D. "Der traditionelle Moscheebau am mittleren Niger". *Païdeuma 23*. (1977): 101–140.

Gruner, D. "Der traditionelle Lehmbau und seine Problematik, Entwicklungstendenzen am mittleren Niger (Mali)". *Païdeuma 27*. (1981): 45–62.

Gruner, D."Islamische Tradition oder autochtones Erbe ? Anmerkungen zum Moscheeturm in Westafrika". *Païdeuma 35*. (1989): 93–113.

Gruner, D. *Die Lehm-Moschee am Niger ; Dokumentation eines traditionellen Bautyps* (Studien zur Kulturkunde 95). Stuttgart: Steiner, 1990, 457p.

Gruner D. "*Banco. Mosquées en terre du delta intérieur du fleuve Niger*". Schutyser, S. ed. Milan: 5 continents (2003): 19–27.

Guillain, M. *Documents sur l'histoire, la géographie et le commerce de l'Afrique Orientale*. Paris: Arthus Bertrand, 1856, 3 vols.: 628 p., 556 p. et 527 p.

Gungwu, W. "Les Chinois et les pays situés de l'autre côté de l'océan Indien". *Histoire générale de l'Afrique, Etudes et documents* 3. Paris: UNESCO (1980): 69–75.

Hagi Scikei, N. *Exploring the Old Stone Town of Mogadishu*. Cambridge Scholars Publishing, 2017, 125 p.

Hakim, A.M. & alii. « Preliminary Report of the Multi-Disciplinary Missions of the Joint Sudanese-French Expedition to the Red Sea Region ». *Sudan Notes and Records 60*. Khartoum: Department of Antiquities of Sudan (1981): 36–41.

Hardy-Guilbert, C. & Rougeulle, A. "Ports islamiques du Yémen. Prospections archéologiques sur les côtes yéménites (1993–1995)". *Archéologie islamique 7*. Paris: Maisonneuve-Larose (1997): 147–196.

Hardy-Guilbert, C. & Ducatez, G. "Al-Sihr, porte du Hadramawt sur l'océan Indien". *Annales Islamogiques 38*. Cairo: IFAO (2004): 95–157.

Harries, L. *Islam in East Africa*. London: UMCA, 1954, 96p.

Harrison, C. *France and Islam in West Africa 1860–1960*. Cambridge University Press, 1988, 242 p.

Hasan, P. "Sultanate mosques and continuity in Bengal architecture". *Muqarnas 6*. Leiden: Brill (1989): 58–74.

Hasan, P. *Sultans and mosques: the early Muslim architecture of Bangladesh*, New York: Tauris, 2007, 241 p.

Haselberger, H. "Zur traditionellen Architektur der westafrikanischen Niger: der Bauvergang in den westlichen Guinealändern und im Westsudan". *Zeitschrift für Ethnologie 88–2*. (1963): 180–215.

Haselberger, H. *Bautraditionen der westafrikanischen Negerkulturen*. Wissenschaftliche Schriftenreihe des Afro-Asiatischen Institutes. Wien: Herder Verlag, 1964, 176 p.

Haselberger, H. „Bemerkungen zum Kunsthandwerk im Podo (Republik Mali)". *Baessler Archiv, Neue Folge 13* (1965): 433–439.

Haselberger, H. „Stammeskunst und Kunsthandwerk zwischen Kayes und Sofara". *Zeitschrift für Ethnologie 99*. (1974): 131–192.

Hebbert, H.E. "El-Rih, a Red Sea Island". *Sudan Notes and Records 18*. Karthoum (1935): 308–313.

Hespeler-Boultbee J. *A Story in Stones. Portugal's Influence on Culture and Architecture in the Highlands of Ethiopia 1493–1634*. CCB Publishing, 2006, 200 p.

Hillenbrand, R. *Islamic Architecture. Form, Function, and Meaning*. Columbia University Press, 1994, 645p.

Hirji, Z. "The Siyu Qur'ans: three illuminated Qur'an Manuscripts from Coastal East Africa". *Approaches to the Qur'an in sub-Saharan Africa*. Hirji, Z. ed. Oxford University Press (2019): 431–471.

Hiskett, M. *The course of Islam in Africa*. Edinburgh University Press, 1994, 218p.

Hobley, C.W. "An Arab Minaret on Mombasa". *MAN XXXII*. (1932): 79.

Hodgkin, E. "Islamism and Islamic Research in Africa". *Revue de la Maison des Sciences de l'Homme 4*. Paris (1990): 73–130.

Horton, M. "Early muslim trading settlements on the East African coast: new evidence from Shanga". *The Antiquaries Journal LXVII*. Oxford University Press (1987): 290–323.

Horton, M. "La Route Swahili". *Pour la Science* (*Scientific American*). Paris (1987): 82–89.

Horton, M. "Facing Mecca at Shanga: some problems in the origins of Islam in Eastern Africa". *Bulletin of the School of Oriental and African Studies*. University of London (1989): 1–19.

Horton, M. "Primitive Islam and architecture in East Africa". *Muqarnas 8*. Leiden: Brill (1991): 103–116.

Horton, M. "Archaeology and the Early History of Zanzibar". *International Conference on the History and Culture of Zanzibar*, 1992, 12p.

Horton, M. & Mudida, B. "Exploitation of marine resource: evidence for the origin of the Swahili communities of East Africa". *The Archaeology of Africa*. London: Routledge (1993): 673–693.

Horton, M. « East Africa ». *The Mosque. History, Architectural development and regional Diversity*. Frishman, M. & Uddin Khan, H. eds. London: Thames & Hudson (1994): 194–207.

Horton, M. *Shanga. The archaeology of a Muslim trading community on the coast of East Africa*. London: BIEA, 1996, 458p.

Horton, M. & Middleton, J. *The Swahili*. Oxford: Blackwell, 2000, 282 p.

Horton, M. "Islam, archaeology and Swahili identity". *Changing social identity with the spread of Islam. Archaeological perspectives*. Whitcomb, D. ed. Chicago: Oriental institute (2004): 67–88.

Horton, M. "Early Islam on the East African Coast". *A companion to Islamic Art and Architecture 1*. Flood, F.B. & Necipoglu, G. eds. Wiley Blackwell (2017): 250–274.

Horton, M. Fleisher, J. & Wynne-Jones, S. "The mosques of Songo Mnara in their urban landscape". *Journal of Islamic archaeology 4–2*. Sheffield: Equinox (2017): 163–188.

Horton, M. "Islamic architecture of the Swahili coast". *The Swahili World*. Wynne-Jones, S. & LaViolette, A. eds. New York: Routledge (2018): 487–499.

Hourani, G. *Arab Seafaring in the Indian Ocean in ancient and early medieval times*. New Jersey: Princetown University Press, 1951, 131p.

Hrbek, I. « L'Afrique dans le contexte de l'histoire mondiale ». *Histoire Générale de l'Afrique Noire 3*. Paris: Unesco (1990): 21–51.

Huchery, M. *L'art de la construction chez les Songhoys* (*manuscrit*). *Afrique Occidentale Française*. Haut Sénégal, Niger, Tombouctou III, 1908, 58 p.

Hudec, J., Cheben, M. and Kovar, B. "Report on surveys in Duweym Wad Haj". *Asian and African Studies 28–2* (2019): 168–179; 418–428.

Huntingford, G.W.B. "The town of Amud, Somalia". *Azania* 13. Nairobi: British Institute in Eastern Africa (1978): 181–186.

Ingrams, W.H. *Zanzibar, its history and its people*. London: Frank Cass, 1931 (reed. 1967), 527 p.

Insoll, T. *Islam, Archaeology and History in Gao Region* (*Mali*) *ca AD 900–1250*. BAR S647, Oxford, 1996, 143p.

Insoll, T. "The Archaeology of Islam in sub-saharan Africa: a review". *Journal of World Prehistory 10–4* (1996): 439–504.

Insoll, T. "Mosque architecture in Buganda, Uganda". *Muqarnas 14*. Leiden: Brill (1997): 179–188.

Insoll, T. "The origins of Timbuktu". *Antiquity 74–285*. CUP Cambridge (2000): 483–484.

Insoll, T. *The Archaeology of Islam in sub-Saharan Africa*. Cambridge University Press, 2003, 470 p.

Insoll, T. MacLean, R. & Engda, B. "Archaeological Survey and Test Excavations, Harlaa, Dire Dawa, and Sofi, Harari Regional State, Ethiopia, August 2015. A Preliminary Fieldwork Report". *Nyame Akuma 85*. SAFA (2016): 23–32.

Insoll, T. « Mieux comprendre l'architecture religieuse musulmane en Afrique subsaharienne grâce à l'archéologie ». *Trésors de l'Islam en Afrique. De Tombouctou à Zanzibar*. Paris: IMA-Silvana (2017): 82–87.

Insoll, T. & Zekaria, A. "The Mosques of Harar: An Archaeological and Historical Study". *Journal of Islamic Archaeology 6–1*. Sheffield: Equinox (2019): 81–107.

Iroko, F. *Gao des origines à 1951*. University of Paris 1: PhD, 1974, 385 p.

Jacques-Meunié, D. *Cités anciennes de Mauritanie*. Paris: Klincksieck, 1961, 195 p.

Jama, A.D. *The Origins and Development of Mogadishu AD 1000 to 1850*. Uppsala: Studies in African Archaeology, 1996, 139p.

Jégouzo, A., Romon, T., Pauly, M., Daussy, A. & Dalle, S. « La mosquée de Tsingoni (Mayotte) Premières investigations archéologiques ». *Les nouvelles de l'archéologie* 150 « la possibilité des îles » (2018): 65–70.

Jodidio, P. *The Aga Khan Historic Cities Programme. Strategies for urban Regenerations*. Prestel, 2011, 240 p.

Juma, A. "The Swahili and the Mediterranean worlds: pottery of the late Roman period from Zanzibar". *Antiquity 70–267*. London (1996): 148–154.

Juma, A. *Unguja Ukuu on Zanzibar. An archaeological study of early urbanism*. Uppsala University, 2004, 198 p.

Kamian, B. « Une ville de la République du Soudan : San ». *Les cahiers d'Outre-Mer 47*. (1959): 225–250.

Kanaan, R. "The carved stucco mihrab of Oman, forms, styles and influences". *Islamic Art of Oman*, Al-Salimi, A. Gaube, H. Korn, L. eds., Muscat, 2008.

Kawatoko, M. « Preliminary Survey of 'Aydhab and Badi' sites ». *Kush 16*. Khartoum: Department of Antiquities of Sudan (1993): 203–225.

Kebedde, G. « A Survey on Argobba Sites in Northern Shoa ». *Annales d'Éthiopie XVI*. Addis Abeba (2000): 185–194.

Kervran, M. & Kalus, L. « La mosquée al-Khamis à Bahrain : son histoire et ses inscriptions ». *Archéologie Islamique 1*. Paris: Maisonneuve-Larose (1990): 7–73.

Kervran, M. "Forteresses, entrepôts et commerce : une histoire à suivre depuis les rois sassanides jusqu'aux princes d'Ormuz". *Res Orientales 6*. Louvain (1994): 325–351.

Kervran, M. "Mihrabs omanais du 16e siècle : un curieux exemple de conservatisme de l'art du stuc iranien des époques seljouqide et mongole ». *Archéologie islamique 6*. Paris: Maisonneuve-Larose (1996): 109–156.

Keswani, D.G. « Influences culturelles et commerciales indiennes dans l'océan Indien, de l'Afrique et Madagascar à l'Asie du sud-est ». *Relations historiques à travers l'océan Indien*. Paris: Unesco (1980): 37–50.

Khan, A. « Introduction et propagation du mihrâb dans l'architecture islamique du Pakistan ». *Le mihrâb dans l'architecture et la religion musulmanes*. Leiden: Brill (1988):157–166.

Khan, F. "Excavations at Banbhore". *Pakistan Archaeology 28*. Karachi (1993): 49–55.

King, G. "Notes on Some Mosques in Eastern and Western Saudi Arabia". *Bulletin of the School of Oriental and African Studies 43–2*, University of London (1980): 251–276.

King, G. *The Historical Mosques of Saudi Arabia*. London: Longman, 1986, 208p.

