AKORIS

Report of the Excavations at Akoris in Middle Egypt 1981—1992

THE PALEOLOGICAL ASSOCIATION OF JAPAN, INC.
EGYPTIAN COMMITTEE



KOYO SHOBO
KYOTO, MCMXCV

A K Ω P I Σ



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CONTENTS

LIST OF TABLES
LIST OF FIGURES
LIST OF PLATES
PREFACE — TSUNODA, Bun-ei
EXPLANATORY NOTES
LIST OF ABBREVIATIONS

CHAPTER I INTRODUCTION — KAWANISHI, Hiroyuki

1 TOPOGRAPHICAL VIEW OF THE SITE 1
2 PURPOSE OF THE INVESTIGATION 4
3 ORGANIZATION, TERM AND AREA OF THE INVESTIGATION 6
4 SUPPORTING PERSONS AND ORGANIZATIONS 10

CHAPTER II ARCHITECTURE AND STRATIGRAPHY

1 GENERAL VIEW OF THE SITE ..... KAWANISHI, Hiroyuki 11
2 ROCK-CUT CHAPELS AND SHAFTS ..... KAWANISHI, Hiroyuki 17
TSUJIMURA, Sumiyo
MIYAMOTO, Junji
3 WESTERN TEMPLE AREA ..... KAWANISHI, Hiroyuki 43
MIYAMOTO, Junji
TSUJIMURA, Sumiyo
CHIKIRA, Atsushi
SHIRA-ISHI, Noriyuki
KUROKAWA, Tetsuro
4 CENTRAL TEMPLE AREA ..... KAWANISHI, Hiroyuki 130
5 CITY WALL ..... KAWANISHI, Hiroyuki 143
6 TRENCHES IN THE SITE ..... KAWANISHI, Hiroyuki 148
TSUJIMURA, Sumiyo

CHAPTER III ARCHEOLOGICAL REMAINS

1 WOODEN OBJECTS ..... KAWANISHI, Hiroyuki 181
MIYAMOTO, Junji
2 METAL OBJECTS ..... KAWANISHI, Hiroyuki 190
3 COINS ..... TSUJIMURA, Sumiyo 196
4 LITHIC OBJECTS ..... KAWANISHI, Hiroyuki 202
5 STONE BLOCKS ..... KAWANISHI, Hiroyuki 207
6 PRE-PHARAONIC STONE IMPLEMENTS ..... SHIRA-ISHI, Noriyuki 209
7 POTTERY LAMPS ..... KAWANISHI, Hiroyuki 212
8 CLAY OBJECTS ..... KAWANISHI, Hiroyuki 216

9 UNFIRED CLAY OBJECTS ..... KAWANISHI, Hiroyuki 220
10 AMPHORA STOPPERS ..... KAWANISHI, Hiroyuki 220
11 BEADS, AMULETS AND MISCELLANEOUS ACCESSORIES ..... KAWANISHI, Hiroyuki 228
12 GLASS VESSELS ..... CHIKIRA, Atsushi 234
13 TEXTILES ..... TATSUNO, Motoyo 246
14 OTHER MISCELLANEOUS OBJECTS ..... KAWANISHI, Hiroyuki 257
MIYAMOTO, Junji

CHAPTER IV ARCHEOLOGICAL STUDIES

1 CHRONOLOGY OF POTTERY ..... TSUJIMURA, Sumiyo 261
2 CHRONOLOGY OF MUD BRICKS ..... TSUJIMURA, Sumiyo 265
3 CHRONOLOGY OF POTTERY LAMPS ..... TSUJIMURA, Sumiyo 268
4 CHRONOLOGY OF GLASS VESSELS ..... CHIKIRA, Atsushi 273
5 SOME OBSERVATIONS ON MASONRY CHISEL MARKS ..... KAWANISHI, Hiroyuki 275
6 TECHNOLOGICAL STUDY CONCERNING TEXTILES ..... KAWANISHI, Hiroyuki 277
TATSUNO, Motoyo
7 TECHNOLOGICAL STUDIES OF BASKETS AND
OTHER FIBER WORKS ..... KAWANISHI, Hiroyuki 294

CHAPTER V PHILOLOGICAL STUDIES

1 PHARAONIC ..... TOMIMURA, Den 299
UCHIDA, Sugihiko
2 GREEK, COPTIC AND ARABIC ..... JARRY, Jacque 326
TAKAHASHI, Hiroyuki
MOCHIZUKI, Kaoru

CHAPTER VI CHEMICAL STUDIES

1 X-RAY FLUORESCENCE ANALYSIS OF GLASS AND POTTERY ..... MOCHIZUKI, Akihiko 381
2 IDENTIFICATION OF DYESTUFFS ..... SATOH, Masanori 391
YAMA-OKA, Ryohei
SHIBAYAMA, Nobuko
3 RESTORATION AND ANALYSIS OF THE BARQUE MODEL ..... HASHIMOTO, Sei-ichi 418
ITOH, Takao

CHAPTER VII APPENDIX

1 BARQUE MODEL ..... MIYAMOTO, Junji 421
2 SYMMETRICAL ANIMAL DESIGN IN COPTIC TEXTILE ..... SAKAMOTO, Kazuko 451
3 ROADS IN AKORIS ..... TSUJIMURA, Sumiyo 460
4 OLIVE OIL PRODUCTION IN AKORIS ..... TSUJIMURA, Sumiyo 464
5 PRIMITIVE BELIEFS IN TEHNEH VILLAGE ..... TSUJIMURA, Sumiyo 470

CHAPTER VIII SUMMARY ..... KAWANISHI, Hiroyuki 473
THE HISTORY OF AKORIS (in English and Japanese)

LIST OF TABLES

1 Pottery unearthed in the south chamber of the Chapel B shaft
2 Rectangular pit dimensions in Chapels C and D
3 Pottery found in the east colonnade of the South Court
4 Pottery found in the lower layers under the stone circle in the South Court
5 Pottery found in the eastern area around the South Court
6 Pottrry found on the floor of Room 4
7 Pottery found in the south trench at the southeast corner of the Western Temple Area
8 Pottery found at the southeast corner
9 Pottery found at the western area around the South Court
10 Pottery found on the floor of Building 4
11 Pottery found in Room 5 of Building 8
12 Pottery found in Room 4 of Building 9
13 Pottery found on the floor of Room 6 in Building 9
14 Pottery found in the lower layers in the east part of Room 4, Building 10
15 Pottery found on the floor of Building 1
16 Pottery found on the floor of Room 1 in Building 2
17 Pottery found on the floor of Room 2 in Building 2
18 Pottery found in the lower layers in the area adjoining the North Gate
19 Pottery found in the Central Temple Area
20 Dimensions of the rectangular stone blocks scattered in the southern area
21 Pottery found above the paving stones in the "Pool" Area
22 Pottery found in Layers 1~5 of the East Trench
23 Pottery found in the North Trench
24 Mud brick size
25 Baskets and other fiber works
26 Papyri
27 Ostraca
28 Papyri
29 Ostraca
30 Parchments
31 Graffiti
32 Analyzed samples of pottery
33 Analytical results of pottery
34 Analytical results of glass
35 Sample fibers
36 Identified dyestuff
37 Dimensions of each part of the barque model
38 Detailed dimensions of the port side beam, thwarts and gunwale
39 Detailed dimensions of the seat and deck plank

40 Detailed dimensions of the crew
41 Number of crew uncovered
42 Coloring of the barque
43 Materials used for preservative treatment and restoration

LIST OF FIGURES

1 Map of Egypt
2 Map of Middle Egypt
3 Sites and Villages near Akoris
4 Topographical map of the site
5 Reliefs left on the outer face of a rock-cut chapel
6 Rock-cut subterranean tomb
7 North chapel cut into the west cliff
8 South chapel cut into the west cliff
9 North Chapel on the south side of the plateau
10 Completed map of the Western Temple Area
11 Completed map of the rock-cut chapels
12 Plan and vertical section of Chapel A
13 Front of Chapel A
14 Hathor capital in the Chapel A shaft
15 Chapel A shaft
16 Elevation of the Hypostyle Hall
17 Reliefs with cartouches of the Roman Emperor Nero on the gateposts of the Hypostyle Hall
18 Colored relief remaining on a reused stone in the west wall of the Hypostyle Hall
19 Plan and vertical section of Chapel B
20 Entrance step of Chapel B
21 Limestone block with Sobek, a king sitting and part of cartouche
22 Plan and vertical section of the south chamber in the Chapel B shaft
23 Barque model as found
24 Plan and profile of Coffin I
25 Pottery found in the south chamber in the Chapel B shaft
26 Plan of Chapels C, D and E
27 Chapel C shaft
28 Second room shaft in Chapel D
29 First room shaft in Chapel D
30 Chapel E shaft
31 Plan of Chapel F and its southern area
32 Reliefs on the inner walls and paintings on the ceiling of Chapel F
33 Front of Chapel F
34 Reconstruction of the Western Temple in the Roman Period

35 Colonnade and circumference of the South Court
36 Jar found in the east colonnade
37 Eastern area in and around the South Court
38 Stone circle and its lower layer structures in the South Court
39 Pottery found in the lower layers under the stone circle
40 Vertical section of the drainage
41 *Gawadis* type jar unearthed on the floor of Room 4
42 Eastern area adjoining Chapel A and the southeast corner of the Western Temple Area
43 Anthropoid coffin found in the eastern area adjoining Chapel A
44 Paintings on the west side board
45 Vertical section of the south trench
46 Large pot unearthed in the south trench
47 Vertical section of the north trench
48 Relationship between the south and the north trench layers
49, 50 Pottery found at the southeast corner
51 Western area around the South Court
52 Reconstruction of the arc-shaped walls
53, 54 Pottery found at the western area
55 Middle Court and the Sacred Road
56 Reconstruction of the Middle and South Court colonnades
57 Building 4 in the Middle Court East
58 Pottery found on the floor of Building 4
59 Building 8 in the north colonnade of the Middle Court East
60 L-shaped passage to Room 4
61 Room 5 in Building 8
62 Pottery found on the floor of Room 5
63 Iron spike found on the floor of Room 5
64 Vestiges under the pavement of the Middle Court East
65 Middle Gate area
66 Elevation of the west pier
67 Sacred Road from the Middle Gate to the North Gate
68 Limestone block with a sunken relief, wing
69 Elevation of the east pedestal
70 Building 9
71 Room 4 in Building 9
72 Pottery found on the floor of Room 4
73 Parquetry board found in Room 6
74 Buildings 3, 9～11
75 Pottery found in the east part of Room 4, and in the western area around the North Gate
76 North Gate area
77 Two baskets as found on the floor of Room 6
78 Building 3
79 Building 1

80～82 Pottery found on the floor of Building 1
83 Building 2
84 Conjunction method of Rooms 1 and 2
85, 86 Pottery found on the floor of Room 1 in Building 2
87～93 Pottery found on the floor of Room 2 in Building 2
94 Central Temple Area
95 Front of Serapeum, including the lower layers
96 West side of Serapeum
97, 98 Pottery found under the pavement of the Sacred Road
99 Southern area adjoining Serapeum
100 Foundation of a rectangular building in the southern area
101 Stone blocks scattered in the southern area
102 Reconstructed elevation of Serapeum
103 Locations of excavation trenches
104 Vertical section of the other parts of the city wall
105 Southeast trench
106 South trench
107 Reconstructed vertical section of the city wall
108 "Pool" Area
109 Lead pipe left at the northwest corner of the "pool"
110 Layers of the south end in the "Pool" Area
111 Earthen Hathor amulet
112, 113 Remains found in the "Pool" Area
114 Ashlar building ruin
115 Tile-floored chamber
116 Reconstructed plan of the tile-floored chamber
117 Location of the East and North Trenches
118 East Trench
119～128 Pottery found in the East Trench
129 North Trench
130, 131 Pottery found in the North Trench
132～135 Wooden objects
136～139 Metal objects
140～142 Lithic objects
143 Leading lines for carving left on the upper and lower faces of the column base
144, 145 Pre-Pharaonic stone implements
146～151 Pottery lamps
152 Clay objects
153 Unfired clay objects
154～156 Stamps on the amphora stoppers
157～160 Beads, amulets and miscellaneous accessories
161～163 Glass vessels
164 Other miscellaneous objects

165 Typology of cooking pots and amphorae
166 Chronology of pottery lamps
167 Chronology of glass vessels
168 Quarry near the site
169 Chisel marks
170 Types of twist
171 Three basic types of weave
172 Derivative plain weave
173 Tapestry techniques
174, 175 Horizontal soumak
176 Longitudinal soumak
177 Twisting in a 4 over 2 under sequence
178～180 Loop pile
181, 182 Knotted pile (sehna)
183, 184 Knotted pile
185, 186 Swivel weave
187 Float weave
188 Weft-faced compound weave
189 Double weave
190 Loom and weaving tools
191 Name of each part of tunic
192 Selvage Type 1
193 Selvage Type 2, 2-2 sequence
194 Selvage Type 2, 3-8-5 sequence
195, 196 Selvage Type 3
197 Edge Type 1
198 Edge Type 2
199 Edge Type 3
200 Edge Type 4
201 Edge Type 5
202 Sprang
203 Back stitch
204 Overcast stitch
205 Half-cross stitch
206 Hemming stitch
207 Blanket stitch
208, 209 Method for sewing together
210 Tunic sleeve
211 Darning
212 Method for warp-faced plain weave band
213 Braiding
214 Plaiting
215 Basket made by wrapping

216 Wrapping
217 Band woven by tablets
218 Positioning of tablets
219 Process of tablet weaving
220 Upper face of the tablet weave
221 Lower face of the tablet weave
222 Changing part in the tablet weave
223 Netting
224 Stele of Pinudjem I
225, 226 Limestone block
227 Papyrus No. 1, Demotic
228 Painting on the outside of the anthropoid coffin
229 Wooden board with hieratic
230 Entrance of Chapel B with graffiti
231 Graffiti
232 Greek inscription
233 Ostracon No. 28
234 Strontium % and zirconium % of the analyzed pottery
235 Strontium % and calcium % of the analyzed pottery
236 Zirconium % and calcium % of the analyzed pottery
237 Typical X-ray fluorescence spectra of the analyzed fragments
238 Principal components analysis of the section samples
239 Cluster analysis of the section samples
240 Some X-ray fluorescence spectra of the glass samples
241 Analyzed samples found in Akoris
242 Absorption spectra of Nos. 1, 2 and purpurin
243 Chromatograms and mass chromatograms of No. 1
244 Chromatograms and mass chromatograms of No. 2
245 Mass spectra and mass chromatograms of alizarin and purpurin
246 Absorption spectra
247 Chromatograms of Nos. 8 and 3
248 Mass chromatograms of Nos. 8, 3 and European madder
249 Absorption spectra
250 Chromatograms of Nos. 6, 7, 5 and indigo (430nm)
251 Mass chromatograms and mass spectrum of No. 5 and alizarin
252 Mass chromatograms of Nos. 6, 7 and alizarin
253 Absorption spectra
254 Chromatograms of Nos. 12, 11, 8, alizarin and indigo
255 Mass chromatograms of Nos. 11, 12, 8, alizarin and purpurin
256 Chromatograms of Nos. 10, 9, alizarin, purpurin and indigo
257 Mass chromatograms of Nos. 9, 10 and European madder
258 Absorption spectra of Nos. 18, 19, 13 and 14
259 Chromatograms of Nos. 13 and 14 (340nm)

260 Mass chromatogram and mass spectrum of No. 14
261 Mass chromatogram and mass spectrum of kariyasu
262 Mass chromatograms of No. 13 and kariyasu
263 Chromatograms of Nos. 16, 17 and indigo (604nm)
264 Mass spectrum (A) and mass chromatogram (B) of indigo
265 Mass chromatograms of Nos. 16, 17 and indigo
266 Chromatograms of Nos. 18 and 19
267 Mass chromatograms of Nos. 18, 19 and indigo + kariyasu
268 Absorption spectrum of No. 15
269 Chromatogram of No. 15
270 Mass chromatogram of No. 15
271 Chromatogram of No. 20
272 Mass chromatograms of No. 20 (1) and indigo (2)
273 Appendix
274 Model of restoration
275 Analysis of the white pigment by X-ray powder diffraction method
276 Plan and profile of the barque
277 Mast stepping, steering oars and other equipment
278 Mast, spars and equipment
279 Oars and punting pole (?)
280, 281 Crew
282 Mummy, canopy, bier, etc.
283 Position of the oarsmen
284 Supposed reconstruction of rigging form
285 Reconstructed navigation forms
286 Reconstruction of the barque
287 Restoration of the barque
288 Lion and plant designs, tapestry weave
289 Leopard attacking hunter, tapestry weave
290, 291 Symmetrical animal design, tapestry weave
292 Symmetrical animal design, swivel weave
293, 294 Silk brocade found in Antinoë
295 Votive relief dedicated to Aphlad
296 Christ enthroned between St. Peter and St. Paul.
297 Dyed fabric with Daniel
298 Roads and olive oil presses in the site
299 Reconstruction of the church
300 Olive oil presses in and around Building 10
301 Olive oil production installations
302 Olive oil press in Pompeii
303 Distribution of the Roman sites in Middle Egypt
304 Transition model of Akoris

LIST OF PLATES

I General view of the site
Upper: View from the northwest
Lower: View from the north
II Barque model
III Crew
IV Amulets and beads
V Glass vessels and accessories
VI Coptic textiles
1 Upper: General view of the site from the top of the south crag
Lower: General view of the Western Temple Area from same
2 Upper: General view of the Western and Central Temple Areas as taken from a kite
Lower: General view of the Western Temple Area (ditto)
3 Upper: South extremity of the main site viewed from the west
Lower: Southern crag adjoining the main site viewed from the north
4 Upper: Inscription for Ptolemy V to Isis Mochias
Lower: Rock-cut relief of Ramses III, Amenre and Sobek.
5 Upper: Rock-cut tombs in the southeast foot of the crag
Lower: Rock-cut relief of Roman military officers on the south side of the crag
6 Upper: North Chapel outside the main site
Lower: Entrance to Chapel F
7 Upper: Front view of the Western Temple Area from the north
Lower: Rock-cut Chapels on the northwest side of the crag
8 Upper: Piers bearing the cartouches of Nero at the entrance to the Hypostyle Hall attending Chapel A
Lower: Front of Chapel A viewed from the north
9 Upper: Chapel A and its shaft
Lower left: Hathor capital unearthed in the Chapel A shaft
right: Inner part of the Chapel A shaft
10 Upper: Front area of Chapel B from the west
Lower: Same from the north
11 Upper: Front view of Chapel B, where hieratic and demotic graffiti are found on the right wall of the entrance
Lower left: Entrance to Chapel B
right: Rock-cut Hathor capital in Chapel B
12 Upper: Chapel B and its shaft
Lower left: Chapel B shaft
right: Entrance to the south chamber at the bottom of the shaft
13 Upper: South chamber entrance viewed from the interior
Lower: Barque model as found in the south chamber
14 Upper: Sailors and equipment on the barque as found

Lower: Funerary objects (Clockwise from upper left: barque oarsmen, mummy and bier, bronze mirror, wooden coffin).

15 Upper: Fragment of hull as found

Lower: Bier

16 Upper left: Blade of adze as found on the floor of Coffin I

right: Scarab and human bone (phalanges)

Middle left: Alabaster jar for eye-paint

right: Stick

Lower left: Implement used in smoothing papyrus paper

right: Columnar object

17 Wooden coffins on the floor as found

18 Upper: Rock-cut Chapels C, D & E respectively as viewed from the northeast

Lower: Same area as viewed from the southwest

19 Upper: South Court and Sacred Road from the south

Lower: South Court from the west

20 Upper: Stone circle in the South Court from the south

Lower: Room 1 in the east area of the South Court from the south

21 Upper: Room 2 in the east area of the South Court as viewed from the south

Lower: Room 3 in the east area of the South Court from the east

22 Upper: Eastern area adjoining Chapel A as viewed from the west

Lower: Three furnaces as unearthed in this area

23 Upper left: South outer wall (W 2) and Structure 2 as viewed from the west

right: South half of the eastern area adjoining Chapel A from the east

Lower: General view of Structure 2 from the south

24 Upper: Tomb as found in the eastern area adjoining Chapel A

Lower left: Coffin as viewed from the north

right: Tomb after removing the coffin

25 Upper: Room 4, as seen from the east, in the eastern area around the South Court

Lower: Room 5 from the southeast in the same area

26 Upper: General view of the eastern area around the South Court

Lower: Southeast corner of the Western Temple Area and the eastern area adjoining Chapel A (kite photograph)

27 Upper: Lower layers at the southeast corner of the Western Temple Area

Lower: Water pot and circular structure as found

28 Upper: Middle Court East of the Western Temple Area as seen from the north

Lower: Middle Court West from the north

29 Upper: Western area around the South Court as viewed from the south

Lower: Colonnade of the Middle Court West from the east

30 Upper: North colonnade of the South Court as viewed from the west

Lower: Northeastern area around the South Court from the east

31 Upper: Gutter on Structure I of the South Court from the south

Lower: East area of the South Court from the north

32 Upper: Northeastern area around the South Court as seen from the south

Lower left: South extremity of the Middle Court East as found
right: South colonnade of the Middle Court East from the west
33 Upper: General view of the Middle Court East from the east
Lower: East colonnade and the courtyard of the Middle Court East from the north
34 Upper: Constructions found under the Middle Court East pavement as seen from the west
Lower: Furnace and two stone basins as found in the same area
35 Upper: Building 4 in the Middle Court East from the west
Lower: Rooms 1 and 2 of Building 4 from the west
36 Upper: Relics as found in Room 2 of Building 4 as seen from the west
Lower left: Amphora and the basketry as found in Room 4 of Building 4 from the north
right: Stairway with stone steps of Building 4 from the west
37 Upper: Building 6 and the west pier of the Middle Gate from the east
Lower: Remaining colonnade of the Middle Court West as seen behind the pier
38 Upper: North colonnade of the Middle Court East and Coptic Building 8 from the west
Lower: Same from the east
39 Upper: Room 1 in Building 9 with Room 6 in Building 8 on the right as seen from the west
Lower: Room 3 in Building 9 from the west
40 Upper: Room 5 in Building 8
Lower: Room 4 in Building 9
41 Upper: General view of Buildings 9~11 (kite photograph)
Lower left: East stairway of Room 4 in Building 8 from the west
right: West end of Room 6 of Building 9
42 Upper: Rooms 6 and 7 in Building 9 from the south
Lower: Wooden "door" as found against the east wall of Room 6 in Building 9
43 Upper: Building 3 from the east
Lower: Two Hathor capitals as found in Room 4 of Building 10 as seen from the north
44 Upper: Room 2 in Building 10 and an olive oil press as found
Lower: General view of Building 11 from the west
45 Upper: North Gate area from the northwest
Lower: Buildings 9 and 10 from the west
46 Upper: General view of the adjoining area outside the North Gate as seen from the east
Lower left: Room 6 in Building 11 from the east
right: Lower layers outside the North Gate as seen from the east
47 Upper: Interior of Building 1 from the west
Lower: Interior of Room 2 in Building 2 from the north
48 Upper: Serapeum and its Sacred Road from the north
Lower: West side of Serapeum
49 Upper: Lower layers in front of Serapeum as viewed from the east
Lower: Pottery in this area as found
50 Upper: Area immediately south of Serapeum
Lower: Foundation of an ashlar structure in this area as seen from the southwest
51 Upper: Distant view of the city wall from the southeast
Lower: Gate found in the south trench from the south

52 Upper : Exposed part of the city wall
Lower left : City wall detected in the southeast trench as seen from the west
right : Same from the east
53 Upper : Distant view of the "Pool" Area, an ashlar building and a tile-floored chamber
Lower : General view of the "Pool" Area from the northwest
54 Upper : "Pool" from the north
Lower : Same from the east
55 Upper : General view of an ashlar building ruin beyond the North Gate as seen from the north
Lower : Southeast part of the building
56 Upper : General view of a tile-floored chamber from the east
Lower left : Detail of the tile floor
right : East dividing wall of the chamber
57 Upper : East Trench from the north
Lower : Large jar capped with a bowl as found in the lowest part of the trench
58 Upper : Rock-cut stairway at the northwest periphery
Lower : Bridge pier (?) at the north end of Akoris
59 Upper : Central road of the city as seen from the south
Lower : Same from the north
60 Upper : Coptic buildings remaining in the north area of the site as seen from the west
Lower : Entrance of the Coptic church in this area
61 Upper : Coptic building remaining in the north area of the site as seen from the northwest
Lower : North Trench
62～66 Barque model
67～69 Wooden objects
70, 71 Metal objects
72～74 Coins and moulds
75, 76 Lithic objects
77 Plaster and lithic objects
78 Pre-Pharaonic stone implements
79～85 Pottery
86～89 Pottery lamps
90 Clay objects
91, 92 Amphora stoppers
93～96 Beads, accessories, amulets, ushabti, scarabs, rings and glass vessels
97～112 Coptic textiles
113 Baskets, other fiber works, bone and horn objects
114 Shells, skulls and crocodile mummies
115 Stelae
116 Stele and stone block with Pharaonic inscriptions
117～119 Stone blocks with Pharaonic reliefs and inscriptions
120 Stelae
121 Stele and stone blocks with reliefs and inscriptions
122～124 Stone construction blocks

125～147 Papyrus texts
148～154 Ostraca
155 Parchment texts
156 Parchment texts and Graffiti
157 Microscopic photos of wooden piece taken from the hull

PREFACE

The present report concerns the results obtained by the Paleological Association of Japan Inc. in the excavations executed during 1981～1992 at the site of Akoris in Middle Egypt.

The excavations were mainly concentrated in the Western Temple Area, where pivotal functions of the city were fulfilled, in order to make clear the process of change from the formation to the decline of Akoris, which was only known as a Greek and Roman city until we began our investigation. Much of the data yielded through our excavations has been studied from the viewpoints of periontology, philology, architecture, chemistry, etc. and the results synthesized giving historical significance to the vicissitudes at Akoris which in fact had been occupied, we discovered from at least the Third Intermediate Period through the Coptic Period, significantly longer than originally thought. Though many problems to be soluted are left for us as the area of excavation was limited compared to the city area as a whole, we must be satisfied with showing an incomplete model of the change which took place in this ancient city of Middle Egypt. It remains, however, to be proven whether the model can be applied to other cities or not.

That the funeral barque model belonging to the Middle Kingdom was discovered in the shaft tomb in the rock-cut chapel is a great pleasure and one quite beyond our expectation. And it is also a pleasure for us this fire damaged barque was restored completely by the use of new techniques and chemical materials. In this restoration we have had the kind cooperation of Dr. Showky Nahra, director of restoration department.

The above-mentioned fruits owed not merely to our members' efforts but also to our Egyptian counterparts who supported our team. We would like to particularly show our respect and appreciation to the succesive chairmans of the Egyptian Antiquity Organization (E.A.O.), including the late Dr. Ahmad Kadly who was the chairman when we first began this project; and to Dr. Ali el Khouil, ex-director of the Middle Egypt Section of the E.A.O.; Mr. Mahmud Hamza, the director of Minya Inspectorate of the E.A.O.; Dr. Muhammad Sallah, the director of the Egyptian Museum.

Furthermore, we would like to express our gratitude to our fellow researchers, including to Dr. Jacque Jarry who deciphered many papyri and ostraca unearthed in Akoris, and a great number of others, without whom, this project would not have been possible to either continue for these twelve years or to publish this report.

We, the Paleological Association of Japan, Inc., hope that this report will contribute to the studies in ancient Egyptian history and will break new ground as well.

Chairman of the Paleological Association of Japan, Inc.
Director and Professor of the Japan Institute of
Paleological Studies.

Bun-ei TSUNODA

EXPLANATORY NOTES

1) This report is the result which the archeological investigation in the site of Akoris, Egypt, from 1981 through 1992, yielded.

2) The investigation was under the supervision of the Egyptian Antiguity Organization, and the executing nuclear members were composed of those appointed to the provisional Egyptian Committee of the Paleological Association of Japan.

3) The authors of this report mainly consist of the persons who had engaged in the investigations. In addition to them, four contributors, Jacque Jarry; Masanori Sato; Kazuko Sakamoto; Akihiko Mochizuki, and their collaborators, Itoh, Takao; Shibayama, Nobuko; Yama-oka, Ryohei, are included. Each writer's name is shown below and at the end of the portion.

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SHIRA-ISHI, Noriyuki	Research assistant, Ni-igata University
TAKAHASHI, Hiroyuki	Associate prof. Kyoto Institute of Technology
TATSUNO, Motoyo	Teacher, Kohnan Girls' High School
TOMIMURA, Den	Lecturer, JIPS
TSUJIMURA Sumiyo	Lecturer, JIPS
TSUNODA, Bun-ei	President and Prof., JIPS
UCHIDA, Sugihiko	Lecturer, Waseda University
YAMA-OKA, Ryohei	Associate prof., Kyoto Institute of Technology

4) Ten preliminary reports concerning Akoris have been issued by us. Their results have been rectified when necessary, expanded and rewritten for this report. When rewritten, the building names, 1～11 except for 3, have been fundamentally maintained, and yet, the names of the relics such as room, chapel and walls are unified.

5) This edition has been prepared by the Committee. The redaction shared by Kawanishi and Tsujimura.

6) Drawings, explanation, and tables concerning the pottery found in Akoris are included in the discription of the area in which they were found. All other remains uncovered have been put together in Chapter III so that a complete inventory could be made.

7) The scales used in the drawing are shown in each instance. The architecture and layers have ratios different from each other, and except for special cases, are as follows: Pottery 1/4, wooden objects 1/3, metal objects 1/2, lithic objects 2/3, 1/2 and 1/3, pottery lamps 1/2, earthen objects 1/2 and 1/3, beads and faience actual size, glass

vessels 1/2, plaster objects 1/2 and horn and bone objects 1/2.

8) In numbering the plates appearing in this report, Roman numerals are used for the color film plates and Arabic numerals for the monochrome.

9) As the absolute altitude of the site is unknown, the conventional zero point was fixed at the north end of the Sacred Road in the Western Temple Area.

10) The English in this edition has been checked and corrected by Vernon Spencer, and the drawing and word-processor works done by Noriko Nishimura.

11) The field work was sponsored by the Grant-in-Aid for Scientific Research (1984～86, 89), and the publication *was funded by the Grant-in-Aid for Publication of Scientific Research Results, the Ministry of Education, Science* and Culture, Japan.

LIST OF ABBREVIATIONS

ASAE	*Annales Service des Antiquités du l'Égypte* (Le Caire, 1900-following).
BAR	*Biblical Archaeology Review* (Washington, 1955-following).
BAILEY, *EA IV*	BAILEY, D. M., *Excavations at El-Ashmunein IV* (London, 1991).
BECKERATH, *HÄK*	BECKERATH, J. von, *Handbuch der Ägyptischen Königsnamen* (München, 1984).
BERNAND, *IGLA*	BERNAND, E., *Inscriptions Greques et Latins d'Akoris* (Le Caire, 1988).
BIFAO	*Bulltin de l'Institut Français d'Archéologie Orientale* (Le Caire, 1901-following).
BSAA	*Bulltin de la Société Archéologique d'Alexandrie* (Alexandrie, 1898-following).
DRIOTON, *ÄS*	DRIOTON, É., *Un Cryptogramme Relatif aux Souffles de Vie* in *Ägyptologische Studien*, hrsg. V. O. FIRCHOW (Berlin, 1955) pp. 44-50.
DRIOTON, *JEA*	DRIOTON, E., *La Cryptographie de la Chapelle de Toutankhamon* (*JEA*, 35, London, 1949).
DRIOTON, *Rd'E*	DRIOTON, É., *Essai sur la Cryptographie Privée de la Fin de la 18e Dynastie*, (*Rd'E*, 1, Le Caire, 1933).
GARDINER, *AEO*	GARDINER, A. H., *Ancient Egyptian Onomastica* (London, 1947).
GARSTANG, *BCAE*	GARSTANG, J., *The Burial Customs of Ancient Egypt* (London, 1907).
GAUTHIER, *DTH*	GAUTHIER, H., *Dictionnaire des Nomes Géographique Contenus dans les Textes Hiéroglyphiques* (Le Caire, 1925-1931) / (Osnabrüch, 1975).
GLR III-IV	GAUTHIER, H., *Le livre des Rois d'Égypte*, tome III-IV (Le Caire, 1914-1916).
GRIMAL, *SPM*	GRIMAL, N.-C., *La Stèle Triomphale de Pi ('ank)y au Musée du Caire* (Le Caire, 1981).
HABACHI, *JARCE*	HABACHI, L., *Three Large Rock Stelae Carved by Ramesses III near Quarries* (*JARCE*, 11, 1974).
HAYES, *LRP*	HAYES, J. W., *Late Roman Pottery* (London, 1972).
HAYES, *SE*	HAYES, W. C., *The Scepter of Egypt* (New York, 1953).
IGRR	CAGNAT, R. (ed.), *Inscriptiones Graecae ad res Romanas Pertinentes* (Paris, 1925).
JARCE	*Journal of American Research Center in Egypt* (Boston, Mass./Cambridge, Mass./Princeton, N. J./New York, 1962-following).
JEA	*The Journal of Egyptian Archaeology* (London, 1914-following).
KESSLER, *HTMS*	KESSLER, D., *Historische Topographie der Region zwischen Mallawi und Samalut* (Wiesbaden, 1981).
KITCHEN, *THIP*	KITCHEN, K. A., *The Third Intermediate Period in Egypt (1100-650B. C.)* 2nd. ed. (Warminister, 1986).
LÄ	*Lexikon der Ägyptologie* (Wiesbaden, 1972-1992).
LEFEBVRE, BARRY, *ASAE*	LEFEBVRE, G. et L. BARRY, *Rapport sur les Fouilles Executées à Tehneh, en 1903-1904* (*ASAE*, 6, 1911).
LUCAS, *AEMI*	LUCAS, A., *Ancient Egyptian Materials and Industries* (4th ed. revised and enlarged by J. R. Harris, London, 1962).
MDIK	*Mitteilungen des Deutschen Instituts für Ägyptische Altertumskund in Kairo* (later *Mitteilungen der Deutschen Archäologischen Institites Abteilung Kairo*, Berlin und

	Wiesbaden, 1930-following).
Pre. Re. I	*Preliminary Report, First Season of the Excavations at the Site of Akoris*, Egypt (Kyoto, 1982).
Pre. Re. II	*Preliminary Report, Second Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1983).
Pre. Re. III	*Preliminary Report, Third Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1984).
Pre. Re. IV	*Preliminary Report, Fourth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1985).
Pre. Re. V	*Preliminary Report, Fifth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1986).
Pre. Re. VI	*Preliminary Report, Sixth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1988).
Pre. Re. VII	*Preliminary Report, Seventh Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1988).
Pre. Re. VIII	*Preliminary Report, Eighth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1989).
Pre. Re. IX	*Preliminary Report, Ninth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1990).
Pre. Re. X	*Preliminary Report, Tenth Season of the Excavations at the Site of Akoris, Egypt* (Kyoto, 1991).
Rd'E	*Revue d'Égyptologie.* (Paris, 1933-following).
SEIF, *ASAE*	SEIF, H. E. A., *Rapport sur les Fouilles Faites à Tehneh en Janvier et Février 1926.* (*ASAE*, 26, 1926), pp. 32-38.
SPENCER, *EA*	SPENCER, A. J., *Excavations at El-Ashmunein II-III* (London, 1989-1993).
WAGNER, *NIA*	WAGNER, G., *Nouvelles Inscriptions d'Akoris* in *Hommages à la Memoire de Serge Sauneron*, tome II (Le Caire, 1979).
Wb	ERMAN. A und H. GRAPOW, *Wörterbuch der Ägyptischen Sprache* (Leipzig/Berlin, 1926-1963).

I
INTRODUCTION

1 TOPOGRAPHICAL VIEW OF THE SITE

LOCATION

The site of Akoris is situated 230km south of Cairo on the east bank of the Nile, northwest of el Minya, a major city in Middle Egypt. The major archeological sites in this general area include Beni Hasan and Ashmunein (Hermopolis) 30km and 45km south respectively, and el-Bahnasa (Oxyrhynchus) and el-Hiba 40km and 70km north (Figs. 1 and 2).

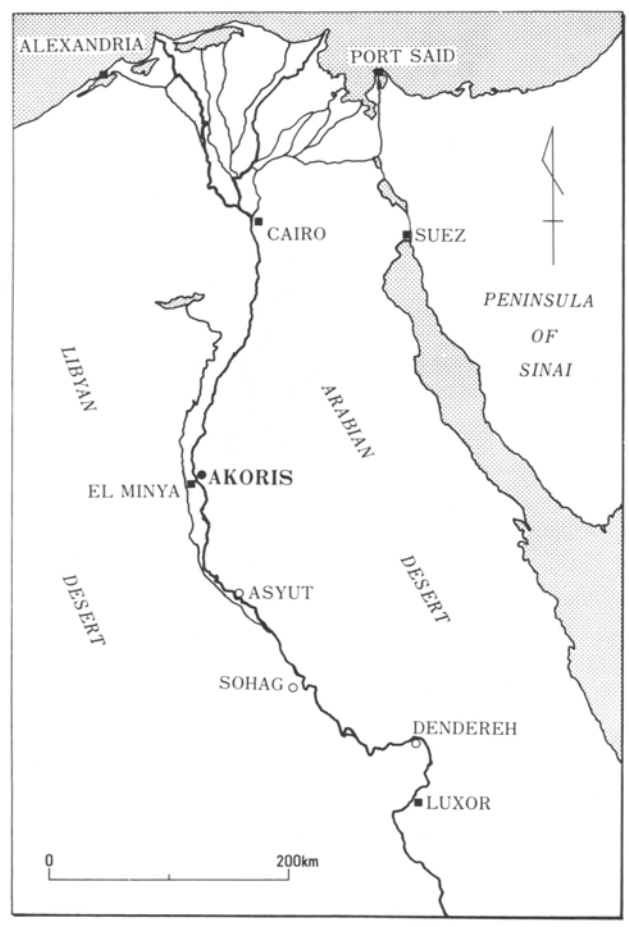

Fig. 1 Map of Egypt

There are, in addition, many smaller sites on the east bank in the vicinity of Akoris (Fig. 3). The sites in a 15km radius from our site, show a fluctuation both in number and scale depending on the age. The first and sole site of the post-Neolithic Period so far found is Zawiat al-Maietin where pre-Dynastic tombs of Naqada II and a step pyramid of the 3rd Dynasty are found. However, after the 4th Dynasty, the number of sites increased suddenly to include not only Zawiat al-Maietin but also Nazlet al-Shurafa, the 'Fraser Tombs', Gabal al-Teir Bahari, al-Babain and our site, Akoris. These sites, consisting mainly of rock-cut tomb chapels or tombs, are small in scale. If the owners of the tombs were the officials sent from the central bureaucracy, the increase in the tombs means, as popularly viewed, the intensification of the bureaucracy. And yet, if they can be regarded the leaders of a small group such as an eminent tribe or family, it is supposed that they gathered strength rapidly and were admitted into the central bureaucracy.

In the Middle Kingdom, the sites diminished conspicuously in number, but at the same time certain

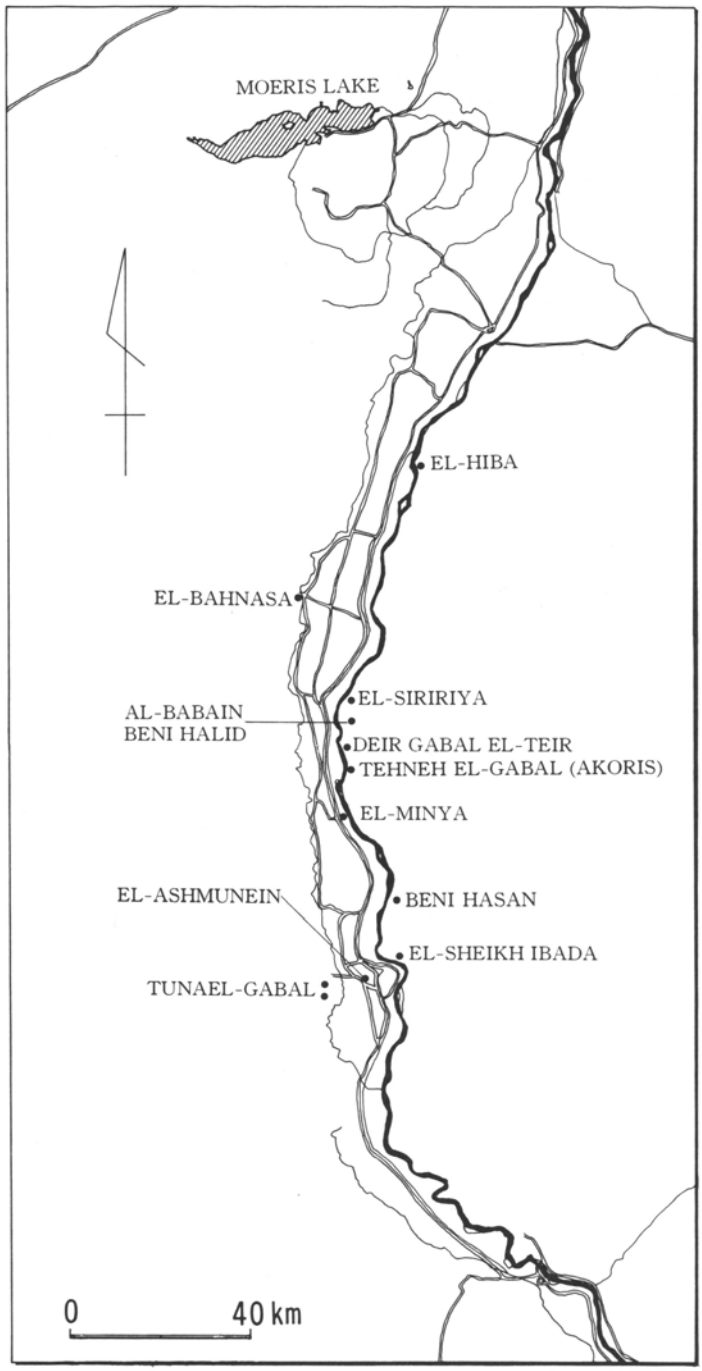

Fig. 2 Map of Middle Egypt

ones become large in scale, typically Beni Hasan, and, according to our investigation, Akoris can be numbered among such sites. Local political integration in opposing the power of the central authority, advanced in the First Intermediate Period. Subsequently, with the establishment of royal authority over the whole of Egypt, during the 12th Dynasty, large tombs were no longer built in Beni Hasan, and it is quite possible that the same applied to Akoris.

As the New Kingdom came, local tomb building ceased and was replaced by royal monuments, as shown by inscriptions on stone blocks, stelae and so on, that is Amen-hetep III and Ramses III in Zawiat al-Maietin, Ramses III in Akoris, and Ramses III in al-Babain. Whether the royal interest in this district increased as the result of the political and religious confusion in the Amarna Age or not is an interesting problem.

While few new sites, including royal monuments, representing the Third Intermediate Period have been discovered, urbanization seems to have continued. It is in this period that Akoris and probably Zawiet al-Maietin became urbanized. Afterwards, these fortified cities were improved under the rule of the Roman Empire, and sites consisting of tombs or small villages, such as Nazlet al-Shurafa, Sidi Muhammad, Gabal el-Teir al-Qibli, Gabal el-Teir Bahari, Bani Halid, Kom el-Ahmar, Kom ad-Dick and so on, appeared in their vicinities.

The east bank of the Nile forms a high limestone plateau which is divided by numerouse wadis, and there is a clearcut difference between it and the sandy desert area on the west bank. The area occupied by Akoris is tongue-shaped with a wadi on its east and north boundaries, which is said to flood once every 20 years (Fig. 4. Pls. I and 1). Bordering the site on the north, the village of Tehneh straddles both sides of the wadi.

According to Ptolemy's *Geographia*, the Nile split into two branches at Akoris, and rejoined south of Oxyrhynchus, quite unlike the present course. If such had actually been the case, the fact that the border lines of the nomes ran differently around Akoris depending on the age should be of importance. In the Middle Kingdom the border line between 17th and 18th nomes extended north from Akoris splitting the agricultural fields, while in the south the lines run east-west. Additionally, from Akoris to al-Babain the course of the stream seems to be against nature according to the current maps showing the fact that the deepest part of the river flows on the west side at the eastward bend of the river just west of Akoris. At this point erosion preventive measures to keep the river from cutting a perhaps natural course through the fields are seen. Thus, if the depiction is correct, Akoris could have been more important for water transportation than supposed. Future geological surveys are awaited.

Acknowledgement

Sugihiko Uchida gave me valuable suggestions and advice. I would like to express my sincere thanks to him.

(KAWANISHI, H)

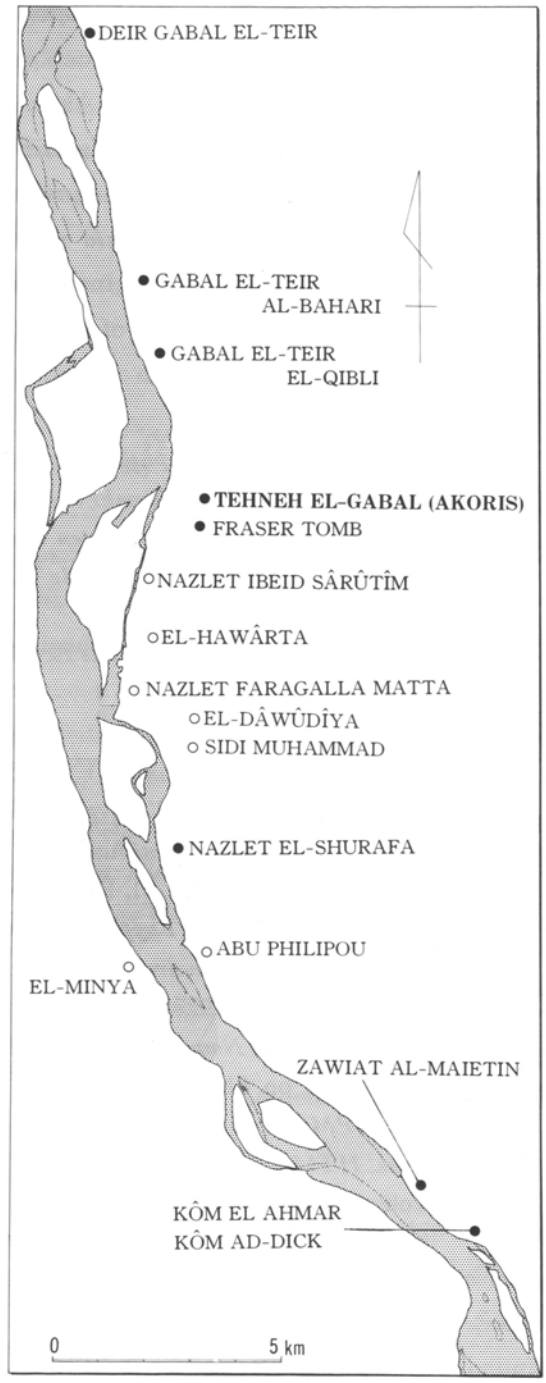

Fig. 3 Sites and Villages near Akoris

DERIVATION OF THE SITE NAME

It is thought that in the Middle Kingdom this site was called Mr-nfr 'a fine canal'. According to the inscription found at Beni Hasan, Khnum-hetep's father built the Ka Chapel at a place called Mr-nfr. The actual site of Mr-nfr was identified because a stone block and Osiris coffins bearing the name of Mr-nfr were found here, and though these remains date from the Roman Period, this identification is in all probability correct.

Another name T3-dhnt which means Crag, seems to have been used during the New Kingdom according to the Wilbour Papyrus, and probably was derived from the steep crag occupying the southwest section of the site. Later the place name of T3-dhn(t)-wr-nhtw, which literally means the Crag-Great-of-Victories, appears in the P(ᶜankh)y Stele. This name evolved in the Ptolemaic Period to

become Τῆνις and then Tehneh, the name of the present village adjoining the site.

Akoris is the third and last name applied to the actual site itself. Concerning this Greek name, there is the opinion that it came from Akoris, a Pharaoh in the 29th Dynasty. G. Posener claims that the source of Akoris goes back to the Hagrian who were the nomads which invaded from east Palestine. Apart from the etymological problem, what is specially noteworthy is that the place name of Akoris mentioned on Ptolemy's *Geographia* was identified with the site by deciphering the Isis Mochias inscription in 1716, and meanwhile many papyrus records bearing the name of Akoris found in various other sites identified the function of the city.

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(KAWANISHI, H)

2 PURPOSE OF THE INVESTIGATION

In ancient times, except in the Amarna Age Middle Egypt, particularly the south half, had no important political power equivalent to the Upper and Lower districts. This would be largely attributable to both poor agricultural production and a lack of mineral resources. However, when Egypt was divided into two political powers, the Upper and Lower, supposedly Middle Egypt sandwiched, as it was, between the two opposing powers became important in the resulting power play.

In comparison with the Upper and Lower districts, archeological investigations which have been

executed in Middle Egypt have not been sufficient in number and, except for several famous sites, small in scale. Furthermore, it is regrettable that as some investigations remain unreported, the details are not known.

According to philological sources, while Tehneh, or Akoris, was located on or near the boundary between the 16th and the 17th or the 16th and the 18th nomes in the Pharaonic Period, Ptolemy's *Geographia* mentions that it belonged to the Cynopolite Nome. As the cliffs of the Eastern Desert are close to the Nile in this district and is an obstacle to a north-south irrigation system, the nome's boundary was naturally set here.

The results of epigraphical and papyrological studies of the site of Akoris before our investigation are summarized as follows:

1) Khnum-hetep II's father built the Ka Chapel in the 12th Dynasty.[1)]
2) The Temple of Amon existed under the rule of Ramses V.[2)]
3) Pi('ankh)y's soldiers attacked and demolished the enclosure wall and slaughtered the northern district army.[3)]
4) In the Ptolemaic Period the Serapion family rented the lands to the inhabitants of Akoris.[4)]
5) In the same period Dionysios, son of Kephalas, dealt in wheat and cows in the city.[5)]
6) Under the rule of Ptolemy V, Hergeus's son Euchariste dedicated an inscription to Isis Mochias which identified Akoris (Pl. 5 upper).[6)]
7) Titus Egnatius Tiberianus, a centurion of the Legio III Cyrenaica, dedicated an alter to Zeus and was in charge of the Akoris quarry which supplied stone paving for Alexandria.[7)]
8) Curvius Rufuce and Caius Rammius Cypronianus who were centurions of the Legio XXII Deiotariana dedicated stelae to Serapis.[8)]
9) Dedications to Amon and Suchos were carried out by Ammonios who lived in Alexandria, Kollouthos, etc..[9)]
10) The trireme captains, Herennius Straton and Aurelius Avitianus carried out dedications to the god Amon, and Aurelious Avitanus and Casius Rufus to an undetermined god.[10)]

According to these philological results, it is proved that Tehneh or Akoris was a township with an enclosure wall in the Third Intermediate Period and subsequently had considerable functions as a religious, military and economic stronghold during the Ptolemaic and Roman Periods. Some Egyptologists since Lesquier have already referred to this and its historical significance in detail, though restricting themselves to the pre-Coptic Period due to the insufficiency of philological materials.

On the other hand, archeological investigations were executed by many scholars, Lefebvre, Kamal, Barry, Lesquier, Seif and so on mentioned in the next chapter. However, compared to the fact that the philological sources depict the functions of the city vividly even in the Ptolemaic and Roman Periods, and show us its historical significance, it cannot be denied that these archeological investigations which were mainly concerned with tombs and rock-cut chapels were insufficient for our purpose. Therefore, with the four purposes mentioned below, our investigation started in 1981.

1) Elucidating the consitution and function of the city.
2) Establishing the sequence of the city chronologically.

3) Verifying the philological results of previous studies.

4) Gaining Coptic texts.

Supplement

At the end of July 1980, Madoka Suzuki, then a lecturer at the Heian Museum of Ancient History, left for Egypt under the order of Prof. Bun-ei Tsunoda, the director of the Museum, to select a Greco-Roman site for excavation. As the result of visiting some sites suggeted by Prof. Jean-Louis de Cénival, Prof. Jean Yoyotte and Prof. Étienne Bernand, she recommended the site of Akoris in Middle Egypt. Prof. Tsunoda then dispatched Hiroyuki Kawanishi, then a research assistant at the Museum, to Egypt to prepare for the comimg excavation in company with Suzuki.

In the next year, our application for permission to begin excavation at the site of Akoris was accepted by the Egyptian Antiquity Organization. And to support the excavations, the Egyptian Committee of the Paleological Association of Japan, INC. was immediately organized.[11]

Notes

1) GAUTHIER, *DTH* 3, pp. 7, 8.
2) GARDINER, A. H., *The Wilbour Papyrus, II* (Oxford, 1948).
3) GRIMAL, *SPM*, pp. 46-49.
4) DREW-BEAR, M, *Le Nome Hermopolite* (Michigan, 1979), p. 295.
5) *ibid*, p. 296.
6) JOMARD, E., *Antiquité-Descriptions* (*Description de l'Égypte*, vol. IV, Paris, 1982), pp. 372-377.
7) BERNAND, *IGLA*, pp. 6-9.
8) WAGNER, *NIA*, pp. 51-56.
9) *ibid.*
10) *ibid.*
11) As the Heian Museum of Ancient History governed by the Paleological Association of Japan, INC. was closed with the opening of the Museum of Kyoto in 1988, the excavation at Akoris was taken over by the Japan Institute of Paleological Studies established by the Paleological Association of Japan, INC.

(KAWANISHI, H)

3 ORGANIZATION, TERM AND AREA OF THE INVESTIGATION

EGYPTIAN COMMITTEE

President : TSUNODA, Bun-ei, president and professor, the Japan Institute of Paleological Studies (JIPS)

Chairman : SHIMOJO, Nobuyuki, professor, E-hime University, 1981～1983
KAWANISHI, Hiroyuki, professor, JIPS, 1984 and 1986～1993
SUZUKI, Madoka, professor, Hijiyama Women's College, 1985

Members : ETANI, Hiroshi, professor, JIPS ; TOMIMURA, Den, lecturer, JIPS ; NISHI-I, Yoshiko, lecturer, JIPS ; TSUJIMURA, Sumiyo, lecturer, JIPS ; SAKA-I, Satoshi, lecturer, JIPS ; IWAMOTO, Yoshio, lecturer, the late lamented ; TOJO, Hisashi, vice-director, the Museum of Kyoto (MK) ; KATA-OKA,

Hajime, section head, MK ; SUZUKI, chuji, senior curator, MK ; FUJIMOTO Ko-ichi, senior curator, MK ; NI-IDA, Ikuo, section head, MK ; OBOROYA Hisashi, professor, Doshisha Women's College ; ASAKA Tadashi, professor, Doshisha University ; TERASHIMA, Ko-ichi, associate professor, Tokyo University ; NISHIO, Shin-ichi, section head, Kyoto prefectural office

FIRST SEASON

Date : From 9 September to 23 December 1981

Purpose : Excavation, Western Temple Area, 510m^2

General director : TSUNODA, Bun-ei

Director : SUZUKI, Madoka

Members : KAWANISHI, Hiroyuki ; MINAMI, Hiroshi, curator, MK ; TAKAHASHI, Hiroyuki, associate professor, Kyoto Institute of Technology ; FUKUMOTO, Kunio, staff member, the Penta-Ocean Construction Co. Ltd ; ENDO, Kouji, staff member, the Penta-Ocean Construction Co. Ltd

Site inspector : Adel Hassan, Egyptian Antiquity Organization, EAO

SECOND SEASON

Date : From 15 October to 22 December 1982

Purpose : Excavation, Western Temple Area and Central Temple Area, 320m^2

General director : TSUNODA, Bun-ei

Director : SUZUKI, Madoka

Members : KAWANISHI, Hiroyuki ; SUZUKI, Chuji, HAMAJIMA, Kazunari, teacher, the Syowa Dai-ichi Gaku-en High School

Site inspector : Ratiba Radwan Tobla, the Coptic Museum

THIRD SEASON

Date : From 21 October to 12 December 1983

Purpose : Excavation, Western Temple Area, 390m^2

General director : TSUNODA, Bun-ei

Director : SUZUKI, Madoka

Members : KAWANISHI, Hiroyuki ; TSUJIMURA, Sumiyo ; YAMADA, Kunikazu, curator, MK

Site inspector : Magdi Husseun Mohamed, EAO

FOURTH SEASON

Date : From 1 November to 15 December in 1984

Purpose : Excavation, Western Temple Area and City Wall, 666m^2

General director : TSUNODA, Bun-ei

Director : SUZUKI, Madoka

Members : KAWANISHI, Hiroyuki, TSUJIMURA, Sumiyo ; SAOTOME, Masahiro, senior curator, Tokyo National Museum ; MIYAMOTO, Junji, lecturer, Tachibana Women's College ; SUDO, Yoshiyuki, associate professor, Nagoya University ; MOCHIZUKI, Kaoru, staff, the Fujisawa municipal office

Site inspector : Yussef Abdel Rahman Kassin, EAO

FIFTH SEASON

Date : From 1 November to 5 December 1984

Purpose : Excavation, Western Temple Area, 500m^2

General director : TSUNODA, Bun-ei

Director : SUZUKI, Madoka

Members : KAWANISHI, Hiroyuki ; TSUJIMURA, Sumiyo ; YAMADA, Kunikazu ; MOCHIZUKI, Kaoru

Site inspector : Mohassen Lamai Liyad, EAO

SIXTH SEASON

Date : From 25 October to 4 December 1986

Purpose : Excavation, Western Temple Area and rock-cut shafts, 637m^2

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : SADAMORI, Hideo, curator, MK ; TSUJIMURA, Sumiyo ; MIYAMOTO, Junji ; UCHIDA, Sugihiko, lecturer, Waseda University

Site inspector : Faiyuk Abdrabo, EAO

SEVENTH SEASON

Date : From 10 October to 11 December 1987

Purpose : Excavation, Western Temple Area and rock-cut shafts, 361m^2

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : TSUJIMURA, Sumiyo ; CHIKIRA, Atsushi, staff, Yamashiro town office ; ITAMI, Sana-e, curator, the Tenpyo Museum

Site inspector : Mahmud El Said, EAO

EIGHTH SEASON

Date : From 15 October to 1 December 1988

Purpose : Excavation, Western Temple Area and rock-cut shafts, 330m^2

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : TSUJIMURA, Sumiyo ; KUROKAWA, Tetsuro, lecturer, Me-iji University ; MIYAMOTO, Junji ; SHIRA-ISHI, Noriyuki, research assistant, Ni-igata University

Site inspector : Faiyuk Abdrabo, EAO

NINTH SEASON

Date : From 10 October to 21 November 1989

Purpose : Excavation, Western Temple Area and rock-cut shafts, 330m^2

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : TSUJIMURA, Sumiyo ; HASHIMOTO, Sei-ichi, staff, the Kyoto Cultural Buried Property Center ; MIYAMOTO, Junji ; TERAMASU, Hatsuyo, staff, JIPS

Site inspector : Hesham Ahmad, EAO

TENTH SEASON

Date : From 20 December 1990 to 12 January 1991

Purpose : Restoration of ship model. Examination of Coptic textiles. Measurement of the rock-cut chapels and shafts

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : TSUJIMURA, Sumiyo ; HASHIMOTO, Sei-ichi ; TATSUNO, Motoyo, teacher, the Kohnan Girls' High School

Site inspector : Gamal Hermina, the Coptic Museum ; Mahmoud Salah, EAO

ELEVENTH SEASON

Date : From 2 December 1991 to 16 January 1992

Purpose : Restoration of the ship model. Measurement of the site

General director : TSUNODA, Bun-ei

Director : KAWANISHI, Hiroyuki

Members : TSUJIMURA, Sumiyo ; HASHIMOTO, Sei-ichi ; MIYAMOTO, Junji

Site inspector : Mahmoud Salah, EAO

TWELFTH SEASON

Date : From 21 November 1992 to 8 January 1993

Purpose : Examination of the ship model and coffin. Excavation, northwest area in the site, 500m^2

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Director : KAWANISHI, Hiroyuki
Members : TSUJIMURA, Sumiyo ; MIYAMOTO, Junji
Site inspector : Helmi Hossin Sleimen, EAO ; Mahmoud Salah, EAO

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The Ministry of the Education, Culture and Science ; The Ministry of Foreign Affairs ; Asahi Optical Co., Ltd. ; Asahi newspaper ; Konica Photo Ind. Co., Ltd. ; Mitsui & Co., Ltd. ; Penta-Ocean Construction Co., Ltd. ; Slick Industry Co., Ltd. ; S. S. Pharmaceutical Co., Ltd. ; Takanashi Foundation ; Tokyo Surveying Institute Co., Ltd. ; Topcon Co., Ltd. ; Yamano-uchi Pharmaceutical Co., Ltd..

II
ARCHITECTURE AND STRATIGRAPHY

1 GENERAL VIEW OF THE SITE

The main site covers a surface of 600m north to south and 300m east to west and 14.7ha in area (Fig. 4. Pls. I. 1 and 2). In the southwestern part of the site a crag rises to a height of 50m from field level. Many rock-cut tombs on the east side (Pl. 5 upper) and some rock-cut chapels on the north side of the crag have lost their original form thus adding to the ghostly appearance of the lonely site. The main site decreases in height gradually in the north and the east directions as it reaches the wadi, while the west side forms a cliff.

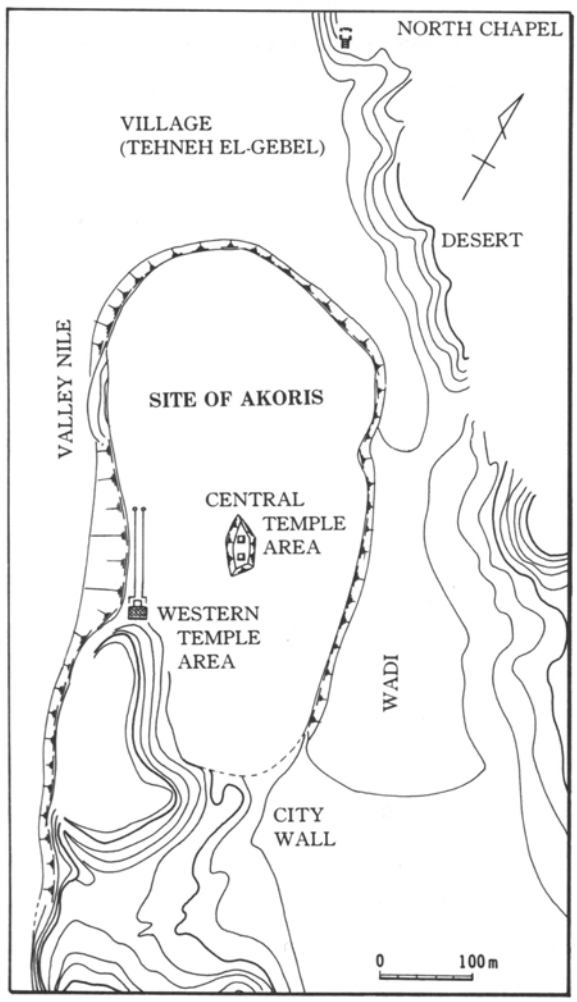


Fig. 4 Topographical map of the site



Fig. 5 Reliefs left on the outer face of a rock-cut chapel (scale 1/12)

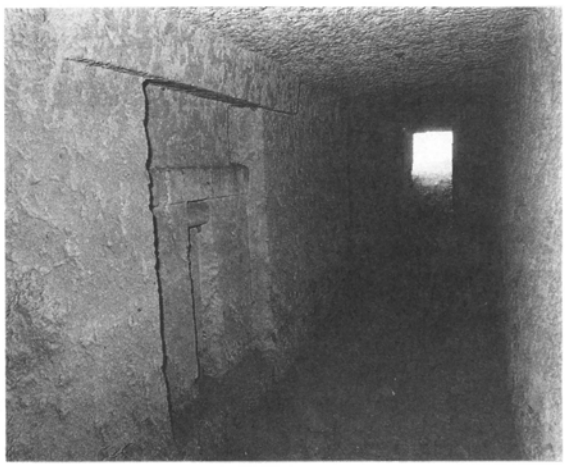


Fig. 6 Rock-cut subterranean tomb

While traces of human occupation reach back to the Neolithic Period according to our investigation, the structures in the site belong to the Dynastic and post-Dynastic Periods. A large number of mud brick walls remain everywhere and many stone blocks used for construction are scattered about here and there without possession. On the west side of the site there is a temple complex, while at the center, the remains of an ashlar temple which appears to be dedicated to Serapis stand and many stone blocks are scattered about in its vicinity.

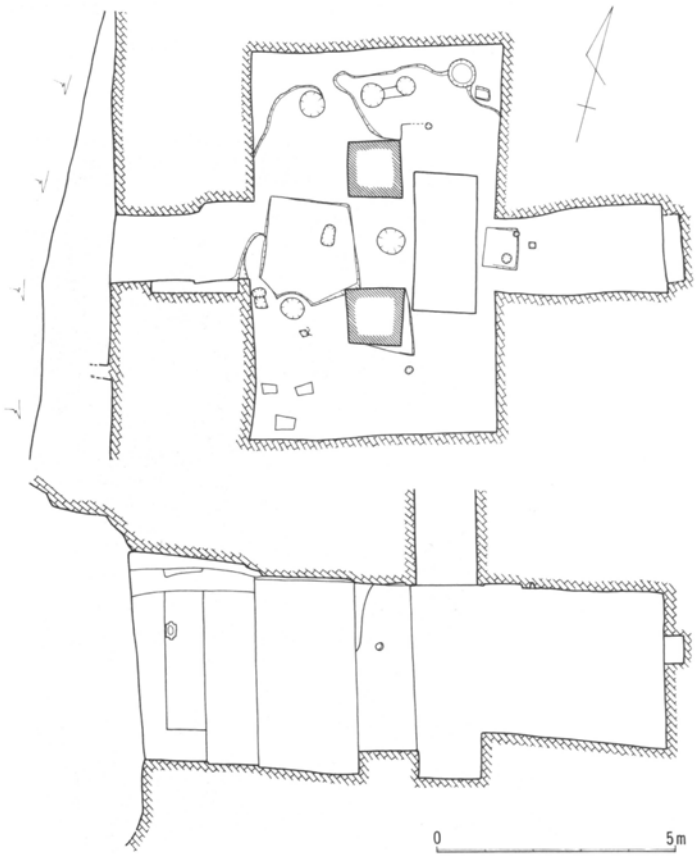


Fig. 7 North chapel cut into the west cliff

After Edmé F. Jomard[1] had confirmed that Tehneh was the site of Akoris in his report of 1821, Sir Gardner Wilkinson[2] and Nestor L'Hôte[3] published reports on their general surveys of the site, and archeological excavations were started at the end of the 19th century. In 1904, the main temple with an inscribed cartouche of the Roman Emperor Nero, situated on the north side of the crag, was excavated by M. Gustave Lefebvre and L. Barry[4]. M. Jean Lesquier excavated the Sacred Road section of the western temple area in 1908[5]. In 1926 Hakim Abou Seif unearthed the shaft tombs which were dug in the rock floor of one of the west chapels, and found mummies and many funerary artifacts[6]. A long interruption in the archeological investigation then followed until our excavation was started in 1981.

There are rock-cut chapels and tombs, and inscriptions and reliefs along the western cliff facing the Nile (Pl. I upper) A rock-cut chapel situated at the north end of the western cliff bears reliefs on the outer face. Unfortunately, except for one presenting the god Amon or Khnum and an offering table (Fig. 5), all of them have perished due to later disturbance. Southward from the chapel a wide, natural shelf leads to several tombs which are on it and two chapels cut into the cliff.

One of these tombs has a long subterranean room, measuring 9.0m north-south × 1.4m east-west

× 2.2m in height, with 1.2 × 2.2m two false doors carved on the west wall (Fig. 6). Because of the similarity to the form and the chisel marks of the 'Fraser Tombs', situated near the site and belonging to the Old Kingdom, this subterranean tomb also appears to date from that period. Of the two rock-cut chapels, the north one is a wing room type with two rock-cut pillars and a shaft 7.7m deep (Fig. 7), and the south one, 20m distant, is an aligned room type without either pillars or shafts (Fig. 8). Judging from the chisel marks, the former dates from the Middle Kingdom while the latter to the Roman Period (see pp. 275 ff).

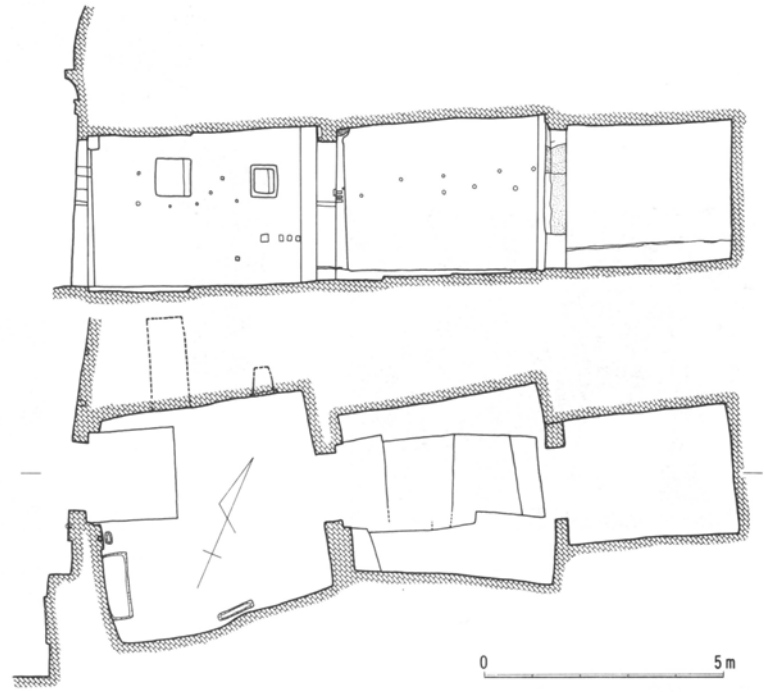


Fig. 8 South chapel cut into the west cliff

On the top of the crag there is an enormous shaft filled with sand containing pottery shards, however its date could not be determined due to the lack of time for complete excavation.

On the south side of the crag, there is a pair of Roman officers and their horses inscribed symmetrically on the cliff and a rock-cut shaft just under it (Pl. 5 lower). On the southern slope of the crag and below the cliff some mud brick walls are exposed here and there. Most of the pot shards and mud bricks found here were from the Third Intermediate Period to the beginning of the Roman Period while artifacts belonging to the Coptic Period were few.

Separated by a saddle, there is a second crag to the south. On the west end of the saddle between the two crags there is a cliff facing agricultural fields along the Nile below, and a rock-cut stairway going halfway down. The Isis Mochias inscription referred to by many philologists is on this cliff (Pl. 4 upper).

The north side of the southern crag facing the saddle contains many vestiges of quarries and tunnel type tombs (Pl. 3 lower). Along the western cliff, the wide natural shelf continues to the south, and as the northern part of the shelf is especially wide, many tombs are also existent here mainly of the shaft type with subterranean chamber. The grandest of these tombs has two pillars, a false door set in front of an offering table and a shaft carved in the floor. At least a part of the tombs seem to go back to the Middle Kingdom, however, all of them show later disturbance.

Although the natural shelf disappears at one point, a narrow artificially cut path leads to another further south. The cliff above the shelf bears a big cartouche of Ramses III and a relief consisting of Sobek, Amenre and Ramses III (Pl. 4 lower), all of which have already been reported in detail by Labib Habachi.[7]

Turning to the east side of the wadi, the plateau which forms the west end of the Eastern Desert

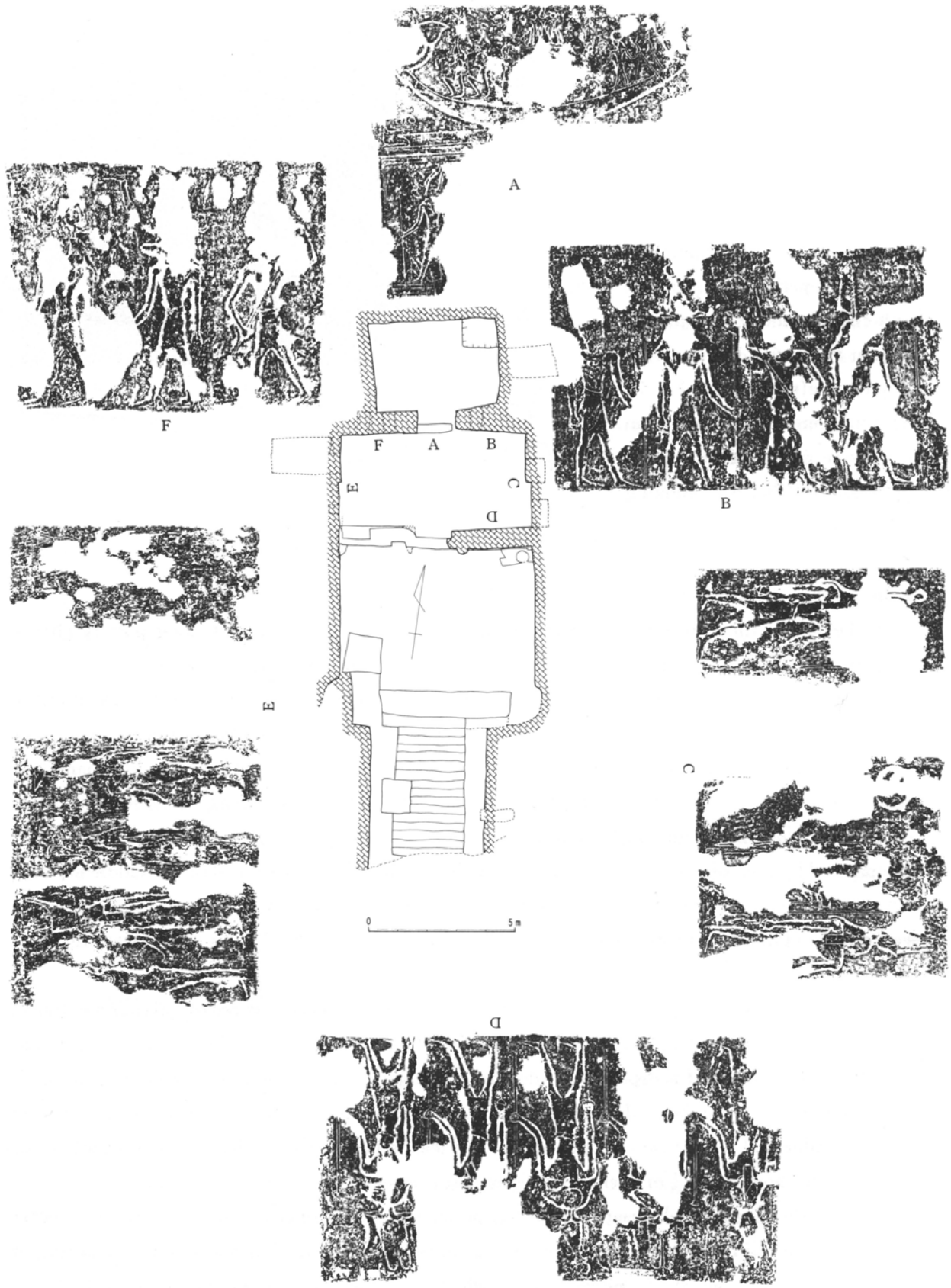


Fig. 9 North Chapel on the south side of the plateau

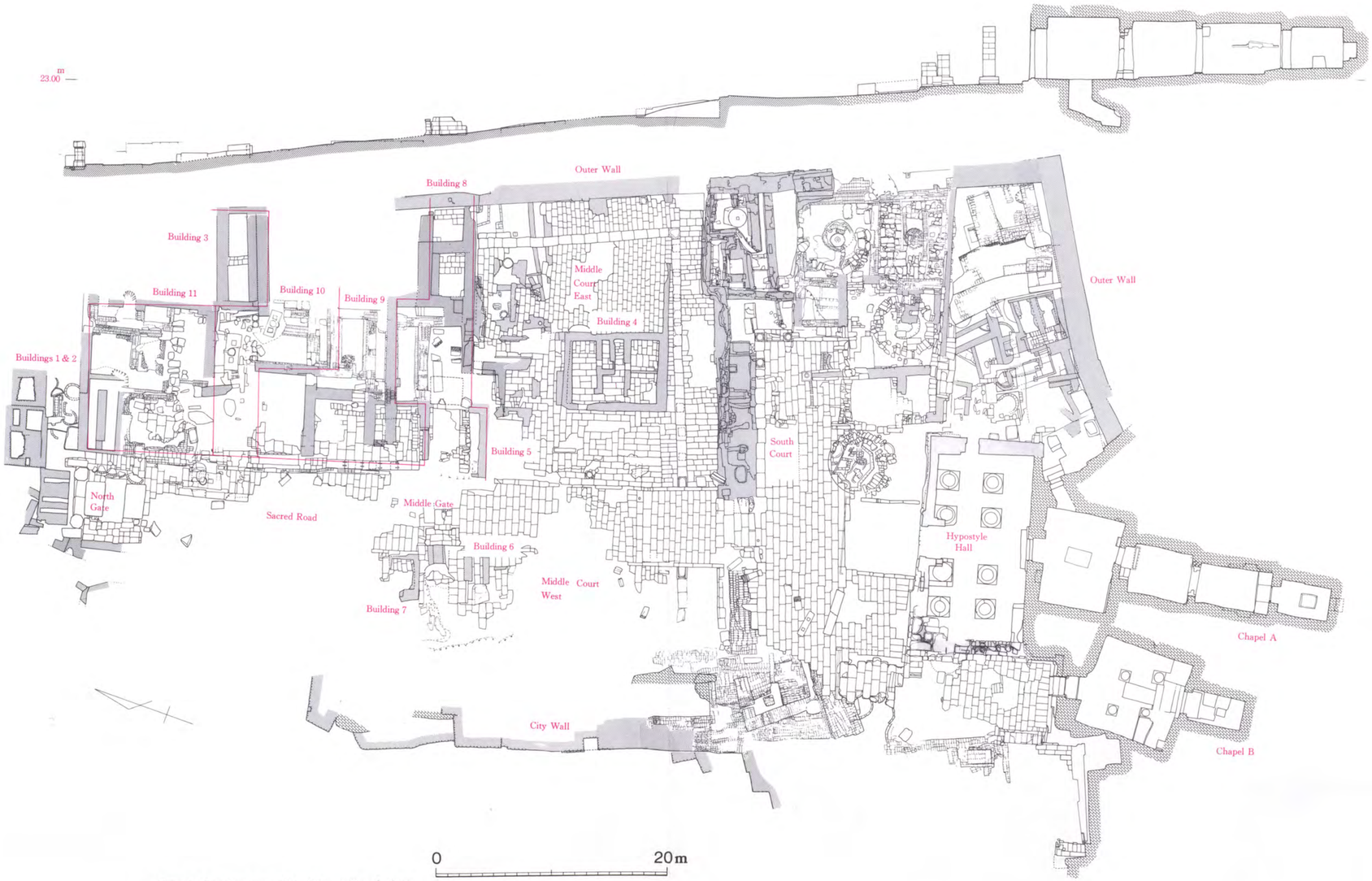


Fig. 10 Completed map of the Western Temple Area

extends north-south, and the cliff and slope here served as chapel, tomb and quarry. A small chapel dated to the Ptolemaic Period, as reported by R. Holthoer and R. Ahlgvist,[8] appears in a cave situated on the south side of the rock cliff some 250m north of the main Akoris site (Fig. 9. Pl. 6 upper). South of the cave and in a dry valley cut in the plateau many quarry traces and a large artificial cave remain while on the valley floor a group of mud brick walls are left. Half way up the cliff facing the wadi, a large number of rock-cut tombs range in a row toward the south. They are a tunnel-type, some of which are only a narrow tunnel while others form a chamber, and most appear to be from the Roman to the Coptic Periods. Many shaft tombs dug in the rocky slope were exposed by Lefebvre in 1903, and according to his report each had a limestone vessel and twenty-eight of the vessels contained an anthropoid wooden coffin with a Horus-shaped head.[9] In addition, pseudo-mummies of Osiris were found inside the coffins which dated from the 1st or 2nd century A. D.

Notes

1) JOMARD, E., *Antiquités-Descriptions* (*Description de l'Égypte*, vol. IV, Paris, 1821), pp. 372-377.
2) WILKINSON, J. G., *Topography of Thebes and General View of Egypt* (London, 1835), pp. 369-370.
3) L'HÔTE, N., *Lettres Écrites d'Égypte en 1838 et 1839* (Paris, 1840), pp. 36-38.
4) LEFEBVRE, BARRY, *ASAE*, pp. 141-158.
5) LESQUIER, J., *Fouilles à Tehneh* (*BIFAO*, 8, Le Caire, 1911), pp. 111-133, Pls. I-XI.
6) SEIF, *ASAE*, pp. 32-38.
7) HABACHI, *JARCE*, pp. 71-73, Pls. VII, X.
8) HORTHOER, R. and R. AHLGVIST, *The Roman Temple at Tehna el Gebel* (*Studio Orientalia*, vol. 43-7, Helsinki, 1974), pp. 3-24.
9) LEFEBVRE, G., *Sarcophages Égyptiens Trouvés dans une Nécropole Gréco-Romaine à Tehnéh* (*ASAE*, 4, Le Caire, 1903), pp. 227-231.

(KAWANISHI, H.)

2 ROCK-CUT CHAPELS AND SHAFTS

CHAPEL A (Figs. 10～13. Pls. 7～9)

ROCK-CUT ROOMS : These four rock-cut rooms are aligned in a row to form a chapel measuring 27m in overall length. The first room has two entrances from the outside, one from the north, the other from the east. In the third room, crocodile mummies had been niched in form-fitting shelves cut in both sides of the walls. The fourth room, which was used as the sanctuary, has an altar cut from the bedrock at its center. A niche cut in the rear wall, had previously been enclosed by a door and in all probability a statue of a god had been set inside, however both the door and a statue are now missing. The front of the north entrance to the chapel is cut in the form of a gate consisting of a lintel and side posts, each of which bears a panel relief (Fig. 13. Pl. 8 lower). The gate projects 10cm from the front wall in order to

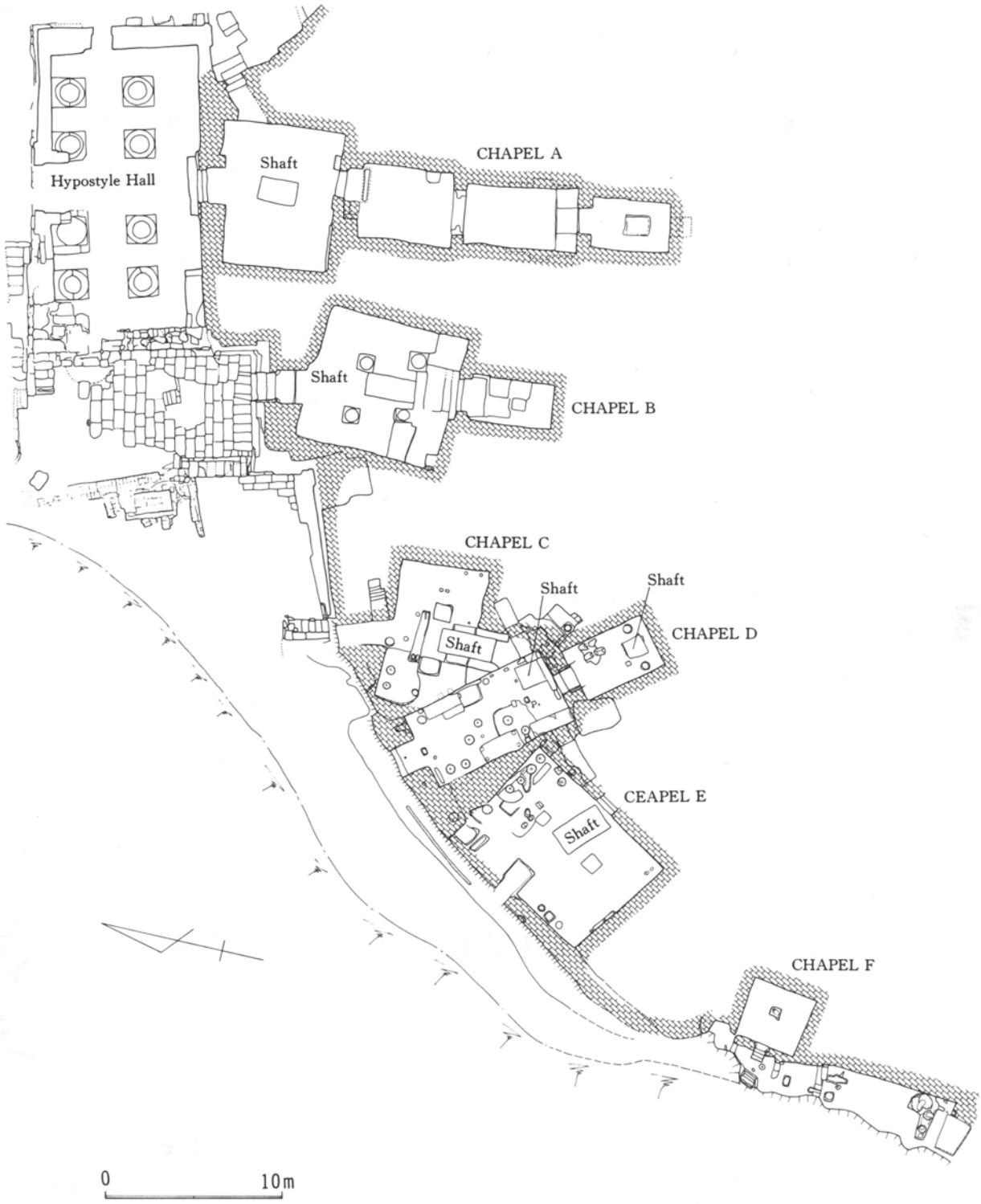


Fig. 11 Completed map of the rock-cut chapels

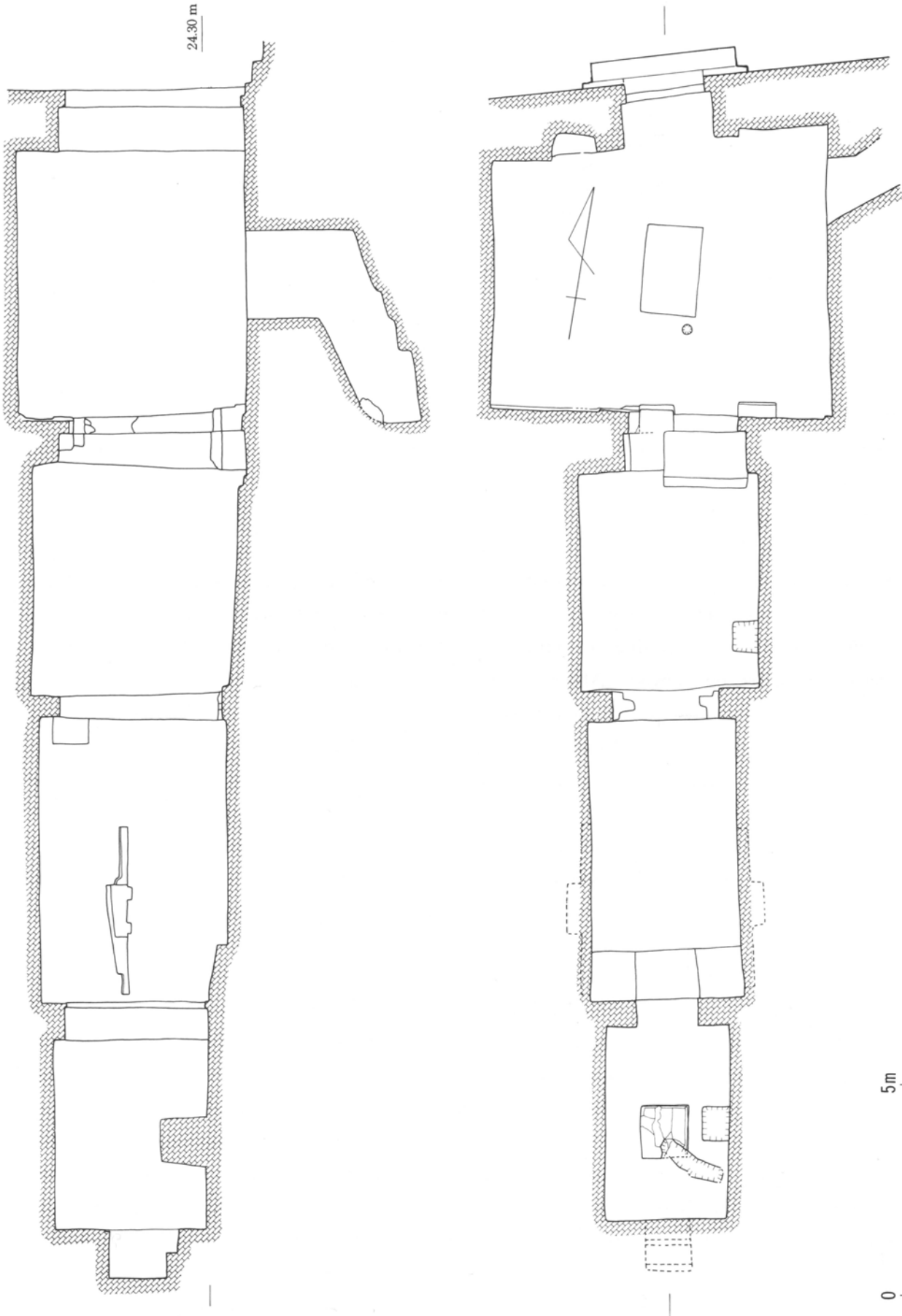


Fig. 12 Plan and vertical section of Chapel A

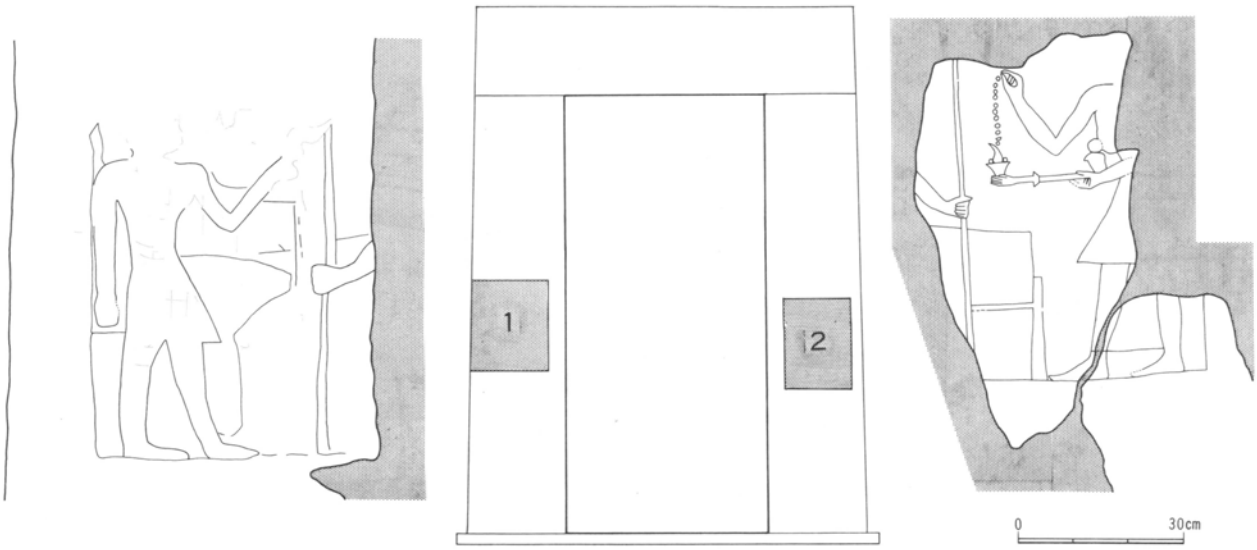


Fig. 13 Front of Chapel A

accentuate it. The upper part of the gate had at one time been broken off, but subsequently was repaired, though poorly. The left-hand relief presents a god coming from a temple and a visiting king. Except for one hand holding a scepter, the god is missing, which unfortunately leaves the question of whether the god is Amon or Sobek. The right-hand scene which consists of two parts, an unbroken relief and a replaced fragment, shows a ceremony where the king is offering incense to the god. This scene of the king throwing granular incense into an incensory can be grasped although the head and one side of the body are lacking. The king's incensory is the same as the bronze type used in the Greco-Roman Period, that is, a hand with a cup in its palm, and an arm. The end of the handle is shaped in a lanneret bearing a disc on its head. Although this relief was finished, the left-hand relief of the king offering something votive to the god was not. The outline of the king's body was formed, but the detail was not finished. That the indistinctness of the left-hand scene is due to the interruption of the work is supported by the fact that dark brown guidelines used when carving, are seen on the surface, which indicates that Chapel A as a whole was left unfinished. Regarding the fact that Chapel A was, as mentioned later, rebuilt by the Roman Emperor Nero, surely this has historical meaning. (KAWANISHI, H.)

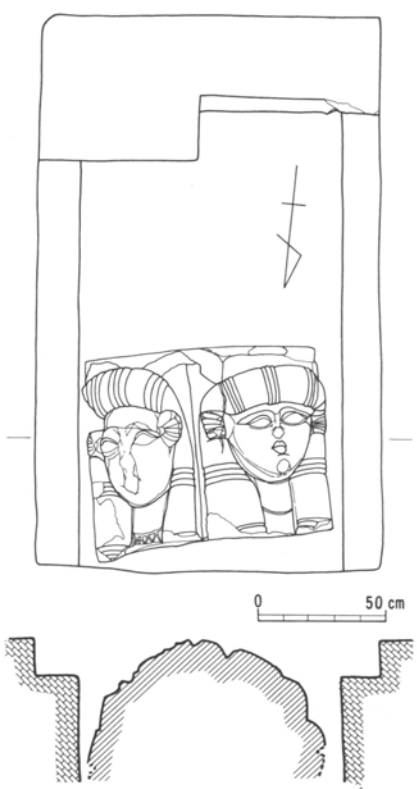


Fig. 14 Hathor capital in the Chapel A shaft

SHAFT (Fig. 15. Pl. 9): This shaft is located in the first room of Chapel A and it was completely filled with soil and rubble when our work began.[1)] The vertical entrance pit had originally been sealed with a slab lid which rested on ledges cut in the east and west edges of the pit wall. A part of the lid still remained in position at the south end of the opening before our investigation of the shaft began.

Our work of the 8th (1988) season in the shaft began with the removal of a Hathor capital, 90cm wide and 79cm high (Fig. 14. Pl. 9 lower left). On the south side just next to the capital and almost at the same level, was found a limestone block with a fragmentary

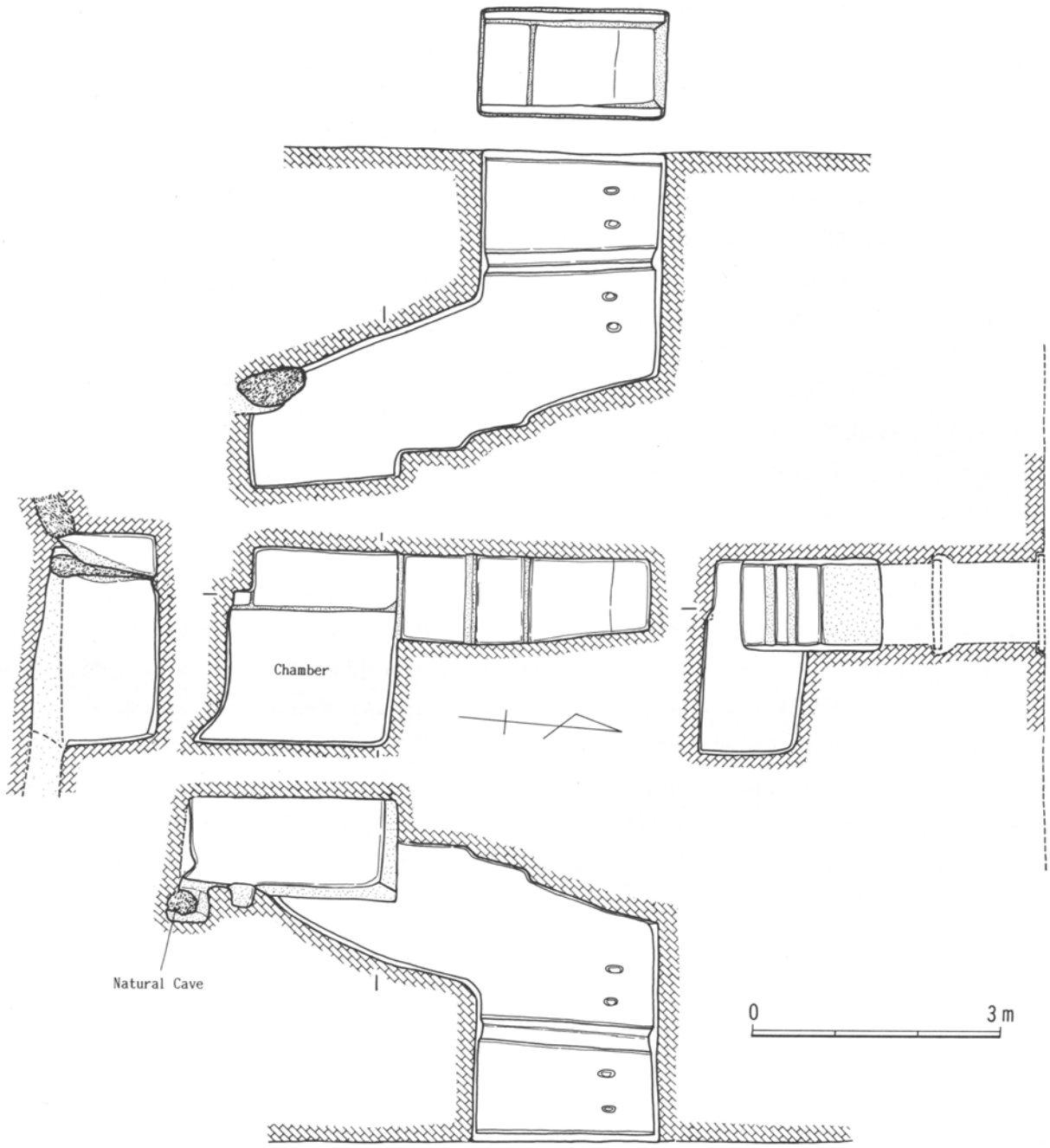


Fig. 15 Chapel A shaft

relief carved with hieroglyphs and a figure wearing a loincloth (see p. 309. Pl. 117 no. 1). They date from the Roman Period.

In the process of removing the filling from the shaft pit, grooves were detected on its east and west walls running from north to south at a point 1.2m from the top. It is supposed that these grooves had been cut to receive a second slab lid, now lost.

The excavated shaft measures 2.2m north-south × 1.3m east-west at the top, and the depth is 2.6m at the north end and 3.4m at the south. Access to an inner chamber is achieved by means of a short passage with three steps descending from north to south. The chisel marks left on the lowest part of the wall show that the original slope had been recut into steps at a later date. The prior chissel marks are

similar to those of the shafts in Chapel B, C and E mentioned later and the later ones to those of the Greco-Roman relics in this site (see pp. 275 ff). The floor of this chamber is located 4.1m below the floor of the first room of the chapel. It is supposed that the chamber was originally planned to be about 2.4m square, but judging from the fact that the floors and walls had been only roughly quarried out, that the south wall was not completed, and that two natural caves were exposed in both corners of the south wall, it is assumed that the sub-surface rooms including this chamber were never finished. Perhaps the two caves were the main factor in the cessation of work here.

Some interesting remains such as bronze coins (see. p. 196), a bronze bird leg (Fig. 137 no. 11), a bronze Osiris (Fig. 138 no. 6), a wooden disk plaque (Fig. 134 no. 20. Pl. 68 no. 8), fragments of cartonnage (Pl. 77 nos. 1 and 2) and so on were found in the disturbed filling. (MIYAMOTO, J.)

HYPOSTYLE HALL (Fig. 16): The north end of the rock crag was cut out and then the Hypostyle Hall which measures 20m east-west × 9.5m north-south was constructed. When found by Lefebvre and Barry, it had already been heavily damaged with the upper part destroyed. However, eight columns shafts, 1.1m in diameter at the lower end, still remain, one with the Nile hymn written in red on it. It is quite possible, considering the size and style, that the Hathor capital found in Chapel A was originally from here. The east, west and north walls are composed of cut stones of various sizes set on the natural rock. The foundation of the east wall was constructed using stone blocks with reliefs on them (Pl. 119 nos. 8, 9, 11 and 12). The west wall is almost completely missing and the other two walls were restored in this century. The south wall is formed by the cut mountainside except where due to the natural slope of the crag in the upper east part, it is supplemented by uniform ashlar so as to maintain a consistant height. The main entrance is in the center of the north wall and an attendant entrance is found in the east. The north side of both main gateposts, fronting the Sacred Road on the north, possesses reliefs

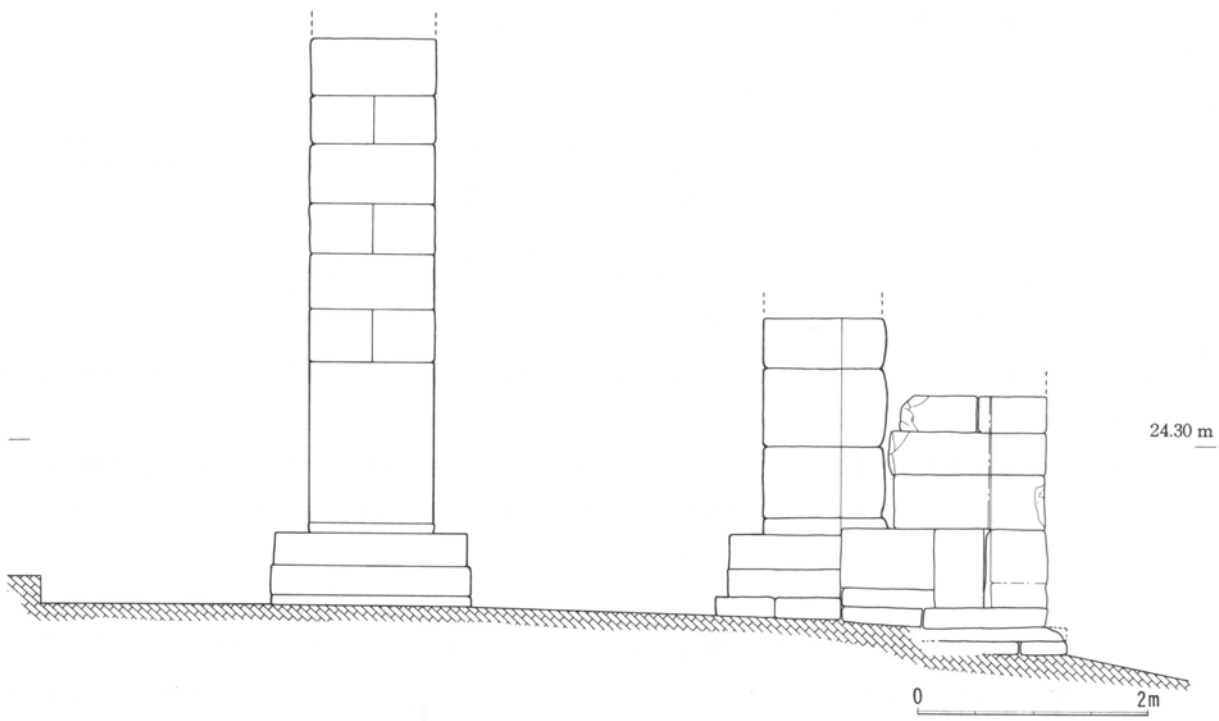


Fig. 16 Elevation of the Hypostyle Hall

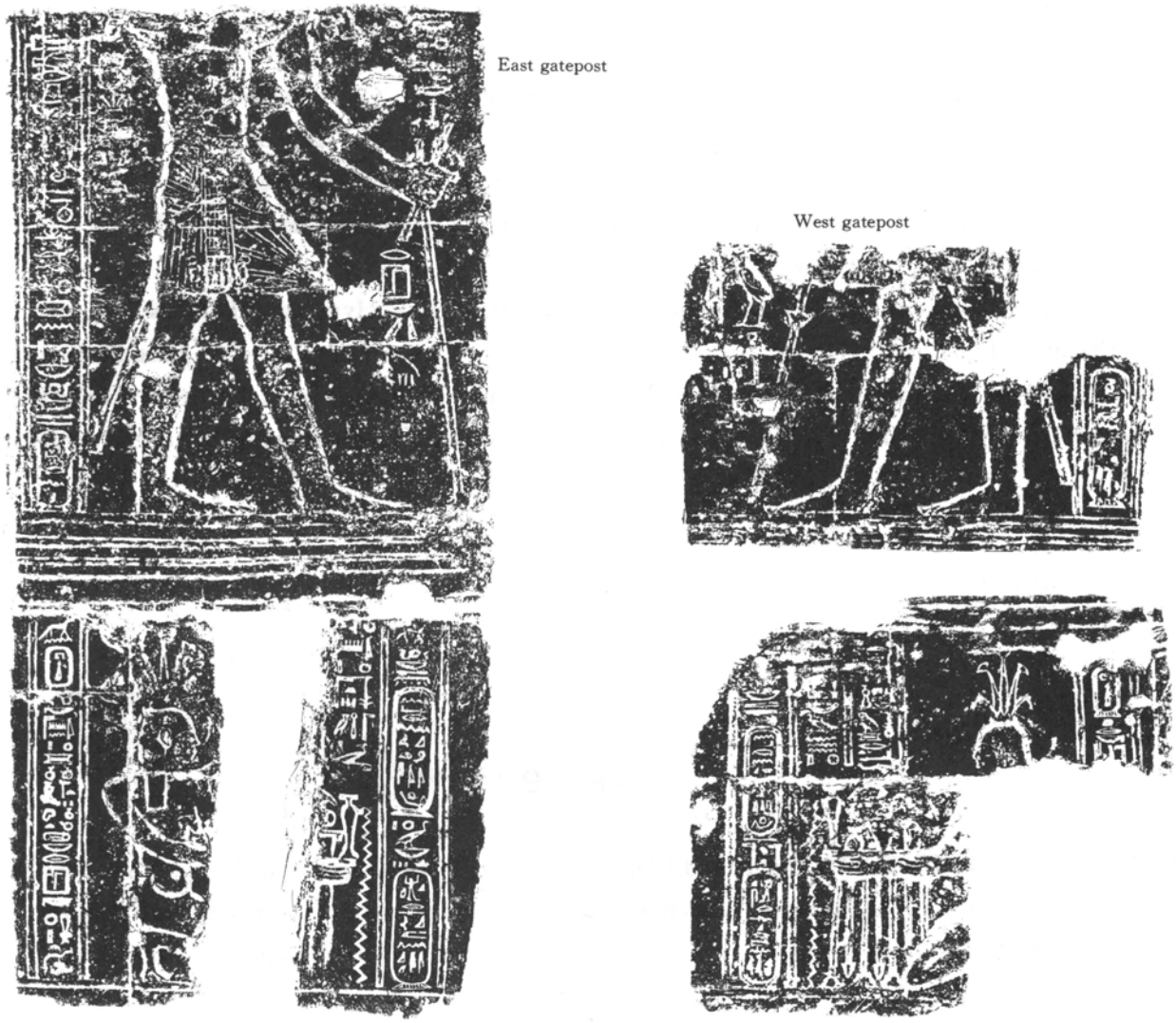


Fig. 17 Reliefs with cartouches of the Roman Emperor Nero on the gateposts of the Hypostyle Hall (scale1/16)

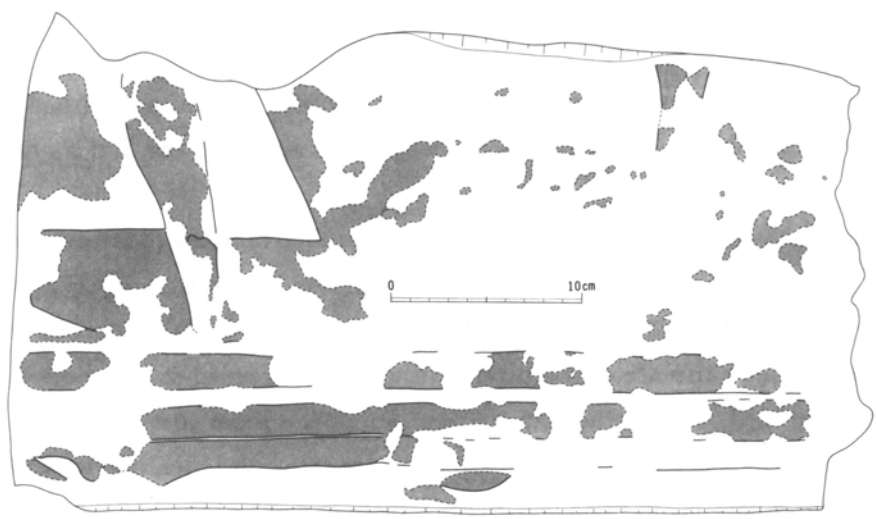


Fig. 18 Colored relief remaining on a reused stone in the west wall of the Hypostyle Hall

with cartouches of the Roman Emperor Nero (Fig. 17. Pl. 8 upper) while a Greek inscription remains on the west side of the east gatepost (see p. 330. Pl. 121 no. 2).

The largely destroyed west wall measures 1.25m in thickness. Of the stones in the wall, a reused one bearing colored painting had at one time been included (Fig. 18). Although the stone itself is missing, the mortar which held the stone in the wall shows three horizontal lines colored yellow, blue and yellow from the top, and the lower part of what may be a king's loincloth. The leg of the king is colored in red and the loincloth in yellow.

There is a concavity in the floor at the northwest corner of the Hypostyle Hall. A bronze lamp (Fig. 139 no. 3. Pl. 71 no. 9), some bronze coins (Pls. 72 nos. 19～21, and 73 nos. 22～30), glass decorations (see p. 234. Pl. IV no. 9) and pottery shards and so on were found in it. The coins date from the first half of the 4th century A.D. which is coincident with the date of the Nile hymn written on one of the columns.[2]

Notes

1) According to Lefebve's report, a Sakhet statue made of black granite was found in the shaft. LEFEBVRE, BARRY, *ASAE*, p. 144.

2) LEFEBVRE, G., *La Fête du Nile à Achôris* (*BSAA*, 18, Alexandrie, 1921), pp. 51-56.

(KAWANISHI, H.)

CHAPEL B

ROCK-CUT ROOMS (Fig. 19. Pls. 11 and 12 upper) : Chapel B is contiguous to Chapel A and consists of two aligned rooms. The first room, which measures just 8m north-south × 8m east-west, has traces of four column bases carved out of the rock, and a shaft pit in the area between them. Though all four columns are missing, the capital of one with the face of Hathor carved, as far as could be determined, on at least two sides remains suspended from the ceiling. The west wall is for the most part lacking. The floor in the rear center behind the shaft serves as a ramp which leads into the inner room, and on it slight traces of carved steps remain. The entrance to the second room is composed of a threshhold, jambs and a lintel all carved out of the rock. The second room measures 4.8m north-south × 2.8m east-west, and unpainted plaster is preserved on the rock walls. Although the original chapel had only two rooms, some time at a later date another very small room was added adjoining the first room and to the right of the ramp.

The area next to the threshold of the first room is lower than both the room and the threshold itself. There are many lines, round and square pits and hollows in this 1.7m wide area (Fig. 20). At the front and on both sides of the slightly raised threshold, there are small round pits which, due to circular scratch traces on the floor and the existence of a central bolt hole, are regarded as axis holes for a double-leaf door which opened inward. Two other large, deep pits in the room just behind the jambs are also considered to be similar axis holes, but in this case there are two bolt holes, one for each leaf. Granite and basalt chips inlaid separately in various patterns remain in some of the hollows on the floor. Small square hollows in the threshold must have at one time been inlaid also. The western wall of the entrance bears hieratic and demotic graffiti written in black on the plaster. According to Uchida's

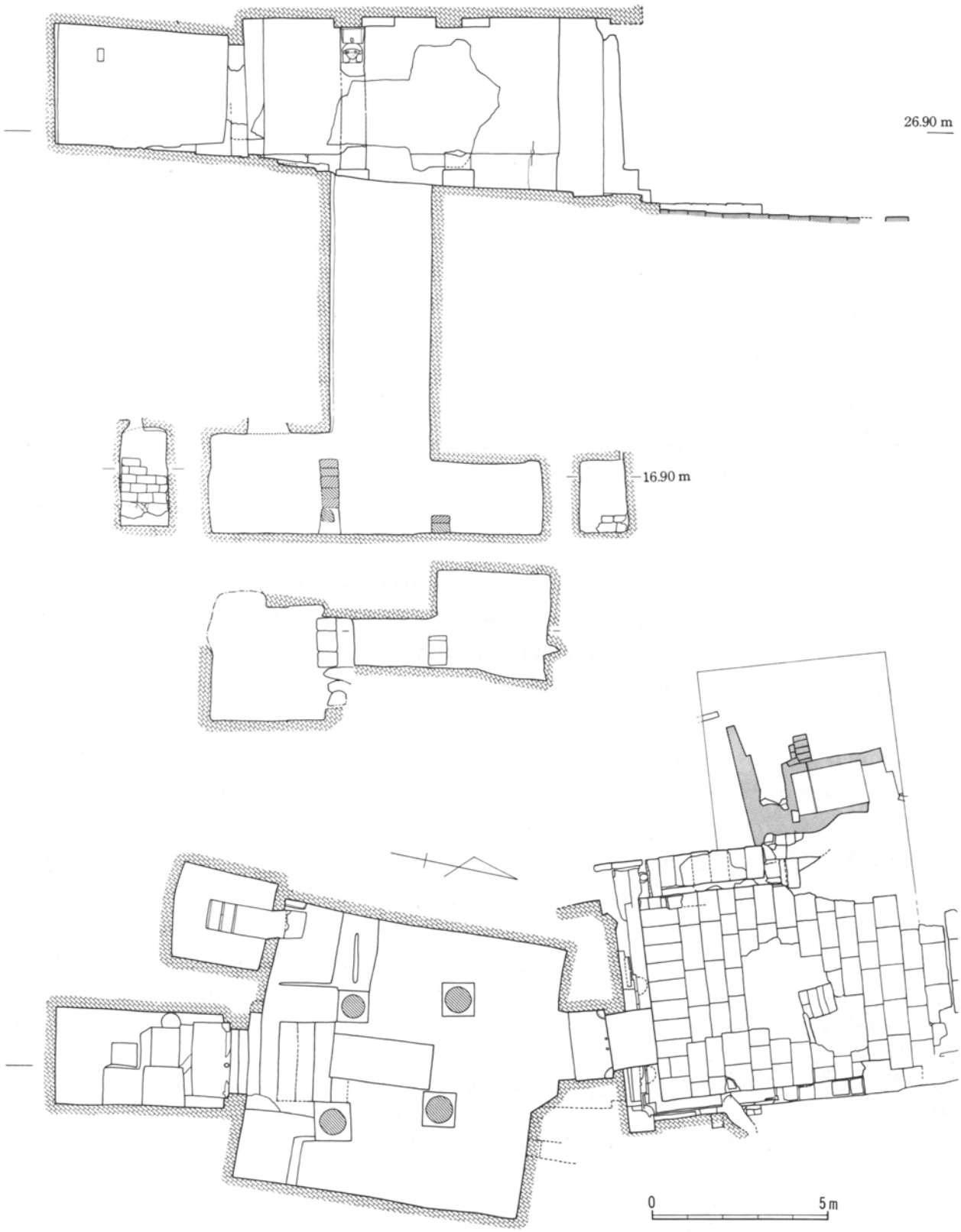


Fig. 19 Plan and vertical section of Chapel B

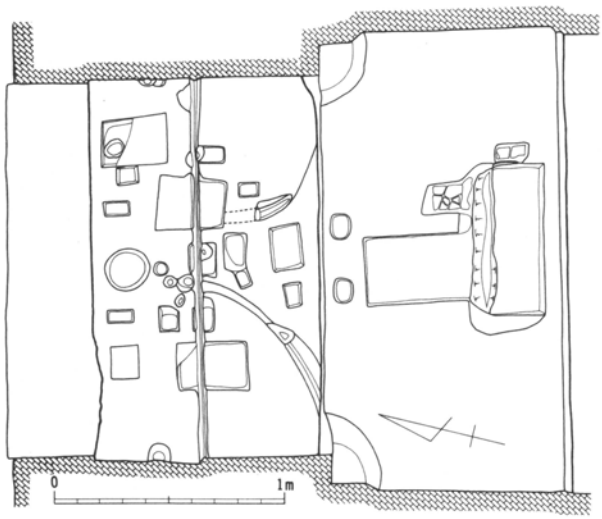


Fig. 20 Entrance step of Chapel B

deciphering mentioned in Chapter V, this graffiti belongs to either the Late Dynastic or Ptolemaic Period (see p. 322).

The eastern doorpost and wall of the first room entrance rise to 1.2m in height from the threshhold, at which point both level off to form a wide platform, and then rise again to the ceiling. Considering the relationship between the entrance and this platform, the chisel marks left on the first room walls are remarkable in that they are different in the lower and higher parts, the boundary being horizontal and at a height equivalent to the top of the platform. Compared to those on the higher wall, those on the lower are crude and rough. On the opposite west wall of the entrance, the chisel marks show the same difference at the same height, while plaster possessing graffiti is missing in the lower part. The results suggested by these facts are as follows : The platform was the original entrance floor and it was used at least until the Ptolemaic Period, when the rock floor of the first room was lowered and the present main entrance was made. Supposedly this new floor dates from the Roman Period, judging from the sawtooth chisel marks left on the column bases carved out from below the previous rock floor level (see pp. 275 ff).

The establishment of Chapel B goes back to the Middle Kingdom according to the date of the shaft described later. After that, it is thought remodeling was executed several times, the largest in scale being that carried out in the Roman Period.



Fig. 21 Limestone block with Sobek, a king sitting and part of cartouche (scale 1/4)

SHAFT AND NORTH CHAMBER : At the start of our dig the shaft was jammed with stones and earth from a point 5m below the rock floor. The top of the shaft measures 2.9m north-south × 1.3m east-west, while the bottom, attained at a depth of 9.5m, measures 2.2 × 1.3m. Tomb chambers were found on the north and south sides in the lowest part.

The north chamber is almost rectangular and is 3.2m north-south × 2.8～3.0m east-west × 1.9～2.0m in height. Stones and earth filled the entrance and occupied half of the interior space. Four stone blocks, measuring 35 × 53 × 25cm each, were piled half way up the entrance to the north chamber. It is thought that these blocks were remnants of a wall which closed off the tomb. The main shaft and the north chamber were investigated in our 7th season (1987), and the stele bearing the name of Pinudjem I (see p. 299. Fig. 224. Pl. 115 upper), stone blocks with relief (Fig. 21. Pl. 117 no. 5), fragmentary crocodile mummies (Pl. 114 nos. 7, 8, 11 and 12), a cap of canopic jar (Fig. 140 no. 1. Pl. 75 no. 1), bronze Osiris figures (see p. 191), a wooden base of an Osiris statuette with hieratic writings (see p. 321. Fig. 134 no. 1. Pl. 68 no. 1), numerous beads (see p. 228), etc. were found, but due to plundering, nothing remained in its original position. (KAWANISHI, H.)

SOUTH CHAMBER : The entrance of this chamber measures 2.9m in height, 1.3m in width, and its lower half is closed off by some natural limestones and thirteen rectangular limestone blocks which were piled on top of them (Pls. 12 lower and 13 upper). Judging from the existence of some similar blocks found in the south chamber, this entrance would originally have been closed completely. The south chamber was damaged extensively and filled with rubble and sand which was remained.

As remains were discovered in the fill, it became necessary to divide the room into Areas A to H as shown in Fig. 22. As a result, a part of the floor located about 1.9m below the ceiling was detected in Areas A, D and E. This floor is about 0.9m above the floor of the main shaft and at about the same level as the bottom of the limestone blocks piled up at the entrance. By reason of the fact that we could not remove the entrance blocks and that the floor in the western part of the chamber was missing due to a natural collapse extending from northeast to southwest, an accurate relationship between the floors of the main shaft and the chamber was not revealed. However, it is possible that this lost floor area had been repaired simply by filling it up artificially with soil and rubble to the level of the floor remaining in the eastern part, because the remains found were only at levels higher than the floor (Layers I～IV) and nothing below (Layer V). It is supposed that the collapse of the floor, or rather bedrock, happened before the chamber was cut, or during the cutting work, or before the chamber actually came into use, the floor had been repaired. However, the fact that many natural limestones were found in the soil in higher levels (Layers I～III) shows that other collapses occurred in the chamber some time later.

Judging from surviving walls, the original plan of the south chamber would have been for a room about 3.1m north-south × 3.3m west-east at the floor level which shows nearly a square plane. The ceiling, the north, the west and the south walls of the chamber do not preserve their original appearance owing to the collapse of bedrock extending from northeast to southwest. Of these walls, the north wall seems to have been roughly repaired with natural limestone rubble. In the southwest corner of the chamber, the collapse is connected with a long natural cave cutting through the bedrock of the mountain.

In spite of the disruption caused by plundering, the soil fill can, generally speaking, be classified from the top to the bottom into five groups : a grayish-brown soil with much rubble (Layer I), a greyish-black soil with sand (Layer II), a dark-brown sandy soil (Layer III), a dark-brown pure dusty soil (Layer IV) and a dark-brown soil with much limestone gravel (Layer V). Numerous objects which were found in these soils, are from the Middle Kingdom through the Copic Period.

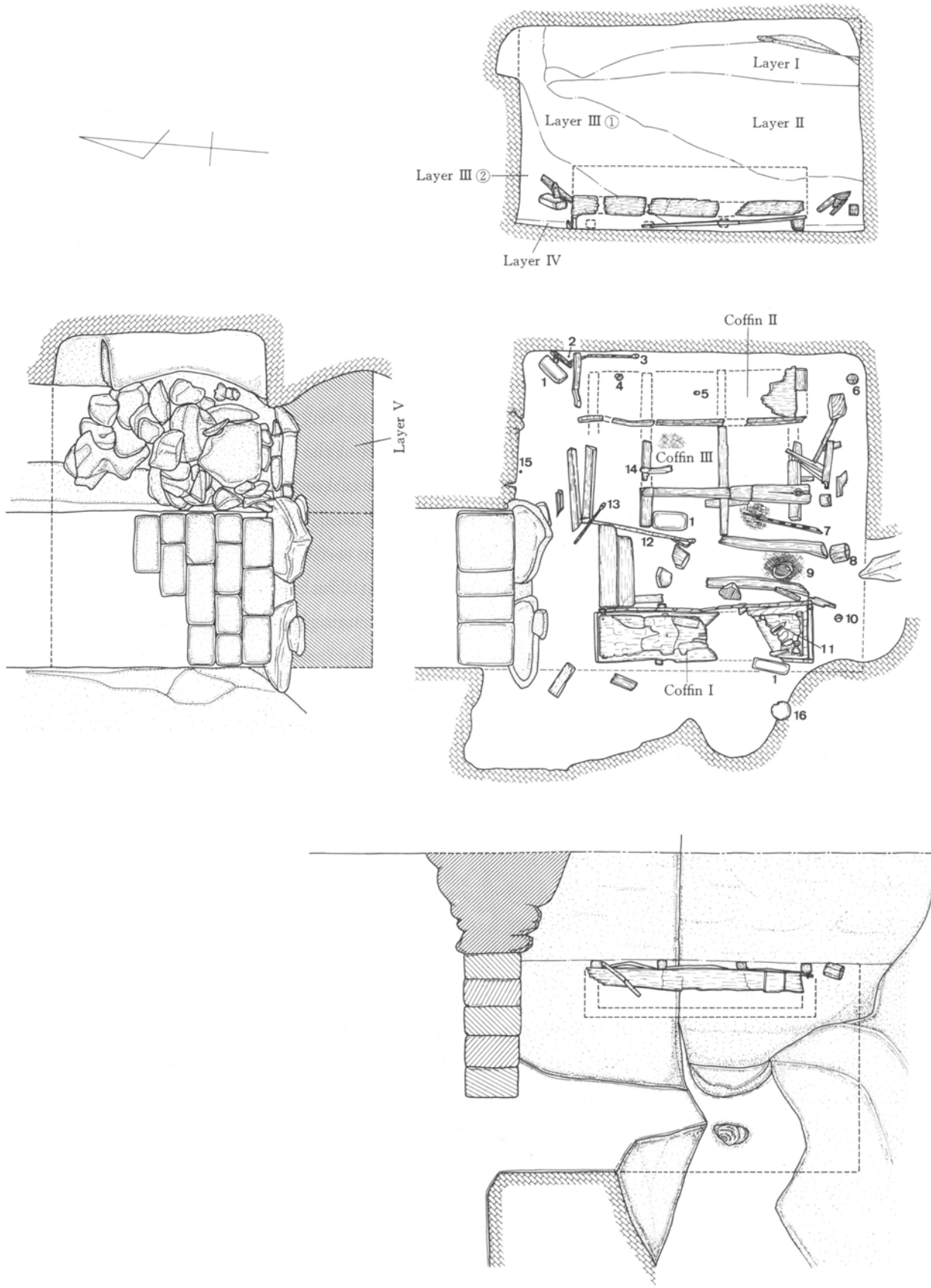
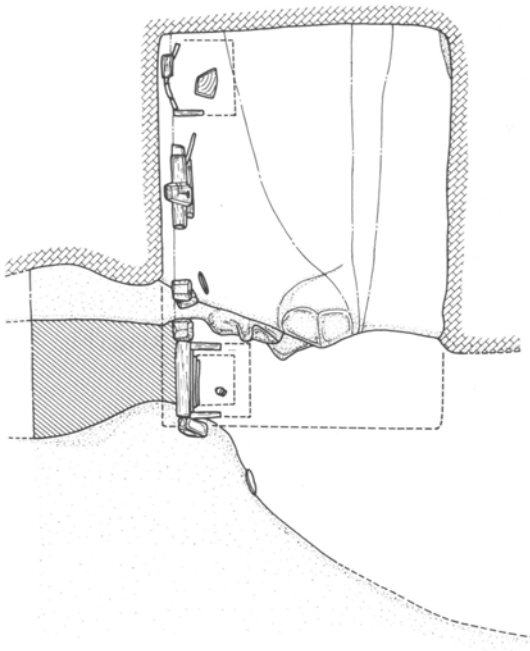
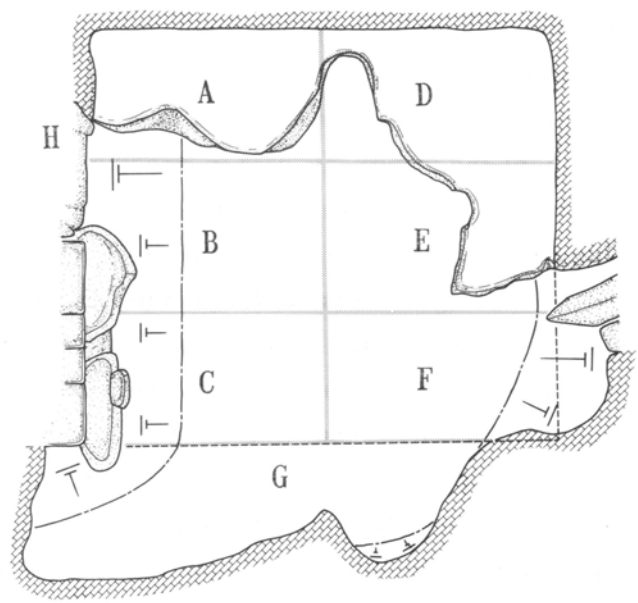


Fig. 22 Plan and vertical section of the south chamber in the Chapel B shaft



1. Mud bricks
2. Implement used for a papyrus paper
3. Model of stick
4. Small squat jar for eye paint
5. Scarab
6. Wooden columnar object
7. Fragment of wooden coffin with painted stripes
8. Wooden columnar object (large)
9. A fragment of red-brown vase with some burned cloth
10. Small squat jar for eye paint
11. Blade of an adze with a stone ornament
12. Stick
13. Model of stick
14. Bone
15. Headrest for mummy
16. Bronze disk mirror



The objects from Layer I were characterized by numerous beads (see p. 228), some bronze figures of Osiris (see p. 190), and fragmentary crocodile mummies. Similar objects had been found in quantities in the shaft pit and in the north chamber. Layer II contained many human (Pl. 114 nos. 5 and 6) and animal bones in addition to a few coins, Osiris figures (see p. 190), and some beads (see p. 228).

Layer III was divided into two parts. The upper part (III-1), with burned soil and ashes, contained objects similar to those found in the upper Layers I and II. The lower part (III-2) was a sandy dark-brown soil and contained many older objects. In the northeast part of the chamber many important wooden objects were discovered in Layer III-2. They consisted of numerous fragments of a coffin (Pl. 68 nos. 4 and 5), a mummy's headrest (Fig. 132 no. 9. Pl. 68 no. 7), a fragmentary statue of a king (Fig. 133 no. 11. Pl. 67 no. 1), a fragmentary part of a funerary model barque and others.

The model of the badly damaged funerary barque was found just south of the north wall (Area A, Layer III-2). Unfortunately the stern part of the hull had been completely destroyed by fire (Fig. 23. Pls. 13 lower, 14 upper and 15 upper), and though the rest was broken into many pieces when found, it was extremely elaborate and proved to be one of the best examples of funerary barques ever uncovered. In addition to the barque model with the crew and equipment (Pls. 14 and 15), a stick which could have actually been used, two model sticks which would belong to wooden statues (Pl. 16 middle right. Fig. 132 no. 6), the implements used in smoothing papyrus paper by burnishing (Pl. 16 lower), and many fragments of a rectangular coffin and other objects of unknown purpose, were found among the wooden objects scattered all over the chamber (Fig. 22).

Following the work of lifting out the barque (see p. 418), Layer III and the lower Layer IV-V were dug out. Consequently, it was revealed that Layer III reached almost down to the floor level.

In Areas C～F, on the floor, some parts of a rectangular wooden Coffin I were found in their probable original positions (Fig. 24. Pl. 17 lower left). Though they had been damaged by fire and carbonized almost completely, the bottom board of this coffin remained there with fragments of the side planks. The middle part of the bottom had been completely destroyed by stones which would have fallen from the natural cave. On the interior floor were found some burned human bones (Pl. 16 upper right), burned cloth, a copper or bronze adze with a stone ornament lying on it (Figs. 137 no. 3, 141 no. 14. Pls. 16 upper left, 70 no. 15, and 75 no. 5), and many beads (see p. 228). In addition to these remains, a bronze disk mirror with handle missing (Fig. 137 no. 15. Pls. 14 lower right and 70 no. 14), a small alabaster jar for eye paint (Fig. 141 no. 1. Pls. 16 middle left and 75 no. 4), a great quantity of fragmentary cloth, and a human skull and other bones were found in the upper layers of Areas F and G. They would have been belonged to Coffin I.

On the floor in Areas A and D, a part of another bottom board and some fragments of side planks were found in their probable original positions (Pl. 17), but these were also burned and carbonized completely. They would belong to another coffin, Coffin II, which contained some burned human bones, a small squat alabaster jar for eye paint (Fig. 141 no. 2) and a plain scarab (Fig. 159 no. 7. Pl. 95 no. 7). This coffin was in such bad condition that we could not pick it up intact. Besides Coffins I and II, many other coffin fragments, four large transverse battens for a coffin and much burned cloth remained in Areas B and E, it is, therefore, suspected that a third Coffin III, had existed in the chamber. Though it is a puzzle why the plural coffins were found together, they testify that this south chamber was used for

burials, while the north chamber may have been used either for burials or for funerary offerings.

On Layer III-2, some plaster gypsum and bronze objects, many faience beads, a few glass and stone ornaments, many human and animal bones, much burned cloth, many pottery shards (Fig. 25. Tab. 1), and many kinds of wooden objects, mud bricks and others things were also found. All the mud bricks measure 34 × 17 × 8cm and their size suggests that they belong to this tomb. On the eastern part of the floor, a pure, dark brown dusty soil (Layer IV) had accumulated about 5cm in thickness. This layer was formed before the chamber was first plundered. At a level lower than the floor (*viz.* in Areas B, C, E, F

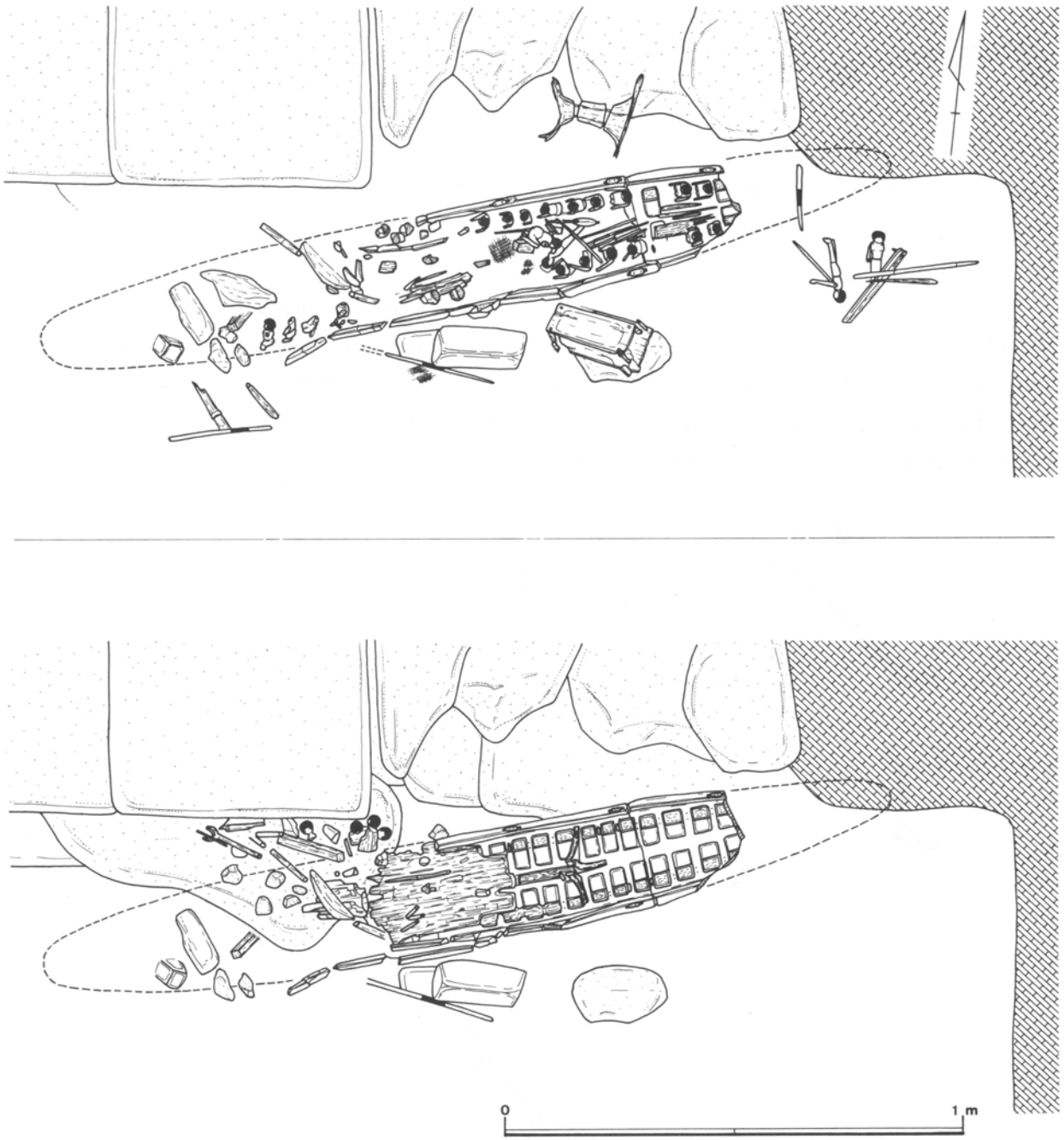


Fig. 23 Barque model as found
Upper: Upper layer as first found. Lower: After partial removal

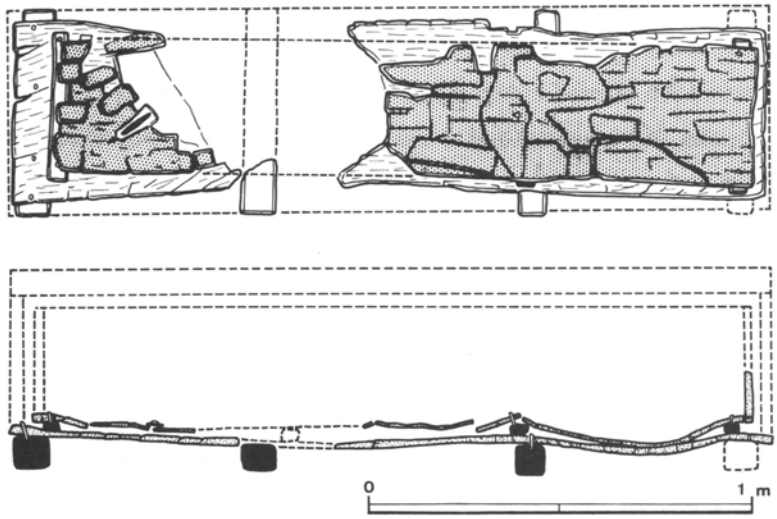


Fig. 24 Plan and profile of Coffin I

and G) where the bedrock were missing, a dark-brown soil with much limestone gravel (Layer V) was detected, but as mentioned above, it contained no remains.

Most wooden objects in the south chamber were carbonized, thus showing that it had been wholly burned. The shard of a pottery jar (Fig. 25 no. 2) with some burned cloth which had possibly wrapped a mummy, was uncovered in these layers in Area E and suggests how the fire started. The pottery probably had been used as a lamp by tomb robbers, who might not have been careful with the fire of their lamp, or who might have intentionally set fire to the chamber to destroy evidence of their robbery.

The model barque, some remains of wooden coffins, and a wooden headrest, etc. discovered in the chamber, were in regular use as articles of funerary equipment in the tombs of the Middle Kingdom. Undoubtedly these chambers and shaft were the tomb of a noble, or his family, of great prominence in Middle Egypt in this period, but compared with the same type of rock-cut tombs belonging to the Middle Kingdom which were furnished with elaborate model barques, the articles of funerary paraphernalia

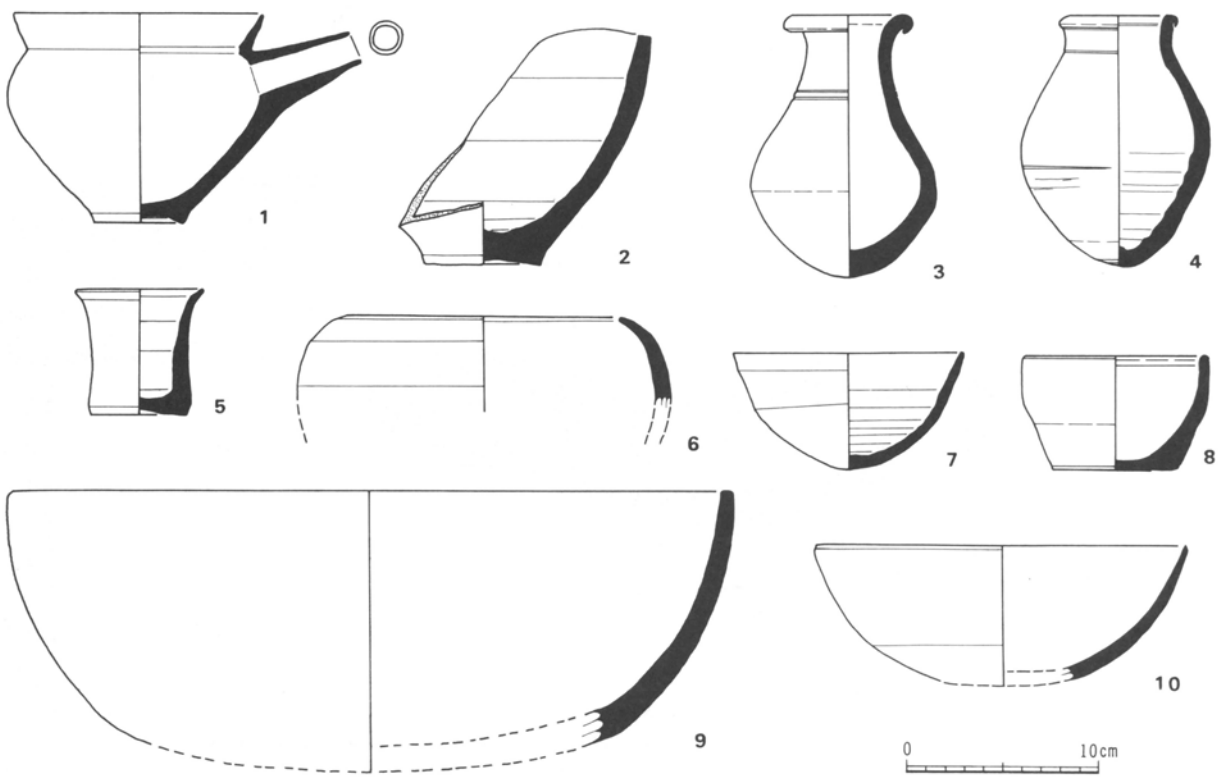


Fig. 25 Pottery found in the south chamber in the Chapel B shaft

Tab. 1 POTTERY

UNEARTHED AREA : South Chamber, Chapel B Shaft

Fig. no. (Pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
25-1 (85-2)	F-III	spouted jar	13.2 × 11.2 vol. : 592cc. (without rim)	minute	red outer face	without decoration	horizontally rubbed	
25-2	A	jar	6.1	rather sandy, white grit	brown	ditto	ditto	burned cloth on inner face
25-3 (84-9)	blackish brown, disarranged	ditto	5.5 × 13.3 vol. : 262cc.	rather sandy	greyish brown	horizontal grooved lines	ditto	
25-4 (84-10)	ditto	ditto	5.8 × 14.0 vol. : 335cc.	ditto	ditto	ditto	ditto	
25-5	G-II	cup	6.7 × 6.6 vol. : 77cc.	minute	brownish black	without decoration	rim & outer face : polished, inner face : scraped, bottom : rubbed	
25-6	III	bowl	14.4	ditto	reddish brown	ditto	horizontally rubbed	
25-7	A-III,IV	ditto	12.0 × 6.2 vol. : 312cc.	ditto	dark brown	ditto	lower part of body : scraped & polished, other parts : rubbed	
25-8	blackish	ditto	9.4 × 6.0 vol. : 220cc.	ditto	brown	ditto	horizontally rubbed, bottom : string-cut	red painting on rim top
25-9	A-IV	ditto	36.8	ditto	reddish brown	ditto	lower part of outer face : scraped, other parts : horizontally rubbed	
25-10 (84-11)	E, F-IV, disarranged	ditto bowl	19.2 × 23.5 × 15.0	ditto sandy, vegetable-tempered	ditto dark brown	ditto ditto	ditto rubbed by hand	

from our south chamber are too few in quantity. This indicates that the tomb had been plundered of almost all major articles before being burned. (MIYAMOTO, J.)

FRONT AREA (Pl. 10) : During the course of the fifth season (1985), a sounding trench was dug in front of Chapel B where fragments of a sheep mummy and a floor paved with hewn stones were detected. In the sixth season (1986), the entire area was excavated to expose the paved floor which extends 5.9m east-west × 10m north-south. From the south side of this area the paving stones are disposed differently in the 1st~4th rows compared to the subsequent rows. That is to say, the eastern stones are of various dimensions, thus upsetting the alignment of the rows. It is thus quite obvious that this part of the front area had been repaired.

Slabs of stone 30cm thick are set at the west end of the paving stones. Other stones shaped in rectangular blocks measuring 50 × 90 × 50cm are disposed behind the slabs, and together the slabs and

blocks which are mortared in place limit the paving stones and at the same time compose the west wall limiting the front area of Chapel B.

Depending on the location, two to three steps are carved out of the rock at the foot of the north wall of Chapel B. In the southeast corner of the steps a quarter of a cylinder, probably a pilaster base, has also been carved out. In addition, the marks of a half cylinder are left on the step west of the main entrance, and though their function is undetermined, one small rectangular hole or niche is cut on the front face of the steps on each side of the entrance.

The south part of the east wall in this area, has two steps which are carved out of the bedrock. The north end of the steps is limited by a rectangular pillar with a convex top which is also carved from the bedrock. The north part of the wall consists of piled stones.

The paving stones were covered with about 50cm of accumulated soil in front of the entrance to Chapel B, and gradually decreased toward the north. Many remains were unearthed from this soil, particularly in the lowest layer, where much cloth used to wrap mummies, many fragments of crocodile (Pl. 114 no. 10) and sheep mummies, parchment fragments (see p. 373. Pls. 155 nos. 1～3, and 156 nos. 4 and 5), various kinds of ornaments such as beads (see p. 230) and so on were found. In the east part much mortar was discovered, which included some sculptured fragments, thus suggesting that the surface of the east wall had once been covered with thick sculptured plaster.

NORTHWEST AREA NEIGHBORING THE FRONT OF CHAPEL B (Fig. 19): The neighboring northwest area was also excavated, and several walls made of mud brick were found, but in bad condition. The mud brick, mixed with cut straw, was found in two sizes, the larger 38 × 18 × 12cm, the smaller 34 × 18 × 12cm. These were in different walls, but so constructed as to lead one to believe that in spite of their different sizes, the walls were built at the same time. The walls used the bedrock for a foundation. In the north part of this area a small room with a mud brick floor, plastered in mud and surrounded by three of these walls was uncovered. The room measures 2.0m north-south × 1.2m east-west. In addition, in the south part of this area a short east-west wall was unearthed.

The area beyond the north end of the west stone wall which extends from the front of Chapel B was partially excavated, and one mud brick measuring 38 × 18 × 13cm, was seen used in the foundation at the end of the wall. It is considered that at Akoris this type of mud brick belongs to the latter half of the Ptolemaic Period or the beginning of the Roman Period, and assuming this to be true, it can be said that this phase of the construction of the whole area at the front of Chapel B dates from the same period.

(KAWANISHI, H.)

CHAPEL C, D, E, F AREA (Figs. 26～33. Pl. 18)

CHAPEL C (Pl. 18 upper): Chapels C, D and E are aligned northeast-southwest and the entrances open from the north, northwest and west respectively following the natural curve of the mountain. Chapel C possesses winged areas on the east and west sides of the entrance. The southwestern corner of this chapel is cut off by Chapel D, and its floor level is about 60cm higher, indicating that it predates the latter.

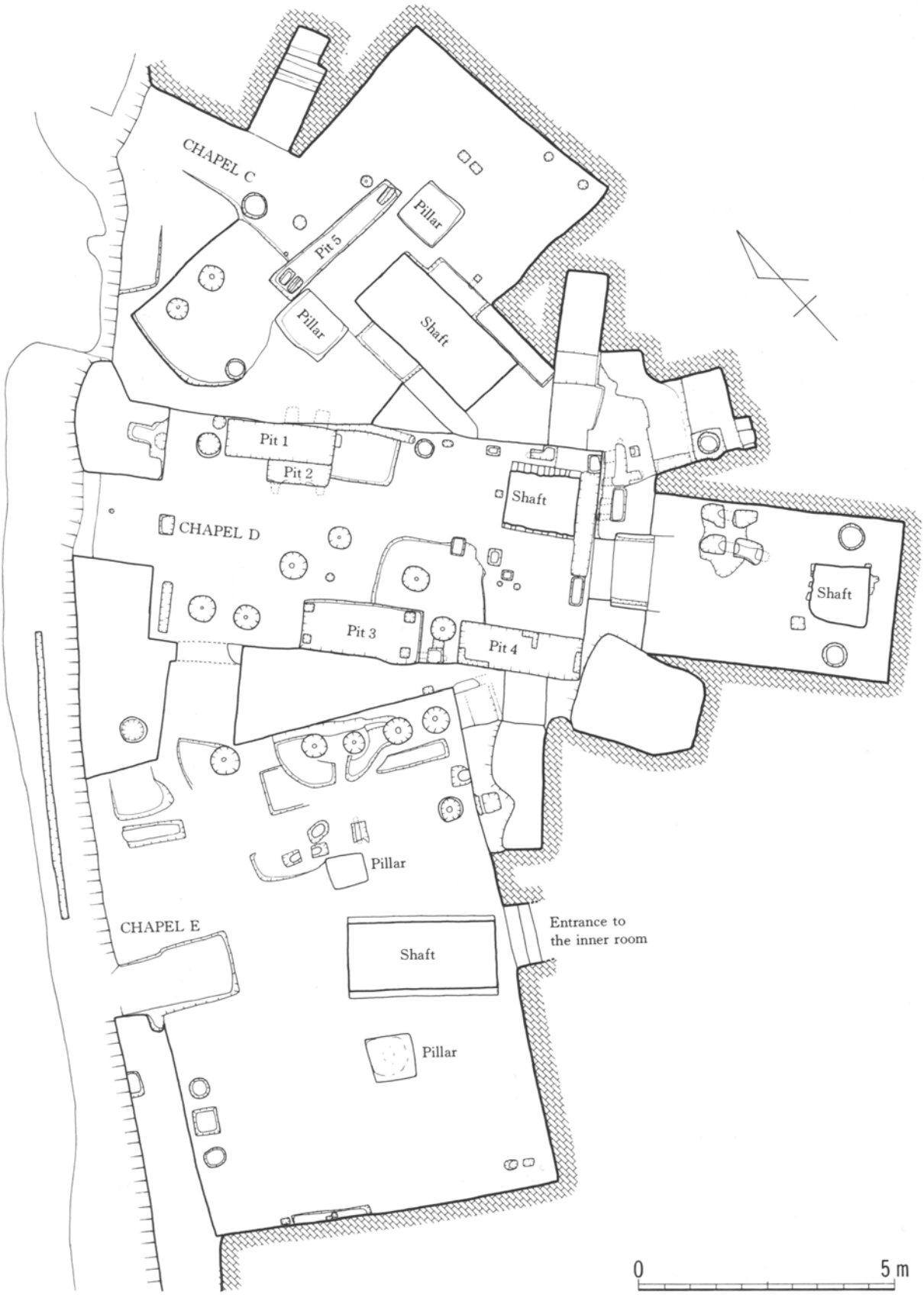


Fig. 26 Plan of Chapels C, D and E

At the top of the four corners of the shaft and on the long sides, raised rectangles are seen which served as a device for a lid.

There is a narrow pit (Pit 5) cut in the floor across the north end of the shaft which has two holes, one at each end. Wood was inserted in these holes, but it is a mystery as to how this pit was utilized. In addition, at the left hand side of the entrance a rectangular cut was made in the rock to serve as a small two-tiered shrine.

The shaft is situated between the two wings of the chapel, and two square vestiges of rock-cut pillars are seen at the northern corners of the shaft entrance. The entrance of the shaft measures 3.1m north-south × 1.4m east-west. The depth of the shaft could not be measured due to accumulated soil and debris on the bottom, however, Abou Seif reported it to be 10.8m (Fig. 27), and our investigation showed it to be 8.1m from the floor of the chapel to the top of the entrance of the north tomb chamber. The tomb chambers open off the north and south sides in the lowest part. The north opening consists of

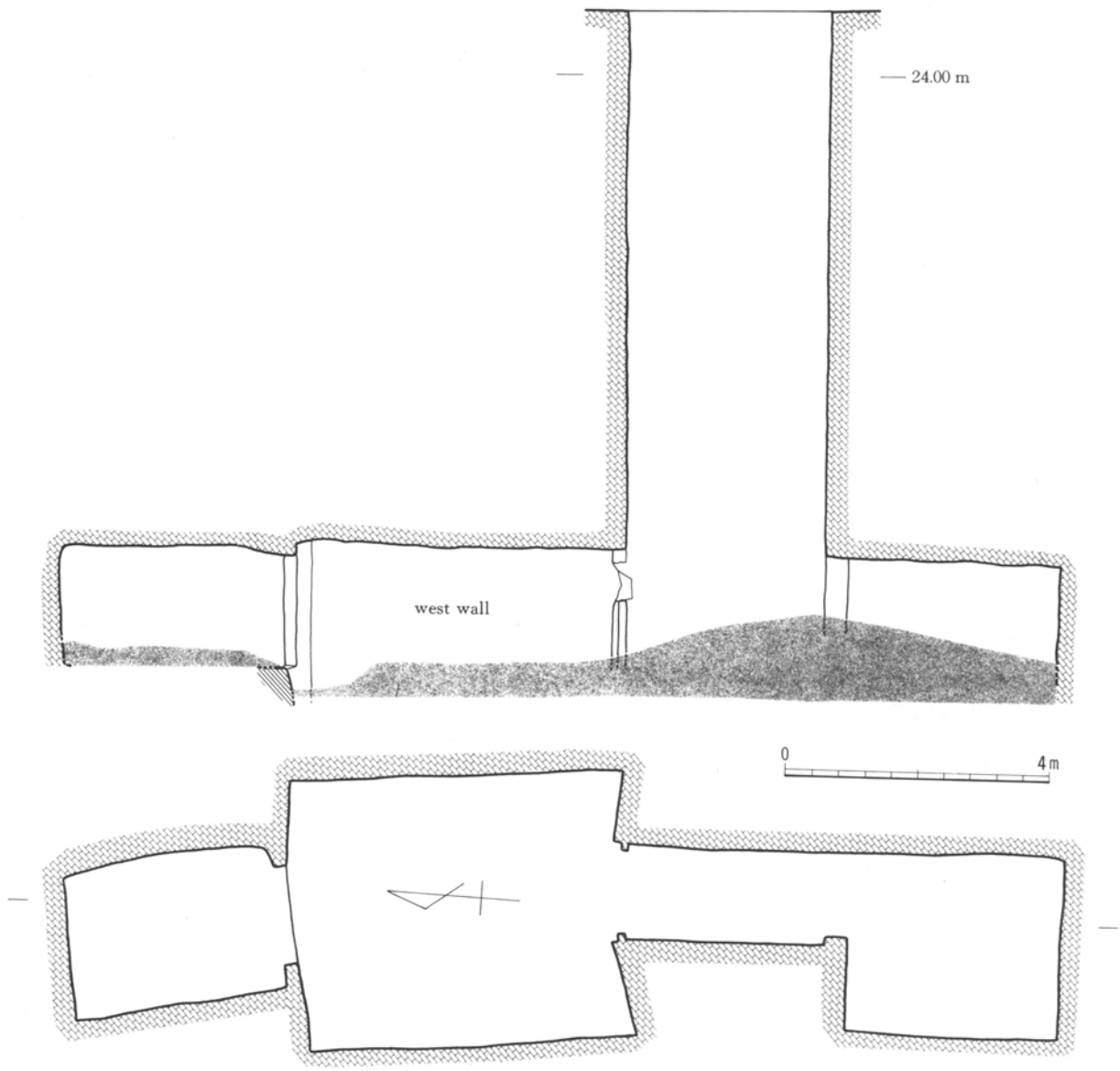


Fig. 27 Chapel C shaft

two continuous chambers on a north-south axis, and their floors were covered with sand and soil mixed with fragments of crocodile mummies and wooden coffins when we entered. Numerous rough chisel marks are found on the wall surfaces. The front chamber measures 4.9～5.1m north-south × 4.1m east-west × 2.2m in height. Both sides of the entrance have a slightly projecting rectangular doorjamb, each of which has a hole possibly for the reception of a bolt or hinge. The rear chamber measures 3.2m north-south × 2.2m east-west × 1.8m in height at the front and though the floor was covered with rubble, it is assumed to be the same at the rear. The floor is higher at the entrance and the ceiling lower than in the front chamber, and both sides of the entrance have projecting rectangular jambs.

The south opening is a single chamber which extends toward the west from the entrance. It measures 3.1m north-south × 2.8m east-west. Accumulated soil containing stones, wood and mud bricks cover the floor in depth. The present height where the level of debris is low measures 1.5m. The surface of the wall is smooth with very little trace of cutting. Compared to the north chamber, this is constructed and finished in a more refined way, and therefore belongs to a prior period (see p. 275).

Abou Seif's report[1] mentions that four canopic jars and about four hundred funeral statuettes (ushabti), some bearing the names of the deceased written in hieroglyph were found in the north and the south openings, however all are now missing. According to Gauthier who deciphered the names of the deceased, they belonged to the period between the 20th and 26th Dynasties, and so, though the south opening predates the north, it was reused in that period. Depending on the similarity of the chisel marks and on the fact that the axis of this north-south shaft is parallel to those in Chapels A and B, it is in all likelihood contemporaneous.

CHAPEL D (Pl. 18 upper): Chapel D was found to be in the best condition of these three chapels, and consists of two rooms, north and south connected by steps. The first room is now roofless, but measures 10 × 4.5m while the second measures 5.0 × 3.5m. Each room has a shaft tomb.

Tab. 2 RECTANGULAR PIT DIMENSIONS

No.	length	width	depth
Chapel D, 1	210cm	75cm	79cm
2	120	45	44
3	230	105	90
4	240	85	58
Chapel C, 5	305	50	30

In the second room the shaft opening measures 1.5m square and has cog-like indented edges on the north and the south sides for receiving a lid. The tomb chamber cut into the south side at the bottom of the shaft consists of two connecting chambers on a northwest-southeast axis (Fig. 28). The depth from the top of the shaft to the top of the entrance of the chamber measures 5.4m. A comparatively thin accumulation of soil found in the shaft contained fragments of wooden coffins, animal and human bones, including a skull bearing some Arabic letters written in red ink. The front chamber is an irregular rectangle, 3.3 × 1.8～2.3 × 1.6m in height. Three small cut hollows in the floor and three stone slabs which at one time were used to close off the rear chamber but now neatly piled in the east corner were found. The rear chamber also has an irregular rectangular plan, 2.8 × 0.9～1.4 × 1.3～1.5m in height. The ceiling and the floor incline toward the back, and the east wall is partly hollowed out. There are many chisel marks similar to those in the north chamber of the shaft in Chapel C. According to Abou Seif's report[2] an anthropoid coffin without decoration or epigraph and 380 funeral statuettes were left in

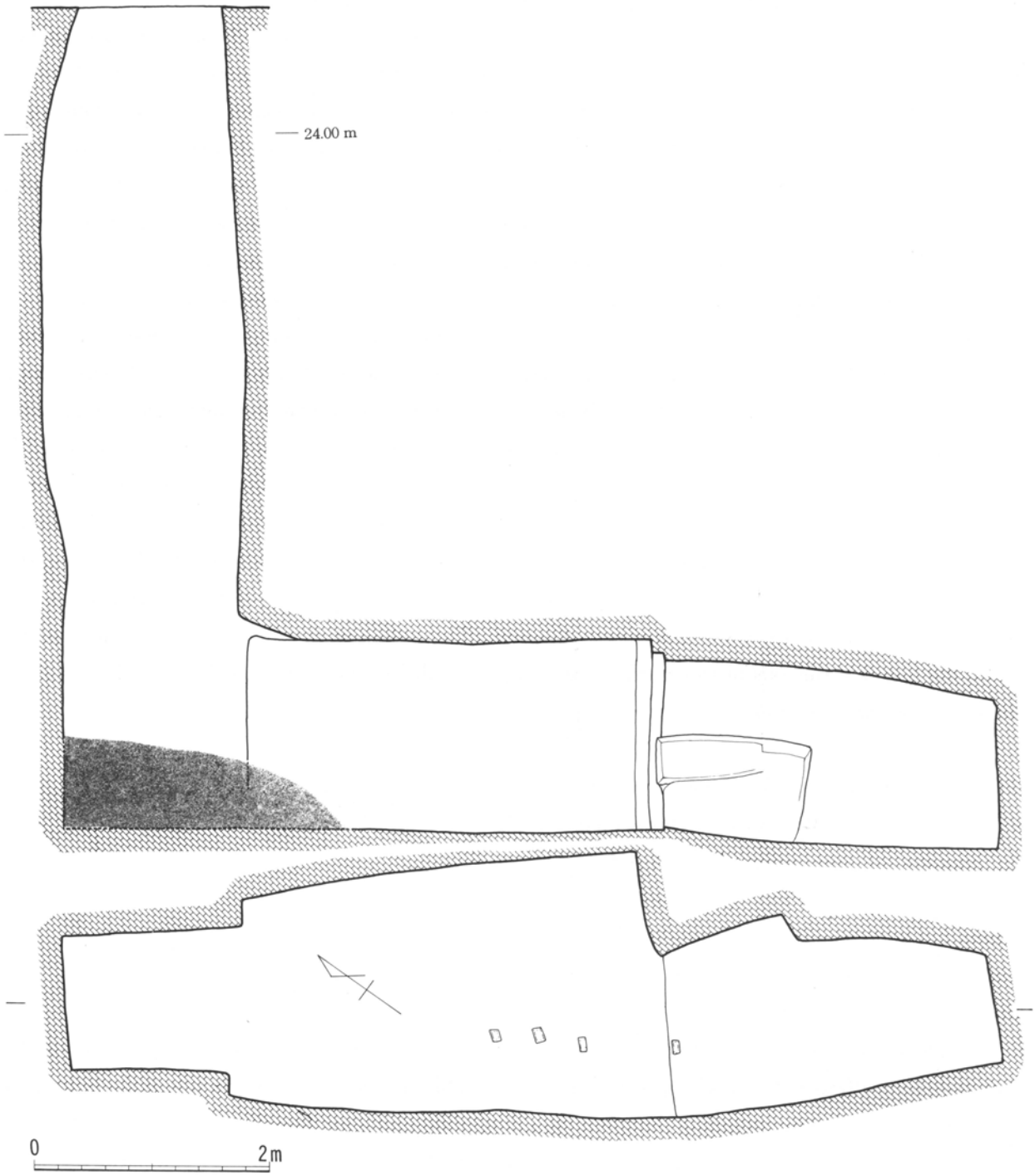


Fig. 28 Second room shaft in Chapel D

the rear chamber, however none now remain. P. Lacau supposed that the coffin and statuettes dated from the 20th～23rd Dynasties judging from their style.

The shaft cut in the first room floor measures 1.4m north-south × 1.1m east-west, and also bears cog-like indented edges on the east and the west sides so as to receive a lid. The shaft measures 1.9m from the opening to the top of three steps which lead to a deeper chamber on the south side. This chamber, which is one more step down, is an asymmetrical square measuring 2.8～3.0m north-south ×

2.7～2.9m east-west (Fig. 29). It is clear by the traces of mortar on the sides of the entrance, that the chamber had at one time been closed off by stone slabs. Without disturbing the accumulated soil on the floor, it is impossible to measure the height of the chamber accurately. As chisel marks left on the wall and the method of closing the mouth of the shaft are similar to that of the south shaft, it was quite possible that this shaft also dates from the Third Intermediate Period.

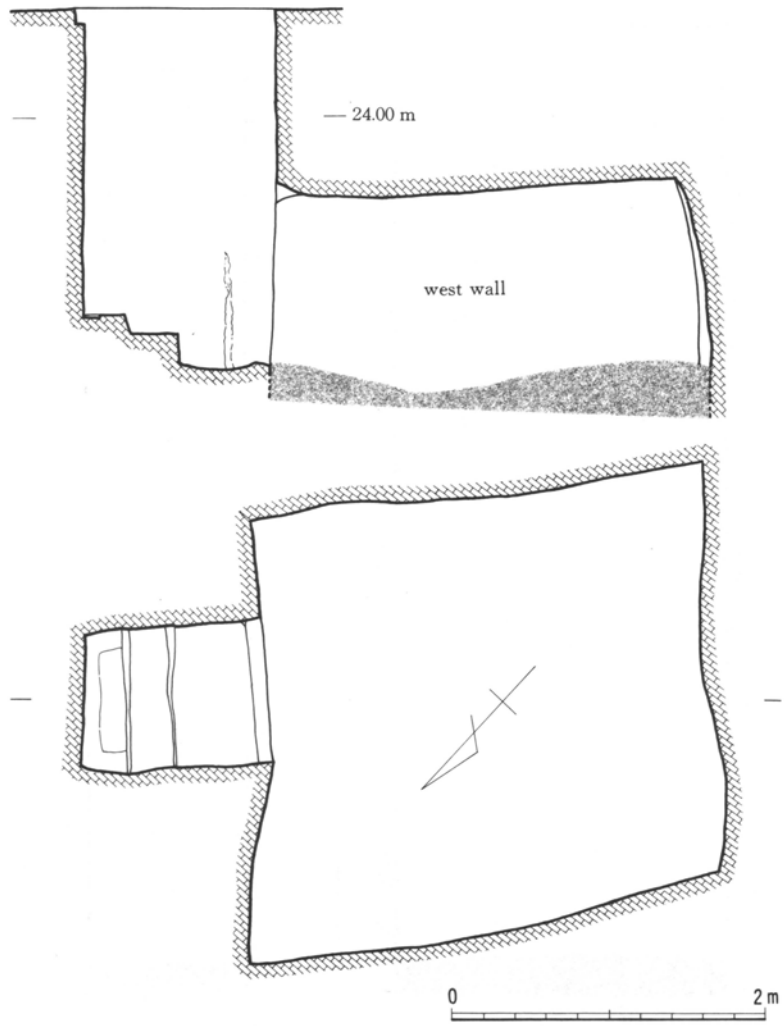


Fig. 29 First room shaft in Chapel D

At the southeast corner in the first room of Chapel D, a small shelf-like room about in above the floor was cut out possibly to serve as a shrine in the Coptic Period. Rectangular pits, whose various sizes are shown in Tab. 2 and which were coincident with the principal axis of the chapel were found in the first room. Some small shallow holes and grooves in which to put something were cut in the bottom of the 3rd and 4th pits. Though these pits look like tombs, no funerary remains were found in them.

CHAPEL E (Pl. 18 lower) : Chapel E consists of two rooms on a northwest-southeast axis. The second room could not be measured, as crocodile mummies unearthed from this area are kept inside behind a locked gate. The first room originally measured 6.8 × 9.8m, but with the removal of the wall on the left side of the entrance was extended outward to its present size. Directly in front of the second room there is a shaft opening with two pillar bases at its foot as seen in Chapel C. The floor level is about 30cm higher than in Chapel D, and as indicated below, Chapel E predates Chapel D. The two chapels do not intersect, however, a short corridor was made between them.

The shaft measures 1.4 × 2.9m and is located in front of the steps between the two rooms (Figs. 26 and 30), and its axis is not coincident with that of this chapel. As usual, ledges are cut for a lid on the east and west edges, and its depth measures more than 7.2m, but it has not been excavated completely. On each long side above the bottom there are two chambers, the west one 2.3 × 2.2 × 1.1m and the east one 2.1 × 1.7 × 0.9m. It is supposed that these rooms were used for funerary articles. Below these and off the southeast end of the shaft is the main tomb chamber on whose floor numerous pieces of chrocodile

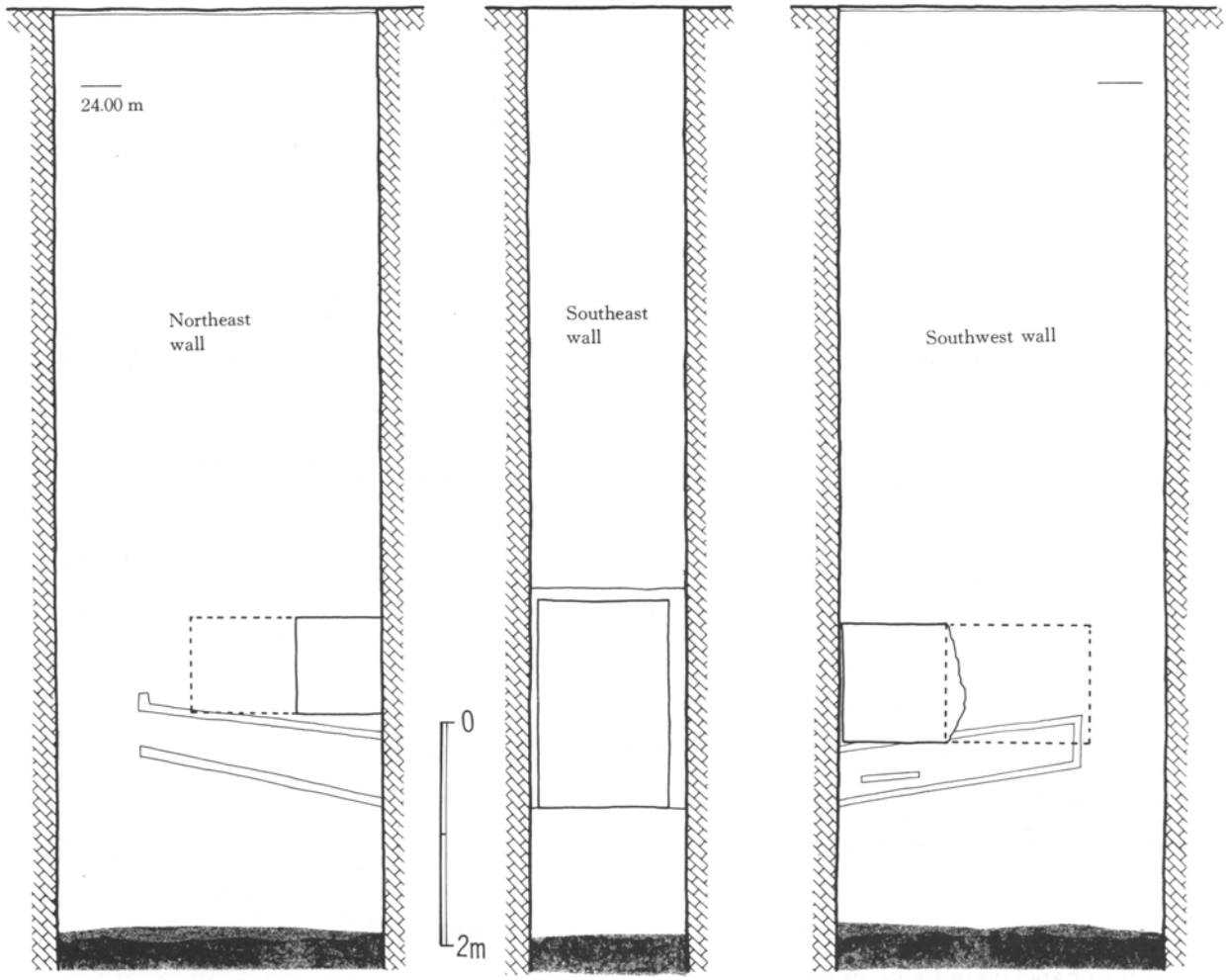


Fig. 30 Chapel E shaft

mummies were scattered. It measures 3.0 × 3.1 × 1.7m, and being more than one meter off the floor of the shaft thus making entrance difficult, it was apparently fitted with a sloping platform that rested on grooves cut into the shaft walls so as to create an angle which would facilitate moving a coffin into it.

Abou Seif presumed from the remains found that this chapel, like Chapel D, belongs to the Third Intermediate Period. However, as chisel marks remaining on the walls and in the shaft are different than those in the former, and similar to those in the shafts in Chapels A, B and C. It would thus seem that Chapel E also dates from the Middle Kingdom (see pp. 275 ff).

PITS OF CHAPELS C, D AND E (Fig. 26) : Many round pits which have a diameter of 40～60cm dot this area. One of them was dug in the shrine at the southeast corner of Chapel D, another is found on the top of the partially destroyed northwest wall of the same chapel. Accordingly, these pits are presumed to have been cut after the chapels lost their original function, perhaps in the Coptic Period. They are found in two shapes. One is a shallow pit of 10～20cm in depth, and another is a conical pit of 50～60cm in depth. The conical pits are divided into two types by whether there is an ledge for a lid or not. The upper part of those conical pits without an ledge was polished so that there were no chisel marks remaining. One of the conical pits with a lid fitting found on the northwest side of the corridor

between Chapels D and E contained soot while the others were all empty. It is supposed that these pits were used for storage.

CHAPEL F (Fig. 31. Pl. 6 lower) : Going farther toward the south in this area, a small chapel is situated half way up the gigantic rock cliff facing the Nile. This chapel belongs to the Ptolemaic Period judging from the reliefs of a snake and a Greek-style priest in and around the entrance (Fig. 33).[3] A flat narrow space in front of the chapel goes to the south along the face of the rock. More pits were found here, but none were conical. Only parts of the steps going down in the direction of Chapel E from the front of the chapel remain.

Chapel F measures 3.5 × 3.6m and reliefs of various Egyptian gods and goddesses including Isis nursing Horus are carved on the inner walls (Fig. 32). Two colored designs could be discerned faintly on the ceiling. One is a series of concentric rectangles colored red, blue, red candy stripe, and blue in that order from the center, and bordered by twenty four red squares each framing a blue flower-like pattern in the middle. The other design overlays the former and consists of two circles, red and blue, each 30cm wide.

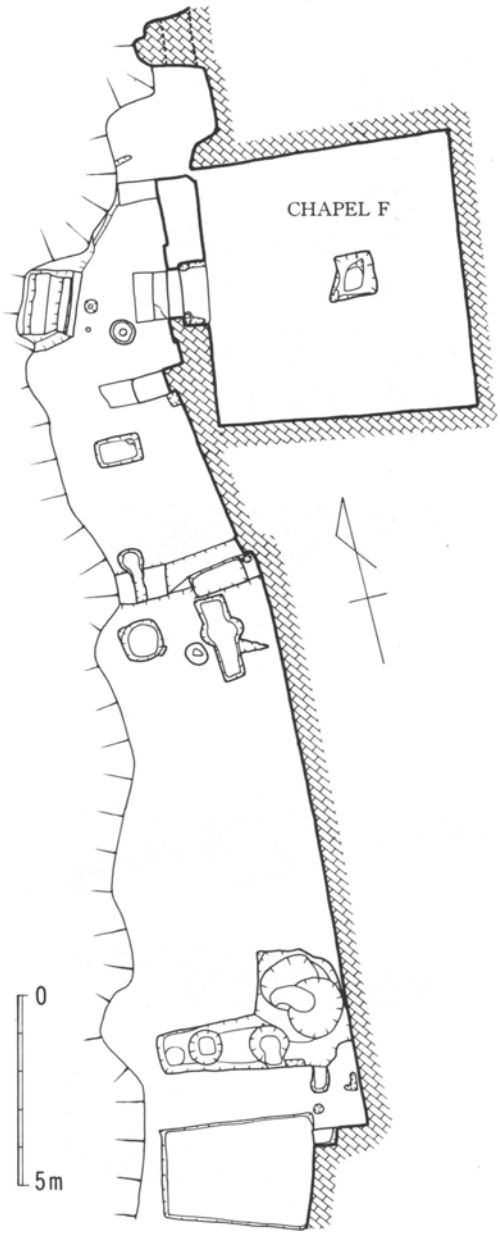


Fig. 31 Plan of Chapel F and its southern area

(KAWANISHI, H. and S. TSUJIMURA)

Notes

1) SEIF, *ASAE*, pp. 32-38.
2) *ibid.*
3) KAMEL, M. A. B., *Fouilles à Tehneh* (*ASAE*, 4, Le Caire, 1903), pp. 232-241.

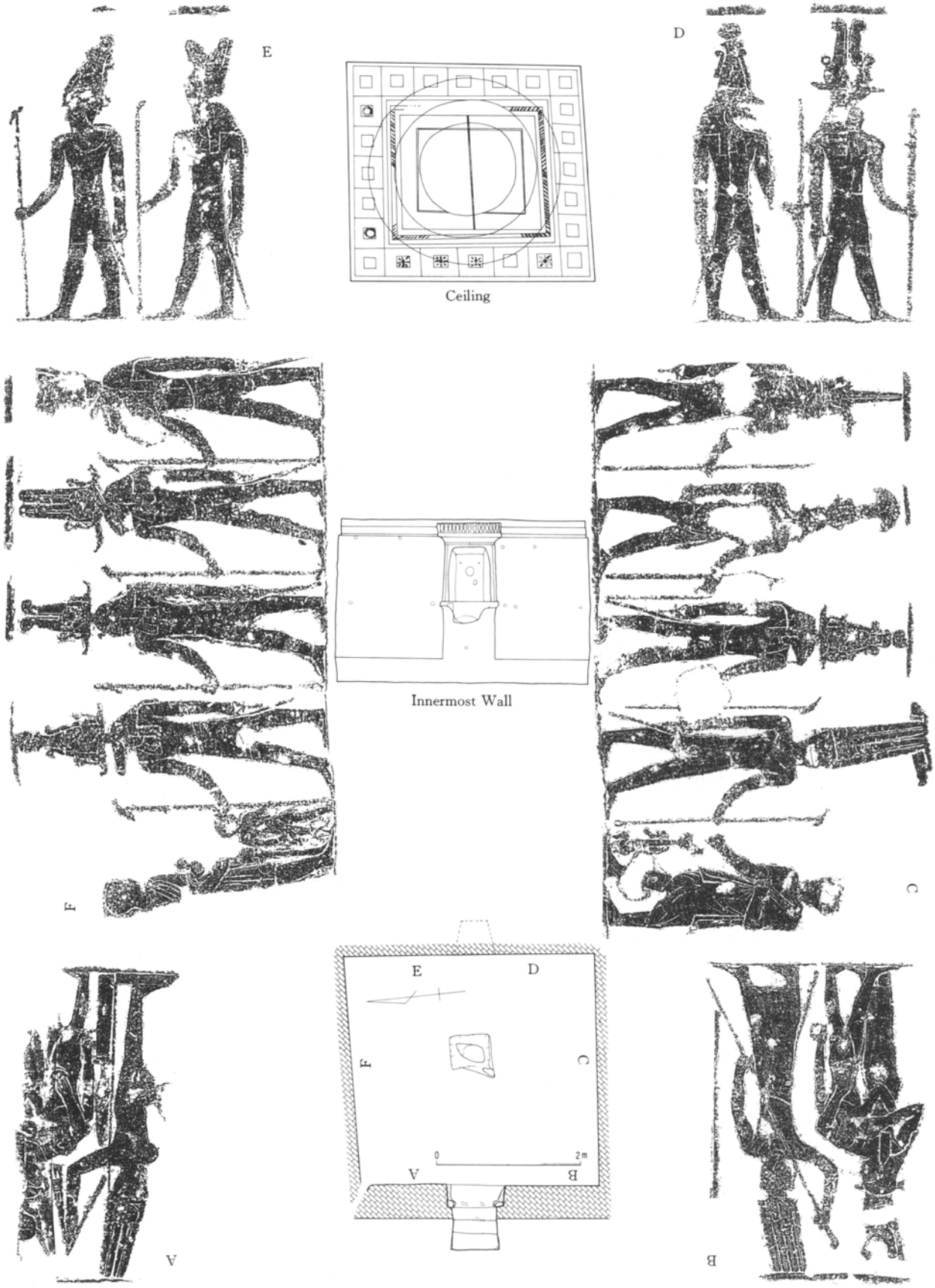


Fig. 32 Reliefs on the inner walls and paintings on the ceiling of Chapel F

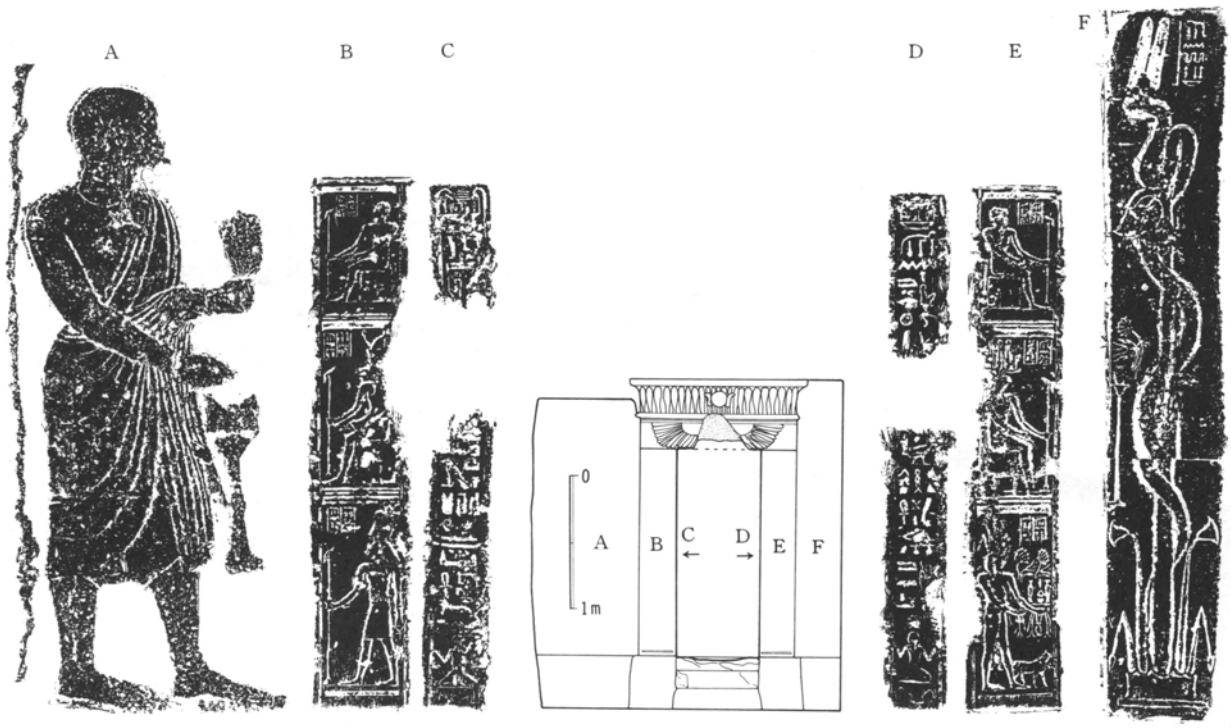


Fig. 33 Front of Chapel F

3 WESTERN TEMPLE AREA

SOUTH COURT AREA

SOUTH COURT (Figs. 10 and 34. Pl. 19) : In front of the Hypostyle Hall attached to Chapel A is the South Court which extends east-west. It measures 32m in length and 18m in width, and is connected to both the Hypostyle Hall and Chapel B by two ramps, the former possessing curbstones.

The South Court is paved by hewn stones bedded on limestone sand and gravel. Peripheral parts are disturbed by Coptic buildings and in various areas no pavement is found. The fact that a colonnade was constructed on the north side is discernible only by the existence of a row of slabs projecting above the stone pavement and by two of the column bases set on them. Shallow lines which probably served to keep the ramp stones from slipping are cut in the pavement in front of each of the ramps leading to Chapels A and B. They indicate the lowest extent of the ramps and as they are aligned with each other, further indicate that the ramps were built at the same time. These lines also suggest that the South Court was made before the ramps were constructed. Moreover, the fact that here and there in the court the width of the stones varies, thus upsetting their alignment, tells us that the pavement was probably repaired at some time.

Many limestone blocks are scattered in the South Court. Of them a drum and several ashlars with Pharaonic reliefs are included.[1] (KAWANISHI, H.)

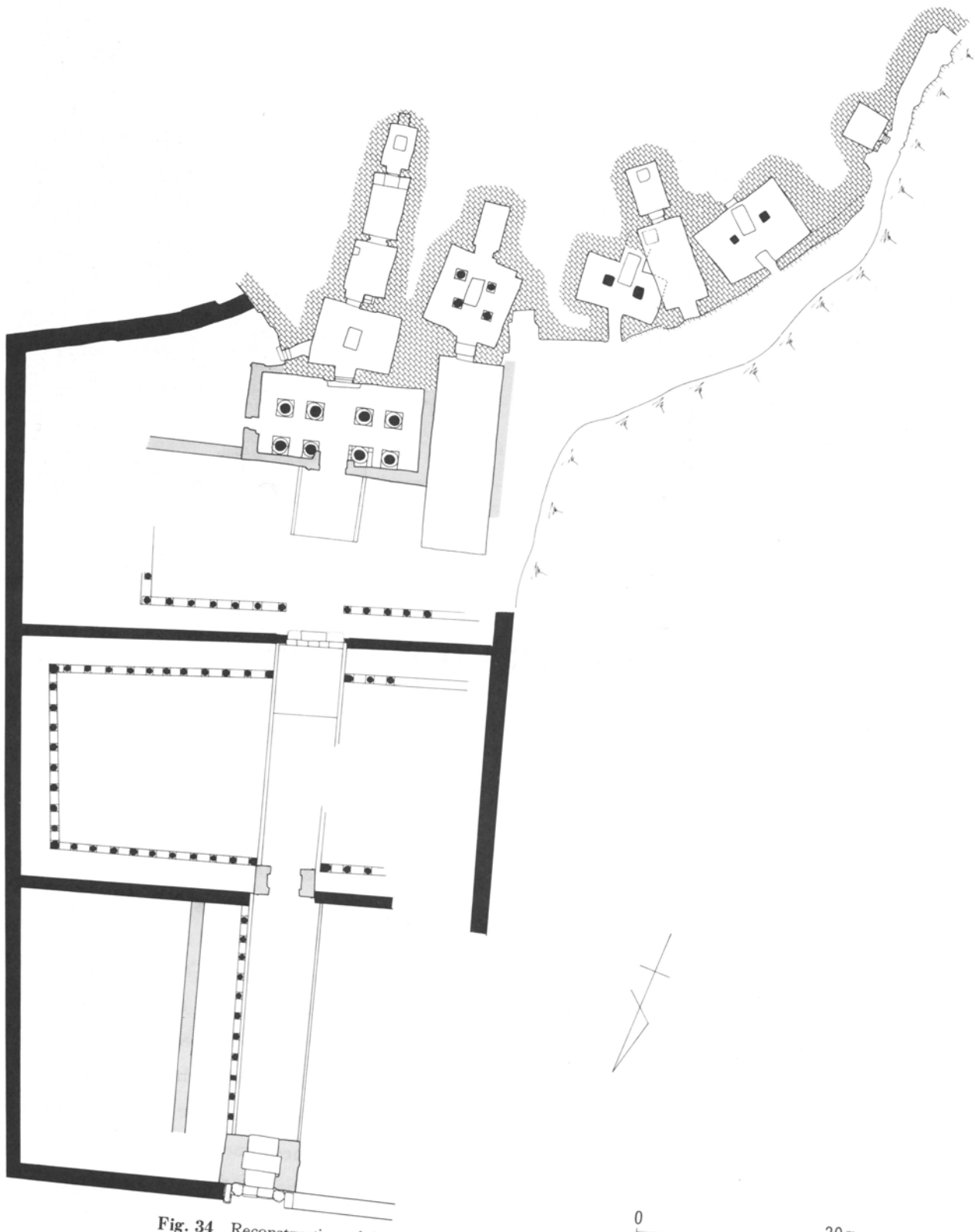


Fig. 34 Reconstruction of the Western Temple in the Roman Period

North and east colonnades (Fig. 35. Pls. 30 and 31). The disturbed soil was removed in the north area east of the Sacred Road ramp, and white limestone sand and gravel was revealed. As this type of white sand is usually used under paving stones as bedding, there seems to be little doubt that originally the South Court paving stones must have also been laid in this area, thus forming the north colonnade foundation of the South Court. When removing the white sand layer, mud brick Structure 1 (S 1) was revealed. Structure 1, on the north side of the South Court extends in an east-west direction, paralleling a row of raised stones which once formed part of the foundation of a colonnade. Structure 1 extends from the east where the colonnade foundation turns to the south and runs almost to the west end of the court. On the north side of Structure 1, a mud brick Wall 1 (W 1) 1.0m in thickness runs in an east-west direction. This wall, which includes a single panel stone, is built on the surface bricks of Structure 1, and although the wall most probably extended further west, it ends after about 8m from its east end. It is probable that this wall formed the north wall of the colonnade.