Kirkman, J. "The Excavations at Kilepwa". *The Antiquaries Journal XXXII*. Oxford University Press (1952): 168–184.

Kirkman, J. *The Arab City of Gedi* (*excavations at the great mosque and finds*). Oxford University Press, 1954, 197p.

Kirkman, J. "Historical Archaeology in Kenya (1948–1956)". *The Antiquaries Journal XXXVII-1*. Oxford University Press (1957 a): 28p.

Kirkman, J. "Kinuni, an arab manor on the coast of Kenya". *Journal of the Royal Asiatic Society*. London (1957 b):145–150.

Kirkman, J. "Takwa, the Mosque of the pillar". *Ars Orientalis 2*. University of Michigan, Washington: Smithsonian Institution (1957 c): 175–182.

Kirkman, J. "Excavations at Ras Mkumbuu on the Island of Pemba". *Tanganyika Notes and Records 53*. Dar es-Salaam: Government Printer (1959 a): 161–178.

Kirkman, J. "Mnarani of Kilifi: the mosques and tombs". *Ars Orientalis 3*. University of Michigan, Washington: Smithsonian Institution (1959 b): 95–112.

Kirkman, J. *Men and monuments on the East African coast*. London: Lutterworth Press, 1964, 224p.

Kirkman, J. *Ungwana on the Tana*. La Hague: Mouton, 1966, 129p.

Kirkman, J. "The friday mosque at Kilindini, Mombasa". *Azania 17*. Nairobi: British Institute in Eastern Africa (1982): 99–105.

Kirkman, J. "The Early History of Oman in East Africa". *Journal of Oman Studies* 6–1. Muscat (1983): 41–58.

Knipe, P. *The Kongo Mosque*. unpublished, 1985, 26p.

Kusimba, C. *The Archaeology and Ethnography of Iron Metallurgy on the Kenya coast*. Ph.D. University Michigan, 1993, 343 p.

La Lomia, M.-R. *Antiche Moschee di Mogadiscio*. Instituto per la Diffusione della Cultura Araba, Siciliana e Mediterranea, Palermo: Mazzone, 1982, 93p.

Lambourn, E. "The decoration of the Fakhr al-Din mosque in Mogadishu and other pieces of Gujerati marble carving on the East African coast". *Azania 34*. Nairobi: BIEA (1999): 61–86.

Lambourn, E. "Islam beyond Empires: Mosques and Islamic landscapes in India and the Indian Ocean". *A companion to Islamic Art and Architecture 2*. Flood, F.B. & Necipoglu, G. eds. Wiley Blackwell (2017): 755–776.

Lambourn, E. "Carving and communities. Marble Carving for Muslim Patrons at Khambhat and around the Indian Ocean Rim, Late Thirteenth–Mid-Fifteenth Centuries". *Ars orientalis 34* (2004): 99–133.

Lauber, W. *L'Architecture dogon*. Paris: Adam Biro, 1998, 176p.

La Violette, A. *An archaeological ethnography of blacksmiths, potters and masons in Jenne, Mali*. Ph. D. Dissertation, Saint Louis: Washington University, 1987.

Laviolette, A. & Fleisher, J. "The Urban History of a Rural Place: Swahili Archaeology on Pemba Island, Tanzania, 700–1500 AD". *International Journal of African Historical Studies 42–3* (2009): 433–455.

Le Cour Grandmaison, C. "L'héritage arabe, XVIII^{e} et XIX^{e} siècle". *Zanzibar aujourd'hui*. Le Cour Grandmaison C. & Crozon A. eds. Paris: Karthala-IFRA (1998): 35–71.

Le Cour Grandmaison, C. "Présentation du Sultanat d'Oman". *La Péninsule Arabique d'aujoud'hui vol. 2*. Bonnenfant P. ed. Paris: CNRS (1982): 263–288.

Le Guennec-Coppens, F. & Caplan, P. *Les Swahili entre Afrique et Arabie*. Paris: CREDU-Karthala, 1991, 215p.

Le Guennec-Coppens, F. & Parkin, D. *Autorité et pouvoir chez les Swahili*. Paris: Karthala-IFRA, 1998, 262 p.

Le Guennec-Coppens, F. « Les Swahili: une singularité anthropologique en Afrique de l'Est ». *Journal des Africanistes 72–2*. Paris: Societé des Africanistes (2002): 55–70.

Leary, A. *The Development of Islamic Architecture in the Western Sudan*. University of B'ham: Master dissertation, 1966, 54p.

Lebeuf, J.-P. & Immo Kirsch, J.-H. *Ouara, ville perdue* (*Tchad*). Paris: ADPF, 1989, 100p.

Lebeuf, J.-P. & Rodinson, M. « Les mosquées de Fort-Lamy ». *Bulletin de l'Institut Français d'Afrique Noire 14–3*. Dakar (1952): 970–974.

Lege, B. *Djenné : présentation critique de la thèse de L. Prussin. Propositions méthodologiques*. Paris: D.E.A., 1978, 29 p.

Lepage, C.& Mercier, J. *Lalibela: Wonder of Ethiopia: The Monolithic Churches and Their Treasures*. London: Paul Holberton, 2012, 320 p.

Levtzion, N. *Muslim and chiefs in West Africa*. Clarendon Press, Oxford, 1968, 228p.

Levtzion, N. "Islam in the Bilad al-Sudan to 1800". *The History of Islam in Africa*. Levtzion, N.& Pouwels, R. (eds), Oxford: James currey (2000): 63–91.

Lewcock, R. "Architectural connections between Africa and parts of the Indian Ocean littoral". *Art and Archaeology Research Paper* 9. London (1976): 13–23.

Lewcock, R. *Traditional Architecture in Kuwait and the Northern Gulf*. London: Art and Archaeology Research Papers, 1978, 172 p.

Lewcock, R. "East Africa". *Architecture of Islamic World*. London: Thames and Hudson (1978): 278–279.

Lewcock, R. and Smith, R. "Three medieval mosques in the Yemen: architecture, art, and sources". *Chroniques du manuscrit au Yémen 2*, Regourd, A. ed. (2018): 28–76.

L'Histoire du Sahara et des relations transsahariennes entre le Maghreb et l'ouest africain du Moyen-Age à la fin de l'époque coloniale. Actes du IVe colloque eurafricain, Bergame: Gruppo – Walk Over, 1986, 247 p.

Lidwien, K. 2000. "Ethiopia and the Horn of Africa" in The History of Islam in Africa, Ed. Levtzion et Pouwels, London: James Currey: 227–250.

Lienhardt, P. & Phil, D. "The mosque college of Lamu and its social background". *Tanganyika Notes and Records 53*. Dar es Salaam: Government Printer (1959): 228–242.

Liesegang, G. "Archaeological sites on the Bay of Sofala". *Azania 7*. Nairobi: British Institute in Eastern Africa (1972): 147–159.

Liszkowski, H. *Mayotte et les Comores. Escales sur la route des Indes aux XVe et XVIIIe siècles*. Mamoudzou: Editions du Baobab, 2000, 415 p.

Lovejoy, P. « Les empires djihadistes de l'Ouest africain aux XVIIIe–XIXe siècles » in Cahiers d'histoire. Revue d'histoire critique 128, [En ligne], 2015, 13p.

Loiseau, J., Dorso, S., Gleize, Y., Ollivier, D., Ayenachew, D., Berhe, H., Chekroun, A. & Hirsch, B. "Bilet and the wider world: new insights into the archaeology of Islam in Tigray". *Antiquity 95–380* (2021): 508–529.

Lowick, N. "The Coins and Monumental Inscriptions". *Siraf 15*. The British Institute of Persian Studies (1985): 84–85.

Ly Tall, M. *L'empire du Mali : contributions à l'histoire de l'empire du Mali* (*XIIIe–XVIe siècle*). Dakar: Nouvelles Editions Africaines, 1977, 220 p.

Maas, P. & Mommersteeg, G. "De moskee van Djenné, morfologie en onderhoud van een Afikaans monument". *Bulletin K.N.O.B.* 88–6 (1989): 24–30.

Maas, P. "Djenné: living tradition". *Aramco World 41–6* (1990): 18–29.

Maas, P. & Mommersteeg, G. *Djenné, chef-d'œuvre architectural*. Amsterdam: Institut Royal des Tropiques, 1992.

Maas, P. & Mommersteeg, G. « L'architecture dite soudanaise : le modèle de Djenné ». *Vallées du Niger*. Paris: Editions Réunion des Musées Nationaux (1993): 478–492.

Maas, P. & Mommersteeg, G. « une architecture fascinante ». *Djenné, une ville millénaire du Mali*. Bedaux, R. & van der Vaals, J.D. eds., Leiden: Rijksmuseums voor Volkenkunde (1994): 79–94.

Mallinson, M. "Mosque/Churches of the Sudan". *Azania 39–1* (2004): 225–241.

Marçais, G. *L'Architecture Musulmane d'Occident*. Paris: Arts et Métiers graphiques, 1954, 541p.

Marchand, T. *The Masons of Djenné*. Bloomington Indiana: Indiana University Press, 2009, 376 p.

Margariti, R. *Like the place of congregation on judgment day: Maritime trade and urban organization in medieval Aden* (*ca. 1083–1229*). Phd. Princeton University, 2002, 372p.

Martin, E.B. *Malindi, A Geographical Analysis of an East African Coastal Town from the Portuguese Period to the Present*. Nairobi: East African Literature Bureau, 1973, 301 p.

Marty, P. *Etudes sur l'Islam et les tribus du Soudan, II. La région de Tombouctou* (*Islam songai*), *Djenné, Le Massina et dépendances* (*Islam peul*). Paris: Leroux, 1920, 335 p.

Masao, F. & Mutoro, H. « La côte d'Afrique orientale et les Comores ». *Histoire Générale de l'Afrique 3*. Paris: Unesco (1990): 625–656.

Mathew, G. "Recent discoveries in East African Archaeology". *Antiquity XXVII*. Gloucester: Bellows (1953): 212–218.

Mathew, G. "Songo Mnara". *Tanganyika Notes and Records 53*. Dar es-Salaam: Government Printer (1959): 155–160.

Mathew, G. "The East African coast until the coming of the Portuguese". *History of East Africa 1*. Oliver R. & Mathew G. eds., Oxford: Clarendon Press (1963): 94–127.

Matveiev, V. "L'essor de la civilisation swahili". *Histoire Générale de l'Afrique 4*. Paris: Unesco (1985): 495–522.

Mauny, R. "La tour et la mosquée de l'Askia Mohammed à Gao". *Notes Africaines 47*. Paris (1950): 66–67.

Mauny, R. "Notes d'archéologie au sujet de Gao". *Bulletin de l'Institut Français d'Afrique Noire 13*. Dakar (1951): 837–852.

Mauny, R. "Notes d'archéologie sur Tombouctou". *Bulletin de l'Institut Français d'Afrique Noire 14*. Dakar (1952): 899–918.

Mauny, R. "Notes d'histoire et d'archéologie sur Azougui, Chinguetti et Ouadan". *Bulletin de l'Institut Français d'Afrique Noire 17*. Dakar (1955): 142–62.

Mauny, R. *Tableau géographique de l'Ouest africain au Moyen-Age* (*d'aprés les sources écrites, la tradition, l'archéologie*). Dakar: Mémoires de l'Institut Français d'Afrique Noire 61, 1961, 587p.

Mauny, R. "Le périple de la mer Erythrée et le problème du commerce romain en Afrique au sud du Limes". *Journal de la Société des Africanistes 38*. Paris (1968): 38–41.

Mauny, R. *Les siècles obscurs de l'Afrique noire* (*histoire et archéologie*). Paris: Fayard, 1970, 314p.

McCall, D. "Islamization of the Western and Central Sudan in the eleventh century". *Aspects of West African Islam 5*. McCall, D. & Bennett, N. eds, Boston University: African Studies Center (1971): 1–30.

McGregor, A. "Palaces in the Mountains: An Introduction to the Archaeological Heritage of the Sultanate of Darfur". *Sudan & Nubia 15* (2011): 129–141.

Meeks, D. "Locating Punt, in: Encounters with Ancient Egypt". *Mysterious Lands 7*. O'Connor, D. & Quirke, S. eds., London (2003): 53–80.

Meier, P. "Chinese Porcelain and Muslim Port Cities: Mercantile Materiality in Coastal East Africa" *Art History 38–4*. Journal of the Association of Art Historians (2015): 702–717.

Meier, P. *Swahili port cities. The architecture of elsewhere*. Indianapolis: Indiana university press, 2016, 230 p.

Meinecke-Berg, V. « L'art du califat schismatique : les Fatimides ». *Le Grand Atlas de l'Art*. Paris: Encyclopaedia Universalis (1993): 212–213.

Mercier, J. & Lepage, C. *Lalibela : Capitale de l'art monolithe d'Ethiopie*. Paris: Picard, 2013, 344 p.

Mercier, M. *La civilisation urbaine au Mzab*. Paris: Geuthner, 1922, 269 p.

Mercier, M. « Notes sur une architecture berbère saharienne ». *Hespéris 8–3*. Paris (1928): 413–429.

Merklinger, E.S. *Indian Islamic Architecture: the Deccan 1347–1686*. Warminster: Aris and Phillips, 1981, 146p.

Michell, G. *Architecture of the Islamic world*. London: Thames & Hudson, 1978.

Michell, G. ed. *The Islamic heritage of Bengal*. Protection of the Cultural Heritage 1, Paris: Unesco, 1984, 239p.

Michell, G. et Philon, H. *Islamic Architecture of Deccan India*. Woodbridge: ACC Art Books, 2018, 416 p.

Middleton, J. "The Towns of the Swahili Coast of East Africa, The diversity of the Muslim Community". *Anthropological Essays in Memory of P. Lienhardt*, al-Shahi A. ed. London: Ithaca Press (1987): 99–114.

Miège, J.-L. « L'Oman et l'Afrique orientale au XIXe siècle ».*La Péninsule Arabique d'aujoud'hui vol. 2*. Bonnenfant P. ed. Paris: Centre National de la Recherche Scientifique (1982): 293–318.

Miquel, A. *La géographie humaine du monde musulman*. vol. 1, Paris, 1967: 32.

Moffa, C. *L'Afrique à la périphérie de l'histoire*. Paris: L'Harmattan, 1995, 383 p.

Moncelon, J. "La Da'wa fatimide au Yémen". *Chroniques Yéménites 3*. Sanaa: CEFAS (1995): 26–37.

Monneret de Villard, U. « I minareti di Mogadiscio ». *Rassegna di studi ethiopici 3–2*. Rome (1943): 121–130.

Monod, Th. « Teghaza, la ville en sel gemme (Sahara Occidental) ». *La Nature 3025*. Paris: Masson (1938): 289–296.

Monod, Th. « Nouvelles remarques sur Teghaza ». *Bulletin de l'Institut Français d'Afrique Noire 2*. Dakar (1940): 248–250.

Monteil, Ch. *Monographie de Djenné, cercle et ville*. Tulle: Mazeyrie, 1903, 360 p.

Monteil, Ch. *Une côté soudanaise : Djenné, métropole du Delta central du Niger*. Paris: Anthropos, 1932 (rep. 1971), 301 p.

Monteil, V. *L'Islam Noir : une religion à la conquête de l'Afrique*. Paris: Le Seuil, 1964 (rep. 1971), 368 p.

Monteiro, A. « Vestiges archéologiques du Cap Delgado et de Quisiva (Mozambique) ». *Taloha 3*. Revue du Musée d'art et d'archéologie, Tananarive: Université de Madagascar (1970): 155–164.

Moraes Farias, P.F. *Arabic Medieval Inscriptions from the Republic of Mali: Epigraphy, Chronicles, and Songhay-Tuareg History*. OUP, 2003, 280 p.

Moreau, J.L. *Africains musulmans*. Paris: Présence Africaine, 1982, 315 p.

Morris, J. & Preston Blier, S. *Butabu. Adobe architecture of West Africa*. New York: Princeton Architectural Press, 2003, 216 p.

Moughtin, J.C. "The friday mosque, Zaria city". *Savannah* 1–2 (1972): 143–163.

Moughtin, J.C. *Hausa architecture*. London: Ethnographica, 1985, 175 p.

Muehlbauer, M. "From stone to dust: The life of the Kufic-inscribed frieze of Wuqro Cherqos in Tigray, Ethiopia", *Muqarnas 38* (2021): 1–34.

Munro-Hay, S. *Ethiopia, The Unknown Land. A Cultural and Historical Guide*. London: Tauris, 2002, 432 p.

Nath, R. *Historiographical study of Indo-Muslim Architecture* (*Medieval architecture of India and Pakistan*). Jaipur: The Historical Research Documentation Program, 1991, 68p.

Newitt, M. *East Africa. Portuguese Encounters with the World in the Age of the discoveries*. Vermont: Ashgate, 2002.

Niane, D. *Le Soudan occidental au temps des grands empires XI–XVI^e siècle*. Paris: Présence Africaine, 1975, 271 p.

Niane, D. « Le Mali et la deuxième expansion manden ». *Histoire générale de l'Afrique 3*. Paris: Unesco (1984): 141–96.

Niane, D. « Les relations entre les différentes régions : échanges entre les régions ». *Histoire Générale de l'Afrique 4*. Paris: Unesco (1985): 669–691.

Nivelle, N. *Code pour l'analyse des monuments religieux*. Paris: Cnrs, 1975, 2 vols., 91p. & 111p.

Nixon, S. *Essouk – Tadmekka. An Early Islamic Trans-Saharan Market Town*. Leiden: Brill, 2017, 422 p.

Nixon, S. "The Sahara". *The Oxford handbook of Islamic archaeology* (2020): 287–309. Muslim groups 9th c. pp. 303–305.

Obłuski, A., Godlewski, W., Kołątaj, W., Medeksza, S. & Calaforra-Rzepka, C. "The Mosque Building in Old Dongola. Conservation and revitalization project". *Polish Archaeology in the Mediterranean 22*, Warsaw: Polish Centre of Mediterranean Archaeology (2013): 248–272.

O'Kane, B. *The mosques of Egypt*. American University in Cairo Press, 2016, 359 p.

Oliver, R. & Mathew, G. *History of East Africa*. Oxford University Press, 1963, 500p.

Olympio, G. & al. *Larabanga*. Grenoble: CRATerre, 2004, 36 p.

Ottino, P. ed. *Etudes sur l'Océan Indien*. Collection des Travaux de l'Université de la Réunion, 1984, 300p.

Pancaroglu, O. "The Mosque-Hospital Complex in Divriği: A History of Relations and Transitions". *Anadolu ve Çevresinde, Ortaçag 3*. Ankara (2009): 169–198.

Papadopoulo, A. ed. *Le Mihrab dans l'architecture et la religion musulmanes*. Actes du Colloque International de 1980, Paris: Brill, 1988, 180p.

Paribeni, R. « Ricerche nel luogo dell'antica Adulis (colonia Eritrea) ». *Monumenti Antichi XVIII*. Rome: Reale Accademia dei Lincei (1907): 437–571.

Park, M. *Voyage dans l'intérieur de l'Afrique*. Paris: Maspéro, 1799 (rep. 1982), 347 p.

Pauly, M. « La diffusion de l'Islam à Mayotte à l'époque médiévale ». *Taarifa, Revue des archives départementales de Mayotte 4*, Mamoudzou (2014): 63–89.

Pearson, M. *Merchants and Rulers in Gujarat. The response to the Portuguese in the sixteenth Century*. Berkeley: University of California Press, 1976, 178 p.

Pedersen, J., Kern, R. and Diez, E. "Masdjid". Encyclopaedia of Islam, Leiden: Brill (1930) <http://dx.doi.org/10.1163/2214-871X_ei1_COM_0155>.

Pereira, J. *Islamic sacred architecture* (*A stylistic history*). New Delhi: Books and Books, 1994, 379 p.

Philon, H. "The Solah Khamba Mosque at Bidar as a ceremonial hall of the Bahmanis". *Sultans of the South: arts of India's Deccan Courts, 1323–1687*. Haidar, N. & Sardar, M. eds., New York: Metropolitan Museum of Art (2011): 188–203.

Planhol de, X. *L'Islam et la mer, La mosquée et le matelot VIIe–XXe siècle*. Paris.

Poirier, C. « A propos de quelques ruines arabes et persanes ». *B.A.M. XXV*. Tananarive (1942–43): 137–139.

Poirier, C. « Réflexions sur les ruines de Mahilaka ». *B.A.M. XXVIII*. Tananarive (1947/48): 97–101.

Poirier, C. « Terre d'Islam en mer Malgache ». *B.A.M. XXXI*. Tananarive (1954): 71–116.

Poissonnier, B. « Fäqi Däbbis. Rapport préliminaire de la mission de mars 2000 ». *Encyclopaedia Aethiopica 2*. Uhlig, S. ed. Wiesbaden (2005): 491.

Poissonnier, B., Ayenachew, D., Bernard, R., Hirsch, B., « Les mosquées médiévales de Goze et Fäqi Däbbis ». *Espaces musulmans de la Corne de l'Afrique au Moyen Âge.* Fauvelle-Aymar, F.-X. & Hirsch, B. eds. Paris: Centre Français des Études Éthiopiennes- de Boccard (2011): 103–139.

Poissonnier, P. "The great mosque of Timbuktu: seven centurie of earthen architecture". *Earthen Architecture in Muslim Cultures: Historical and Anthropological Perspectives*. Pradines, S. ed. Leiden: Brill (2018): 22–36.

Portch, J.H. "Minarets in Nigeria". *Nigerian Field 45–1*. Lagos (1980): 7.

Pouwels, R. "Tenth Century Settlement of the East African Coast: The Case for Qarmatian/Isma'ili Connections". *Azania IX*. Nairobi: British Institute in Eastern Africa (1974): 65–74.

Pouwels, R. « The Medieval Foundations of East African Islam ». *International Journal of African Historical Studies 2–3* (1978): 201–226 & 393–409.

Pouwels, R. "Oral Historiography and the Problem of the Shirâzi in East African Coastal History". *History in Africa 11* (1984): 236–66.

Pouwels, R. *Horn and crescent: cultural change and traditional Islam on the East African coast, 800–1900*. Cambridge University Press, 1987, 273 p.

Pouwels, R. « The East African Coast, c. 780 to 1900 c.e. ». *The History of Islam in Africa*. Levtzion N. & Pouwels R. eds., Oxford: James Currey (2000): 251–271.

Pradines, S. "Enceintes urbaines swahili et forts omanais". *Les Cahiers de l'IFRA 11*. Nairobi: Institut Français de recherche en Afrique (1998): 4–23.

Pradines, S. « L'archéologie swahili et la collection Révoil au Musée de l'Homme (Paris) ». *Mvita 8*. Nairobi: Regional Centre for Archaeology National Museums of Kenya (1999 a): 20–28.

Pradines, S. « L'influence indienne dans l'architecture swahili ». *Swahili Forum VI*. AAP 60, Köln: Institut für Afrikanistik (1999 b): 103–120.

Pradines, S. « Rituels funéraires swahili : les sépultures islamiques du site de Gedi (Kenya) ». *Les Recherches sur le Monde Arabe en France, 1er Colloque des Jeunes Arabisants*. Toulouse: CEMAA-AMAM (2000): 167–193.

Pradines, S. "Une mosquée du XII^e siècle à Gede (Kenya, Mission de Juillet-Août 2001)". *Nyame Akuma 56*. University of Alberta: Bulletin of the Society of Africanist Archaeologist (2001): 23–28.

Pradines, S. "La bipartition des cités swahili : l'exemple de Gedi (Kenya)". *Southern Africa and the Swahili World, Studies in the African Past 2*. University of Dar es Salaam (2002): 66–75.

Pradines, S. « Le mihrab swahili : Evolution d'une architecture islamique en Afrique subsaharienne ». *Annales Islamologiques 37*. Cairo: IFAO (2003): 355–381.

Pradines, S. *Fortifications et urbanisation en Afrique orientale*. Cambridge Monographs in African Archaeology 58, BAR S1216, Oxford: Archaeopress, 2004, 374 p.

Pradines, S. & Blanchard, P. « Kilwa al-Mulûk. Premier bilan des travaux de conservation-restauration et des fouilles archéologiques dans la baie de Kilwa, Tanzanie ». *Annales Islamologiques 39*. Cairo: IFAO (2005): 25–80.