The mud brick forming Structure 1 on the east side of the Sacred Road is 38 × 17 × 13cm in size. Here the bricks are neatly laid following a set pattern, whereby, except for the surface bricks adjacent to the entrance, they generally lay side by side in an east-west direction. On the other hand, at the east end of this part of the structure, the bricks for the most part lay side by side in a north-south

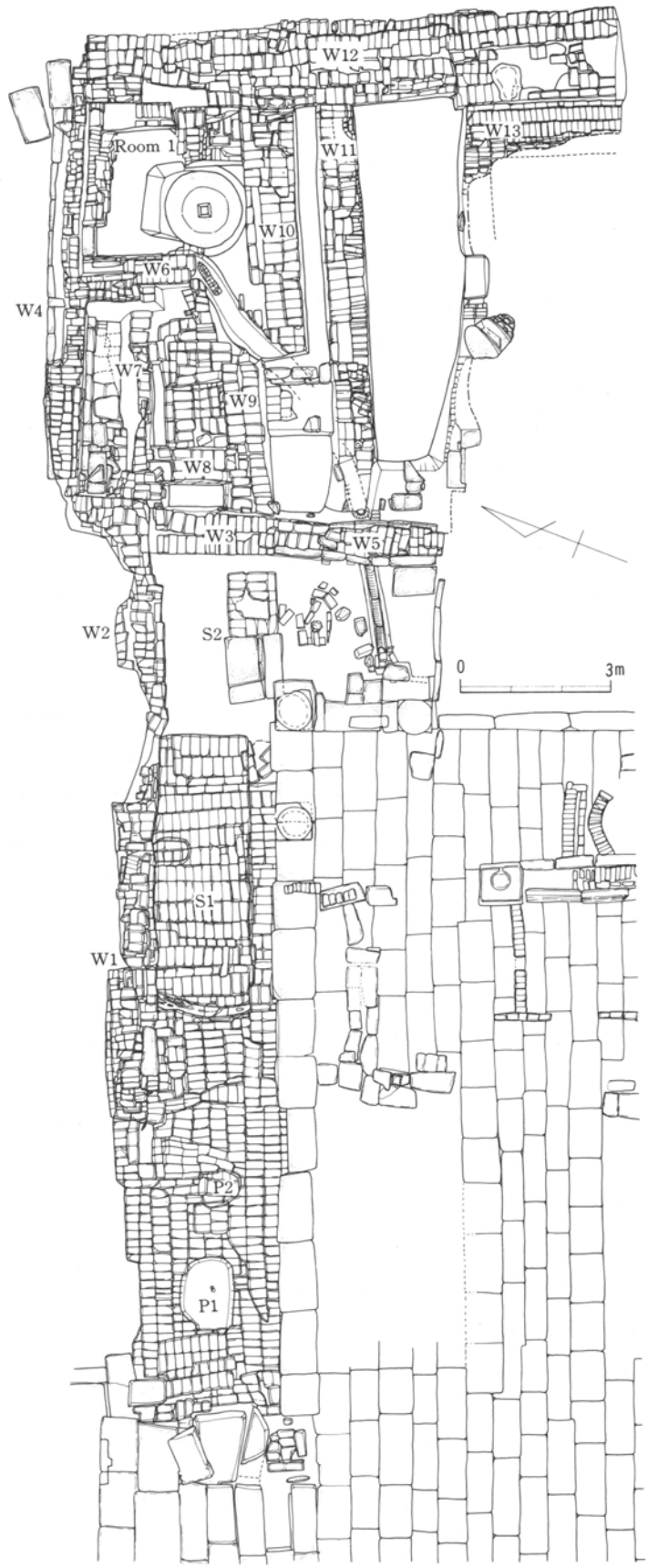


Fig. 35 Colonnade and circumference of the South Court

direction. Adjacent to the north side of the colonnade foundation, there is a gutter-like trench 0.3～0.5m in width extending from the east end 7.0m westward. At the bottom of this trench, there is another layer of brick which in the west lies just under surface of Structure 1 and extends under the white sand bed below the colonnade foundation there. The bottom of the trench does not, however, keep the same level, but rather, descends to the east in three steps at irregular intervals each generally dropping 13cm.

At the center of Structure 1, a "gutter" descending from the south to the north and going into the bottom of Wall 1 was unearthed (Pl. 31 upper). Though this "gutter" opens from the east-west trench, its opening is higher than the trench bottom. In addition, a rectangular catchment was found at the bottom of the west end of Wall 1 where the "gutter" seems to exit. The level difference between the highest point of the "gutter" bottom at the trench and the lowest point at the opening, measures about 20cm. The bottom of a 1.2 × 0.3m rectangle in front of the opening, is firmly solidified with mud and flanked by bricks. The "gutter", the catchment and the opening were all filled with wood, and although these might have been for some kind of drainage system, the proper usage is undetermined.

There are two large pits on the west end of this part of Structure 1, both dug out in a later period. The fill in Pit 1 (P 1), measuring 1.5m east-west × 1.0m north-south, was removed to a depth of 0.5m. Pottery shards, fragmentary glass vessels, colored pieces of plaster, pieces of Coptic textile, bronze artifacts including a coin, etc., as well as some modern objects were found in it. Its deeper fill was not investigated. The disturbed soil in Pit 2 (P 2), measuring 0.7m east-west × 0.8m north-south, was also excavated to 0.4m, but nothing was found.

The northeast area of the South Court is situated to the east of Structure 1 and is bounded on the east side by Wall 5 of 33 × 16 × 13cm mud brick. At the extreme north of this area, the east-west Wall 2 is preserved at approximately the same height as the east edge of Structure 1. On the south side of this area, three limestone panels were set in an east-west direction. Similar panel stones were revealed on both faces of Wall 5, five on the west side of the wall and four on the east. Directly under these nine stones, mud bricks which formed part of the original wall was discovered. As this brick is 35 × 17 × 13cm in size it is smaller than that used in Structure 1, so that it is probable that this part was remodeled as the eastside colonnade the 3rd～4th century A. D. (see pp. 265 ff). Whether the colonnade had extended eastward before that time is undetermined.

Three smaller slabs adjacent to the threshold between two column bases on the west side, and one large slab, 87 × 57 × 30cm, in the southeast corner were revealed. These four slabs are all face up and approximately equal in level to the paving stones of the South Court. It is possible, considering their level and the fact that white limestone sand used as bedding was found immediately beneath them, that at least the corner slab and most likely also the other three were paving stones for the colonnade and in their original position. A Coptic capital (Pl. 122 no. 5) of some undetermined column was also uncovered on the limestone sand.

Structure 2 (S2), about 1.3 × 1.2m, was revealed on the east side of Structure 1. It is formed by three 16cm thick limestone slabs with two additional slender limestones filling up a gap between two of them. The top face of the three slabs is worn from usage. The southwest corner of this stone structure is situated about 20cm below the under face of the slab foundation stone of one of the column bases and intrudes into the white sand layer. This fact shows that the structure was in place before the paving

stones and columns were set. Immediately east of Structure 2, there is a 1.3 × 1.0m rectangular mud brick structure. Perhaps further excavation will reveal what this stone structure and mud brickwork were used for.

A jar with handles was found on the south side of Structure 2 (Fig. 36. Pl. 83 no. 6). This jar belonged to a dark brown soil layer which was mixed with broken mud brick just beneath the white sand. It was found at approximately the same level as Structure 2 mentioned above. A drain complex described below was also detected in the same layer south of the jar. The drain runs in an east-west direction,

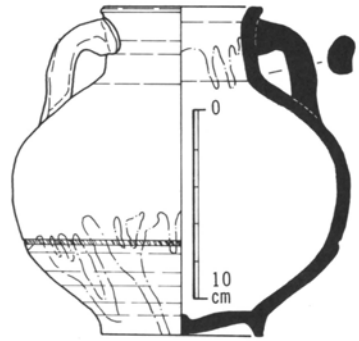


Fig. 36 Jar found in the east colonnade

Tab. 3 POTTERY

UNEARTHED AREA : East Colonnade of the South Court

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
36 (83-6)	jar	8.4 × 17.3 vol. : 1746cc. (without neck)	minute	brown	white slip, cord-impressed two handles	rubbed by wheel	

and was found unbroken. (Pl. 31 lower). The remaining top of Wall 5 is flat on the north, and gradually ascends toward the south where, as mentioned above, the slab stones were set on both lower faces. Concerning these stones, some ornamental plaster was partially preserved on the surface of the slab that is situated at the extreme south of the west face. In addition, many fragments of plaster were found from the fill soil around the slab, and around a gap between the south end of Wall 5 and a southern mud brick structure (Room 6) mentioned later (see p. 55). Some fragments were colored. These facts show that the slabs, at least on the west face, were decorated by ornamental plaster. (MIYAMOTO, J.)

Room 1 (Fig. 37. Pl. 20 lower). The east part of the South Court was diverted to buildings in the Coptic Period. A characteristic of the Coptic buildings found here is the presence of stone foundations which compared to most of the Coptic buildings unearthed in the Western Temple Area is unusual. Among these stones, there were parts of Pharaonic and Roman building stones, and in the disturbed upper layer accumulated in Room 1 a donation stele bearing the cartouche of Osorkon III (see pp. 301 ff. Pl. 116 upper), was also found.

Room 1 is divided into east and west parts by a partition, but it is not clear whether the east part formed a room, due to the complete lack of the north and east walls. The west part is subdivided by 24 × 12 × 8cm mud brick walls, one brick thick. Forage-like botanical vestiges stuck to the paving stones used as the floor lead us to think there is a possibility that this part had been used by domestic animals. There is a large opening in the west wall. A stele which was donated by Cassius Rufus is revealed in the foundation of the partition between Rooms 1 and 2 (see p. 329. Pl. 120 no. 3).

Room 2 (Pl. 21 upper). Room 2 has two entrances, the south and the west, and the inside is divided into two spaces, north and south, by a thick, short partition wall. The north space has almost a square plane measuring 4.0 × 4.0m. The stone floor, actually part of the South Court, is in its original condition except in the southeast corner. The entrance to this space is in the west wall and a stone with a relief of

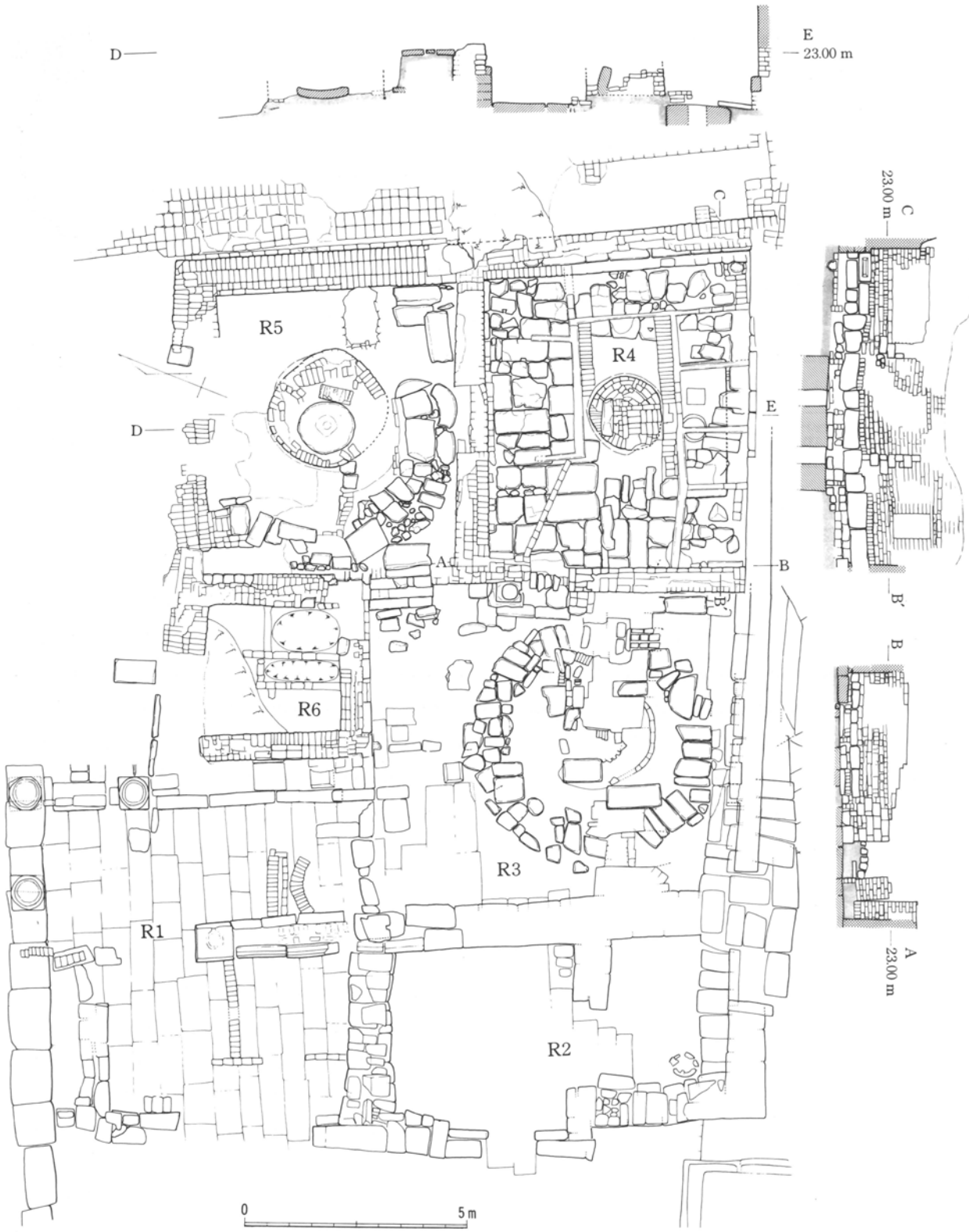


Fig. 37 Eastern area in and around the South Court

the dynastic gods Sakhmet and Nefertum (see p. 308. Pl. 116 lower) is diverted to the north side of the entrance. The south space has a rectangular plane 3.5m east-west × 2.0m north-south. A stone with a colored inscription has been diverted to the west wall foundation (see p. 313. Pl. 118 no. 2), and a slab

stone with a relief presenting the scene of a king offering a balm pot to a god (Pl. 119 no. 4) is upset on the outer surface of the south wall. A large stone with a sunken dynastic relief and without writing (Pl. 117 no. 3) is reused in the west outer wall foundation. This relief is also upset on the outer surface.

The foundation stones of the partition wall and the east wall are placed directly on the sand bedding used for the presently missing paving stones of the original South Court. Consequently, it is known that these walls were constructed after taking up the paving stones. A row of stones extending east-west assembled on the natural rock surface, was found projecting from under the south wall. This is part of a thick wall which established the southern limit of the South Court. At the southwest corner of Room 2 a large jar was unearthed *in situ*. Depending on the mud brick size, 24 × 12 × 8cm, this room dates to the 7th century A. D.

Room 3 (Pl. 21 lower). Room 3 is surrounded by mud brick walls on a stone foundation and measures 8.0m north-south × 6.5m east-west. A column base and traces of three entrances remain in the walls, two on the east side and one on the north. Paving stones belonging to the original South Court remain in the northwest corner. A stone circle is found in the center of the room. It is composed of stone slabs and has a 5.5m outer diameter. Some of the stones used were diverted from the original South Court paving. The top part of the structure is worn probably from use in the moving of grindstones of a flour mill. At the northeast edge of the mill and found in an upside down position was the lower half of a Hathor capital with the same characteristics as that found in the Chapel A shaft (Pl. 119 no. 2).

After the supposed mill lost its function, three hearths were constructed in a row on it. The hearth walls are made of diverted stones from some unknown location and mud bricks of 24 × 12 × 8cm, which would date the hearths from the 7th century A. D.

Stone circle and lower layers (Fig. 38. Pl. 20 upper). In the disturbed east part of the South Court neighboring the south ramp, a doughnut-shaped structure of 5.5m in outer diameter was uncovered. Stones, some of which were diverted from the South Court, and column drums, all with their top surfaces worn, are placed in a circle. As this structure is the same size and of similar construction as that mentioned above, it is also likely to have been of a flour mill dating from the Coptic Period.



Fig. 38 Stone circle and its lower layer structures in the South Court

In the center of this circular structure, the lower layers of accumulated soil in a natural break in the bedrock were dug out. Two layers could be

differentiated. A domed circular structure 1.8m in diameter × 0.9m in height and a square structure 1.0m in width × 0.6m in height, both made of mud brick are in the lower layer. The mud brick used in the former measures 32 × 16 × 9cm and in the latter 37 × 18~19 × 8cm. Another circular structure composed of a course of laid mud brick was partially unearthed in the northeast. This also belongs to the lower layer, and the brick used here measures 39 × 18 × 9cm. Parts of what appear to have been mud brick floors or walls belong to the upper layer. These mud bricks are 30 × 15 × (?)cm and 28 × 16 × (?)cm sizes. Many pottery shards were discovered in each layer. According to the brick size and pottery type (Fig. 39), the lower layer dates either from the Third Intermediate Period or the Late Dynastic Period while the upper layer from the Roman Period. (KAWANISHI, H.)

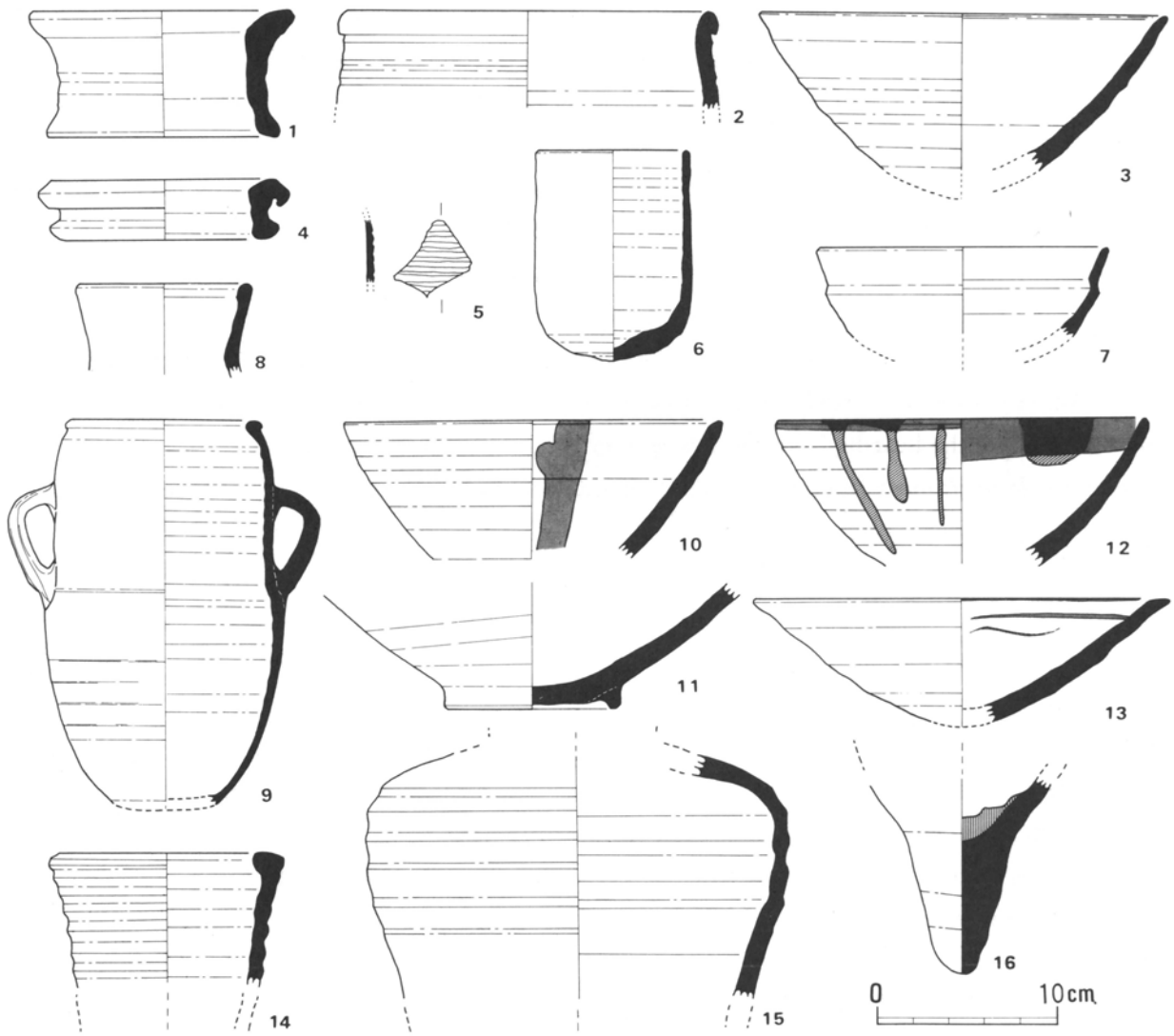


Fig. 39 Pottery found in the lower layers under the stone circle

Tab. 4 POTTERY

UNEARTHED AREA : Lower Layers under the Stone Circle Found in the South Court

Fig. no.	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
39-1	lower	stand	14.8 × 7.1	minute	grey	without decoration	rubbed by wheel	soot-stained on outer face
39-2	ditto	pot	20.0	sandy	pale reddish brown	horizontal concave lines	ditto	
39-3	ditto	bowl	22.3	rather sandy	brown	without decoration	ditto	
39-4	ditto	stand	12.2 × 3.4	sandy	pale brown	ditto	ditto	
39-5	in the square	jar(?)		minute	ditto	horizontal grooved lines	rubbed by wheel	
39-6	lower	cup	8.1 × 11.7 vol. : 432cc.	rather sandy	reddish brown	without decoration	outer face : scraped by wheel, inner face : rubbed by wheel, base : scraped & rubbed	
39-7	ditto	bowl	16.0	minute	dark reddish brown	red slip	rubbed by wheel	
39-8	middle	jar	9.3	ditto	light brown	without decoration	ditto	
39-9	ditto	ditto	10.0 vol.:1765cc.	ditto	red	red slip	outer face : burnished, inner face : rubbed by wheel	
39-10	ditto	bowl	20.7	rather sandy	pale yellowish brown	red painting on inner face	rubbed by wheel	
39-11	ditto	jar		sandy	light brown	without decoration	upper part of outer face : rubbed by wheel, lower part : scraped by wheel, foot : rubbed, inner part : undetermined	
39-12	lower	bowl	20.2	rather sandy	dark grey	red painting on rim	rubbed by wheel, lower part of outer face : scraped by wheel	black coating on red painting
39-13	middle	ditto	22.5	ditto	pale brown	ditto	ditto	
39-14	upper	amphora	11.5	minute	reddish brown	horizontal concave lines	rubbed by wheel	
39-15	ditto	ditto	23.2	minute	brown	ditto	ditto	black coating on inner face
39-16	ditto	ditto		rather sandy	ditto	without decoration	rubbed by hand	ditto

EASTERN AREA AROUND THE SOUTH COURT : This area is located between the South Court and the east outer wall of the Temple Area.

Northeast corner (Pls. 30 lower and 32 upper). This corner is east of Walls 3 and 5 which forms the east edge of the northeast area of the South Court. At the north part of this whole area, two rectangular squares were revealed.

The west square forms a rectangular space which measures 4.0m east-west × 0.9m north-south at the inside top of the surrounding mud brick walls, that is, Walls 3 (W 3), 4 (W 4), 6 (W 6) and 7 (W 7) on the west, north, east and south respectively (Fig. 35. Pl. 30 lower). After the removal of the top fill soil, large limestone blocks forming a wall were detected in the west half, of which those on the extreme west enters Wall 3. These blocks, which are irregular in size and piled up on each other, form a flat face on their north side. In the east of this rectangle the lower level, perhaps the foundation, of the stone wall was seen. This wall was apparently a part of the south wall bordering the pavement of the Middle Court as described below (see p. 60. Pl. 32 lower left).

Digging was continued in order to confirm the state of the lower level in front of the wall, and consequently a row of limestone slabs lying in an east-west direction was detected. These slabs were apparently the paving stones of the extreme south of the Middle Court. The fact that white sand was found under them, must testified that the slabs are in their original position. Judging from this, it is evident that Wall 4 was constructed on the paving stones of the Middle Court while Walls 3 and 6 were built over an older stone block wall.

The internal faces of the walls in this square are nearly vertical on all but the south wall where the mud bricks are in disorder due to later disturbance. In the north, east and south walls, the upper and lower layers of mud brick are of a different size, the upper being 25 × 13 × 9cm, and the lower 33 × 16 × 13cm. According to the brick size, then, the lower dates to the 3rd～4th century A. D., while the upper to the 6th century. In the case of the north wall, the large bricks are set back as far as 30～35cm on the slabs mentioned above, and the small bricks above them retreat another 3cm or so.

Though some small bronze fragments, pottery shards, etc., were unearthed in the upper and lower fill, nothing was found that testified to the use of this square.

The east square, 3.6m east-west × 2.4m north-south, is bounded by the outer wall on the eastern side, and by Wall 10 (W 10) on the southern side. In the north part of this square, Room 1 (R 1) was revealed. This room has a series of projections on the west, north and east internal walls, and in addition, in the south half, part of a mud brick structure, probably the south wall of the room, was detected. Judging from the trace of a ceiling preserved on the wall above the east projection, from the few remaining bricks of the north wall and from the condition of the south wall-like structure, it would appear that this part of the east square had been a room with a vaulted ceiling.

The north wall projection is of two parts. The east part is built with mud bricks, while, in the west the projection takes the form of a narrow L-shaped corner shelf. The top face of this shelf is made of small limestone slabs, fired bricks, mud bricks and timber, but its purpose is not evident. The mud brick in the upper part of this wall is also different than in the lower part, that is 25 × 13 × 9cm in the upper part and 33 × 16 × 14cm in the lower. As can be seen, the lower brick size is consistent throughout the north wall as is their placement on the Middle Court paving stones.

Our work was obstructed by a large round limestone drum which remained on the surface soil in the southern half of this square. It could not be removed easily, so further investigation in the south of this square was left to later digs.

From the surface soil of Room 1, pottery shards, a shell ornament, a faience bead, coins, and bits of cloth, a piece of bronze, etc. were found, however the upper fill was generally in an undisturbed condition.

Tab. 5 POTTERY

UNEARTHED AREA : Eastern Area around the South Court

pl. no.	Layer	Form	Dimension	Paste	Color	Design	Technique	Remarks
82-8	*in situ*	pipe	di. 13.4cm	sandy, white grit	brown	horizontal concave lines	rubbed by wheel	with flange
84-1	between Walls 10 & 11, settled layer	bowl	di. 13.3	minute	ditto	without decoration	ditto	

Fragmentary pieces of wood with a flat surface on which square-headed nails were driven, and a wood board fragment, 30 × 15 × 0.8cm, on which white plaster remained, were found in the western upper fill of the room. From the same fill, many fragmentary pieces of bronze, which seem to be parts of small ornaments, pottery shards, a coin, part of a lamp, some wooden material, fragments of faience and glass vessels were also found.

The date of Room 1 is undetermined by those remains, however, judging from the mud brick sizes, the upper part of the north wall being 25 × 13 × 9cm and the east one 24 × 12 × 8cm, it dated from the 6th or 7th century A.D.. Moreover, the lower part of the north wall in both rooms consists of a 33cm size mud brick. As this size of mud brick belongs to the 3rd～4th century A.D.

The top face of the east outer wall gradually swells up in the center (Pl. 32 upper). A square hole in the top surface at the north end of the wall was revealed, but it was not excavated in depth, and therefore its purpose is not evident. Dating from the same period as the outer wall are Walls 10 and 11 (W 11) which join it at right angles. Approximately 2m south of Wall 11, the outer wall projects about 30cm to the west. At that point, there is a small break reaching to the center of the outer wall, and a gap on the west side between it and Wall 12 (W 12). The lower state of the square south of Wall 11 is not evident, because excavation was not carried out.

As far as it was revealed, the bricks which form the eastern side of the outer wall, appeared to be roughly laid. It is probable that they were disturbed in a subsequent period. In the expanded section of investigation to the south, the outer wall was found to be badly disturbed in the west half with many bricks missing.

Wall 12, which is about 1.1m in width, runs parallel to the outer wall at its expanded section but is separated by a small gap which gradually widens as it proceeds southward. The top faces of both walls show approximately the same level, and it is apparent that they continue toward the south. Wall 12 turns west at its northern end just before the outer wall narrows. At this point, mud bricks, 24 × 12 × 9cm, are set four high, but as the ground upon which the wall rests rises toward the west, the number of courses used to maintain a constant height is reduced until there is only one. Where Wall 12 runs in a north-south direction, its bricks are carefully laid, but after it turns west, the bricks are disturbed, and so the condition of the wall deteriorates. Wall 12 postdates the outer wall and, judging from the brick size, belongs to the 7th century A.D.

In this northeast area, many pottery fragments were found in the surface soil, but they did not include any that indicated precisely the original form or character of the area. Pottery and glass shards,

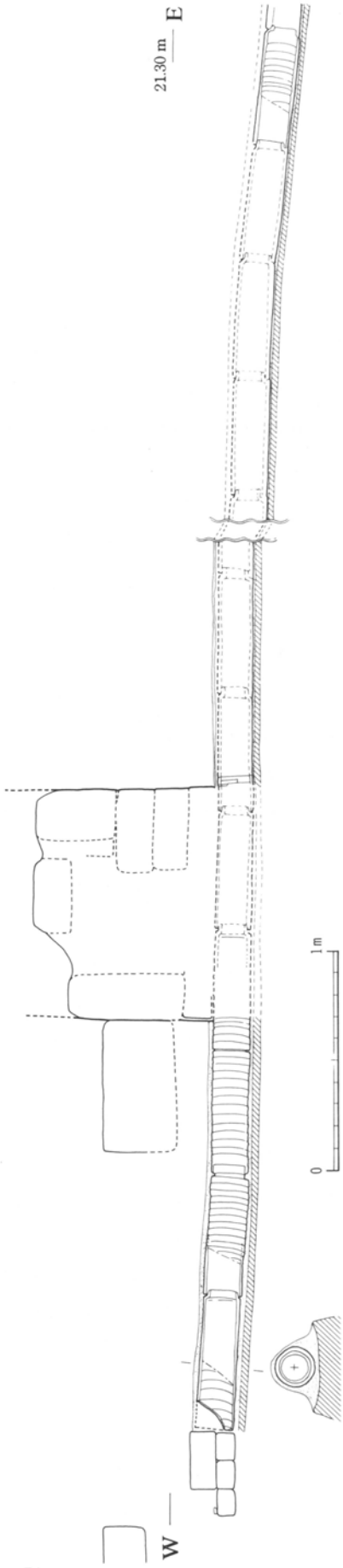


Fig. 40 Vertical section of the drainage

bronze coins and a ring, etc. were unearthed in the dark brown soil layer.

Pottery drain pipes (Fig. 40. Pls. 31 lower and 32 upper). This drain is composed of a catchment of fired bricks 23 × 11 × 8cm, mouth and pottery pipes leading to the east. Whether the pipes came east from the South Court to the catchment or not is not evident, because the paving stone in the South Court prevented further investigation.

These flange and socket pottery pipes are ribbed and about 60cm long on the average. The internal diameter is 9cm on the flange end and 13cm on the socket end (Pl. 82 no. 8. Tab. 5) All of the pipes found were joined with the flanges on the down side of the drainage, in this case, the east. Four pipes were detected between the mouth and Wall 5 where the extreme east pipe enters the dark brown soil under it. Another pipe exits on the east side of the wall. These pipes were coated with yellowish, light brown sand.

It is suggested from obvious traces that other pipes continued toward the east, although most are lost. The surface of the soil in an area 0.4 × 1.1m in front of the pipe remaining on the east face of Wall 5 has been covered with yellowish light brown sand, the top part of which was firmly solidified with mud. It is evident that this formed the foundation of the drain pipes. Therefore, the process in laying a drain there, must have been as follows : At first, the planned route was firmly solidified with mud which was then covered with sand. Next, the pipe was laid on the foundation and strengthened with a coating of mud and sand after which the whole was covered with sand and buried in dark brown soil mixed with broken mud bricks.

Though this foundation and piping is lost for about 2.6m, it was detected again at the corner of Wall 9. From there it went 2.5m to the south end of Wall 6 where another two pottery pipes were found in place at the end of that wall. One of these pipes was in its original position, although it had been broken. The other was just fragmentary, and the foundation, which continues northeast was cut by part of Wall 6. Only a total of seven

pipes were revealed, but estimating from the average length of the pipes, the number needed between the mouth and south of Wall 6 would be at least seventeen. According to the size of brick in Wall 5 and the type of pipe, this drainage system probably dates from *ca.* the 4th century A. D.[2] (MIYAMOTO, J.)

Rooms 4, 5 and 6 (Fig. 37. Pl. 25). Two Coptic rooms, Rooms 4 (R 4) and 5 (R 5) were detected between the outer wall and the South Court of the Temple Area, and other Coptic room, Room 6 (R 6), adjacent to Room 5 on the east side and to Room 3 on the south of this eastern area. The outer wall is more than 1.5m in thickness, and is built with 34 × 18 × 10cm mud brick. The east walls of Rooms 4 and 5 were built along the outer wall, but these two walls were not built at the same time as indicated by the difference in the size of brick used, the 26cm type (see pp. 265 ff) in the wall of Room 5 and the 24cm type in Room 4. Brick of the 26cm type is found under Room 4, indicating that Room 5 extended at one time to as far as the south wall of Room 4. As the east wall of Room 4 does not cross either the south wall or the wall between the two rooms at a right angle, the rooms are not rectanglar. Embedded in the east end of the wall between the two rooms, a broken Hathor capital was found upside down.

All of the walls of Room 4 including the wall between the two rooms were built with the 24cm type brick (see p. 265). Room 5, on the other hand, was built with two types of brick, namely, the 26cm type in the north wall and 24cm type in the west wall. However, part of a wall using 26cm type bricks remains 1.5m below the top of the west wall and 60cm to the east, so that it is suspected that Room 5 was enlarged to the west in the 24cm type brick period, and at that time, the original room was probably cut in two.

Room 4 (Pl. 25 upper). This room extends 5.2m north-south × 6.5m east-west. Fired brick was used in the lower half of the south wall, and was covered with white plaster which still remains in some places. The use of fired brick was limited to the south wall, except where a few were reused in the west wall near the entrance. Ashlar formed much of the lower part of the wall, both sides of a large niche in its center part, the foundation of the west wall and a projection in the middle of the north wall. Mud brick formed the rest of the walls. In addition to the large niche in the center of the south wall, a small one was also found at the west end of the same wall and another in the east wall.

The paving stones serving as the floor are not figurate, and as some of them have dovetail hollows or construction marks they obviously have been reused here. In the center of the room, a cylindrical stand made of the 24cm type brick was built. It is 1.0m in height and 1.6m in diameter. The floor for the most part, was paved with stones, but they have seemingly been removed around the stand. Some courses of the 24cm type brick two or three high are layed on the stone floor. These were plastered in mud and divided the room into nine parts. Furthermore, a hard 25cm layer of mud containing much fiberous material covered the paving stone. Judging from the above, it is presumed this room was not used for a dwelling but for a storehouse or some type of workshop.

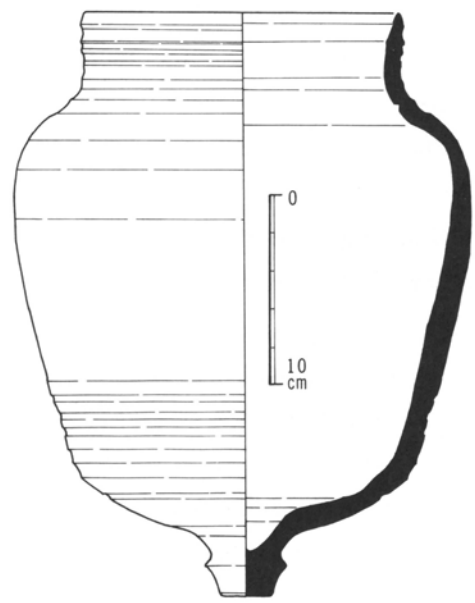


Fig. 41 *Gawadis* type jar unearthed on the floor of Room 4

A complete *gawadis* type jar[3] (Fig. 41. Pl. 84 no. 3) was

Tab. 6 POTTERY

UNEARTHED AREA : On the Floor of Room 4

Fig. no. (pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
41 (84-3)	*Gawadis* type jar	16.3 × 30.8 vol. : 5850cc. (without rim)	minute	reddish brown	horizontal concave lines on lower part	rubbed by wheel	

found in a square brick-lined pit at the southeast corner of the room. Its use is for *saqia*?

To the south of the cylindrical stand, a rectangular stone block measuring 3.0 × 1.4 × 0.4m and estimated to be an olive oil press was buried just under the level of the paving stones. Accordingly, it is presumed that the production of olive oil was carried out in this vicinity some time before this room was built in the 7th century A. D.

An entrance 60cm higher than the floor is opened in the west wall. Several stones forming the outer half of the threshold remain on a foundation of soil. The threshold is 85cm wide, and descending stone steps from it are set up only on the outside. The inner half of the threshold is missing as is any trace of steps. The wall on the south side of the door is formed by ashlar and there is a mortise cut in it, and as the wall continues south, it is mixed with an increasing amount of brick. The north side of the door is accomplished by a narrow wall and an adjacent wall which is a southward extension of the north part of the west wall in Room 5. As opposed to the wall south of the door which descends to the floor level, the north walls are separated from the floor by a hard layer of soil. As a flat stone remains under the stones in the threshold at the same level as the bottom of these north side walls, it is quite possible that the entrance was at one time lower and the floor higher than seen at present.

In the upper part of disturbed soil covering the room, a stele (see p. 299. Pl. 115 upper) was found together with many pottery shards belonging to the 6th～7th century and glass shards to the 3rd～5th centuries A. D. (see p. 238). As noticeable remains, a wooden lathe-made lid (Fig. 135 no. 1. Pl. 69 no. 13), a wooden baluster (Fig. 135 no. 3) an earthen incensory (Fig. 151 no. 5. Pl. 88 no. 9), some beads (see p. 231), an ivory plaque (Fig. 164 no. 3. Pl. 113 no. 5) and a tablet-woven band (see p. 296) were found on and over the paving stone floor, in addition to a vase-amulet (Fig. 157 no. 39. Pl. 96 no. 9) unearthed beneath it.

Room 5 (Pl. 25 lower). This room extends 5.2m north-south × 6.3m east-west and is almost the same size as the south room. Some limestone blocks were piled up irregularly on the west side of the room, and among them were two with reliefs, one of which was the face of Sakhmet (Pl. 119 no. 5), and the other a hand holding a small jar used in dedication. A cylindrical stand *ca.* 0.8m in height and 2.5m in diameter and made of the 24cm type brick remains in the center of the room. A stone disc measuring 1.3m diameter, 0.2m in thickness and a rectangular stone with relief (see p. 316. Pl. 119 no. 10) are left on it. The surface of the stone disc is depressed like a dish, and has a small square hollow in the center, so is identified as the drum of a column. A hard, flat surface of soil, regarded as a floor, extends over the northeast part of the room at almost the same level as the floor in Room 4. At a point 0.8m above the stone disc on the cylindrical stand, stones remain arranged in a circle which makes near or direct contact with the west and south walls of the room and though now missing, presumably with the north and east walls. The top of these stones is at the same level as the top of the blocks piled on the west side of the

room. The central point of the stone circle is coincident with that of the stone disc, but 0.5m to the west of that of the stand.

An entrance measuring 1.3m in width is opened in the west wall. Stone steps outside the room lead down through the entrance to the stone circle in Room 3. Judging from these installations, this room must have also been used for at least two different kinds of work, too. It is not clear what the work was except that due to the steps, it probably did not involve animals.

Considering the use of Rooms 4 and 5, it is possible to have produced olive oil in the period of the 26cm type brick, however, the production must have ceased in the period of the 24cm type brick due to the fact that the oil press was buried under the floor. The cylindrical stands and the stone circle support the idea that these rooms were continuously used as some sort of workshop in the period of the 24cm type brick. The stone circle and the stone disc in Room 5 were possibly used in the grinding of flour, however, whether that was its original use is unclear.

A bronze coin of 12 nummia (Pl. 74 no. 70) and a glass bead (Fig. 157no. 33) were found in disturbed soil filling Room 5. (TSUJIMURA, S.)

Room 6. This room measures 2.8m east-west × 2.9～3.2m north-south. The discrepancy in the length of the north-south wall is due to the fact, while the east and west walls are almost in parallel with each other and they meet at right angles with the south wall, the north wall, though partially missing, has a discrepancy in angle. Moreover, the mud brick in the north wall is 26 × 13 × 8cm, and in the other three walls 24 × 12 × 8cm. Thus, probably the north wall formed the south end of the colonnade mentioned on p. 47 and was reused in the subsequent period.

Three adjacent, rectangular depressions plastered with vegetable-tempered mud were detected in the upper layer in this room. Each is separated by a header-aligned mud brick wall and has a 40cm depth. As they maintain the same height as the stone circle unearthed in Room 5, their usage is thought to have some relation with flour milling. (KAWANISHI, H.)

EASTERN AREA ADJOINING CHAPEL A (Fig. 42. Pls. 22 and 23) : This area is bounded on the south side by the outer wall of the temple complex, the north side by the extreme south wall of the South Court Area and the east side by a large arc-shaped wall. It thus measures 10m on the east side, 13m on the west and 15m from east to west. The east entrances of both the Hypostyle Hall and the first room of rock-cut Chapel A open onto this area, the latter served by natural limestone rock rising in places in step-like cuts. Of undetermined date were a small two-room tomb and other cut depression found in this rise. This section revealed a complex set of walls of various dates. Judging from the mud brick size and wall direction, roughly six phases were differentiated.

First phase. This phase includes the walls (W 1, 2, 3, 5, 6, 8 and 10) and domed structures (S 1 and 2) east of them. In addition, a tomb with a wooden anthropoid coffin, which was unearthed at the northeast corner of a small room formed by Walls 1, 3, 6 and 11, also belongs to this phase. Generally, this phase seems to date from the pre-Ptolemaic Period, however, it would be possible to subdivide this phase because subtle differences can be discerned among mud brick sizes, 38 × 19 × 7cm, 38 × 21 × 9cm and 37 × 17 × 10cm.

Pottery shards from the Third Intermediate Period to the Late Dynastic Period were unearthed

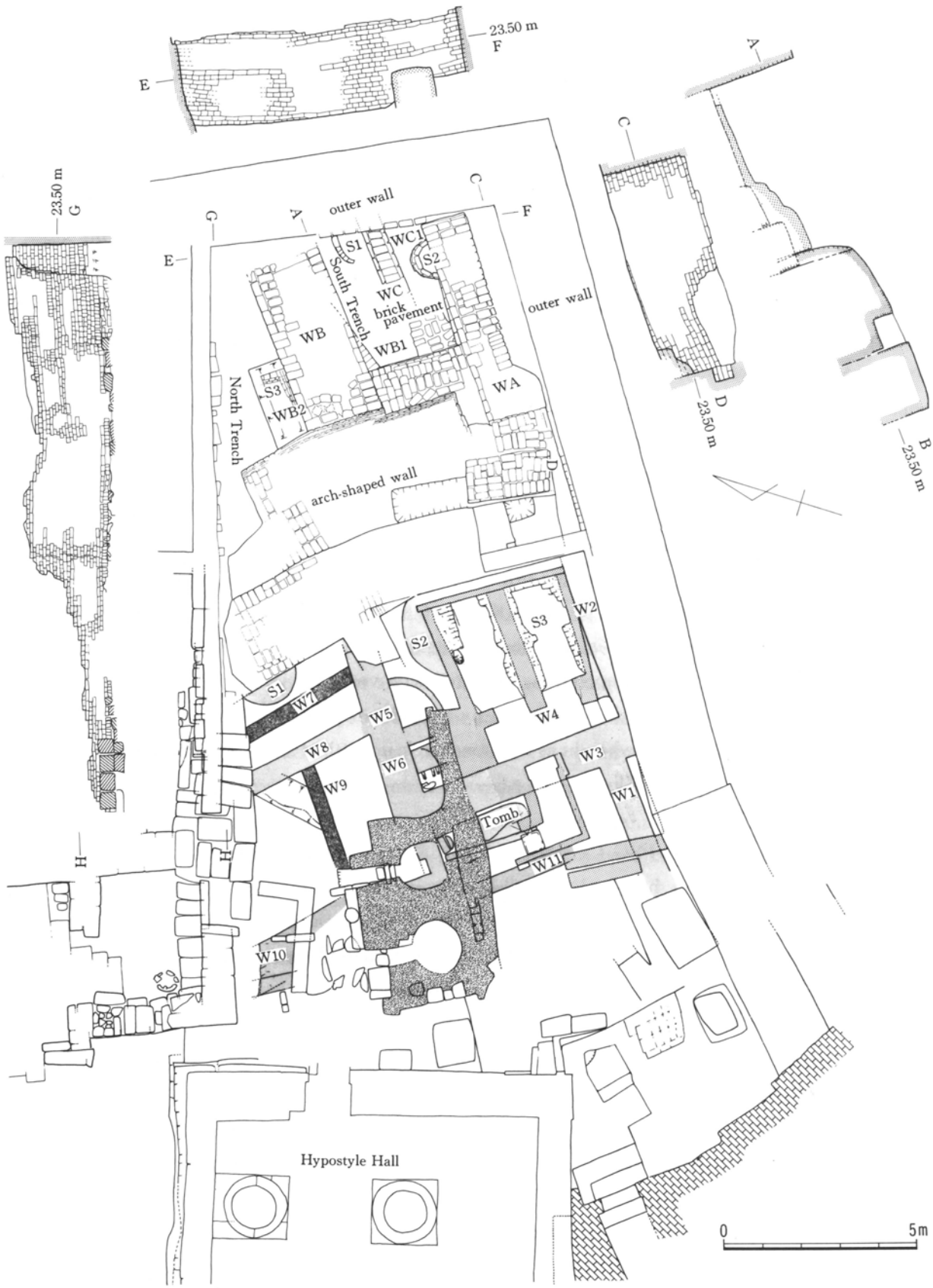


Fig. 42 Eastern area adjoining Chapel A and the southeast corner of the Western Temple Area

here, and according to Uchida's report (see p. 310) the paintings on the coffin are characteristic of the 18th Dynasty.

Wooden anthropoid coffin (Fig. 43. Pl. 24). This coffin measuring 2.0m in length, 0.6m at the widest point and 0.3m in height was found. The outer face of the coffin had paintings painted over a plaster coating. On the west side, in particular, writing and scenes expressing a funerary ceremony were found in good condition (Fig. 44). While all of the lid except the foot section had already been lost through artificial disturbance, the body of the coffin was in complete form when found. It consisted of twenty two boards of different sizes, that is, the bottom was formed by seven boards, the east side six, the west side three, the arch-shaped head section four and the foot two. Of these only the side and end boards were joined by wooden pegs. All other boards were loose, which indicates that the side boards may have been joined, plastered and painted in advance and then the coffin assembled in place. In fact, the paintings suggest that this was an 18th Dynasty coffin brought and reassembled here (see p. 310).

Mud brick measuring 39 × 18 × 9cm, enclosed the coffin, and although most of the ceiling was missing, the interior dimensions were 2.30 × 0.65 × 0, 65m in surviving height. The natural rock on which the tomb sits has a gradual descent toward the east, so bricks were placed under the east side in order to create a horizontal level for it. Chaff-like botanical material and very fine soil filled the space between the coffin and the mud brick enclosure. Moreover, at the northwest and the southeast end where broad spaces remained, bricks were set along the outer faces to secure their stability.

Inside the coffin the complete remains of a human body were revealed *in situ* in spite of later disturbance. The body seems to have been covered by linen cloth judging from the discovery of much

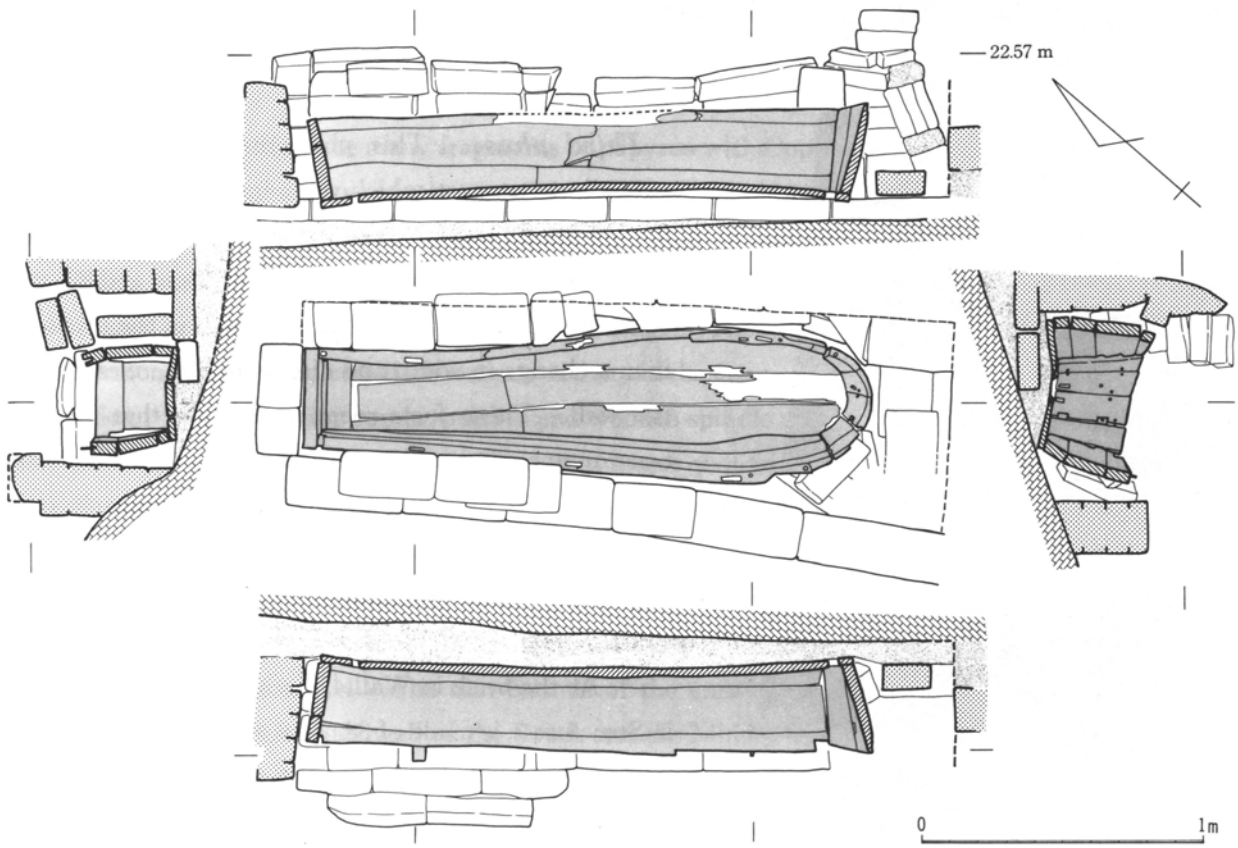


Fig. 43 Anthropoid coffin found in the eastern area adjoining Chapel A



Fig. 44 Paintings on the west side board

decayed cloth stuck to the bones. A gold ring and some beads (Fig. 157 nos. 26～28 and 51) were found, but they were not in their original position. The gold ring was unfortunately lost by an Egyptian government official as soon as it was unearthed, so it can not be described in this report.

Second phase. This phase includes Walls 7 and 9, and it is likely that they divide two former rhomboidal rooms. The mud brick in Wall 7 is 30 × 18 × 8cm and in Wall 9, 31 × 21 × 7cm. Wall 9 is on the natural rock bed in the west end, but because of the rock's descent eastward, it rests on a layer of soil reaching 0.7m in thickness there.

A deep, wide crack in the rock extends north-south diagonally under Walls 8 and 9. The natural crack, as far as excavated is a maximum of 0.8m in width and 1.7m in depth. It was filled with a sandy deposit containing small fragments of pottery. On the top of the deposit a human skull on its side was unearthed.

Depending on the size of mud brick used in the walls and the pottery shards found, this phase is thought to date from the Late Dynastic or the beginning of the Ptolemaic Period.

Third phase. This phase includes a wide wall extending east-west, which was constructed so as to limit the Western Temple Area on the south. Its width is 2.1 ～2.2m and mud brick size 39 × 18 × 13cm and 33 × 16 × 11cm. There is a slight interruption in the brick and then a change in width and direction in the west half of the wall. These facts seem to indicate that the wall construction was either discontinued or that reconstruction was carried out, but the latter case is quite possible because the larger mud brick size dates from the begining of the Roman Period, i.e. in course of construction of the Western Temple.

As the brick in Wall 4, discovered under the foyer in Structure 3, is made of 38 × 19 × 12cm size brick, this wall possibly belongs to this phase. The north extremity of this area is bounded by a foundation consisting of rectangular stone blocks erected on the

natural rock. The foundation cuts the mud brick walls of the first and second phases, so, due to its alignment with the north wall of the Hypostyle Hall it is likely that it belongs to the 1st century, i. e. the third phase, too. This alignment differs from that of the South Court.

Fourth phase (Pl. 23 lower). Two parallel subterranean rooms with foyer (S 3) had been constructed in the southeast corner of the area. Each of the two rooms had a vaulted ceiling, now missing. Their surviving height measures 1.8m. Wall 3 belonging to the first phase was reused as the west wall, and a circular structure (S 2) also of the first phase, was cut off by the north wall in the construction of the room. And L-shaped passage leads west from the foyer. The entrance to the foyer from the passage, which was cut through Wall 3 and finished, was later completely sealed off with mud brick. There is a difference between the size of the mud brick used in the passage and in the parallel rooms. In the case of the passage, they measure 28 × 15 × 10cm and in the parallel rooms 35 × 20 × 12cm. However, there is little doubt that these two structures and the common space were one complex, judging from their disposition. This is thought to be a type of tomb.

The ceilings of the parallel rooms had already been destroyed and the unearthed relics had lost their original position, however, in the accumulated soil, pottery shards, a faience amulet of Thoth (Pl. IV no. 1), a stone figure (Fig. 141 no. 13. Pl. 76 no. 3), a pilaster capital (Pl. 122 no. 8) and so on were uncovered. It is possible that this phase dates from the 4th~5th century A. D.

Fifth phase (Pl. 22 lower). Three furnaces were installed side by side in the center of the area, with their fire tunnels opening toward the north. The conical fire rooms do not have the same diameter, the one situated in the west measuring 1.4m and the one in the middle 1.2m, and the surviving height of the best preserved is 1.6m. The east furnace for the most part is lost. The furnace walls are made of mud brick and diverted stones. The mud brick size is a uniform, 24 × 12 × 8cm, which was typical in the 7th century A. D.

Under the west furnace many fragments of papyrus with Coptic letters (see p. 361) were removed, and in front of the same furnace a bronze Osiris figure (Fig. 138 no. 24) and an accompanying wooden board, both perhaps from a coffin of an earlier age, were unearthed.

Kilns with fire tunnels were used for firing pottery in the Roman Period and the furnaces found here are similar, they probably thus had the same usage. These furnaces, and the stone circles, or flour mills mentioned above, indicate the economic activity in the Coptic Period when the temple itself had lost its function. Many weaving combs, needles and wooden spindle whorls (see p. 183), though found in the disodered soil covering this area, were detected in larger quantities than in other areas and also indicate the economic activity carried on in the Temple Area. (KAWANISHI, H.)

SOUTHEAST CORNER OF THE WESTERN TEMPLE AREA (Fig. 42. Pls. 26 and 27): An excavation area 10m square was set up to the east of the above-mentioned area, and adjacent to the south of the Coptic room, Room 4. The east bounds of the excavation area extended along the supposed prolongation of the east outer wall of the South and the Middle Courts. The principal purpose of our investigation in this section was to clarify whether the outer wall actually extended further to the south or not, and if so, its relation to the south outer wall.

Shortly after the commencement of work to remove the mound of disturbed soil, a stele bearing the

name of the Roman Emperor Caligula (see p. 327. Pl. 120 no. 1) was discovered at the southeast corner of the excavation area and the upper part of the east outer wall made of 32 × 16 × 12cm brick was disclosed. Under this wall another older wall of 32 × 16 × 7cm brick was found and it protrudes 15cm to the west. The south outer wall was later found to extend and join the east wall by an in-and-out bond. The thickness of these walls measures 2.0m and the dimensions of the mud brick used 32 × 16 × 12cm. However, at a point 5.7m west of the corner of the outer walls, a separate but incorporated wall of 38 × 19 × 12cm brick was uncovered 65cm under the top of the south outer wall. This wall projected to the north by the width of one brick. Additionally, brick of this wall was laid horizontally.

The north wall of the area of investigation was presumably constructed at a date later than the east outer wall due to the fact that it was simply attached to the outer wall, and the bottom was on a different level. A large crevice in this north wall is found about 1m west of the east end, and the bottom of the wall on the west side of the crevice extends 50cm lower than that on the east side. The size of the mud brick used for the construction of the north wall differs on each side of the crevice. That is, brick measuring 29 × 14 × 11cm was used on the east side, while on the west side smaller brick measuring 24 × 12 × 8cm was used. Some bricks measuring 29 × 14 × 11cm were also used in the lower part of the west side, however, it is presumed that they were reused when the wall was reconstructed. The use of building stone for the foundation of the west side of the wall is noteworthy.

Opposed to these three linear walls, the west wall of the excavated area curves toward the west. This wall measures about 5m in thickness, descends gently as it curves, and ends at the point where it appeared to have been cut by the north wall. The east side of the arc-shaped wall inclines toward the top while the west side is vertical. This wall is constructed with mud bricks of three different sizes, that is, 38 × 19 × 7cm for a thickness of 2m on the west side, and from there to the east side of the wall 31 × 15 × 7cm. At the northeast corner at a thickness of 1.5m, brick of 38 × 19 × 12cm is also found. It is considered that the difference in the size of bricks is due to their age in which they were used and the present wall is the result of eastward additions. The oldest wall is the highest, being almost the same as the outer walls. As mentioned later, we surmise that the arc-shaped west wall might have had the function of an outer wall encircling all or part of the chapel area until the linear walls surrounding the temple area were built.

An east-west wall (W A) 80cm north of the south outer wall is also constructed of mud brick measuring 38 × 19 × 12cm. The thickness is 1.1m and the top of the wall is about 1m lower than the remaining height of the south outer wall. Its eastern end is at the point where it meets the projecting lower part of the east wall referred to above. The size of brick used here shows that the lower east outer wall was constructed first, then Wall A and lastly the upper part of the outer wall.

Two walls, one upon the other but on different axes, extend to the east from the middle of the west wall but have been cut by the east outer wall. The upper wall (W B) made of mud brick measuring 38 × 19 × 12cm is 80cm in height. The lower wall (W B1) is 50cm in depth and is made of brick measuring 32 × 16 × 7cm. This wall extends diagonally toward the east, indicating an older wall once existed.

From our investigation in this section, the chronological change in brick size is presumed to have been as follows : 38 × 19 × 7cm → 32 × 16 × 7cm → 38 × 19 × 12cm → 32 × 16 × 12cm → 29 × 14 × 11cm → 24 × 12 × 8cm, the first size being the oldest. Henceforth these will be referred to as large,

thin ; small, thin ; large, thick ; small, thick ; 29cm and 24cm types respectivelly (see pp. 265 ff).

We excavated the whole area down to the foundation of Wall B1, but in the levels lower than the base of the above two walls, the excavation was limited to the area between walls A, B and B1 to avoid the collapse of the east side of the dig.

South trench (Fig. 45. Pl. 27 lower). The east outer wall is divided into two layers by brick size, that is, the lower part was made of small, thin brick and it projects 15cm to the west as mentioned above. The top of this lower part is 1.7m below the top of the east outer wall, and 65cm above the top of Wall B1 made of the same type brick. On the other hand, the bottom is 25cm below the bottom of Wall B1.

The bottom of the southern east-west inner wall (W A) is 25cm below the bottom of the east outer wall. This wall was attached to both the lower part of the east outer wall and the east side of the arc-shaped walls. As indicated above there is a gap between it and the newer upper part of the east outer wall. Thus, it is seen that the east outer wall was rebuilt after Wall A was constructed, so the small, thin type brick found in the bottom part there must be older than the large, thick type in Wall A, which in turn must be older than the small, thick type in the upper east outer wall. It is possible to confirm this chronology where Wall A meets the arc-shaped wall. Here part of a brick pavement or floor of the area north north of Wall A was discovered. It is small, thin brick (32 × 16 × 7cm), and its level is almost equivalent to the top of Wall B1, which contains the same brick. An ash layer of 10cm in thickness spreads 90cm below the brick pavement, and the bottom of the arc-shaped wall is 1.7m below that level. The lower part of a vaulted structure (S 1) was found on a mud floor at the same level as the bottom of arc-shaped wall and its limestone pebbles foundation. Under the mud floor, two east-west walls, one under the other and separated by a soil layer 20cm in thickness, were found. The upper wall (W C) was made of a large, thin type brick, the lower one (W C1) was made of brick very thin measuring 30～32 × 15～16 × 5～6cm which is smaller than the small, thin type. The

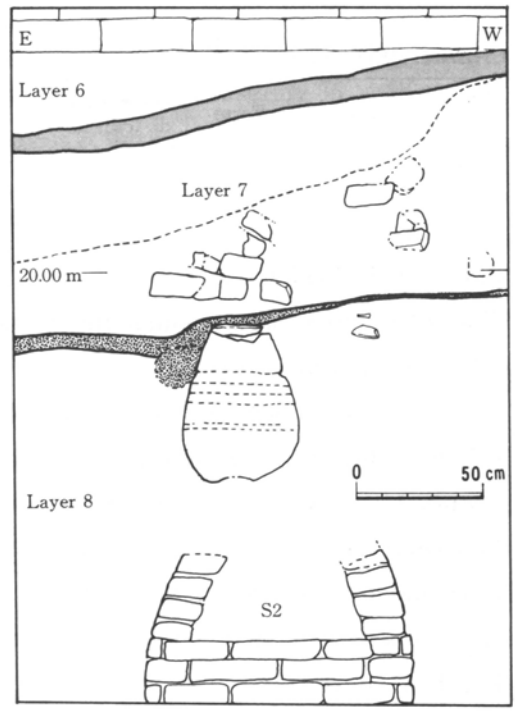


Fig. 45 Vertical section of the south trench

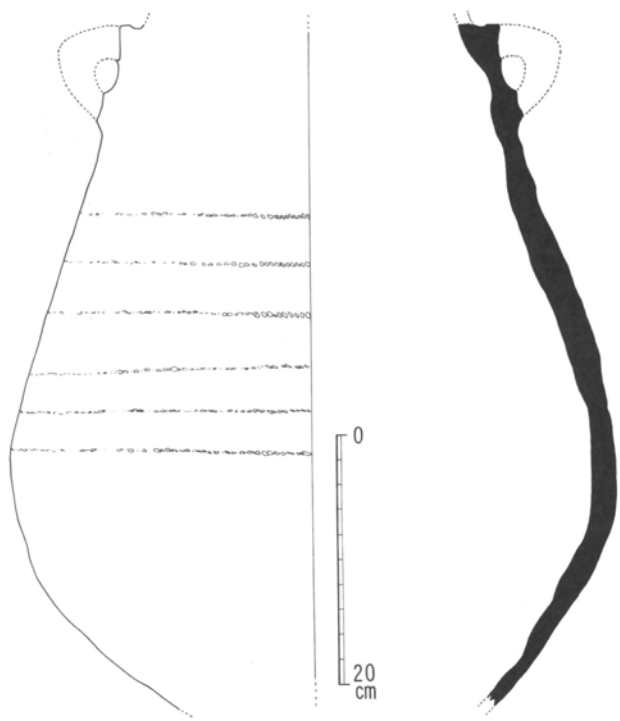


Fig. 46 Large pot unearthed in the south trench

Tab. 7 POTTERY

UNEARTHED AREA : South Trench in the Southeast Corner

Fig. no. (pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
46 (85-1)	8	pot	48.0	sandy, vegetable-tempered	pale reddish brown	cord-impressed line, spiral	rubbed by wheel	

bottom of the Wall C1 is 6.3m below the top of the east outer wall and 5.2m below the top of the Wall A. Thus we see that the very small, thin brick is the oldest in chronology and it is followed by brick in the order given above.

The bottom of Wall A was found horizontal, however the eastern half of the layers under the wall including the ash layer mentioned above inclines down toward the east and then returns to the horizontal. A white gravel with some pottery shards was found between the bottom of the wall and the ash layer in the eastern end. A thin yellow sand layer lay 1.1m further under the wall. Though it was not all horizontal, its horizontal surface on the east extended further to the east compared to the upper layers and is almost at the same level as the foundation of the arc-shaped wall. An almost complete large pot (Fig. 46. Pl. 85 no. 1) measuring 60cm high with a broken bottom and a stone lid was discovered under the yellow sand layer. This pot was set vertically. Because there was no installation to set it on, it is supposed that the lower part had been buried in the soil. Nothing remained in the jar.

A vaulted structure (S 2) made of brick measuring 36 × 15 × 7cm was found 25cm under the pot. The bottom of this structure was equivalent to the bottom of the lowest wall (W C1) uncovered on the north side of Wall A.

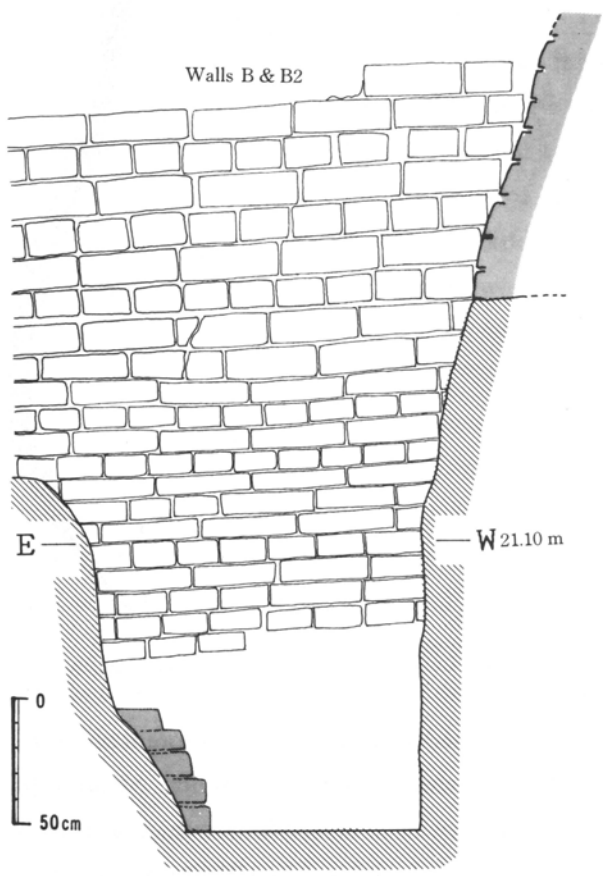


Fig. 47 Vertical section of the north trench

Bricks of the lowest layer in this area were thin and small in common, but their lengths are varied. Therefore, it is not possible to call these bricks which are older than the large, thin type typical. However, their variety may be rather a feature to distinguish them from the later small, thin type.

North trench (Fig. 47. Pl. 27 upper). We set up a trench 2m east-west × 1m north-south at the corner of the north side of Wall B next to the arc-shaped wall. Both Wall B and the northeast corner of the arc-shaped wall used brick of the large, thick type, and the bottom of both are at the same level. No other walls were found under the bottom of the arc-shaped wall. On the other hand, just under Wall B, a wall (W B2) of brick of the

large, thin type was found. Though the wall has the same axis as Wall B, it protruded 20cm to the north. Including the two lower courses in which bricks were laid in a header bond, this wall is 1.1m in depth. At the east end of the trench a vaulted structure (S 3) made of brick measuring 35 × 16 × 7cm remained below the wall, separated by a soil layer 20cm in thickness at the east end of the trench. Walls B and B2 incline slightly down toward the east, while Structure 3 was built horizontally almost at the same level as the mud floor on which Structure 1 was built in the excavated area, south of Wall B.

Layers at this corner (Fig. 48). As for the layers excavated, the disturbed soil, Layer 1, extends to a depth of about 80cm. Broken pieces of pottery (Fig. 49 nos. 1～7) and carinated oval lamps (see p. 212) belonging to the 6th or 7th century A.D. were removed from this layer. Under Layer 1 was found a very hard Layer 2 which extended about 70cm in depth and contained no remains. Layer 3 extended about 40cm in depth to the bottom of the east part of the north wall constructed with bricks of the 29cm type and contained many remains, which included both whole pieces and shards of glass and pottery (Fig. 49 nos. 8～13), as well as a large quantity of straw fodder in the northern half. Since all the lamps found here date from around the first half of the 4th century A.D., this layer must date from that period.

Layer 4 is a fine, soft soil. The lowest level of this layer is lower than the bottom of the newer part of the east outer wall. If the upper wall had been built before Layer 4 accumulated the discrepancy in the thickness between the upper and the lower walls would have been exposed above ground, a very unlikely situation. Accordingly, it is supposed that the upper wall which used brick of a small, thick type was constructed during the accumulation of Layer 4. Among the remains found in this layer such objects as a crocodile shaped plaster (Fig. 164 no. 16. Pl. 77 no. 5) and a plaster figure of two crocodiles with hieroglyph (see p. 322. Fig. 164 no. 11. Pl. 77 no. 6) were included. The glass also found in this layer is of high transparency and quality (see p. 238), and the lamps have the rear legs of an animal and a palm leaf design on the top (see p. 212. Fig. 146 no. 7. Pl. 86 no. 1). Judging from these lamps and glass, Layer 4 is estimated to date from the 2nd century A.D. Therefore, the small, thick type brick dates from after that century at the earliest because the bottom of the south outer wall and the newer part of the east higher than the lower part of Layer 4.

Layer 5 reaches to below the bottom of Wall B, and pottery (Fig. 49 nos. 14～18) belonging to the beginning of the Roman Period was removed from it. Though the brick pavement of a small, thin type

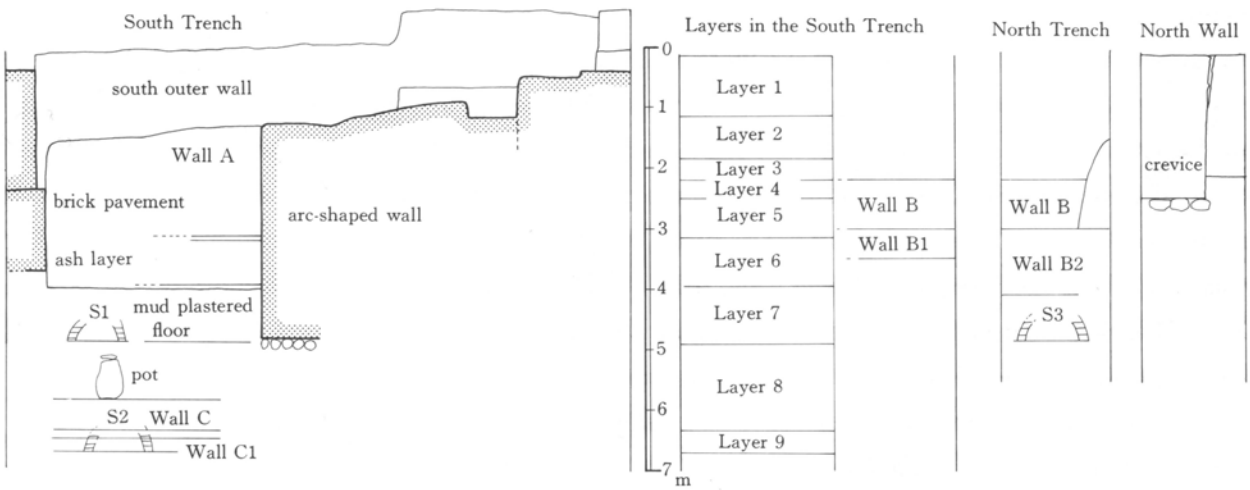


Fig. 48 Relationship between the south and the north trench layers

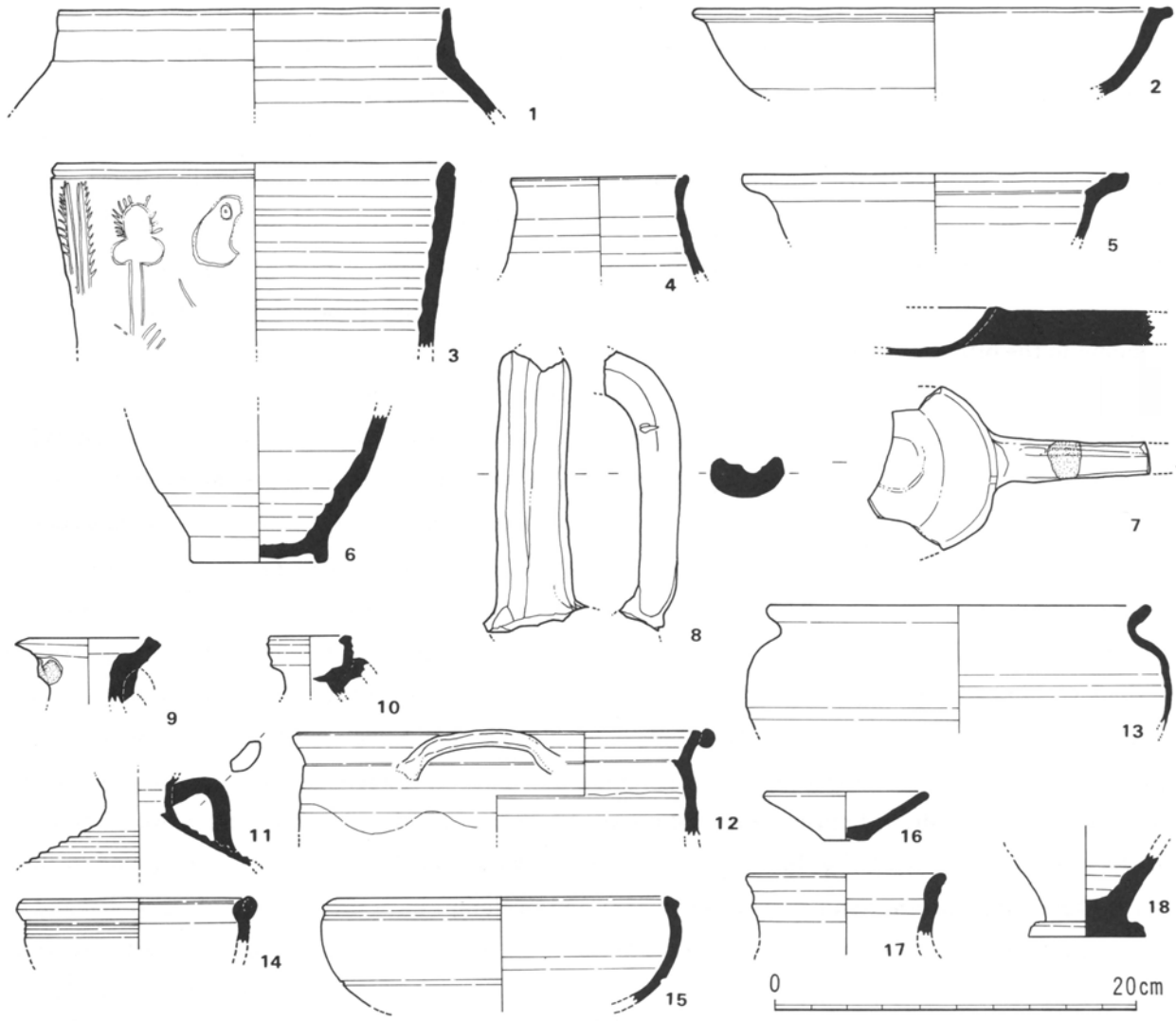


Fig. 49 Pottery found at the southeast corner

is a little lower than the bottom of Layer 5, the pottery found on it belongs to that period, too.

Layer 6 reaches down to the horizontal level of the thin ash layer, which is at almost the same depth as the bottom of the lower part of Wall B2 in the north trench. Pottery (Fig. 50 nos. 1 and 2) unearthed from this layer belongs to the Ptolemaic Period. Accordingly, these bricks for the pavement must have been reused. Layer 7 goes down to the mud floor, and pottery (Fig. 50 nos. 3～14) belonging to the latter half of the Late Dynastic Period and the Ptolemaic Period was unearthed in this layer. Vaulted structures, Structure 1 constructed on the mud floor in the south trench and Structure 3 in the north trench are supposed to belong to the latter period. Soil under Layer 9 between Walls C and C1 was divided and half designated Layer 8 and half Layer 9, because, even though the pottery (Fig. 50 nos. 15～35) unearthed from both halves was from the same age, the Third Intermediate Period, and the soil indistinguishable the brick type was quite different.

As mentioned above, this area outside the arc-shaped wall might have been used for storage from the Late Dynastic Period to the Ptolemaic Peiod. And then, though the wall still maintained its function until the 2nd or 3rd century A.D., this area apparently was no longer utilized for such.

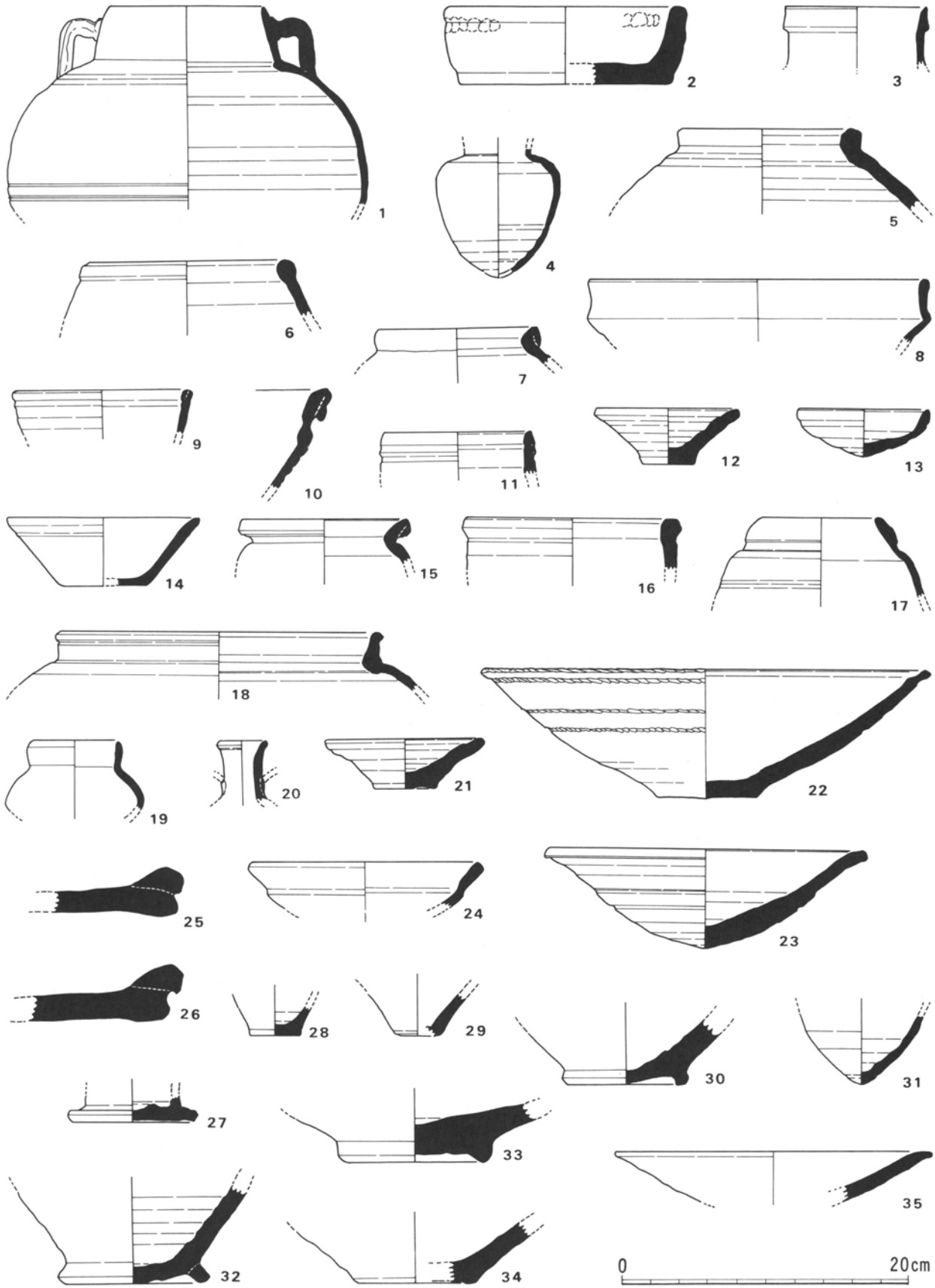


Fig. 50 Pottery found at the southeast corner

Tab. 8 POTTERY

UNEARTHED AREA : Southeast Corner of the Western Temple Area

Fig. no. (pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
49-1	1	jar	21.6	minute	reddish brown	without decoration	rubbed by wheel	
49-2	ditto	bowl	26.2	ditto	ditto	red slip	ditto	
49-3 (84-2)	ditto	ditto	21.8	ditto vegetable-tempered	ditto	whitish slip, relief	ditto	
49-4	ditto	jar	9.6	minute	ditto	whitish slip	ditto	
49-5	ditto	bowl	21.3	ditto	greyish brown	red slip	ditto	
49-6	ditto	base		rather sandy, vegetable-tempered	reddish brown	without decoration	ditto	
49-7	ditto	ladle		minute	dark brown	ditto	rubbed by hand	
49-8	3	handle of amphora		rather sandy	pale brown		ditto	
49-9	ditto	table amphora	6.7	minute	pale yellowish brown	two handles	rubbed by wheel	
49-10	ditto	ditto	4.2	ditto	reddish brown	handle slip	ditto	
49-11	ditto	ditto		ditto	pale yellowish brown	handle, horizontal concave lines	ditto	
49-12	ditto	pot cooking (?)	21.8	minute	reddish brown	transverse handle whitish slip on inner face	ditto	soot-stained outer face
49-13	ditto	cooking pot	20.7	ditto	ditto	without decoration	ditto	ditto
49-14	5	bowl	12.6	ditto	ditto	horizontal comb-mark	ditto	
49-15	ditto	ditto	18.6	ditto	reddish brown	without decoration	lower part : scraped by wheel, other parts : rubbed by wheel	
49-16	ditto	plate lamp (?)	8.8 × 2.8	ditto	dark brown	ditto	rubbed by wheel & by hand	soot-stained inner face
49-17	ditto	base	10.6	ditto	pinkish brown	ditto	rubbed by wheel, bottom : cut with spatula	
49-18	ditto	jar		ditto	pale yellowish brown	ditto	rubbed by wheel	
50-1	6	jar	10.7	ditto	dark brown	two handles	ditto	
50-2	ditto	plate	16.3 × 5.4	sandy	greyish brown	without decoration	rubbed by hand	
50-3	7	jar	9.8	rather sandy	pale brown	slip	rubbed by wheel	
50-4	ditto	ditto		ditto	reddish brown		lower part : scraped by wheel, upper & inner parts : rubbed by wheel	soot-stained outer face
50-5	ditto	ditto	12.3	ditto	ditto	without decoration	rubbed by wheel	
50-6	ditto	pot	13.7	ditto	orange	ditto	ditto	
50-7	ditto	jar	10.9	minute	light	ditto	ditto	

					greyish brown			
50-8	7	bowl	23.6	minute	greyish brown	without decoration	rubbed by wheel	
50-9	ditto	ditto	12.1	ditto	pale brown	ditto	ditto	
50-10	ditto	ditto	35.4	ditto	reddish brown	slip	horizontal concave lines	
50-11	ditto	jar	10.3	ditto	pale brown	without decoration	rubbed by wheel	
50-12 (84-7)	ditto	plate	10.0 × 4.0	ditto	pale orange	ditto	ditto	
50-13	ditto	ditto	8.9 × 3.3	rather sandy	dark brown	ditto	ditto	
50-14	ditto	ditto	13.1 × 4.8	minute	reddish brown	ditto	ditto	
50-15	8	jar	11.4	minute	reddish brown	without decoration	rubbed by wheel	
50-16	ditto	jar(?)	14.4	ditto	ditto	slip	ditto	
50-17	ditto	jar	8.4	ditto	dark brown	ditto	ditto	
50-18	ditto	ditto	21.9	ditto	reddish brown	ditto	ditto	
50-19	ditto	ditto	6.0	ditto	ditto	ditto	ditto	
50-20	ditto	pilgrim flask	3.2	ditto	pale brown	two handles	ditto	
50-21	ditto	plate	10.7 × 3.6	ditto	dark brown	without decoration	ditto	
50-22 (84-5)	ditto	bowl	30.7 × 9.2	rather sandy	ditto	four cord-impressed lines	ditto	
50-23 (84-6)	ditto	ditto	21.8 × 7.0	ditto	reddish brown	horizontal grooved line	lower part : scraped by wheel, upper part & inner face : rubbed by wheel	
50-24	ditto	ditto	15.8	minute	pale brown	without decoration	rubbed by wheel	
50-25	ditto	platter(?)		sandy, vegetable-tempered	orangish brown	ditto	upper face : rubbed by wheel, lower face : unfinished	
50-26	ditto	ditto		ditto	ditto	ditto	ditto	soot-stained on rim
50-27	ditto	base		minute	pale brown	ditto	rubbed by wheel, bottom : scraped	
50-28	ditto	ditto		rather sandy	ditto	ditto	ditto	
50-29	ditto	ditto		ditto	brown	ditto	rubbed by wheel	
50-30	ditto	ditto		minute, white grit	reddish brown	with foot	ditto	
50-31	ditto	ditto		ditto	ditto	without decoration	ditto	
50-32		ditto		rather sandy	greyish brown	slip	ditto	
50-33	ditto	ditto		ditto	reddish brown	without decoration	ditto	
50-34	ditto	ditto		ditto	greyish brown	ditto	ditto	
50-35	ditto	bowl	21.1	ditto	dark brown	ditto	ditto	

WESTERN AREA AROUND THE SOUTH COURT (Fig. 51. Pls. 28 lower and 29): We investigated the western area around the South Court to understand the relationship between the court and the west outer wall of the Temple Area. The fact of the matter is that in addition to the outer wall, other walls and structures made of brick of different sizes and lain in complexity were found in this area.

Under the ramp in front of Chapel B three circular structures were uncovered. Structure 1 (S 1) is made of brick of a large, thin type, while the others (S 2 and 3) are a small, thin type. Though two latter structures (S 1 and 2), 1.6～1.8m in diameter, were broken by the construction of the ramp and Wall 1 (W 1) extending from the west end of the terrace of Chapel B, Structure 1 might have been a half circle from the beginning as it seems to be attached to the wall rather than having been cut by it. In Structure 1, the shard of a jar (Fig. 54 no. 1) dating from the Late Dynastic Period, according to the report of Saqqara[4] was found.

Along the southern part of Wall 1, a rectangular room measuring 2.8m × 1.2m was detected (see p. 34). However, because only a floor of brick coated with mud and one to three courses of brick were found, it is unclear what its use was. Both in Wall 1 and in this room, bricks of the small, thick type were used.

The top of the north part of Wall 1 was completely missing and a limestone gravel layer 30cm thick laid on top of the remaining lower part. Yellow sand which was ordinarily used directly under paving stones was found under the terrace but not on the gravel. Bronze coins, an earthen hedgehog (Fig. 152 no. 3. Pl. 90 no. 1), some group C of frog lamps and group A of carinated oval lamps were found in both disturbed soil on the gravel, and in the gravel layer (see pp. 268 ff).

To the north of the circular structures, an east-west wall (W 2) measuring 2.8m in thickness disappears under the paving stones at an angle of 23 degrees, so that its general view and character could not be ascertained. However, as the distance from the center of the shaft in Chapel A to the inner part of the arc-shaped wall in the southeast corner is the same as that to Wall 2, and as the brick size is the same large, thin type, it is possible to consider these to be parts of the same wall (Fig. 52). This assumption is strengthened by the fact that a wall adjacent to Wall 2 was uncovered on its north side doubling the thickness of the wall to the same dimension as the outer part of the wall in the southeast corner. In addition, the brick size of both is the same here, too.

A narrow wall (W 3) joining Wall 2 at a right angle extends to the north 5m and turns at a right angle to the east. Wall 3 is of brick of a small, thin type. Wall 4 of the same type brick and almost the same thickness as Wall 3 extends from Wall 3 after a small break to the east for a short interval. Of note here, is the gap between Walls 3 and 4, and the change of axis, probably caused by the movement of the land. These walls are, however, suspected to have been a part of the same wall originally. This complex set of walls can be seen to have been based on the arc-shaped wall, built in the Third Intermediate Period as a core. In the low part surrounding Walls 2 and 3, many shards were unearthed, including some platters, jars and bowls with rims doubled back on the exterior, etc. (Figs. 53 nos. 8～36, and 54 nos. 2～7). Of special note is a shard (Fig. 53 no. 24) with a carinated shoulder, as listed.

Bricks of a large, thick type were piled up around Wall 4 to the same level as the top of the wall to form a flat surface, however, their axis is coincident with the sacred road unlike those in Wall 4 and the bricks to the south of it. Some bowls with an external roll-rim (Fig. 53 nos. 37～39) were detected on



Fig. 51 Western area around the South Court

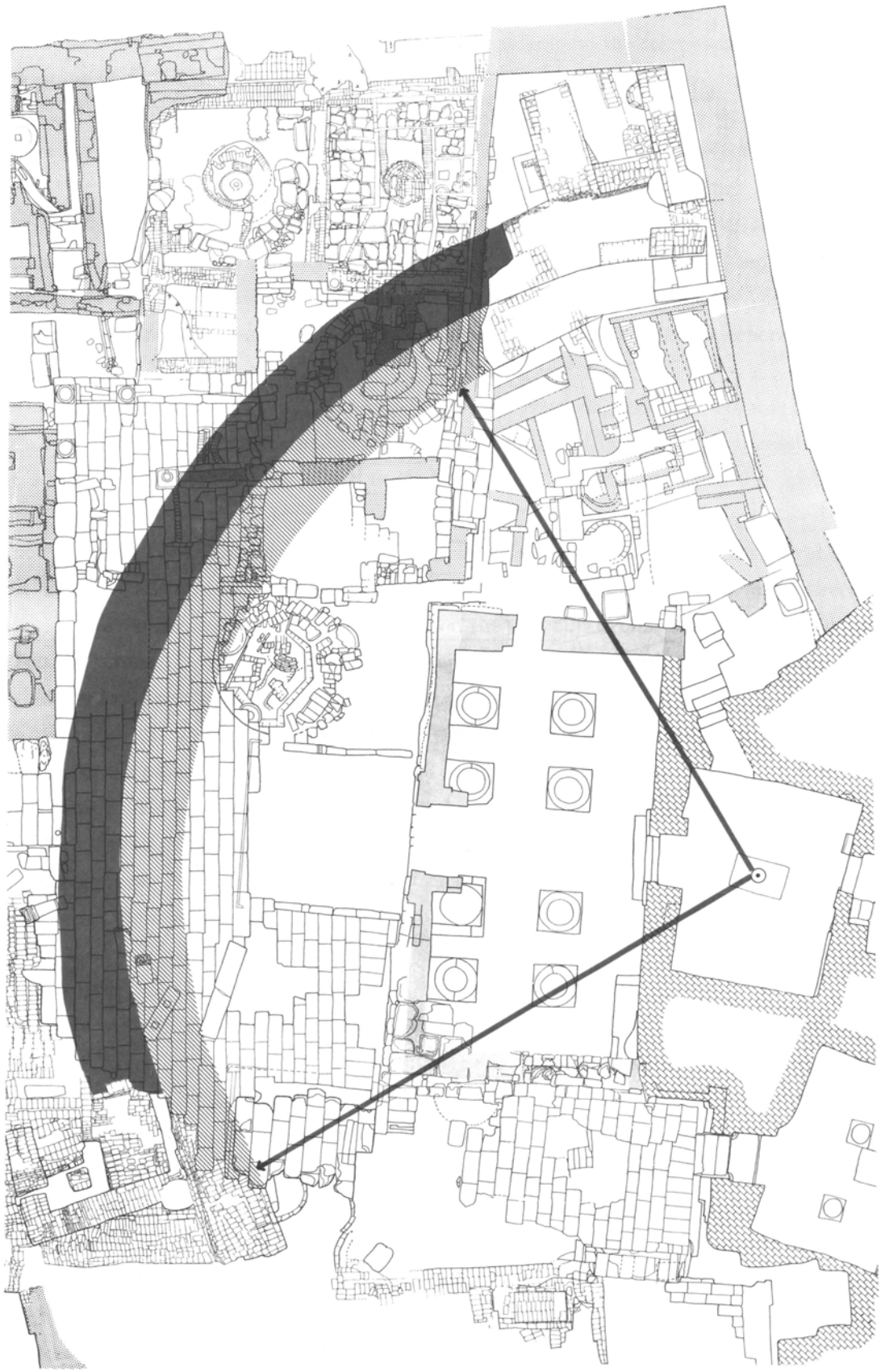


Fig. 52 Reconstruction of the arc-shaped walls

this flat surface of brick. Between this surface and the north colonnade, a rectangular hollow measuring 1.6m north-south, 45cm at the north end and 35cm at the south end, and 0.8～0.9m deep, was cut in the bedrock. Though this is thought to have been a Coptic tomb in which the deceased was laid north-south, nothing was found in it.