Pradines, S. "Sanjé ya Kati, Kilwa, Tanzanie, 2005–2006". *Nyame Akuma 66*. University of Alberta: Bulletin of the Society of Africanist Archaeologist (2006): 64–70.

Pradines, S. « L'île de Sanje ya Kati (Kilwa, Tanzanie). Un mythe Shirâzi bien réel ». *Azania: Archaeological Research in Africa 44–1*. London: Routledge (2009): 49–73.

Pradines, S. & Blanchard, P. *Sites islamiques et mosquées de Mayotte*. Unpublished survey report 19–26 September 2009. Mamoudzou: Association des Naturalistes de Mayotte, Mayotte, 2009, 7 p.

Pradines, S. *Gedi, une cité portuaire swahilie. Islam médiéval en Afrique orientale*. Monographies d'archéologie islamique, Cairo: IFAO, 2010, 302 p.

Pradines, S. « Commerce maritime et islamisation dans l'océan Indien : les premières mosquées swahilies (XI^e–XIII^e siècles) ». *La mer et le sacré dans le monde musulman, Revue des Mondes Musulmans et de la*

Méditerranée 130. Presses universitaires de Provence (2011): 131–149.

Pradines, S. « Les villes médiévales swahilies : une perspective est-africaine ». *Taarifa 4*. Mamoudzou: Publication des archives départementales de Mayotte (2014 a): 9–27.

Pradines, S. "Swahili Archaeology. Islamic Archaeology in Eastern Africa". *Encyclopaedia of Global Archaeology*. Smith, Claire Ed. New York: Springer (2014 b): 7162–7173.

Pradines, S. & Blanchard, P. "Songo Mnara. Etude architecturale d'une ville swahilie médiévale". *Taarifa 5*. Mamoudzou (2015): 9–33.

Pradines, S., Renel, H., Veyssier, D. & Zhao, B. "Irone Be (Dembeni, Mayotte) Rapport de mission 2015". *Nyame Akuma 85*, University of Alberta (2016): 44–56.

Pradines, S. "Burg al-Zafar, architecture de passage des Fatimides aux Ayyoubides". *Egypt and Syria in the Fatimid, Ayyubid and Mamluk Eras VIII*. Vermeulen U., D'hulster K., Van Steenbergen J. Eds, Leuven: Peeters (2016): 51–119.

Pradines, S. "The Medieval mosques of Nora. Islamic architecture in Ethiopia". *Journal of oriental and African studies 26*. Athens (2017 a): 33–79.

Pradines, S. "Swahili past in peril. New archaeology in East Africa". *Journal of oriental and African studies 26*. Athens (2017 b): 211–236.

Pradines, S. & Blanchard, P. « Songo Mnara. Etude architecturale d'une ville swahilie médiévale ». *Taarifa 5*. Mamoudzou: Archives départementales de Mayotte (2018): 9–33.

Pradines, S. "Du nouveau à l'ouest de l'océan Indien : le cristal de roche et l'ivoire swahilis". Sur les Chemins d'Onagre, Histoire et archéologie orientales, Hommage à Monik Kervran, Hardy-Gilbert, Renel, Rougeulle and Vallet Eds, Oxford: Archaeopress (2018): 153–167.

Pradines, S. & Khorasani, M. "Sufi in War: Persian influence on African weaponry in 19th century Mahdist Sudan". *The Journal of the Arms and Armour Society XXII-5*, London, (2018): 254–279.

Pradines, S. "Ethnicity and architecture. The Fatimid town walls in Cairo". *Earthen Architecture in Muslim Cultures: Historical and Anthropological Perspectives*, Leiden: Brill (2018): 104–145.

Pradines, S. "Maintien de la paix et protection du territoire : le réseau fortifié des Ottomans en Egypte". *Guerre et paix dans le Proche-Orient médiéval, x^e–xv^e siècles. Histoire, archéologie et anthropologie*, M. Eychenne, S. Pradines and A. Zouache eds. Cairo: IFAO-IFPO (2019 a): 251–287.

Pradines, S. "Islamic Archaeology in the Comoros: The Swahili and the Rock Crystal Trade with the Abbasid and Fatimid Caliphates". *Journal of Islamic Archaeology 6–1*. Springer (2019 b): 109–134.

Pradines, S. "Madagascar, the Source of the Abbasid and Fatimid Rock Crystals: New Evidence from Archaeological Investigations in East Africa". *Seeking Transparency: Rock Crystals across the Medieval Mediterranean*. Shalem, Avinoam & Hahn, Cynthia editors. Berlin: Gebr. Mann (2020): 35–50.

Pradines, S. and Balestra, F. "Excavations on the Coral Mosques of the Maldives". *Journal of Material Cultures in the Muslim World 2*. Leiden: Brill (2021): 200–226.

Pradines, S. "Archaeological Excavations of Bāb al-Ghurayb Cemetery: Plague Epidemics and the Ruin of Fourteenth-Century Cairo". *Mamluk Studies Review XXIV* (2021): 119–170.

Prévost, Virginie, Les mosquées « soudanaises » expression de l'Islam africain, in *Acta Orientalia Belgica 17, Lieux de culte en Orient*, Société Belge d'études orientales, Louvain la neuve, 2003, pp. 113–130.

Prévost, V. *Les mosquées ibadites du Djebel Nafûsa. Architecture, histoire et religions du nord-ouest de la Libye* (*VIIIe–XIIIe siècle*). London: Society for Libyan studies, 2016, 232 p.

Prins, A.H.J. *The Swahili-speaking peoples of Zanzibar and the East African coast* (*Arabs, Shirazi, and Swahili*). London: International African Institute, 1961, 143p.

Prussin, L. "The Architecture of Islam in West Africa". *African Arts 1–2*. Los Angeles: Coleman African Studies Center (1968): 32–35, 70–74.

Prussin, L. *Architecture in northern Ghana*. Berkeley, Los Angeles: University of California, 1969, 136 p.

Prussin, L. « Contribution à l'étude du cadre historique de la technologie de la construction dans l'Ouest africain ». *Journal de la Société des Africanistes 40–2*. Paris (1970 a): 175–178.

Prussin, L. « Sudanese architecture and the Manding ». *African Arts 3–4*. Los Angeles: Coleman African Studies Center (1970 b): 8–19 & 97–98.

Prussin, L. *The architecture of Djenné: African synthesis and transformation*. PhD. Thesis, Michigan: Yale University, 1973, 426 p.

Prussin, L. & Lee, D. "Architecture in Africa: an annotated bibliography". *Africana Library Journal 4–3* (1976): 2–32.

Prussin, L. "Building technologies in the west African savannah". *Le sol, la parole et l'écrit ; mélanges en hommage à Raymond Mauny*. Paris: Société Française d'Histoire d'Outre-Mer (1981).

Prussin, L. *Hatumere : Islamic design in West Africa*. Berkeley, Los Angeles: University of California, 1986, 306 p.

Prussin, L. "Sub-saharan West Africa". *The Mosque*. Eds. Frishman, M. & Khan, H. eds., London: Thames & Hudson (1994): 180–193.

Prussin, L. "Architectural Facets of Islam in the Futa-Djallon". *Islamic Art and Culture in Sub- Saharan Africa*. Adahl, K. ed. University of Uppsala (1995): 21–56.

Quinn, C. & F. *Pride, faith, and fear: Islam in Sub-Saharan Africa*. Oxford University Press, 2003, 175 p.

Ravereau, A. *Le M'Zab, une leçon d'architecture*. Paris: Sindbad, 1981.

Raymond, A. "Ville musulmane, ville arabe : Mythes orientalistes et recherches récentes". *La ville arabe, Alep, à l'époque ottomane : (XVI^e–XVIII^e siècles)*. Damas: Ifpo (1998): 23–50.

Relations historiques à travers l'Océan Indien. 1980 – *Etudes et documents 3*, Paris: UNESCO, 203p.

Révoil, G. *Voyage au cap des aromates*. Paris: Dentu, 1880, 299 p.

Révoil, G. *La vallée du Darror, Voyage au Pays çomalis (Afrique orientale)*. Paris: Chalamel Ainé, 1882, 388p.

Révoil, G. « Voyage chez les Bénadirs, les Somalis et les Bayouns, en 1882 et 1883 ». *Le Tour du Monde*. Paris (1885): 1–80 & 129–208.

Révoil, G. « Voyage chez les Bénadirs, les Somalis et les Bayouns ». *Le Tour du Monde 2*. Paris (1888): 385–416.

Ritchie J. and Sicard S. von, *An Azanian Trio. Three East African Arabic Historical Documents*. Brill, 2019, 350 p.

Roche, M. *Le M'Zab : architecture ibadite en Algérie*. Paris: Arthaud, 1970, 136 p.

Rolingher, L. "Constructing Islam and Swahili identity: Historiography and theory". *The MIT Electronic Journal of Middle East Studies 5. Frontier geography and boundless history, Islam and Arabs in East Africa*. Ghazal, A. ed. (2005): 9–20.

Rouch, J. « Contribution à l'histoire des Songhay ». *Mémoires de l'Institut Français d'Afrique Noire 29*. Dakar (1953): 137–245.

Rougeulle, A. « Le Yémen entre Orient et Afrique : Sharma, un entrepôt du commerce médiéval sur la côte sud de l'Arabie ». *Annales Islamologiques 38*. Cairo: IFAO (2004): 201–253.

Rougeulle, A. ed. *Sharma. Un entrepôt de commerce médiéval sur la côte du Hadramawt (Yémen, ca. 980–1180)*. Oxford: BAR, 2017, 559p.

Rumpler, M. *La coupole dans l'architecture byzantine et musulmane*. Strasbourg: Le Tilleul, 1956, 152p.

Salim, A. « Kenya ». *Encyclopédie de l'Islam 4*. Paris: Maisonneuve (1978): 918–924.

Salvadori, C. *Through open doors. A view of Asian Cultures in Kenya*. Nairobi: Kenway Publications, 1989, 388p.

Sanseverino, H.C. "Archaeological remains on the southern Somali coast". *Azania 18*. Nairobi: British Institute in Eastern Africa (1983): 151–164.

Sanseverino, H.C. "Barawa, the coastal town in southern Somalia". *Kenya Past and Present 17*. Nairobi: Kenya Museum Society (1985): 16–23.

Sassoon, H. "Excavation at the site of early Mombasa". *Azania 15*. Nairobi: British Institute in Eastern Africa (1980 a): 1–42.

Sassoon, H. "The coastal town of Jumba la Mtwana". *Kenya Past and Present 12*. Nairobi: Kenya Museum Society (1980 b): 2–14.

Sassoon, H. "Mbaraki Pillar & related ruins of Mombasa Island". *Kenya Past and Present 14–1*, Nairobi (1982 a): 26–33.

Sassoon, H. "The Mosque and Pillar at Mbaraki: a contribution to the history of Mombasa Island". Azania 17–1, Nairobi: Biea (1982 b): 79–97.

Santelli, S. "Harar: The fourth holy city of Islam". *The City in the Islamic World 1*. Jayyusi, S. Holod, R. Petruccioli, A. & Raymond, A. eds., Leiden: Brill (2008): 625–641.

Sauvaget, J. « L'Architecture Musulmane en Syrie ». *Revue des Arts Asiatiques*. Paris: Editions d'art et d'histoire, 1934, 51p.

Schacht, J. « Sur la diffusion des formes d'architecture religieuse musulmane à travers le Sahara ». *Travaux de l'Institut de Recherches Sahariennes 11*. Paris (1954): 11–27.

Schacht, J. « An unknown type of minbar and its historical significance ». *Ars Orientalis 2*. Washington: University of Michigan, Smithsonian Institution (1957): 149–173.

Schacht, J. "Further notes on the staircase minaret". *Ars Orientalis 4*. Washington: University of Michigan, Smithsonian Institution (1961): 137–141.

Schacht, J. "Notes on Islam in East Africa". *Studia Islamica XXIII*. Paris: Maisonneuve-Larose (1965): 91–136.

Schneider, M. *Stèles funéraires musulmanes des Îles Dahlak* (*mer Rouge*). Cairo: Ifao, 1983, 2 vols.

Schulz, V.-S. "Artistic Dynamics across the Seas" in Early Maritime Cultures. *East Africa and the Western Indian Ocean*. Sarathi, A. ed. Oxford: Archaeopress (2018): 185–214.

Senna-Martinez, J.-C. "The Swahili interface, urban trajectories, and state formation in East Central Africa (c.700–1700)". *Cultures of the Indian Ocean*, Lisbon (1998): 129–137.

Serjeant, R.B. "Mihrab". *Bulletin of the School of Oriental and African studies 22*. London (1959): 439–453.

Shaw, T., Sinclair, P., Andah, B. & Okpoko, A. eds. *The Archaeology of Africa* (*food, metals and towns*). London: Routledge, 1993, 857p.

Shepherd, G. "The making of the Swahili (a view from the southern end of the East African coast)". *Paideuma 28. From Zinj to Zanzibar, in Honour of James Kirkman*. Wiesbaden: Franz Steiner (1982): 129–147.

Sheriff, A. "Mosques, merchants and landowners in Zanzibar stone town". *Azania 27*. Nairobi: British Institute in Eastern Africa (1992): 1–20.

Sheriff, A. "Mosques, Merchants and landowners in Zanzibar Stone Town". *The History and Conservation of Zanzibar Stone Town*. London: James Currey (1995): 46–66.

Sheriff, A. "The historicity of the Shirâzi tradition along the East African coast". *Historical Role of Iranians* (*Shirâzis*) *in the East African Coast*. Nairobi: Embassy of Iran (2001): 21–41.

Shinn, D. *Historical dictionary of Ethiopia*. Scarecrow Press, 2004, 633 p.

Sinclair, P. & Duarte, R. "A perspective on archaeological research in Mozambique". *The Archaeology of Africa*. London: Routledge (1993): 409–431.

Sinclair, P. & Wandibba, S. *Urban Origin in Eastern Africa* (*Project proposals and workshop summaries*). Uppsala: Central Board of National Antiquities, 1988, 187p.

Siravo, F. & Pulver, A. *Planning Lamu: conservation of an East African Seaport*. Nairobi: NMK, 1986, 167p.

Siravo, F. *Zanzibar: A plan for the historic Stone Town*. The Aga Khan Trust for Culture, 1996, 218 p.

Smith, G.R. "A recessed minbar in the mosque of Simambaya". *Azania 8*. Nairobi: British Institute in Eastern Africa (1973): 154–156.

Smidt, W. "A Chinese in the Nubian and Abyssinian Kingdoms (8th Century). The visit of Du Huan to Molin-guo and Laobosa". *Chroniques yéménites 9*. Sana'a: CEFAS (2001): 17–28.

Snelder, Raoul, "The Great Mosque at Djenne. Its impact today as a model". *Mimar: Architecture in Development 12*. Singapore (1984): 66–74.

Soghayroun Elzein, I. *Islamic Archaeology in the Sudan*. BAR 60, 2004, 152 p.

Soghayroun El Zein, I. "The Nilotic Sudan". *The Oxford handbook of Islamic archaeology* (2020): 395–416.

Spear, T. "The Shirâzi in Swahili Traditions, Culture and History". *History in Africa 11* (1984): 291–305.

Sperling, D. *The growth of Islam among the Mijikenda of the Kenya coast* (*1826–1933*). University of London: PhD, 1988, 233p.

Stevens, A. *Oman, citadelles entre sable et mer*. Winksele: Terra Incognita, 1990, 144 p.

Stigand, H. *The Land of Zinj, being an account of British East Africa, its ancient history and present inhabitants*. London: Frank Cass, 1913 (reed. 1966), 351 p.

Strandes, J. *The Portuguese Period in East Africa*. Nairobi: East African Litterature Bureau, 1899 (reed. 1971), 373 p.

Stowell, R.F. "Notes on some ruins at Tongoni, near Tanga". *Tanganyika Notes and Records 4*. Dar es-Salaam: Government Printer (1937): 75–76.

Sutton, J. *The East African Coast* (*an historical and archaeological rewiew*). Paper n°1 of Historical Association of Tanzania. Nairobi: East African Publishing House, 1966, 27p.

Sutton, J. *A thousand years of East Africa*. Nairobi: B.I.E.A., 1990, 111p.

Tabbaa, Y. "The Politics of Patronage in Medieval Mossul: Nur al-Din, Badr al-Din and the Question of the Sunni Revival". *The Seljuqs and their Successors: Art, Culture and History*. Beyazit, D. Sheila Canby, S. and Rugiadi, M. eds., Edinburgh University Press, 2020, 88–109.

Takezawa, S. and Cisse, M. "Discovery of the earliest royal palace in Gao and its implications for the history of West Africa". *Cahiers d'études africaines 208*. Paris (2012) http://journals.openedition.org/etudesafricaines/17167.

Talib, Y. « La diaspora africaine en Asie ». *Histoire Générale de l'Afrique 3*. Paris: Unesco (1990): 749–778.

Terrasse, H. *Note sur Sijilmassa*. 2ème congrès d'Alger, 1936.

Terrasse, M. « Les synthèses de l'Anatolie turcomane ». *Le Grand Atlas de l'Architecture Mondiale*. Paris: Encyclopaedia Universalis (1981): 256–257.

The Stone Town of Zanzibar. United Nation Center for Human Settlements, 1983, 58p.

Tibbetts, G.R. *Arab Navigation in the Indian Ocean before the coming of the Portuguese*. London: Royal Asiatic Society of Great Britain and Ireland, 1971 (reed. 1981), 614p.

Tilahun, C. "Traces of Islamic Material Culture in North-Eastern Shoa". *Proceedings of the first national conference of Ethiopian studies*. Addis Ababa (1990): 303–320.

Thiriet, E. *Au Soudan français : souvenirs 1892–1894. Massina-Tombouctou*. Paris: André Lesot, 1932, 233 p.

Thomassey, P. & Mauny R. « Campagne de fouilles à Koumbi Saleh ». *Bulletin de l'Institut Français d'Afrique Noire 13*. Dakar (1951): 436–462.

Thomassey, P. & Mauny R. « Campagne de fouilles à Koumbi Saleh ». *Bulletin de l'Institut Français d'Afrique Noire* 18, Dakar (1956): 117–140.

Torres de, J. Ruiz-Galvez, M. Fernandez, V. "The Quirimbas Islands Project (Cabo Delgado, Mozambique): report of the 2015 campaign". *Nyame Akuma 85* (2016): 57–68.

Toussaint, A. *Histoire de l'Océan Indien*. Paris: Presses Universitaires de France, 1961, 286p.

Triaud, J.L. *Islam et sociétés soudanaises au Moyen-Age*. Paris: Cnrs-Centre de Recherches voltaïques 16, 1973, 239 p.

Trimingham, J.S. *Islam in the Sudan*. London: Frank Cass, 1949, 280p.

Trimingham, J.S. *Islam in Ethiopia*. London: Frank Cass, 1952, 299p.

Trimingham, J.S. *Islam in East Africa*. Oxford: Clarendon Press, 1961, 198p.

Trimingham, J.S. *Islam in Tropical Africa*. Lewis, I.M., Oxford University Press (1966): 129–143.

Trimingham, J.S. *A history of Islam in West Africa*. London: Oxford University Press, 1970, 262 p.

Tuchscherer, M. "Les échanges commerciaux entre les rives africaine et arabe de l'espace mer Rouge golfe d'Aden aux XVIe et XVIIe siècles". *Trade and Travel. The Red Sea Region, Proceedings of Red Sea Project I*. Kennet, D. & Simpson, St J. eds., Oxford: Society for Arabian Studies Monographs 2 – British Archaeological Reports S-1269 (2004): 157–163.

Um, N. *The merchant houses of Mocha: trade and architecture in an Indian Ocean port*. University of Washington Press, 2009, 270 p.

Unen van, W. *Een Onderzock naar de Architectuur van het Dorp Sirimou nabij de stad Djenné*. Mémoire de fin d'étude (architecture). Eindhoven: Université de Technologie, 1987.

Urvoy, Y. « L'art dans le territoire du Niger ». *Etudes Nigériennes 2*. Niamey: Institut Français d'Afrique Noire, 1955, 68 p.

Velden van der, R. *Moskeën en Metselaars in de Regio van Djenné*. Mémoire de fin d'étude (architecture). Eindhoven: Université de Technologie, 1989.

Vérin, P. « Observations préliminaires sur les sites du Mozambique ». *Azania 5*. Nairobi: British Institute in Eastern Africa (1970): 184–189.

Vérin, P. « Histoire Ancienne du nord-ouest de Madagascar ». *Taloha*, Tananarive: Musée d'art et d'archéologie, 1972, 174p.

Vérin, P. *Les Echelles Anciennes du Commerce sur les côtes nord de Madagascar*. Université de Lille III: PhD, 1975, 2 vols, 1028p.

Vérin, P., Chittick, N. & Robineau, C. « Arabes et Islamisés à Madagascar et dans l'Océan indien ». *Taloha 2*. Tananarive: Musée d'art et d'archéologie, 1967, 58p.

Vérin, P. & Mille, A. « Recherches du Centre d'archéologie sur les sites islamiques du nord-ouest ». *Bulletin de l'Académie malgache XLV-2*. Tananarive: Imprimerie Officielle (1967): 99–108.

Vernier, E. & Millot, J. *Archéologie Malgache* (*comptoirs musulmans*). Catalogues du Musée de l'Homme, Paris: Muséum National d'Histoire Naturelle, 1971, 177p.

Viaut, C., Jean, B., Hamadi, M. & Davy, L. *Le patrimoine bâti d'époque classique de Ngazidja* (*Grande Comore, Union des Comores*). *Rapport de synthèse de prospection et d'étude de bâti*. CNDRS – INP, 2020, 207 p.

Waldron, S. *Social organization and Society Control in the Walled City of Harar* (*Ethiopia*). Ann Arbor: PhD, 1975.

Watson, O. *Ceramics from Islamic Lands: a Catalogue of the al-Sabah Collection, Kuwait*. London: Thames and Hudson (2004), 512 p.

Wenzel, M. *House decoration in Nubia*. Duckworth, 1972, 227p.

Werner, A. "Swahili history of Pate". *J.A.S 14*. London: Mc Millan (1915): 148–161, 278–296 & 392–413.

Wheeler, M. "Archaeology in East Africa". *Tanganyika Notes and Records 40*. Dar es-Salaam: Government Printer (1955): 43–47.

Whitcomb, D. & Johnson, J. *Quseir al-Qadim 1980*. American Research Center in Egypt Reports 7, 1982, 406 p.

Whitehouse, D. "Excavations at Siraf (First interim report)". *Iran VI*. London: The British Institute of Persian Studies (1968): 1–22.

Whitehouse, D. "Siraf: a medieval port on the Persian Gulf". *World Archaeology II-2*. London: Routledge (1970): 141–158.

Whitehouse, D. "Maritime trade in the Arabian sea, 9th–10th". *South Asian archaeology, Taddei 2*. Naples: Instituto universitario orientale (1979): 865–885.

Whitehouse, D. "The smaller mosques at Siraf (a footnote)". *Iran XXII*. London: The British Institute of Persian Studies (1984): 166–168.

Whiteley, W. *Swahili* (*the rise of a national language*). London: Methuen, 1969, 150p.

Wichmann, H. ed. *Architektur der Vergänglichkeit* (*Lehmbauten der Dritten Welt*). Basel: Birkhäuser, 1983, 254 p.

Wilber, D.N. *The architecture of Islamic Iran*. Princetown: Princetown University Press, 1955, 208p.

Wilding, R. "The ancient buildings of the North Kenyan Coast". *African Heritage*. Nairobi: Plan East Africa (1972): 41–46.

Wilding, R. *A report of the archaeological fieldwork on the north kenyan coast 1971–1973*. Nairobi: British Institute in Eastern Africa, 1973, 31 & 74p.

Wilding, R. "A preliminary note on the second mosque at Mwana". *Azania 10*. Nairobi: British Institute in Eastern Africa (1975): 149–150.

Wilding, R. « The desert trade of Eastern Ethiopia ». *Actes du 8ème Congrès Panafricain de Préhistoire* (*1977*). Nairobi: The International Louis Leakey Memorial Institute for African Prehistory (1980): 379–380.