Wall 5 (W 5) built with a large, thick type brick is sitting on the prolongation of the thick walls which continue intermittently on the west margin of the site. Therefore, it is possible that Wall 5 is not only the west outer wall of the Temple Area but also an integral part of the city wall. Both the city wall and Wall 5 are parallel to the Sacred Road, and make a right angle with the north colonnade. Both of them used the same type brick. Therefore, the directional characteristic of walls changed a great deal between the thin brick type era based on the arc-shaped wall and that of the thick brick type based on the Sacred Road.

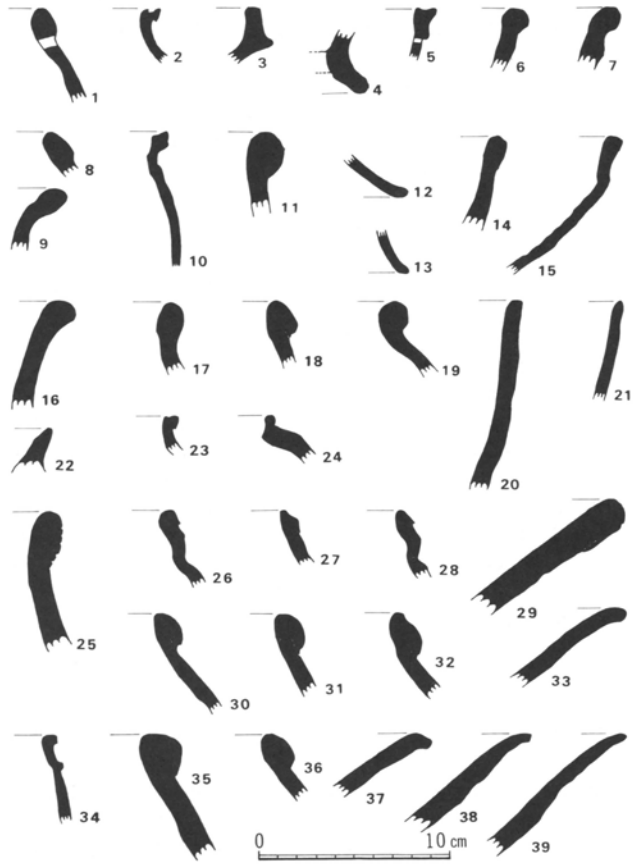


Fig. 53 Pottery found at the western area

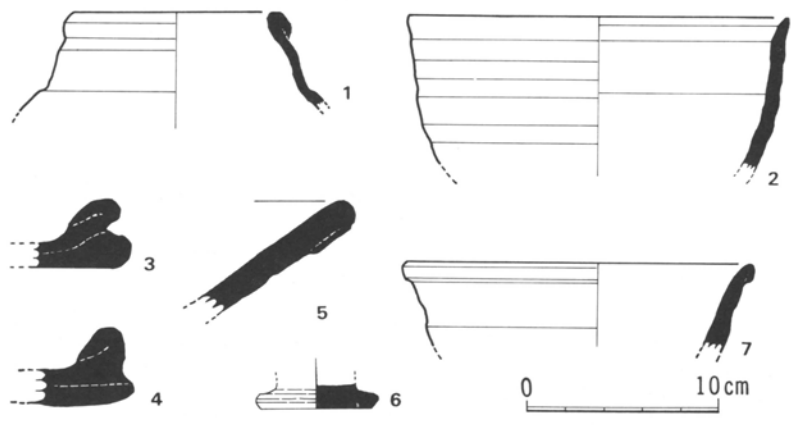


Fig. 54 Pottery found at the western area

To the west, a 24cm type brick wall (W 6) extends from Wall 5, at a point opposite the east-west wing of Wall 3. Furthermore, other walls built with a large, thick type and a small, thin type brick extend to the west. The farthest wall is at 9.6m distance from the west end of Wall 5. These low walls are on various axes, and are thus complex. Its details and significance must be left to later investigation.

One meter north of the brick foundation serving the north colonnade paving stones, foundation stones for the row of columns and stone panels lining the north edge were uncovered. And from a point where this line meets a line from the west end of the colonnade brick foundation, a course of brick of the large, thick type placed end to end extends to the north. Perpendicular to the east side of these, 29cm type brick is laid side up, while brick of a large, thick type are found on the west side. The bedrock under the bricks was cut vertically in parallel to the line of bricks but separated by at a distance of 1.6m.

Tab. 9 POTTERY

UNEARTHED AREA : Western area around the South Court

Fig. no.	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
53-1	pot cooking(?)	14.0	minute	brown	pierced hole	rubbed by wheel	soot-stained on outer face
53-2	cooking pot	16.5	ditto	ditto	without decoration	ditto	soot-stained
53-3	bowl		ditto	reddish brown	red slip	ditto	
53-4	foot	8.0	sandy	brown	without decoration	ditto	
53-5	rim		minute	brownish white	pierced hole	ditto	
53-6	bowl	17.4	rather sandy	pale brown	without decoration	ditto	
53-7	ditto	25.0	minute	brownish white	whitish slip	ditto	
53-8	pot		ditto	pale reddish brown	slip	ditto	
53-9	pot(?)	ditto	ditto	brownish white	without decoration	ditto	
53-10	cooking pot	25.4	ditto	dark brown	ditto	ditto	soot-stained
53-11	pot		ditto	reddish brown	ditto	ditto	
53-12	pedestal	15.0	rather sandy	ditto	ditto	ditto	
53-13	ditto	8.0	rather sandy, white grit	brown	ditto	ditto	
53-14	bowl		ditto	ditto	ditto	ditto	
53-15	ditto	24.0	ditto	brownish white	slip	lower part : scraped by wheel, other parts : rubbed by wheel	
53-16	ditto	19.5	ditto	yellowish brown	without decoration	rubbed by wheel	
53-17	pot	12.0	minute	pale brown	ditto	ditto	
53-18	ditto		rather sandy, white grit	reddish brown	ditto	ditto	
53-19	ditto	12.5	ditto	ditto	ditto	ditto	
53-20	bowl	22.0	minute	brown	ditto	ditto	soot-stained on rim
53-21	ditto	10.0	ditto	reddish brown	slip	ditto	
53-22	rim		ditto	black	without decoration	burnished on the face	
53-23	ditto	5.8	rather sandy, white grit	dark brown	ditto	rubbed by wheel	
53-24	pot		sandy	reddish brown	without decoration	ditto	
53-25	ditto	17.6	ditto	brown	horizontal comb-mark on rim	ditto	
53-26	pot cooking(?)	10.0	minute	ditto	without decoration	ditto	soot-stained

53-27	pot(?)	9.0	rather sandy, white grit	orange	without decoration	rubbed by wheel
53-28	pot cooking(?)	11.3	minute	brown	ditto	ditto
53-29	plate	39.2	sandy, vegetable-tempered	ditto	two cord-impressed lines	ditto
53-30	pot	10.4	rather sandy, white grit	reddish brown	without decoration	ditto
53-31	ditto	7.4	ditto	ditto	ditto	ditto
53-32	ditto	10.7	rather sandy	brown	ditto	ditto
53-33	plate	20.0	minute	brownish white	ditto	lower part : scraped by wheel, other parts : rubbed by wheel
53-34	pot	15.0	very minute	white	band under rim	rubbed by wheel
53-35	ditto		rather sandy	brown	whitish slip	ditto
53-36	ditto	8.7	rather sandy, white grit	reddish brown	without decoration	ditto
53-37	plate	24.0	ditto	dark brown	ditto	ditto
53-38	ditto	24.0	ditto	pale reddish brown	ditto	lower part : scraped by wheel, other parts : rubbed by wheel
53-39	ditto	23.4	ditto	ditto	ditto	ditto
54-1	jar	10.8	minute	pink	whitish slip on outer face	rubbed by wheel
54-2	bowl	19.9	ditto	reddish brown	without decoration	ditto
54-3	platter(?)		sandy	ditto	ditto	rubbed by hand(?)
54-4	ditto		ditto	ditto	ditto	ditto
54-5	plate	39.5	sandy, vegetable-tempered	brown	cord-impressed lines	rubbed by wheel
54-6	jar		minute	reddish brown	without decoration	ditto
54-7	bowl	18.0	ditto	orangish brown	ditto	ditto

Soil in the west, neighboring the cut rock, was removed to a point 2.5m deep, but bedrock was not found.

The axes of the above-mentioned course of brick and the west end of the north colonnade are almost coincident with that of the border line between the Hypostyle Hall and the terrace of Chapel B. However, as the paving stones extended over this line, and the west part of the foundation stones of the colonnade were absent, we could not find a clue as to the whereabouts of the west border of the South Court.

In the area to the north of the north colonnade, many different remains belonging to the Coptic Period were found, including bronze coins, textile fragments, papyri with writings (see p. 363. Pl. 144 nos. 74～76) in addition to a crocodile mummy.

Notes

1) Two stone blocks bearing the cartouche of Nero have already been reported. KESSLER, *HTMS*, SS.

260-263.

2) In Middle Egypt, the British Museum's Party found a complex of pottery drain pipes at Ashmunein. SPENCER, A. J. and D. M. BAILY, *Ashmunein (1984)*; *British Museum Expedision to Middle Egypt* (*British Museum Occasional Paper* No. 61, 1985, London.), p. 3, Pl. 4b, Fig. 3, 34-U4.
3) MÉNASSA, L. et P. LAFERRIÉRE, *La Sáqia* (Le Caire, 1974), p. 18.
4) FRENCH, P. and H. GHALY, *Pottery Chiefly of the Late Dynastic Period, from Excavations by the Egyptian Antiquities Organization at Saqqara, 1987* (*Cahiers de la Céramique Égyptienne*, 2, Le Caire, 1991), pp. 93-124, pottery No. 82.

(TSUJIMURA, S)

MIDDLE COURT AREA

SACRED ROAD (Fig. 55): The Middle Court is north of the South Court and on a lower level. It is reached from the latter by descending the Sacred Road which begins with two steps and then a ramp which is paved with stones and possesses curbstones on both sides. The stones at the bottom of the ramp overlap the paving stones of the court, thus creating yet another step. The ramp measures 6.3m east-west × 6.4m north-south and has an elevation difference of 1.5m between the north and the south ends, and consequently its inclination angle is about 13 degrees. At the time of discovery in 1903 by Lefebvre and Barry, stelae were set at each corner of the ramp, however, they are now removed. These stelae show the date of the Roman Emperors Antoninus Pius (A. D. 160) and Marcus Aurelius Antoninus (A. D. 161～181). Therefore this ramp dates from at latest the latter half of the 2nd century.

From the ramp, the gently descending slope of the Sacred Road continues to the north where it reaches a gatepost which we have named the Middle Gate. The north end of the road seems to have been repaired at one time, however, the road is in poor condition due to the looting of stones and other disturbances.

MIDDLE COURT EAST (Fig. 55. Pl. 33): The Middle Court is divided by the Sacred Road running between the South Court and the Middle Gate, and is in the same poor condition as the Road. Middle Court East retains little of its original form, but it seems to have had a colonnade on the north, the east and the south sides, and to have been paved with rectangular stones.

The court is bounded on the east by a thick wall made of mud brick which forms the east outer wall of the Western Temple Area. What appears to have been an entrance to the Court is existent at the south end of the east outer wall. The south extremity is limited by a wall which is also the extreme northern wall of the South Court colonnade. The elevation difference between the two courts east of the ramp is 1.6m (Fig. 56). A projection from the south wall near the southeast corner was constructed at a later date (see p. 88).

The north-south dimension of the Middle Court East is 25m and the east-west dimension differs from 23.3m on the extreme north to 25.3m on the extreme south due to the fact that the axis of the Sacred Road is not parallel to the east outer wall. As the direction of the road is at a right angle to the walls limiting the north and the south extremities, the plane of Middle Court East forms a trapezoid, which has

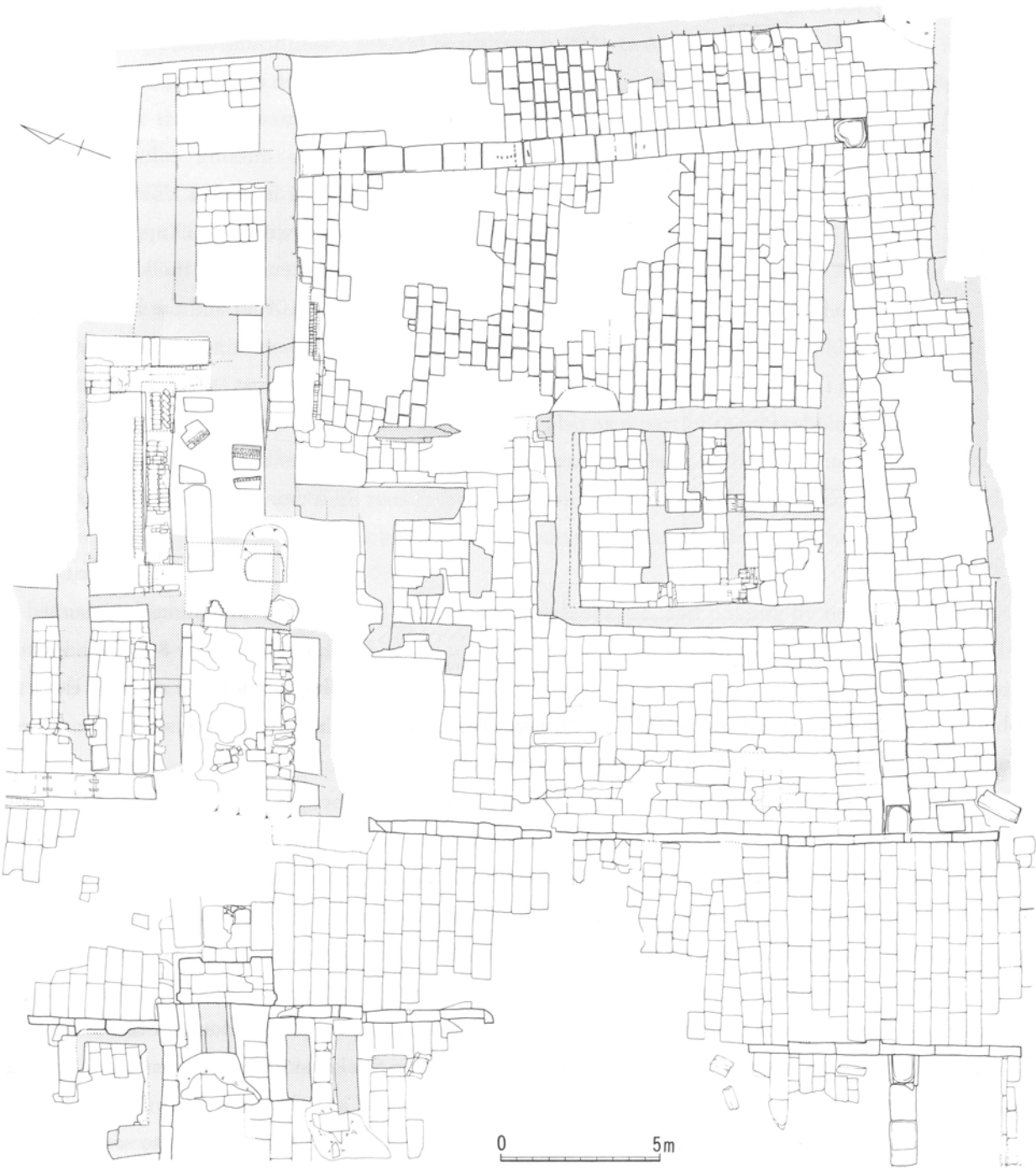


Fig. 55 Middle Court and the Sacred Road

an influence on the direction of the whole colonnade.

Fortunately, the foundation stones in the colonnade are almost all in their original position. The south row retains two column bases, with that on the extreme west contiguous to the curbstone of the ramp. The plane of the upper part of this base, with its a torus-scotia-torus moulding forms an elongated semicircle projecting from the side of the ramp, and thus shows the shape of the missing pillar. On the top surface there is the latin inscription "*EV*" (Pl. 124. no. 3). The base dimensions are 87 × 76 × 34cm. The second other base, also with a torus-scotia-torus moulding, is set at the southeast corner.

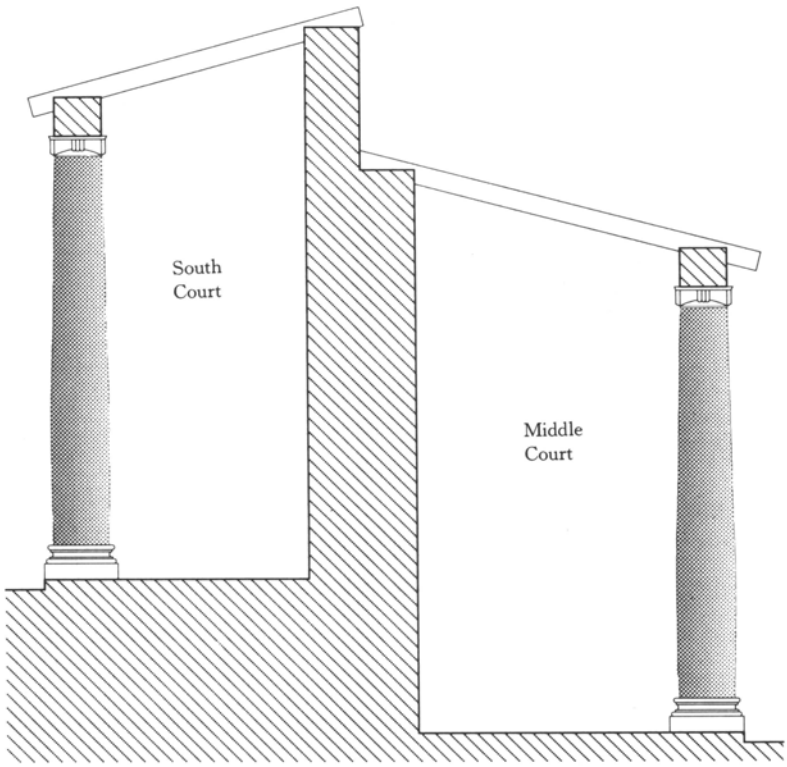


Fig. 56 Reconstruction of the Middle and South Court colonnades

It is L-shaped and flat on the south and east sides, so that the plane of the upper part takes the form of a heart (Pl. 33 lower). The missing column, therefore, was a joined, double column as shown in Pl. 39 upper. The base dimension on the long sides is 100 × 100cm and the height is 33cm. Although the other bases have been lost, there are some traces left on the foundation stones. They signify that the bases, 70 × 70cm, were placed at equal intervals of 2.1～2.2m from center to center so that the intercolumniation is assumed to have been a 3 ¼ D, eustyle. Including those on both ends, the columns in the south row number eleven. Although base traces on the eastern row should be present, they have been either worn off or removed by later cutting.

Four cornices and a joined double column were scattered in the northwest corner of the Middle Court East. There were no Greco-Roman capitals suitable for this court except for an Ionic one exposed on the accumulated soil of the Middle Court West (Pl. 122 no. 1). Since the column part of this capital measures 48cm in diameter and the lower end of the column *ca.* 65cm in diameter as calculated from the base traces left on the colonnade, it is not impossible that this capital belonged to the column which came from the colonnade in this court.

The stone floor inside the colonnade is, as usual, at the same height as the foundation stones and 5～10cm higher than the main courtyard. There is a difference in thickness among the various stones, i. e. the foundation stones are *ca.* 40cm, colonnade floor stones *ca.* 30cm and the court floor stones *ca.* 15cm. In addition, paving stones in the eastern half of the courtyard are set side by side north to south. In the west part they are set not only in a north-south but also in an east-west direction and do not have a consistent width. Moreover, the dimension of the paving stones is different not only among those in the west but also between the east and the west. These facts suggest that the court floor was partially repaved or repaired several times. Judging from the ribbed fragments of amphorae found in the white sand layer used as pavement bedding, reparation of the courtyard seems to have been carried out in *ca.* the 4th century A. D.. The mud brick walls forming the outer limits of the court also bears traces of repair and alteration. For instance, a projection in the south wall at the extreme east end was made the 3rd～4th century A. D. with 33 × 16 × 13cm mud brick and a wall in the northwest corner in the 4th or 5th century A. D. using brick of 29 × 14 × 9cm.

Many fragments of Coptic textiles (see p. 254), a wooden falcon figure (Fig. 134 no. 9. Pl. 68 no. 9), an amphara stopper (Fig. 153 no. 7), several beads (see p. 233), two limestone frieze (Pl. 77 nos. 9 and 12) and so on were found in the disordered soil accumulated on the paving stones. The Coptic textiles were concentrated at the southwest part of the court.

SUBSEQUENT CHANGES IN THE MIDDLE COURT EAST: When the Middle Court East was excavated, several mud brick constructions built on the court floor appeared.

Building 4 (Fig. 57. Pls. 35 and 36). This building measures 6.8m east-west, 8.8m north-south and 2.4m in present maximum height. This building consists of five rooms, but as the south wall of the building extends on to the east, it may have at one time been the wall of another building. The building was built with 26 × 13 × 8cm and 24 × 12 × 8cm mud brick. However, several smaller fired bricks were found in a partition between Rooms 1 and 2, and also as a part of the threshold between Rooms 3 and 5. As these two installations were built after the main walls, it is thought that these fired bricks dating from the Roman Period were reused, as they were ready at hand having come from demolished structures. Considering the mud brick size and the pottery found, Building 4 dates to around the 7th century A. D.

Interior doorways are considered to have been arch-shaped, and judging by remaining traces, the rooms had barrel-vaulted ceilings, which depending on the room, began their arches at between 60～80cm off the floor. According to our paper restoration, the height of each room from crown to floor is different, with Room 3 being the highest at 1.9m and Room 4 the lowest at 1.4m.

From the east side of Room 3 there is a narrow passage and a stairway leading to an upper floor. The stairs consisting of five stone steps go up to a landing next to the outer wall of the building. Here, they turned left and, though now missing, went up to the upper floor.

A Part of the west wall of Room 5 opens to the west like an entrance, however, it is still a matter for debate whether this was its actual use, because the "threshold" composed of mud bricks is a high 36cm above both the outer and the inner floors. Furthermore, as there is no step so as to make it easier to pass over, and as both sides of the opening widen as they rise in height, this would be a very unusual entrance. However, some bricks on the upper parts of the opening lay aslant to the horizontal, thus suggesting that this was a true entrance of arch-type constitution. Perhaps excavations in other areas will shed light on the mystery of this opening.

Two incomplete amphorae (Fig. 58 no. 4. Pl. 83 no. 3), a wooden decorative spindle and a basket were discovered directly on the floor of Room 5. A wooden door possibly existed between Rooms 5 and 3, and judging from the stone arrangement at the threshold, opened into the former. A leather sandal was found under one of the top stones of the threshold.

Room 4, leading from Room 5, has a rectangular alcove at the end of the south wall in which traces of a wooden shelf remain (Pl. 36 lower left) on each side at the height of 1.3m from the floor. A fragmentary amphora (Fig. 58 no. 3. Pl. 83 no. 1) and an exquisitely woven basket (see p. 297. Pl. 113 no. 1) were discovered under the now lost shelf. In the northeast corner of the room, four mud amphora stoppers (see p. 224. Fig. 153 no. 1. Pl. 91 no. 1) were unearthed.

In Room 3 relics left on the floor were concentrated on the north side. They included a demotic

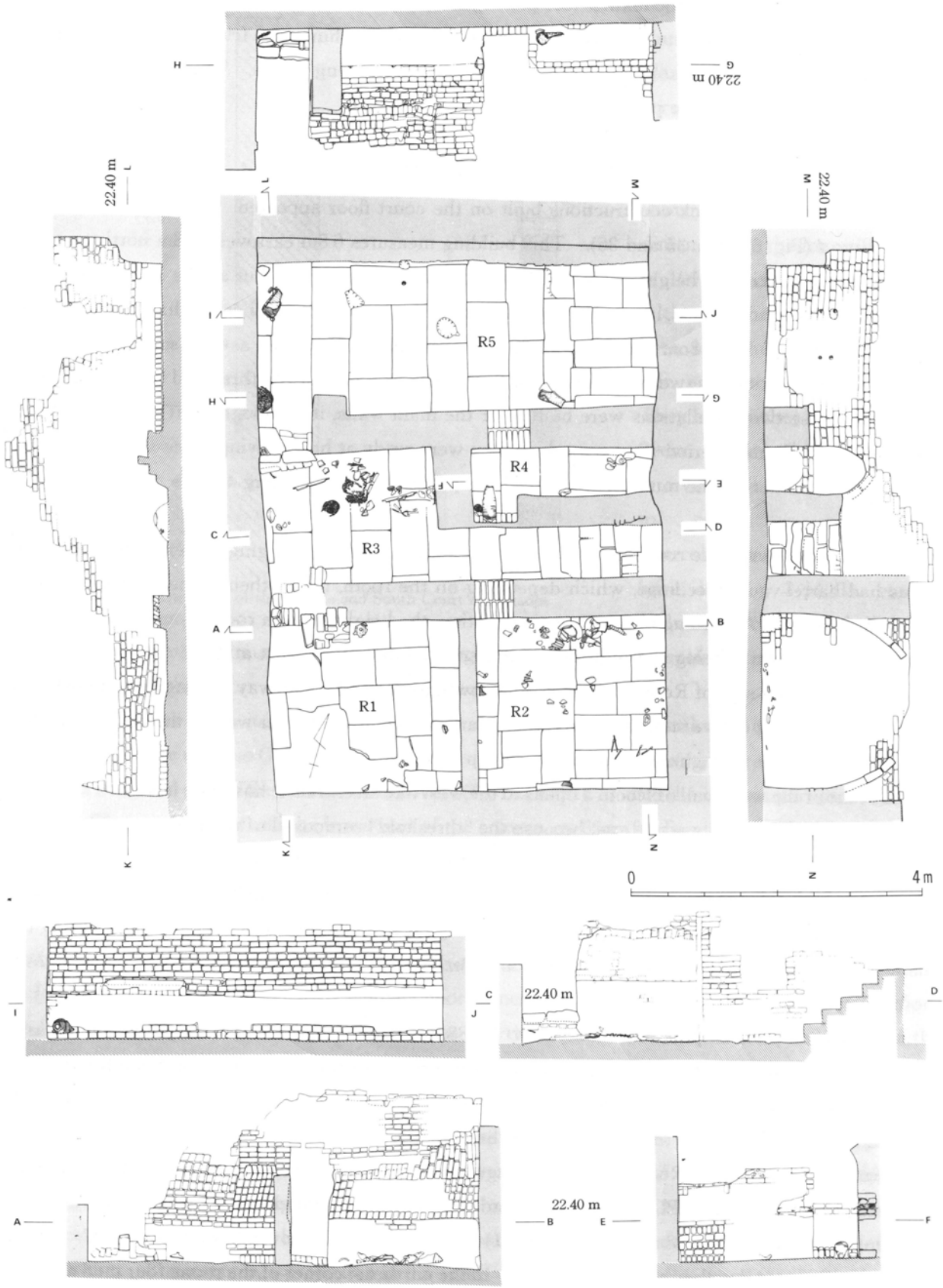


Fig. 57 Building 4 in the Middle Court East

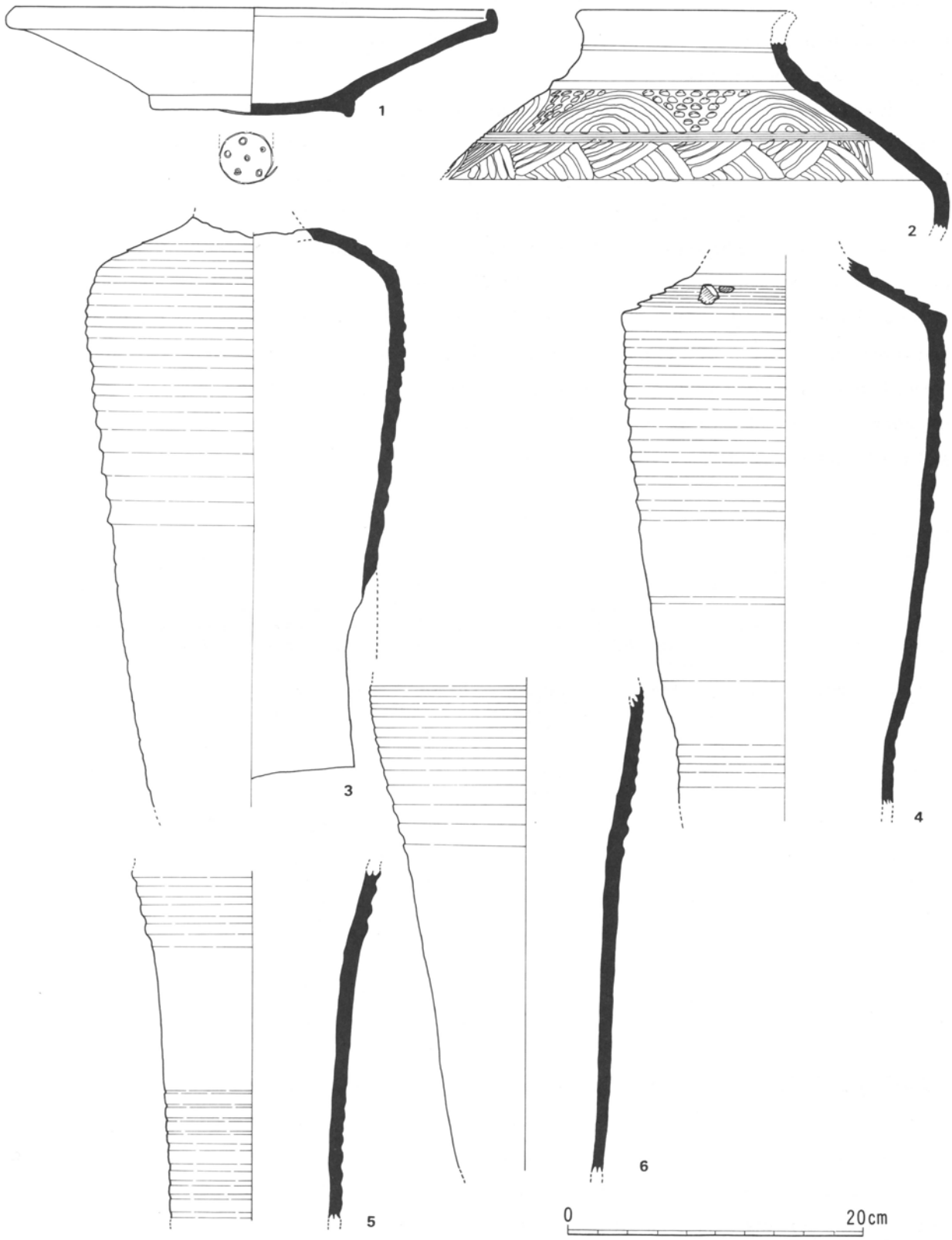


Fig. 58 Pottery found on the floor of Building 4

ostracon (see p. 318. Pl. 148 no. 3), baskets, an iron nail, mud amphora stoppers, animal bones, black, white and red pigment powder and so on. A decorative wooden comb (Fig. 135 no. 31) was found in the accumulated soil. A mud object with three impressions stamped on it (Pl. 91 no. 11) was also uncovered.

It was attached by a wooden stick to the lowest part of the north wall neighboring the entrance, but because of its position below the present threshold level, this probably was not for sealing a door. Its usage remains undetermined.

Rooms 1 and 2 were created by the construction of a thin, roughly made wall which divides an original room into two equal parts. Because of this, an access from Room 3 by way of the passage to Room 2 was required. There were two perforations possibly for sealing stamps on the left side of the wall between the entrance to Room 2 and the stairs to the second floor.

In Room 1 only a limestone potter's wheel (Pl. 75 no. 6) remained on the floor. Room 2 was rich in relics, that is, a wooden pendant (Fig. 134 no. 14. Pl. 69 no. 17), a wooden comb for weaving, a pottery shard with decoration (Fig. 58 no. 2. Pl. 83 no. 5), a piece of cloth with writings (see. p. 379. Pl. 97 no. 2) and three ostraca (see p. 372. Fig. 58 nos. 5 and 6. Pls. 151 ~ 153) and so on were near the north wall. According to Jarry's deciphering, one of the ostraca dates from after the Arab Conquest, but its dating is not entirely consistent with the mud brick size chronology, so it must be assumed that the building was still used after the Arab Conquest.

Tab. 10 POTTERY

UNEARTHED AREA : On the Floor, Building 4

Fig. no. (Pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
58-1 (83-4)	Room 2	plate	32.3 × 7.3 vol. : 1962cc.	rather sandy	reddish brown	round patterns inscribed on bottom	rubbed by wheel	soot-stained on outer face
58-2 (83-5)	ditto	jar	13.8	sandy, vegetable-tempered	brown, blackish core	geometric designs on shoulder	scraped by wheel, other parts : rubbed by wheel	
58-3 (83-1)	Room 4	amphora		rather sandy	brown	horizontal concave lines	rubbed by wheel	
58-4 (83-3)	Room 5	ditto		ditto	ditto	ditto	ditto	
58-5 (153-20)	Room 2	ditto		ditto	reddish brown	horizontal concave lines, Coptic writings	ditto	black coating on inner face
58-6 (152-19)	ditto	ditto		minute	ditto	ditto	ditto	
83-2	Room 5	ditto		rather sandy	dark brown	horizontal concave lines	ditto	trace of handle

Building 5 (Fig. 55). This building adjoining Building 4 has several walls, but due to their poor, incomplete condition, whether they were rooms or not could not be determined precisely.

All the walls consist of mud brick measuring 24 × 12 × 8cm. Therefore, it is clear that Building 5 dates from the 7th century A. D. and was coexistent with Building 4. Fragments of papyri possessing Coptic letters were discovered on the floor. One shows the date 794 A. D. (see p. 333), which is far from the others dating to the 680's and before. Many mud amphora stoppers (see p. 220), pottery shards and lamps (see p. 213) papyri (see pp. 361, 363) and so on were removed from the accumulated soil covering the building. The amphora stoppers unearthed in the Western Temple Area were concentrated here. This fact suggests, though without structural evidence, that this environs had been occupied by shops for

olive oil and wine in the Coptic Period.

(KAWANISHI, H.)

Building 8 (Fig. 59. Pl. 38). Three aligned rooms (R 1 ~ 3) were revealed in this building and all had

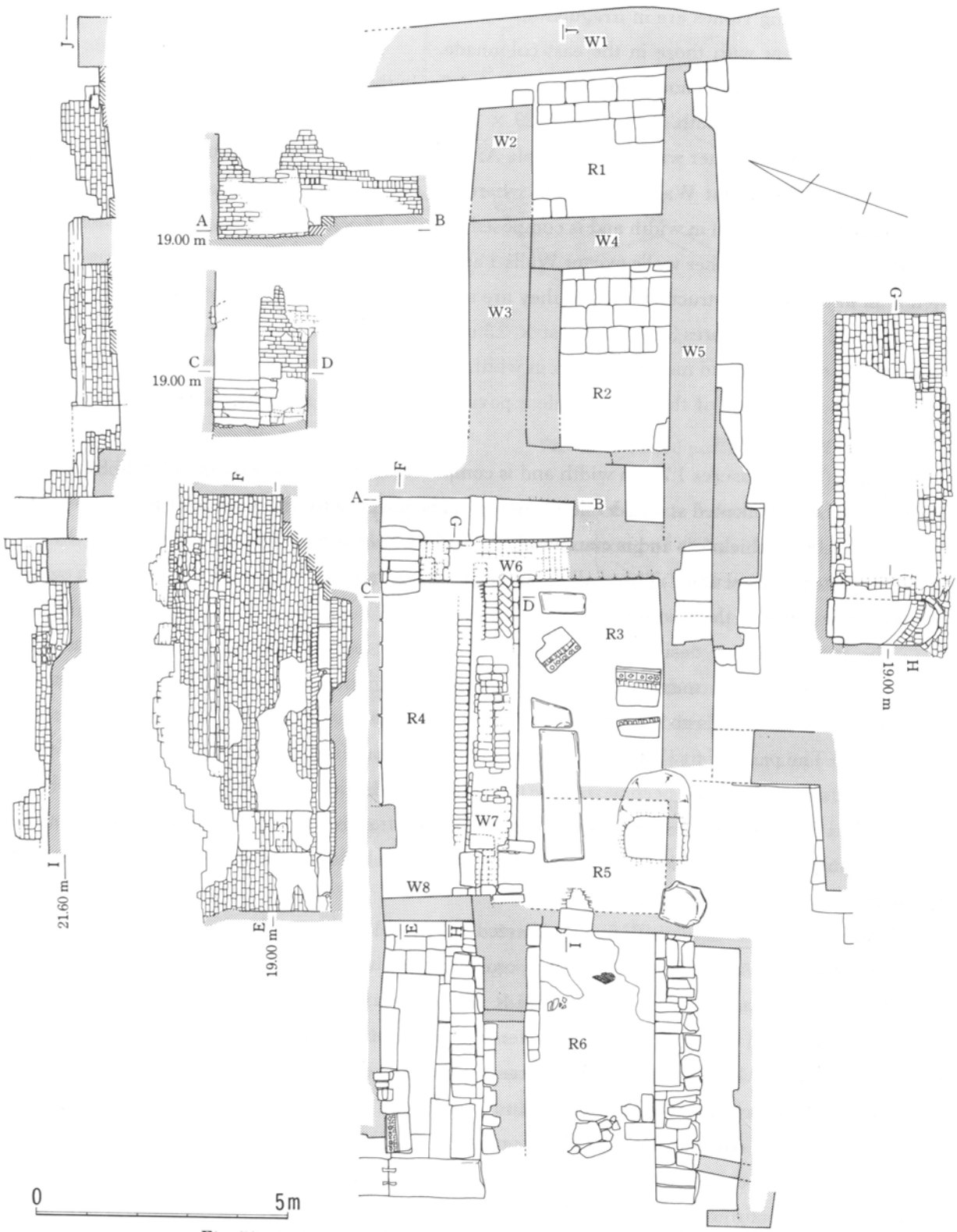


Fig. 59 Building 8 in the north colonnade of the Middle Court East

been burned as testified by the scorched walls and a black layer of soil. Room 1 in the extreme east is made of mud bricks and measures 2.5m east-west × 3.0m north-south. The entrance of this room is located in the northeast corner and is 60cm in width. Three mud bricks measuring 29 × 14 × 10cm remained in the floor there, while paving stones remain on the east side and in the northwest corner of the room. These paving stones are in irregular sizes and are somewhat smaller than those of the Middle Court, but consistent with those in the east colonnade.

Wall 1 (W 1) runs in a north-south direction, is 1.7m in thickness and composed of 26 × 13 × 8cm mud brick, except in the south section where 29 × 14 × 10cm brick form an inner core. This wall is a continuation of the east outer wall of the Temple Area, however, as the brick in the outer wall is 38 × 19 × 14cm, it is thought that Wall 1 is located where the outer wall was originally built.

Wall 2 (W 2) is 1.7m in width and is composed of 26 × 13 × 8cm mud brick with the long side set at random as seen in all other walls except Walls 1 and 4. Walls 2 and 3, though of the same brick size, are not an integrated construction, so that they are seen not to have been constructed at the same time.

Room 2 (R 2) measures 3.8m east-west × 2.3m north-south. The entrance of this room is located in the southwest corner and measures 70cm in width. Paving stones such as those in Room 1 remain in the east half of the floor of this room while a paving stone similar to these of the Middle Court, was detected in the southwest.

Wall 3 (R 3) measures 1.7m in width and is composed of 26 × 13 × 8cm mud brick. In addition, this wall had been thickened at a later date by 60cm. The purpose for this is undetermined. Wall 4 (W 4) measures 1.0m in thickness and is composed of 26 × 13 × 8cm mud brick, generally with the longer side in an east-west direction. This wall continues on the same line as the row of foundation stones of the colonnade forming the east edge of the Middle Court.

The space we have designated Room 3 (R 3) has a somewhat irregular shape and measures a minimum of 2.6m and a maximum of 3.0m north-south. The east-west measurements cannot be determined because there is no indication of a west wall, which may in turn indicate this was in fact not a room at all. The parts of five large stone cornices (Pl. 124 nos. 1 and 2), and the major part of a joined double shaft, all of which had been part of the colonnade of the Middle Court, were detected in this room. It is assumed that these stones had been put in this room after the colonnade of the Middle Court was destroyed, and then at some undetermined date all the rooms had been burned. The remaining part of the shaft measures 2.7m in length.

The foundation of Wall 6 (W 6) was detected at a depth of 30cm under the lower black soil created by the fire and therefore it is known that this room had been built before it occurred. The upper brick of Wall 7 (W 7) except in the eastern quarter is 26 × 13 × 8cm in size, and the lower is 29 × 14 × 9cm. In the eastern part of the wall both upper and lower bricks are generally 29 × 14 × 9cm, but they are mixed with larger bricks of various sizes here and there. These larger bricks are assumed to have been used in an original wall, which included Walls 2, 3 and 7.

When top soil covering Wall 5 was removed, a row of stones was found under the wall, thus revealing that it had been constructed on the foundation of the north colonnade of the Middle Court East, a fact which was confirmed by the mark of a column base located on one of these stones. The mud brick which composes this wall is different in size in its upper and lower layers, the upper being 24 × 12 × 8cm

and the lower 26 × 13 × 8cm.

Relics recovered from the disturbed layer of soil resulting from fire include a large number of plaster fragments, a faience, glass shards (see p. 239), a pottery lamp (Pl. 89 no. 3), and a bronze animal figure (Pl. 71 no. 4). Some of the plaster fragments were colored in geometrical patterns. It is deemed that these fragments were a part of wall paintings. Though those relics do not immediately indicate the construction date, according to the mud brick size Rooms 1, 2 and 3 belong to the 26cm brick type era i.e. the 6th century A. D.

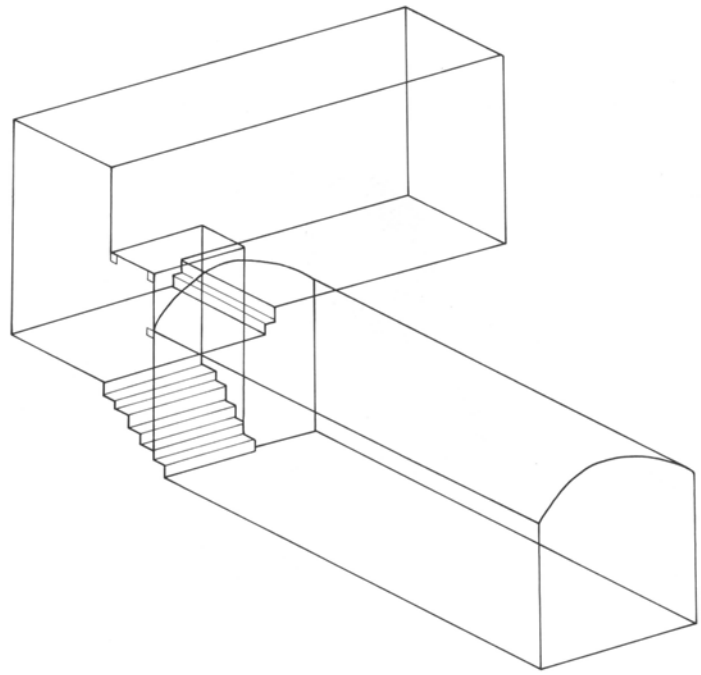


Fig. 60 L-shaped passage to Room 4

An L-shaped passage and stairway, which measures 70cm in width, went down from the Middle Court colonnade to Room 4. However it was subsequently closed off by the construction of Room 2 during the Coptic Period.

The passage down to Room 4 has two flights of stairs consisting of eight stone steps in total, two down toward the north and after a landing 1.8m long six toward the west (Pl. 41 lower left). The height of the stairs from top to bottom is 1.5m. It is undetermined whether the ceiling over the stairwell was vaulted or not.

Room 4 is long and narrow, measuring 6.3m east-west × 1.8m north-south and at one time had a vaulted ceiling. Traces of the vault exist on the north wall at a height of 2.2m from the floor of the room, while three holes so aligned as to constitute an inverted L on the same wall above the steps seem to have been for supports holding up the stairwell ceiling (Fig. 60). This wall has a foundation of slab stones which appear to be diverted paving stones. There is also a slab stone foundation serving a rectangular projection, possibly a doorjamb, on the western part of this wall. Mud brick size in this wall is 26 × 13 × 8cm.

The east wall of the room consists of 26 × 13 × 8cm mud brick except in the lower corner by the stairs, where stone ashlars are found. A small pentagon niche is seen about 1.7m from the floor.

The south wall (W 7) has a complex constitution, that is, the mud brick at the top measure 26 × 13 × 8cm, in the middle part 31 × 15 × 11cm and in the lower part 39 × 18 × 10cm. Moreover the remains of a mud brick wall, parallel to this wall, were found next to it at floor level. The mud brick size of this wall measures 39 × 18 × 10cm. Therefore, it is known that the south wall was once, at 1.6m, thicker than the present one which is 0.8m thick, and formed the north wall of the higher Middle Court. During the period when 31 × 15 × 11cm brick was used, i.e. *ca.* the 4th century A. D., the court wall was replaced with a thinner one. A large rectangular niche, h. 55 × w. 46 × d. 33cm, is left in the western half of the wall at a height of 1.5m from the floor.

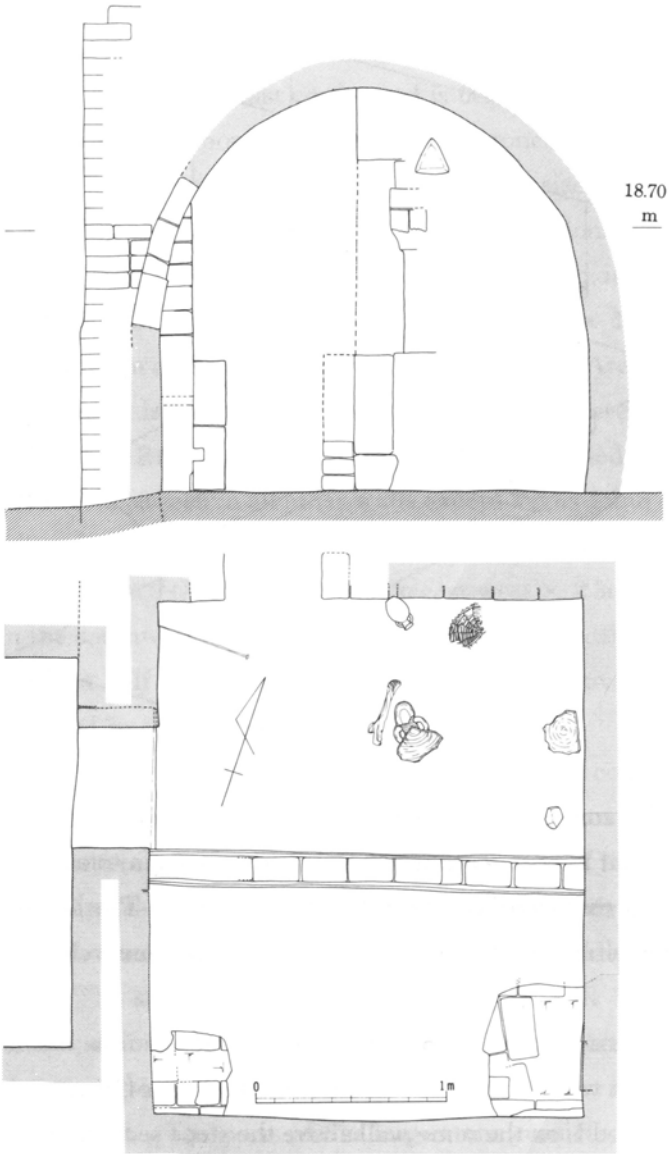


Fig. 61 Room 5 in Building 8

Accumulated soil in Room 4 revealed a bronze dolphin decoration (Fig. 139 no. 1. Pl. 71 no. 7) in the southeast corner of the room. A wooden object (Fig. 134 no. 18), pottery and glass shards, lamps, beads, a large stone block with a Coptic cross and a rectangular pilaster capital with decoration (Pl. 122 no. 3) were also found scattered in the room.

Room 5 (Fig. 61. Pl. 40 upper) is entered from Room 4 by way of an opening in the extreme west end of Wall 7, and is about 30cm lower. The vaulted ceiling has a hole broken in it through which a large amount of debris entered including various remains. The floor, walls and ceiling inside the room were plastered in white but had been discolored to a moss green. The dimension of Room 5 is 2.7m north-south × 2.3m east-west × 2.1m high, but had at one time been divided by a wall from east to west at its center. Though only the base of this wall remains, on the east wall, its trace is seen up to a point 65cm off the floor. This room has two entrances, one from Room 4 and the other passing through to the west room, Room 6. Only the north wall is made of 36 × 18 × 13cm mud brick which is set on a stone foundation. The other walls and ceiling are made of mud brick measuring 24 × 12 × 8cm. On the inner face of the north wall 1.7m from the floor a small triangular niche is cut.

An amphora with stopper (Figs. 62 no. 1 and 154 nos. 1 and 2. Pl. 92 no. 10), a jar with handles (Fig.

Tab. 11 POTTERY

UNEARTHED AREA : Room 5, Building 8

Fig. no. (Pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
62-1	on the floor	amphora		minute	brown	horizontal grooved lines, with stopper	rubbed by wheel	
62-2 (83-8)	ditto	jar	4.1 × 18.2 vol. : 593cc. (without neck)	minute, soft	brownish black	two handles	ditto	

62 no. 2. Pl. 83 no. 8), an iron spike (Fig. 63. Pl. 71 no. 12), a basket and four bronze coins (see p. 198) were scattered on the floor of Room 5, and an ostracon (see p. 372. Pl. 150 no. 11), beads (see p. 231) six amphora stoppers (see p. 224) and a stone weight (Fig. 142 no. 6) in the accumulated soil there. Of the four coins one belongs to the age of Theodosius I (379～395 A. D.), two (Pl. 73 nos. 35 and 36) to the first stage of the reform made during the rule of Anastasius I (491～518 A. D.) and the rest (Fig. 73 no. 37) to Heraclius and Constantinus III (610 A. D.). According to the date shown on the coins, it might be presumed that Room 5 was constructed early in the 7th century A. D.

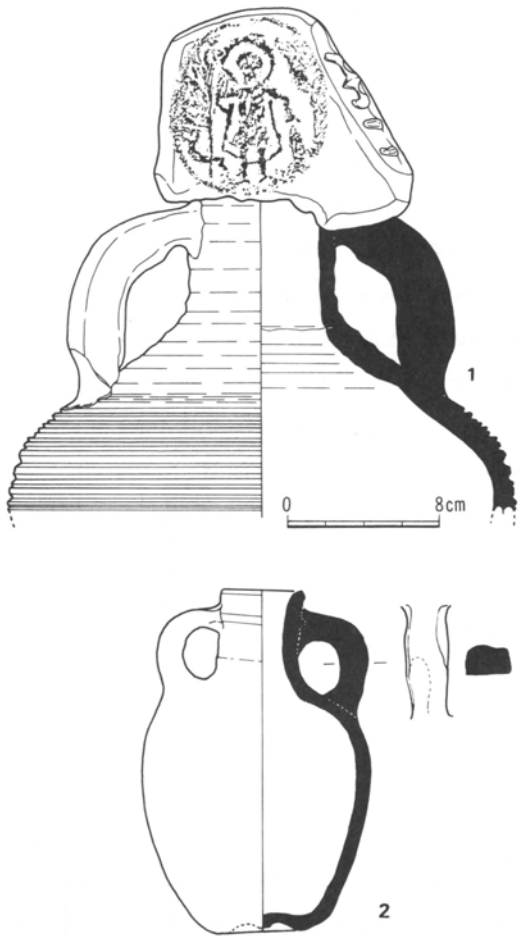


Fig. 62 Pottery found on the floor of Room 5

Room 6 (Pl. 39 upper) is a 20cm step down from Room 5 and measures 2.3m north-south × 5.5m east-west. The ceiling is completely missing. Though no wall remains, the west end of this room faces the Sacred Road, but is 1m lower. The other walls and floor were plastered as in Room 5 and had become the same moss green color. The east half of the north wall of Room 6 is a continuation of the north wall of Room 5, however, the west half is made of 26 × 13 × 8cm brick, and it is thus believed that this part of the wall was rebuilt with small bricks when this dwelling was reconstructed after the original was partially destroyed. While the north mud brick wall is panelled with limestones on the south surface, the remaining part of the south wall is made of stones including diverted column fragments.



Fig. 63 Iron spike found on the floor of Room 5

Looking at the mud brick size in these rooms, we see that the same 26cm type brick is used in the north and south walls of Room 4 and in their continuation into Room 1 of Building 9 (see p. 95). The west wall of Room 4, on the other hand, and the east and west walls of Room 5 are of the newer 24cm type brick, which suggests that the former had once been part of a passage leading to the Sacred Road in the 26cm type era and that it had been closed off when Room 5 was built.

A faience amulet (see p. 231. Fig. 159 no. 13. Pl. 94 no. 14), a glass bead (Fig. 157 no. 38), a wooden decoration (Fig. 134 no. 16), an ostracon (see p. 372. Fig. 233) and a pottery lamp (Fig. 150 no. 14) were discovered in Room 6.

Also found was a wall with brick of 29 × 14 × 9cm, 90cm away and parallel to the south of the

stone wall in Room 6. This brick wall measuring 5.3m east-west, was built after the Middle Court and before Room 6. (TSUJIMURA, S. and A. CHIKIRA)

Other reconstruction in the Middle Court. In addition to the reconstruction mentioned on p. 76, two projections in the east outer wall and a small column base are included. Their purpose is unknown.

A stone container was buried in the western area of the courtyard, partially destroying the stone pavement. The dimension of this container is 48cm in diameter and 46cm in depth. Nearby, a Greek inscription was found on a pavement stone (see p. 330. Pl. 121 no. 3).

Considering these changes, it is thought the Middle Court had lost its primary function before the 6th century A. D. and the construction of the mud brick structures. (KAWANISHI, H.)

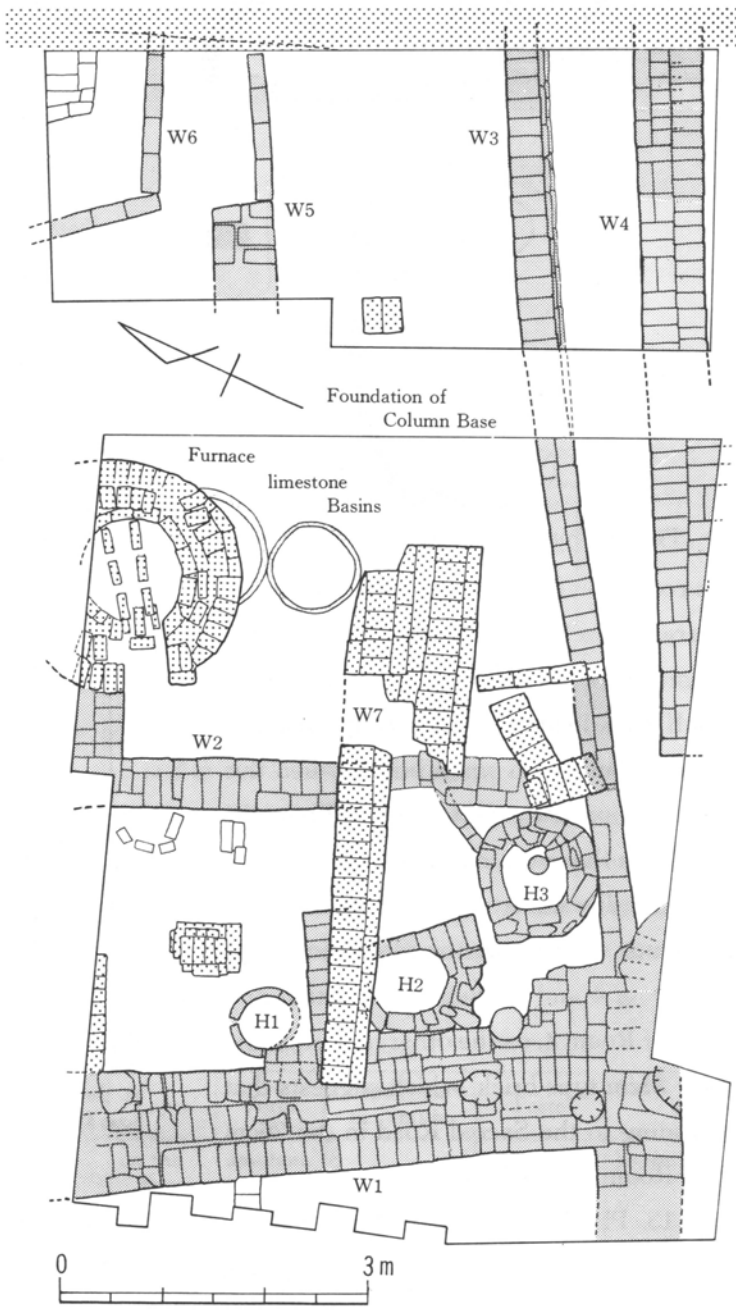


Fig. 64 Vestiges under the pavement of the Middle Court East

VESTIGES UNDER THE PAVEMENT (Fig. 64. Pl. 34): In the northeastern part of the Middle Court East, excavation was executed where pavement had been lost. The excavated area measured 11.7m east-west × 6.5m north-south and reached a depth of 2m. Mud brick walls, a kiln and three hearths were unearthed here. By the size of the mud brick and the type of the pottery found, two phases could be differentiated here.

First phase. This phase includes Walls 1 (W 1) and 2 (W 2) extending north-south and Walls 3 (W 3), 4 (W 4) and 5 (W 5) extending east-west, Wall 3 is connected to Walls 1 and 2, Hearths (H 1～3) were set between Walls 1 and 2 and two adjoining stone basins were found in the center of the trench. Although it is unknown whether these walls formed buildings or not, judging from the existence of the hearths and the stone basins, there is no doubt that this area was used for boiling or firing. In addition, another wall, Wall 6 (W 6), was uncovered in the

northeast corner. There is a slight variety in the mud brick size, i. e. 31 × 16 × 9cm, 33 × 17 × 9cm, 35 × 17 × 9cm, 36 × 19 × 9cm and 38 × 18 × 8cm, but these dimensions show that they date from the Third Intermediate to the Late Dynastic Periods, and accompanying pottery shards comfirm this.

Second phase. This phase includes Walls 5 (W 5) and 7 (W 7), the kiln, and the east outer wall of the Temple Area. It is very uncertain whether Wall 7 constitutes a wall, because only one course of brick was found. The kiln consists of a short fire-opening and a circular fire room. Although the north part of the kiln could not be exposed due to the presence of paving stones, the outer diameter as uncovered is 2.2m, the inner 1.0m, the wall thickness 0.6m and the surviving height 0.5m. Two lines of three mud bricks each extend on the floor from the fire opening to the back of the kiln. They spread slightly as they go toward the back, and the bricks in each line are seperated by small gaps. The inner surface of the mud brick wall is vitrified here and there, which testifies to the fact that the fire room heat rose to an intense degree as in the case of a pottery kiln.

In Wall 7 the mud brick measures 38 × 18 × 11cm and in the east outer wall 38 × 19 × 14cm. Therefore, it is known that the second phase dates from either the Ptolemaic or the early Roman Period. Although the mud brick in the kiln measuring 30 × 14 × 9cm would seem to be too small for this date, it may have been produced especially for its use and is assumed to date from the same period.

(KAWANISHI, H.)

MIDDLE COURT WEST AND BUILDINGS 6 AND 7: Another court extended westward from the Sacred Road. An elongated, semicircular column base is existent opposite that on the east side of the ramp, mentioned on p. 77, and three foundation stones which indicate use as column bases form a row to the west, while a few paving stones remain adjoining the ramp. Stone panels on part of the south wall indicate that the colonnade here was well-finished. The width from the stone panels to the row of the remaining foundation stones is 2.7m, and the width between the column bases 2.1m from center to center. These dimensions are nearly equal to those of the Middle Court East.

Unfortunately, it is difficult to know the complete scale, structure and style of the Middle Court West precisely, because of later destruction, however, the city wall (see pp. 70 ff), whose mud brick measures 35 × 17 × 13cm in the upper part and 38 × 19 × 13cm in the lower part, must have formed the west border at the time the construction of the court was made. There is a cut in the bedrock at the southwest corner of this court. As the width from the east edge of this cut to the city wall is the same as that of the south colonnade, it is assumed that originally the colonnade turned here and extended north, parallel to the city wall. If this assumption is correct, the east-west dimension of this court is 12.8m, thus being about half that of Middle Court East.

An ostracon (see p. 373. Pl. 154 no. 23), a limestone block with graffito (see p. 378. Pl. 156 no. 2) and many pieces of textile (see p. 255) were unearthed in the accumulated soil covering the courtyard.

A vestige of Middle Court West also remains in the neighborhood of the Middle Gate (Fig. 65. Pl. 37), however, because this area continued to be reused in alternate forms for a long period of time and is in very poor condition, construction as uncovered appears even more tangled than in the Middle Court East. A discernible wall (W 4) made of hewn stone extends from the northwest corner of the Middle Gate to the west. The northeast part of the court is bound by this wall, which perhaps served as a part

of the colonnade as shown below, and by the west side stones of the Sacred Road.

The paving stones are existent in this area and lay in two different directions, a single row side by side in an east-west direction parallel to Wall 4 and side by side in a north-south direction in the rest of the area. Separating the stones so laid are two rectangular stones set end to end and are thought to have formed the foundation for columns as shown by the marks of two column bases left on their top surfaces. According to these marks, the dimension from center to center of the bases measures roughly 1.8m. A difference in the degree of damage can be detected on the stones depending on the direction they lie, that is, the north-south stones are worn more than the east-west ones. If the stones parallel to Wall 4 and the wall itself were part of a colonnade, the width of the colonnade would measure 2.8m and this dimension is approximately the same as that of the colonnades in both Middle Courts East and West.

The pavement level of the north part of Middle Court West is lower than that in the south part by nearly 50cm, while the height of the top of the foundation stones for the column bases is almost the same as the paving stones in the south. In addition, the fact that the curbstones bounding the Sacred Road and the ramp do not follow a straight line attracts our attention, as does the fact that the paving stones in the north and in the central parts of the Sacred Road lie in slightly different directions. How these facts relate to each other is a problem for future research.

A mud brick wall was uncovered adjacent to the west pier of the Middle Gate. The brick measures 28 × 14 × 8cm, which would date this wall to the 5th century A.D. Just west of this wall a layer of very thin paving stones was also uncovered but on the same level as the two colonnade foundation stones and the paving stones in the south part of Middle Court West. At a level between the above mentioned paving stones and the brick wall, one other layer of paving stones was found adjacent to the foundation stones. It is assumed that the stones in this layer were partially removed, the brick wall built and then at some later date after its destruction, covered by the top layer of paving stones.

This area leaves many unanswered problems. First of all, the two foundation stones with the column base marks on them are sitting on the top of carefully hewn stones which one must presume to have been court paving. This paving is, however, nearly 50cm lower than the pavement at the south side of the court which is unusual. Furthermore, the direction of the paving would, in spite of a lack of any sign of column bases on the under stones, indicate a colonnade. On the other hand, the top layer of the foundation stones and the unusually thin top layer of paving stones bring the colonnade up to the same level as that on the south side of the court. The column base traces are, however, set at an interval of only 1.8m which is rather narrow. Further, as no top layer of paving at the height of the foundation was found on the south side of the colonnade, we must presume that it was higher than the paving which is also unusual. Just what, then, the relationship of these various constructions was cannot answered at this time.

Walls 5 (W 5), 6 (W 6) and 7 (W 7) are 7th century A.D. mud brick walls referred to as Building 6. Actually outside the Middle Court but adjacent to the colonnade are mud brick walls, Walls 1 (W 1), 2 (W 2) and 3 (W 3) which compose a building with vaulted ceiling referred to as Building 7, also of the Coptic Period. Paving stones reused as the floor are left in the eastern part of the room. The height of this floor is 1.3m lower than the original pavement level of the Middle Court West.

From accumulated disturbed soil, a large pile of Coptic papyri was unearthed 2m west of Walls 5

and 6 (see p. 361). Though it was thought that a Coptic church had been located here, architectural evidences were missing.

EAST PIER OF THE MIDDLE GATE (Fig. 65) : The east pier belonging to the Middle Gate is lost. Observing soil accumulation in the area of the west side of Room 6 in Building 8, horizontal soil layers

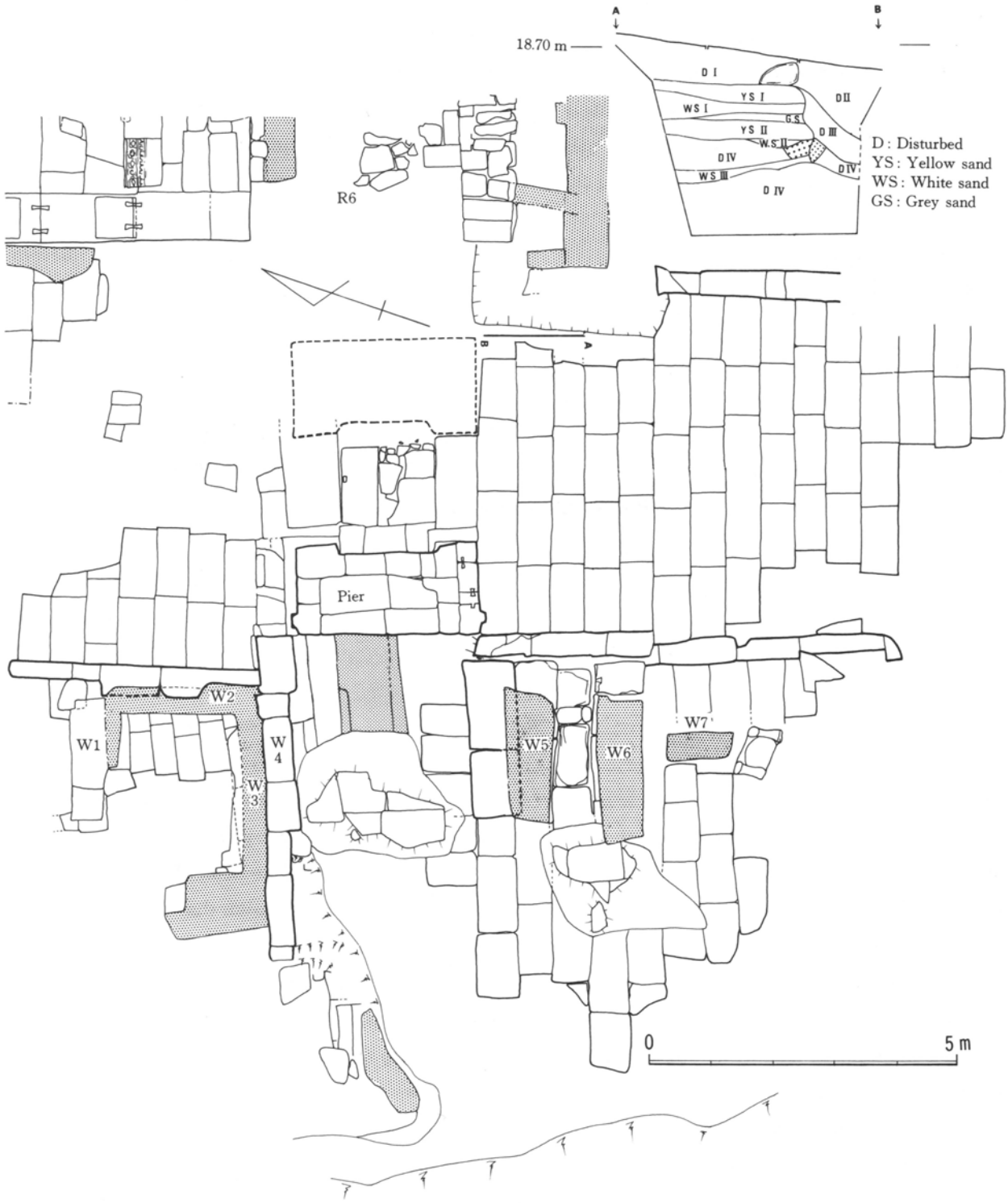


Fig. 65 Middle Gate area

under the pavement were cut and then filled by disturbed layers which reached a depth of 80cm from the surface, and, judging from its position, is thought to have accumulated there due to the destruction of the east pier of the Middle Gate.

WEST PIER OF THE MIDDLE GATE (Figs. 65 and 66. Pl. 37 upper) : This construction projects out into the Sacred Road which itself is narrow at this point. The dimensions of the gate are 3.0m north-south × 1.5m east-west and present height 1.5m. Four courses of hewn stone remain on the paving stone level. The traditional method of holding stones together from the Pharaonic Period was the dovetail cramp, of which the holes of a single set are found here. Each end on the east side protrudes approximately 10cm and each protrusion measures 70cm in width. Moreover, at the west end of the north and south faces pilasters measuring 20 × 5cm have been sculptured out of the stone.

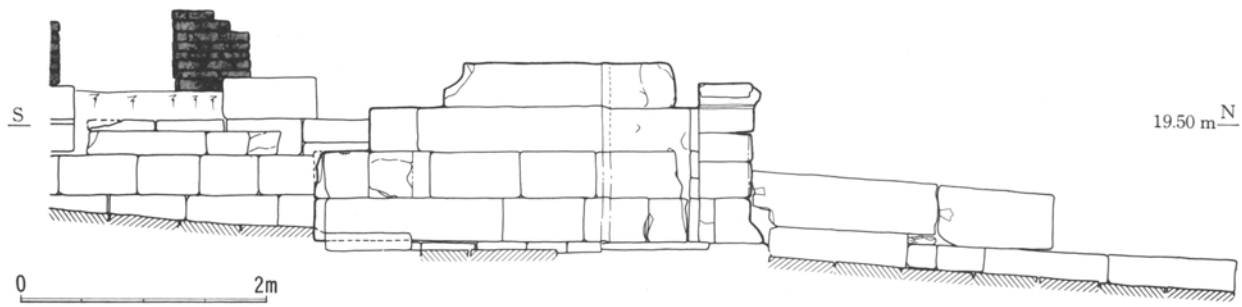


Fig. 66 Elevation of the west pier

(KAWANISHI, H. and N. SHIRA-ISHI)

NORTH AREA

SACRED ROAD (Fig. 67. Pl. 45 upper) : Stones on the Sacred Road between the Middle Gate and the North Gate have been looted so that few remain especially in the western part. On the east side, which is in comparatively better condition, there are vestiges of curbstones and paving stones extending generally to the North Gate. However, in several places the curbstones have been replaced with mud brick. Judging from the mud brick size measuring 24 × 12 × 8cm, it is known that the Sacred Road was still functioning in some manner in the 7th century A. D.

Five foundation stones are left adjacent to the curbstones on the east side of the Sacred Road at the south end of the western side of Building 9, and have traces of 65cm square column bases placed at center to center intervals of 2.0m (Fig. 70). The double dovetail cramp technique was used to join the stones (Pl. 40 lower). The dimension of four of the foundation stones is 1.6 × 0.8 × 0.3m, while, though the south end is missing, a fifth one set in the south extremity is somewhat longer with a present length of 1.9m. This longer stone must have been at the south extremity of a colonnade. These foundation stones maintain the horizontal compared to the Sacred Road which descends toward the north at a seven degree angle, so that the drop in the road reaches approximately 1.8m at its northern extremity. The

foundation stones were kept at the horizontal by the use of mud bricks measuring 36 × 18 × 13cm.

East from the foundation stones, vestiges of stone pavement are seen. Of this pavement, that in the south part is in comparatively good condition because of its use as the floor of the Coptic structure, Building 9. The stones are rectangular and measure 0.8m north-south × 1.5m east-west. The pavement is terminated at a distance of 3.8m east of the foundation stones where it is bounded by another stone structure composed of small stone blocks extending northward parallel to the Sacred Road and under two Coptic walls built at a later date. The present dimensions of this structure are 7.0 × 1.0m. The east side and the north end are very uneven in construction. In addition, the top of this structure is a little lower than the adjacent paving stones and has no wear characteristic of stone flooring, so it is assumed that this was a wall which extended further to the north, and judging from the uneveness of the east side, was originally thicker. Considering these facts, this structure seems to have been either the stone wall or the foundation for a brick wall, which means that the area east of the Sacred Road formed a wide

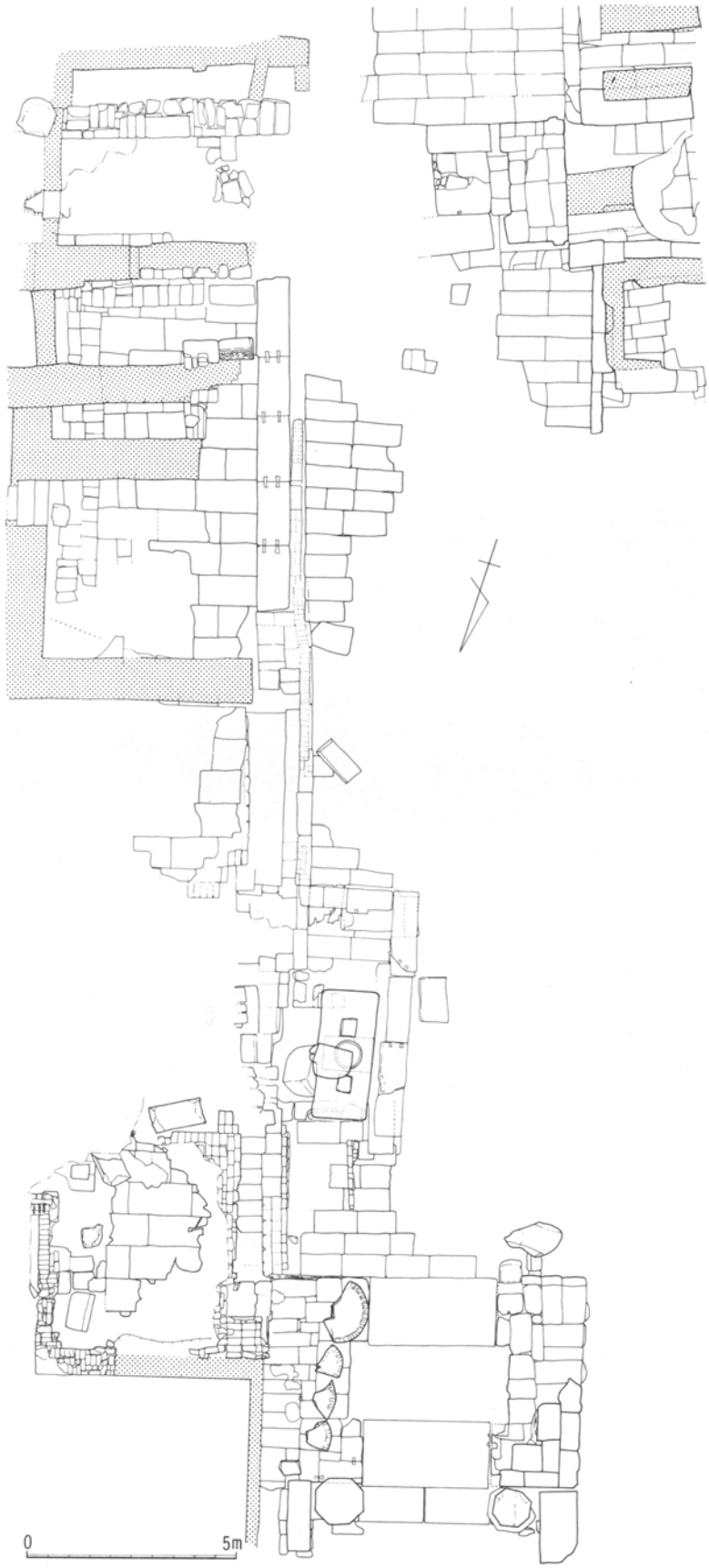


Fig. 67 Sacred Road from the Middle Gate to the North Gate

colonnade, and according to the size of mud bricks placed for pavement bedding, dates from the 1st or 2nd century A. D.

Paving stones with sand bed are left in the area westward from Wall 7 and southward from Room 6 of Building 11 mentioned below and extend 4.0m north-south and 2.5m east-west. This pavement is 1.8m higher than the Sacred Road situated on its west side, and keeps the same level as that to the south. Accordingly, it is known that this pavement was connected with that in the south and that the colonnade extended from the Middle Gate to the North Gate beside the Sacred Road.

Two stone blocks were detected lying astray south of the pavement. They bear the inscribed cartouche "Berenike", the name of a queen in the Ptolemaic Period (see pp. 310, 312. Pl. 118 nos. 1 and 3). Unfortunately, it is undetermined where these blocks had been used.



Fig. 68 Limestone block with a sunken relief, wing

Near the North Gate on the Sacred Road, there is a large stone, which measures 3.1 × 1.4m. It has a round groove in the center which leads to a lip on the east side and is one of several olive oil presses found in the site (see pp. 464 ff). A stone block, 90 × 75 × 80cm, with a sunken relief of a wing is sitting on it (Fig. 68. Pl. 119 no. 3). Though of Pharaonic style design, it dates to the Roman Period according to the chisel marks (see pp. 275 ff), and possibly it formed the upper part of the North or Middle Gateway. Some stones around the press are arranged roughly in the form of a wall on top of the Sacred Road, and though some have dovetail cramp holes for conjunction, they are not paired, so obviously were taken from other structures. At the time of Lesquier's excavation carried out in 1908[1] this wall structure was extended by the use of mud brick to join the North Gate. In fact, according to his report, a small vaulted room containing household implements existed here. The mud brick remaining measures 24 × 12 × 8cm which belong to the 7th century A. D.

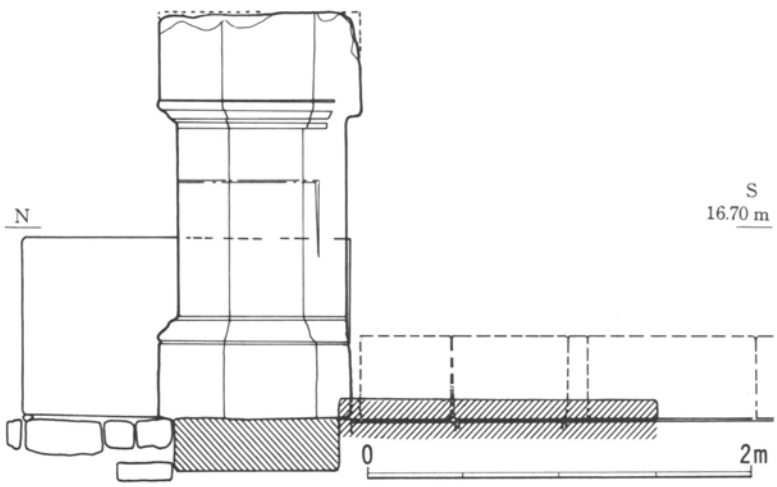


Fig. 69 Elevation of the east pedestal

NORTH GATE (Figs. 67 and 69. Pl. 7 upper): Much plaster and cement remains on the east pier of the North Gate. Although the pier has already been lost to the level of the Sacred Road, by examination of the remaining visible plaster on its sides and the mortar on the top, its dimension could be known to measure 5.0m north-south × 2.5m east-west.

The three stone blocks forming the northwest corner of the pier are joined by dovetail cramp. The west side has a rectangular retreat whose dimension is 0.4m east-west × 1.8m north-south. Sitting on the top surface of the missing pier are four broken fan-shaped stones, once part of a column base. They were 2.0m in original diameter, with a square hole for a spindle lock in the center. The sides are incised with many vertical lines of the Pharaonic style, but where they were used are unknown.

The curb and colonnade foundation stones extending northward beside the Sacred Road from the Middle Gate seem to have originally come to an end at the south side of the North Gate pier. Hewn stone blocks for bedding are exposed due to the removal of curb and colonnade stones.

The west pier retains several upper stone blocks on the north, thus maintaining its primary form to a better degree than the east pier. It measures 5.1m north-south × 2.1m east-west. While the length and width of the east pier is a precise 2 : 1 ratio, the west is 2.5 : 1. Both piers have rectangular retreats of equal dimension. Two stone blocks situated in the southeast part have dovetail cramp holes.

In the passage between the piers, enormous stone slabs were used as pavement. Though the floor consisted of three stones at the time of Lesquier's investigation, the middle one is now missing. The remaining northern and southern stones have the same dimensions, that is, 2.6 × 3.0m.

Adjoining the north face of each pier and resting on paving stones is a rectangular stone block placed at the outer corner and a hexagonal pedestal at the inner. These blocks are surmised to have been the east and west panel stones of the north outer wall which extended from the gate (Fig. 34). The east pedestal is 2.1m in height and, though the west one is lacking its upper half, it is assumed to have been the same. The north and the northwest faces of the surbase of the east pedestal possess inscriptions and the name of the Roman Emperor Commodus (180～192 A. D.) as deciphered by Lesquier. Between the two pedestals there are two stone slabs which form a small step down and they are red granite rather than the usual common limestone.

BUILDING 9 (Fig. 70. Pl. 42 upper) : This building is north and adjacent to Building 8 and is divided into seven rooms (R 1～7). Of them Rooms 3 and 4 are connected by a doorway and 4 in turn is further connected to Rooms 5 and 6. Thus Rooms 3～6 form a building, on the other hand, Rooms 1 and 2 are independent and Room 7 belongs to another building. In that sense, the name, Building 8, is used only for convenience sake.

Room 1 (Pl. 39 upper). This room whose dimensions are 1.4m × 4.7m shows a complex construction, due to the diversion of the south wall to a different use. The east part of the south wall preserves the original mud brick of 36 × 18 × 12cm. Under the mud brick and along the wall there is a barely visible continuation of the stone foundation seen in Room 5 of Building 8. While this wall is a continuation of the south wall of Room 4 in Building 8 and bounds the north extremity of the Middle Court, the existence of the stone foundation suggests that this also formed the south wall of the colonnade that went north along the Sacred Road to the North Gate. The east wall of Room 1, shared by Room 4 in Building 8, is 50cm in thickness, and the mud brick size is 24 × 12 × 8cm which places it in the 7th century A. D. As mentioned on p. 87, this room had been at one time connected to Room 4 in Building 8 and together both rooms probably joined to serve as a passageway during the 26 × 13 × 8cm mud brick era, but were then closed off. Two stone blocks are set at the northwest corner of Room 1 and project southward. One of

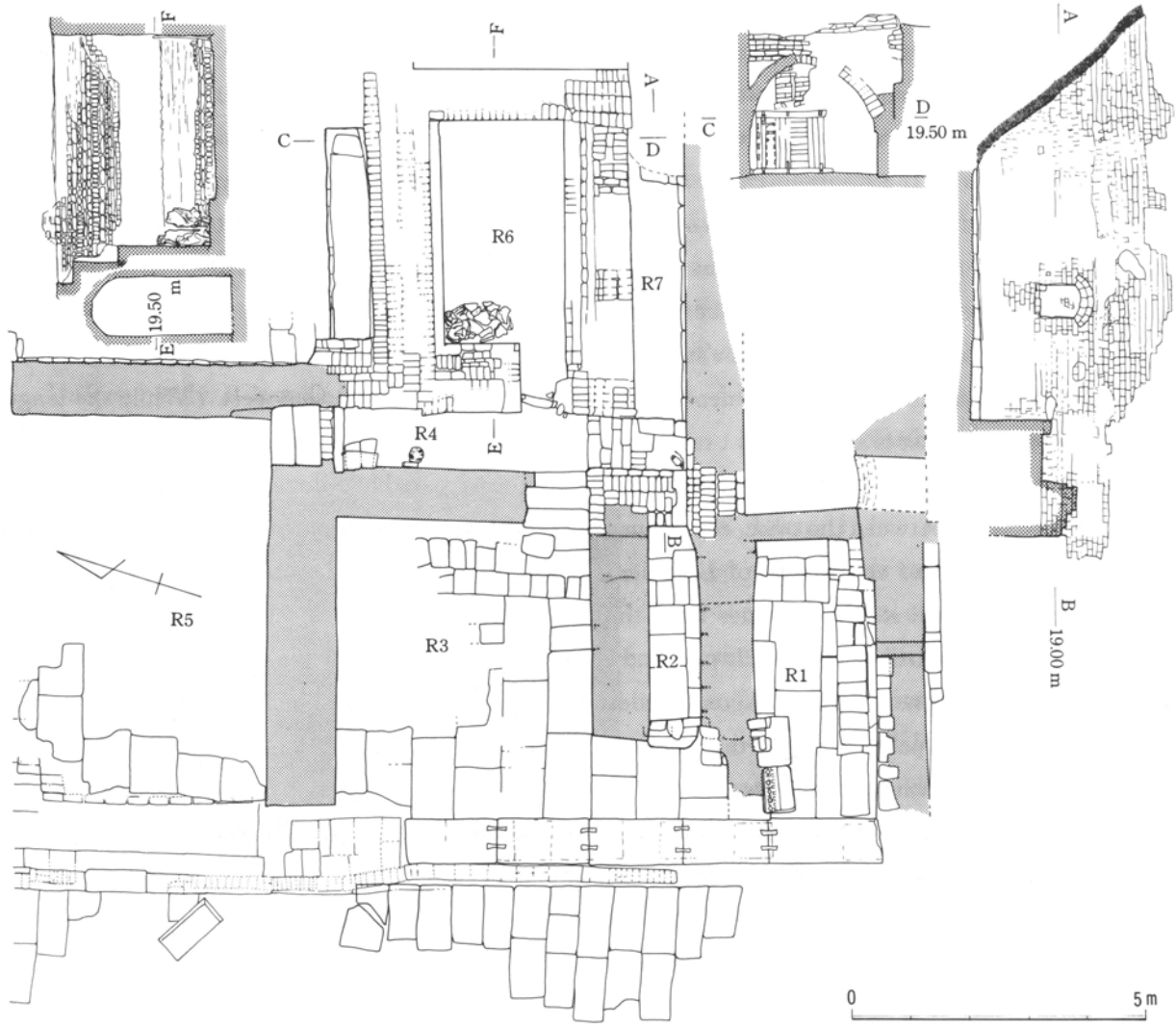


Fig. 70 Building 9

them is a diverted cornice. A barrel-shaped glass bead (Fig. 157 no. 56) was found in the accumulated soil.

Room 2 (Pl. 39 upper). Measuring 0.9 × 3.2m, this room is formed by mud brick walls on the north, east and south sides and closed on the west side by both small stone blocks and mud brick. The brick size in these walls is 24 × 12 × 8cm. This room is too narrow to have been for daily use. A wooden baluster (Fig. 135 no. 13. Pl. 69 no. 21) and two metal objects (Fig. 139 nos. 2 and 11. Pl. 71 no. 1) were found in the accumulated soil.

Room 3 (Pl. 39 lower). This room is bounded by a mud brick wall on the north, the east and the south respectively, and is presently open on the west. The present measurements are 4.4 × 5.0m, and mud brick size in each wall is 24 × 12 × 8cm. There is an entrance at the southeast corner of this room, where the threshold has a 50cm step up to the east. From accumulated soil of this room, a bronze cross (Fig. 139 no. 9. Pl. 71 no. 2), six pieces of ostraca (see p. 372), an amphora stopper (Fig. 154 no. 5. Pl. 91 no. 7), two limestone blocks with relief (Pl. 77 no. 13) and so on were unearthed. Two ostraca (Pl. 150 nos. 9 and 10) were detected on the floor.

Room 4 (Fig. 71. Pls. 40 lower and 42 upper). This room measures 4.2 × 1.0m and part of a vaulted

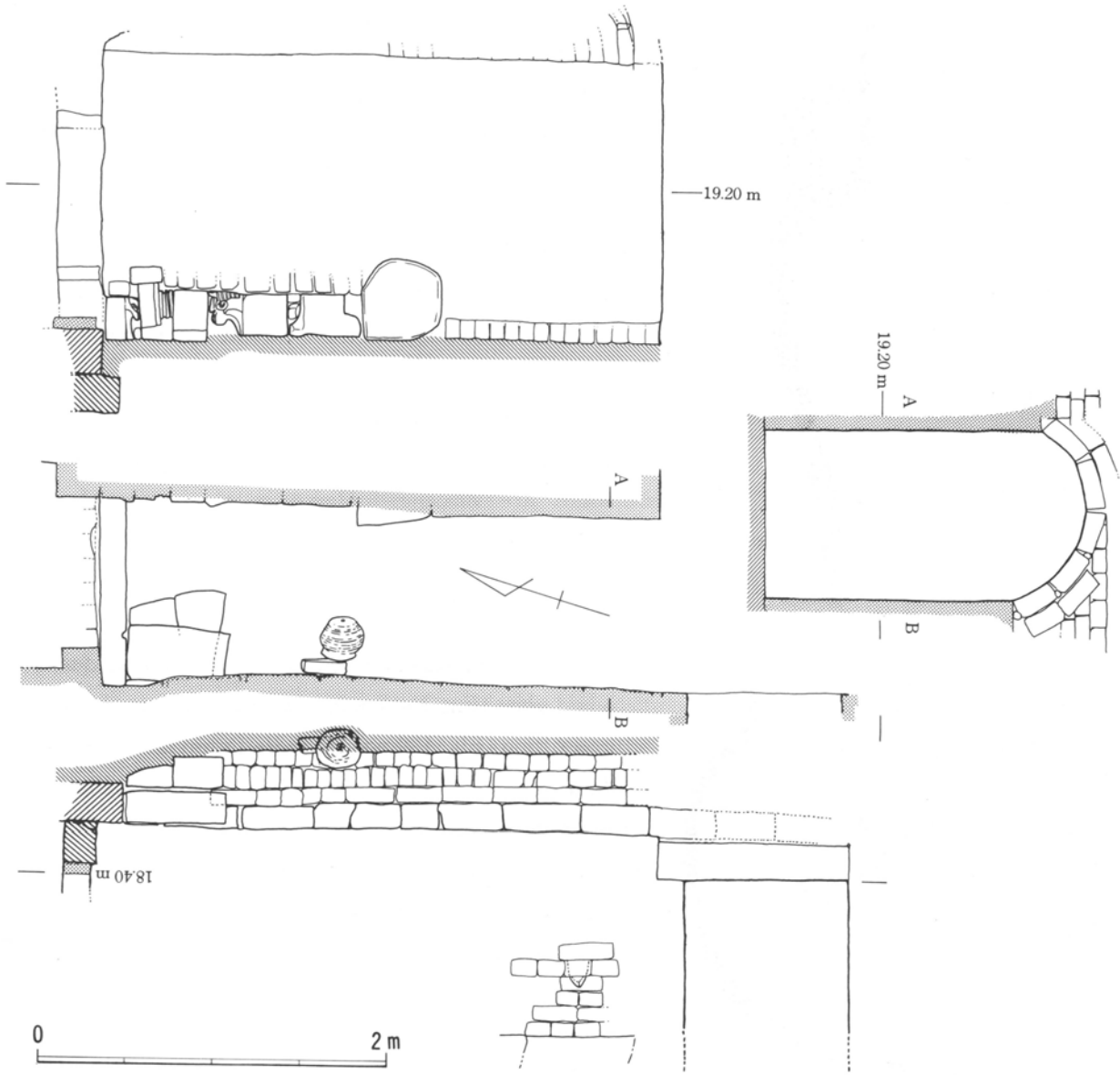


Fig. 71 Room 4 in Building 9

ceiling remains near the south end. The north end served as an entrance, and a staircase with five stone steps remains at the south extremity. After the steps there is a landing 90cm square, and then east along the south wall another flight of steps now missing continued upward. At the base of the stairway there is a passage to Room 3 and another to Room 6. Some amphora fragments were found on the landing (Fig. 72 no. 1).

The east and west walls of 24 × 12 × 8cm mud brick have stone foundations in which in the east, a pilaster capital, a piece of a pillar base and other such stones were used, and in the west reused stone blocks lying on three layers of mud brick. The threshold of the north entrance is at almost the same level as the bottom line of the stone in the foundations. In addition, a flawless cooking pot (Fig. 72 no. 2. Pl. 83 no. 7) was unearthed at the same level. Consequently, this level served as the floor, at least when the pot was in use, and thus the room was 2m in height from the floor to the crown of the vault.

This whole area had been burned and a large quantity of burned soil had accumulated in the

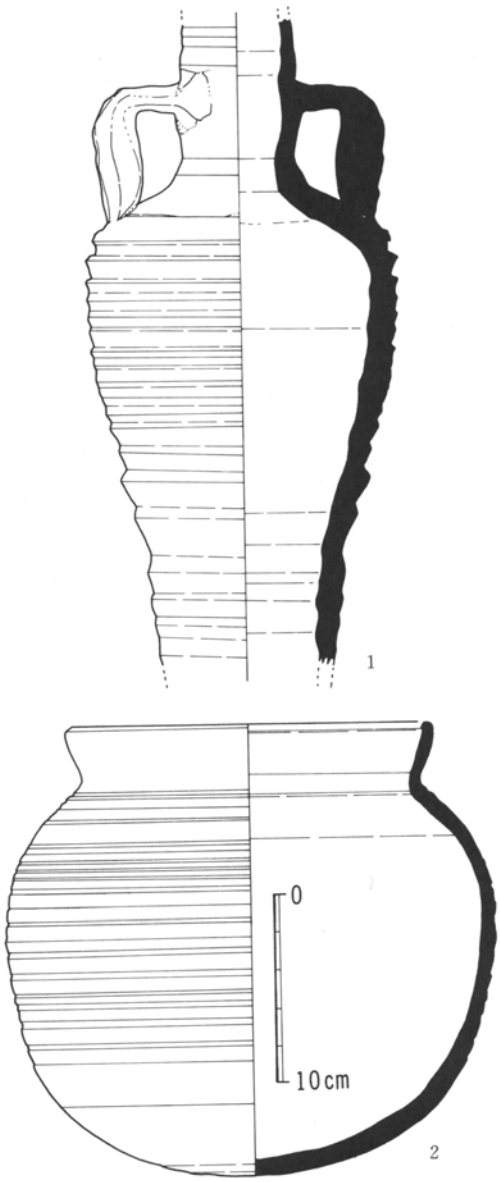


Fig. 72 Pottery found on the floor of Room 4

building in the centuries before our investigation. Almost all of the shards unearthed from this disturbed soil are presumed to date from the 6th to the 7th century A.D. As nothing belonging to a later period survived a large-scale fire estimated to have occurred in the 7th or 8th century A.D.