Wilding, R. "Asian trade pottery as mosque and tomb furniture on the swahili coast". *Second International Conference on Indian Ocean*. Perth: National Museums of Kenya (1984): 1–6.

Wilkison, J.-C. "Oman and East Africa: new light on early Kilwa history from the Omani sources". *The International Journal of African Historical Studies 14–2* (1981): 272–304.

Wilks, I. "The Juula and the expansion of Islam into the Forest". *The History of Islam in Africa*. Levtzion, N. & Pouwels, R. eds., Oxford: James currey (2000): 93–115.

William, G.J. "The Juma'a (Friday) mosque Zaria City". *Savanna 2–1* (1972): 103–4.

Willis, J. "Reflections on the diffusion of Islam in West Africa". *Studies in West African Islamic History 1*. London: Frank Cass (1979): 1–39.

Wilson, T. *The Monumental Architecture and Archaeology North of the Tana river*. National Museums of Kenya, 1978 (reed; 2016), 114p.

Wilson, T. "Takwa: an ancient swahili settlement of the Lamu archipelago". *Kenya Past and Present 10*. Nairobi: Kenya Museum Society (1979): 6–16.

Wilson, T. *The Monumental Architecture and Archaeology North of the Central and Southern Kenya coast*. National Museums of Kenya, 1980, 168p.

Wilson, T. "Conservation of the ancient architecture of the Kenya coast". *Kenya Past and Present 14*. Nairobi: Kenya Museum Society (1982): 6–19.

Wilson, T. "Spatial analysis and settlement patterns on the East African coast". *Paideuma 28, From Zinj to Zanzibar, in Honour of James Kirkman*. Wiesbaden: Franz Steimer (1982): 201–219.

Wilson, T. "Sites and settlement patterns of coastal Jubaland, southern Somalia". *Second International Congress of Somali Studies 1983*. University of Hamburg (1984): 73–106.

Wilson, T. & Athman Lali, O. "Archaeological Investigations at Pate". *Azania 32*. Nairobi: BIEA (1997): 31–76.

Wilson, T. *Swahili Monumental Architecture and Archaeology North of the Tana River*, National Museums of Kenya, 2016, 156 p.

Wright, H. "Early seafarers of the Comoro Islands (The Dembeni phase of the IX th–X th centuries a.d)". *Azania 19*. Nairobi: British Institute in Eastern Africa (1984): 13–59.

Wright, H. "Early Islam (Oceanic trade and town development on Nzwani: the Comorian archipelago in the XIth–XVth centuries a.d)". *Azania 27*. Nairobi: British Institute in Eastern Africa (1992): 81–128.

Wright, H. "Trade and politics on the eastern littoral of Africa, a.d 800–1300". *The Archaeology of Africa*, London: Routledge (1993): 658–672.

Zehnacker, F. ed. *A la Rencontre de Sindbad, la route maritime de la Soie*. Paris: Réunion des Muses Nationaux-Musée de la Marine, 1994.

Zoghby, S. ed. *Islam in Sub-Saharan Africa*. Washington: Library of Congress, 1978, 318p.

Index

Abasa 126–127, *128*, 302
Abd al-Aziz 199, 232, 308
Abu Bakr Siddiq 200
Abu Sarh 135, 302
Adal 116, 125, 127–128, 311
Aden 115, 125, 127, 129–130, 146*n*1, 155–156, 159*n*112, 166–167, 170, 183, 207, 249*n*360, 311
Adhan 49, 68, 81, 84, 87, 311
Adrar 23, 50–51, 66
Adulis 130, *131*, 302
Afar 125, 127
Agadez (Agades) 9, 11, 15, 30, 33–34, 37, 48–49, 61, 66, *67*, 101, 106, 108, 112, *113*, 300
Ain Farah 142–143, 302, 312
Air 17, 30, 48–49, 66, 68, 111, 300
Aksum 129–130, 311
Akwa 227, 310
Alexandria 130, 133, 167
Algeria 3, 22, 108, 312–313, 316
Almoravids 13, 20, 22, 55
Alwa 135, 139, 311
Ambidedi 109, 300
Ampasindava 212
Amud 126, 302
Anatolia 210, 233, 235–236
Angazidja 311
Anjouan 151, 153, 157–158, 165, 226, 230, 245, 249, 310–311
Aqaba 167
Argobba 117, 126, 311
Argungu 84, 300
Aribinda 98, 299
Armenian 233, 235–238
Artul 135–136, *137*, 302
Asbari 117, 122–123, 302
Askia Mohammed 15–16, 22, 58, *60*, 66, 69, 79, 299, 311
Assab 155
Assode 30, 37, 66, 68, 105–106, 300
Aswan 130, 133, 136, 141
Awash 117
Awdaghust 13, 20–23, 51–52, 101, 107, 111, 299
Aydhab 126, 130, 133, 167, 302
Azania 151
Azara *36*, 37, 311

Bab al-Mandab 166, 311
Badi 126, 130, 302
Badr al-Din Lu'lu 233
Bagamoyo 160, 226–227, 309
Baghdad 153–156, 167
Bagerhat 253
Bahla 211, 248, 313
Bahmanid 290, 311
Bahr al-Qulzum 166–167
Bahrain 5, 154–155, 167–168, 222, 231, 290, 312
Bajun 146, 153, 157, 212, *214*, 308, 311
Balutchi 311
Bamako 23, 75, 82, 104, 299
Bambara 18–21, 28, 81, 102, 104, 109, 114, 311, 313
Bambougou 82, 299
Bambuk 12, 22
Banankoro 82–83, 299
Banda Nkwanta 89, *92–93*, 94, 300
Bandamadji 244, 310
Bandarini 238, 309, 311
Bandiagara 24, 32, 77, *78*, 102, 299, 312
Bangladesh 253
Bani 10, 14, 18, 24, 75, 313
Banian 161, 168, 280, 311
Barawa 152, 157, 159, 163, 170, 200, 206, 218, 308
Bari 26, 101, 311
Barka 55, 299
Barza 281, 309
Basra al- (Bassorah) 153–154, 156, 165, 167
Bauchi 18, 88, 108, 300, 314
Bebeji 84, 300
Banadir 153–154, 157, 162, 239, 281, 311
Beni-Isguen 111
Berber 3, 13–15, 20–23, 50, 112, 311, 314–316
Berbera 125–126, 153, 158, 166, 168–169, 302
Berenice 130, 167
Beta Giyorgis 237
Bhattia 168–169, 311
Bia 81, 299
Bidar 253
Bilad al-Barbar 153, 311
Bilad al-Sudan 7, 14, 20, 311
Bilad al-Sufala 153, 311
Bilad al-Zanj 153, 311
Binu 104, 311
Biram 16, 300
Birika 311
Birnin Kebbi 84, 300
Bla 109, 299
Blue Nile 139
Bobo-Dioulasso 9, 23–24, 82, 89, 91, 96, 99, 102, 300
Bode 18, 83, 109, 300
Bohra 5, 161, 168–169, 232, 281–282, 286, 311
Bole *46*, 89–90, *92–93*, 94, 300
Bombay 161, 168–169, 254
Boramo 127, 302
Bore 26–27, 299
Borno 23, 143–145, 311

Bougamena 95
Bouna *32*, *47*, 58*n*109, 69, 299
Bozo 26, 75, 81, 104, 311
Bure 13, 311
Burkina Faso 7–10, 15, 19, 23, 30, 88–89, 91, 98–99, 291, *297*, 300, 313–314
Busa'idi 311
Buuni 244, 310
Bwana Tamu 273, *275*, 308
Bweni Kuu 282, 309

Cafe 32, 311
Cairo 1, 58, 110, 130, 139, 145, 154–155, 222, 236, 312
Calicut 168–169
Cambay 168–169, 231
Cameroon 17, 98, 104
Casamance 96, 300
Chad 1–3, 7, 17, 20, 30, 84, 98, 143–145, 291, *301*, 302, 311–312, 314
Chercher 125, 127
Chiginawen *39*, 84, 87, 300
Chinguetti 37, *38*, 53, *54*, 66, 101, 108, 299
Choa 115
Chole *185*, 273, 282, *283*, 309
Chwaka 197, 208, *209*, 238, 263, 309
Ciula *214*, 308
Comoros 146, 151, 153, 157–158, 165, 174, 218, 226–227, 230, 245, *306*, 310–311, 313

Dabhol 254, 314
Dahlak 115, 126, 130
Daju 142, 311
Daka 31, 33, 299
Daka Womira 31, 33, 299
Dakrupe 89, 300
Dale 104
Danakil 125–126
Darfur 1, 142–144, 291, 302, 311–312, 314
Darimo 126, 302
Daura 16–17, 300
Daybul (Banbhore) 156, 168, 231, 290, 314
Debo 11, 68, 79, 81, 104
Deccan 168, 170, 194, 250, 253–254, 286, 311, 313–314
Dege 17, 180, 238, 309
Delgado 161
Derbiga 126, 302
Dhira 174, 311
Dhow 163, 166, 311
Dia 9–10, 14–15, 18–19, 26, 30, 108, 299
Diafarabe 31, 299
Diani 188, 308
Dinguiraye 96, 98–99, 109, 301
Dire 14, 24, 30–31, 69, 75, 79, 88, 107, 127, 299
Diu 164, 169
Divrigi 233, 235
Djabal Nafusa 111–112
Djedda 130, 156, 166
Djenne *7*, 9, 14–15, 18–20, 22–24, *25*, 26–29, 31–32, *33*, 34, 37–38, *40*, 41, *45*, 46, 48, 69–70, *71*, 72, *73*, 74, 81, 89, 91, 100–102, *103*, 105, 107–110, 113–114, 292–293, 299, 311–313
Djerba (Jerba) 111–112
Djinguere Ber (Djingereyber / Jingarey Ber) 22, 30, *36*, 45, 49, 61, 63, *64–65*, 107–108, 110, 112, 299, 312
Djumbe Fumu 244, 310
Dogon 25, 101–102, *103*, 104, 311–312
Domoni 173, 226, 230, 243, 245, 249, 310
Domweli 249, 310
Dondoli 89–90, 300
Dongola 134–135, *136*, 139, 141*n*63, 302, 313
Douentza 24, 299
Dougouba 11, 31, 95, 99, 108, 299
Doukoure 14, 299
Doumga Ouro Alfa 83, 104, 109, 300
Doumga Ouro Thierno 83–84, 300
Dyakhanke 312
Dyula 9, 14, 20, 23–24, 72, 88–89, 91, 100, 108, 291, 312, 314
Dzaoudzi 227, 310

Ethiopia 1–3, 115–117, *118*, 120, *123–124*, 125, 127–129, 133, 166, 206, 234, 237, 291, *301*, 302, 311–312

Fakhr al-Din 169, 173–175, 179, 186, *187*, 188, 193, 212, 217, 233, *235–236*, 238, 260, 308
Fandikani 160, 312
Faqi Dabbis 117, 122–124
Fasher al- 143, 302, 312
Faza 159, 273, 276, 308
Fe Mte wa Kandzu 244, 310
Ferey 28, 105, 312, 314
Fes *12*, *16*, *21*
Fezzan 111, 143
Forodhani 281, 286, 293, 309
Fougoumba 96, 301
Foullodji-Kolo 98, 299
France 5, 113–114, 210
Fréjus 114
Fujian 170
Fulani 3, 17–19, 22–23, 68, 72, 83, 86, 96, 108, 112–113, 141, 312
Fulbe 9, 15, 17–20, 22, 72, 81, 88, 98, 104, 109, 113–114, 144, 292, 312–314
Funj 139, 143, 312
Furdani 282, 309
Futa Jalon (Fuuta Djallon) 19–20, 96, *97*, 109, 301, 312, 315
Futa Toro 8, 11, 17, 19–20, 48, 83, 101, 104, 109, 300, 312
Fuzhu 170