Room 5. This room is connected with Room 4 through the entrance at the southeast corner, but the north wall is completely lacking and the west side opens to the Sacred Road.

Except for in the west part, most of the original colonnade paving stones on the floor continuing from the south are missing. However, a constant level is maintained in brick, and limestone sand. The present condition of this room is poor, but it is thought to have been a dwelling.

Glass shards (see p. 240), a decorative plaque with inlaid glass (Fig. 158 no. 9), six amphora stoppers and an iron fitting (Fig. 139 no. 15) were found on and over the floor. (KAWANISHI, H.)

Room 6 (Pls. 41 lower right and 42). Opposite the entrance to Room 3 is the raised threshold to the room referred to as Room 6, which extends over an area 3.8m east-west × 2.1m north-south. The threshold consists of a rectangular limestone block whose dimension is 0.9 × 0.2 × 0.1m. As some burned wooden remnants and some iron nails were unearthed there, it is known that the entrance had a wooden door. Due to the vaulting from the south wall, the door support must have been on the north side of the entrance. According to the remains of the vault on the innermost or east wall, the vault started from a height of 0.9m on the north and south walls and reached 2.0m at the crown.

The room has mud brick walls covered with mud plaster, the surface of which was burned by fire.

Tab. 12 POTTERY

UNEARTHED AREA : Room 4, Building 9

Fig. no. (Pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
72-1	on landing	amphora		minute	dark brown	horizontal concave lines, two handles	rubbed by wheel	
72-2 (83-7)	on floor	pot	18.4 × 23.9 vol. : 6416cc. (without rim)	ditto	reddish brown	horizontal concave lines	rubbed by wheel, scraped on bottom	

The north is 1.3m in thickness and made of 24 × 12 × 8cm mud brick, while the east, west and south walls, 0.9m, 1.3m and 1.2m in thickness respectively and made of 25 × 13 × 8cm mud brick. The mud brick size among them indicates a delicate difference, with those forming the north wall somewhat smaller than those in the other three walls. As mentioned below in detail, Room 6 had extended northward reaching Wall 1 in Building 10, and then it was reduced in size by the construction of the present north wall.

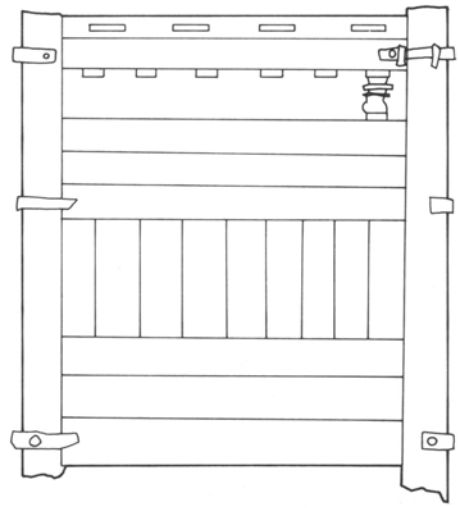


Fig. 73 Parquetry board found in Room 6

A 1.1 × 0.9m parquetry board (Fig. 73. Pl. 42 lower) leaning against the innermost wall was found. Pieces of wood, each measuring 12cm in width × 3cm in thickness, were aligned side by side in either vertical or horizontal position and mortised together, and three U-shaped iron fittings were fastened with nails around the outer pieces of wood on the long sides. In addition, the fitting at the upper right end was reinforced not only by a nail but also by two clamps while a tapered iron fitting (not shown) was attached to the end of the left piece of wood. At the top an openwork with six balusters were set and four mortises were confirmed on the top piece of wood. Considering the position of the tapered fitting, this seems to have been either a full or a half door, however the mortises at the top, are unexplainable. We hope that later study will reveal its true usage.

Of the artifacts found here, two large earthen water pots, containing much vegetable-and grit-temper, were in the northwest corner. Though they had been broken completely by fire and the collapse of the ceiling, it is known that they had stood side by side. Seven bronze coins (Pl. 74 nos. 62～68) were found near the pots on the floor. One identifiable coin (Pl. 74 no. 68) was Heraclius and his son Constantinus III (A. D. 610). It, then, suggests to us the date of this room, and this is confirmed by the mud brick size.

An amphora stopper, an earthen stamped object (Pl. 90 no. 13), a horse-shaped bronze image (Fig. 139 no. 6. Pl. 71 no. 5), a bronze hook (Fig. 139 no. 8), nine bronze discs and a glass shard (see p. 240), in addition to the above-mentioned bronze coins, were uncovered on the floor. A pilaster capital (Pl. 124 no. 5) was also found in the accumulated soil.

Tab. 13 POTTERY

UNEARTHED AREA : On the Floor of Room 6, Building 9

Pl. no.	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
84-8	plate	17.7 × 3.2	minute	dark brown	without decoration	rubbed by wheel	soot-stained on base

Room 7 (Pl. 42 upper). This room lies next to and south of Room 6 and is under the upper flight of the staircase starting from the south end of Room 4. While the north-south dimension is just 0.9m, the east-west dimension, though unconfirmed due to much difficulty in digging out the east end, is more than 5.0m. This room does not open to Rooms 4 and 6 but rather to an unexcavated room on the east. The

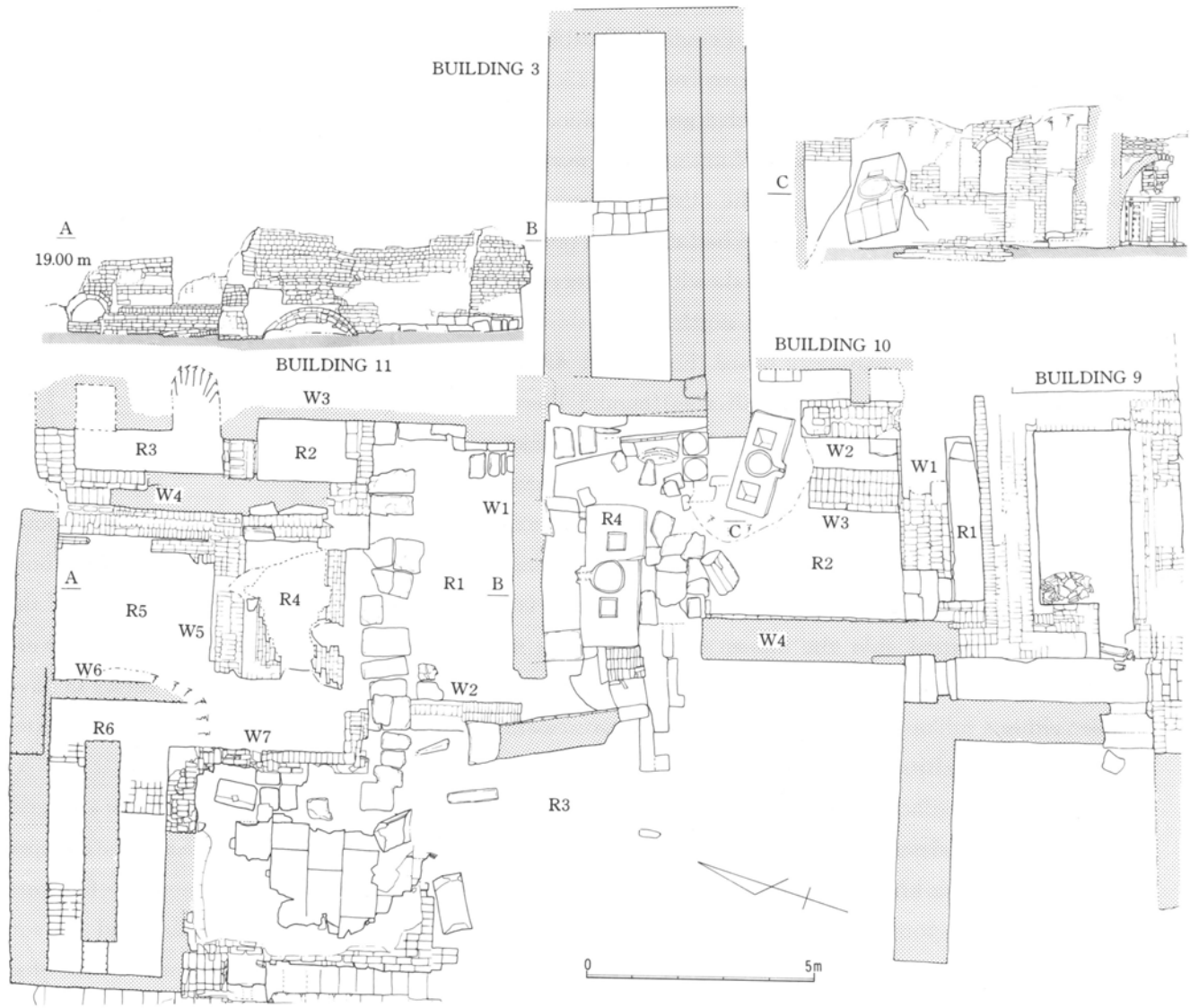
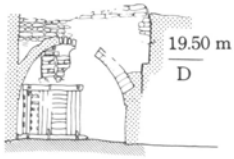


Fig. 74 Buildings 3, 9~11

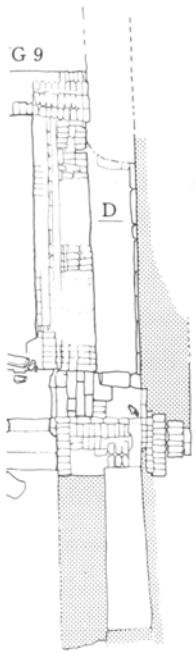
south wall, equivalent to the north wall of Room 4 in Building 8 (see p. 85), was, as mentioned, constructed on slab stones, and a vaulted niche was provided at a height of 1.0m above the floor level. The niche measures 52cm in width, 40cm in depth and 78cm in height, at the back on the floor of the niche a single row of brick forms a shelf. Observing the traces left on the wall surface, four small holes which were aligned diagonally show where supports for the upper flight of the staircase from Room 4 were located. A horizontal band, consisting of dried mud and pottery shards, testifies to the existance of some sort of ceiling.

Two amphora stoppers (Pl. 91 no. 10), some leather-made products and a bronze disc were unearthed on the floor. (KUROKAWA, T.)

BUILDING 10 (Fig. 74. Pls. 41 upper and 45 lower) : Building 10 neighbors Building 9 on the north, however, whether it is actually a building remains in doubt. However, for convenience sake we have designated it as such.



Room 1. This room measures 3.6m east-west × 0.7m north-south. This long, narrow space is more like a passage than a room, but as the east end is closed off by a mud brick wall and there is only a single entrance, which opens at the northwest corner, it does not form a passage. The north wall referred to as Wall 1 (W 1) is 1.0m in thickness and a niche whose dimension is 50cm in width × 35cm in depth × 60cm in present height remains 80cm above the floor level. This wall consists of 26 × 12 × 9cm mud brick and the foundation is on a layer of slab stones. The east wall is also on the slab stones which continue from the north wall. In addition, one slab occupies the innermost part of the floor.



On the south wall a recessed step is left in a band at a height of 2.3m above the floor level. As it is too high for a vaulted ceiling, the ceiling must have been flat. The foundation level of this wall is 20cm higher than those of other walls, and there is no slab stone foundation. This fact suggests that the south wall was built later than the other walls, and further that this room had originally formed a part of Room 6 in Building 9 adjoining it on the south.

The north mud brick wall with slab stone foundation is of the same construction as the south wall of Room 7 in Building 9 and as both of them keep the same level and the mud bricks in each are of equal-size, they are thought to have been constructed at the same time. Considering that foundation stones are not set on a sand bed akin to the common paving stones found in Akoris, quite probably they were removed from their original position for use here when the walls were built.

The 1.1m wide entranceway opens into Room 2 and has a single doorjamb projecting from the east wall at the south end, and it is paved with stones on both ends.

Room 2 (Pl. 44 upper). The south wall referred to as Wall 1, the east wall as Wall 2 (W 2) and the west wall as Wall 4 (W 4) form this room. The northeast corner is occupied by an enormous olive oil press which has fallen against the east wall. No wall was found on the north side, but some stone blocks, diverted from an undetermined ashlar building, are placed in an untidy line, which may be assumed to have formed the foundation of a missing mud brick wall. If this be so, the dimensions of Room 2 are 4.1m east-west and around 4.2m north-south.

Wall 4 is provided with a large vaulted niche, which measures 60cm in width, 40cm in depth and 90cm in height, and is 90cm above the floor level. The mud brick forming Wall 4 is the smallest, that is, 24 × 12 × 8cm while in Wall 2 it is 26 × 13 × 9cm and in Wall 1, 26 × 12 × 9cm. In addition, Wall 4 is joined to the west wall of Room 1 but is some 40cm thinner. Wall 4 shows the date of the present Room 2, which according to the mud brick chronology in Akoris, is the 7th century A.D.

Below the floor level are some walls projecting from under Walls 1 and 4, and at the same level, the top part of Wall 3 (W 3) was partially uncovered. They keep an equal level, and are all built of the 6th century 26 × 12 × 8～9cm brick. Accordingly, it is quite possible that these walls formed a room before remodeling, and that this room coexisted with the original Room 5 in Building 9. It is also possibly that at that time the present entrance opening to Room 1 was not in existence.

Several stone slabs are placed at the corner of Walls 1 and 2 and they maintain the same level as the floor of the remodelled room. As Wall 2 is partially situated on them, its construction postdates the lower or original room.

A vaulted niche, whose dimensions are 0.7m in width × 0.8m in depth × 1.3m in height, was uncovered on the south wall (?) adjacent to Wall 2 on the east. Due to the oil press stone, further excavation was impossible here. Later investigations should be carried out so as to clarify the structure and usage of this part.

No artifacts worthy of reporting were detected on the floor of Room 2. (KUROKAWA, T.)

Rooms 3 and 4. At a point, 6m to the east of the Sacred Road curbstones, there is a north-south wall made of mud brick measuring 24 × 12 × 8cm with a foundation of stones, including part of a stele at the north end with a Greek inscription of the names of Tiberius and his mother on it (see p. 326. Pl. 121 no. 1). The south end of this wall is missing, but we have divided the area into two rooms with this wall, and from the west call them Rooms 3 and 4 although the existence of the former is in fact in doubt. The north wall of Room 4 is made of brick measuring 24 × 12 × 8cm. Stones of various size lie in Room 4, including two inverted Hathor capitals, each measuring 60 × 60 × 65cm, set side by side (Pls. 43 lower and 119 no. 1), and a large stone used as an olive oil press measuring 304 × 120 × 70cm set in such a way that it maintains a constant level with those of the capitals. This level is 50cm lower than the floor level of Room 2. Judging from the mud brick size of the north and west walls, these stones are estimated to have been used as flooring in the 24cm brick type era.

An ostracon (see p. 373. Pl. 154 no. 24), a wooden spindle (Fig. 135 no. 15), a limestone block with Pharaonic relief (Pl. 117 no. 2) and some beads (see p. 233) were found in the accumulated soil here.

A sounding trench excavation was carried out to a depth of 1.3m on the west side of the wall dividing Buildings 10 and 12. This excavation revealed Pharaonic bricks 38 × 18 × 8cm that protrude on a more westerly axis (Figs. 74 and 78). This wall is not horizontal but rises toward the south at 15 degrees.

A sounding trench also revealed part of a domed structure of 30 × 15 × 8cm mud brick at a point approximately 20cm west of the wall. Other dome structures of mud bricks of the same size were found in the eastern area around the Hypostyle Hall. From the space between the west wall and the dome, pottery shards (Fig. 75), presumed to trace back to the Dynastic Period, were unearthed.

(TSUJIMURA, S.)

BUILDING 11 (Fig. 74. Pl. 44 lower) : This building neighbors Building 10 on the north and is divided into six rooms, however, it does not necessarity follow that these rooms are connected to form an actual building.

Room 1. Wall 1 (W 1), which defines the south side of Room 1 (R 1), remains to a height of 1.6m above the floor level. At an 83cm height a vault begins its ascent, however, most of the haunch is now missing. Another wall on the north which probably received the vaulted ceiling is completely demolished. Some stone slabs in an untidy line might have formed the foundation of the mud brick wall.

Wall 2 (W 2), though in bad condition, is assigned the west wall, and Wall 3 the east wall of Room 1, so that this room measures 5.7m east-west × *ca.* 2.3m north-south.

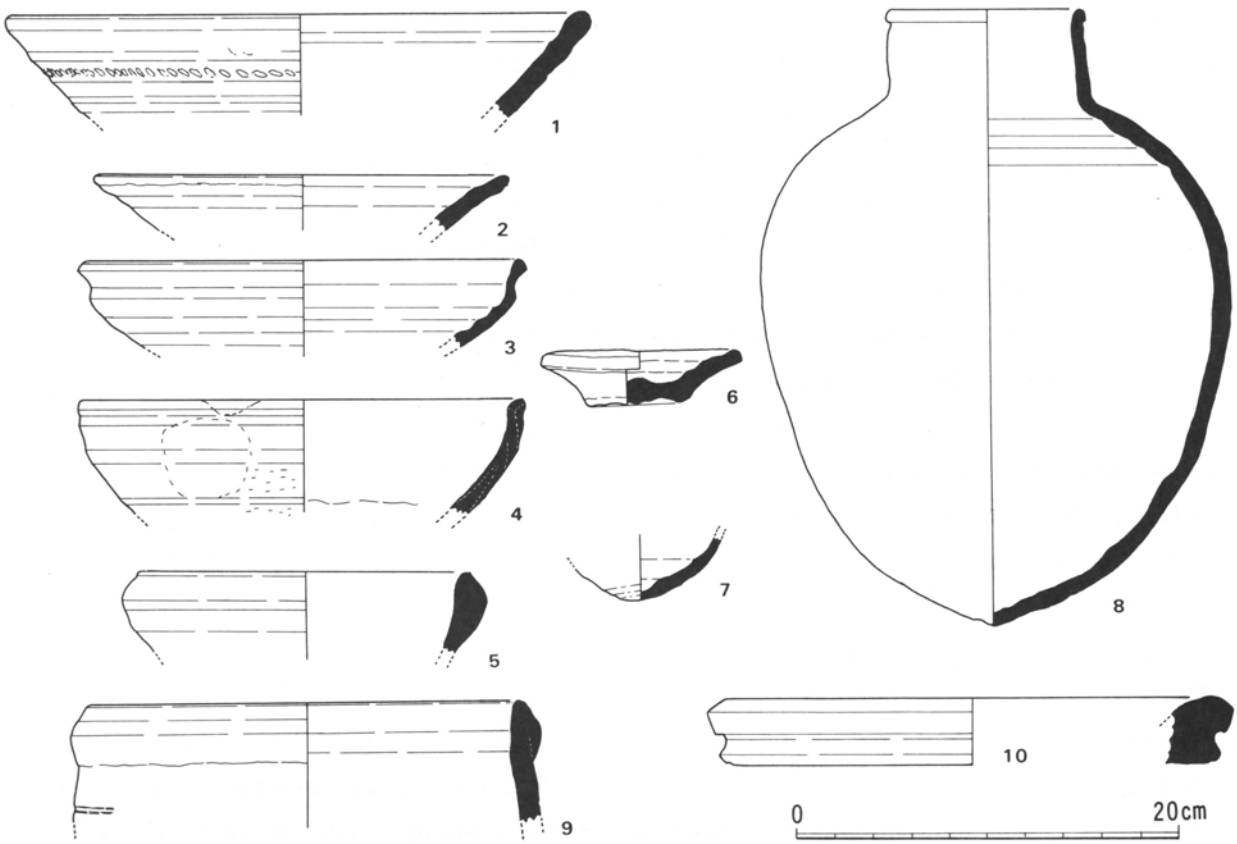


Fig. 75 Pottery found in the east part of Room 4 (Nos. 1~7, 9, 10), and in the western area around the North Gate (No. 8)

Tab. 14 POTTERY

UNEARTHED AREA : Lower Layers in the East Part of Room 4, Building 10

Fig. no.	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
75-1	bowl	30.0	minute	dark orange	continuous diagonal incised pattern	rubbed by wheel	
75-2	ditto	21.0	ditto	ditto	without decoration	ditto	
75-3	ditto	22.9	ditto	ditto	ditto	ditto	
75-4	ditto	22.9	ditto	dark grey	ditto	lower part of outer face : scraped by wheel, other parts : rubbed by wheel	
75-5	ditto	17.4	ditto	dark orange	ditto	rubbed by wheel	
75-6	plate, lamp	9.8 × 2.8	minute	dark orange	without decoration	rubbed, spatula scrapings on base	
75-7	base		minute	dark orange	without decoration	outer face : scraped by wheel, inner face : rubbed by wheel	
75-9	pot	22.5	minute	dark orange	folded rim	rubbed by wheel	
75-10	pedestal(?)	25.4	rather sandy	dark orange	without decoration	rubbed by wheel	

Wall 3 (W 3) possesses several marks distinguishing it from Walls 1 and 2. First, it is on a double layer of stone slabs and moreover, a water pipe made of probable lead opens into the room from between the slabs. In addition, the outermost line of the wall is recessed from the stone edge, including the south end which projects to the west from the rest of the wall. Secondly, except in the projecting south end, the mud brick size is 30 × 15 × 9cm, while Walls 1 and 2 consist of 24 × 12 × 8cm brick, which is the same size as those at the south end of Wall 3. It is observed through the demolished condition of the north end of the projecting part of Wall 3 that the south part extended northward and covered the 30cm type brick wall. As the 30cm type brick belongs to the 4th~5th century A.D. and 24cm size one to the 7th century A.D., it is clarified that the east wall was altered when Room 1 was constructed.

However, as for the stone slab foundation, it is thought that they predate the 4th~5th century A.D., because a mud brick wall would be unsuited for a building equipped with a water pipe. As the eastern area behind the colonnade left no archeological evidence concerning its function before the 4th~5th century A.D., the stone slab foundation and lead pipe call our attention. However, whether there were bathing facilities there or not is not known, as the area east of Wall 3 was left unexcavated.

An iron lock (Fig. 139 no. 14) was included in the accumulated soil.

Room 2. This room (R 2) adjoins Room 1 on the north and is separated from it by a mud brick wall in poor condition. Its dimensions are 1.4m east-west and 1.9m north-south. The entrance which had opened into Room 3 (R 3) was later closed by a thin wall of stretcher aligned mud brick. A doorjamb is projected at each side, and some charred timber remnants extend straight from one side to the opposite on the edge of threshold suggesting a wooden door.

Except for the entrance closure made of 24cm size brick, the mud brick size, 30 × 15 × 9cm, is consistent in the surrounding walls. Wall 4 (W 4) is double, that is, the eastern side, 75cm thick, consists of the 30cm size brick and the below-mentioned western side, 60cm thick, utilized 24cm size brick. The inner face of Wall 4 is partially paneled with slab stones.

Room 3. This room measures 3.2m north-south × 0.9m east-west. It is equipped with a niche at the north part of the east wall. The large niche, with dimensions of 0.9m in width × 1.0m in depth × 1.0m in height, is out of balance in this narrow room. It may have been for installing some figure. The south part of the east wall forms an entrance which opens to the east. Its width measuring 1.0m is large for this room. The mud brick size is 30 × 15 × 9cm, the same as that that in Room 2.

No remains which could lead to dating were found on the floors of Rooms 2 and 3. However, according to the mud brick chronology, these two rooms date to the 4th~5th century A.D. Tracing their sequence, they were connected to each other through the entrance, and belonged to another building situated eastward at that time. Later in the 7th century A.D. the entrance was closed and Room 2 was reused as part of Building 11. The later use, if any, and its integration was unknown at this time.

Room 4. Except for part of the floor, Room 4 scarcely remains. The floor level is 60cm higher than that of Room 1, and the vaulted ceiling of a subterranean room was seen under it. This subterranean room was left as found, half buried by an inflow of soil coming through a hole broken in the floor of Room 4. It appeared to be in tolerably good condition though excavation was not attempted due to the fear of collapse.

Room 5. This room adjoins Room 4 (R 4) on the north and its dimensions are 3.2m north-south × 3.4m

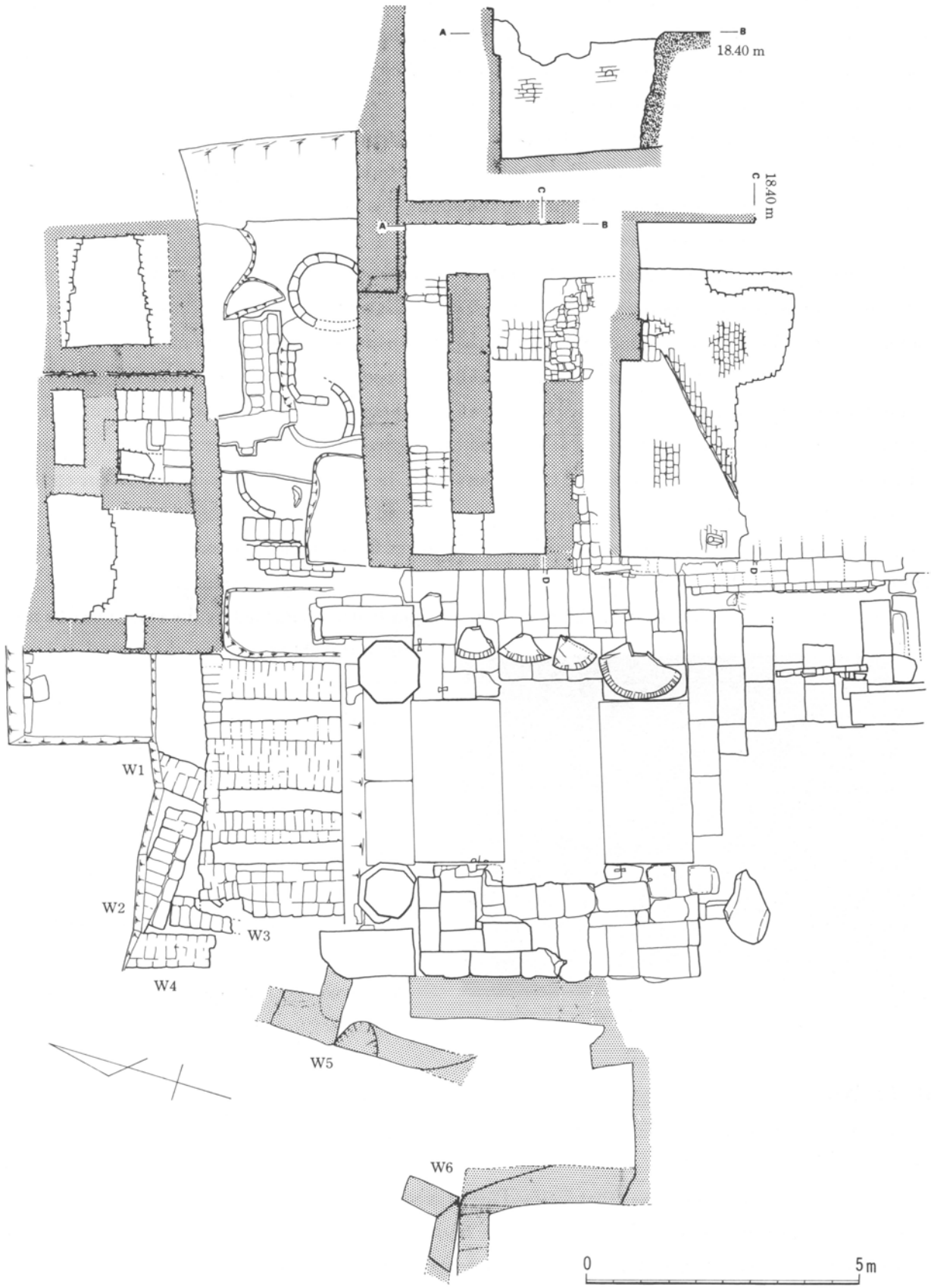


Fig. 76 North Gate area

east-west. The floor is completely missing and below the floor level much ashy soil remains. According to remnants partially detected along Wall 4, there was also a subterranean room with a vaulted ceiling as in Room 4. Though unexcavated, it is also clear that the vaulted ceiling extends north-south and makes a right angle to that of Room 4.

The subterranean parts of Rooms 4 and 5 consist of 24cm size mud brick. This size brick is used in Wall 7 (W 7) and in the below-mentioned subterranean Room 6 (R 6). In addition, considering that Wall 7 forms a passage leading from Room 6 to the south, it is quite possible that Rooms 4, 5 and 6 are connected with each other underground. (KUROKAWA, T.)

Room 6 (Fig. 76. Pl. 46 lower left). This room is 6.1m east-west × 2.5m north-south. In the center of the room there is an independent interior wall 0.8m thick, and an entrance located at the southeast corner. On the floor, exposed mud brick that possibly constitute a wall was found.

Traces of date palm wood are left in the walls. Those on the south wall and the central wall facing it ascend at a oblique angle. This fact shows that there had been a stairway between the south and the central walls, presently topping at 2.2m from the lower half of the floor. The floor under the stairs is about 50cm lower than the floor. On the west wall the traces of wood maintain a horizontal line. The east wall, the north wall and the north side of the central wall have such traces at the same height where the walls remain. The traces at 2.0m from the lower floor suggest the existence of a horizontal ceiling or the floor of an upper room.

The space lying just under the oblique passage was put to use, confirmed by the existence of a mud brick threshold between the central and west walls, a small niche in the south wall and a window in the west. Two baskets were unearthed *in situ* in the southwest corner of the room (Fig. 77).



Fig. 77 Two baskets as found on the floor of Room 6

The mud brick size is 24 × 12 × 8cm thus placing it in the 7th century A.D. Thinking of the fact that the outer side of the north wall is aligned with the North Gate, it is apparent that the north line of the Temple Area was still followed after the temple lost its primary function. (KAWANISHI, H.)

BUILDING 3 (Fig. 78. Pl. 43 upper) : This one-room building, measuring 7.6m east-west × 1.7m north-south was uncovered east of Building 10. Observing the room carefully, it is not seen to be rectangular. The east wall of the room is 50cm east of the line extending from the east outer wall surrounding the Temple Area and is half as thick as that wall. Part of what is presumed to be a squinch ceiling remains at the southeast corner and in the south wall where in the construction of a vault, the bricks were laid in pitched vault form, that is, in a semi-prone position toward the west in the western half of the vault and toward the east in the eastern half. The latter bricks in turn meet the bricks similarly laid toward the south in the east wall. The remaining vault construction thus shows that the east and the south walls

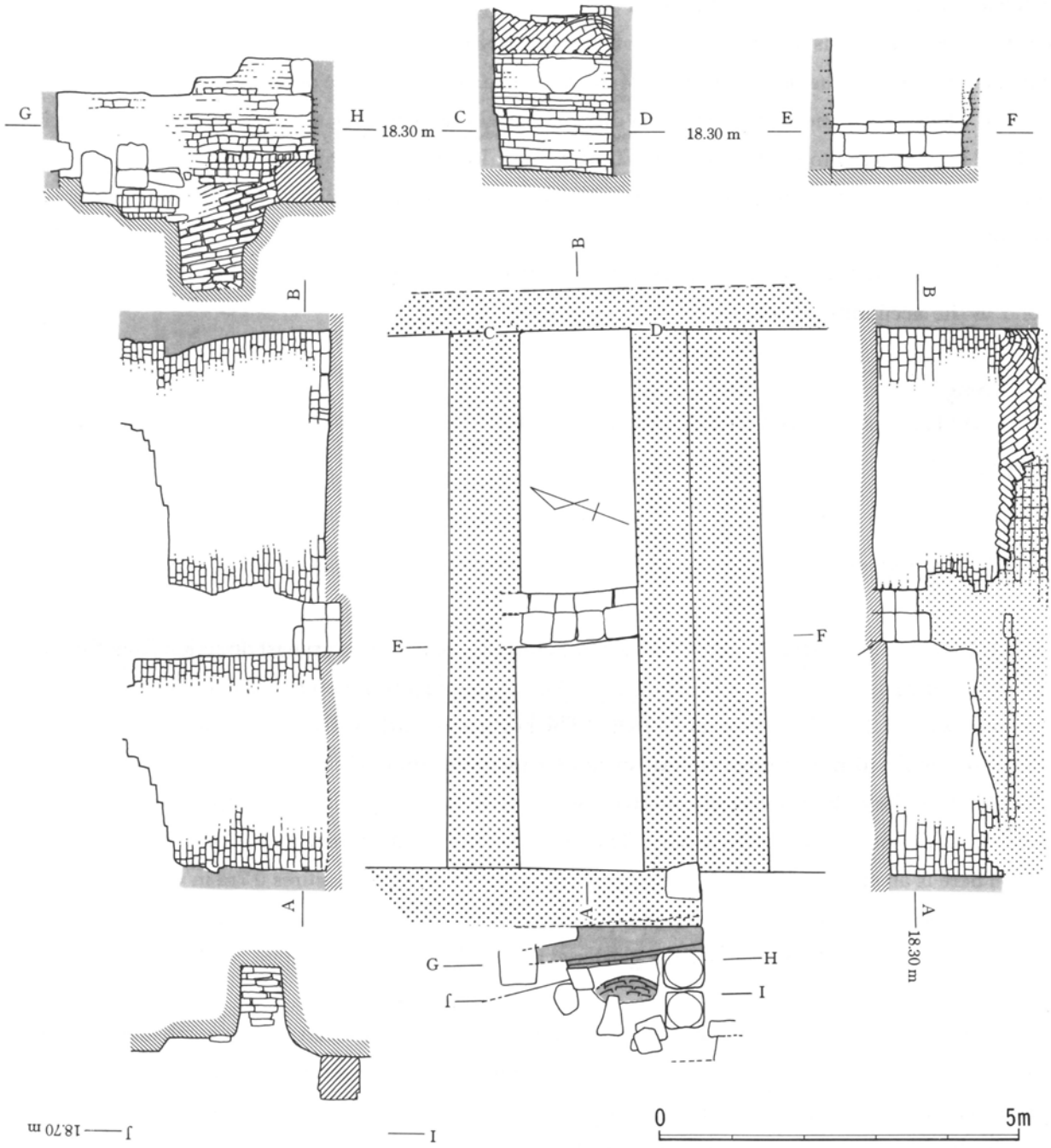


Fig. 78 Building 3

were built at the same time. On the other hand, the north wall, which has no such brick work, must have been constructed after the south and east walls, and pending further excavation, it can thus be assumed that the north wall is an interior one.

A north-south stone wall 75cm thick, exists in the center of the room and is on the extension line of the east side column foundation in the Middle Court. However, while the one end extends through the north wall and beyond, the other appears to be joined to the south wall and so may not be connected to the above foundation directly. Where the central wall goes through to the north, an entrance is formed. This entrance opens at the same level as the top of the stone wall and is of the same width. The north

wall was made of mud bricks measuring 24 × 12 × 8cm in addition to some 29 × 14 × 9cm reused brick, but the three other walls are clearly made of mud brick of two different sizes i.e. from the vaulting course to a line 80cm below, the bricks measure 24 × 12 × 8cm and from there down to as far as excavated, 32 × 16 × 12cm. The line where these two different sized bricks meet is the same as the top of the stone wall and is considered to be the floor line of the room. In addition to the above, the floor level is nearly equal to the tops of the large stone olive press embedded in the floor and the capitals in Room 4 of Building 10.

The head part of a human figure with Coptic characteristics (Fig. 140 no. 2. Pl. 75 no. 15) was found in the accumulated soil.

Note

1) LESQUIER, J., *Fouilles à Tehneh* (*BIFAO*, 8, 1911), pp. 111-133.

(TSUJIMURA, S.)

ADJOINING AREA OUTSIDE THE NORTH GATE (Fig. 76. Pl. 46 upper)

BUILDING 1 (Fig. 79. Pl. 47 upper) : This building is situated in the northeast direction from the North Gate and adjoins the east wall of Building 2. It has a square plane measuring 2m and is a subterranean structure made of 29 × 14 × 9cm mud brick. The north and south walls rise vertically to a 1.5m height and subsequently form a vaulted ceiling, most of which unfortunately is missing. The courses in the vertical part of the wall are generally alternate header and stretcher while the ceiling is in slightly oblique stretcher form with the usual back fill. The walls are not meshed at the four corners.

There is an entrance on the northern part of the east wall. It measures 0.7m in width and 1.5m in height. A piece of date palm wood is used as a lintel and it is equivalent to the top line of the vertical walls. The threshold is raised above the plastered base and is composed of mud brick lined in a stretcher bond.

Horizontal pieces of date palm wood are embedded in the vaulted parts of the north and west walls. These are thought to have been used for reinforcement. A niche is set in the center of the west wall, 1.3m from the floor, and the dimensions are 35 in width × 40 in height × 40cm in depth.

In the disturbed soil at the same level as the niche, a limestone column base, a limestone block and an almost flawless amphora were unearthed. And in the lower layer much pottery falling in from the east entrance was found. Other pottery was scattered on the floor level throughout the room. The pottery (Figs. 80～82) was varied and included amphorae, jars with handles, pots with small rims and pottery lamps (Fig. 146 no. 12. Pl. 87 no. 1). In addition, an amphora stopper (see p. 224), glass beads (see p. 231), bronze coins (see p. 199. Pl. 72 nos. 8～11) and basket fragments were also found. At least a Constantinus I (A. D. 324～337) was included among the coins.

Judging from the mud brick size, the coins and pottery, this building belongs to the 4th ～ 5th century A. D.

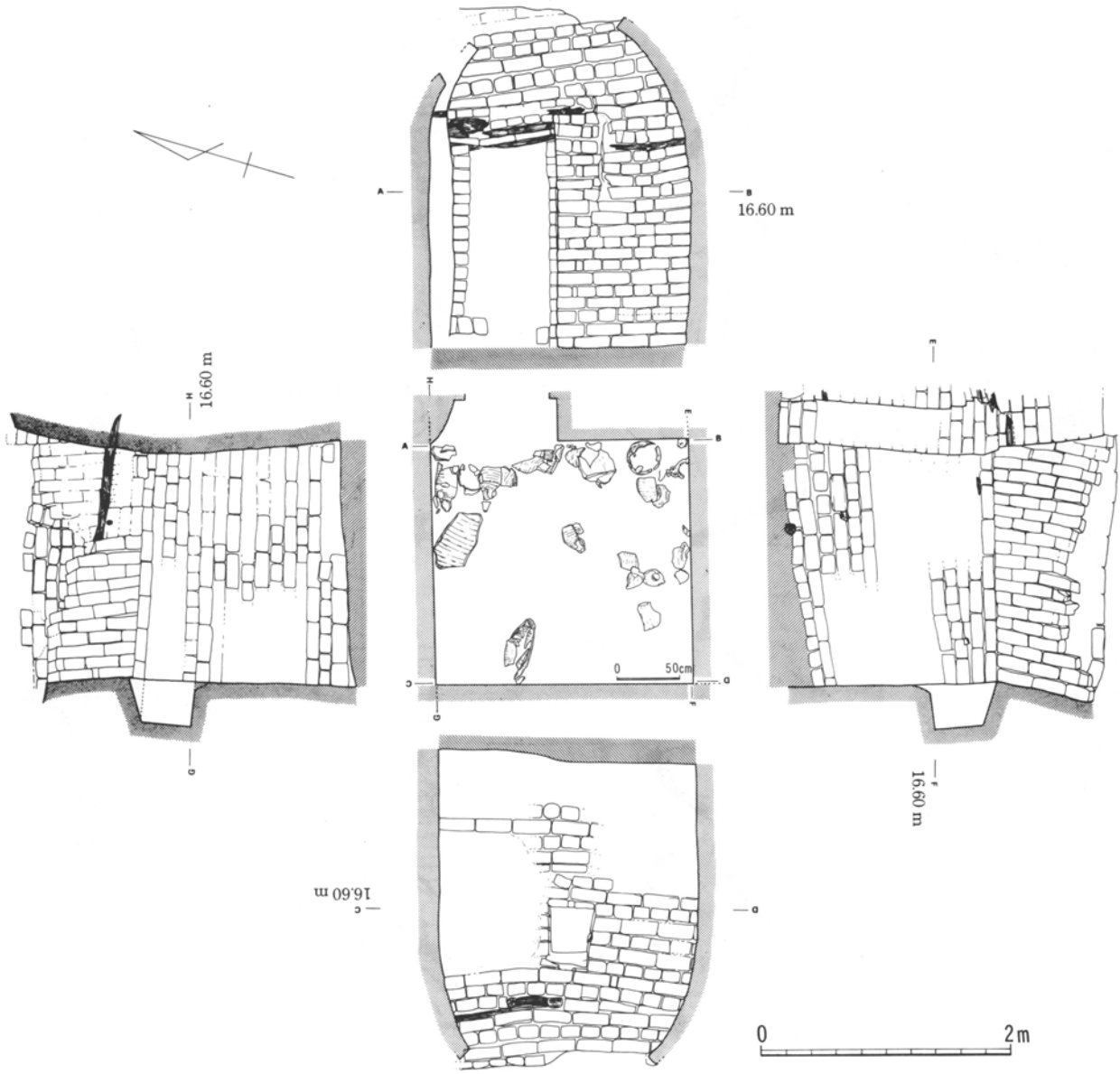


Fig. 79 Building 1

Tab. 15 POTTERY

UNEARTHED AREA : On the Floor of Building 1 Adjoining the North Gate Eastward

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
80-1	cooking pot	15.9	sandy, white grit	reddish brown	horizontal concave lines	rubbed by wheel	
80-2 (81-10)	ditto	15.7 × 14.4 vol. : 2936cc. (without rim)	sandy	ditto	horizontal concave lines, paired handles	ditto	soot-stained on outer face
80-3	ditto	14.1	ditto	ditto	horizontal concave lines	ditto	ditto
80-4 (81-8)	ditto	15.4	minute	ditto	white round speckles on horizontal grooved lines	ditto	ditto
80-5	lid for cooking pot	21.2 × 6.9	minute	brown	without decoration, small pierced hole on top	rubbed by wheel	soot-stained on peripheral

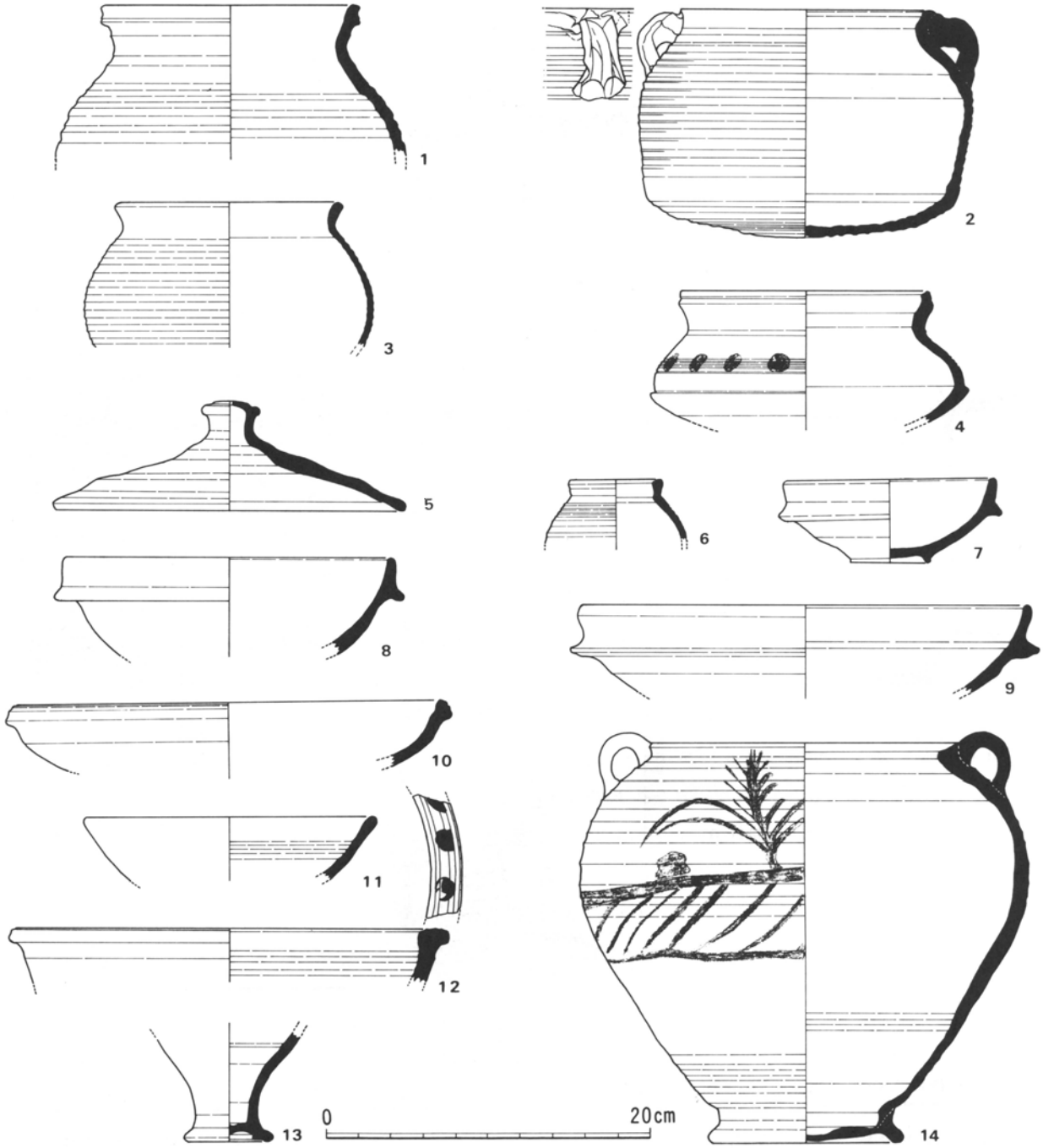


Fig. 80 Pottery found on the floor of Building 1

							section
80-6	jar	5.6	minute	pale yellow	horizontal cancave lines	rubbed by wheel	
80-7	bowl	13.1 × 5.3	rather sandy	brown	without decoration	lower part of outer face : scraped by wheel, other part : rubbed by wheel	something charred on inner face
80-8	ditto	20.4	minute	reddish brown	reddish brown slip on whole, lustrous	rubbed by wheel	ditto
80-9	ditto	27.6	minute, white grit	ditto	reddish brown slip on whole face	lower part of outer face : scraped by	

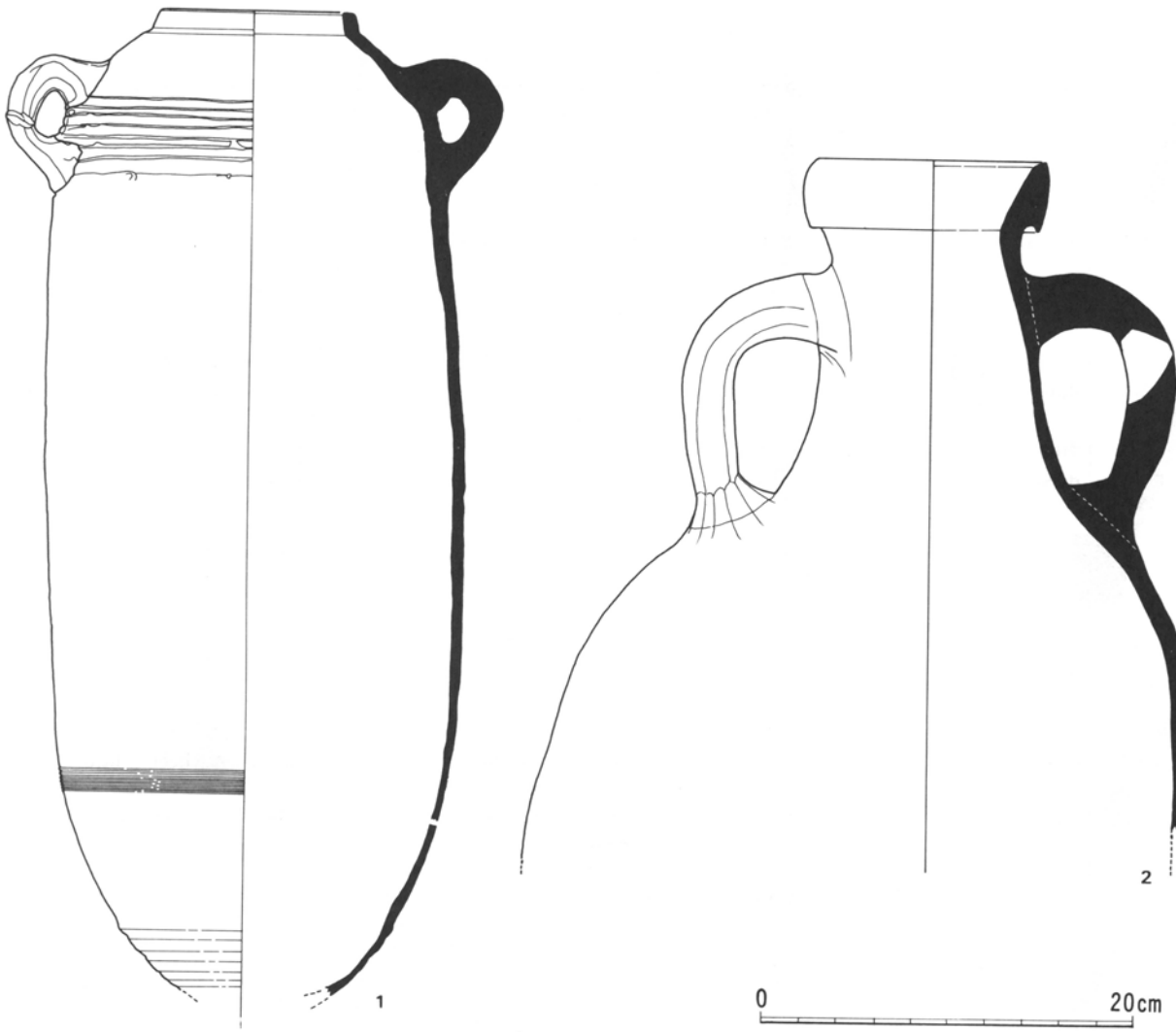


Fig. 81 Pottery found on the floor of Building 1

						wheel, other parts : rubbed by wheel	
80-10	plate	26.0	minute	reddish brown	reddish brown slip on whole face,	ditto	
80-11	bowl	17.9	rather sandy	reddish brown	ditto	rubbed by wheel	
80-12	ditto	26.8	ditto	ditto	reddish brown slip on whole face, dark grey speckles on rim top		
80-13	table amphora		minute	pale yellow	without decoration	base : scraped by wheel, other parts : rubbed by wheel	
80-14	jar	18.7 × 25.0 vol. : 7832cc. (without rim)	rather sandy	pale yellow	some paintings on horizontal concave lines	rubbed by wheel	
81-1 (82-3)	amphora	10.3 vol. : 15535cc. (without rim)	minute	brown	horizontal concave lines on shoulder, horizontal grooved lines on lower part of	rubbed by wheel	black coating on inner face

					outer face, looped handles		
82-2	amphora	12.1	minute, white grit	outer face : pale grey, inner face : dark brown	paired handles	rubbed by wheel	
83-1	amphora		minute	brown	horizontal concave lines	lower part of outer face : scraped & rubbed by wheel, base : rubbed by hand	black coating on inner face
83-2	ditto		ditto	pale brown	ditto	rubbed by wheel	
83-3	ditto		ditto	ditto	ditto	ditto	ditto
83-4	ditto		ditto	ditto	ditto	upper part of outer face : scraped & rubbed by wheel, other parts : rubbed by wheel	
83-5	ditto		ditto	ditto	ditto	rubbed by wheel	black coating on inner face
83-6	ditto		ditto	brown	ditto	rubbed by wheel, base by hand	ditto
83-7	ditto		ditto	light reddish brown	ditto	rubbed by wheel	ditto
83-8	ditto		ditto	ditto	horizontal concave lines, whitish slip on outer face	ditto	ditto
83-9	ditto		ditto	pale yellow	without decoration	rubbed by wheel, projected base, scraped & rubbed by wheel	
83-10	ditto		ditto	light reddish brown	without decoration	rubbed by hand	black coating on inner face
83-11	ditto		ditto	pale reddish brown	without decoration	ditto	ditto
83-12	ditto		ditto	pale brown	ditto	upper part of outer face : rubbed by wheel, base : rubbed by hand	ditto
83-13	ditto		ditto	ditto	ditto	rubbed by hand	ditto
83-14	ditto		ditto	dark brown	ditto	ditto	ditto
83-15	ditto		ditto	pale brown	ditto	ditto	ditto
83-16	ditto		ditto	dark brown	ditto	ditto	ditto
82-1	ditto		rather sandy, white grit	reddish brown	horizontal concave lines	rubbed by wheel	ditto
82-2		h. 54.0	ditto	ditto	ditto	ditto	ditto

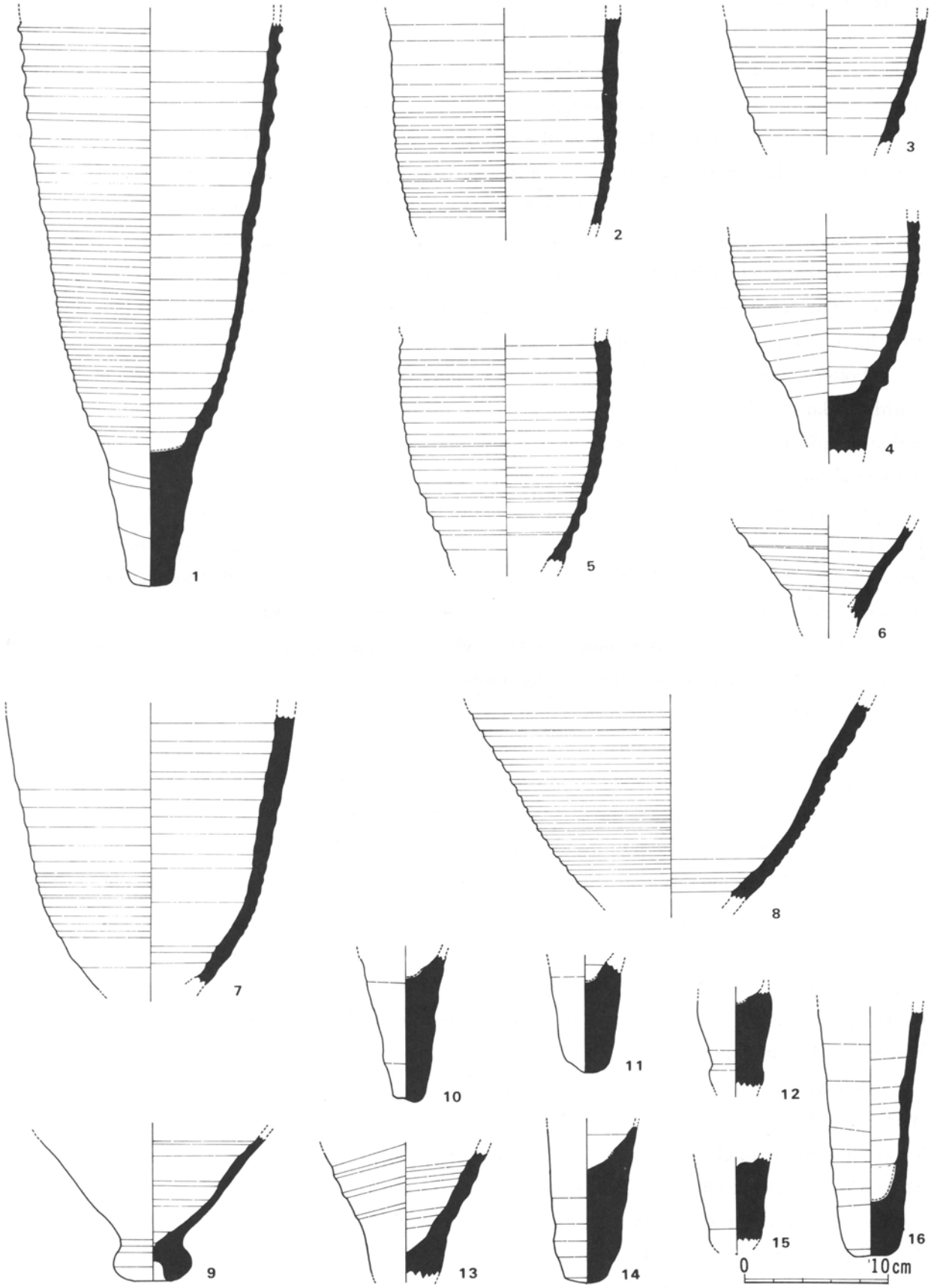


Fig. 82 Pottery found on the floor of Building 1

BUILDING 2 (Fig. 83. Pl. 47 lower) : This building is west of and adjacent to Building 1 and occupies an area 2.6m north-south × 4.6m east-west. There is a subterranean structure made of 30 × 15 × 10cm mud brick consisting of three rooms which are in good condition compared to that part of the building above ground, most of which is missing.

A mud brick stairway leading to the lower rooms is L-shaped with the upper flight from the surface to a landing in five steps of 62cm width and from there to the bottom in five steps of 56cm width.

Room 1 (R 1) measures 1.8m east-west × 1.0m north-south × 2.2m in height. The north and the south walls rise vertically to a 1.7m height and then form a vaulted ceiling. There is an arched niche in the east wall at the height of 1.2m from the floor. It is 40cm not only in width but also in height to the crown. The depth measures 32cm and is equal to the thickness of the wall. This fact plus that of the mud brick size show us that Buildings 1 and 2 must have been built concurrently.

Pottery shards (Figs. 85～86), a amphora stopper (Fig. 153 no. 6), some beads (see p. 232), glass shards, undateable bronze coins, a bronze hook (Fig. 139 no. 12) and a basket were found in accumulated soil in the room and a large size piece of vegetable-and grit-tempered pottery lacking its upper part was unearthed on the floor in the northeast corner.

Room 2 (R 2), is entered through Room 1 with both inner sides of the entrance projected so as to form doorjambs. At the top of the north side pillar, 1.7m in height, a fragmentary piece of wood is embedded in the wall and the bricks here form the beginning of an arch though they are layed perpendicular to the wall rather than at a slant as is the case in the usual vaulted ceiling. Though such a form of construction has not been found anywhere else in Akoris, this piece of wood may have been used for the support of a transverse vaulted ceiling above the door. The vaulted ceiling of Room 1 would end with this transverse "band", which in turn intersected the vault of Room 2 (Fig. 84).

The measurements of Room 2, the largest in the building, are 2.4m east-west × 2.6m north-south × 2.2m high. The east and the west walls are vertical to the height of 1.2m and the upper part has a vaulted structure whose height is the same as that of Room 1, 2.2m. Two small holes each formed by a broken pot were open at the top of the ceiling, possibly for lighting. Additionally, following the brick course pitch of the vaulted ceiling, there is a rhomboid opening, presumably a skylight, above the west wall. At the top of the opening there is a wooden lintel. The window raises obliquely and narrows toward its opening at the presumed pavement level of the North Gate frontage. There is an arched niche, 40 in width × 42 in height × 32cm in depth, in the north wall 1.1m from the floor, and in the center of the opposite south wall and 1.7m off the floor there is a small rectangular niche, 14 in width × 14 in height × 24cm in depth.

A large-sized jar was unearthed in the southeast corner and various kinds of pottery (Figs. 87～93), such as amphorae, bowls, cooking pots and so on were scattered in the southern part of the room (Pl. 47 lower), in addition to glass shards (see p. 241), an ushabti made of faience (see p. 232. Fig. 158 no. 1. Pl. 94 no. 15), a limestone club-like object (Fig. 142 no. 2. Pl. 76 no. 2), bronze coins (see p. 199) an amphora stopper, pottery lamps (see p. 214) and some beads (see p. 232) scattered about here and there on the floor. The effigies on the coins are the Roman emperors, Licinius and Arcadius.

Room 3 (R 3) is a narrow L-shaped space. It is enclosed by mud brick walls and there is no entrance of a common style. As the north part is open upwards and traces of toeholds are left on the

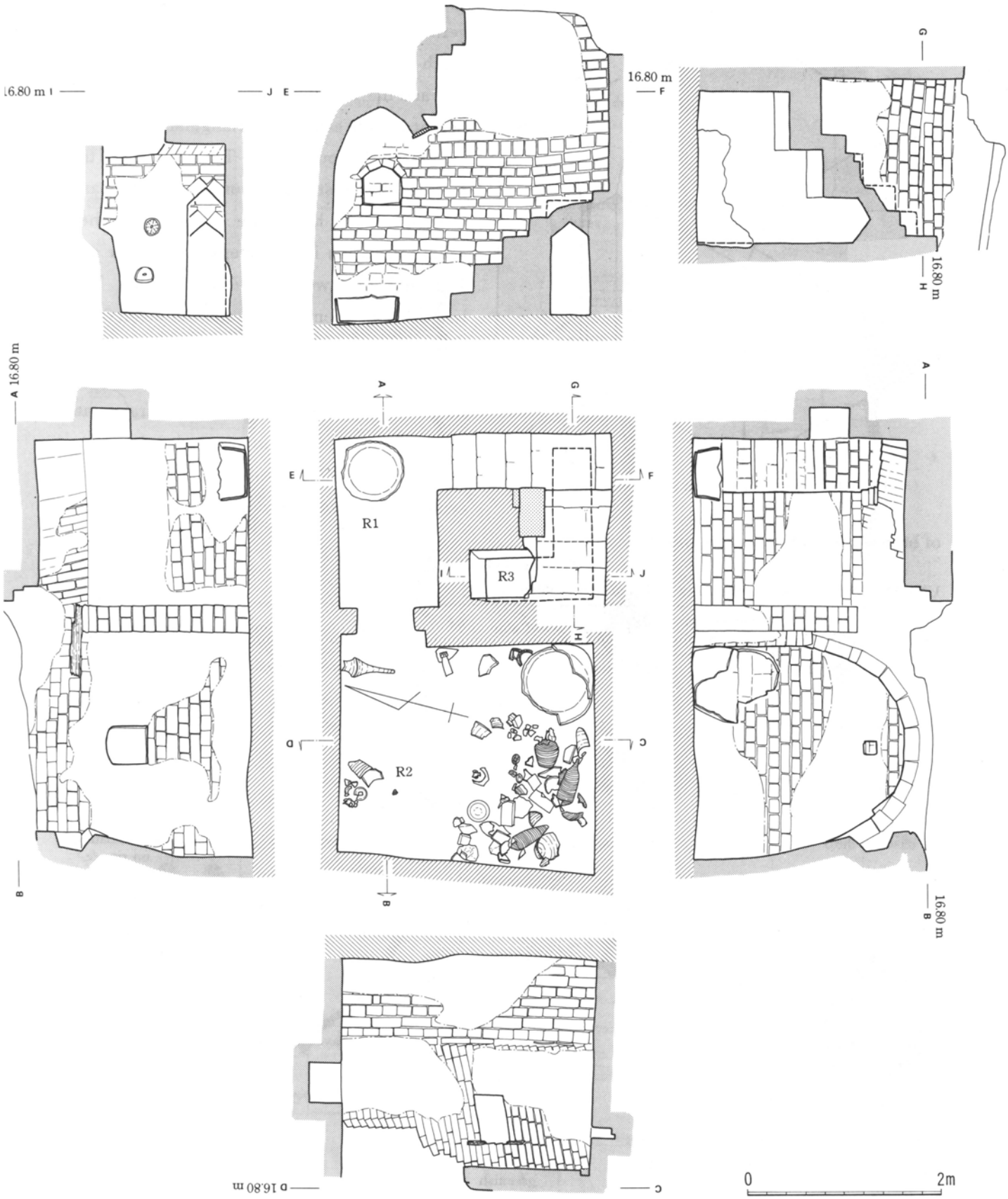


Fig. 83 Building 2

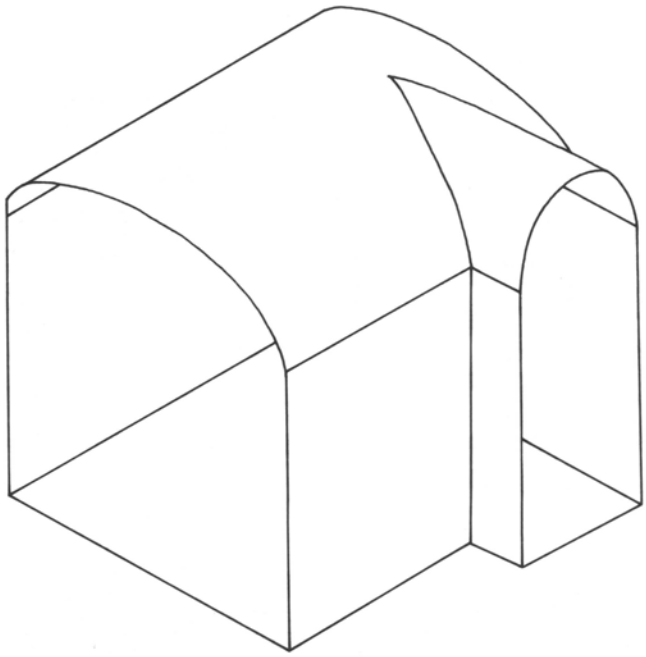


Fig. 84 Conjunction method of Rooms 1 and 2

walls there, it is apparent that there was a vertical entrance. A long space extending north-south measures 1.3 × 0.5 × 1.8m. The east and the west walls rise vertically to 1.6m in height and the ceiling is a triangular arch which extends to the south wall. The other leg of the L extending east-west is under the staircase. Consequently, here the triangular-arched ceiling descends in two steps, the higher one 1.3m and the lower one 0.9m in height. The length of the room is 1.1m and the width 0.4m. Judging from the layout of the room, this space supposedly was for special usage perhaps for religious prayer, or storage. A few fragments of pottery were found in accumulated soil.

Building 2 belongs to the 4th ~ 5th century A.D. according to the pottery style, date of bronze coins, glass vessels and mud brick size.

(KAWANISH, H.)

Tab. 16 POTTERY

UNEARTHED AREA : On the Floor of Room 1 in Building 2

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
85-1	amphora	7.8	rather sandy	dark yellowish brown	horizontal concave lines, paired handles	rubbed by wheel	black coating on rim & inner faces
85-2	ditto	6.4	ditto	ditto	horizontal concave lines	ditto	black painting on inner face
85-3	ditto	6.3	ditto	ditto	horizontal concave lines, paired handles	ditto	
85-4	ditto	6.6	ditto	ditto	horizontal concave lines	ditto	black coating on rim & inner faces
85-5	ditto	5.0	ditto	ditto	ditto	ditto	black painting on inner face
85-6	ditto	6.1	ditto	ditto	ditto	ditto	ditto
85-7	ditto	7.8	ditto	ditto	ditto	ditto	ditto
85-8	faience, vessel	10.0	minute	pale yellow	pale blue	ditto	
85-9	table amphora		ditto	pale yellowish brown	horizontal concave lines, paired handles	rubbed by wheel	
85-10	ditto	4.6	ditto	pale yellow	ditto	ditto	
85-11	ditto		ditto	ditto	paired handles	ditto	
85-12	ditto	6.0	ditto	pale greenish yellow	ditto	ditto	
85-13	ditto	3.3	ditto	pale yellow	ditto	ditto	

85-14	table amphora		minute	pale yellow	paired handles	rubbed by wheel
85-15	ditto	3.4	ditto	dark reddish brown	ditto	ditto
85-16	ditto		ditto	pale yellow	without decoration	ditto
85-17	ditto		ditto	ditto	ditto	ditto
85-18	ditto		ditto	pale greenish brown	ditto	ditto
85-19	ditto		ditto	reddish orange	horizontal concave lines	ditto

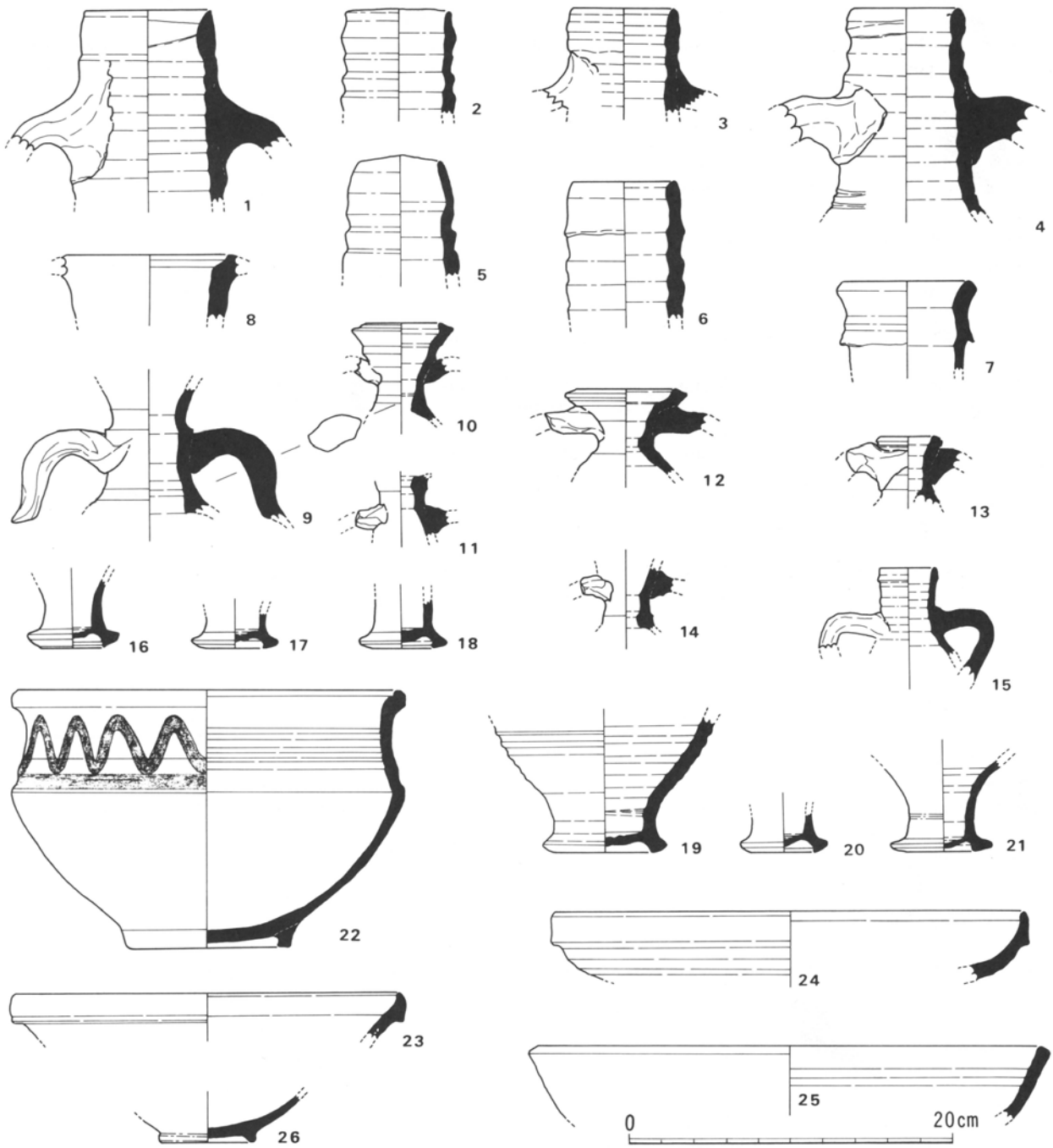


Fig. 85 Pottery found on the floor of Room 1 in Building 2

85-20	table amphora		minute	pale yellow	without decoration	rubbed by wheel	
85-21	ditto		ditto	ditto	ditto	ditto	
85-22 (81-5)	bowl	23.4 × 16.0 vol. : 3250cc. (without rim)	minute	reddish brown	reddish brown slip, lustrous, black painting		
85-23	ditto	23.3	ditto	ditto	reddish brown slip on inner face	rubbed by wheel	soot-stained on outer face
85-24	ditto	28.8	ditto	ditto	reddish slip on whole face	ditto	
85-25	ditto	30.8	ditto	ditto	reddish slip left on top of rim	ditto	
85-26	ditto		rather sandy	dark reddish brown	reddish slip on whole face	rubbed by wheel	
86-1	cooking pot	12.7	minute	greyish brown	horizontal grooved lines	ditto	soot-stained on outer face
86-2	ditto	14.6	rather sandy	reddish brown	ditto	ditto	ditto
86-3	ditto	14.8	minute	pale brown	without decoration	ditto	ditto
86-4	ditto	18.7	ditto	brown	horizontal concave lines	ditto	
86-5	ditto	23.7	ditto	ditto	ditto	ditto	
86-6	ditto	20.3	ditto	dark brown	ditto	ditto	soot-stained on outer face
86-7	ditto	17.3	ditto	reddish brown	ditto	ditto	
86-8	ditto	21.1	ditto	dark reddish brown	ditto	ditto	soot-stained on outer face
86-9	ditto	17.6	ditto	light brown	ditto	ditto	ditto
86-10	ditto	16.3	ditto	pale reddish brown	ditto	ditto	ditto
86-11	ditto	17.7	ditto	light reddish brown	ditto	ditto	ditto
86-12	ditto	15.8	ditto	ditto	ditto	ditto	soot-stained on outer & inner faces
86-13	ditto	15.8	ditto	pale brown	ditto	ditto	soot-stained on outer face
86-14	ditto	16.6	ditto	ditto	ditto	ditto	ditto
86-15	ditto		ditto	ditto	horizontal concave & grooved lines	ditto	ditto
86-16 (81-7)	ditto	13.8	ditto	dark reddish brown	continuous finger presses on rim, horizontal concave lines	ditto	ditto
86-17	lid	22.2 × 9.2	rather sandy	reddish brown	without decoration	middle part of inner face : scraped by wheel, other part : rubbed by wheel	soot-stained on outer face
86-18	ditto		rather sandy, vegetable-tempered	ditto	ditto		worn on outer face

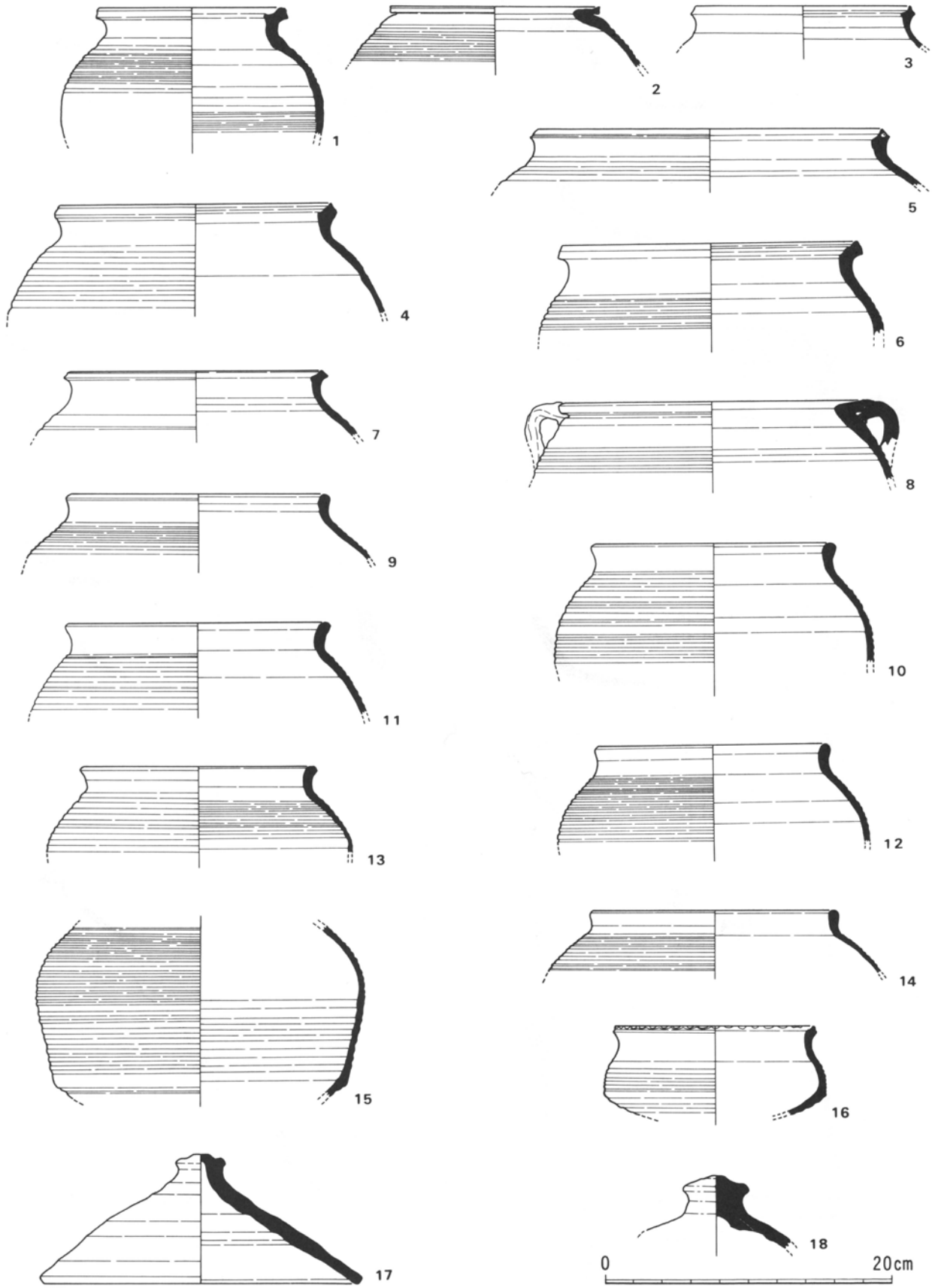


Fig. 86 Pottery found on the floor of Room 1 in Building 2

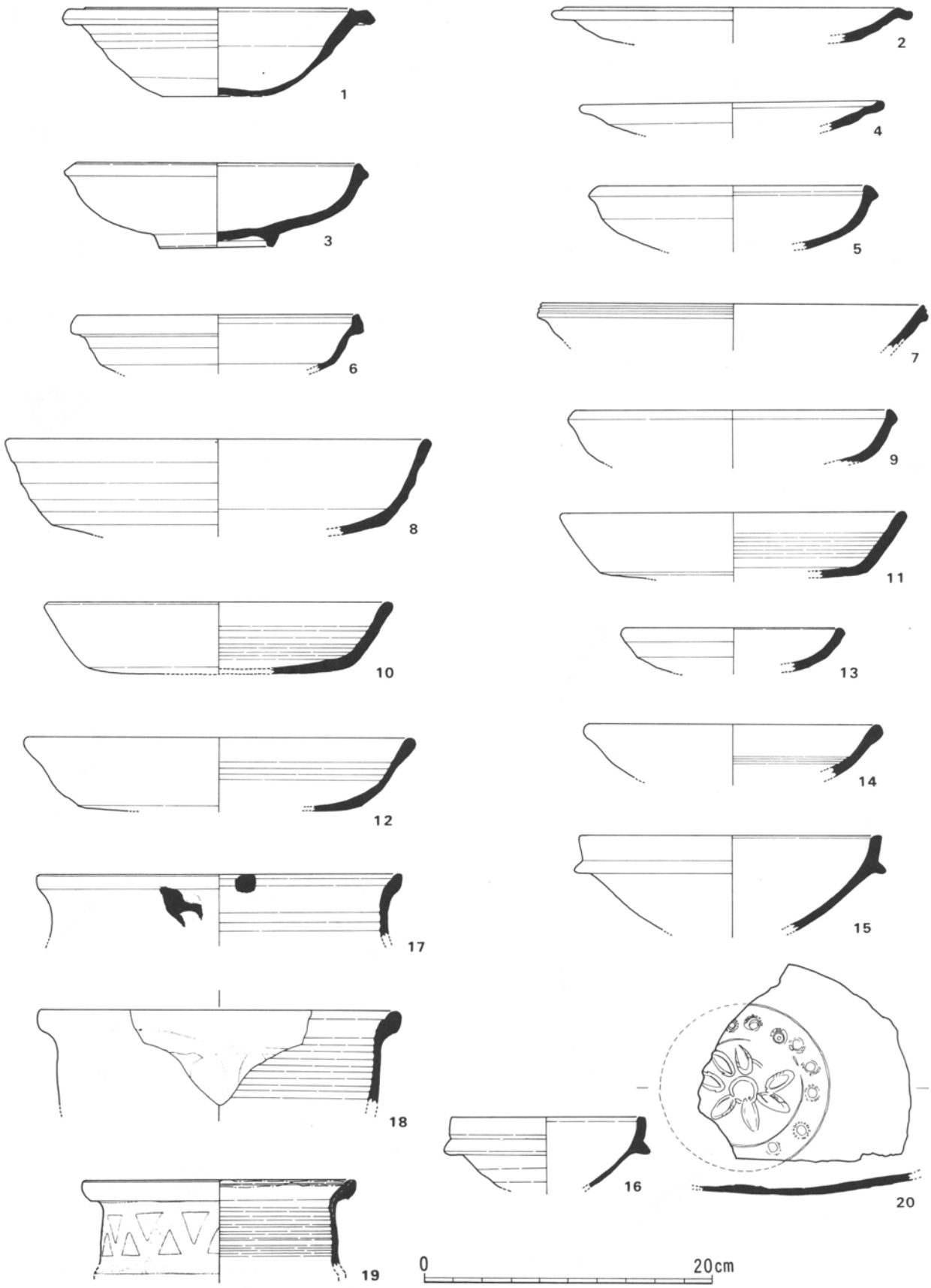


Fig. 87 Pottery found on the floor of Room 2 in Building 2

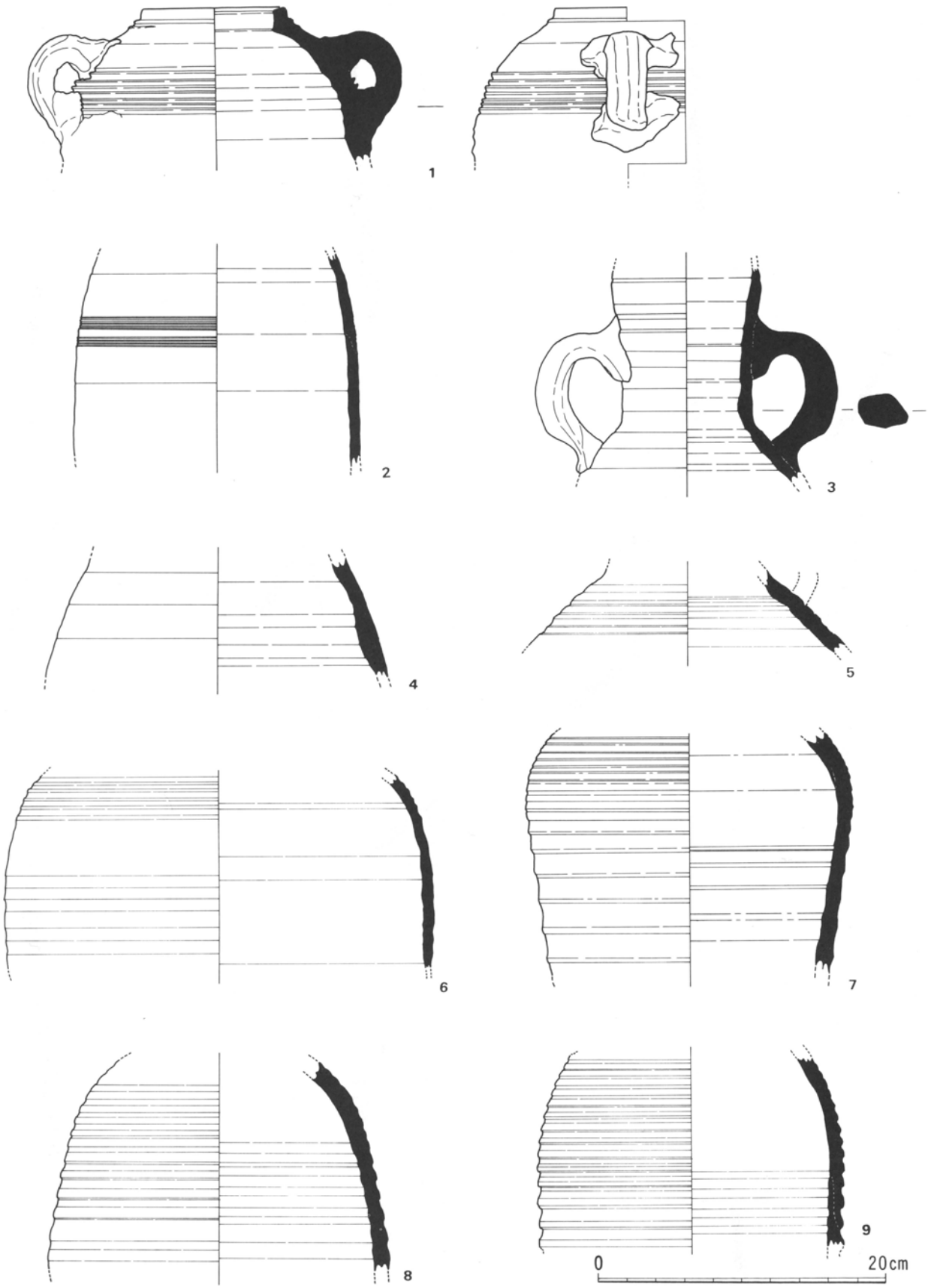


Fig. 88 Pottery found on the floor of Room 2 in Building 2

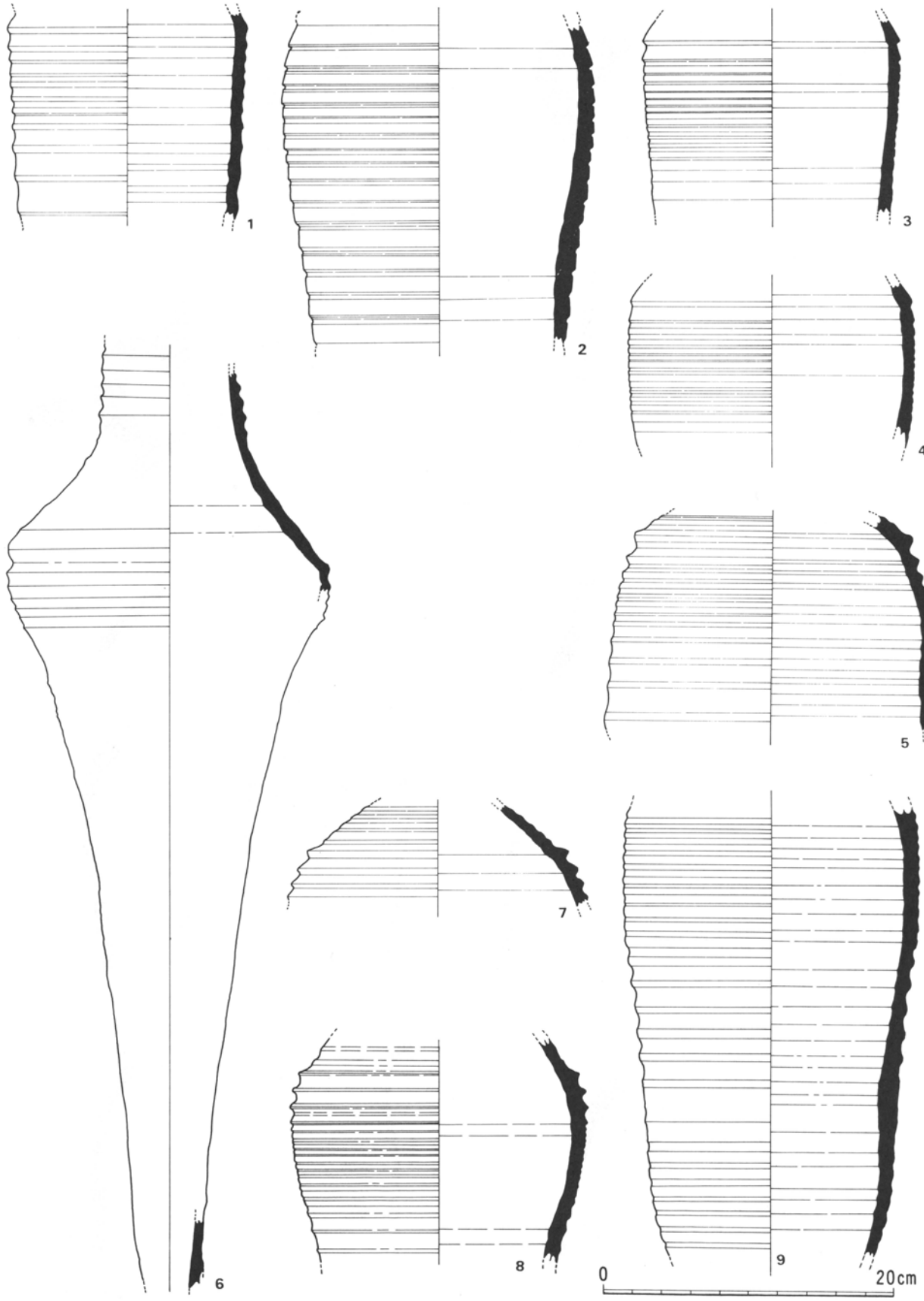


Fig. 89 Pottery found on the floor of Room 2 in Building 2

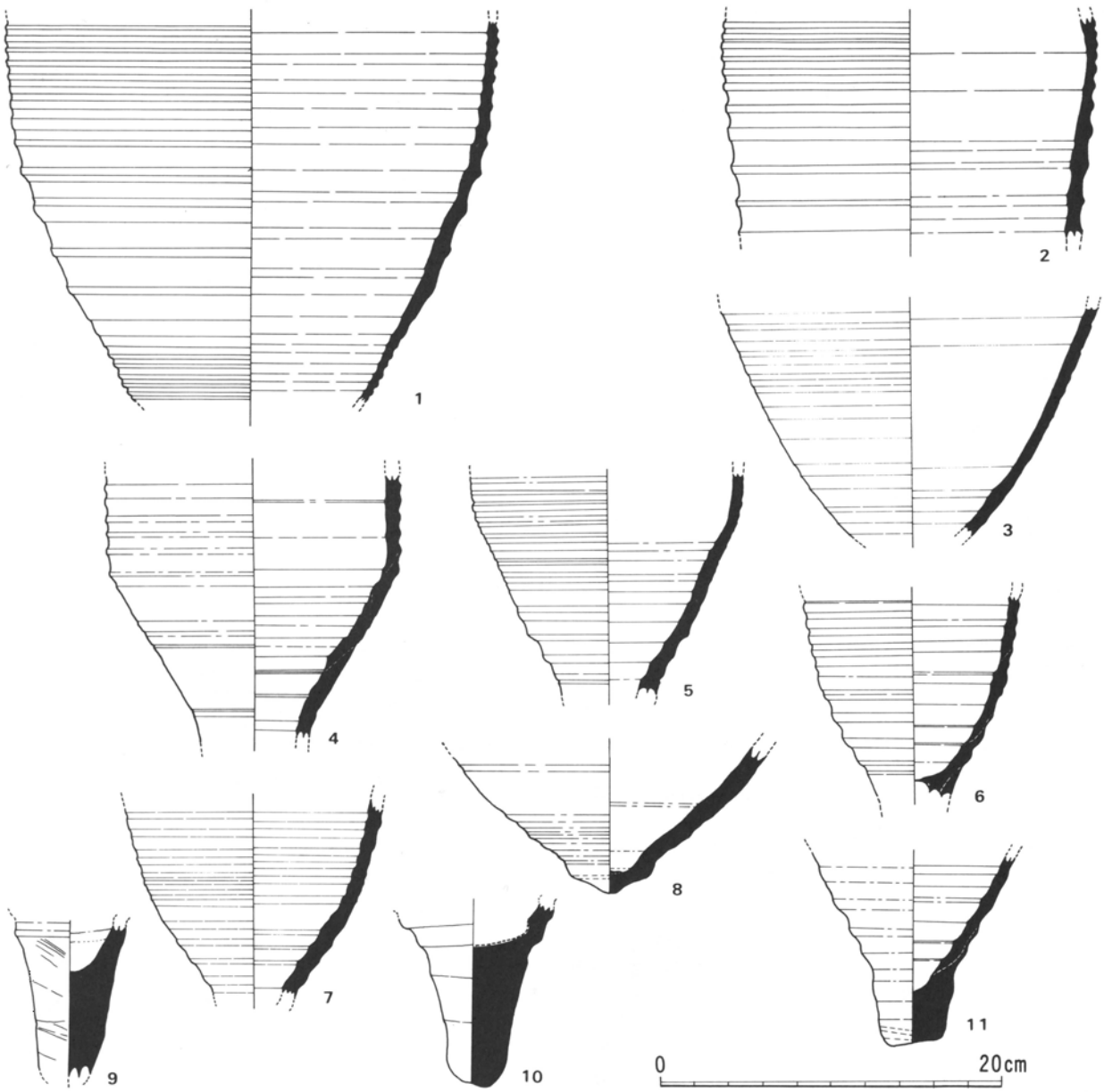


Fig. 90 Pottery found on the floor of Room 2 in Building 2

Tab. 17 POTTERY

UNEARTHED AREA : On the Floor of Room 2 in Building 2

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
87-1 (81-1)	plate	20.5 × 6.2	rather sandy	light reddish brown	lustrous, slip(?)	lower part of outer face : scraped by wheel, other parts : undetermined due to exfoliation	
87-2	ditto	28.9	minute	reddish brown	red slip on inner face	rubbed by wheel on outer face	
87-3 (81-4)	ditto	21.0	ditto	ditto	red, lustrous slip on inner face	rubbed by wheel	

87-4	plate	21.0	rather sandy	reddish brown		outer face : scraped by wheel, inner face : rubbed by wheel	soot-stained on inner face
87-5	ditto	18.5	ditto	ditto	red slip on inner face & rim	inner face & rim : rubbed by wheel, other part : scraped by wheel	
87-6	ditto	19.3	ditto	ditto	reddish brown slip on outer face of rim	lower part of outer wall : scraped by wheel	
87-7	ditto	26.3	minute	orange	slip on whole face, horizontal grooved lines on the rim	rubbed by wheel	
87-8	ditto	29.0	ditto	dark reddish brown	without decoration	ditto	soot-stained on whole face
87-9	ditto	21.6	rather sandy	reddish brown	slip(?)	lower part of outer face : scraped by wheel, other part : rubbed by wheel	
87-10	ditto	23.4	minute	reddish brown	red slip	lustrous on inner face, rubbed by wheel	
87-11 (81-3)	ditto	23.6	rather sandy	ditto	red slip on inner face to rim	outer face : rubbed by wheel	
87-12	ditto	26.5	minute	dark brown	red slip on inner face	lower part of outer face : scraped by wheel, other part : rubbed by wheel	soot-stained on outer face & rim
87-13	ditto	14.8	ditto	reddish brown	red slip on inner face	outer face : rubbed by wheel	
87-14	ditto	20.0	rather sandy	dark brown	ditto	rubbed by wheel	
87-15	bowl	20.7	minute	reddish brown	red slip on inner face & rim	outer face except rim : scraped by wheel	

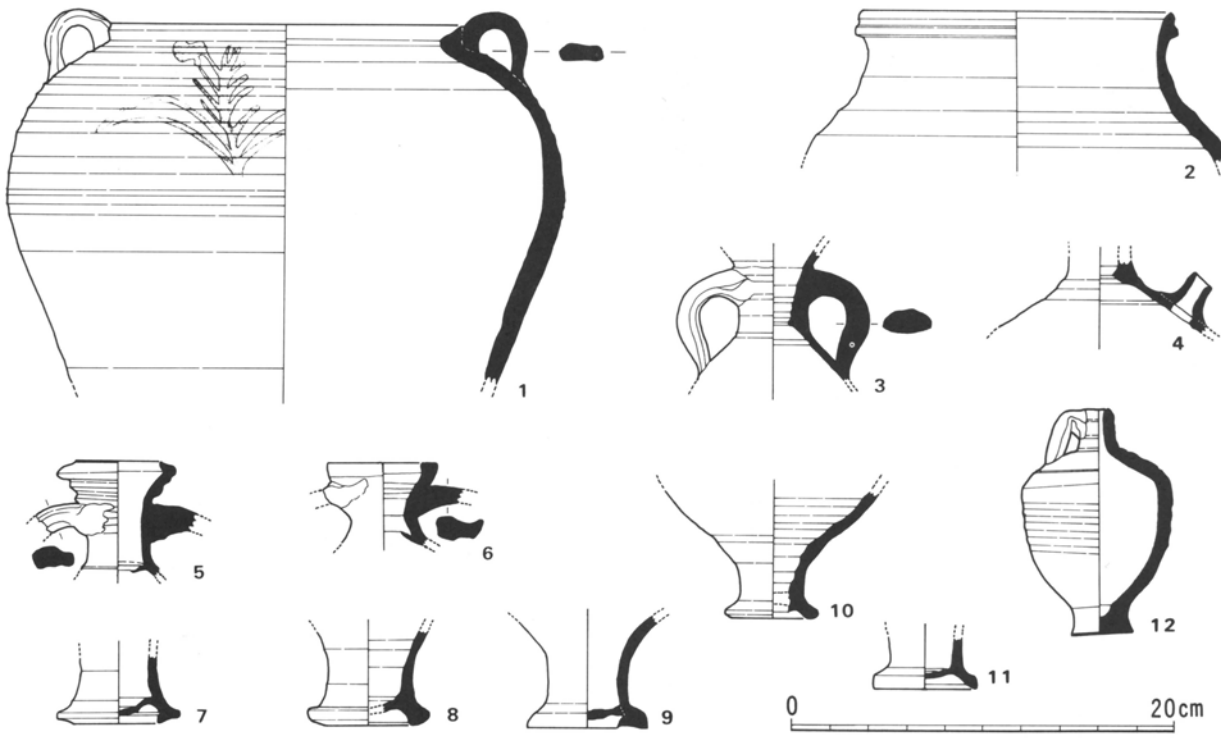


Fig. 91 Pottery found on the floor of Room 2 in Building 2

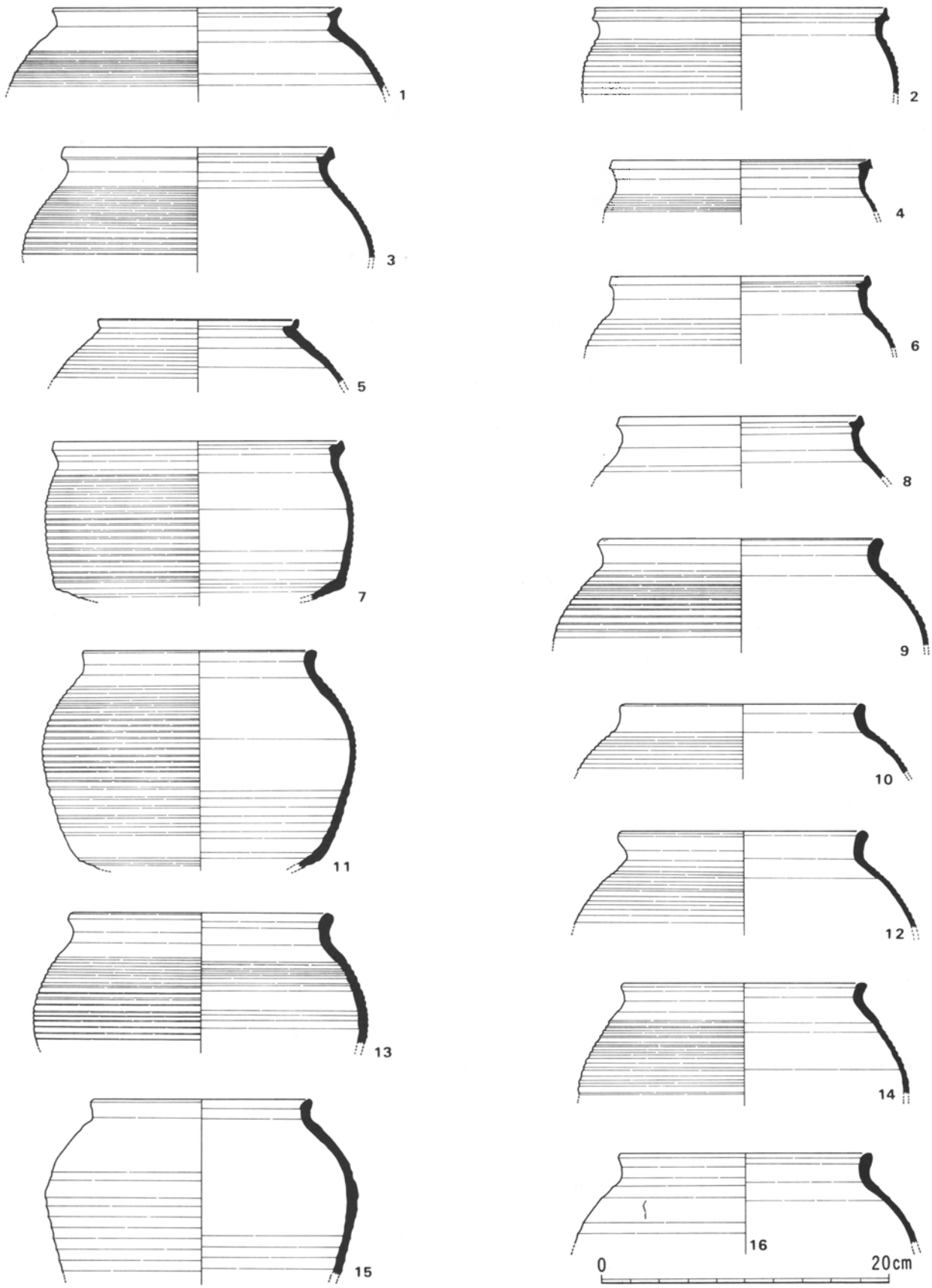


Fig. 92 Pottery found on the floor of Room 2 in Building 2

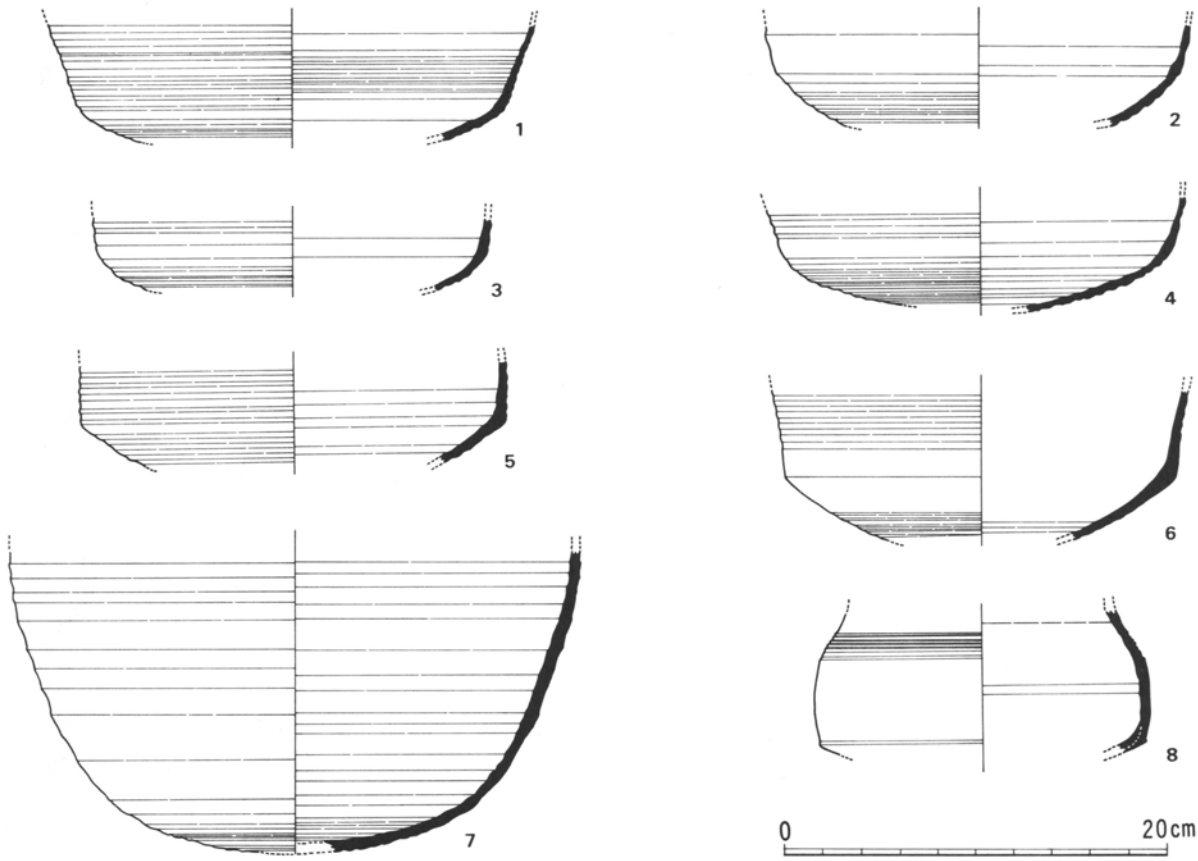


Fig. 93 Pottery found on the floor of Room 2 in Building 2

87-16 (81-2)	bowl	13.2	rather sandy	reddish brown	red slip, lustrous on inner face	lower part of outer face : scraped & rubbed by wheel, other parts : rubbed by wheel	
87-17	ditto	24.8	minute	ditto	some design with black & white on upper part of outer face & inner part of rim	rubbed by wheel	
87-18	ditto	24.8	ditto	ditto	red slip, some designs in dark grey	rubbed by wheel	
87-19	ditto	18.5	rather sandy	ditto	red slip, zigzag pattern in black	ditto	
87-20	plate			light reddish brown	stamped rosette design surrounded by concentric circles with dot-fringes	scraped by wheel on outer face	soot-stained on outer face
88-1	amphora	9.8	rather sandy, white grit	pale yellowish orange	horizontal grooved lines, pair of looped handles	rubbed by wheel	
88-2	ditto		minute	pale brown	two horizontal bands finely incised	ditto	
88-3	ditto		ditto	ditto	horizontal concave lines	ditto	soot-stained on inner face

88-5	amphora		minute	pale brown	horizontal concave lines	rubbed by wheel	
88-6	ditto		ditto	reddish brown	ditto	ditto	
88-7	ditto		ditto	brown	ditto	ditto	black painting on inner face
88-8	ditto		ditto	pale reddish brown	ditto	ditto	blackish inner face
88-9	ditto		ditto	brown	ditto	ditto	
89-1	ditto		minute	pale brown	horizontal concave lines	rubbed by wheel	
89-2	ditto		ditto	brown	horizontal grooved lines	ditto	
89-3	ditto		ditto	pale brown	horizontal concave lines	ditto	
89-4	ditto		ditto	pale reddish	ditto	ditto	
89-5	ditto		ditto	pale brown	ditto	ditto	blackish inner face
89-6	ditto		ditto	ditto	ditto	ditto	
89-7	ditto		ditto	ditto	ditto	ditto	
89-8	ditto		ditto	reddish brown	ditto	ditto	soot-stained on inner face
89-9 (82-5)	ditto		ditto	pale reddish brown	ditto	ditto	black coating on inner face
90-1	ditto		minute	ditto	horizontal concave lines	rubbed by wheel	
90-2	ditto		ditto	pale brown	ditto	ditto	blackish inner face
90-3	ditto		ditto	light reddish brown	ditto	ditto	black coating on inner face
90-4	ditto		ditto	brown	ditto	ditto	blackish inner face
90-5	ditto		ditto	ditto	ditto	ditto	black coating on inner face
90-6	ditto		ditto	ditto	ditto	rubbed by wheel, base part separately jointed	blackish inner face
90-7	ditto		ditto	ditto	ditto	rubbed by wheel	reused as lamp
90-8	ditto		rather sandy, vegetable-tempered	reddish brown	ditto	ditto	
90-9	ditto		minute	brown	without decoration	rubbed by wheel & finger	black coating on inner face
90-10	ditto		ditto	ditto	spiral concave lines	rubbed by wheel	ditto
90-11	ditto		ditto	ditto	horizontal concave lines	rubbed by wheel, base part separately jointed	ditto
(82-4)	ditto	27.5	rather sandy, white grit	reddish brown	horizontal grooved lines	rubbed by wheel	ditto
91-1	jar	18.2	minute	pale yellowish brown	horizontal concave lines, dark brown floral painting	rubbed by wheel on inner face, rubbed by wheel then finger on outer face	
91-2	ditto	16.2	rather sandy	pale	horizontal concave	rubbed by wheel	

				reddish brown	lines		
91-3	table amphora		minute	pale greenish yellow	paired handles	rubbed by wheel	
91-4	jug		minute	pale yellowish brown	with spout	rubbed by wheel	
91-5	table amphora	4.4	minute	whitish yellow	paired handles	rubbed by wheel	
91-6	ditto	5.7	ditto	pale yellowish brown	paired handles	ditto	
91-7	ditto		ditto	yellowish white	without decoration	ditto	
91-8	ditto		ditto	ditto	ditto	ditto	
91-9	ditto		ditto	ditto	ditto	ditto	
91-10	ditto		ditto	pale yellowish brown	ditto	inner face : rubbed by wheel, outer face : rubbed by wheel & finger	
91-11	ditto		ditto	yellowish white	ditto	ditto	
91-12 (81-9)	jug	1.3 × 12.0	minute	light brown	horizontal concave lines	rubbed by wheel, string-cut on base	
(82-7)	base	12.0	ditto	whitish yellow	oblique lines & circles in reddish brown painting, white slip	rubbed by wheel	
92-1	cooking pot	19.7	minute	pale reddish brown	horizontal grooved lines densely incised	rubbed by wheel	soot-stained on outer face
92-2	ditto	20.1	ditto	dark brown	horizontal concave lines	ditto	
92-3	ditto	18.4	ditto	pale reddish brown	horizontal concave lines densely incised	ditto	soot-stained on outer & inner faces
92-4	ditto	17.8	ditto	ditto	horizontal concave lines	ditto	
92-5	ditto	13.6	ditto	light reddish brown	ditto	ditto	
92-6	ditto	17.6	ditto	dark brown	ditto	ditto	
92-7	ditto	19.7	ditto	pale reddish brown	ditto	ditto	soot-stained on outer face
92-8	ditto	16.6	ditto	ditto	ditto	ditto	ditto
92-9	ditto	19.0	ditto	ditto	ditto	ditto	ditto
92-10	ditto	16.3	ditto	ditto	ditto	ditto	
92-11	ditto	15.7	ditto	ditto	ditto	ditto	soot-stained on outer & inner faces
92-12	ditto	16.7	ditto	ditto	ditto	ditto	ditto
92-13	ditto	17.4	ditto	ditto	ditto	ditto	ditto
92-14	ditto	16.4	ditto	ditto	horizontal concave lines densely incised	ditto	ditto
92-15	ditto	14.8	ditto	dark orange	horizontal concave lines	ditto	soot-stained on outer face
92-16	ditto	17.2	ditto	pale greyish brown	shallow concave lines	ditto	ditto

93-1	cooking pot		minute	pale reddish brown	horizontal concave lines	rubbed by wheel	soot-stained on outer face
93-2	ditto		ditto	ditto	ditto	ditto	ditto
93-3	ditto		ditto	ditto	ditto	ditto	ditto
93-4	ditto		ditto	ditto	ditto	ditto	soot-stained
93-5	ditto		ditto	ditto	ditto	ditto	soot-stained on outer face
93-6	ditto		ditto	dark brown	ditto	ditto	ditto
93-7	ditto		ditto	dark reddish brown	horizontal shallow concave lines	ditto	ditto
93-8	ditto		ditto	ditto	horizontal concave lines, densely incised	base : scraped by wheel, other parts : rubbed by wheel	soot-stained on base

LOWER LAYERS (Fig. 76. Pl. 46 lower right) : The southern area neighboring Buildings 1 and 2 was investigated 8.0m east-west × 2.8 m north-south. As a result three circular structures, one rectangular structure and parts of walls and floors were confirmed.

The three circular structures were formed by several courses of mud brick. The one in the best condition, measures 1.4～1.5m in outer diameter and 1.0m in present height. And the mud brick size is 36 × 18 × 9cm. A partially destroyed rectangular structure measures 1.1m in length, 0.7m in present width and 0.9m in present height and is limited by a row of mud brick whose dimension is 40 × 20 × 10cm. These structures all date from the Late Dynastic or Ptolemaic Period.

A wall 1.0m in thickness extending north-south in parallel with the Sacred Road was detected. The north part had been destroyed by the construction of Building 2. The mud brick size here is 40 × 20 × 12cm. Another mud brick structure composed of one layer of mud brick 40 × 20 × 11cm was also unearthed and both date from the Ptolemaic to the early Roman Period. The remnants of four floors all of different height were also found, however, none of these left evidence for dating. A bowl, which seems to date from the Late Dynastic Period, was unearthed from the accumulated soil in this area (Pl. 81 no. 6).

The frontage of the North Gate possessed stone pavement at the time of Lesquier's excavation in 1908, but unfortunately, it is now, for the most part missing. In our area of investigation here, measuring 5.8m east-west × 3.3m north-south and 0.9m in depth, two layers of mud brick construction could be differentiated. The upper layer consists of four low walls extending north-south and joined at the north end by a wall in an east-west direction. With the exception of the west wall, all the walls are penetrated in the southern part by a narrow tunnel of a 30cm width and 20cm height. Each of the four walls has a

Tab. 18 POTTERY

UNEARTHED AREA : Lower Layers in the Area Adjoining the North Gate

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
75-8 (84-4)	jar	10.0 × 32.4 vol. : 7520cc.	rather sandy	dark brown	folded rim	lower part of outer face : scraped by wheel, other parts : rubbed by wheel	
(81-6)	bowl	37.4 × 22.2	minute, white grit	brown	without decoration	rubbed by wheel	

different thickness varying from 1.4m to 0.6m. The present height is 0.5m. This mud brick structure was under the stone pavement and continues under the North Gate in the same direction as the Sacred Road. The mud brick size is 35 × 17 × 12cm, which dates it from the 1st century A. D., but its purpose is for bedding ? The lower layer was detected adjacent to the north side of the upper layer and consists of two mud brick walls (W 1 and 2). They are on a different axis from the upper layer walls, and the mud brick in these walls is 34 × 17 × 8cm and 40 × 20 × 8cm in Wall 2. Two other walls (W 3 and 4) of the Roman and Coptic Periods respectively were also uncovered here, but they do not meet at a right angle with the former.

In the western area around the Gate, a wall (W 5) made of brick measuring 38 × 18 × 8cm, whose axis is in common with Walls 1 and 2, extends to the east under the stone neighboring the gate pier and pedestal. At a 3.5m distance westward from the pier, a north-south Y-shaped wall (W 6) consisting of two layers, remains. The brick size in the upper layer is 29 × 14 × 10cm, and in the lower layer is 38 × 18 × 12cm. Under the lower layer, a complete jar dating from the Late Dynastic Period was discovered (Fig. 75 no. 8. Pl. 84 no. 4). (KAWANISH, H. and S. TSUJIMURA)

4 CENTRAL TEMPLE AREA

SERAPEUM (Figs. 94～96. Pl. 48) : An ashlar temple is situated in the center of Akoris. This is given the name of Serapeum, because two stelae devoted to the god Serapis lie on their sides in the vicinity of the southeast corner. However, strictly speaking, this name may be a misnomer for these stelae are not in their original place. While the south half of this temple has been completely destroyed, the lower part of the rest, that is the portico, is almost in its original condition. The dimensions of this remaining part are 6.8m east-west × 6.7m north-south. The dovetail cramp technique is used to join the limestone ashlar which is then mortared together.

With the exception of a column base at the northwest corner, seven of the eight pillar bases are left on the periphery, five of which are for columns and two for antae. The north periphery possesses three column bases and the outline of the fourth, together creating three intervals between them. The central interval measures 1.7m and both side intervals 0.9m from end to end. The central interval is wider than the others as it served as the entrance to the temple. The plinth of each column base measures 79cm square and 28cm in height, while the upper part, of torus-scotia-torus design, is 18cm in height and 70cm in diameter at the top. The center to center interval between the columns is 2.5 D (1.7m), 3.5 D (2.5m), 2.5 D. respectively. Including the corner pillars, the east and the west peripheries have three pillars, the middle ones having bases which are 8cm shorter in height while the other measurements remain the same. The two intervals between these columns measure 1.3m making the center to center interval here 3 D (2.0m). The two southern bases are for antae, the lower part of which is 82cm east-west × 76cm north-south × 35cm in height and the upper part is 72cm east-west × 65cm north-south × 22cm in height. Prolonged necks of different length extend from these antae and were used in connecting the antae to the ashlar temple walls which extended southward but are now missing. The portico was filled

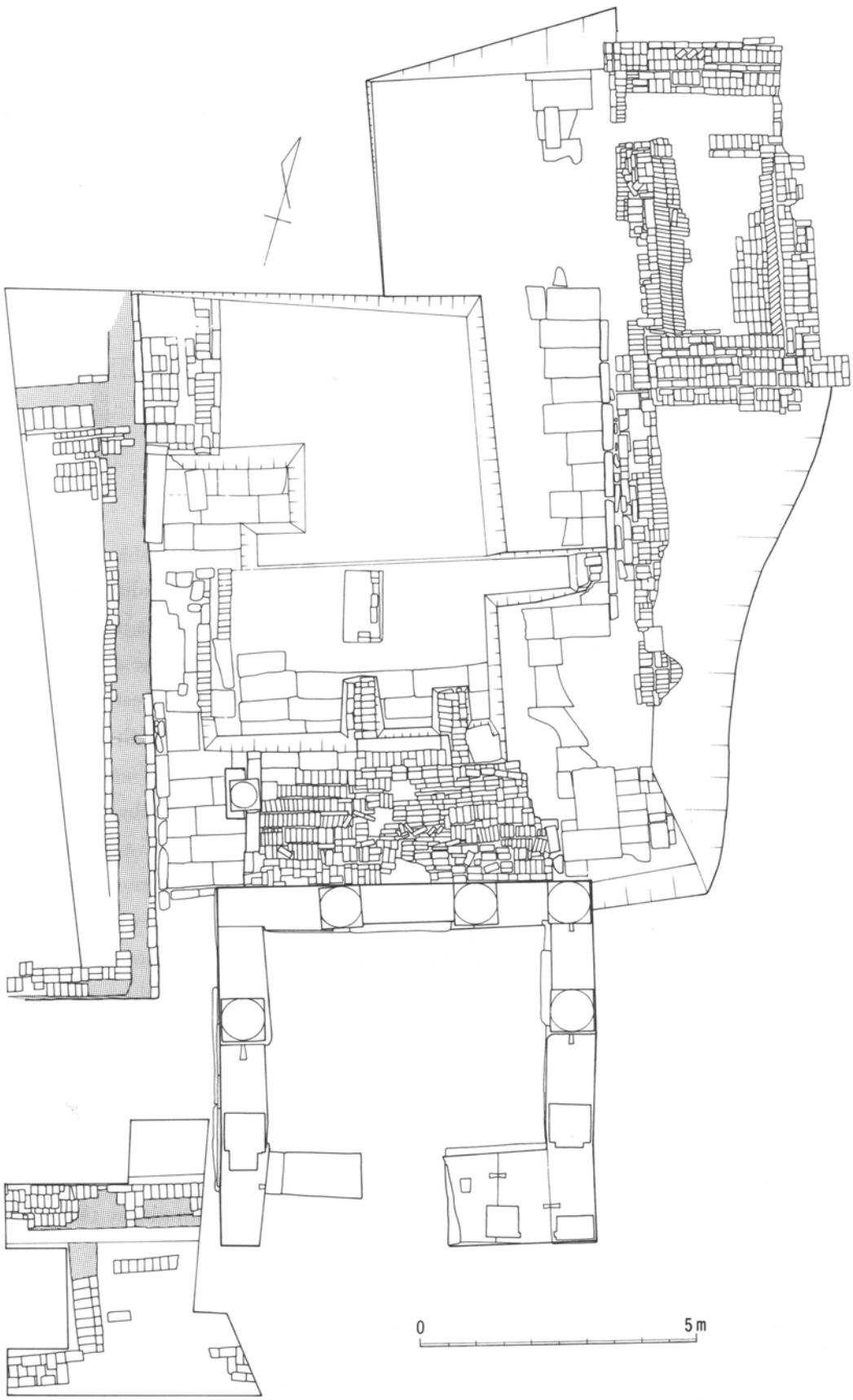


Fig. 94 Central Temple Area

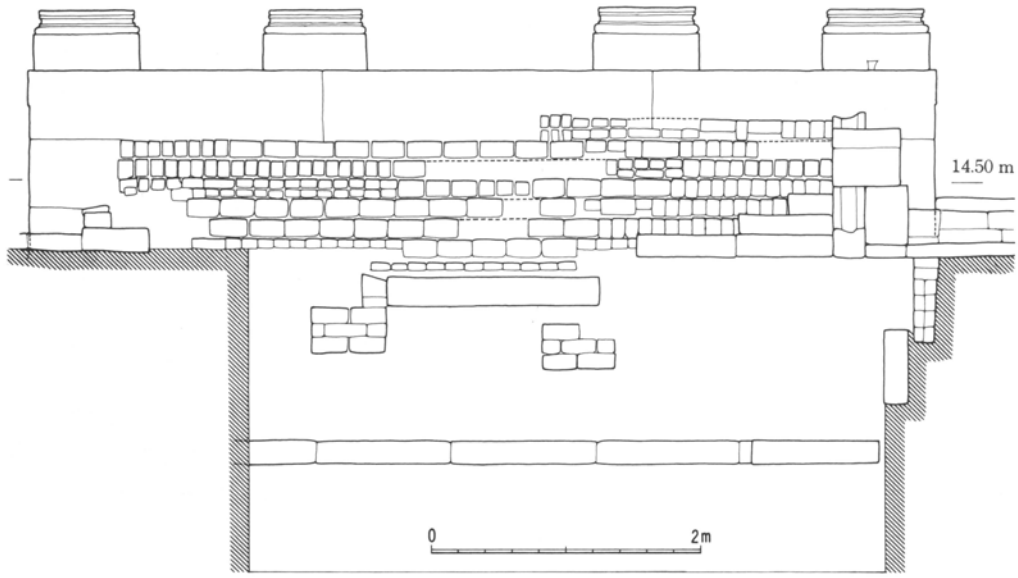


Fig. 95 Front of Serapeum, including the lower layers

with rubble and paved with stones which are now missing.

At the southeast corner there are two rectangular stone blocks with longitudinal projections. One of the two, which is situated just at the corner, has a continuous moulding on the uppermost part of the east, south and part of the west sides. Its style and height are the same as the antae's. It would be thought that if the sanctuary were at the back of the portico, the south and west moulding would be unnecessary. In any case, these two ashlar stones are joined to the foundation with cement and so are *in situ*. Noticeable, is a long narrow worn area left between the latter ashlar and that edge of the foundation stone blocks. It extends from the foot of the western block to the western end of the remaining foundation stones. These facts indicate that this worn section formed a part of the sanctuary floor, and that there must have been an opening of undetermined use at the northeast corner of the sanctuary where the block with the moulding is located. Conspicuous wear is also observed on the intervals between the column bases and on the north edge of the above-mentioned foundation blocks where the two stones are set. The unworn section on these two foundation blocks measures 1.1m in width, and so if all this unworn section fell under the dividing wall between the portico and the sanctuary, it would be too thick. Accordingly the unworn section is thought to have consisted of the dividing wall and some construction such as a stand for a statue or a torch set at the side of the sanctuary entrance.

Returning to the two stone blocks, on the both upper faces, rough chisel marks are left and the wider western one is 40cm in width measuring from the south edge. This kind of chisel mark is made when joining two stones together tightly with cement. This, then, would indicate that perhaps there was a 40cm thick wall covering this point of the block.

On the north side of the building, a stairway consisting of seven steps is attached. The width is 5.3m, the length 2.6m and the present height 1.1m. Each step was made of mud brick covered with rectangular limestone blocks which for the most part are missing. The mud brick size is $24 \times 12 \times 8$cm which belongs to the 7th century A.D., so shows the reconstruction of the steps. Though the east side has been removed and the top triangular stones lie on the northern cliff by *sebakh* some 60m from the

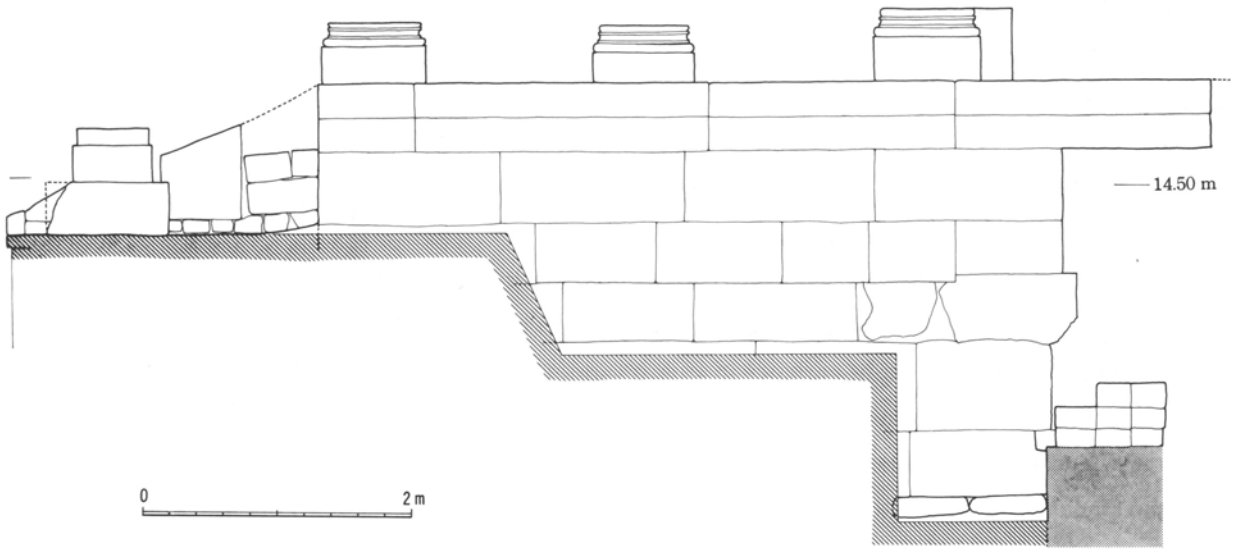


Fig. 96 West side of Serapeum

temple formed, both sides of the stairs were at one time bounded by stone blocks which descended at the same angle as the steps. As seen from the remaining stones, the top surface with wear had a rib-trough-rib moulding. The west side of the moulding was partially cut out in later remodeling so as to set a small column, the base of which remains in position.

SACRED ROAD : The Sacred Road extends straight to the north, and although most is now missing, supposedly formed the central road in the city of Akoris (Fig. 298. Pl. 59). In our excavation of 15m north-south × 13m east-west, the Sacred Road was found to measure 8.0m in width. Paving stones which still remain here and there covered it in the past, and both sides of the road were bounded by curbstones, as seen by the remnant on the east side. On the west side all the curbstones have been removed but apparently efforts at repairs were carried out by the use of diverted stones such as pillars.

Mud brick buildings with facing stones were uncovered immediately behind the curbstones on each side. At least some of these buildings have underground rooms with vaulted ceilings and windows opening on the Sacred Road. They date from the 6th~7th century A. D.

The area in front of the stairway leading up to the temple was excavated in a rectangle 5.5m east-west × 8.0m north-south and to a depth of 2.3m from the remaining stone pavement and various vestiges were revealed (Pl. 49). Two mud brick walls extending north-south were detected in front of the stairway at a depth of 0.6m. The walls continue under the stairway in the south and end approximately 1.0m north. At the end of the west wall, there is a space of some 0.5m and then a stone cornice laid in the same direction. As mud bricks were placed on the top surface, apparently this was part of a wall, however, it is undetermined if or how it was related to the west wall.

Below the lowest step of the stairs and under 1.4m of layered accumulated soil, a stone paving without sand bedding was unearthed. The west border of this lower paving ends in a straight line, while the east part of the pavement could not be determined due to the presence of the upper pavement. A wall which consists of mud bricks and two diverted stone blocks, borders the west side of the lower

paving, however, as the lowest part of the wall is somewhat higher than the top surface of the paving, the wall obviously postdates it. Behind this wall, another, parallel wall made of mud brick extends under the upper pavement, and because part of the top is covered with the limestone sand and gravel used for the pavement bedding, this wall predates it. As the mud brick in this wall is 31 × 15 × 12cm from the 3rd～4th century A. D. and 26 × 12 × 10cm from the 6th century, and as repair indications were not found, the two kinds of bricks were used together.

In the northwest part of the excavated area a mud brick wall faced with slab stones extends north-south. This wall may be linked to the preceding southern one, but due to an unexcavated part beneath the later pavement and to a slight variance in axis, it cannot be definitely established. Thirty centimeters behind this wall and at a higher level, another mud brick wall faced with slab stones also extends north-south on a parallel axis. The former wall is immediately below the limestone sand bedding for the upper pavement, while the latter wall is separated from that paving and sand. This wall apparently rose to a greater height, and if one may judge by the brick and stone walls remaining on the same axis, it would continue on to at least the temple building.

Obviously the lower wall was constructed before the upper pavement, and there is a possibility that the gap separating the higher western wall from the pavement had actually been occupied by curbing as seen on the eastern side of the road. However, as the stone, which has a finished face, goes to at least a depth of 0.7m, its precise function cannot be determined until further investigation is made.

In the northern part of this trench some amphorae, cooking pots, etc. (Figs. 97 and 98) and a pottery lamp (Fig. 146 no. 10. Pl. 86 no. 6) were unearthed in a concentrated area. This level is equal to the lower stone pavement and the features of the pottery show it to be from the 4rd century A. D. Thus the upper pavement is later than that period.

A narrow trench was dug adjoining the west side of the ashlar temple to confirm the existence of its foundation. As the result, it was clarified that the side wall of the building consisted of six courses of stone blocks set on the stone bedding. The upper half of the top or sixth course projects slightly, to form a cap. The third course also is projected. While the fourth to sixth courses are carefully hewn, the first to third courses which project equally are rough in treatment, and therefore formed the underground foundation of the building. The level of the fourth course is approximately equals to the upper pavement of the Sacred Road.

A mud brick wall extending east-west goes through the southern part of the foundation at the first and second course level. It is apparent that this wall dates to before the temple construction and was reused as a part of the foundation at that time. The mud brick size is 28 × 12 × 8cm in the upper courses and 37 × 18 × 10 cm in the lower courses of the wall. According to our mud brick chronology in Akoris (see pp. 265 ff), as these sizes are not typical, we are compelled to date this wall from the Third

Tab. 19 POTTERY

UNEARTHED AREA : Central Temple Area

Fig. no. (Pl. no.)	Layer	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
97-1	under the paving stone in front of Serapeum	amphora	11.2	minute	reddish brown	horizontal concave lines	rubbed by wheel	black coating on inner face & rim

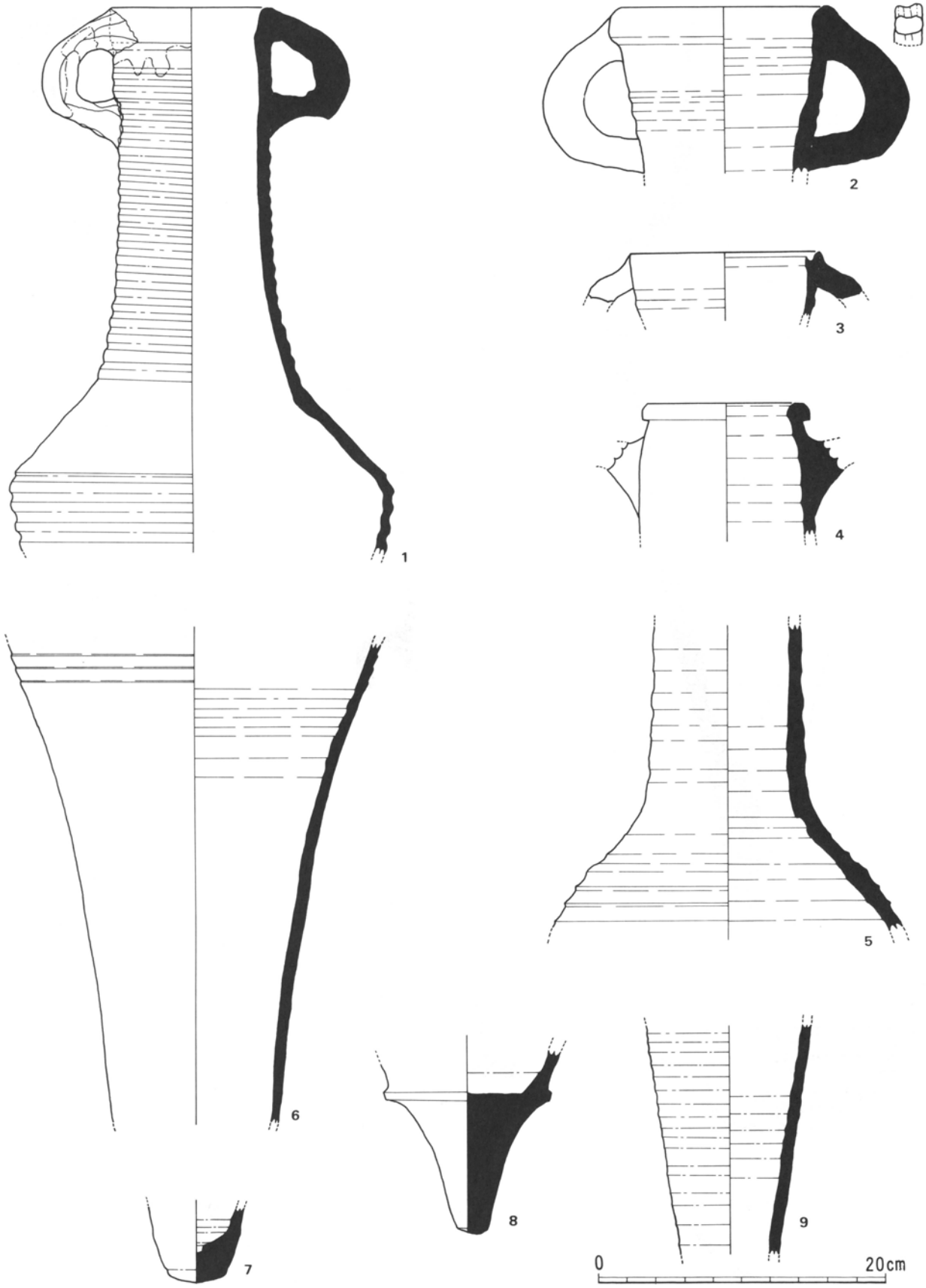


Fig. 97 Pottery found under the pavement of the Sacred Road

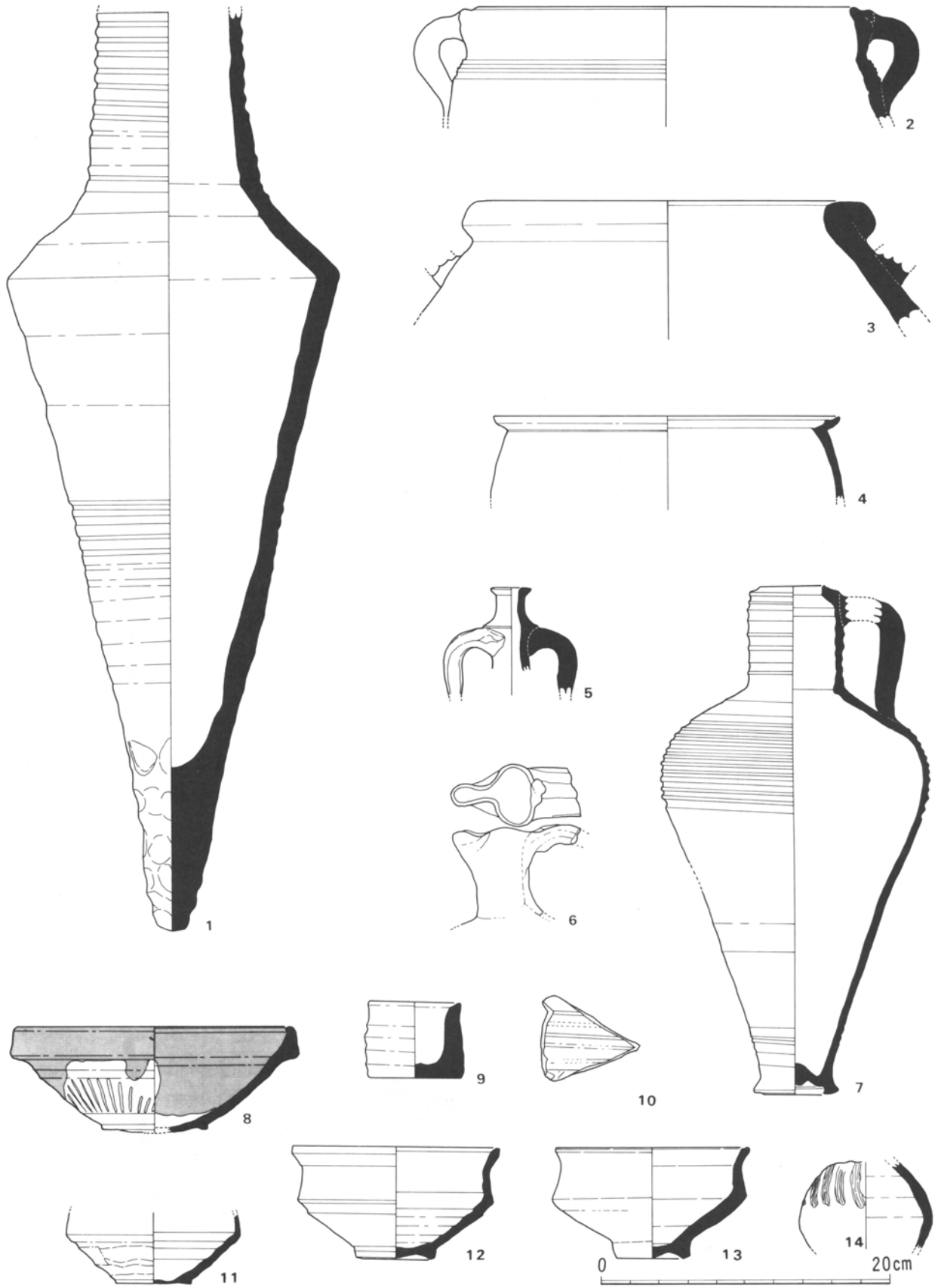


Fig. 98 Pottery found under the pavement of the Sacred Road

97-2	under the paving stone in front of Serapeum	amphora	14.2	rather sandy, white grit	outer face : pale grey, inner face : dark brown	horizontal concave lines	rubbed by wheel	
97-3	ditto	ditto	13.0	minute	brown	ditto	ditto	
97-4	ditto	ditto	10.8	ditto	pale yellowish brown		ditto	black coating on inner face
97-5	ditto	ditto		rather sandy	pale brown	horizontal concave lines, handles lacking	ditto	
97-6	ditto	ditto		minute	brown	horizontal concave lines	ditto	black coating on inner face
97-7	ditto	ditto		rather sandy	dark brown		ditto	
97-8	ditto	ditto		minute	pale brown		ditto	black coating on inner face
97-9	ditto	ditto		rather sandy	reddish brown	horizontal shallow concave lines	ditto	something charred on inner face
98-1 (80-6)	ditto	amphora	vol. : 6840cc.	ditto	brown	horizontal, probably spiral, concave lines	ditto	black coating on inner face
(82-6)	ditto	ditto	10.0	ditto	reddish brown	horizontal concave lines	ditto	ditto
98-2	ditto	pot	26.0	ditto	pale brown	ditto	ditto	
98-3	ditto	ditto	27.1	ditto	pale greyish yellow	without decoration	outer face : rubbed by wheel, rim & inner face : scraped & rubbed by wheel	
98-4	ditto	ditto	23.8	minute	light brown	without decoration	rubbed by wheel	soot-stained on outer face
98-5	accumulated soil over Serapeum	jar	2.8	ditto	light yellowish grey	without decoration, paired handles	rubbed by wheel	
98-6	under the paving stone in front of Serapeum	ditto	rim : 4.4 × 5.7	ditto	Outer face : dark brown. Inner face : brown	without decoration	ditto	
98-7 (80-5)	ditto	ditto	4.5 × 35.7 vol. : 3200cc. (without rim)	ditto	rose grey	horizontal concave lines	lower part of outer face : scraped by wheel, other parts : rubbed by wheel	black coating on inner face
98-8	accumulated soil over Serapeum	bowl	19.3 × 7.5 vol. : 793cc. (without rim)	minute	brownish grey	incised designs on the lower part of outer face, black colored	lower part of outer face & base : scraped by wheel, other parts : rubbed by wheel	
98-9 (79-10)	ditto	cup	6.4 × 5.3 vol. : 50cc. (without rim)	sandy	dark grey	horizontal concave lines	rubbed by wheel, string-cut base	
98-10	ditto							ostracon No. 13
98-11	ditto	bowl		rather sandy	pale reddish brown	without decoration	lower part of outer face :	

							scraped by wheel, other parts : rubbed by wheel	
98-12 (79-11)	under the paving stone in front of Serapeum	bowl	14.4 × 8.0 vol. : 568cc. (without rim)	rather sandy, white grit	dark brown	without decoration	ditto	soot-stained on inner face
98-13	ditto	bowl	13.6 × 7.9 vol. : 435cc. (without rim)	ditto	reddish brown	ditto	ditto	ditto
98-14	trench adjoining west side of Serapeum	jar		minute	brown	red painted design	rubbed & polished	black coating on inner face

Intermediate to the Late Dynastic Periods, or the Coptic Period.

SOUTHERN AREA ADJOINING SERAPEUM (Fig. 99. Pl. 50) : In the southern area adjoining Serapeum numerous stone blocks are scattered in heaps, and the stone foundation of a rectangular building (Pl. 50 lower) which measures 4.5m east-west × *ca.* 8m north-south × 1.7m in height at its highest point is left. The north-south axis of this building coincides with that of Serapeum.

The outer flank of the foundation is seen to have three parts as shown in Fig. 100. The lowest part is an underground base of roughly hewn stone 26cm in depth. The middle part is set back 6cm and is 52cm in height. The stone is finely hewn. The upper part, set back another 20cm, is 92cm in height and has a banded relief representing a Roman hunting scene (Pl. 121 no. 4). Its thickness is *ca.* 22cm. The size of this stone foundation is too limited for this building to be considered as that of a temple, but there is the possibility that this was a Roman tomb or some kind of funerary building.

The level at the base of the foundation is nearly equivalent to the bedding of Serapeum and the top of the foundation to the upper stone pavement. The ground level as determined by the finish of the stones has a drop of 1.5m from the estimated south end of Serapeum, a distance of only about 7m. It is therefore difficult to think that these two stone buildings functioned at the same time.

TRIAL RESTORATION OF SERAPEUM : The visible stone blocks scattered at the back of Serapeum are estimated to number at least a hundred and sixty-five. A hundred and five of these can be identified as to shape and/or usage, while the remainder have lost their original form or were for the greater part buried under debris so as to prevent examination. Of those identified, eighteen were pillars, seventy-six were other structural stones, such as cornices, wall stones etc. and eleven were stones of miscellaneous use.

Type A blocks (Fig. 101), which were decorated with a quirck cyma recto and a astrogal moulding, seem to have formed the top course of the peripheral wall of Serapeum. While the height of each of the eighteen ashlar stones identified as it is an almost consistent 50～57cm, their depth varies greatly, 77～124cm (Tab. 20). Consequently, the depth of these stones does not show us the true thickness of the wall.

Their length also varies. The total length of these blocks is calculated at a little over 17.0m. The width of the portico is 6.8m, so using that figure for the width of the sanctuary, enough blocks would

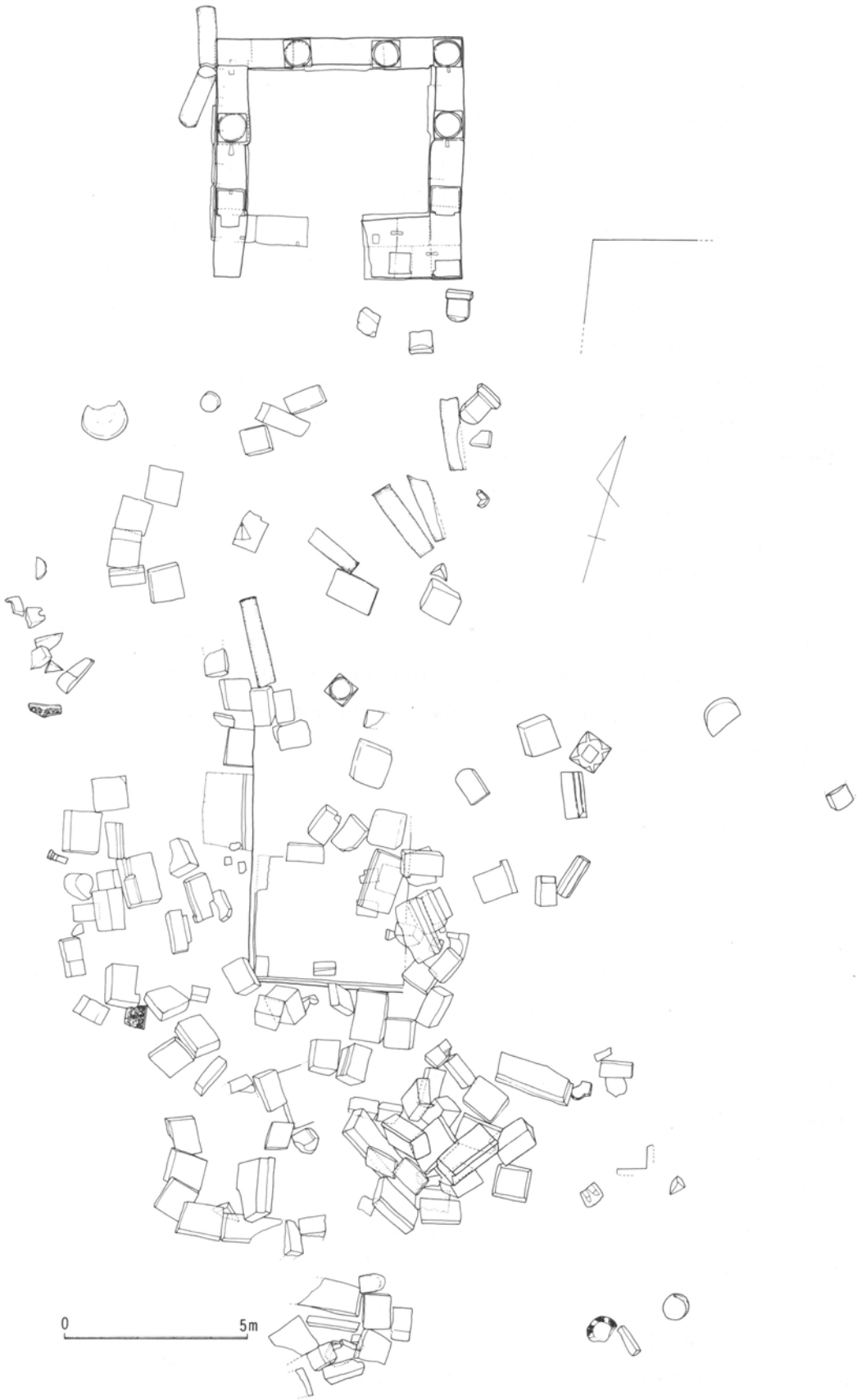


Fig. 99 Southern area adjoining Serapeum

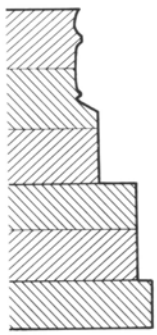


Fig. 100
Foundation of a rectangular building in the southern area (scale 1/40)

remain for 5.1m north-south walls and this size is nearly equal to the portico plus the front wall of the sanctuary. Even if some blocks remain buried or lost, it is thought that this size showing a ratio of one to one between the portico and the sanctuary is quite reasonable based on the dimensions found in other Roman temples.

D, E and F type blocks (Fig. 101. Pl. 124 nos. 6 and 8) are parts of pilasters, D type a base, E type a half drum and F type a three-quarter drum used at the outside corner. In addition, a single Corinthian pilaster capital (Pl. 123 no. 1) was found. There is no doubt that the pilasters were set on the above-mentioned A type blocks with the moulding, however, the problem of the location of the pilasters remains. That is, if the A type blocks were set on the uppermost line of the portico foundation, the pilaster bases would be higher than those in the portico. On the contrary, if the pilaster bases were set at the same height as those in the portico, foundation blocks A would be at the same height as the top course of the portico foundation stones. Though it is actually undetermined which was the original style, from an architectural point of beauty, the height of the column and pilaster bases ought to be unified.

Secondly, there is the matter of the alignment of the pilaster. The radii of the pilaster drums measure 27cm and the pilaster base projects 35cm from the wall which is equivalent to a half of the width of the column bases set in the portico. Therefore, when the pilasters were on the A blocks, the outer surface of the wall must have been recessed 35cm from the top edge of the foundation moulding. On the non-projecting part of the pilaster blocks, the wall thickness would measure around 40cm. All except one A blocks, measure 86～124cm in depth. These blocks thus projected into the inner part of the sanctuary, and must have served as uncut bases for the interior paving stones as opposed to those in the portico which were cut out to hold the floor paving.

If this restoration is reasonable, the interior size of the sanctuary would have measured 5.0m east-west and 5.5m north-south.

B Blocks bear double-banded, ovolo and torus moulding. As shown in Tab. 20, each block is nearly equal in size, though the confirmed number is confined to three. However, that they are few, suggests their limited usage. Considering that an altar would probably be found in this kind of sanctuary, it is thought that they formed part of an altar. Another block with spiral steps, measuring 50cm in height, may have been attached to the altar (Pl. 124 no. 7).

C Blocks are architraves decorated with double-faced moulding. One face consists of a cavette, band and astrogal, and the other face has a layered cutting. A banded recess of 7cm width borders the lowest part, but as it is too narrow for use in Corinthian architecture, another independent lower block with a banded recess must have been used. Though several such blocks were found, it is undetermined if they were suitable, because they were limited in number and various in shape. According to Tab. 20, with one exception, the height of each is almost equal, though the width and length are varied. Judging from the column intervals, the two corner architraves are, in particular, too long to have been set at the northern corners, so they must have been on the southern ones, and supported in part by the wall. Four other architraves found, measuring around 170cm in length, are appropriate for both sides of the portico. The total length of the confirmed architraves is 20.7m, which is about two thirds of the necessary 29.2m

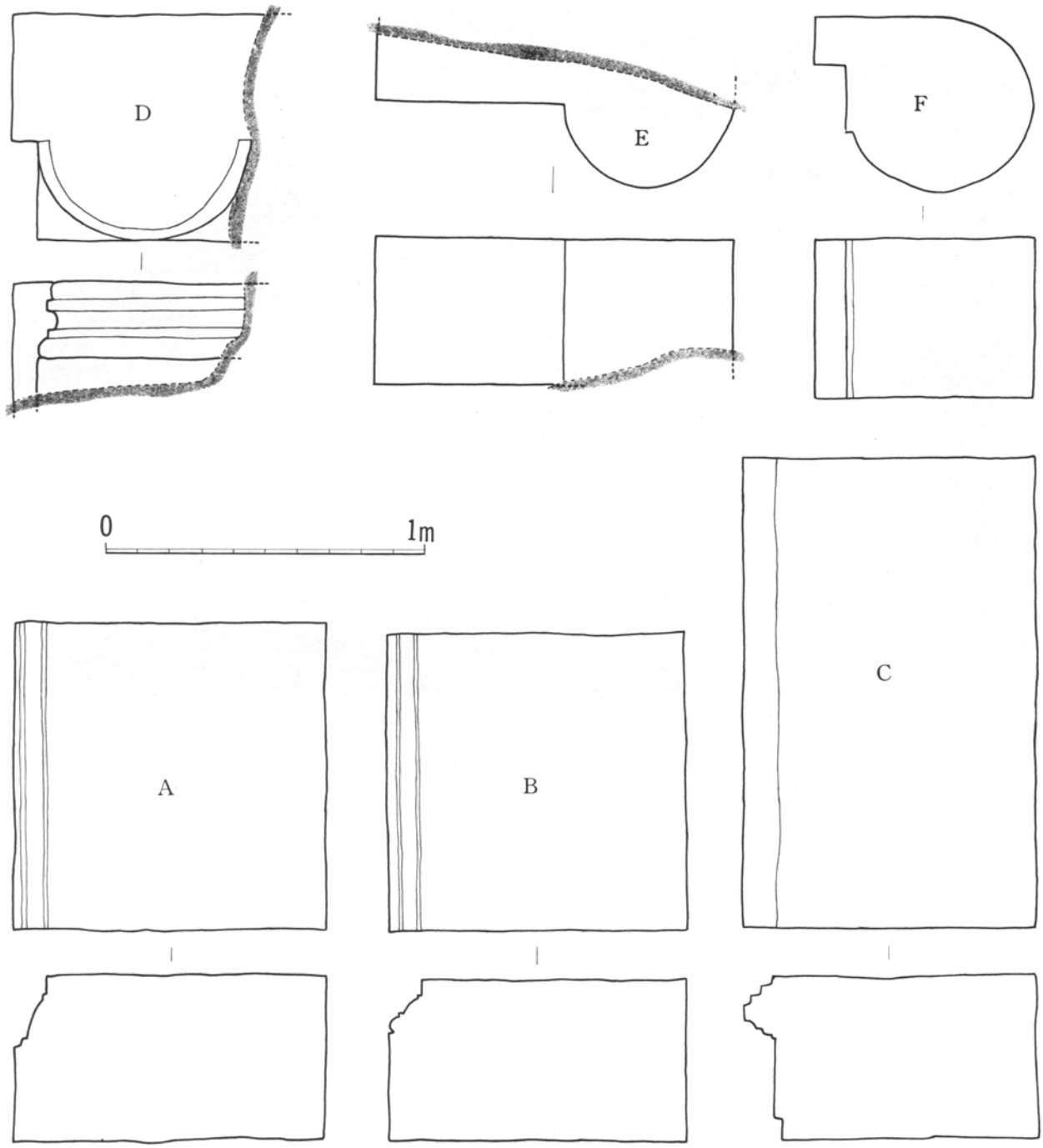


Fig. 101 Stone blocks scattered in the southern area

length.

Unfortunately, though a broken cornice was found, no complete one has as yet been. The friezes or roof blocks have also been undetected.

Forty-six blocks, rectangular and without decoration, have been found (Tab. 20). Forty-one of more than 60cm in depth are too thick for the wall and so, must have been used as foundation blocks. Long capped blocks as found in the portico forming the uppermost foundation course have not been found. This fact gives substance to the above-mentioned restoration concerning the pilaster's height. Five blocks measuring around 40cm in depth are supposingly for the wall.

Tab. 20 RECTANGULAR BLOCKS

A BLOCKS

UNEARTHED AREA : Southern Area

Inves. No.	Depth	Length	Height	Note
169	77cm	99cm	53cm	
60	80	118	53	partial corner
82	86	86	54	
81	87	105	53	
99	88	100	53	corner
176	89	93	53	
116	89	106	54	
172	90	92	50	
63	92	87	54	
154	93	88	52	
171	94	94	50+	
73	96	96	51	
110	96	89	53	
175	97	53+	50+	
80	98	98	53	
104	98	87	51	
153	101	78	51	
120	124	89	53	

C BLOCKS

UNEARTHED AREA : Southern Area

Inves. No.	Depth	Length	Height	Note
148	68cm	225cm	54cm	corner
126	74	170	54	
87	76	140	53	
98	84	218	50	corner
86	85	115	53	
70	86	167	55	
118	86	170	53	
84	89	120+	45	
145	91	155	52	
109	92	150	52	
113	92	150	52	
75	93	169	51	
146	95	123	51	

Inves. : Investigation

B BLOCKS

UNEARTHED AREA : Southern Area

Inves. No.	Depth	Length	Height	Note
34	93cm	95cm	52cm	
37	94	95	48+	
36	63+	92	53	

UNEARTHED AREA : Southern Area

Inves. No.	Depth	Length	Height	Note
72	40 cm	62cm	19cm	corner
54	43	105	26	
97	35	97	55	
29	40	75+	49	
20	40	100	50	
144	60	98	53	
49	74	136	46	
152	80	115	43	
123	81	98	31	
149	81	103	51	
35	83	93	53	
111	83	103	56	
100	84	108	52	
156	84	90	54	
56	85	85	47	
76	85	104	54	
108	85	111	56	
117	85	93	53	
132	85	105	40	
136	85	85	42	
151	85	107	51	
178	85	85+	54	
33	86	86	53	
76	86	86	43	
105	86	93	53	
143	86	152	61	
101	87	115	46	
141	87	115	26	
64	88	88	54	
69	88	88	49	
43	89	93	52	
79	89	97	53	
112	89	92	53	
119	89	107	53	
127	89	103	53	
177	89	89	52	
65	90	101	54	
130	90	90	54	
106	91	95	53	
83	93	145	46	
41	94	94	54	
42	94	113	57	
166	94	106	46	
74	95	116	54	
89	95	95	46	
107	103	90+	40	

Most of these stone blocks seem to belong to Serapeum because they are too large in relation to the foundation of the southern structure, however, such being the case, the date of Serapeum is called into question. Based on the stelae donated by the Roman Army Legion XXII Deiotariana and the Corinthian

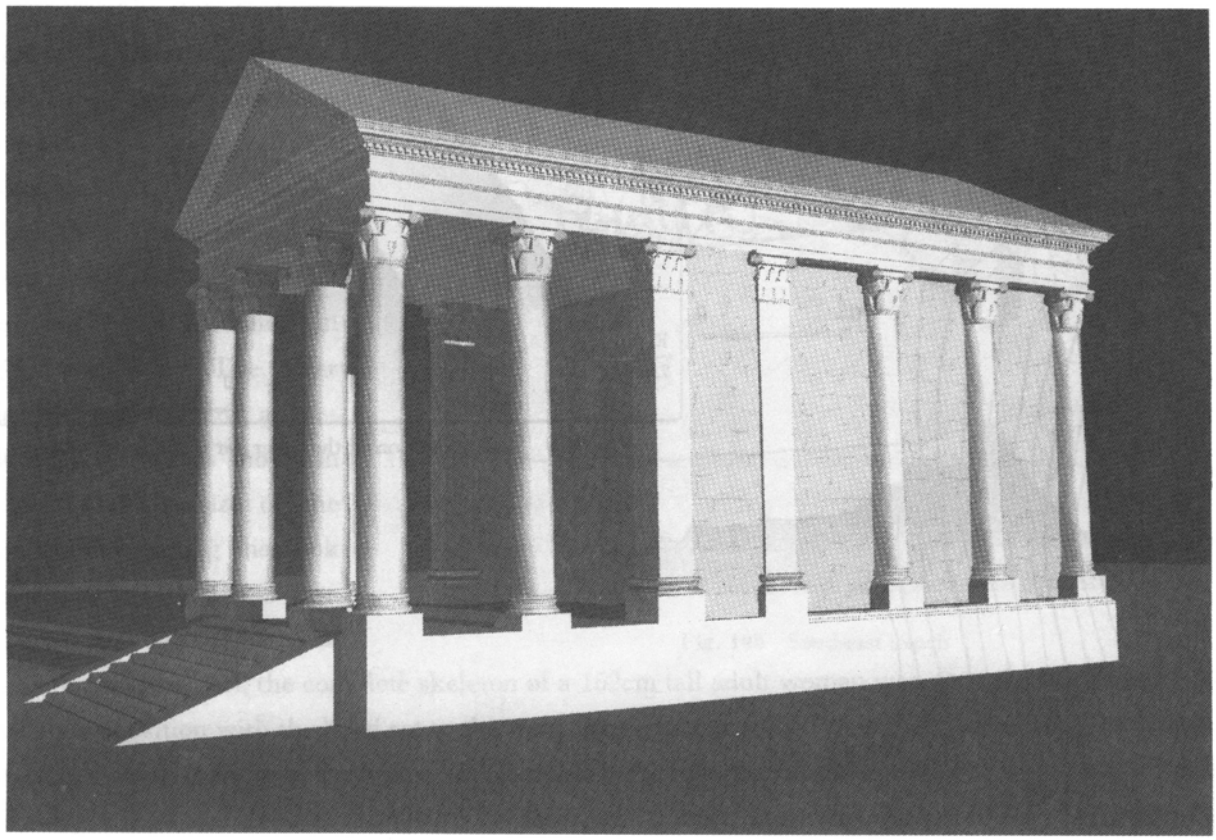


Fig. 102 Reconstructed elevation of Serapeum

capitals, the construction of Serapeum goes back to the 2nd century A. D. Yet laying stress on the archaeological evidence found in our excavation such as brick size, pavement, pottery etc., it seems to belong to the later date. Further excavation should be carried out in the future so as to solve this problem. (KAWANISHI, H.)

5 CITY WALL

SOUTHEAST TRENCH : The south extremity of this site borders on a col of the rock mountain and the east extremity faces the wadi. From the south to the southeast margin of the site, a protuberance measuring 5~7m in height rises like a dike and mud bricks are partly exposed here and there (Pls. 3 upper and 51 upper). In addition, the tops of nineteen buried stones form a 45m long line along the southern extremity of the protuberance, part of which dips to form a saddle.

The appearance of this area caused us to anticipate the existence of a city wall and gate. As a result, the northern extremity of the protuberance and the saddle area were chosen for excavation (Fig. 103). Part of the outer surface of the protuberance was also cleared of sand.

A trench measuring 11m east-west × 5m north-south was dug at the northern end and the top of the mud brick wall was exposed (Fig. 105. Pl. 52 lower). A thick sand layer which revealed no remains had accumulated on the outer side of the wall facing the wadi. This side of the wall had lost its original

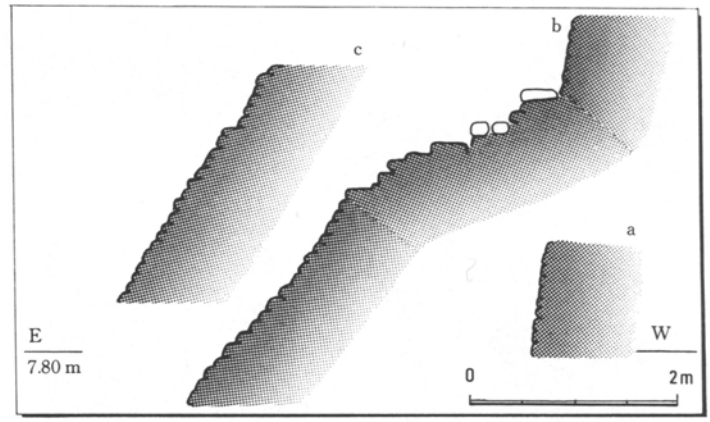


Fig. 104 Vertical section of the other parts of the city wall

Fig. 103 Locations of excavation trenches

shape mainly due to flood erosion. The deep eastern part of the trench revealed the bottom of the wall 2m from the ground surface.

On the back side of the wall facing the city, the original form remained in good condition. The outer surface is battered at a 30～40 degree angle as shown in Fig. 104. The size of the mud brick forming the back side is 36 × 18 × 12cm. On the western side of the wall near the deepest part, the complete skeleton of a 152cm tall adult woman was unearthed in an extended decubitus position with the head set to the west, the right arm folded over the stomach and the left arm stretched along the side of the body. Some beads were found scattered around it. There was no trace of a coffin, however decayed cloth of plain fabric and a straw mat were unearthed over and under the bones showing that the corpse had been clad in or covered with cloth and wrapped in a mat which was tied with three woven strings. Unfortunately there is no archeological evidence to fix the date of burial, however, in a Muslim burial, the head is placed toward Mecca and in the case of a Coptic burial, the corpse is placed in a coffin, so when these customs are not followed, it is thought that the grave dates to the pre-Coptic Period.

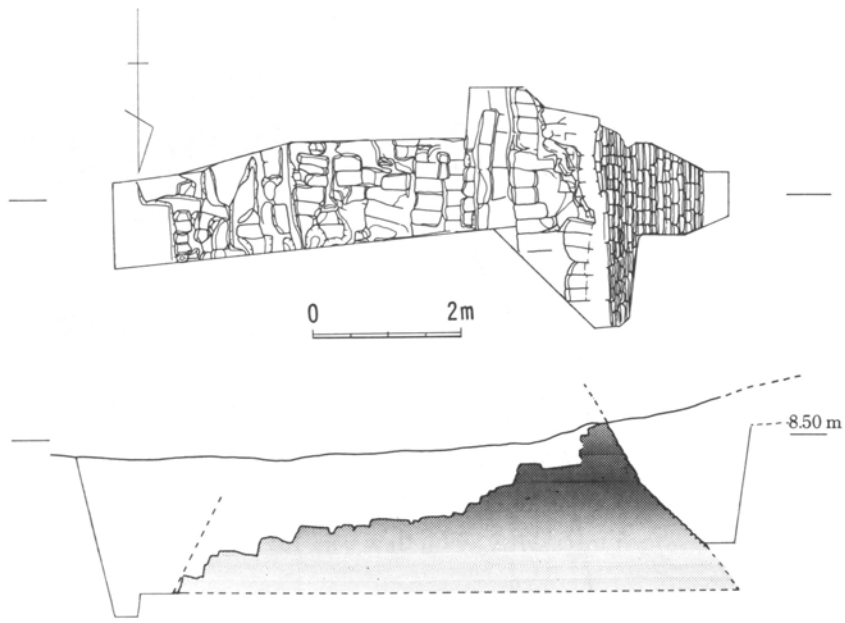


Fig. 105 Southeast trench

SOUTH TRENCH (Fig. 106. Pl 51 lower): An investigation trench was dug 20m east-west × 10m north-south in the saddle part of the protruding mound. Accordingly, it was clarified that the city wall had apparently been cut in this part to serve as a gate and a mud brick wall (W 1) had been added from there toward the southeast. At its extermity, another wall (W 2) was uncovered. This wall, on the same foundation layer and probably a continuation of Wall 1, is on a north-south axis thus, together with the former wall, forming an L. Moreover, another L-shaped mud brick wall (W 3 and 4) on the same axes as the first wall was partially uncovered a little east toward the wadi. South of the city wall, the trench was dug to the depth of 1.5m, deep enough to uncover the destroyed top of a wall, which proved to be an integral part of the city wall, thus showing that a gate had not originally been constructed here.

By observation of the exposed cross section of the city wall at this trench, its original form could be reconstructed (Fig. 107). Accordingly, the city wall takes a trapezoidal shape in section and consists of two parts i. e., the outer skirts at a 55 degree angle from the horizontal and the core. The angle of the skirt is generally that of the remaining inner skirt of the northern part of the wall mentioned above. The core part had an inclination of 80～85 degrees on each side. The mud brick size in each part is different, in the skirts 36 × 18 × 13cm, and in the core 41 × 20 × 11cm. This observation gained in the north and

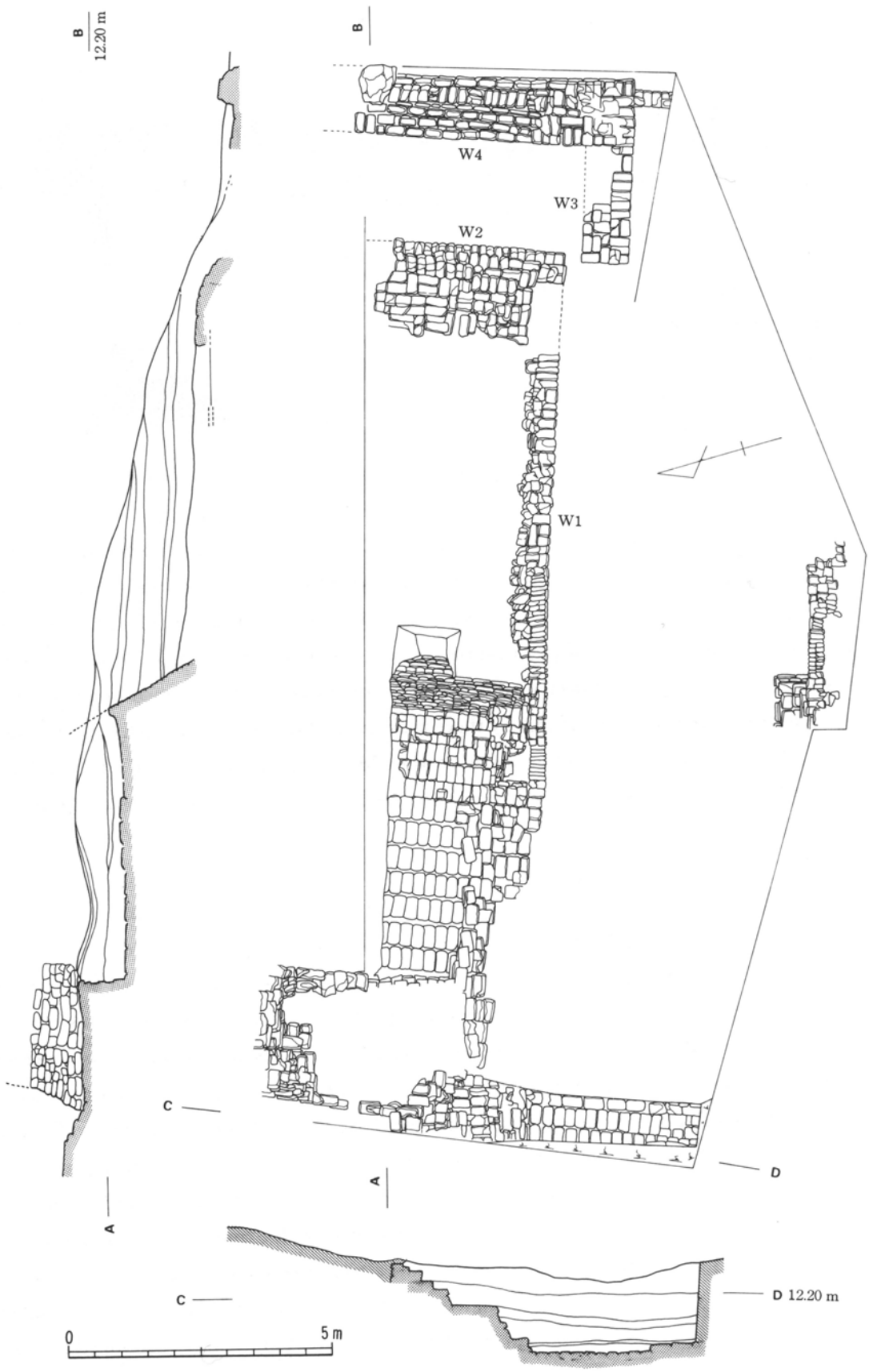


Fig. 106 South trench

the southeast trenches can be ratified by the result of the cleaning of other parts of the wall (Fig. 104. Pl. 52 upper). According to the brick size the city wall belongs to the 1st～2nd century A. D. though there may be a gap in construction date between the core and the skirt. The paper reconstruction of the wall shows the width to be 15m at the foundation, 4.3m at the top and height 7.5m in height. Judging by the form the city wall takes, it was not for protection from an enemy but rather, from floodwater.

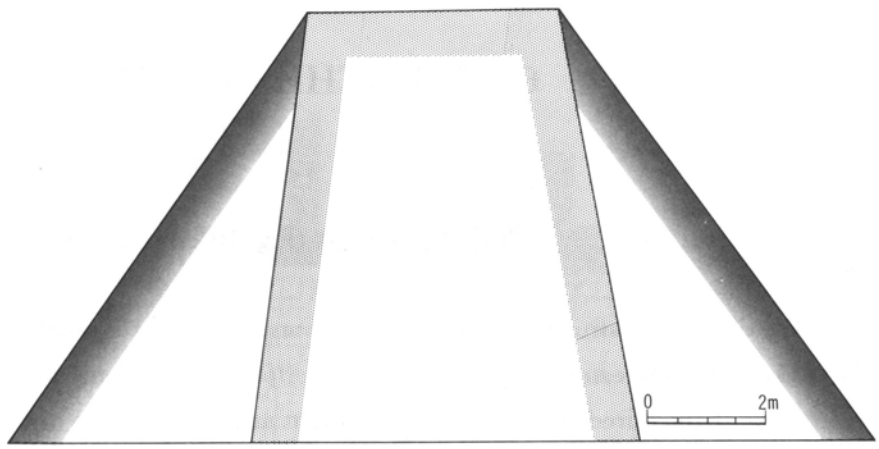


Fig. 107 Reconstructed vertical section of the city wall

The L-shaped mud brick wall mentioned above which extends from the cut in the city wall towards the east is attached to the broken bricks so it is known that it was constructed after this part of the city wall was destroyed. The condition of this remaining wall is poor. The north side has been destroyed while the south side keeps its original line. Mud brick in the long leg of the wall is in two sizes, 35 × 18 × 9cm and 25 × 15 × 8cm, while in the short leg it is all 35 × 18 × 9cm.

The second L-shaped wall is 0.9m thick in its east-west direction and 1.3m in its north-south. This wall is covered by a layer of soil on which the first L-shaped wall is constructed, so consequently it precedes the first wall. The mud brick size here is 33 × 15 × 9cm. The depth of the wall was not confirmed, but the last stone in the south end of the line of stones along the city wall as mentioned on p. 143 is embedded in the east leg (W 4) of this wall, which indicates that the line of stones and the L-shaped wall which presumably extends north functioned as one complex. Supposingly the reason why the stones were set in the front of the wall was for reinforcement against floodwater. The date of this wall according to the mud brick size seems to be the Ptolemaic Period though the size is not typical.

From the above-mentioned facts, the sequence can be traced as follows : The small-scale outer wall was constructed in the Ptolemaic Period. Subsequently, when this proved to be inadequate against floods, the enormous city wall was built in the 1st～2nd century A. D. and then in the Coptic Period a part of it was removed in order to construct a small gate. What purpose the second, or middle, wall served was undetermined.

(KAWANISHI, H.)

6 TRENCHES IN THE SITE

"POOL" AREA (Fig. 108. Pls. 53 and 54)

We detected a structure dating to the Roman Period at a point 45m north and 14m west of the North Gate of the Western Temple and for descriptive convenience will refer to it as the "pool". This rectangular shaped fired brick "pool" is at a right angle to the axis of the Sacred Road, and its outside measurements are 3.7m north-south × 7.0m east-west. It rests on a line established by paving stones set in a courtyard on its north side. This line hereafter is referred to as the base line.

The inside wall surface of the pool is coated with three layers of plaster. The fired bricks have a primary coating of 2.5cm thick plaster mixed with a fine gravel, a secondary coating of 0.3cm thick plaster and finally a 0.3cm coating of red plaster.

Along the inner base of both the north and south walls there is a moulding, possibly to prevent leakage. At the east end the south wall brick was laid in courses up to a point 50cm above the inside floor level and then set to protrude gradually toward the inside. A vaulted roof is supposed to have existed at this end, and its barrel arch is estimated to have reached a height of 2.0m at the crown.

Though the floor has been covered with plaster and seems to be level, the east end is about 11cm higher than the west end, and correspondingly a drain opening is fixed in the northwest corner where the bricks had been broken so as to allow a lead drainpipe about 7cm in diameter to pass through the wall (Fig. 109). The lead pipe, most of which is missing, extended diagonally from the inside to the outside corners and then went north to a point 1.2m away where it made a right angle toward the west. Mortar 20～39cm wide, which fixed and protected the pipe, is found on the fired brick base after the turn.

Although we could not find traces of a water supply installation, there was one noteworthy stone among the building stones lying scattered outside the east end of the "pool". It is a limestone block measuring 1.6 × 0.58 × 0.24m, and on one side there is an 8cm through cut in the middle longitudinally which connects to a bowl-shaped indentation. There is the possibility that this stone was part of a water delivery system, since, if a lead pipe had been fixed into the groove, it would be approximately the same size as the drainpipe, in addition to the fact that the stone was found on the east side opposite the drain opening. Furthermore, while the bricks are two thick in the north, west and south walls, they are three thick in the east wall, possibly in order to help support the supposed arched roof which would give this end of the "pool" special prominence.

One noteworthy point regarding the internal condition of the "pool" is that in the center there is a rectangle 1.0m north-south × 2.6m east-west which is unplastered. The plaster bordering it curves up above its present level showing that the rectangle was the location of some sort of platform or table. If this were true, its exact nature would have a direct bearing on the use of the "pool".

A stone decking is found rising 0.7m above and 1.3m below the base line of the area. This stone decking was uncovered on the west and south sides of the "pool". On the south side, however, it remains

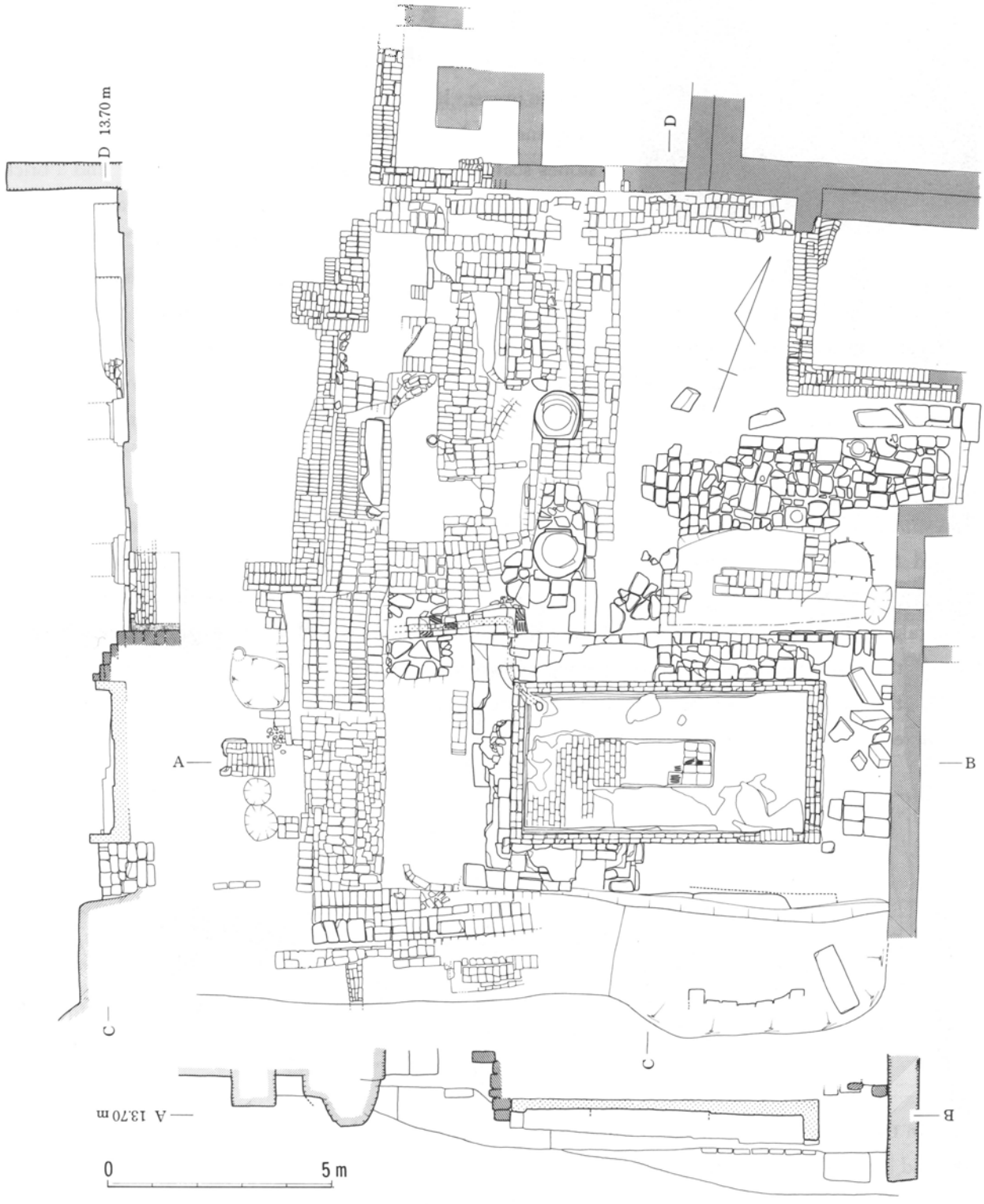


Fig. 108 "Pool" Area

only in the western half and reaches 0.7m above and 0.6m below the base line in the part uncovered there, and the bottom measures 1.1m in width. The construction of this wall destroyed a wall running on a slightly different axis from the "pool". This wall which is below the base line is made of brick measuring 32 × 16 × 7cm, which places it in the Late Dynastic Period according to our chronological



Fig. 109 Lead pipe left at the northwest corner of the "pool"

order of dating (see pp. 265 ff).

The stone work in the west side which is narrower to same extent than that on the south measures 0.9m in width and 0.6m in present height above the base line. The part below the base line is 0.8m in depth. On the east side, there are building stones scattered between the east end of the "pool" and a brick wall paralleling it, however, judging from their shape, it can be said that these stones had never been used in the deck stonework. After removing these stones, pavement at the base line was detected in a lower layer. The floor of the "pool" is 40cm thick in the east end and 20cm thick in the west end, giving it an artificial slope to assist in drainage.

So far as the circumstances below the floor of the "pool" could be observed, it seems that there are no particular facilities for heating, so whether this "pool" served as a bath can not be determined and its use remains a complete mystery.

Along the south side of the deck there is an unusual structure, perhaps a paving made of *opus signinum*. Built at some undetermined date, it extends from the brick wall east of the "pool" to a point beyond the east end of the remaining south deck (Fig. 110). How far it extends south remains undetermined. The east and west ends are approximately at the same level, while the central part rises 15cm taking the shape of a platform. Under the structure, there is a fill of stones, bricks, cement, etc., but whether this was there before the paving or was inserted at a later date is undetermined. In any case, as the paving has been broken so as to create a space as wide as the remaining south deck, it is considered to have been constructed before the deck.

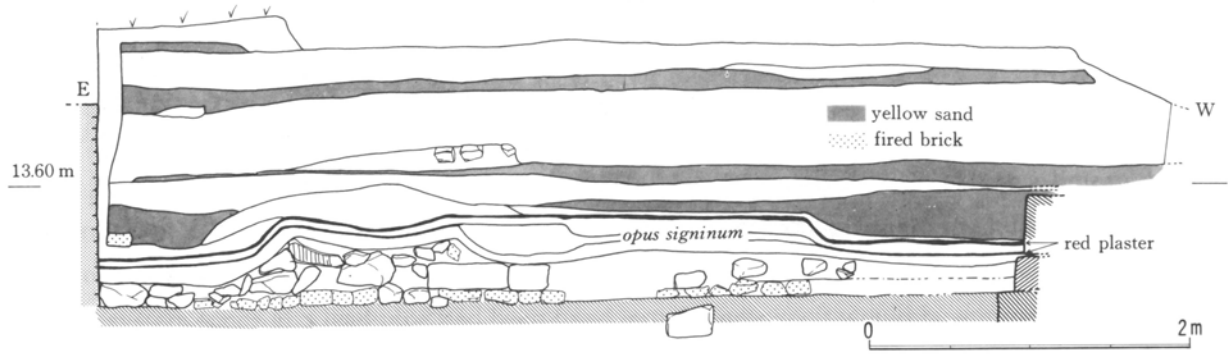


Fig. 110 Layers of the south end in the "Pool" Area

In the upper layer of the platform-like structure, there are alternating horizontal layers of yellow sand and lime pebbles. The top of the bottom, middle and upper layers of yellow sand are 20, 70, 90cm respectively, above the base line.

A stone pavement still remains above the upper sand layer and since such yellow sand is usually laid underneath a stone pavement, the three layers, suggest that stone paving had existed in three different periods of time. Judging from the fact that some pieces of the

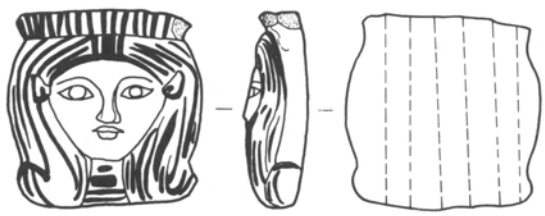


Fig. 111 Earthen Hathor amulet (scale 1/1)

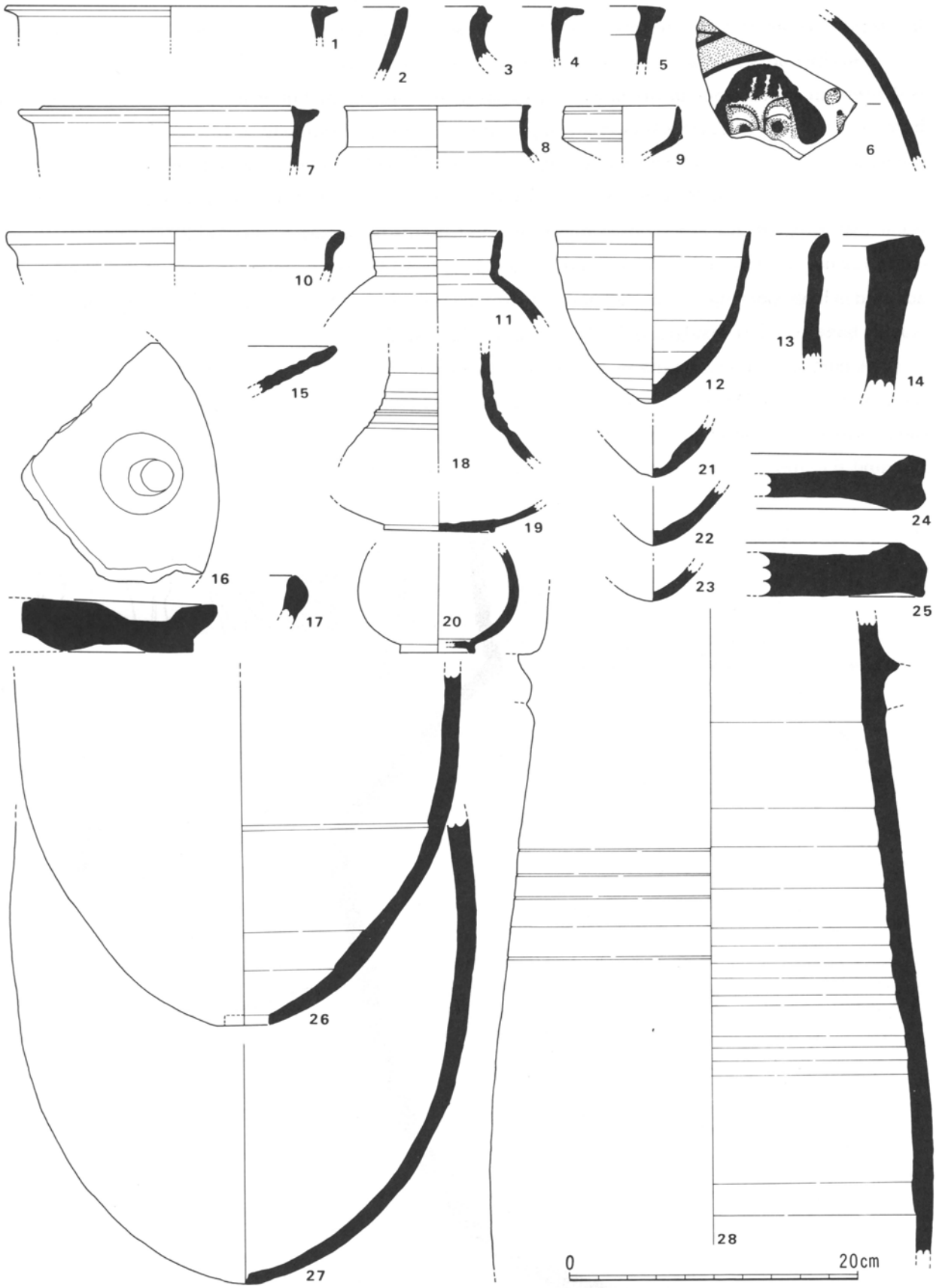


Fig. 112 Remains found in the "Pool" Area

fired brick are observed only in the lowest yellow sand layer while mud brick is found in the two upper layers, it is considered that the lowest layer of pavement coexisted with the original "pool" construction.