Gabes 25
Gall in- 48, 300

Gao 9, 11, 13–16, 20–23, 30, 46–47, 49, 57–58, *59–60*, 66, 98, 101, 106–108, 110–111, 145, 157, 292, 299, 308, 312, 314
Gao Safon Gari 46, 84, 87
Gao Saney 57, 107, 299
Gedi (Gede) 149, 151, 162, 172, *173*, 174, 177, 179–180, *181*, 182, 193–195, 197, 208, 211–213, 215, 227, *228–229*, 230–231, 238–239, 255, *256*, 258, 260, *261*, 262–264, *265–267*, 268, 308
Ghadamès 25, 111
Ghana 7–8, 10–15, 20, 22–24, *46*, 50–51, 88–91, 94–95, 99–100, 107–108, 291, *297*, 300, 312, 314
Ghardaya 25, 111
Ghat 111
Gibir 16, 300
Ginna 312
Goa 160, 163, 169
Gobir 17, 300
Gobarau 88, 300
Gofu 281, 309
Golea al- 112
Goundam 14, 23, 30, 69, 75, 79, 88, 107, 299
Goze 117, 123, 302
Guardafui 161
Guede 83, 109, 300
Guguba 129, 312
Guindio-Sare 26, 31, *80*, 81, 299
Guinée 34*n*82, 89*n*138, 107*n*187
Gujarat 158–159, 168–169, 215, 231–233, *236*, 280, 286, 289–290, 311–314
Gulbarga 253

Hadhrami 158
Hadramawt 156, 158, 166, 231, 249, 313
Hafun Ras *116, 164, 301, 303*
Hais *116, 301, 303*
Halayeb 130, 302
Halwar 19, 83–84, 109, 300
Hamar Wani (Omar Weyne) 199, 232–233
Hamdullahi 18–20, 313
Harar 115, 125, 127–129, 302, 312
Harba 47, 126
Hasa al- 152, 154, 157, 167
Hatumere 98–99, 312
Hawd 126, 302
Hausa 9, 15–18, 23–24, 26, 28–29, 31–32, 34, 37, 46, 84, 86–87, 101, 108–109, 291, 311–315
Himyar 312
Hindu 168–169, 232, 311, 313–314
Hormuz 153, 155–157, 159, 166, 168, 170

Ibadi 4–5, 20, 22, 48, 50–51, 55, 58, 69, 108, 111–112, 125, 127, 152, 157, 193, 225, 232, 281–282, 285–286, *287–288*, 290–291, 312–313, 315
Ibngabwa 289, 310
Ifat 116–117, 123, 125, 127, 302, 312
Imam ʿAwn al-Din 233
In Salah 112
Indus 156, 168
Iraqi 235
Ismaili 4–5, 22, 58, 115, 125, 155, 157, 161, 217, 231, 281–282, 286, 290–291, 309, 311–312, 315
Ivory Coast 1, 7–10, 23, 28, 30, 88–89, 91, 95–96, 99, 114, 291, *297*, 300, 314

Jain 169, 314
Jangwani 188, 195, 309
Jebel Marra 142
Jega 84, 300
Jemadari 243, 308
Jibondo 238, 309
Jihad 3, 17–18, 20, 22, 72, 84, 108–109, 115, 128, 139–140, 144, 166, 291–292, 312–314
Jijiga 126, 302
Jinah al- 211
Juba 157, 161–162
Julfar 168

Kafin Madaki 18, 300
Kairouan 31, 111
Kajificheni 281, 309
Kamaka 69, 299
Kamale Sibi 98, 109, 299
Kanem 17, 20, 22–23, 143, 145, 312
Kani Kombole 102, 299
Kano 9, 14, 16–17, 20, 101–102, 300
Kaole 172–173, 180, *184*, 197, *237*, 238, *242*, 309
Kasr 313
Kasubi 289, 310
Kathiawar 168–169
Katib 48, 312
Katsina 9, 15–18, 86, 88, 108, 111, 300, 314
Kawar 143
Kawara 9, 11, 24, 33, 95–96, 108, 300
Kawkaw 22, 312
Kebbi 17, 84, 300
Keira 142, 312
Ke-Massina 82
Kenya 1, 146, 149–151, 160–162, 166, *171*, *183*, 186, *187*, 204, *206*, 207, 211–212, 215, 218, 227, 238, 255, 258, 282, *304*, 308, 311, 315
Kerimba 166, 310
Kharijites 4, 20, 22, 108, 290
Khartoum 141
Khatib 4, 232, 283, 313
khatim 98, 313
Khoja 161, 168, 311, 313
Kumbi Saleh *10*, 12–13, *21–23*, 50–*52*, 101, 107, 291, *296*, 299
Khutba 48, 313

Kibumba 289, 310
Kiburugeni 238, 308
Kidal 53, 55, 299
Kidira 109, 300
Kilifi 146, 161, *183*, 184, 195, *196*, *206*–207, 212, *214*, 243, *244*, 308
Kilindini 146, 177, 180, 184–185, 242, 308
Kilwa 61, 120, 149, 151–152, 155–163, 165–166, 168–169, 172–173, 175–182, 184, 188, *190*–*191*, 192–195, 197, 204–208, *210*, 212, 217, 219, 222–223, 226, 230–231, 238, *241*, 242–243, 249–255, 258, 268, 290, 293, 309, 313
Kilwa kisiwani 166, 175–176, *181*–*182*, 204, *205*, *210*, 226, *241*, 249, 254–255, 293, 309
Kimbiji 238, 309
Kingany Makamby 217
Kipumbwe 282, 285, 309
Kish 155–156
Kisikimto 273, 309
Kisimani 149, 220, 222–223, 238, 241, 309
Kisimani Mafia 220, 222, 238, 241, 309
Kismaayo 308
Kismayu 159
Kiswahili 146, 148, 158, 165, 313
Kitoka 180, 238, 308
Kizimkazi 218–219, 220–223, 239, 231, 238, 282, 290, 309
Koa 27, 69, 299
Kobb 143, 302, 312
Kobilo 18, 83, 109, 300
Kola 13, 17, 23–24, 311
Kolda 96, 300
Kolenze 69, 104, 299
Koloman-Kambaya 96, 301
Komara 34, 299
Komoguel 75, *77*, 114, 293
Kona 30, 299
Kong 9–10, 23–24, 33, 82, 89–91, 99, 300
Kongo 188, *191*, 308
Konna 25, 299
Konya 210, 235
Koporo-Kenie-Na 102, 299
Korhogo 23, 300
Korientze 24–25, 299
Koro el- 135–136, *142*, 302
Kouakourou 104
Koulikoro 98, 109
Koumaira 34, 37, 81, 299
Koumpentoum 98, 300
Kounari 33, 299
Kowe 172, 313
Kua 151, 175, 180, *211*, *215*, 271–*274*, 283, 285, 290, 309
Kufa 154, 157, 313
Kufic 4, 115, 130, 217–219, 222, 229–232, 313
Kumbi Saleh 12–13, 22–23, 50–52, 101, 107, 291, 299
Kutch 168, 217, 231, 313
Kyakakwere 289, 310

Laghbari 286, *288*, 309
Lalibela 237
Lamu 139, 149–150, 153, 158, 160–161, 163, 166, *171*, 174, 180, *201*–202, *204*, 213, 215, 217–218, 258, 273, 276–*277*, *280*, 281, 285–*286*, 290, 308–309
Lanfiera 89, 300
Larabanga 9, 89, 91, 94, 99–100, 300
Laso 32, 313
Lohana 168, 311, 313
Lybia 316

M'Zab 23, 25, 49, 108, 111–112, 313
Madagascar 146, 151, 153, 155, 161, 165–167, 169, 212, 217, 222, 241, *306*, 310, 313
Madina Torobe 83, 104, 109, 300
Madrasa 4, 14, 48, 55, 101, 114, 193, 232, 276, 313
Maduna 126–127, 302
Mafia 149, 157–158, *185*, 220, 222–223, 238, 241, 271, 282–*283*, 309
Mafui 208, 243, 263, 308–309
Mahajamba 222
Mahdali 158, 163, 231, 249, 313
Mahdist 139, 141, 313
Mahilaka 212, 310
Maksura 313
Makuba 32, 313
Makuria 134–135, 139, 313
Makuti 159, 170, 185–*186*, 204, 313
Malabar 158, 168, 254, 290, 312–313
Malacca 168
Maldives 153–154, 170, 229
Mali 7–9, 13–15, 17, 22–23, 27–28, 31–32, 34, 37, 41, *43*, 48, 50, 55–*56*, 58*n*109, 61, 63, *79*, 81, 83, 95–96, 99, 107–109, 114, 143, 291–292, *296*, 299, 311–313
Malikite 5, 14, 20, 22, 98, 112–113
Malindi 146, 152, 158–160, 163, 165–166, 168–170, 202–*203*, 255, 281–282, 285, 308–309
Maluwe 91, 300
Manah 211
Manda 149, 153, 159–160, 202, 204, 213, 258, 308
Mandhiri 286, *287*, 309
Mandhry 202, 308
Mandika 291, 313
Mandingo 68, 311–313
Mansa 14–15, 61, 79, 101, 107, 110, 313
Marka 314
Marrakesh 13
Mashhad 233
Masjid 4, 162, 172, 232, 302, 312–313
Massawa 128, 155
Masselage 166

Massina 15–16, 18–21, 96, 109, 299, 313
Mauritania 1, 3, 7, 20, 50–51, 55, 68, 84, 107, 111, 143–144, *296*, 299, 312
Maweni 249, 310
Mayotte 151, 165, *179*, *193*, *198*, 226–227, *246–248*, 249, 310
Mazrui 160–161, 281, 308
Mbaraki 151, 172, 177, 184–185, 192, 195, 200–201, 203, 308
Mbaye 281, 309
Mboamaji 282, *284*, 285, 309
Mbweni 179, 238, 309
Mecca 4, 14, 31, 61, 70, 95, 101, 110, 144, 151, 154, 156, 227, 231, 312–313
Medina 4, 96, 109, 312
Melika 111–112
Merka 152, 157–159, 163, 308
Mesallamiya 139, 313
Metlili 25, 112
Mgangani 212, 238–239, 308–309
Mida creek 308–309
Mihrab 1, 4, 8, 14, 16, 19, 30–31, 41, 43, *45*, 46–52, 55, 57–58, 61, 66, 68, 72, 75, 77, 79, 81–84, 87–91, 94–96, 101–102, 105, 107–108, 112, 114, 120–123, 125–127, 129, 134–136, 142–143, 145, 149, 170–171, 175, 179–180, 183, 192, 197–198, 204, 206–208, *209*, 211–223, 225, *226*, 229–233, *235*, 236, *237*, 238–245, 249–250, *253*, 255, 257–258, 260, 262–264, 268–269, 271, 273, 276, 280–283, 285–286, 290, 313–315
Minbar 4, 16, 48, 50, 55, 61, 66, 68, 72, 75, 77, 79, 81–84, 88–89, 112–113, 127, 129, 202, 206–*208*, 219, 222, 257–258, 260, 262, 273, *281*–283, 285–286, 290, 312–313
Mirandole 227, 249, 310
Miskiti 309, 313
Mitaa 264, 281, 313
Mitepe 163, 313
Mkiri wa Shirazi 226, 245, 310
Mkwaja 282, 309
Mnara 149, 151, 172, 176, *186*, 193, 197, 202, *203*, 212, 222, 226, 268, 269–*271*, 281–282, *285*, 293, 308–310, 313
Mnara Siyu 212
Mnarani 178, 180, *183*, 184, 195–*196*, *206*, 207, 212, 213–*214*, 218, 238, 242–243, *244*, 308–309
Mnarani of Kilifi *183*, 184, 212, 243
Mocca 166
Mogadishu 130, 146, 148–150, 152–153, 157–159, 161–163, 169–170, 175, 179, 183, 186–188, 199, 210, 212, 217–218, 232–233, 236, 238–239, 258, 264, 290, 308
Mombasa 146, 151–152, 156, 158–161, 163, 165–166, 168–169, 177, 180, 184–185, 188, 195, 200–202, 207, 232, 242, 276, 280, 289–290, 308–309
Momen 168, 311, 313
Mopti 9, 20, 26–27, *29*, 31, 33–*35*, 38, 41, *43–44*, 75–77, *80*, 81, *103*, 114, 292–293, 299
More Nakore 300
Morocco 3, 20, 23, 25, 51, 108, 111, 114, 311, 313, 315–316
Moroni 244, 310
Mossi 15, 21, 24, 95, 104, 313
Mosul 233
Mozabites 111, 313
Mozambique 146, 150–151, 153, 160, 166, 212, 233, 238, 290, 310–311
Msuka Mjini 233, 242, 309
Mtambwe Mkuu 163
Mtumbwi 163, 313
Mtwapa 146
Mukhtara al- 154
Murabitun al- 13, 311
Muscat 160–162, 166, 168–169, 311
Musta'lite 311
Mwana 186–188, 233, 308
Mwangati 165, 185, 313