On the north side of the "pool", the stone pavement mentioned previously and various mud brick walls remain. The stone in the pavement varies in size and shape but at the same time is different in both aspects from that in the Western Temple Area. Brick measuring 32 × 16 × 7cm is used for all of the walls, including a circular structure, and a furnace which is 0.9m lower than the base line. That part of the furnace above the base line was destroyed by a wall built with brick measuring 32 × 16 × 12cm. Some clay supports for vessels used in cooking and shards belonging to the Third Intermediate Period (Figs. 112 nos. 10～25, and 133 nos. 2 and 3) were discovered scattered around in front of the furnace. In addition, a large pot (Fig. 112 no. 28) was discovered sitting in front of the furnace, and a spatula made of animal bone was left inside it (Fig. 113 no. 5. Pl. 113 no. 7).

A north-south wall on the west side of the excavated area is 1.8m thick and is the prolongation of the city wall in the Western Temple Area. The size of brick differs in the upper and lower parts with the dividing line approximately 0.5m lower than the base line. The lower bricks measure 32 × 16 × 7cm and the upper 36 × 18 × 12cm. Three large pots (Figs. 112 nos. 26 and 27, and 113 no. 1) were

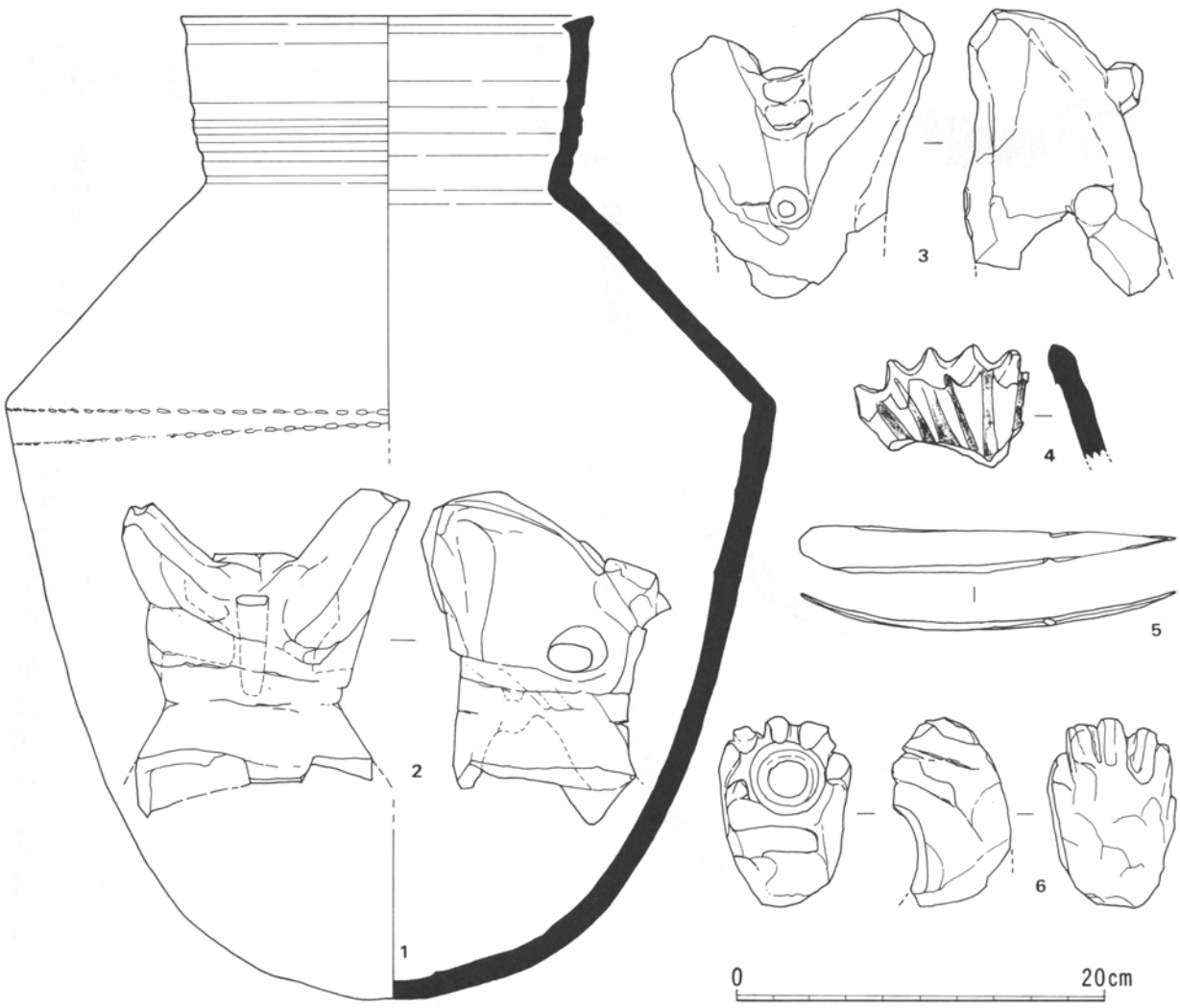


Fig. 113 Remains found in the "Pool" Area

discovered on the west side of this wall.

North of the "pool", two column bases 30cm in the height, 1.1m in diameter on the bottom remain, one north of the other. According to the trace of gypsum on the bases, it is supposed that columns 80cm in diameter had been built there. Of slightly different shape and flattened on one side, they possibly might have been used at one time for engaged columns or antae and then reused here. There is a mud brick wall directly below the stone pavement which is found around the southern column base. The brick measures 32 × 16 × 7cm. No other column bases or plinths were found in the area and it is unknown whether these two column bases formed part of a colonnade or merely served as an entrance to a building.

Some Coptic dwellings built of brick measuring 24 × 12 × 8cm remain around the "pool" area.

Many Coptic shards (Fig. 112 nos. 1～9), a wooden plaque (Pl. 69 no. 16), the stone carving of a left hand grasping something circular (Fig. 113 no. 6. Pl. 76 no. 4) and an earthen crown with intermittent lines painted in red and black (Fig. 113 no. 4) were unearthed in disturbed soil on the paving stones. Various amulets (Fig. 160) including an earthen Hathor amulet (Fig. 111. Pl. 90 no. 15), a bronze Osiris, several bronze coins (see p. 201) and an earthen coin mould (Pl. 74 no. 75) were found in the vicinity of the north column base.

(TSUJIMURA, S.)

Tab. 21 POTTERY

UNEARTHED AREA : Above the Paving Stones in "Pool" Area

Fig. no.	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
112-1	pot	22.9	minute	dark brown	without decoration	rubbed by wheel	
112-2	rim	unmeasurable	ditto	ditto	ditto	ditto	
112-3	jar	ditto	ditto	ditto	ditto	ditto	
112-4	bowl (?)	ditto	ditto	ditto	red painting on outer face of rim	ditto	
112-5	rim	ditto	ditto	pale brown	without decoration	ditto	
112-6	jar		ditto	ditto	slip, red & black painting	ditto	
112-7	pot	17.2	ditto	dark brown	without decoration	ditto	soot-stained on outer face
112-8	jar	13.0	ditto	ditto	ditto	ditto	
112-9	bowl	7.8	ditto	reddish brown	red slip on inner & outer faces	ditto	

UNEARTHED AREA : Near the Furnace in "Pool" Area

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
112-10	bowl	23.4	minute	pale brown	without decoration	rubbed by wheel	
112-11	jar	8.8	ditto	reddish brown	ditto	ditto	
112-12	bowl	13.5 × 12.0	ditto	ditto	ditto	lower outer part :	soot-stained

		vol. : 768cc.				scraped by wheel, other part : rubbed by wheel	on outer face
112-13	bowl	unmeasurable	minute	pale brown	without decoration	rubbed by wheel	
112-14	furnace (?)	64.4	sandy, vegetable-tempered	reddish brown	ditto	ditto	
112-15	plate	unmeasurable	minute	pale brown	slip on face	ditto	
112-16	lid (?)	31.4	ditto	dark brown	pierced hole	ditto	
112-17	bowl (?)	unmeasurable	ditto	reddish brown	without decoration	ditto	
112-18	jar		ditto	brown	horizontal concave lines	ditto	
112-19	base		ditto	pale reddish brown	whitish slip	ditto	
112-20	juglet		ditto	pink	red slip, imported from Phoenicia	ditto	
112-21	base		ditto	reddish brown	without decoration	ditto	
112-22	base		ditto	ditto	ditto	ditto	
112-23	base		ditto	dark brown	ditto	ditto	
112-24	platter (?)	44.0	sandy, vegetable-tempered	reddish brown	ditto	rubbed by hand	
112-25	platter or lid	38.0	ditto	ditto	ditto	ditto	
112-26	pot		minute	ditto	ditto	outer face : burnished, inner face : rubbed by wheel	
112-27	ditto		ditto	ditto	ditto	unidentifiable	
112-28 (85-5)	ditto		ditto	ditto	two handles	cord impressions, rubbed by wheel	
113-1 (85-4)	jar	22.4 × 53.8 vol. : 32979cc. (without rim)	ditto	ditto	horizontal concave lines on neck whitish slip on neck & shoulder	ditto	outside west wall
113-2 (85-6)	vessel support	18.0	ditto	ditto	without decoration, three holes	rubbed by hand	soot-stained between two ears
113-3	ditto		ditto	ditto	ditto	ditto	ditto

ASHLAR BUILDING RUIN (Fig. 114. Pl. 55)

This building is located 80m north of the North Gate and on the east side of the supposed extension of the Sacred Road of the Western Temple Area. Since a stone wall had been partially exposed on the site surface before our excavation, an ashlar building was expected to be found. The excavated area was a 15 × 7.5 × 1.7m rectangle with a 2.5 × 2.5 × 1.3m addition on the west side.

As expected, an ashlar building was detected, but the state of preservation was poor due to later

disturbance, whereby the construction blocks were scattered here and there. The unearthed east wall, with both corners lost, consists of four layers of stone blocks reaching 1.7m at the highest point. The shape of the ashlar is different in the upper and lower layers, the first or lowest ones are drum-shaped, the second roughly rectangular, the third consisted partly of cut stones such as pilasters and the fourth too few to determine. While the first and second layers form the foundation of the wall, the third and fourth belong to the exposed upper part. Four double-pilaster blocks beside the middle of the present east wall were found together, though not *in situ*. They seem to have originally formed part of the wall with the large arched pilaster face inside the building according to a trace left on the wall there.

In the addition dug on the west side, three drum-shaped stone blocks, aligned north-south were unearthed. They are thought to have formed the west wall foundation because of their similarity with those in the east wall in shape, height and direction. An artificial fill of sand and stone, probably having formed the base under the lost stone pavement, occupied the area between both walls. If the reconstruction is correct, the width of the building measures around 8.5m.

An incomplete work which is composed of thin hewn stones was detected in the southwest corner of the main excavated area (Pl. 55 upper). The east-west joints of the stones are aligned, so they can be divided into three parts, north, middle and south. The middle part consists of three layers, while the north and south parts are confined to one. There is a variance in height among them with the south row keeping the same height as the lowest layer of the middle row and the second layer of that row the same as the north one. In addition, the south part is worn on the upper face. Accordingly, it is thought that

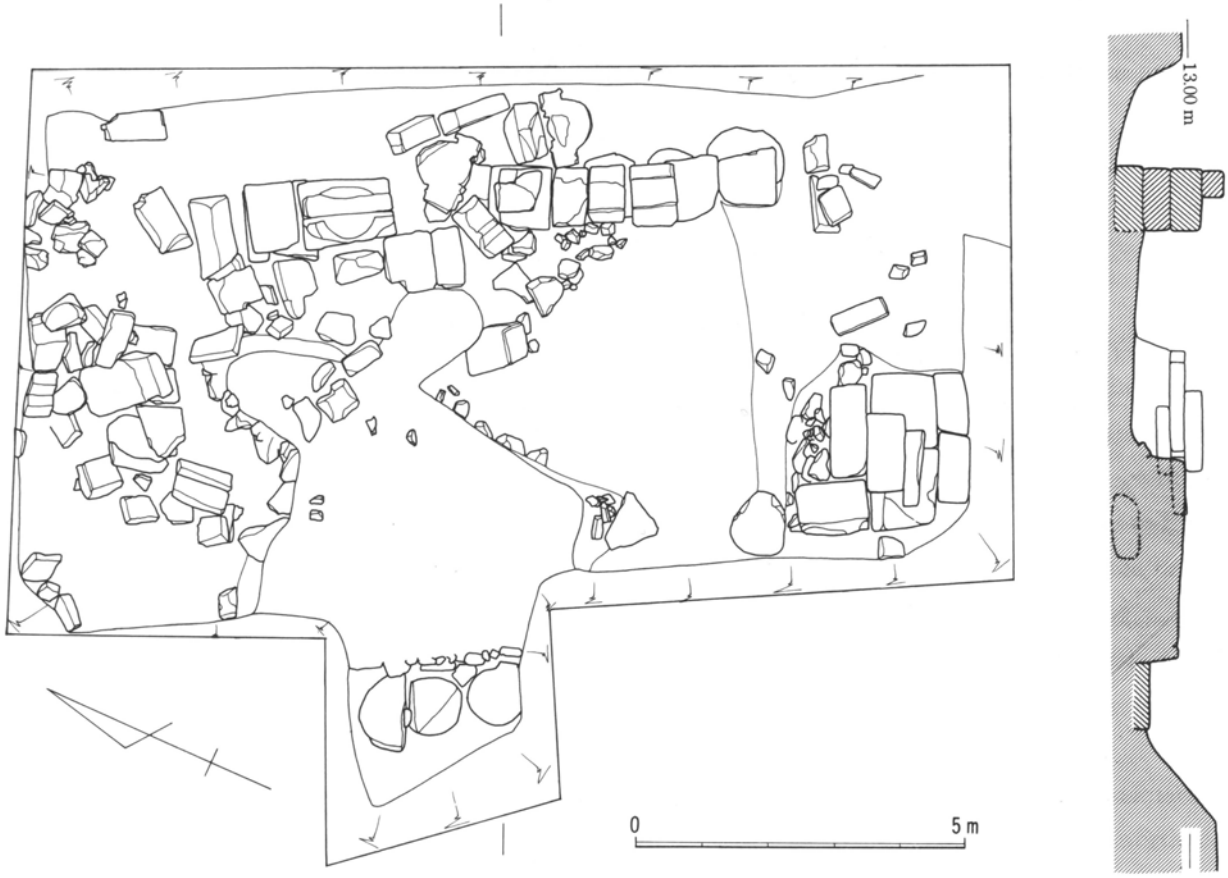


Fig. 114 Ashlar building ruin

the south part formed part of a pavement. Though it is still undetermined how this part of this building was used, there is a possibility that it was part of a colonnade, because the thickness of the east wall at 40cm is extraordinarily thin for the width of this 8.5m building, and thus some supporting pillars would have been structually needed.

An ostracon (see p. 373. Pl. 154 no. 22), a Sakhmet amulet (Fig. 160 no. 7. Pl. 94 no. 6) made of faience, some limestone blocks (Pl. 77 nos. 10 and 11) and so on were included in the disarranged soil covering the ashlar building. Unfortunately architectural clues for dating could not be obtained, but depending on the chisel marks on the stone blocks (see pp. 275 ff), it is certain the this building belongs to the Roman Period. (KAWANISHI, H.)

TILE-FLOORED CHAMBER (Figs. 115 and 116. Pl. 56)

Sixty-five meters north of the above-mentioned ashlar building, and 3m north of the rock-cut steps which lead down to the fields, found by Lesquier in 1908, a tile-floored chamber was uncovered at the edge of the bed rock precipice (Pl. 56 upper).

Due to later disturbance, the walls do not exceed 7cm in height and nearly half of the floor tile is missing. Investigation showed that the remaining *opus signinum*, or reddish mortar mixed with pulverized pottery and fired brick, is 7cm thick on the leveled bed rock, and upon this, a layer of white

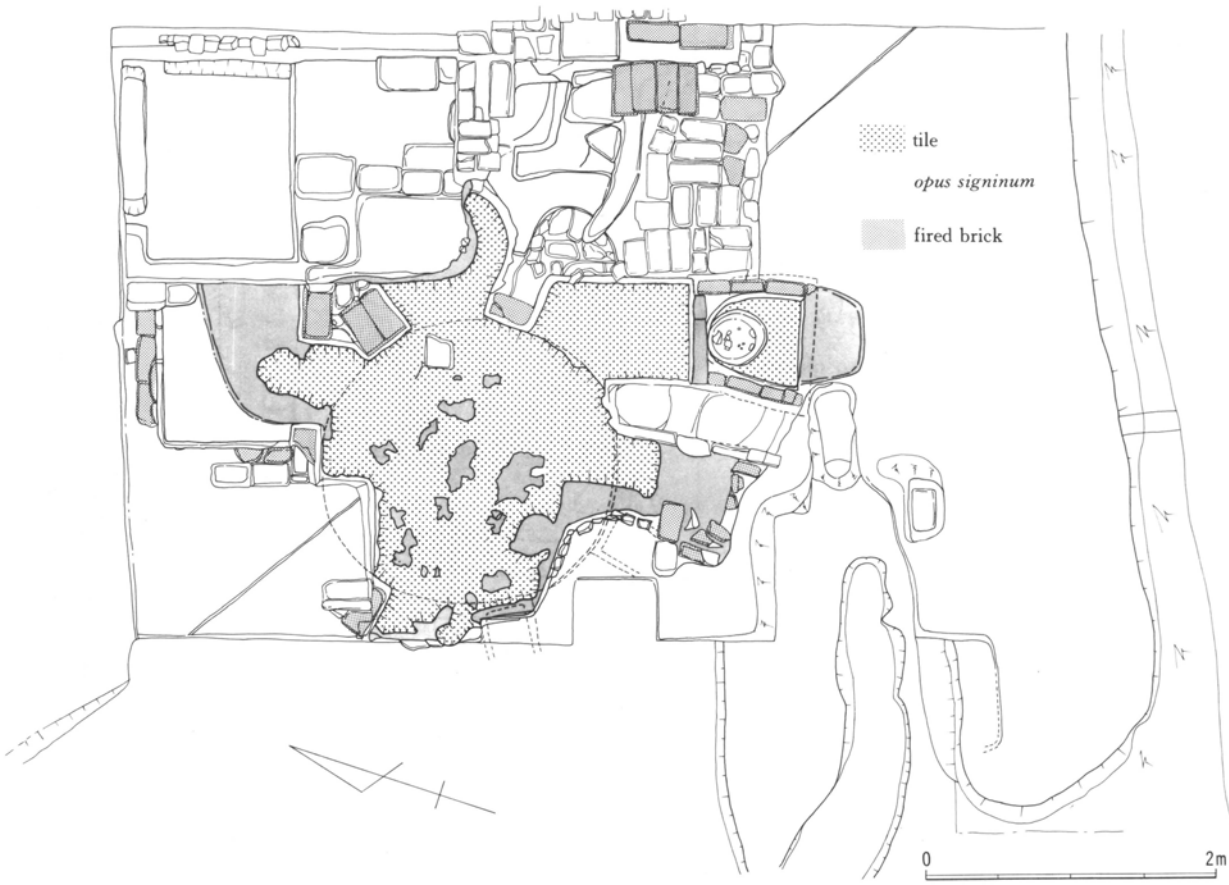


Fig. 115 Tile-floored chamber

uncut limestone chips (*tesserae*) 1 ~2cm in size is layed. The walls surrounding the tile floor are constructed with fired bricks and covered with thick painted plaster.

Reconstructing the plane of the chamber from the remnants, we see it consisted of a circular central area of 2.0m diameter and seven attendant side spaces 1~7 counterclockwise from the southeast.

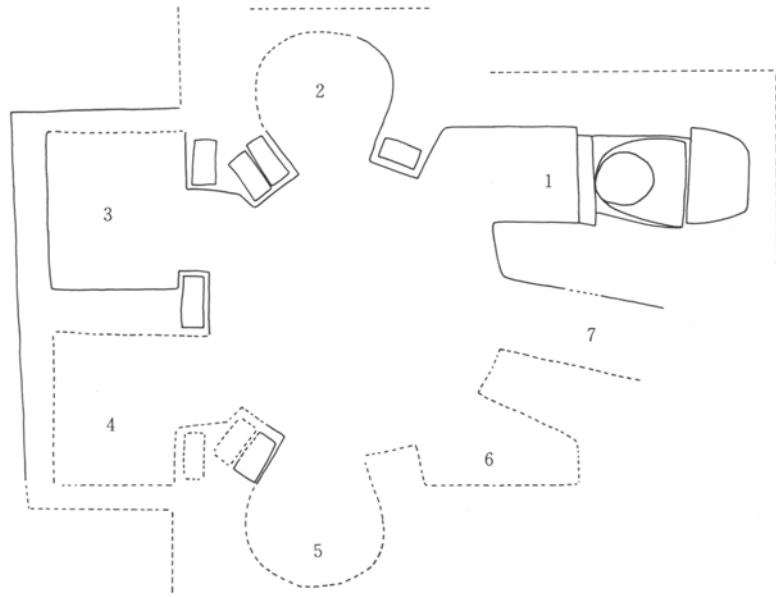


Fig. 116 Reconstructed plan of the tile-floored chamber

Space 1, measuring 66 × 227cm, extends south and consists of two parts divided by a thin wall. The north half is semicircular with a tile floor. A bowl-shaped depression with white mortar is cut in the north central part of the floor. In addition, plastered traces are found around the edge of the tile floor and fired bricks are aligned on both sides. The inner, or south, section is trapezoidal and plastered in *opus signinum*. This constitution is similar to the foot basins attached to the Roman bathrooms excavated in Tell Edfu, Qasr Qarim and Ashmunein. Depending on these examples, the trapezoidal section would be used for sitting and the semicircular part for washing one's body.

Under the east wall of this space, a natural hollow, filled with mud and fired bricks was found with a natural crevice extending from it to the east, however, it is undetermined if this carried out a function such as drainage. From just outside the trapezoidal section in Space 1, a natural rock crevice extends and widens toward the west, but it is probably unrelated to the interior space.

Space 2 quite possibly had a semicircular plane, though half of it was destroyed by the building of a Coptic building in the 6th century. A small patch of pinkish color is left on the wall plaster here.

In Space 3, the tile floor is partially left near its opening and the *opus signinum* bed covers half of the remainder. Undoubtedly the tile had at one time extended over the whole floor. A vivid cobalt blue color covers the wall plaster. The floor of leveled bed rock is cut at the north and the east sides to form a ditch. The north one is 12cm in depth and the east 40cm. The west side is also cut, but due to later alteration, which involved lowering the floor, the extent of the original ditch, if it did indeed exist, is not clear. Several fired bricks are left in the north ditch and in the west depression. Assuming the ditches were for wall foundations, the north and east walls are 27cm and 19cm thick respectively, so that the interior space measures 94cm north-south × 110cm east-west.

Space 4 had been almost completely destroyed and even the rock floor does not maintain its original height, however there are some clues as to the form of this room. The wall on the north side rises against the natural rock cut. On the other hand, on the west, the leveled rock terminating at the precipice, has been cut down. The east-west measurement from the east wall to the precipice or western

edge is almost equal to the width of Space 3, and moreover, the axes shows a concurrence between them. Laying stress on these facts, it is reasonable to regard the western edge as the inner face line of this space. This being the case, spaces of the same size and shape are aligned in an east-west direction.

As for Space 5, if its western line extending southward maintains its primary direction, Space 5 would become a narrow nitch. However, as such a narrow space would hardly be useful as a part of the chamber, isn't it possible that a circular shaped space akin to Space 2 was located here and that the western edge originally lay further west ?

Space 6 scarcely leaves clues as to its original form. However, it is difficult to consider an existing rectangular recess cut in the precipice as a part of the chamber. This cut is thought to belong to a later date.

In space 7 the tile and the *opus signinum* bed extend to the south, and possibly formed a part of the passage from the entrance.

As mentioned above, this chamber was destroyed by a Coptic building dating to the 6th century A. D.. Though no remains to determine the construction date were left, the mud bricks, which are on the tile floor of Space 1, measure 35 × 18 × 12cm. According to the mud brick chronology in Akoris (see p. 265), this size dates to the Late Ptolemaic or early Roman Period, the 1st century B. C.～2nd century A. D. Comparing this with the dates of other bathrooms exemplified above, it is likely that this belongs to the early Roman Period.

This chamber is furnished with a foot/body basin, but comparing the Roman bathrooms (*frigitarium*) known in Egypt, this chamber is different in that there is only one basin and no drainage system is found in the central floor area. If this tile-floored chamber is not a *frigitarium*, then what was it ? Was this a place for worship after cleaning the body ? (KAWANISHI, H.)

EAST TRENCH (Figs. 117 and 118. Pl. 57)

East of the Central Temple Area, a trench measuring 5m east-west × 11m north-south was dug to a depth of 5m. Five layers were differenciated within it, i. e. from the top, Layer 1 consisted of disturbed soil, Layer 2 brownish ash, Layer 3 grey ash, Layer 4 blackish ash and Layer 5 grey ash. In Layers 4 and 5 four mud brick walls were detected overlapping each other. From the top they were named A, B, C and D, and all of them were formed by a single course of mud brick.

Wall A is L-shaped. It is 50～55cm thick. The mud brick which includes white sand is 34 × 18 × 8cm. Wall B is also L-shaped. It is 35cm thick, and the mud brick, again mixed with white sand, is 38 × 18 × 10cm. From the bottom of Wall A to the top of Wall B there is a soil layer 60cm thick. Wall C found on the west side, consisting of three partially uncovered mud bricks, is under the bottom of Wall B. Accumulated soil measures only 10cm in thickness between them. The mud brick is (?) × 18 × 10cm. "Wall" D consists of two mud bricks, the mud brick size is 25 × 15 × 9cm. These walls date from the Third Intermediate to the Late Dynastic Period.

Various remains were unearthed in this trench. Much pottery (Figs. 119～128) was found in Layers 1～4. A large pot (Fig. 119) which was unearthed from the upper part of Layer 4 was placed

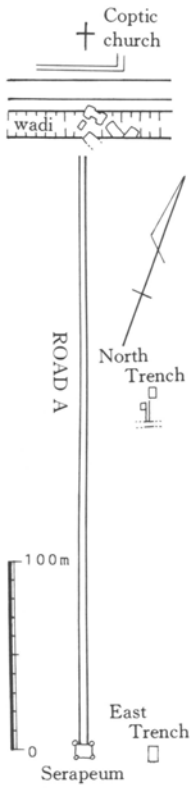


Fig. 117 Location of the East and North Trenches

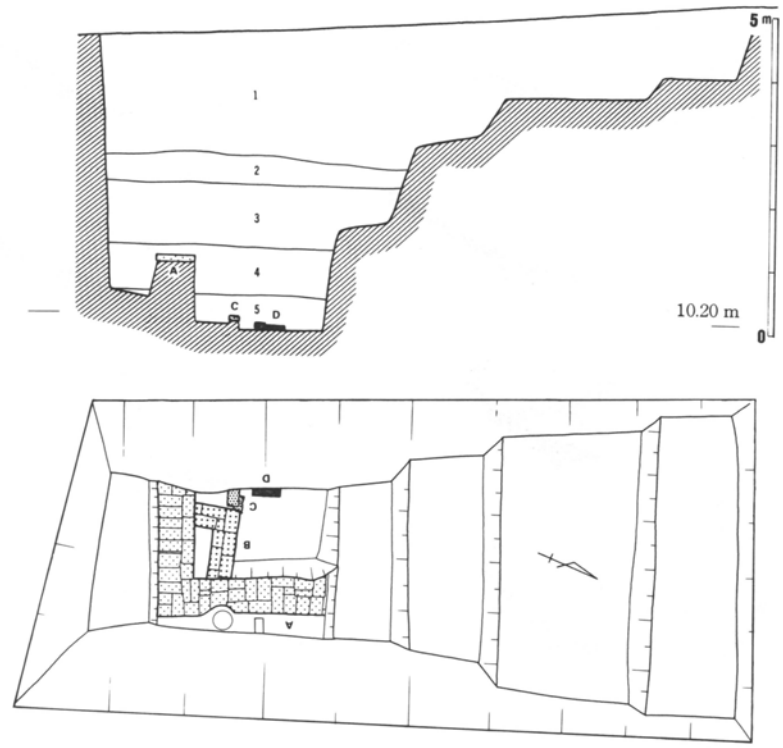


Fig. 118 East Trench

after cutting out part of Wall A. It was *in situ* and capped by a bowl (Fig. 121 No. 1). Inside the pot some pottery shards, a stone pounder and unidentified fragmentary bones were found. This pot and bowl possibly go back to the Late Dynastic Period. Two amulets of Thoth (Pl. 94 no. 8) and Bes (Pl. 94 no. 4) belong to Layer 3, and an Udjat-eye (Fig. 159 no. 1) and a figurine amulet (Fig. 159 no. 16) to Layer 4. These remains from Layer 4 all date to the Ptolemaic Period. A pottery lamp (see p. 214) some bronze coins (see p. 200) and a graffito (see p. 378. Pl. 156 no. 1) were taken Layers 1 and 2. Among the remains the most interesting article was a small limestone slab with Pharaonic reliefs (Fig. 141

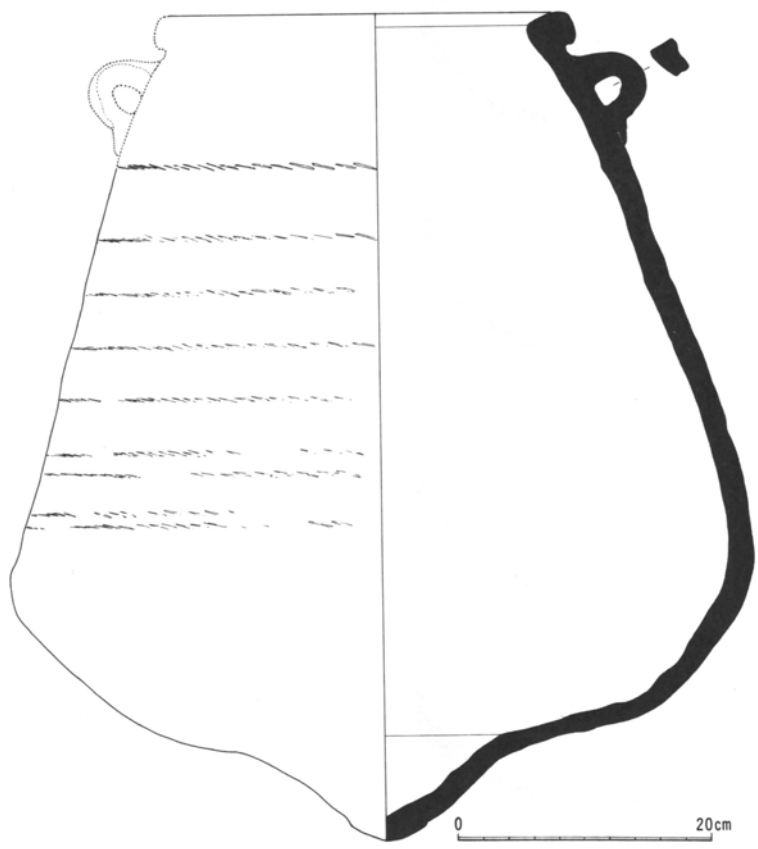


Fig. 119 Pottery found in the East Trench

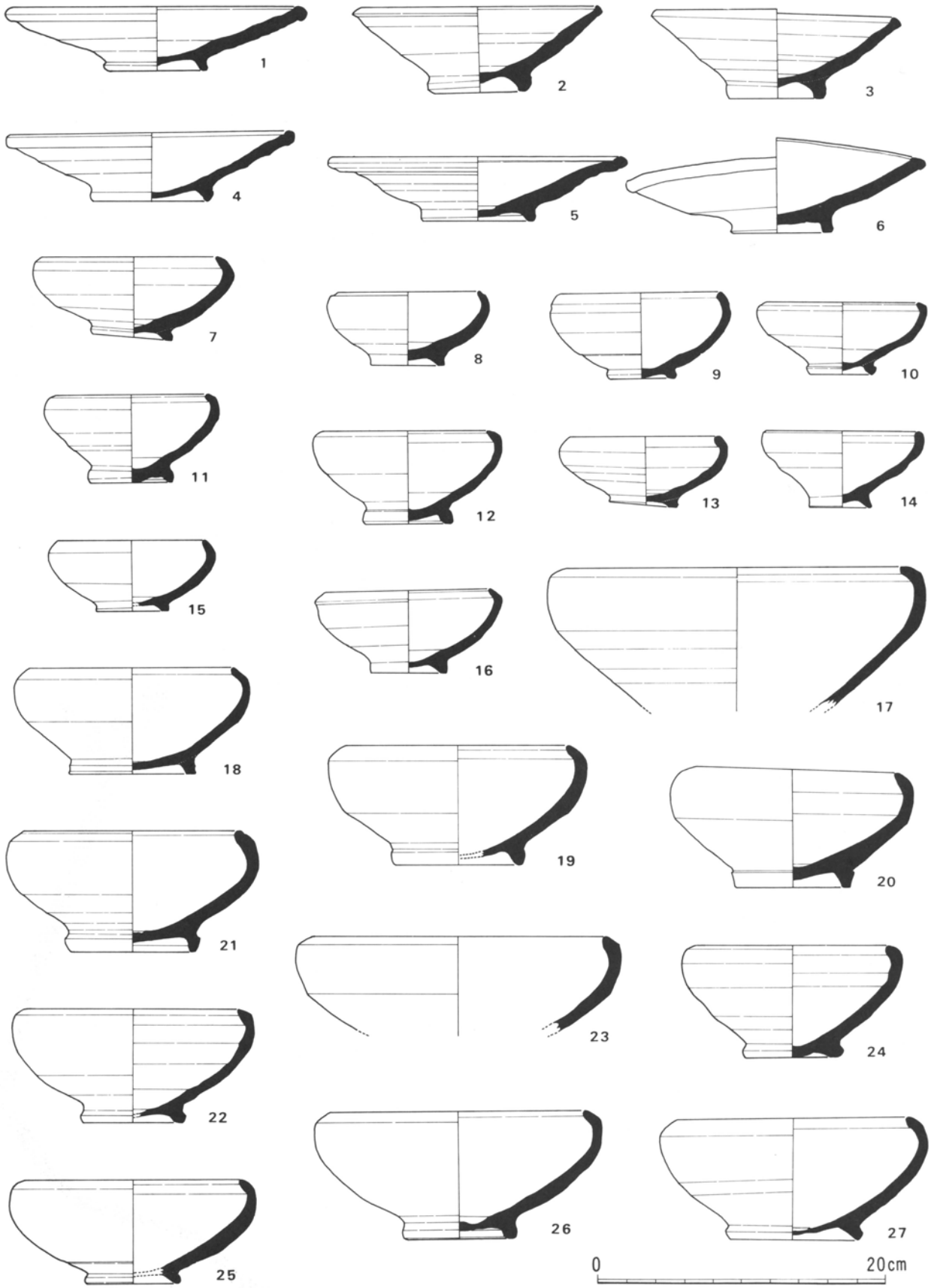


Fig. 120 Pottery found in the East Trench (Layer 1 : 2, 3 Layer 3 : 10, 11 Layer 4 : 1, 4～9, 12～27)

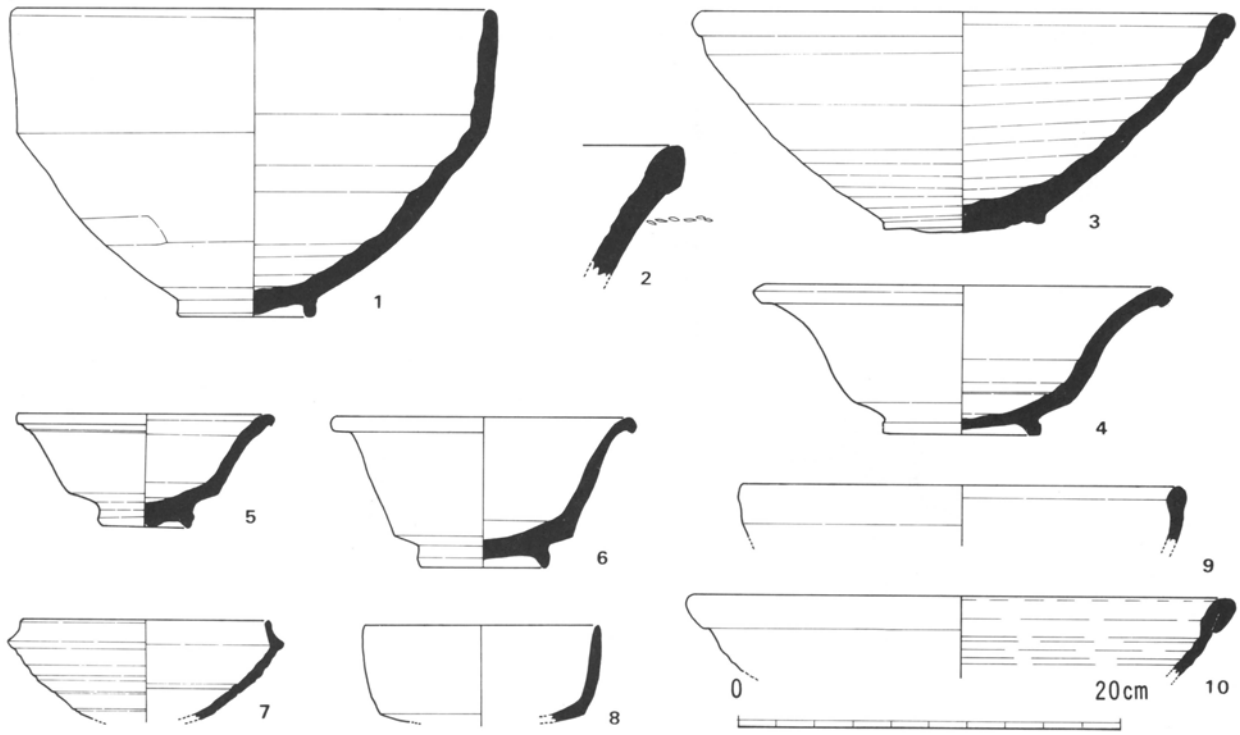


Fig. 121 Pottery found in the East Trench (Layer 2 : 2, 8 Layer 4 : 3~7, 9, 10 Layer 5 : 1)

Tab. 22 POTTERY

UNEARTHED AREA : Layers 1~5 in the East Trench

Fig. no. (Pl. no.)	Form	Dimension di. (cm) h.	Paste	Color	Design	Technique	Remarks
119 (80-3)	pot	31.8 × 66.8 vol. : 87164cc. (without rim)	rather sandy, vegetable-tempered	pale brown	white slip on outer face, horizontal cord-impressed line	lower part of outer face : scraped by wheel, other part : rubbed by wheel	
120-1	plate	20.4 × 4.4	rather sandy	reddish brown	without decoration	rubbed by wheel	
120-2	ditto	16.6 × 6.0 vol. : 364cc.	ditto	dark reddish brown	ditto	lower part of outer face : scraped & rubbed by wheel, other part : rubbed by wheel	
120-3	ditto	17.4 × 6.4	ditto	yellowish brown	ditto	upper part of outer face & base : scraped by wheel, other part : rubbed by wheel	foot : made separately & attached
120-4	ditto	19.7 × 4.8 vol. : 380cc.	ditto	reddish brown	ditto	rubbed by wheel	
120-5	ditto	20.4 × 4.4	ditto	ditto	ditto	ditto	
120-6 (79-5)	ditto	20.8 × 6.6	sandy	ditto	ditto	lower part of outer face & base : scraped by wheel, other part : rubbed by wheel	
120-7	bowl	12.1 × 5.9	rather sandy	dark reddish brown	without decoration	lower part of outer face, foot & base : scraped by wheel, other part : rubbed by wheel	
120-8	ditto	9.8 × 5.2 vol. : 210cc.	ditto	ditto	ditto	ditto	
120-9	ditto	11.1 × 6.0 vol. : 350cc.	ditto	reddish brown	without decoration	ditto	horizontal grooved line

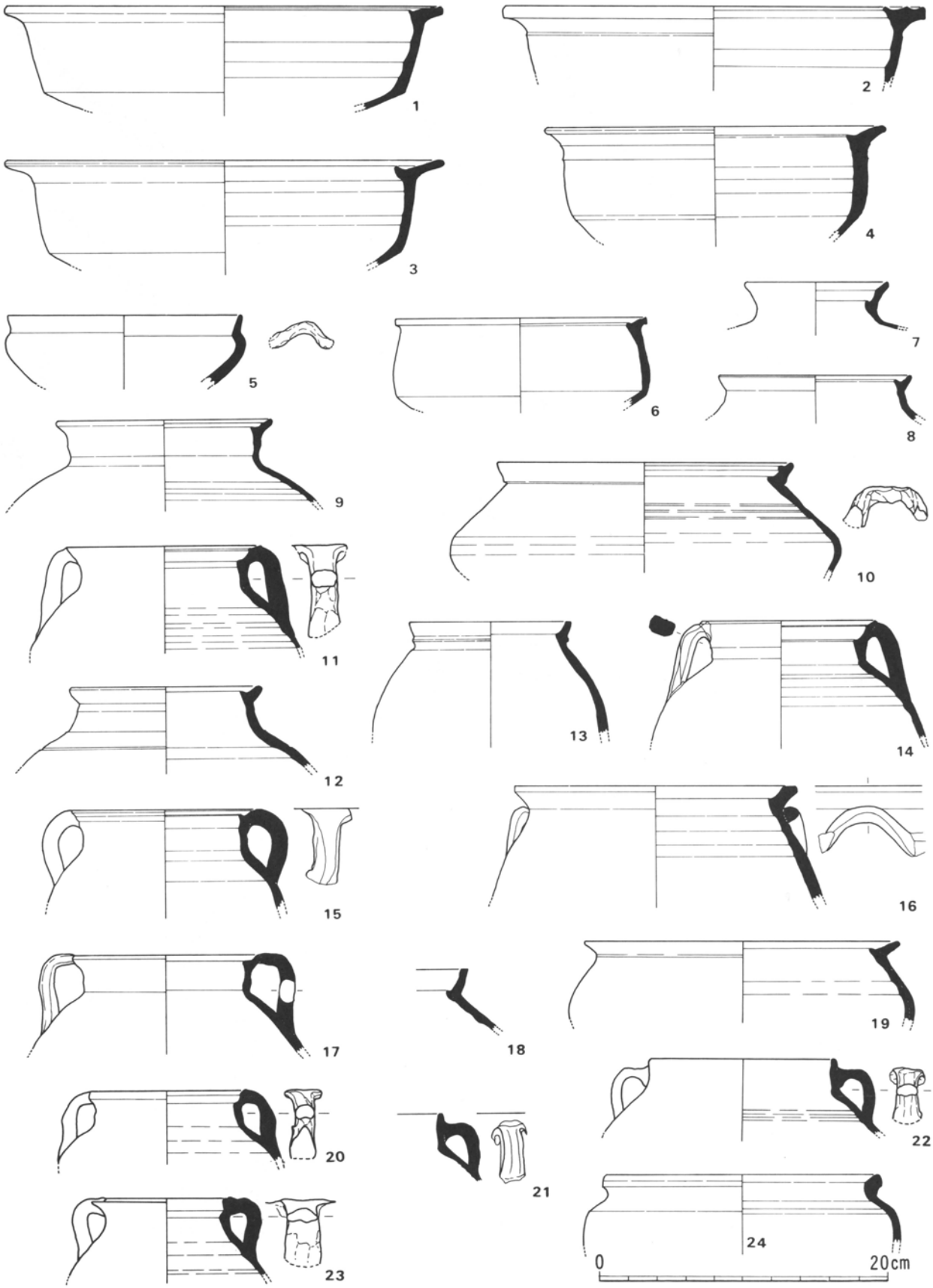


Fig. 122 Pottery found in the East Trench (Layer 2 : 2, 5～12, 14～17, 20, 22, 23 Layer 3 : 24 Layer 4 : 1, 3, 4, 13, 18, 19, 21)

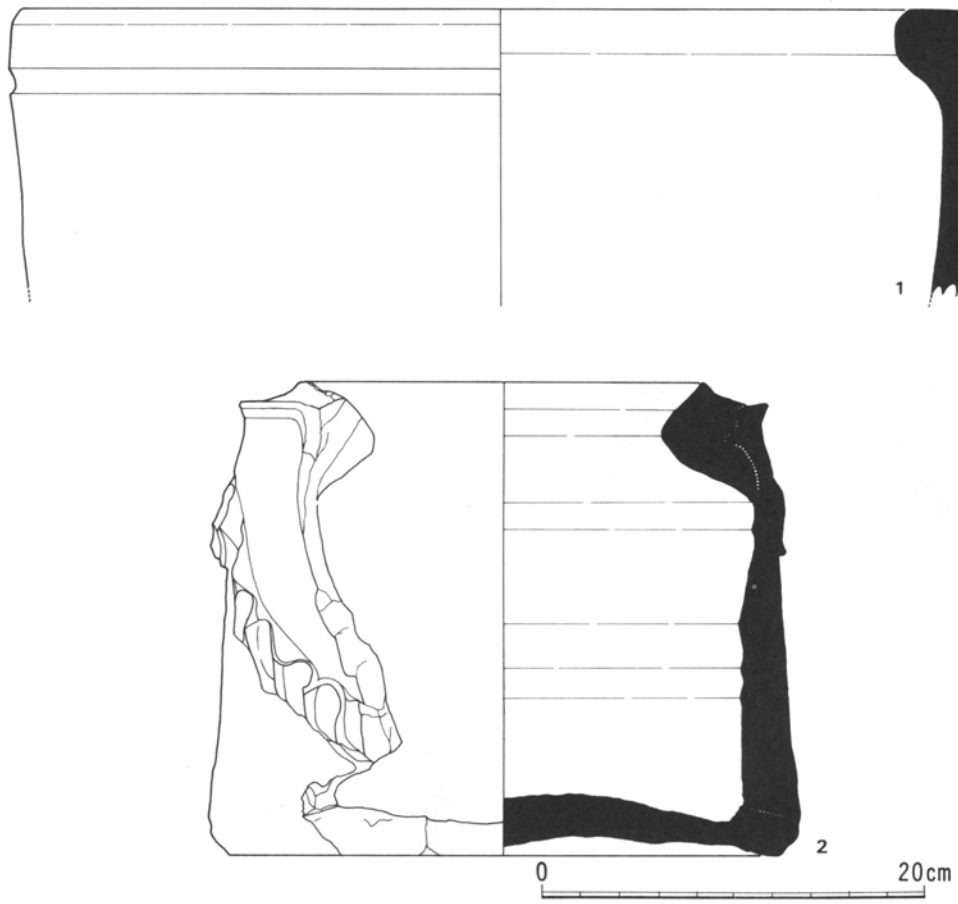


Fig. 123 Pottery found in the East Trench (Layer 2 : 1 Layer 3 : 2)

120-10	bowl	10.6 × 5.1	rather sandy	dark reddish brown	without decoration	ditto	foot : made separately & attached
120-11 (79-8)	bowl	10.5 × 6.2	minute	reddish brown	without decoration	lower part of outer face & inner face of foot : scraped & rubbed by wheel, other part : rubbed by wheel	
120-12	ditto	11.4 × 6.6	sandy	ditto	ditto	lower part of outer face : scraped by wheel, other part ; rubbed by wheel	
120-13	ditto	10.4 × 5.0	rather sandy	dark reddish brown	ditto	lower part of outer face, foot & base : scraped by wheel, other part : rubbed by wheel	foot : made separately & attached
120-14	ditto	10.7 × 5.3	ditto	reddish brown	ditto	rubbed by wheel	
120-15	ditto	10.2 × 5.0	ditto	ditto	ditto	lower part of outer face & base : scraped by wheel, other part : rubbed by wheel	
120-16	ditto	11.4 × 5.9	minute	ditto	ditto	ditto	
120-17	ditto	23.3	rather sandy	dark reddish brown	ditto	lower part of outer face : scraped by wheel, other part : rubbed by wheel	

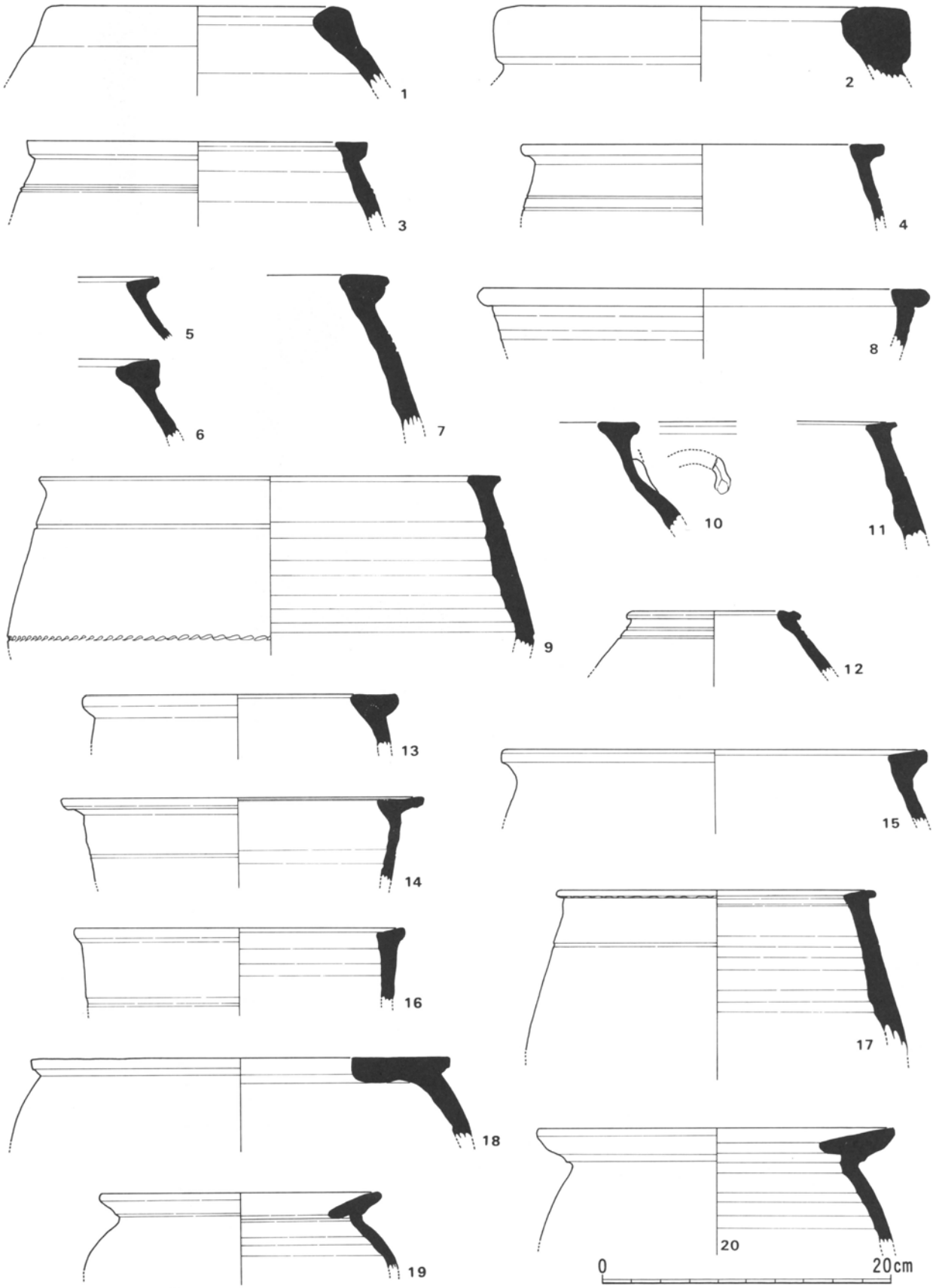


Fig. 124 Pottery found in the East Trench (Layer 2 : 1～11, 13, 15～17 Layer 4 : 12, 14, 18～20)

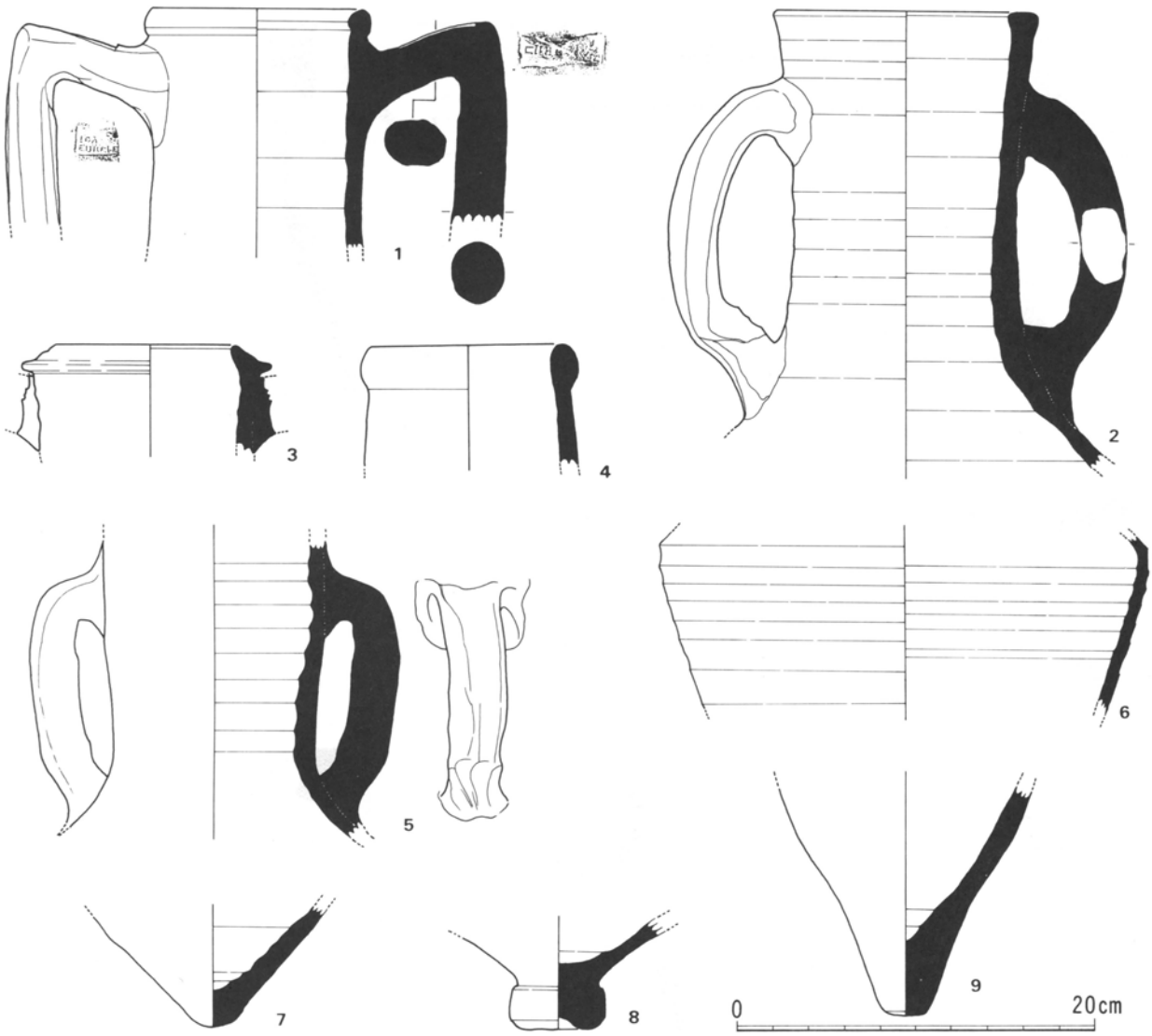


Fig. 125 Pottery found in the East Trench (Layer 2 : 7～9 Layer 3 : 1, 2 Layer 4 : 3～6)

120-18	bowl	14.3 × 7.3	rather sandy	reddish brown	without decoration	lower part of outer face & base : scraped by wheel, other part : rubbed by wheel
120-19	ditto	15.4 × 8.4	ditto	ditto	ditto	ditto
120-20	ditto	14.0 × 8.3	sandy	ditto	ditto	lower part of outer face : scraped & rubbed by wheel, other part : rubbed by wheel
120-21	ditto	14.8 × 8.6 vol. : 861cc.	rather sandy	ditto	ditto	lower part of outer face : lightly scraped by wheel, other part : rubbed by wheel
120-22	ditto	14.8 × 7.9	ditto	ditto	ditto	lower part of outer face & base : scraped by wheel, other part : rubbed by wheel
120-23	ditto	20.4	ditto	light brown	ditto	lower part of outer face : scraped by wheel, other part : rubbed by wheel

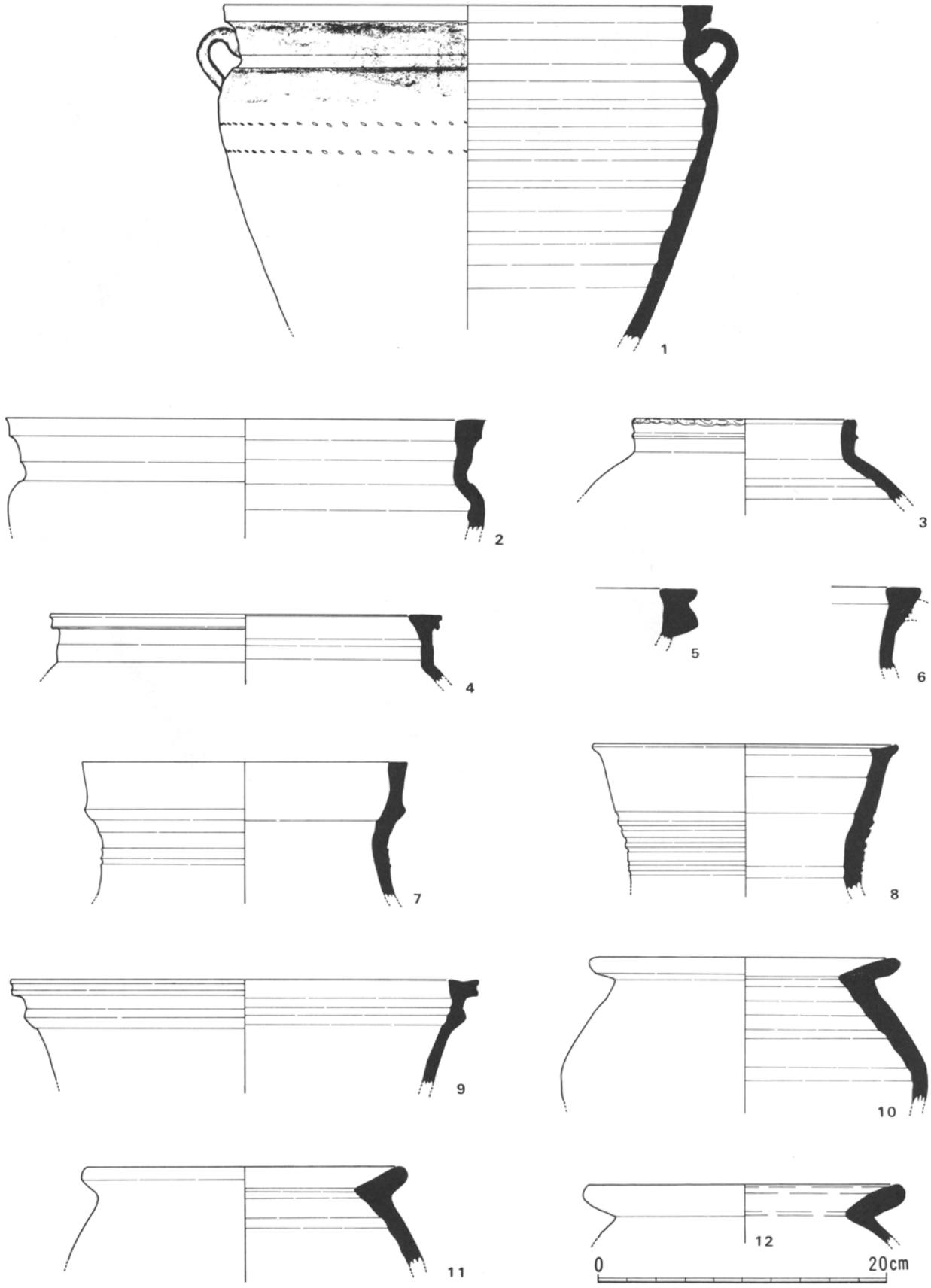


Fig. 126 Pottery found in the East Trench (Layer 2 : 3～6, 8, 10, 11 Layer 4 : 1, 2, 7, 9, 12)

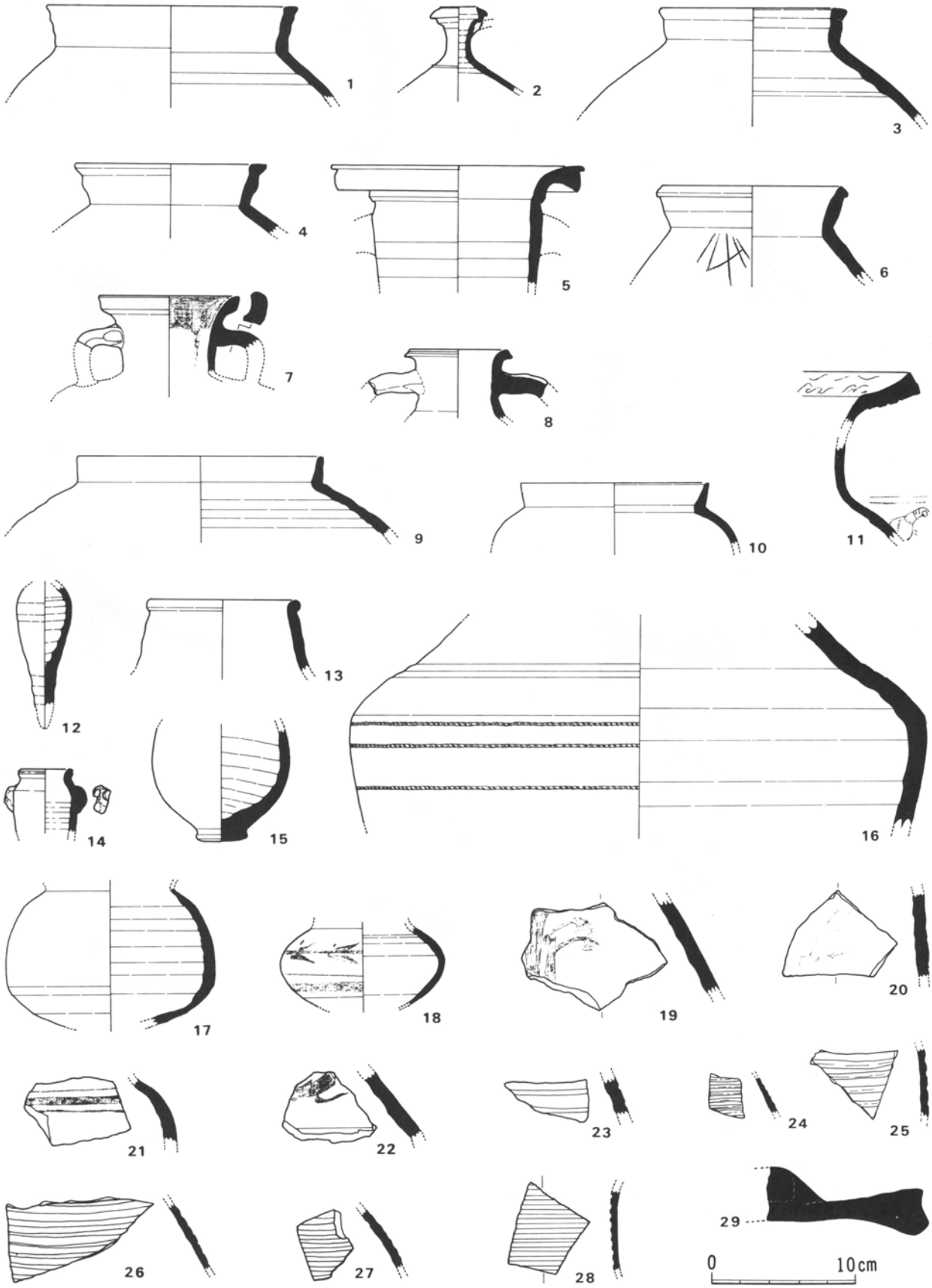


Fig. 127 Pottery found in the East Trench (Layer 1 : 11 Layer 2 : 1～4, 12 Layer 3 : 20 Layer 4 : 5～10, 13～19, 21～29)

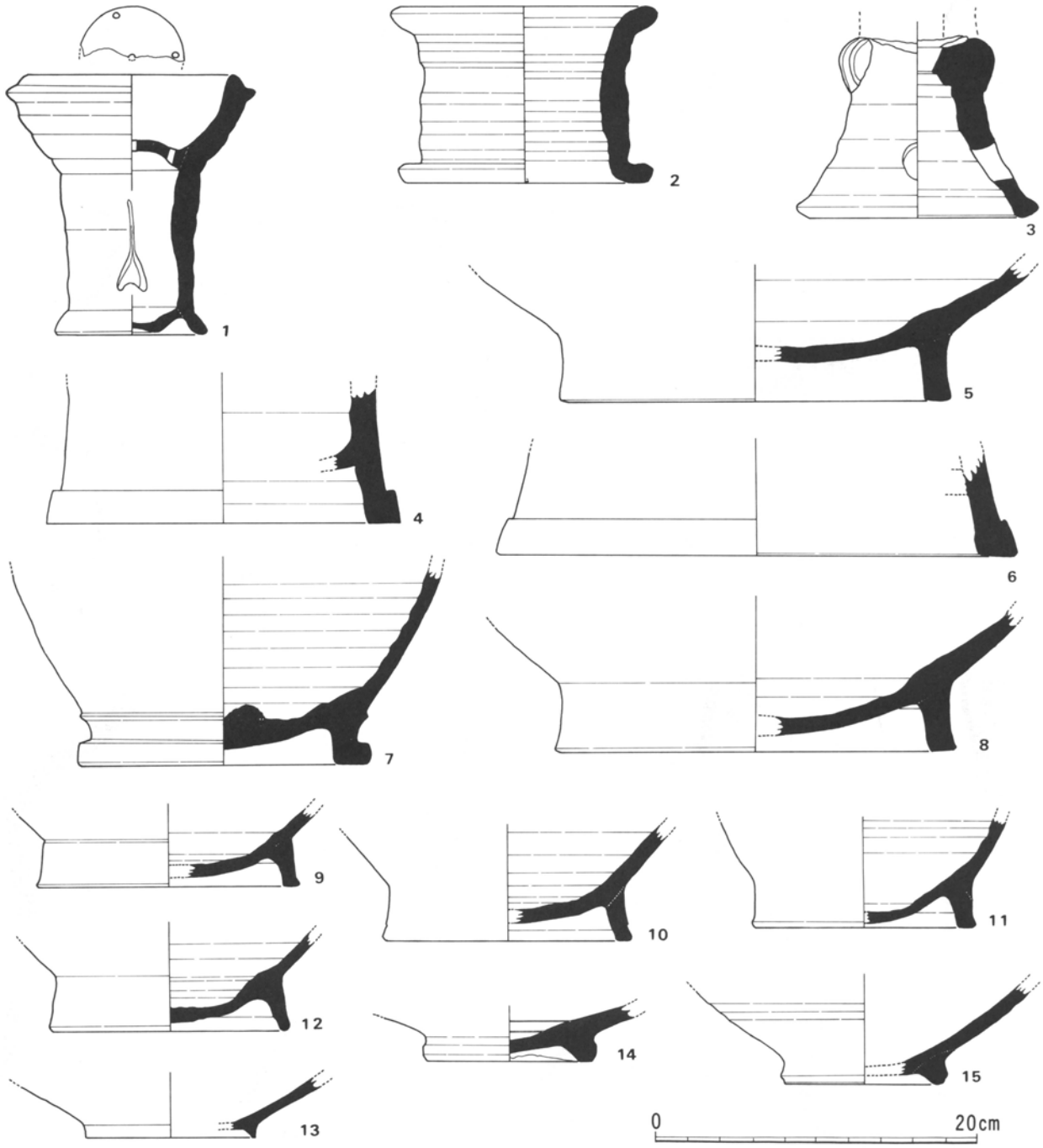


Fig. 128 Pottery found in the East Trench (Layer 2 : 5, 7～12, 14, 15 Layer 3 : 1 Layer 4 : 2～4, 6,13)

120-24	bowl	13.5 × 8.0	rather sandy	brown	without decoration	ditto	
120-25	ditto	15.0 × 7.2	ditto	reddish brown	ditto	rubbed by wheel	foot : made separately & attached
120-26	ditto	17.7 × 9.1 vol. : 1240cc.	minute	ditto	ditto	ditto	
120-27 (79-6)	ditto	16.1 × 8.5	ditto	ditto	ditto	lower part of outer face : scraped & rubbed by wheel, base : scraped by wheel, other part : rubbed by wheel	projected line around inner base

121-1 (79-4)	bowl	24.7 × 16.2	rather sandy, vegetable-tempered	reddish brown	without decoration	lower part of outer face & base : scraped by wheel, other parts : rubbed by wheel	foot : made separately & attached
121-2	ditto	7.0	rather sandy	light reddish brown	light brown, colored slip on rim	rubbed by wheel	impressed cord mark
121-3 (79-7)	ditto	27.3 × 11.5	minute, vegetable-tempered	reddish brown	without decorations	lower part of outer face & base : scraped by wheel, other parts : rubbed by wheel	
121-4 (79-2)	ditto	20.6 × 7.8	minute	dark grey	ditto	lower part of outer face foot & base : scraped & rubbed by wheel, other part : rubbed by wheel	light step on lower part of inner face
121-5 (79-3)	ditto	13.3 × 5.9	minute	reddish brown	without decoration	rubbed by wheel	
121-6	ditto	15.5 × 7.8	rather sandy	reddish brown	ditto	lower part of outer face & base : scraped by wheel, other part : rubbed by wheel	
121-7	ditto	13.0	ditto	light brown	ditto	rubbed by wheel	
121-8	ditto	12.2	ditto	reddish brown	ditto	upper part of outer face & inner face : rubbed by wheel & polished	
121-9	ditto	22.6	ditto	ditto	grey slip on outer face	rubbed by wheel	
121-10	ditto	28.0	ditto	ditto		ditto	
(79-9)	plate	7.2 × 2.6	vegetable-tempered	brown	without decoration	rubbed by wheel	soot-stained rim, lamp(?)
122-1	cooking bowl	30.6	rather sandy, white grit	light brown	without decoration	lower part of outer face : scraped by wheel, other part : rubbed by wheel	soot-stained on outer face
122-2	ditto	29.4	ditto	ditto	ditto	rubbed by wheel	ditto
122-3	ditto	30.6	ditto	ditto	ditto	ditto	
122-4	ditto	23.5	rather sandy	ditto	ditto	lower part of outer face : scraped by wheel, other part : rubbed by wheel	soot-stained on outer face
122-5	ditto	16.2	minute	reddish brown	with handle	inner face : rubbed by wheel, outer face : rubbed & scraped by wheel	
122-6	ditto	17.4	rather sandy	ditto	red slip on inner face	lower part of outer face : scraped by wheel, other part : rubbed by wheel	
122-7	cooking pot	10.0	ditto	ditto	without decoration	outer face : rubbed & polished by wheel, inner face : rubbed by wheel	
122-8	ditto	13.6	sandy	ditto	ditto	rubbed by wheel	
122-9	ditto	15.0	sandy, vegetable-tempered	reddish orange	ditto	upper part of inner face & outer face : rubbed & polished by wheel, lower part of inner face :rubbed by wheel	
122-10	ditto	20.5	rather sandy	reddish brown	with handle, red slip on inner face of rim & outer face	upper part of outer face : rubbed & polished by wheel, lower part of outer face :	

						scraped by wheel, inner face : rubbed by wheel	
122-11	cooking pot	13.6	rather sandy	reddish brown	with handles	rubbed by wheel	
122-12	ditto	13.4	ditto	ditto		ditto	
122-13	ditto	11.1	ditto	ditto	white slip on inner face of rim & outer face	ditto	
122-14	ditto	12.3	minute	dark brown	with handles	ditto	soot-stained on outer face
122-15	ditto	12.6	rather sandy, white grit	reddish brown	ditto	ditto	
122-16	ditto	19.6	minute	ditto	ditto	ditto	soot-stained on outer face
122-17	ditto	12.9	ditto	ditto	ditto	ditto	
122-18	ditto	13.2	ditto	light reddish brown		upper part of outer face : rubbed & polished by wheel, other part : rubbed by wheel	
122-19	ditto	22.0	rather sandy	reddish brown		rubbed by wheel	soot-stained on outer face
122-20	ditto	10.7	minute	ditto	with handles	inner face of rim & outer face : rubbed & polished by wheel, other part : rubbed by wheel	ditto
122-21	ditto	unmeasurable	rather sandy, white grit	light brown	ditto	rubbed by wheel.	
122-22	ditto	13.0	rather sandy	reddish brown	ditto	ditto	
122-23	ditto	8.8	minute	ditto	ditto	ditto	partially soot-stained on outer face
122-24	ditto	18.8	ditto	dark reddish brown	without decoration	ditto	soot-stained on outer face
123-1	hibachi	26.0	sandy, vegetable-tempered	reddish brown	wide concave horizontal line	rubbed by wheel	portable fire container used for cooking
123-2	ditto	20.2 × 24.4	sandy	ditto	band decorated with finger impressions	horizontally rubbed by wheel	
(80-4)	ditto	28.8	sandy, vegetable-tempered	brown	ditto	ditto	
124-1	pot	19.4	minute		light greyish orange slip	rubbed by wheel	
124-2	ditto	27.2	sandy	light brown	pale grey slip	ditto	
124-3	ditto	23.6	minute	reddish brown	two horizontal grooved lines, partially left slip	ditto	trace of handle
124-4	ditto	25.2	ditto	ditto	two horizontal grooved lines slip on rim	ditto	
124-5	ditto	unmeasurable	rather sandy	light reddish brown	pale light brown slip on rim	ditto	
124-6	ditto	42.0	ditto	reddish brown	light orange slip on rim	ditto	

124-7	pot	21.1	rather sandy	brown	three horizontal grooved lines, brownish white slip on rim	rubbed by wheel	trace of handle
124-8	ditto	30.4	ditto	pale brown	without decoration	ditto	
124-9	ditto	32.0	ditto	light reddish brown	horizontal grooved line, cord impressed	ditto	
124-10	ditto	unmeasurable	ditto	reddish orange	milky colored slip on outer face & top of rim	ditto	trace of handle
124-11	ditto	ditto	ditto	reddish brown	horizontal grooved line	ditto	
124-12	ditto	10.2	ditto	pale yellowish orange	two horizontal grooved lines	rim & outer face: rubbed & polished by wheel, inner face: rubbed by wheel	
124-13	ditto	21.9	rather sandy, vegetable-tempered	reddish orange	yellowish slip on top of rim	rubbed by wheel	
124-14	ditto	25.2	rather sandy	brown	horizontal shallow line	ditto	
124-15	ditto	29.0	rather sandy, white grit	light brown	light brown slip on rim	ditto	
124-16	ditto	22.8	rather sandy	reddish orange	horizontal shallow line	ditto	
124-17	ditto	21.8	rather sandy, vegetable-tempered	reddish brown	ditto	ditto	
124-18	ditto	29.0	minute	ditto		ditto	
124-19	ditto	19.6	ditto	pale brown		ditto	
124-20	ditto	24.8		reddish brown	pale brown slip on rim	ditto	
125-1 (80-1)	amphora	11.7	minute	pale brown	stamps on handles right: *CIPH*, left: *Ιcα[αx ? Ελαιεc*	rubbed by wheel	
125-2 (80-2)	ditto	14.5	ditto	light brown	with two handles	ditto	
125-3	ditto	10.2	ditto	dark brown	with two handles	ditto	
125-4	ditto	10.8	rather sandy	reddish brown	without decoration	ditto	
125-5	ditto		minute	pale yellowish orange	with two handles	ditto	
125-6	ditto		rather sandy, white grit	pale greyish brown	horizontal concave lines	ditto	black coating on inner face
125-7	ditto		minute, vegetable-tempered	pale brown	without decoration	ditto	ditto
125-8	ditto		minute	pale yellowish brown	ditto	ditto	
125-9	ditto		rather sandy	ditto	ditto	ditto	
126-1	jar	33.9	minute, white grit	brown	two horizontal cord-impressed lines, white slip from neck to upper part of body	rubbed by wheel	

126-2	jar	33.4	rather sandy, white grit	brown	whitish slip on inner face of neck & outer face	rubbed by wheel
126-3	ditto	15.4	minute	ditto	finger impressions around rim, horizontal projected line under rim, pale orangish grey slip under line on outer face	ditto
126-4	ditto	27.2	rather sandy	ditto	whitish slip on outer & inner faces	ditto
126-5	pot	40.2	ditto	pale brown	protuberance under rim	ditto
126-6	jar	34.6	rather sandy, white grit	reddish brown	trace of handle, light orange slip on top of rim	ditto
126-7	ditto	22.6	rather sandy	brown	three horizontal concave lines, whitish slip on outer face	ditto
126-8	ditto	21.2	rather sandy, white grit	light brown	six horizontal concave lines, pale greyish slip on outer & inner faces	ditto
126-9	ditto	32.4	rather sandy	ditto	projected line under rim, white slip on outer & inner faces	inner face of body: scraped by wheel, other part: rubbed by wheel
126-10	pot	20.8	sandy, vegetable-tempered	brown	white slip on outer & inner faces	rubbed by wheel
126-11	ditto	21.6	ditto	ditto	ditto	ditto
126-12	ditto	21.6	sandy	reddish brown	worn on face	ditto
127-1	jar	17.4	minute	reddish brown	reddish slip on outer face	ditto
127-2	lid		rather sandy	outer face: dark brown, inner face: pale yellowish orange	reddish slip on outer face	ditto
127-3	jar	13.2	ditto	brown	whitish slip on outer face	rubbed by wheel
127-4	ditto	13.3	minute	reddish brown	slip on outer face	ditto
127-5	ditto	17.2	ditto		milky colored slip on outer & inner faces	rubbed & polished by wheel
127-6	ditto	12.5	minute, white grit	reddish brown	something inscribed	rubbed by wheel
127-7	ditto	9.6	minute	brown	orangeish white slip on upper part of inner face of neck & outer face, two handles	ditto
127-8	ditto	6.5	ditto	orange, drab	two handles	ditto

127-9	jar	16.8	minute	reddish brown		rubbed by wheel	
127-10	ditto	13.0	ditto	brown	whitish slip on inner face of rim & outer face	ditto	
127-11	ditto	unmeasurable	ditto	ditto	yellowish slip on inner & outer faces on rim, red colored bird & black colored horizontal lines on shoulder	ditto	
127-12	miniature amphora		ditto	pale reddish brown	without decoration	horizontally rubbed	
127-13	cup	10.0	rather sandy	pale reddish orange	without decoration	rubbed & polished by wheel	
127-14	miniature amphora	3.3	minute, vegetable-tempered	pale brown	two protuberances	horizontally rubbed	
127-15	jar		minute	reddish brown	without decoration	rubbed by wheel	charcoal stuck to outer face
127-16	ditto		rather sandy, white grit	ditto	whitish brown slip on outer face, red colored design on shoulder, three cord-impressed lines	ditto	
127-17	ditto		rather sandy	brown	without decoration	lower part of outer face : scraped & polished by wheel, other parts : rubbed by wheel	
127-18	ditto		minute	pale yellowish brown	dark brown colored design	lowest part of outer face : scraped by wheel, other part : rubbed by wheel	
127-19	ditto		rather sandy, vegetable-tempered	brown	whitish slip on outer face, red brown colored papyrus design	rubbed by wheel	
127-20	ditto		rather sandy	pale brown	whitish slip on outer face, horse eating glass trimmed in black & inside painted in red	ditto	
127-21	ditto		ditto	brown	light brownish slip on outer face, dark brown lines	ditto	
127-22	ditto		ditto	ditto	whitish slip on outer face, dark brown colored design	ditto	
127-23	ditto		ditto	pale grey	concave lines	outer face : lines drawn, then face rubbed by hand (?)	
127-24	ditto		minute	dark orange	ditto	ditto	
127-25	ditto		minute, white grit	dark brown	ditto	ditto	

127-26	jar		minute	dark brown	concave lines	ditto	
127-27	ditto		ditto	reddish orange	ditto	ditto	
127-28	ditto		ditto	pale grey	ditto	ditto	
127-29	lid		vegetable- & grit-tempered	brown	without decoration	rubbed by hand	
128-1	stand	12.9 × 16.5	rather sandy, vegetable-tempered	brown	arrowhead opening on side, small pierced holes on base	rubbed by wheel	
128-2 (79-1)	ditto	16.4 × 11.0	rather sandy	pale brown		ditto	
128-3	ditto		rather sandy, white grit	ditto	rounded openings	ditto	
128-4	base		rather sandy	brown	whitish slip on inner face	rubbed by wheel	
128-5	ditto		sandy, vegetable-tempered	ditto		ditto	
128-6	base or rim		rather sandy	reddish brown	exfoliation trace on inner face of rim section	ditto	
128-7	base		minute	pale brown	whitish slip on outer face	ditto	partial bulge by firing
128-8	ditto		sandy, vegetable-tempered	brown		ditto	
128-9	ditto		minute	reddish brown		ditto	
128-10	ditto		sandy vegetable-tempered	brown		ditto	
128-11	ditto		sandy	reddish brown	whitish slip on inner face	ditto	
128-12	ditto		rather sandy	brown		ditto	
128-13	ditto		ditto	black		rubbed & polished by wheel	
128-14	ditto		rather sandy	reddish brown		outer face : scraped & rubbed by wheel, base : scraped by wheel, inner face : rubbed by wheel	
128-15	ditto		sandy	pale reddish brown		rubbed by wheel	

no. 16. Pl. 76 no. 1) found in Layer 3. It undoubtedly served as practice for a sculptor.

(KAWANISHI, H.)

NORTH TRENCH (Fig. 129. Pl. 61 lower)

The road from Serapeum to the north, if projected, would extend beyond the city wall to the tower of the Coptic church in the village across the wadi (Fig. 117. Pl. 58 lower). The eastern area of this road is the lowest in the city area. It is generally said that a flood runs down the wadi from the desert once every twenty years, and where the flow shifts from the south toward the west, the flood water runs into a

depression at the edge of the site made by either the flood waters or by human activity, *sebakh*. Though this depression lies within the city, remaining brick walls are scarce and bricks measuring 32～34 × 16～17 × 8cm are used in almost all of those which do remain. As brick walls deemed to date from the Coptic Period are not found, it is unknown if this area was utilized in that period or whether it had been abandoned before.

In order to investigate structures from the pre-Coptic Period, two trenches were set up in the depression (Fig. 117), along an exposed 8m long, 2.5m high and 0.5m thick north-south wall located 180m to the north and 35m to the east of Serapeum. One 5.0 × 5.0m trench was established on the east side and one 5.5 × 3.0m on the west side a little south of the wall.

The north end of the wall has been destroyed while the south end joins an east-west wall measuring 1.1m in thickness. Brick measuring 32 × 16 × 8cm is used in both of these walls.

In the west trench, the bottom of the north-south wall was ascertained 35cm below ground level. Digging further to a depth of 1m in an area 2.5 × 3.0m in the northeast part of the trench, a structure made of brick measuring 32 × 17 × 8cm was detected in a layer 40cm below the lowest part of the north-south wall. Judging from the arrangement of the brick, the direction is six degrees west and not parallel to the north-south wall. In the east trench, a structure assumed to be a continuation of that in the west trench was discovered. The top of the structure is higher in the east trench by 40cm than in the west trench. In the west trench, we also detected a circular structure made of brick measuring 32 × 16 × 6cm at the northwest corner of the trench. Due to the limitation of the trench, neither function nor the scale of these structures was determined. Though we had assumed that in the forming of the depression, all remains had been destroyed, we nevertheless could confirm the existence of structures from the Late Dynastic Period.

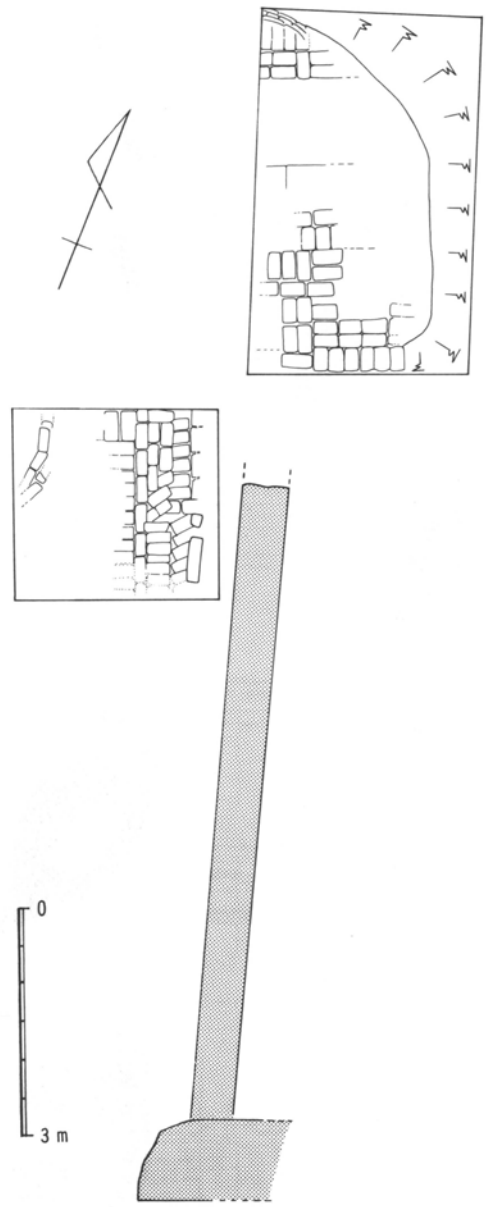


Fig. 129 North Trench

Pottery shards which belong to the Late Dynastic and the Early Ptolemaic Periods (Figs. 130 and 131) were uneathed in the trenches. A bronze coin, some beads (Pl. 95 no. 12), unfired earthen objects (see p. 220. Fig. 153 nos. 9～12) and so on were found. Among these an important find was a very unusually well-shaped elephant head (Fig. 152 no. 11. Pl. 90 no. 5)

To the north of the trenches, two olive oil presses were exposed on the ground. One, with a square channel for collecting oil, was broken into two pieces, while the other one 6.5m to the north of the former is complete but with a circular channel. (TSUJIMURA, S.)