Nabhani 160–161, 313
Namou 96, 301
Nam-Ymi 95, 300
Nando 102
Nashki 199, 217–218, 313
Ndia Kuu 280, 308
N'Djamena 144, 302
Ndumi 182, 215, 309
Nema 55, 299
Ngazidja 244, 310–311, 313
Niafounke 18
Niamey 87
Niani 13, 15, 107, 313
Niger 1, 3, 7–11, 13–15, 17–25, 27–31, 35, 37, 43, 46–51, 55, 58, 66, 68–69, 72, 75, 77, 79, 82–89, 94–96, 99–102, 104, 107–114, 291, 300, 311–312
Nigeria 1, 8–9, 11, 17–18, 20, 26, 30, 84, 85–*86*, 88, 98, 143, 291, 300, 312
Nile 1, 3, 84, 110, 130, 133, 136, 139, 141, 238
Nizarite 232, 311
Nizwa 211, 315
N'nalalo 276, 308
Nora 117–127, 129, 291, 302
Nosy Be 165
Nosy Manja 222, 241, 306, 310
Ntsaweni 244
Nubia 3, 133–136, 138–139, 141, 291
Nupe 17, 300

Ogaden 126, 302
Oman 152, 154, 156, 159–162, 165–168, 171, 192, 211–212, 217, 290
Omdurman 116, 141, 301–302, 313
Oueigoun 98, 299

Pangani 160, 162, 282, 285, 305
Pate 146–147, 149–153, 158–161, 163, 166, 168, 215–217, 273, 275–279, 290, 304

Pemba 149, 151–153, 155–157, 160, 163–164, 168, 197, 209, 225, 233, 276, 282, 305, 307
Peuls 17
Podor 20, 83
Pole 105, 129, 246, 249, 292, 306
Potige 74
Pular 18, 20, 75, 83, 109

Qadiriya 313
Qanbalu 155–156, 167
Qasr Ibrim 116, 136, 138, 301
Qays 167
qibla 4, 8, 31, 43, 45, 47–48, 50–51, 58, 61, 66, 67, 68, 72, 75–77, 79, 81–83, 89, 94, 96, 102, 110, 111, 114, 120–122, 124, 126–127, 129, 139, 206–208, 211, 218, 219, 225, 227, 230–231, 250, 257–258, 263, 273, 276, 282–283, 285–286, 313
Quanzhu 170
Qumur 153, 313
Qur'an 4, 19, 47, 98, 101, 180, 217, 314
Qus 130
Quseir 116, 130, 164, 167, 301
Quseir al-Qadim 130, 167, 168*n*167

Rano 16, 300
Ras Kiambone 197, 207
Ras Mkumbuu 182, 184, 198, 225, 238, 305, 309
Rasini 147, 212, 214, 233, 238–239, 303, 308
Red Sea 1, 2, 3, 21, 116, 126, 129–130, 132, 133, 150, 152, 155–156, 164, 166–167, 169, 200, 229, 232, 238, 291, 301, 311
Reunion (Bourbon island) 161, *164*
Rhapta 322, 325
Ribat 13, 276, 311, 314
Rift 115–116
Rih (al-Rih, er-Rih) 126, 130
Rufiji 162
Rugayi 126, 302
Rustaq 160–161
Ruvu 162
Ruvuma 162

Sa 18, 81, 299
Sabaki 161, 162
Sadrata 111
al-Sahili al-Tuejin 110
Saho 314
Sai 139
Saj 313
Salaga 9, 34, 300
San 9, 10, 23, 26, 69, 77, 296, 299
Sanga Rungu 147, 282, 285, 309
Sanhadja 314
Sanje Majoma 188, 309
Sanje ya Kati 147, 151, 155, 156*n*67, 157, 175, 192, 223–226, 230, 268, 290, 293, 305, 309
Sankarani 13
Sankore 14, 22, 49, 55, 58, 61–63, 65, 104, 107–108, 112, 299
Sanse 69, 299
Sarafere 18, 299
Sare Boido 98, 300
Sebi 23, 31, 95, 108, 299
Segou 9–12, 16, 18, 20, 23, 31, 33, 68, 77, 81–83, 88, 95, 104, 107, 109, 114, 296, 299
Segu Sikorro 109, 299
Seljuq 210, 232–233, 235, 255, 314
Sénégal 2, 7–13, 16, 20–21, 50, 83, 96, 98, 108–109, 113, 291, 296, 300, 312, 314
Sennar 116, 139–140, 301–302, 312
Seno Palel 83, 109, 300
Senufo 89, 109, 314
Serere 314
Shagh 157
Shaitgumbad 253
Shala Fatani 273, 308
Shanga 147, 150, 159, 163, 172–174, 180, 192–193, 218–219, 227, 230, 231, 304, 308
Shangani 199, 232, 305
Sharma 156, 164, 166
al-Shawadhna 211
Shebelle river 153
Shela 161, 201–202, 276, 280, 285–286, 304
Shengejuu 197, 212, 238, 305, 309
Shi'ia 313
Shihr 164
Shi-n Wasagharan 67, 299
Shiraz 153, 156–157, 167, 314
Shoa 116, 117, 125, 128
Shoa Robit 117, 129
Soba 116, 139, 302, 311
Si 82, 299
Sibila 31, 95, 299
Sibo 27, 81, 299
Sidi Yahya 49, 55, 61–63, 102, 112, 299
Sierra Leone 98, 315
Sijilmasa 12, 13, 16, 21–23, 50–51, 110–112
Silla 11–12, 21, 312, 314
Sima 147, 226, 230, 243, 306
Simambaya 276, 304, 309
Sind 164
Siraf 153, 156–157, 164, 167, 212, 231, 314
Sirimou 26, 72, 100
Sita-Mgangani 239, 309
Siyu 147, 159–161, 212, 215–216, 273, 276, 304
Sofala 146–147, 150, 153, 155–160, 162, 164–168, 307
Sofara 69, 299
Sohar 161, 164, 167–168, 212

Sokomuhogo 281, 286–288, 309
Sokoto 10, 17, 84, 86, 298, 300, 314
Solah Khamba 253
Somadougou 69, 299
Somali 115–116, 125–126, 157, 207, 212, 218, 236, 238, 239, 264, 315
Somana 212, 233, 238, 290, 307, 310
Somanat 168
Songhay 15–17, 20, 23, 28, 55, 57, 61, 68, 98, 101, 110, 145, 311–312, 314
Songo Mnara 147, 149, 151, 172, 176, 186, 193, 222, 226, 268–271, 281–282, 285, 293, 305, 309, 310
Soninke 14, 83, 104, 312–314
Suq al-Khamis 222
Sri Lanka (Ceylon) 153, 170, 229
Suakin 116, 127, 130, 132–133, 139, 155, 164, 200, 229, 301–302
Sudan 2, 7, 11, 14–15, 17, 20, 23, 25, 28, 30, 84, 89, 112, 126, 130, 139–140, 143, 153, 291, 292, 301, 311–314
Sufala al-Dhahab 153
Sufi 20, 22, 68, 139, 268, 313–314
Sumi'a 18
Sunni 3–4, 13, 20, 22, 69, 112, 125, 158–159, 193, 227, 281, 285, 290, 311, 313–314
Es-Suk 67–68, 299
Surat 164, 169, 276
Swahili 1–3, 16, 49, 63, 125–127, 139, 146–153, 155–159, 161–163, 166–170, 172–176, 180, 184–185, 192, 194, 197, 199, 203, 207–208, 210, 212–213, 215–219, 222–223, 225, 227, 229–233, 236–238, 241, 249–250, 253, 258, 260, 262, 264, 268, 276, 280, 282–283, 285–286, 289–290, 292, 311–315

Tadmekka 10, 12, 16, 21–23, 67–68, 111–112, 298
Tahert 12, 21–22, 111–112
Taifa 314
Takwa 149–150, 180, 185, 204, 206, 212–213, 263, 304, 309
Tambacounda 98
Tambareni 282, 310
Tana 116, 162, 186, 188, 258, 301, 304
Tancinat 31, 84, 87, 300
Tanga 160–161, 305, 310
Tanzania 1, 120, 146, 149, 151, 156, 162–163, 169, 184, 197, 204, 230, 242, 268, 281–282, 285, 289, 293, 305, 311, 313, 315
Tapti 169
Tariqua 313
Taza 23
In-Teduq 66–67, 299
Tefis 66, 299
Tegdaoust 22*n*49
Teghaza 15–16, 23, 51, 101, 299
Tekrur 11, 13–14, 20–21, 314
Tendirma 9, 12, 16, 55, 56, 101, 300
Tichitt 12, 16, 55, 104, 108, 299
Tidjaniyya 314
Tielao 83, 109, 300
Tiero 114, 299
Tijikja 55, 299
Timbi Touni 96, 301
Timbo 19, 98, 109, 312
Tindirma 300
Tingole 27, 114, 300
Tiwi 188, 191, 304, 308
Togonrogo 37, 41, 300
Tombouctou 300
Tongoni 179, 180, 182, 197, 238, 305, 310
toron 8, 29, 43–44, 58, 61, 66, 68, 72, 75, 77, 81, 83–84, 89, 95, 101–102, 104, 314
Tuat 12, 14–16, 21, 23, 25, 110, 112
Toucouleurs 17, 314
Tountaman 96, 301
Tripoli 12, 16, 21, 23, 111, 116, 144–145, 301
Tsingoni 147, 179, 193, 198, 247–249, 306, 310
Tuareg 12, 15–17, 55, 66, 314
Tubalu 28, 314
Tughluq 253, 290, 314
Tumbatu 192, 218–219, 222, 230–231, 238, 305, 310
Tundwa 208, 242–243, 263, 309
Tunjur 142–143, 314
Tunisia 22, 111, 143, 312-313, 316
Tur 116, 167, 301
Turra 143, 302

Ulama 314
Umm al-Sultan 143, 302
Ungwana 147, 149, 172, 174, 177–178, 180, 182, 188–189, 192–193, 195, 208, 212, 217, 233, 238, 242–243, 258–260, 304, 309
Uri 116, 142, 301–302, 312
Utondwe 276, 305, 310

Vania 280, 311, 314
Victoria Lake 310
Vohemar 164–165, 306
Vumba 146, 160, 163, 166
Vumba-Kuu 163

Wa Deule 276, 309
Wadagu 312
Wadai 144–145, 302, 314
Wadan 12, 16, 21, 53, 55, 66, 108, 299
Wadebuli 314
Wadi Saleh 143
Wak Wak 153, 155, 167
Walata 10, 12, 14–16, 21, 23, 50–51, 55, 66, 101, 104, 108, 110, 296, 299

Wangara 14–15, 20, 23–24, 314
Wara 21, 116, 144, 301–302, 314
Wargla 12, 16, 21, 25, 111
Wenzhu 170
Wietougou 102, 314
Wollo 125
Womira 31, 33, 299
Worondjikoy 26, 100, 300
Wuriyanga 91, 300
Wuro 102, 315

Ya'rubi 160, 315
Yahya b. al-Qasim 233
Yalunka 98, 315
Yarse 24, 313
Youkounkoun 98

Zanata 315
Zangarata 37, 300
Zanj 146, 152–159, 165–166, 168, 311, 315
Zanko 315
Zanzibar 3, 139, 147–149, 151–153, 157, 159–164, 166, 168–169, 180, 193, 202–203, 218–219, 221–223, 276, 281–282, 285–290, 293, 305, 309, 311, 315
Zaria 9–10, 12, 16–18, 26, 31, 37, 40, 84–86, 108, 298, 300, 311
Zeyla 116, 125–128, 158, 166, 302
Ziara 277, 315
Zidaka 315
Ziguinchor 109
Zimba 315
Zimbabwe 151, 159, 162, 165, 307, 314
Zinder 9–10, 46, 48–49, 84, 87, 298, 300
Zinzana 33, 82, 300