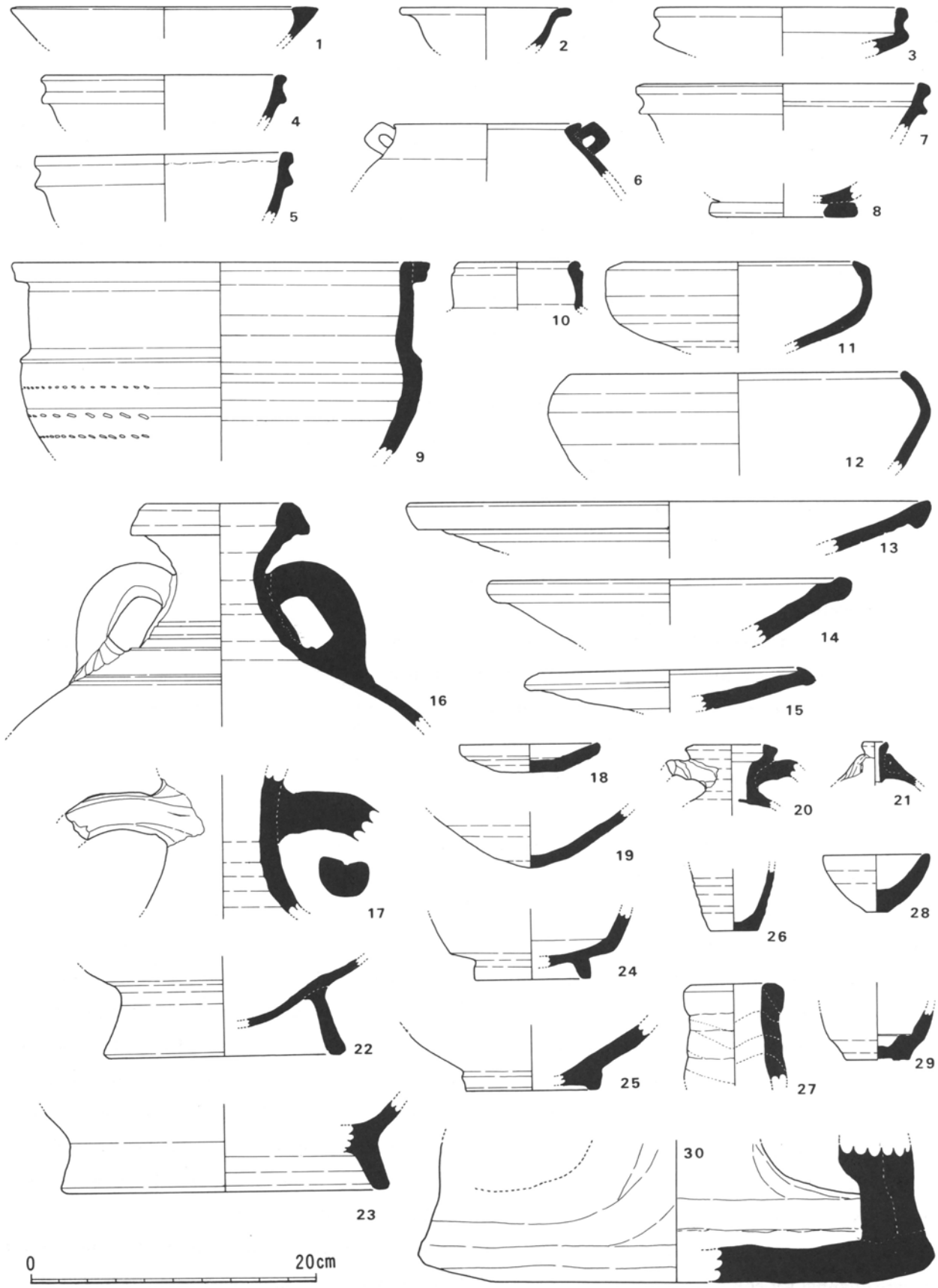


Fig. 130 Pottery found in the North Trench

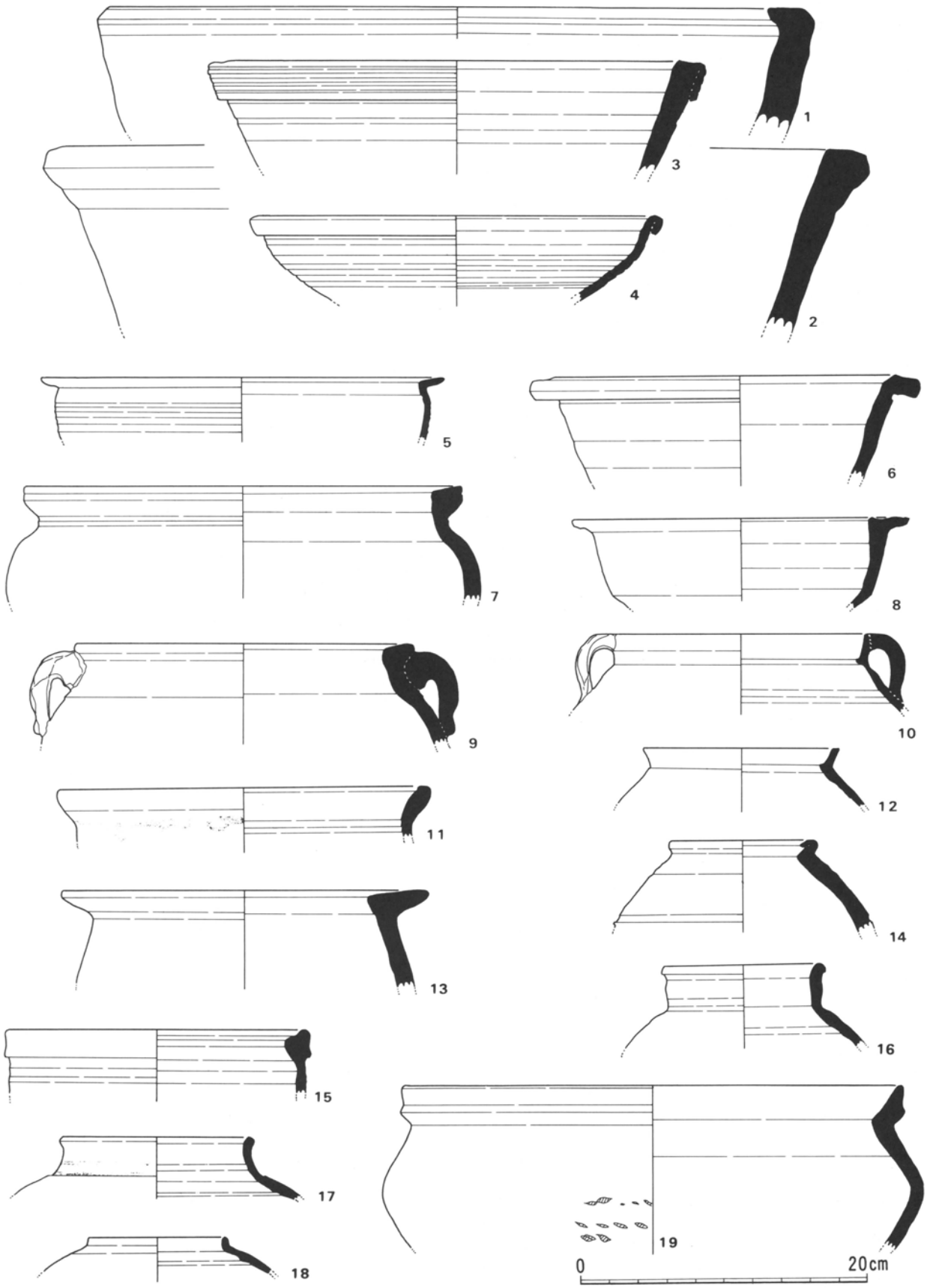


Fig. 131 Pottery found in the North Trench

Tab. 23 POTTERY

UNEARTHED AREA : Disarranged Soil in the North Trench

Fig. no.	Form	Dimension d. (cm) h.	Paste	Color	Design	Technique	Remarks
130-1	bowl	21.3	faience	10BG 4/10	without decoration		
130-2	ditto	11.6	ditto	ditto	band under rim		
130-3	ditto	17.4	ditto	10B 4/12			
130-4	ditto	16.5	ditto	5B 5.5/9	band under rim		
130-5	ditto	18.0	ditto	5B 6.5/6	ditto,		
130-6	jar	12.8	ditto		two handles		
130-7	bowl	19.5	ditto	10BG 4/10	band under rim		
130-8	base		ditto	5B 5.5/9			
130-9	bowl	28.9	rather sandy	dark reddish brown	three cord-impressed lines	rubbed by wheel, whitish slip on surface	
130-10	jar	8.2	minute	greyish yellow	without decoration	rubbed by wheel	
130-11	bowl	16.1	minute	deep reddish	ditto	burnished	
130-12	ditto	23.1	ditto	greyish brown	ditto	rubbed by wheel	
130-13	plate	36.0	minute	reddish brown	horizontal, incised lines	carefully burnished	
130-14	ditto	24.4	sandy, vegetable-tempered	reddish dark brown	without decoration	rubbed by wheel	
130-15	ditto	18.1	sandy	reddish brown	ditto	ditto	
130-16	jar	10.2	minute	reddish brown	horizontal, comb-mark, two handles	ditto	black coating on inner face
130-17	amphora		rather sandy	dark brown	without decoration, two handles	ditto	
130-18	plate	9.6× 2.0	minute	deep orange	without decoration	rubbed by wheel, string-cut on base	
130-19	base		sandy	dark brown	without decoration	rubbed by wheel, radial scraped on base	
130-20	table amphora	5.0	minute	whitish brown	whitish slip, two handles	rubbed by wheel	
130-21	jar	1.6	minute	deep reddish orange	without decoration, two handles	ditto	
130-22	base		minute	strong yellowish orange	whitish slip, without bottom	ditto	
130-23	ditto		sandy, vegetable-tempered	reddish & dark brown	without decoration	ditto	
130-24	ditto		rather sandy	black	ditto	burnished without bottom	
130-25	ditto		sandy	dark brown	ditto	rubbed by wheel	
130-26	base		sandy	reddish brown	horizontal concave lines	ditto	
131-27	rim	6.0	sandy, white grit	dark brown	without decoration	rubbed by hand	
130-28	cup	7.4× 4.0	rather sandy	deep reddish		rubbed by wheel	soot-stained on inner

				orange			face & rim
130-29	base		minute	deep reddish orange	without decoration	rubbed by hand	
130-30	hibachi	35.8	sandy, vegetable-tempered	reddish brown	without docoration	rubbed	
131-1	bowl	47.4	sandy, vegetable-tempered	dark brown	without decoration	horizontally rubbed	
131-2	ditto	54.6	ditto	dark brown	ditto	ditto	
131-3	ditto	33.7	minute	deep reddish orange	horizontal, incised lines on rim	rubbed by wheel	
131-4	ditto	27.4	ditto	ditto	horizontal, concave or grooved lines, slip on outer face	ditto	
131-5	pot	27.9	minute	dark brown	horrizontal concave lines	rubbed by wheel	
131-6	bowl	26.9	sandy, vegetable-tempered	reddish brown	without decoration	ditto	
131-7	pot	30.5	sandy, vegetable-tempered	pale brown	horizontal concave line on rim	ditto	
131-8	bowl	23.4	minute	deep reddish orange	without decoration	lower part: scraped by wheel, other part: rubbed by wheel	
131-9	pot	23.2	sandy, vegetable-tempered	pale brown	slip on rim & outer face, two looped handles	rubbed by wheel, burnished on rim	
131-10	cooking pot	17.4	minute	reddish brown	two handles	rubbed by wheel	
131-11	pot	25.4	minute	reddish brown	black painting on inner face of rim & outer face	burnished by wheel	
131-12	cooking pot	13.5	minute	deep reddish orange	without decoration	rim & outer face: burnished, inner face: rubbed by wheel	
131-13	pot	25.4	sandy, vegetable-tempered	reddish brown	without decoration	rubbed by wheel	
131-14	jar	10.0	sandy	greyish brown	horizontal concave line on body	ditto	
131-15	pot ?	20.5	minute	light yellowish orange	slip on rim & outer face	rubbed by wheel	
131-16	jar	11.0	rather sandy	dark brown	without decoration	ditto	
131-17	ditto	13.0	ditto	deep reddish orange	red slip, two greenish grey horizontal lines on neck	ditto	
131-18	ditto	9.4	ditto	dark reddish orange	without decoration	ditto	
131-19	ditto	34.5	minute	dark brown	three cord-impressed lines	ditto	

III

ARCHEOLOGICAL REMAINS

1 WOODEN OBJECTS

UNEARTHED AREA : South Chamber of Chapel B Shaft

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
132-1 (67-17)	A-IV	columnar	h. 6.6 cm d. 7.0		undetermined use
132-2 (67-16)	D-IV	ditto	h. 7.3 d. 6.2		
132-3 (67-15)	E-IV	ditto	h. 15.3 d. 14.0		cloth remnants on it
132-4 (67-11)	A-IV	papyrus smoother	l. 20.8		
132-5	A-III	ditto	l. 17.8		
132-6 (67-8)	B-IV	stick	l. 44.0		belong to wooden statue
132-7 (67-9)	A-IV	ditto	l. 57.0		ditto
132-8 (68-6)	C-I	human mask	h. 22.0 w. 15.0		
132-9 (68-7)	B-III, IV	headrest	h. 18.0 (restored)		joined with wooden pegs
133-2 (67-3)	F-I	part of bird	w. 7.6 h. 3.4		
133-4 (67-5)	C-II	undetermined	l. 14.0		
133-5 (67-6)	C-I	ram horn	h. 4.1 w. 16.5		attached to a ram-shaped god
133-6	C-II	human hand	l. 16.3		cloth partially remaining on surface
133-7	disarranged	human arm	l. 7.8		wooden peg left in one hole
133-8	C-IV	human leg	l. 6.9	with tenon	
133-9	C-II	human hand	l. 15.0 w. 5.0	gold foil overlaid	
133-10 (67-14)	F-II	human foot	w. 2.1	with mortise	
133-11 (67-1)	F-III	statue	h. 18.5	double crown, gold foil overlaid on plaster and cloth	
133-13 (67-7)	disarranged	part of foot	w. 6.4	two wooden pegs on sole plaster on upper face	partially fired
134-5 (67-13)	C-II	human ear	h. 6.0	with two diagonal hole for peg	
134-6 (68-3)	F-II	padestal for Osiris figure	h. 1.8 l. 5.3		bronze Osiris feet remain
134-11	F-II	undetermined	d. 4.0	square hole	
134-12	disarranged	undetermined	d. 3.2	three pierced holes, peg left on sole	belong to wooden chest
134-13	II	animal	l. 5.4	mongoose (?)	
134-19	disarranged	undetermined	l. 10.3	part of barque (?)	

(68-4)	F	coffin	left l. 11.5		
(68-5)	disarranged	coffin	l. 62		

SUPPLEMENT :

Human ear model with two pierced holes (Fig. 134 no. 5. Pl. 67 no. 13). Undoubtedly this was attached to a funerary mask for the dead.[1)]

Solid mask (Fig. 132 no. 8. Pl. 68 no. 6). It has three wooden pegs. Two pegs are in holes at the head and another hole at the chin.

Bird figure (Fig. 133 no. 2. Pl. 67 no. 3). This is the lower half of the body and there are four attachment holes on the top side. The legs would have been attached in the holes on the underside.

Statue with a double crown (Fig. 133 no. 11. Pl. 67 no. 1). The right half of his face is burned away and the Uraeus figure on his forehead is missing. Some traces of gold foil are seen on the surface. Other parts of the statue have been lost. This statue closely resembles the two famous wooden statues of Senwosret I from Lisht.[2)]

Stick. Another was burned and carbonized completely. Length about 105cm.

Three wooden coffins (Fig. 23). Floor boards of two rectangular coffins (I, II) were detected in their original position, though they had been burned and carbonized. Judging from its multiple floor construction, Coffin I was composed of interior and outer coffins (Fig. 23). The outer one was placed on four massive transverse battens. Placement of floor battens is characteristic of rectangular coffins of the Middle Kingdom. Two fragments of side planks which remained in their original position have some inscriptions painted on thin plaster. The planks were joined together with flat dowels and wooden pegs. The floor of Coffin I is 197cm in length × 54cm in width. The inner, 183cm in length × 38cm in width. The floor boards of Coffin II did not lost their original position. Coffin III which would have occupied the center of the chamber, left only the massive transverse battens. Coffins II and III have probably the same style as Coffin I (Fig. 23). This style of coffin enjoyed great popularity in Upper Egypt in the Middle Kingdom.[3)]

Notes

1) HAYES *SE*, Fig. 201.

2) HAYES, *op. cit.*, Fig. 117 ; ALDRED C., *Egyptian Art* (Oxford,1980), Fig. 101.

3) HAYES, *op. cit.*, Figs. 197, 204, 206, 207 ; GARSTANG *BCAE*, Figs.70, 71, 167, 169, 170 ; SPENCER, A. J., *Death in Ancient Egypt*, (London, 1982) Figs. 24, 64 ; TAYLOR, J. H., *Egyptian Coffins* (*Shire Egyptology*, 1989) Figs. 1, 10, 13, 14.

UNEARTHED AREA : Chapel B Shaft

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
133-1	disarranged	part of bird (?)	w. 7.3 cm		parquetry
133-3 (67-2)	ditto	part of parquetry	w. 6.6		plaster on outer face
134-1 (68-1)	ditto	pedestal for Osiris figure	w. 4.0 l. 8.3 h. 2.7	writings in black	see p. 321
134-3 (68-2)	ditto	pedestal for Osiris figure	w. 4.1 l. 6.9 h. 2.6		
134-8 (67-4)	ditto	crocodile, Sobek	l. 10.1	gold foil overlaid	
134-10 (67-12)	ditto	Uraeus	h. 6.8		
(67-10)	ditto	undetermined	h. 6.6	with tenon	

UNEARTHED AREA : Front Area of Chapel B

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
134-2	disarranged	pedestal for Osiris figure	w. 3.2 cm l. 6.2 h. 1.9		bronze spine left in hole
134-4	ditto	undetermined	l. 12.5	penis-shaped (?)	one end broken
134-7 (69-22)	ditto	undetermined	l. 16.5	writings in black	see p. 321
134-15 (95-8)	ditto	undetermined	l. 6.1	black stone inlaid, horse & scorpion incised	inlaid trace
135-35	ditto	undetermined	l. 6.8		

UNEARTHED AREA : East Area Adjoining Chapel A

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
134-17	disarranged	weaving needle	l. 8.6 cm	with winding strand	broken, read
135-2	ditto	baluster	h. 6.1		
135-7	ditto	spindle	d. 5.3 h. 2.0		
135-10 (69-9)	ditto	frieze	h. 3.5	foliage, tenon at each end	
135-16	ditto	spindle	d. 3.9 h. 1.6		
135-17 (69-3)	ditto	ditto	d. 5.6 h. 1.9	concentric circles around hole	
135-18	ditto	ditto	d. 5.4 h. 2.1		
135-19	ditto	ditto	d. 4.5 h. 2.0		
135-22 (69-4)	ditto	weaving comb	l. 2.9		fragment

135-23 (69-5)	disarranged	weaving comb	l. 3.8		fragment
135-34	ditto	undetermined	w. 2.8		
135-36	ditto	ditto	l. 30.2		
135-37	ditto	ditto	l. 24.3		
135-25	ditto	weaving comb	l. 4.5		
135-26	ditto	comb	l. 4.2		
135-27 (69-7)	ditto	ditto	l. 4.5		
135-30 (69-10)	ditto	cosmetic stick (?)	l. 14.7		
135-32	ditto	undetermined	w. 3.3 l. 7.9	two wooden pegs	
135-33 (69-11)	ditto	hairpin (?)	l. 12.0		
(69-2)	ditto	decoration	w. 2.2	inlaid work lost	
(69-15)	ditto	comb	w. 5.1		

UNEARTHED AREA : Room 4, Eastern Area around the South Court

Fig. no (Pl. no.)	Layer	Form	Dimension	Design	Remarks
135-1 (69-13)	disarranged	lid	d. 11.1 cm h. 6.5	concentric circle separate-made knob, joined with nail	cosmetic vase
135-3	ditto	baluster	h. 5.2		
135-20 (69-6)	on the floor	comb	l. 11.4		
135-28	disarranged	stylus (?)	l. 9.4	oblique checker pattern incised	

UNEARTHED AREA : Building 6

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
135-5 (69-19)	disarranged	baluster	h. 12.6 cm		
135-6 (69-18)	ditto	ditto	h. 13.5		
135-12	ditto	half-baluster	h. 9.8		
135-14	ditto	ditto	h. 11.2		

UNEARTHED AREA : Other Sections

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
133-12	Chapel A shaft	undetermined	w. 4.5 cm		
134-20 (68-8)	ditto	disk plaque	d. 9.7 t. 2.0	Greco-Roman costume, Atef crown	face broken
134-9 (68-9)	Middle Court East, disarranged	falcon Horus	w. 3.7	glass-inlaid eyes, gold foil overlaid	attendant on some product
134-14 (69-17)	Room 2, Building 4, on the floor	pendant (?)	w. 2.5		

(69-12)	Room 2, Building 4, on the floor	needle	l. 20.0 (right)	with winding strand	broken reed
135-31	Room 3, Building 4, disarranged	comb	l. 22.3	circular patterns	
134-16	Room 6, Building 8, disarranged	decoration	h. 2.1	pierced hole	
134-18	Room 4, Building 8, disarranged	decoration	l. 4.0	floral (?) relief, red painting	trimmed in white
135-4 (69-20)	Building 5, disarranged	baluster	h. 13.7		
135-8 (69-8)	ditto	frieze	h. 6.6	palmette(?), foliage	
135-11 (69-14)	ditto	ditto	h. 4.4	palmette	
135-9	site surface	ditto	h. 4.6	tenon at each end	
135-13 (69-21)	Room 2, Building 9, disarranged	half-baluster	h. 8.1		
135-15	east part of Building 10, disarranged	spindle	d. 3.5 h. 1.5		
135-21	southeast corner of the Western Temple Area, over the outer wall, disarranged	comb	l. 7.6		
135-24	ditto	weaving comb	l. 4.2		corner fragment
135-29	stone circle in the South Court, disarranged	stylus(?)	l. 6.5		
(69-1)	Room 1, the South Court	figure	w. 8.7		
(69-16)	"Pool" Area, disarranged	decoration	w. 3.1		

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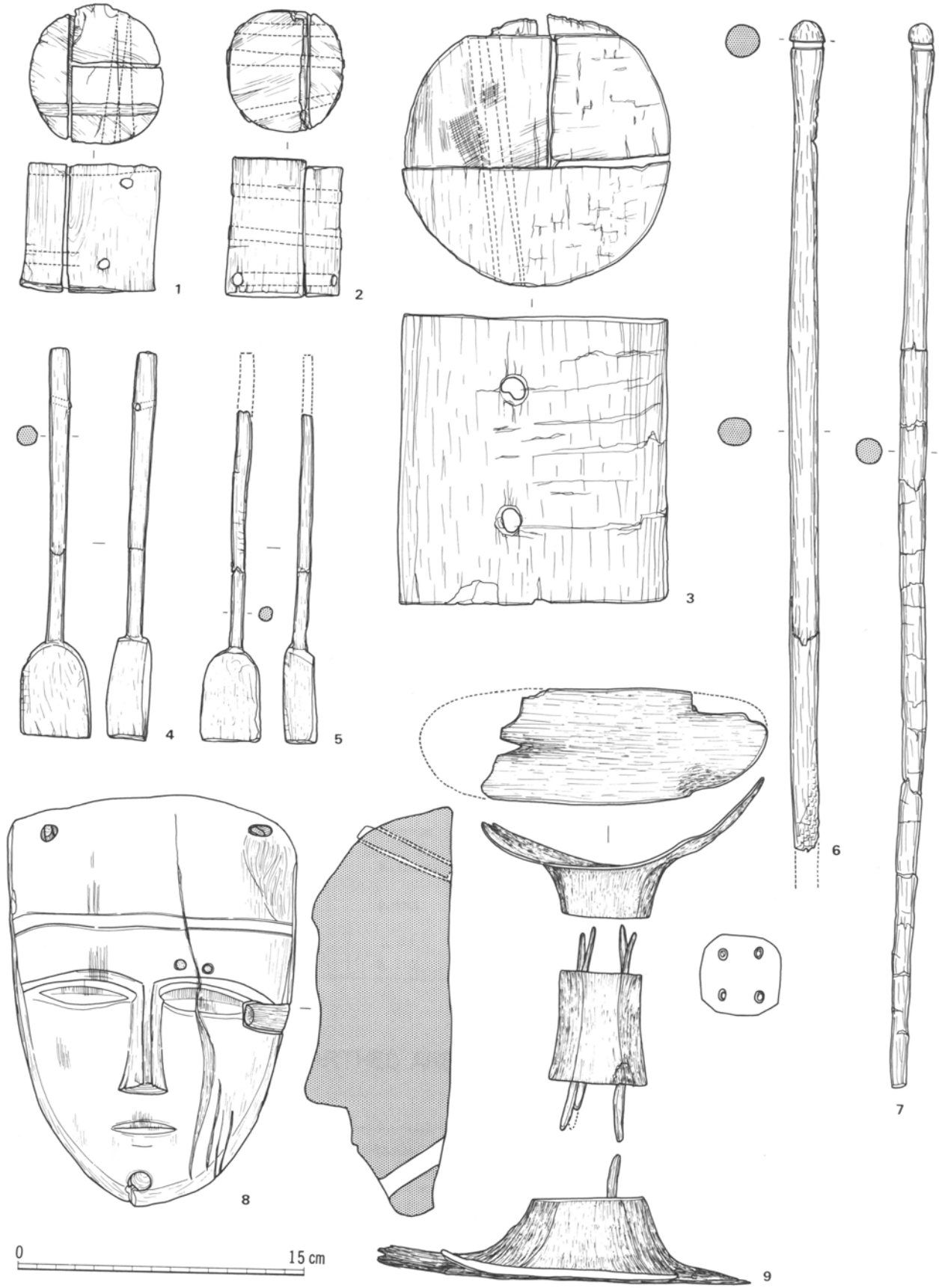

Fig. 132 Wooden objects

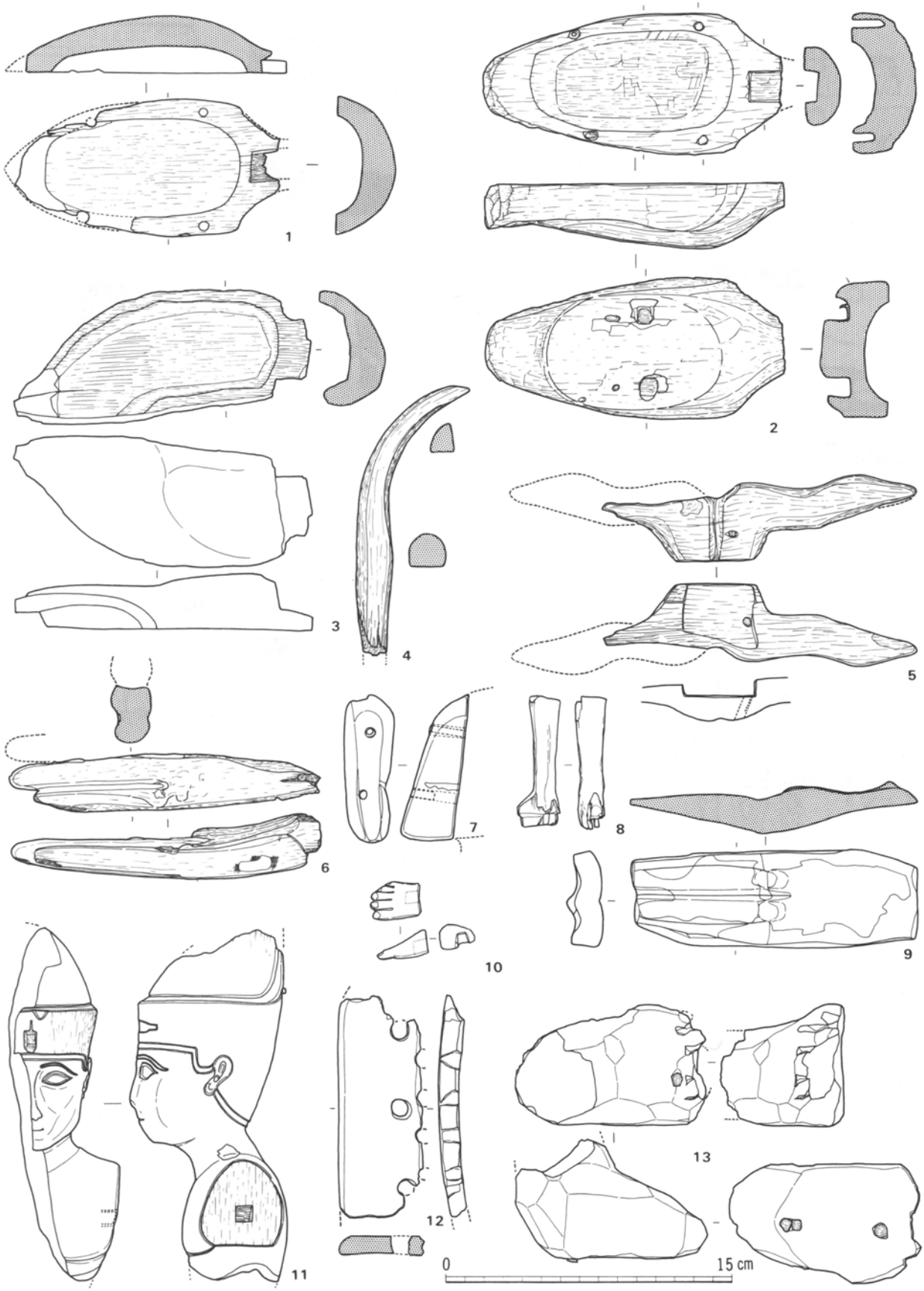

Fig. 133 Wooden objects

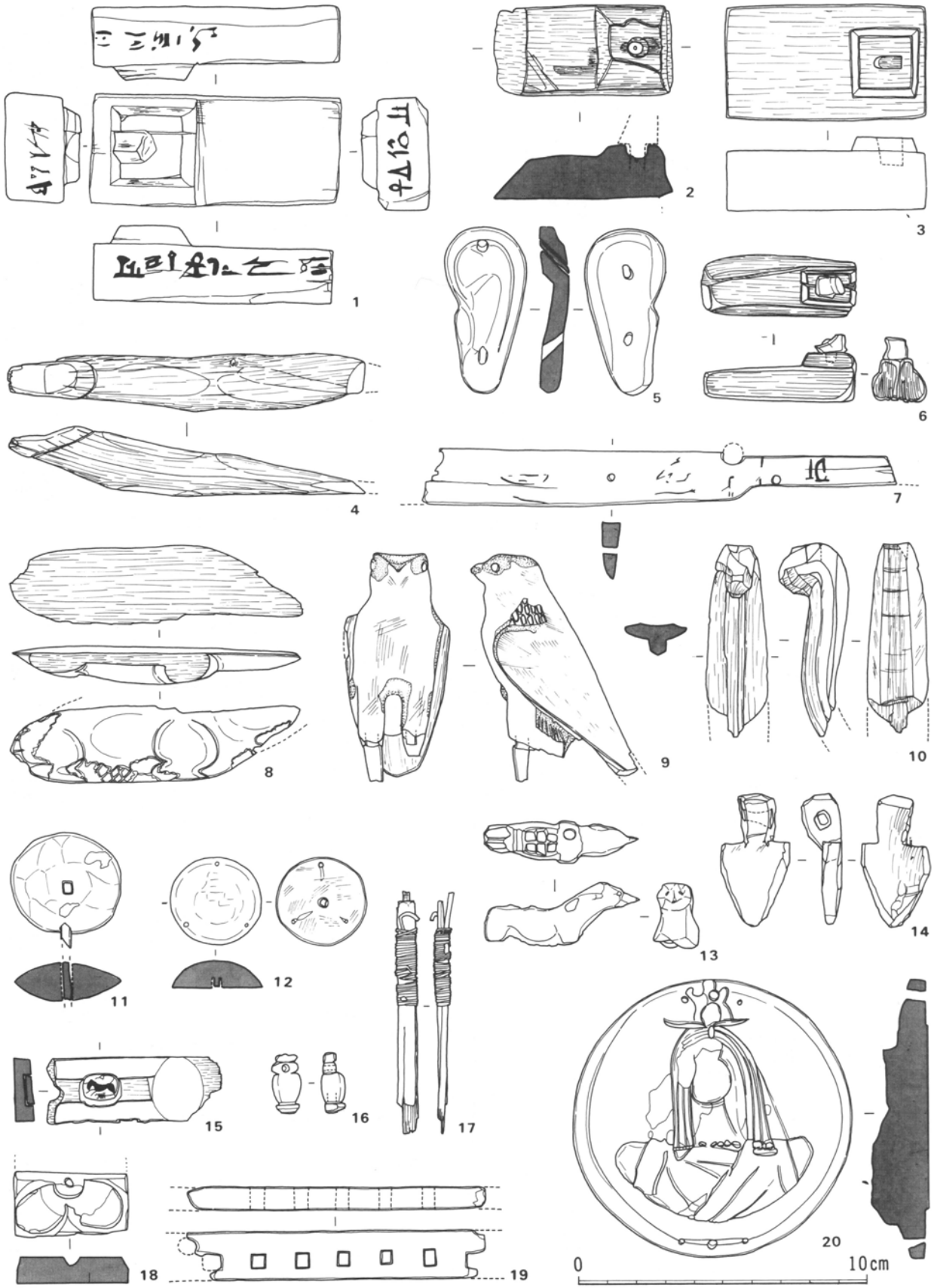

Fig. 134 Wooden objects

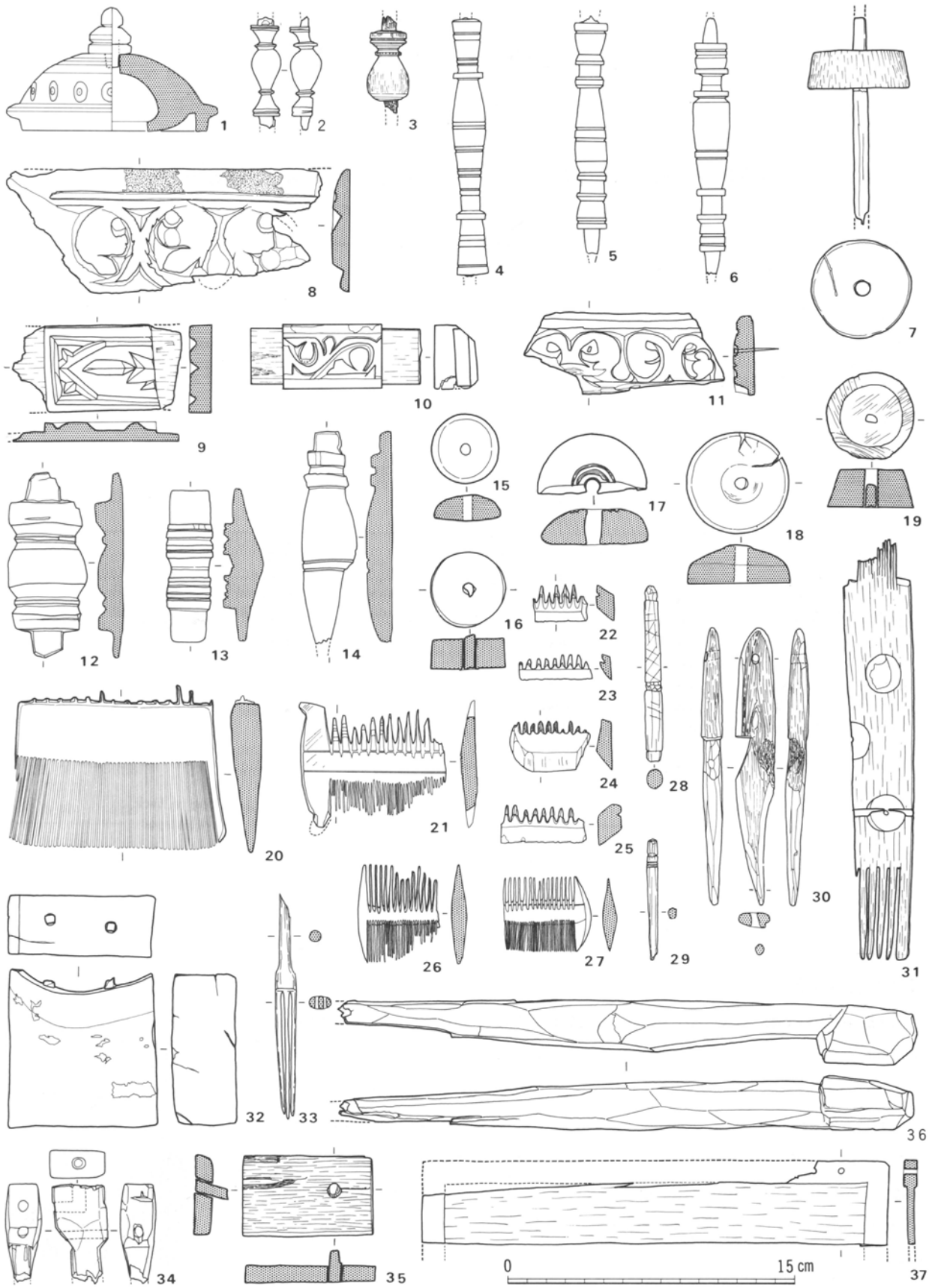

Fig. 135 Wooden objects

2 METAL OBJECTS

UNEARTHED AREA : South Chamber of Chapel B Shaft

Fig. no (Pl. no.)	Layer	Material	Form	Dimension	Remarks
137-1 (70-1)	F-II	bronze or copper	Osiris	h. 15.3 cm	hollow, head and leg lacking
137-2 (70-18)	C~F-I	ditto	Ibis, leg	l. 16.1	fragment
137-3 (70-15)	F-III, in Coffin I	ditto	adze	l. 14.5 t. 0.2	
137-5 (70-22)	C~F-I	ditto	crown of Hathor	h. 4.7	
137-7 (70-16)	F-II	ditto	Uraeus	h. 5.9	lower part missing
137-9	H-III	ditto	plume ornament	l. 2.0	Atef-crown of Osiris
137-14	A-III	ditto	undetermined use	l. 4.1	
137-15 (70-14)	G-III	ditto	mirror, handle missing	d. 15.0 t. 0.2	
138-2	IV	ditto	Osiris	h. 10.7	
138-4	F-II	ditto	ditto	h. 10.1	
138-7	disarranged	ditto	ditto	h. 6.2	foot lacking
138-8	ditto	ditto	ditto	h. 6.9	
138-10	F-II	ditto	ditto	h. 7.5	
138-11	disarranged	ditto	ditto	h. 7.4	
138-12	E, F-II	ditto	ditto	h. 4.2	ring at back
138-17 (70-11)	disarranged	ditto	ditto	h. 8.2	
138-19 (70-13)	F-I	ditto	five-linked Osiris	h. 3.2	
138-20	F-II	ditto	two-linked Osiris	h. 4.0	ring on back
138-23 (70-3)	F-II	ditto	Osiris	h. 9.9	with scepter
136	H-III	ditto	three Uraeus serpents and a ram horn	h. 4.5	part of crown ornament
(70-5)	H, disarranged	ditto	Osiris	h. 6.3	
(70-6)	ditto	ditto	Osiris	h. 8.4	
(70-19)	ditto	silver	bead	d. 1.7	

SUPPLEMENT :

Serpent uraeus (Fig. 137 no. 7. Pl. 70 no. 16). This is inlaid with blue faience and brown glass. Some traces of gold foil are found on the surface. It would have been originally attached to another object.

Adze blade (Fig. 137 no. 3. Pl. 70 no. 15). This blade contained on a stone ornament (see below. Fig. 141 no. 14. Pl. 75 no. 5). It is probable usage was for a furneral rite, such as "Opening the mouth" of the dead.

Osiris figures. The Osiris figures found in our site are divided into five types.

Larger hollow type : His head and feet have been lost but the figure shows an elaborate workmanship. Fig. 137 no. 1 (Pl. 70 no. 1),

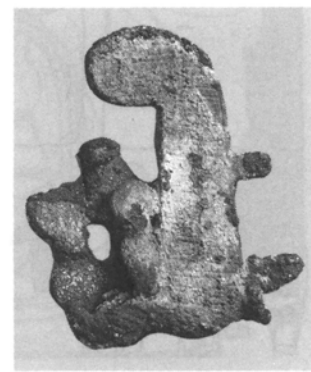

Fig. 136 Metal objects

Fig. 138 no. 21 (Pl. 70 no. 2) and Fig. 138 no. 22

White crown type : Wears a white crown and has a scepter in the shape of a Djed column. Fig. 138 no. 23 (Pl. 70 no. 3)

Smaller type : This type has an attachment loop on its back. Fig. 138 nos. 12, 13 (Pl. 70 no. 12), 15 and Pl. 70 no. 10.

Multiple type : Linked plural Osiris figures. Fig. 138 nos. 14, 18, 19 (Pl. 70 no. 13) and 20.

Standard : Wears an Atef-crown and has a Heka-scepter and flagellum. Fig. 138 nos. 1, 2, 3 (Pl. 70 no. 4), 4, 5 (Pl. 70 no. 9), 6～11, 16 (Pl. 70 no. 7), 17 and 24. Pl. 70 nos. 5, 6 and 12.

Silver bead (Pl. 70 no. 19) : This would have formed a part of a personal ornament like a necklace.[1]

Note

1) HAYES, *SE*, Fig. 144 ; GARSTANG, *BCAE*, Fig. 100.

UNEARTHED AREA : Chapel B Shaft

Fig. no (Pl. no.)	Layer	Material	Form	Dimension	Remarks
137-4	disarranged	bronze or copper	undetermined part	h. 3.0 cm	
137-8 (70-17)	ditto	ditto	Uraeus	h. 3.6	double-pin stuck
137-12	ditto	ditto	bird leg, Ibis (?)	h. 2.3	fragment
138-1 (70-8)	ditto	ditto	Osiris	h. 12.1	
138-3 (70-4)	ditto	ditto	ditto	h. 8.0	
138-9	ditto	ditto	ditto	h. 6.8	
138-21 (70-2)	ditto	ditto	ditto	w. 4.3	inlaid eyes, hollow
138-22	ditto	ditto	ditto	w. 3.2	hollow

UNEARTHED AREA : Front Area of Chapel B

Fig. no. (Pl. no.)	Layer	Material	Form	Dimension	Remarks
137-10	disarranged	bronze or copper	bird leg, Ibis (?)	h. 2.1 cm	fragment
138-5 (70-9)	ditto	ditto	Osiris	h. 7.6	
138-13 (70-12)	ditto	ditto	ditto	h. 4.2	ring on back
138-14	ditto	ditto	two-linked Osiris	h. 4.4	ditto
138-15	ditto	ditto	Osiris	h. 3.7	ditto
138-16 (70-7)	ditto	ditto	ditto	h. 7.5	
138-18	ditto	ditto	plural-linked Osiris	h. 3.0	ring on back
139-13 (70-21)	ditto	ditto	jar-shaped decoration	w. 1.8	
(70-10)	ditto	ditto	Osiris	h. 3.7	

UNEARTHED AREA : Building 9

Fig. no. (Pl. no.)	Layer	Material	Form	Dimension	Remarks
139-2 (71-1)	Room 2, disarranged	bronze	fittings	d. of ring 5.9 cm	undetermined use
139-5	Room 1, disarranged	ditto	fitting	w. 3.5	undetermined use
139-6 (71-5)	Room 6, on the floor	ditto	horse-shaped decoration	l. 5.2	
139-8	ditto	ditto	hook	l. 5.1	ring at one end
139-9 (71-2)	Room 3, disarranged	ditto	cross	h. 3.2	
139-11	Room 2, disarranged	ditto	stick with projections	h. 12.2	undetermined use
139-15	Room 5, disarranged	iron	fittings	l. 11.9	attached to wooden object
(70-20)	Room 3, on the floor	ditto	ring	d. 2.2	

UNEARTHED AREA : Other Sections

Fig. no (Pl. no.)	Layer	Material	Form	Dimension	Remarks
137-6	Middle Court East, disarranged	bronze or copper	crown of Hathor	h. 2.9 cm	
137-11	Chapel A shaft, disarranged	ditto	bird leg, Ibis (?)	h. 7.0	
137-13	ditto	ditto	undetermined use	l. 11.2	wood covered with bronze plate
138-6	ditto	ditto	Osiris	h. 7.7	
139-3 (71-9)	Northwest corner of Hypostyle Hall, depot	bronze	lamp	w. 5.0 l. 8.5 h. 2.3	
139-4	ditto	ditto	disk	d. 4.7	undetermined use
139-1 (71-7)	Room 4, Building 8, disarranged	ditto	dolphin-shaped decoration	h. 15.1 w. 18.3	lowest part broken
63 (71-12)	Room 5, Building 8, on the floor	iron	stick	l. 53.3	
138-24	eastern area adjoining Chapel A near Wall 10, on the bed rock	bronze or copper	Osiris	h. 7.7	ring on back and base, rusty
139-7 (71-6)	site surface	bronze	animal-shaped decoration, camel (?)	l. 4.8	ring on back
139-10 (71-3)	Building 5, disarranged	ditto	decoration	h. 7.5	concentric circle pattern
139-12	Room 1, Building 2, disarranged	ditto	hanger ?	l. 10.0	
139-14	east part of Building 11, disarranged	iron	lock	l. 5.8	
(71-4)	Building 8, disarranged	bronze or copper	animal	h. 6.5	
(71-8)	Room 4, Building 8, on the floor	bronze	vessel	l. 38.0	crushed
(71-10)	Room 5, Building 8, on the floor	bronze except iron nail	fittings, nail	h. 2.5 (nail)	
(71-11)	northeast corner of the Western Temple Area	iron	fitting	l. 19.5	

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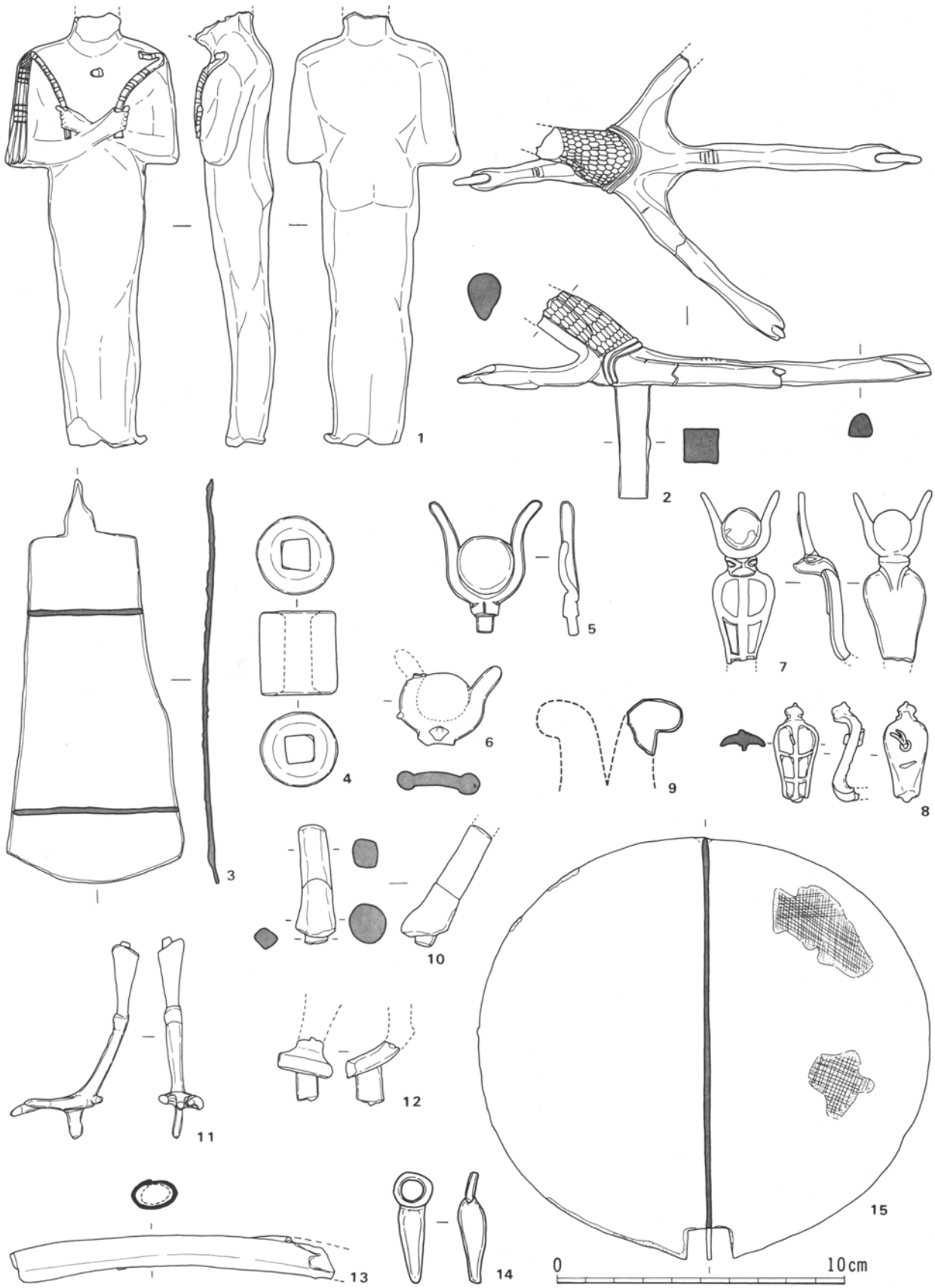

Fig. 137 Metal objects

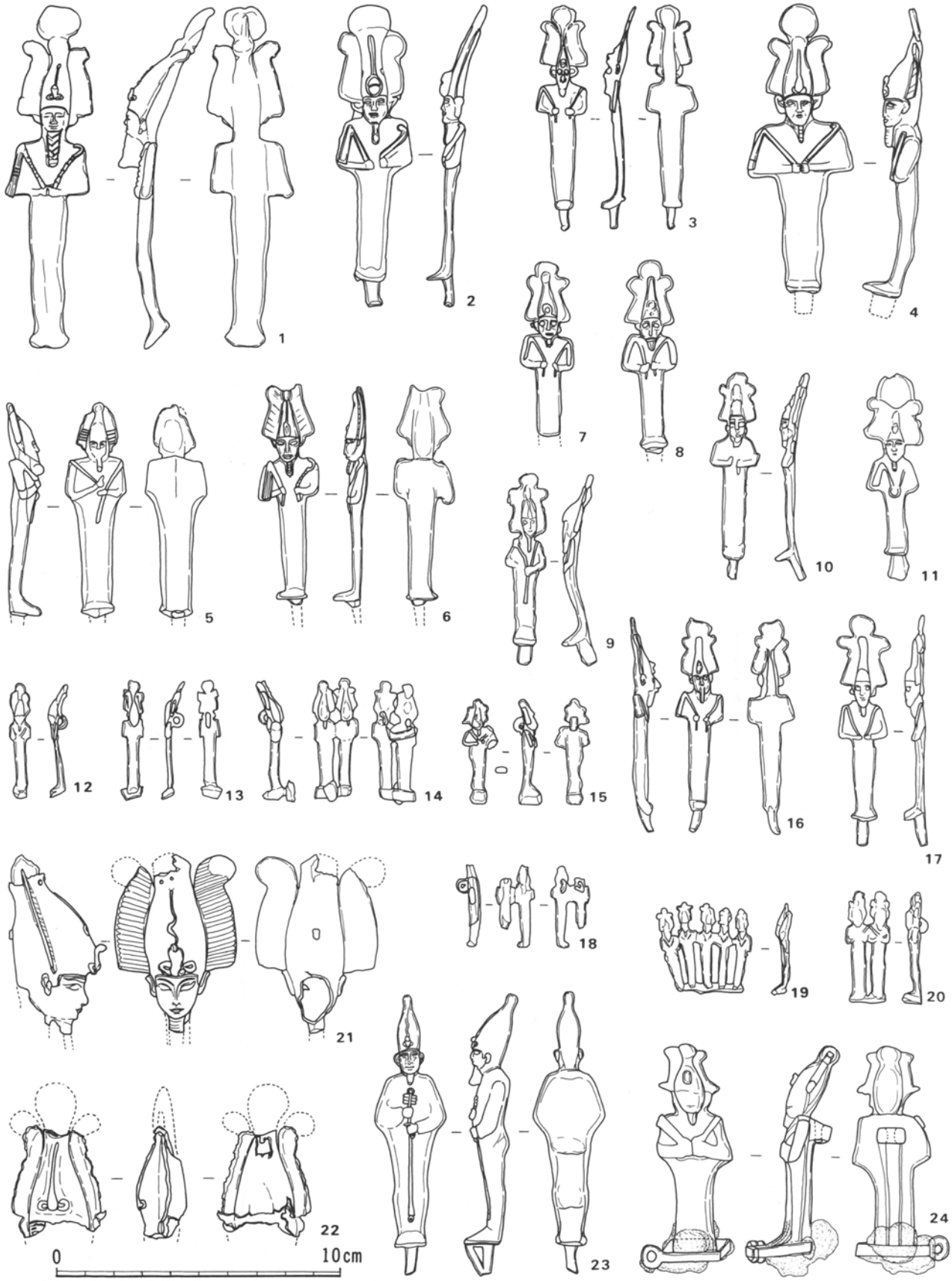

Fig. 138 Metal objects

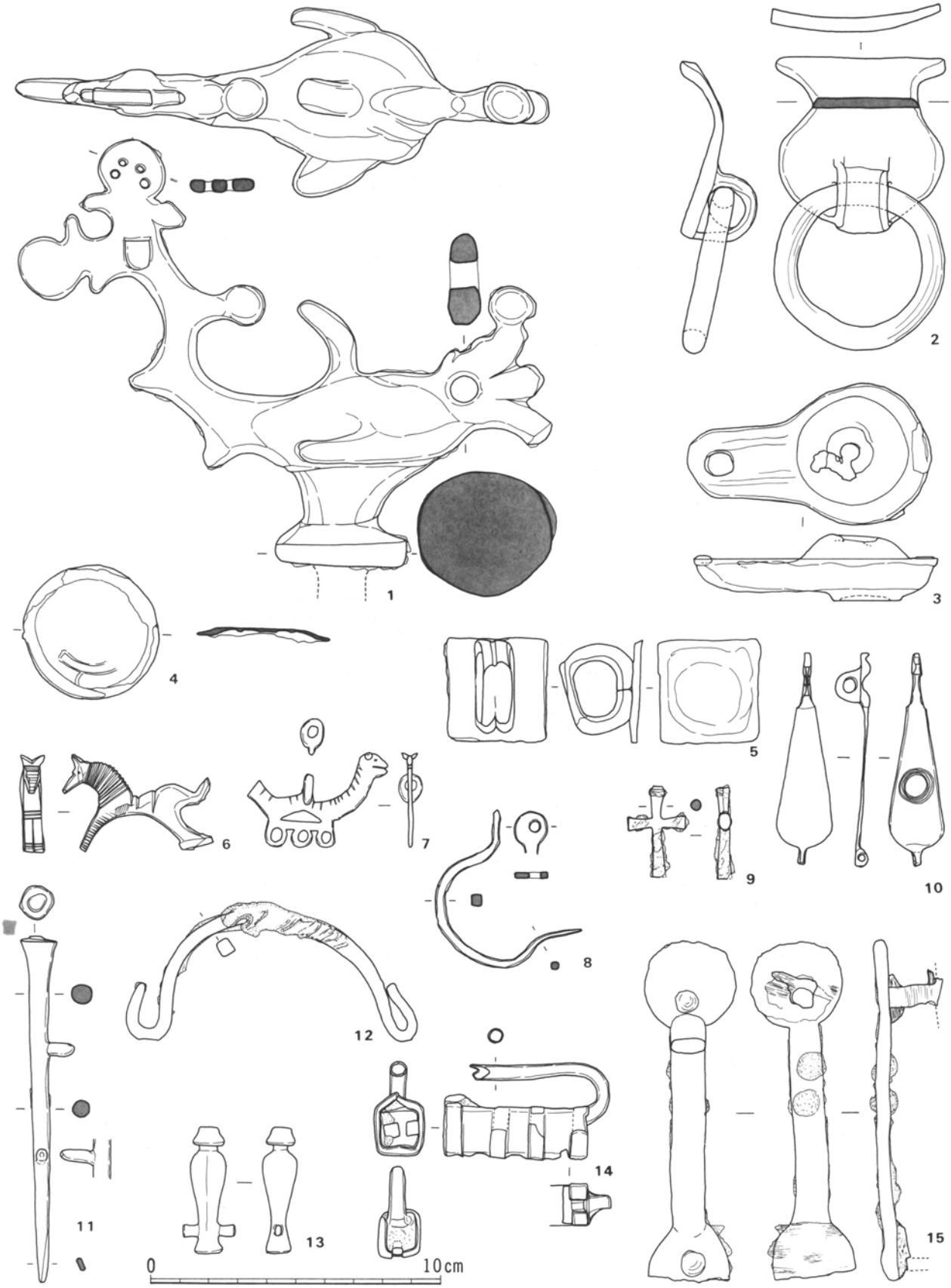

Fig. 139 Metal objects

3 COINS

UNEARTHED AREA : Chapel A Shaft, Disarranged Soil

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
74-51	bronze follis	2.3	17.4 ↓	VRBS ROMA Bust of Urbs Roma, helmeted, wearing inperial mantle, left (same as No. 26)	She-wolf standing left, suckling twins, above, two stars	ALEXANDRIA SMALA	335-337 A. D.
74-52	bronze	5.2	20.0 ↓	Bust of Tiberius, right.	Hippopotamus, right, TR above in ex., E		18-19 A. D.
74-53	ditto	5.0	17.4 ↓	Bust of Const. Gallus			
74-54	ditto	3.1	21.2 ↓	(IMPCVAL LI) CIN LICINIV SPF AUG Head of Licinius, I, laureate, right.	IOVICONSER VATORI AVGGNN Jupiter standing, left, chlamys across left shoulder, holding Nike mounted on globe in right hand, and resting on long scepter in left; in front, eagle left looking back, wings closed, wreath in beak.	ANTIOCHIA AN[T]	307-323 A. D.
74-55	ditto	7.4	23.7 ↓	AK [·····] OCCEB Bust of Diocletianus, laureate, right.	Elpis standing, holding cornucopiae in right hand.		284-296 A. D.
74-56	ditto	6.7	17.1 ↓	ditto	Elpis, standing, looking back. S in field.		ditto
74-57	ditto	1.9	14.8 ↓		Standard between two soldiers		
74-58	ditto			CONSTAN SPFAVG Bust of Constantius, diademed, draped and cuirassed, right.	GLORIA EXERCITVS standard between two soldiers.	NICOMEDIA SMNB	330-335 A. D.
74-59	ditto	1.0	11.6 ↓	ditto	ditto		
74-60	ditto	0.8	15.0 ↓	Head of Augustus (?) right.	L. E. left and right in field.		

UNEARTHED AREA : Northwest Corner of the Hypostyle Hall, Depot

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
72-19	bronze billon	6.8	19.5 ↓	*ΔIOKΛHTI* ANOCCEB *(αστός)* Laureate and cuir assed bust of Diocletianus, right.	LHI and r. in field. Zeus standing left, laureate, chlamys on left shoulder, he holds patera and rests on sceptre, at his feet, eagle, left, looking back (wings open).	ALEXANDRIA	291/292 A. D.
72-20	bronze Æ4	1.5	16.5 ↓	CONSTANTI VSPFAVG Bust of Constantius II,	VICTORIAEDDAVGGQNN two Victories, side by side,	(?)	341-346 A. D.

				laureate (and rosettes) cuirassed, in paludamentum.	with wreaths.		(LRBC)
72-21	bronze Æ4	1.8	14.0×15.5 ↓	CONSTAN SPFAVG Bust of Constantius, right, laureate (and rosettes), cuirassed in paludamentum.	VICTORIAEDDAVGGQNN Two Victories side by side with wreaths.	ROME R⊙T	341-346 A. D.
73-22	bronze	(?)	16.5 ↓		Quadriga	ALEXANDRIA (?) S R / SMALA	337-341 A. D.
73-23	bronze Æ4	1.8	16.0 ↓	DV CONSTANTI NVSPTAVGG Head of Constantinnus I, veiled, right.	Emperor, veiled, standing right.	ALEXANDRIA VN MR / SMALA	341-346 A. D.
73-24	bronze	1.6	16.5×14.0 ↓	Bust of Constantinnus I	Emperor, veiled, standing right.	(?)	341-346 A. D.
73-25	bronze Æ4	1.6	15.5×16.0 ↓	FLIVL HELENAEAVG Bust of Helena, right, laureate (and pearls), draped, mantled.	PAXPV BLICA Pax, draped, standing left, with olive branch in right hand and transverse sceper in left hand.	CONSTANTINOPLE / CONSA	337-341 A. D.
73-26	bronze follis	1.9	15.5 ↓	VRBS ROMA Bust of Urbs Roma, helmeted, wearing imperial mantle, left.	She-wolf standing left, suckling twins, above, two stars.	ALEXANDRIA / SMALA	335-337 A. D.
73-27	bronze	1.6	16.0 ↓	CONSTAN SPFAVG (?) Bust of Constans, diademed (pearls and rosetts), cuirassed, in paludamentum.	VICTORIAEDDAVGGQNN Two Victories, side by side, with wreath.	SISCIA (?) / ASIS	337-364 A. D.
73-28	ditto	1.8	14.5×15.0 ↓	DNCONS [····· Bust of a son of Constantinnus —Augustus, diademed (pearl), right.	FELTEMP REPA RATIO Emperor, with shield on left arm spearing fallen horseman.	(?)	after 337 A. D.
73-29	ditto	1.7	14.5×15.0 ↓	Bust, diademed, right.	VOT/XX/MVLT/XXX in laurel wreath.	(?)	341-346 A. D.
73-30	ditto	1.3	15.5×16.0 ↑	DN [CONST] ANSPFAVG Bust of Constans, right, diademed.	VOT/XX/MVLT/XXX in laurel wreath.		337- late January 350 A. D.

UNEARTHED AREA : Chapel B Shaft, Disarranged Soil

Pl. no. (Fig. no.)	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Datineg
73-40	bronze	2.2	17.9×18.0 ↓	CONSTAN TINOPOLIS (same as No. 1)			
73-41	ditto	1.2	12.7×12.9 ↓	DNTHEODO SIVSPFAVG Bust of Theodosius I, diademed, draped, cuirassed, right.	VOT/X/MVLT/XX		379-395 A. D.
73-42	ditto	0.9	12.5 ↓	D [·····] CADI [····· Bust of Arcadius (?), diademed, right			395-408 A. D.
73-43 (152-9)	mould	—	d. 30.0 d. of coin 25.5	MAXIMINVS			308-313 A. D.

UNEARTHED AREA : Front Area of Chapel B, Disarranged Soil

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
73-38	bronze	7.5	18.6×19.6 ↓	AKMAVAMAΞIMIANOCCEB Bust of Maximianus, right.	Elpis standing, left. Above left shoulder, a star. L. S. l. and r. in field.	(?)	290/291 A. D.
73-44	bronze 12 nummia	4.8	16.7×16.1 ↓	Bust, right.	IB, in the center, a cross.	ALEXANDRIA $\overline{AAE\Xi}$	
73-45	bronze	1.1	12.1×12.4 ↑	DM [·····] DO SIVS PFAVG Bust of Theodosius I, diademed, draped, cuirassed, right.	VOT/(?)/MVLT/XX		379-395 A. D.
73-46	ditto	1.0	8.6 ↓				
73-47	ditto	1.6	12.9×13.0 ↓	Bust, diademed, right.			
73-49	silver	3.1	19.5×22.0 ↓				

UNEARTHED AREA : Room 5, Building 8, on the Floor

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
73-34	bronze Æ2	4.3	21.0×22.1 ↑	DNTHEODO SIVSPFAVG Bust of Theodosius I, diademed, draped, cuirassed, right.	GLORIARO (MANORVM) Theodosius I, in military dress, cloak flying out, standing front, head right, in galley, raising right hand. To right, Victory, draped seated left, holding rudder.	CONSTANTI-NOPLE $\frac{T}{CONB}$	25 Aug. 383~28 Aug. 388 A. D.
73-35	bronze follis	8.7	25.4×24.8 ↓	···]STAN [TIN] VS [··· Bust, right.	M, above, a cross.	CONSTANTI-NOPLE $\frac{}{CON}$	Byzantine Period
73-36	bronze ½ follis	4.3	17.0×17.3 ↓		K	(?)	Byzantine Period
73-37	bronze 12 mummia	6.3	16.1×17.6 ↓	Busts of Heraclius and Constantinus III holding stemma, cuirassed and draped. In the centre, cross above steps.	IB, in the center, cross above a triangular basis.	ALEXANDRIA	5 Oct. 610 ~11 Jan. 641 A. D.

UNEARTHED AREA : Room 6, Building 9, on the Floor

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
74-62	bronze	3.2	14.1 ↓		IB, in the center, a cross.	ALEXANDRIA $\overline{AAE\Xi}$	
74-63	ditto	4.1	15.1 ↓		ditto	ditto	
74-64	ditto	3.6	15.7 ↓		ditto	ditto	

74-65	bronze	5.1	16.5 ↓		IB, in the center, a cross.	ALEXANDRIA $\overline{AAE\Xi}$	
74-66	ditto	3.2	15.9 ↓		ditto	ditto	
74-67	ditto	3.4	17.5 ↓		ditto	ditto	
74-68	ditto	3.9	17.9	Heraclius and his son Constantinus.	☧ , I in the center, a cross on steps.	ditto	

UNEARTHED AREA: Building 1, on the Floor

Pl. no.	Metal Denomination	Wt. g	Size.mm	Obverse	Reverse	Mint	Dating
72- 8	bonze Æ4	1.5	15.9 ↓	DVCONSTANTI NVSPTAVG Head of Constantinus I, reiled, right.	Horse running	ALEXANDRIA	341-346 A.D. (LRBC)
72- 9	ditto	2.1	16.4 ↓	Head of Constantinus I (?)	Man standing		
72-10	bonze	1.0	15.1 ↓	DNCO [·····] VS PFAVG Head of Constantinus, diademed, right.	VOT/XX/MULT/XXX		
72-11	tessera plumbea	0.9	12.1 ↓	Vespasianus (?)	Woman standintg, left.		

UNEARTHED AREA: Room 2, Building 2, on the Floor

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
72-13	bronze Æ2	5.5	22.7 ↓	DNARCAD IVSPFAVG Bust of Arcadius, pearl diademed, draped and cuirassed, right, holding spear and shield in front. Above, hand holding wreath.	GLORIARO MANORVM Emperor standing facing, head left, holding standard in right hand and resting left on shield, to left, captive seated left.	$\frac{\text{SIS}}{\cdots]\text{is}[\cdots}$	25 Aug. A.D. 383 ~*ca.* autumn of A.D. 384 (RIC)
72-14	bronze	19.6	20.0 ↑	IMPCVAL LICIN IVS PF AVG Laureate head of Licinius, right.	[IOVI CONSER] VATO-RIA VGG Jupiter standing, left, chlamys across left shoulder, leaning on scepter, holding victory on globe in right hand, eagle holding wreath.	$\overline{\text{SN}[\cdots}$	313-324 A.D.
72-16	ditto	3.0	18.7 ↓	IMP[·····] NIV[····· Laureate head of Licinius, left.	IOVI CONSER VATOR-IAVGG Jupiter standing left, Chlamys across left shoulder, leaning on scepter, holding victory on globe in right hand, eagle holding wreath to left on ground.	(?)	313-324 A.D.

UNEARTHED AREA : East Trench in the Site

Pl. no.	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
72-2	bronze	10.0	25.9×20.1 ↓	·····] *ΚΑΙΣ* [*αρος*] *Σεβα* [*στοῦ*] *ο νεσ*[····· Laureate head of Vespasianus, right.	Eirene ?	ALEXANDRIA	69-79 A. D.
72-3	ditto	12.0	24.3 ↓	Caracalla (?) head radiate, right.		ALEXANDRIA (?)	198-217 A. D.
72-5	ditto	11.5	22.4 ↓	·····] *ΕΞΑΝΔΡΟ*[····· Laureate head of Severus Alexander, right.	*LΔ* Dikaisune standing with scales and cornucopia.	ALEXANDRIA	224-225 A. D.
72-6	ditto Æ	5.0	14.4 ↓	Heraclius and his son Constantinus Ⅲ.	IB and a cross on steps between two letters.	ALEXANDRIA *ΑΛΕΞ*	610-641 A. D.
72-7	bronze 12 mummia		22.0×23.0 ↓				

UNEARTHED AREA : Other Sections

Pl. no. (Fig. no.)	Layer	Metal Denomination	Wt. g	Size. mm	Obverse	Reverse	Mint	Dating
72-1	eastern area adjoining Chapel A, disarranged	bronze Æ		16.5×15.5 ↓	CONSTAN TINOPOLIS Bust of Constantinnus I, helmeted, laureate, draped, left, spear reversed over left shoulder.	No legend. Victory, draped, standing left on prow, holding spear, left hand on shield.	CYZICUS (?) ∗SMKA	335-336 A. D.
72-4	Central Temple Area, disarranged	ditto	23.0	31.6 ↓	[*Αὐι(οκράωρ) Κ(αῖσαρ) Τ(ίτος) Αἴλ(ιος) Ἁδρ(ιανὸς) Αιτωυινος Σεβ(ασιὸς) Ἐὐσ(εβὴς)* Laureate head of Antoninus Pius, right.	No legend. Head of Ammon with Sol on horns, right.	ALEXANDRIA	138-161 A. D.
72-12	around the North Gate, disarranged	bronze	9.1	26.3 ↓	Laureate head, right.	Ammon (?)		
72-15	ditto	bronze	1.0	12.7 ↓	·····] *ΨΑΛΛΙΕ*[····· Laureate head of Gallienus, right.	LS l. and r. in field Elpis (?) standing left.	ALEXANDRIA	253-268 A. D.
72-17	Middle Court East, disarranged	bronze	2.3	17.5×20.5 ↓	[DN FLCL] IVLI [ANVS] PFAVG Bust of Julian Ⅱ, helmeted, cuirassed, left, holding spear forward, and shield.	VOT/X/MULT/XXX		August in 360-363 A. D.
72-18	ditto	bronze Æ4	1.5	12.7×14.0 ↓	·····] S AVG Bust of Constantius Gallus or Constans, diademed (Pearls and rosettes), right.			
73-31	Building 5, on the floor	bronze	2.2	14.0 ↓		IB, in the center, a cross on steps.		
73-32	Room 6, Building 8,	ditto	1.3	14.5×15.0 ↓	S (6 nummia)	Cross on steps	ALEXANDRIA	(?)

	disarranged							
73-33 (152-8)	site surface	mould			IMPCCV.....AVG Bust of Diocletianus.			Post 294/295 A. D.
73-39	Room 3, Building 9, disarranged	bronze	4.6	16.1×15.9 ↓		IB, in the center, a cross and M.	ALEXAN-DRIA $\overline{A\Lambda E\Xi}$	
73-48	site surface	ditto	1.2	13.5×13.5 ↓	DNT [……] DO [……] AVG Bust of Theodosius, diademed, draped, cuirassed, right.	VOT/X/MVLT/XX	$\overline{\cdots]N[\cdots}$	
74-50	southeast corner of the Western Temple-Area, disarranged	ditto	26.2	33.7×33.2 ↓		Quadriga, left.		
74-69	south chamber in Chapel B shaft, disarranged	ditto	1.4	15.0 ↓	Head of Emperor, diademed, right.			
74-70	Room 5, eastern area around the South Court	ditto	9.3	20.2 ↓		IB, in the center, a cross on M.	ALEXAN-DRIA $\overline{A\Lambda E\Xi}$	
74-71	site surface	ditto	1.4	15.8×17.0 ↓	···]NST[ ]CAVG Head of Constans, diademed, right.	V [OT] /X [X] MVLT/XXX	ALEXAN-DRIA $\overline{SMAL[B]}$	341-346 A. D.
74-72	"Pool" Area, disarranged	ditto	4.5	17.3×15.9 ↑			ALEXAN-DRIA $\overline{A\Lambda E\Xi}$	
74-74	ditto	ditto	2.5	16.3×17.6 ↓	DNGRATIA NVSPFAVG Bust of Gratianus.	CONCOR DIAAVGGG Roma seated facing, head helmeted, left, holding globe and spear, left leg bare.	AQUIL EIA $\overline{SMAQS}$	378-383 A. D.
74-73	Middle Court West, disarranged	ditto	18.2	33.4×34.1 ↓				
74-75	"Pool" Area disarranged	mould		d. : 18.5 (d. of coin : 11.5)	Lower part of head hooded	···]CCE[··· Head crowned with lotus. In rear, cornucopiae.		

Acknowledgement

I owe muck information about identification of the coins to Dr. Maila Chiaravalle. I would like to give my sincere thanks to her. Responsibility of this table is mine.

(TSUJIMURA, S.)

4 LITHIC OBJECTS

UNEARTHED AREA : Chapel B Shaft

Fig. no (Pl. no.)	Layer	Form	Stone	Dimension	Design	Remarks
141-1 (75-4)	south chamber, beside Coffin I	jar with lid	alabaster	4.0×3.3 cm		for eye-paint
141-14 (75-5)	south chamber, in Coffin I	ornament	sand stone (?)	h. 10.0		
141-2	south chamber, in Coffin II	jar with lid	alabaster	3.7×3.2		for eye-paint
141-3 (75-2)	south chamber, disarranged	jar lid covered	crystalline limestone body, brown slate lid	2.5×1.7		for eye-paint
141-8	ditto	plate	alabaster	h. 2.4		
141-10	F-II	inlaid eye	limestone	h. 1.9	black glass pupil	
(75-8)	south chamber, disarranged	rounded upper edge of stele	limestone	w. 4.2	hieroglyph, Djet serpent, Horus, r-sign and part of sistrum	
140-1 (75-1)	disarranged	lid of canopic jar	limestone, crystalline	h. 10.5	Anubis ?	*
141-17 (75-10)	ditto	offering table	limestone	w. 14.4		worn
142-3	ditto	plate	basalt	d. 27.7	with handle	
(75-3)	A-III	jar with lid	alabaster	d. 3.6		for eye-paint
(75-9)	shaft, disarranged	vessel	limestone, minute	h. 8.1		
(75-11)	B-IV	inlaid eye	limestone, obsidian pupil	w. 3.3		
(75-12)	shaft, disarranged	ditto	ditto	w. 4.7		
(75-13)	ditto	ditto	ditto	w. 5.5		

*A bronze peg wedge in the upper part of forehead, the remnant of head ornament, double plumes.

UNEARTHED AREA : Eastern Area Adjoining Chapel A

Fig. no (Pl. no.)	Layer	Form	Stone	Dimension	Design	Remarks
141-5	disarranged	lid	alabaster	d. 5.2 cm		for eye-paint jar
141-9	ditto	pot	ditto	h. 7.2		
141-11 (75-14)	ditto	eye	basalt, black	w. 3.8		for inlaying
141-13 (76-3)	ditto	statuette	limestone, porus	h. 7.3		roughly sculptured
142-11	ditto	weight (?)	limestone	d. 8.0		inscribed cross

UNEARTHED AREA : East Trench in the Site

Fig. no. (Pl. no.)	Layer	Form	Stone	Dimension	Design	Remarks
141-16 (76-1)	disarranged, upper layer	plate	limestone, minute	w. 9.1 cm	some incised figures on both sides	
142-4	ditto	hammer (?)	limestone	h. 9.8		
142-5	ditto	ditto	ditto	h. 15.1		
142-7	ditto	ditto		h. 8.0		chip marks on center of both faces
142-8	ditto	ditto		h. 8.6		ditto

UNEARTHED AREA : North Trench in the Site

Fig. no.	Layer	Form	Stone	Dimension	Design	Remarks
141-4	disarranged	toilet bottle	alabaster	d. 2.7 cm		
141-7	ditto	dish	ditto	h. 4.1		
142-2	ditto	ditto	limestone	d. 22.2		polishing marks on all faces
142-9	ditto	weight	ditto	h. 3.0		
142-10	ditto	ditto	ditto	h. 4.0		

UNEARTHED AREA : Other Sections

Fig. no. (Pl. no.)	Layer	Form	Stone	Dimension	Design	Remarks
140-2 (75-15)	Building 3, east part, disarranged	head	limestone, porous	w. 12.0cm	with Coptic characteristics	rear lacking, remnant of socket jointing
141-6	southeast trench of the city wall, disarranged	lid	alabaster	d. 3.2		for eye-paint jar
141-12 (75-7)	Room 3, Building 9, disarranged	weight	basalt	2.6×1.7		
141-15	Chapel A shaft	statue	marble	w. 3.6	legs only	fragment
(76-5)	ditto	block	limestone	h. 22.5	sunken relief of Sobek on his pedestal, sun disc with Uraeus	
142-1	southeast corner of the Western Temple Area, Layer 5	plate	limestone	d. 29.8		wear marks on inner face
142-6	Room 5, Building 8, disarranged	weight	flint (?)	h. 8.3	groove for rope	
142-12 (76-2)	Room 2, Building 2, on the floor	club (?)	limestone	h. 25.0		inscribed patterns on head
113-6 (76-4)	"Pool" Area, disarranged	hand of statue	ditto	w. 7.2		
143 (76-6)	north area of the site surface	pedestal for column	limestone, minute	h. 9.0	acanthus	see Fig. 145
(75-6)	Room 1, Building 4, on the floor	axis of potter's wheel	basalt (?)	d. 19.0		concentric circular wear marks on upper face

(KAWANISHI, H. and J. MIYAMOTO)



Fig. 140 Lithic objects

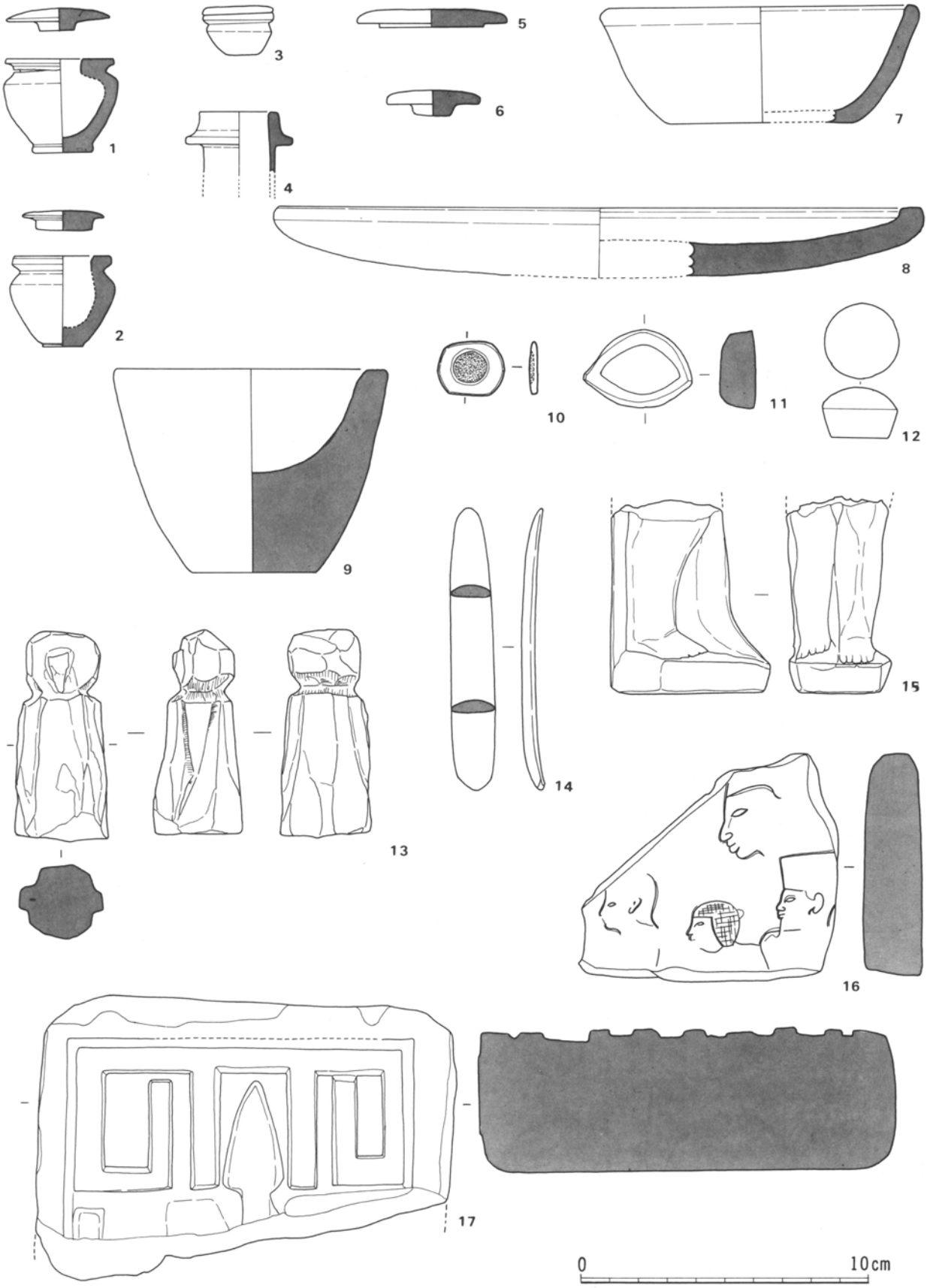

Fig. 141 Lithic objects

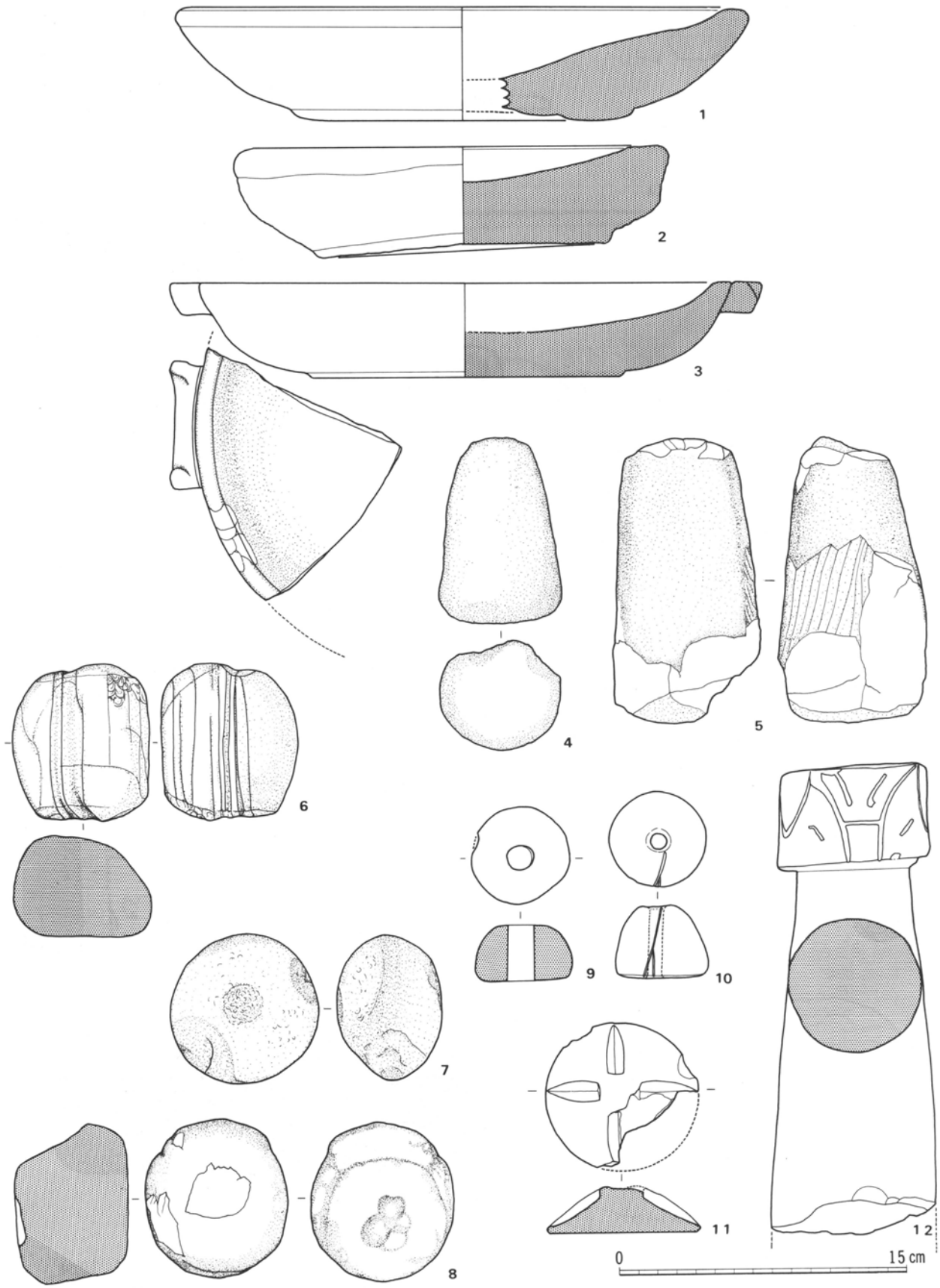

Fig. 142 Lithic objects

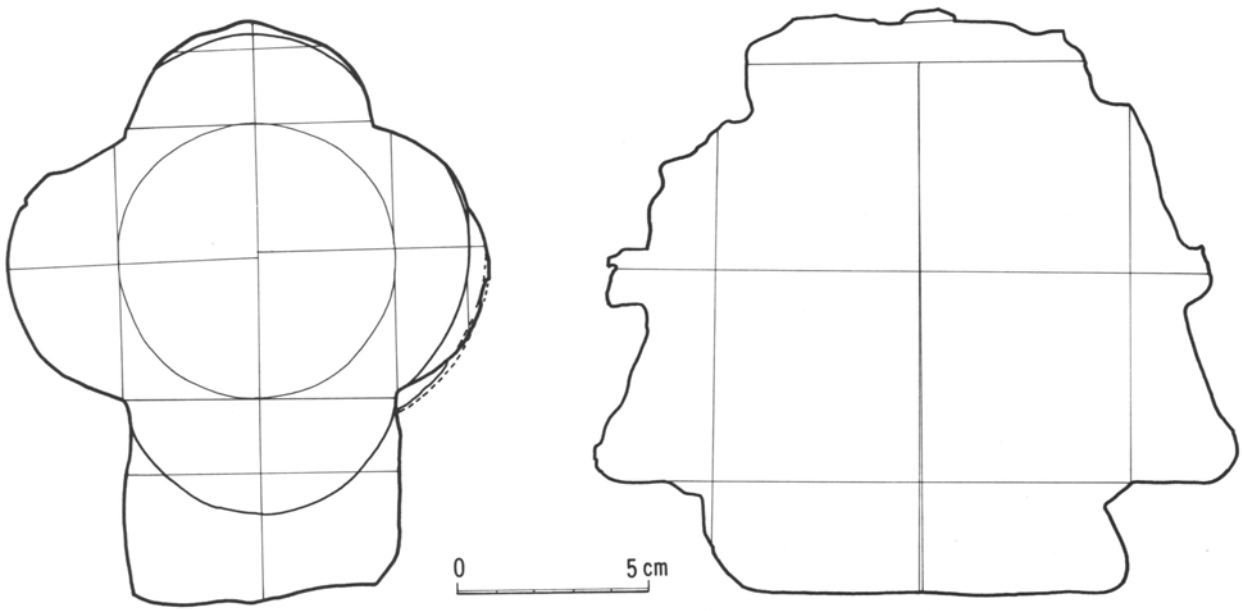

Fig. 143 Leading lines for carving left on the upper and lower faces on the column base (Pl. 76 no. 6)

5 STONE BLOCKS

UNEARTHED AREA : South Court Area

Pl. no. (Fig.)	Layer	Form	Stone	Dimension	Design	Remarks
117-4	on the South Court	cornice (?)	limestone	w. 67 cm	plumes	
119-6	Chapel A shaft, disarranged		ditto	w. 16	sunken relief, plume(?)	fragment
119-7	ditto		ditto	w. 15	some hieroglyphic letters	ditto
9 lower left, (14)	ditto	capital	ditto	w. 90, h. 79	Hathor capital	
119-8	foundation of the east wall of the Hypostyle Hall		ditto	w. 23	sunken relief	ditto
119-9	ditto		ditto	w. 58	pylon (?)	ditto
119-11	ditto		ditto	w. 23	disc	ditto
119-12	ditto		ditto	w. 23	sunken relief	ditto
123-8	Room 2, eastern area, disarranged	undetermined	ditto	w. 19.7	cross mark	ditto
117-3	southwest outer corner of Room 2, eastern area		ditto	w. 85	sunken relief, goddess	fragment reused
119-4	south outer face of Room 2, eastern area	panel	ditto	w. 65	relief, king offering balm pot	reused
119-2	Room 3	capital	ditto	w. 71	Hathor	fragment
119-5	Room 5, eastern area, disarranged		ditto	w. 50	Sakhmet	ditto
122-4	ditto	capital	ditto	unmeasured		ditto
122-5	eastern area, site surface	column capital	ditto	necking, d. 54.0		

122-8	south room, Structure 3, eastern area adjoining Chapel A	pilaster capital	limestone	unmeasured	acanthus	
77-14	eastern area adjoining Chapel A	undetermined	ditto	h. 20.9	palm	fragment

UNEARTHED AREA : Building 8

Pl. no.	Layer	Form	Stone	Dimension	Design	Remarks
124-1	Room 3, disarranged	cornice	limestone	83×56×48 cm		
124-2	ditto	ditto	ditto	w. 86.0		inscription of "E"
124-4	site surface	frieze	ditto	w. 33.0		
122-3	Room 4, disarranged	pilaster capital	ditto	h. 22.0	Egyptianized capital with Corinthian top	

UNEARTHED AREA : Central Temple Area

Pl. no.	Layer	Form	Stone	Dimension	Design	Remarks
123-6	disarranged	pilaster capital	limestone	h. 17.3 cm	cross mark	
123-7	site surface	frieze	ditto	l. 30.0		
123-9	disarranged	cornice	ditto	w. 20.9		fragment
123-11	ditto	undetermined	ditto	w. 16.9		ditto
123-12	ditto	ditto	ditto	w. 19.7	horse tresse	ditto
123-13	ditto	frieze	ditto	h. 15.6	foliage	
123-14	ditto	nitch (?)	ditto	h. 19.7	wing or leaf angel (?)	fragment
123-15	ditto	ditto	ditto	h. 13.9	ditto	ditto
122-2	ditto	column capital	ditto	unmeasured		

UNEARTHED AREA : South Area adjoining Serapeum

Pl. no.	Layer	Form	Stone	Dimension	Design	Remarks
124-6	not *in situ*	pilaster base	limestone	d. 57.0 cm		
124-7	ditto	spiral stairway	ditto	h. 50.0		
124-8	ditto	pilaster	ditto	d. of pilaster, 53		
123-1	ditto	pilaster capital	ditto	d. 56.0	Corinthian	
123-2	ditto	column capital	ditto	d. of necking, 45	ditto	
123-3	ditto	ditto	ditto	d. of necking, 53	ditto	
123-4	ditto	pilaster capital	ditto	d. of necking, 56	ditto	
122-7	ditto	column capital	ditto	l. 86	ditto	

UNEARTHED AREA : Other Sections

Pl. no.	Layer	Form	Stone	Dimension	Design	Remarks
124-3	Middle Court East	column base	limestone	1. 86.0 cm		inscription of "E. V"
77-9	ditto, disarranged	frieze (?)	ditto	w. 12.0		fragment
77-12	ditto, disarranged	ditto	ditto	h. 17.8	painting, red, green, biue	right side broken
122-1	Middle Court West	capital	ditto	echinus 83×60, column d. 4.8	Ionian	
124-5	Room 6, Building 9	pilaster capital	ditto	w. 7.5		
77-13	Room 3, Building 9, disarranged	frieze (?)	ditto	w. 10.5	horse (?)	fragment
117-2	Room 3, Building 10, disarranged		ditto	10.9×9.0	sunken relief, legs of god or king, tail in back, with balance (?)	ditto
119-1	Room 4, Building 10	capital	ditto	60×60×65 (d. of necking : 54)	Hathor	reused
119-3	on an oil press in the Sacred Road		ditto	w. 90	wing	
77-10	ashlar building ruin		ditto	w. 10.0	painting	ditto
77-11	ditto		ditto	w. 22.1	painting, yellow	ditto
123-5	East Trench in the site, disarranged	pilaster capital	ditto	unmeasured		
123-10	ditto	frieze	ditto	w. 16.9		fragment
122-6	north area, site surface	pilaster capital	ditto	unmeasured	Corinthin style with acanthus	

(KAWANISHI, H.)

6 PRE-PHARAONIC STONE IMPLEMENTS (Figs. 144 and 145)

From the Akoris site, stone implements which belong to the Paleolithic Age or the early Neolithic Age were unearthed, none of which were in situ. Those shown in Fig. 144 no. 1 and Fig. 145 nos. 1 and 8 were collected in the excavated area at the north end of the site, that in Fig. 145 no. 7 was found just outside the city wall, and the others were unearthed from the accumulated soil in the south chamber in the shaft of Chapel B. Therefore, it is impossible to determine the period of these implements by the layers in which they were found. All of the implements were made of flint, and as similar flint stones can be gained even now from the opposite side of the east wadi, where they must have been made use of at that time.

Fig. 144 no. 1 (Pl. 78 no. 1) is a thin retouched projectile point. Fig. 144 nos. 2 and 3 (Pl. 78 nos. 2 and 3) are bifacial tools used as scrapers, whose edges show abrasion marks. Fig. 144 no. 4 (Pl. 78 no. 4) is an incomplete bifacial tool. Fig. 144 no. 5 (Pl. 78 no. 4) is a waste flake produced in the manufacturing process of a bifacial tool. Fig. 145 no. 1 (Pl. 78 no. 6) is a denticulate on a wide flake. Fig. 145 nos. 2 and 3 (Pl. 78 nos. 7 and 8) are notched scrapers. Fig. 145 no. 4 (Pl. 78 no. 13) is a part of a backed tool on an elongated flake. Fig. 145 nos. 5～7 are bladelets. On the edge of Fig. 145 no. 5 (Pl. 78 no. 10), the marks

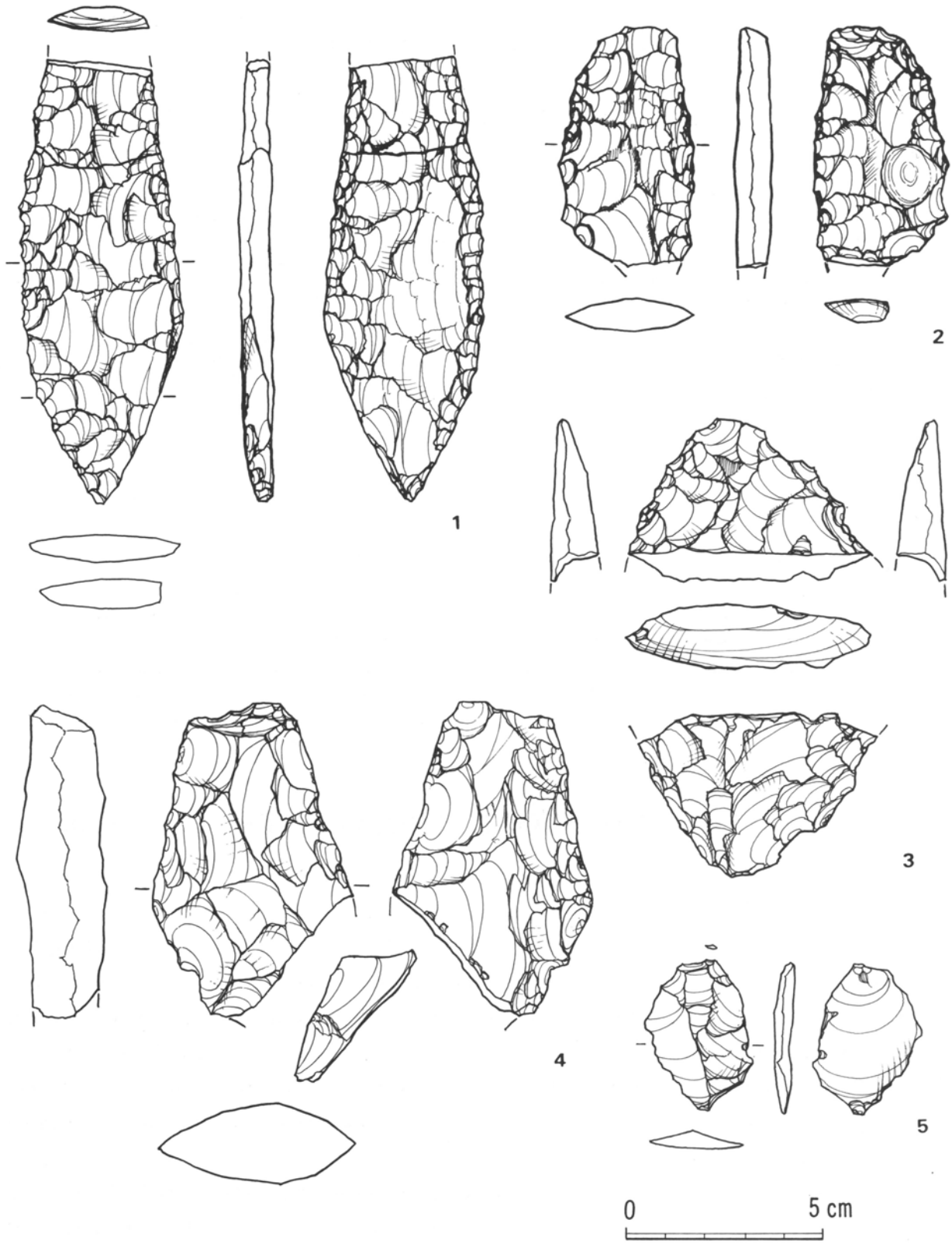

Fig. 144 Pre-Pharaonic stone implements



Fig. 145 Pre-Pharaonic stone implements

showing utilization are noticed. Fig. 145 no. 6 (Pl. 78 no. 12) is a small backed bladelet. Fig. 145 no. 7 (Pl. 78 no. 9) is a sickle-element. Fig. 145 no. 8 (Pl. 78 no. 11) is a Levallois-like flake with indications of careful preparation on the striking platform.

(SHIRA-ISHI, N.)

7 POTTERY LAMPS

UNEARTHED AREA : Southeast Corner of the Western Temple Area

Fig. no. (Pl. no.)	Layer	Dimension (cm) l.×w.×h.	Color	Design	Technique
146-3	Layer 4		deep reddish orange	nozzle head	moulded
146-5	ditto		ditto	ditto	ditto
146-6	ditto		pale lilac	ditto	ditto
146-7 (86-1)	ditto	×8.9×3.5	brown	animal and palm leaf	ditto
147-2	Layer 3	×5.8×2.8	yellowish white	radiating petals, circular pattern inscribed on bottom	ditto
147-3	ditto	×6.3×3.3	pale beige	circlet patterns, rhomboid pattern inscribed on bottom	ditto
147-4 (86-7)	ditto	8.1×6.3×3.7	pale reddish yellow	checkered pattern, rediating petals (?), floral pattern inscribed on bottom	ditto

UNEARTHED AREA : South Court Area

Fig. no. (Pl. no.)	Layer	Dimension(cm) l.×.w.×h.	Color	Design	Technique
146-4	inside stone circle of the South Court, upper layer		reddish brown	nozzle head	moulded
146-9 (88-1)	eastern area around the South Court, disarranged	8.0×7.2×	brown	segmented pattern	moulded
149-7 (88-4)	Room 4 on the paving stones	9.0×7.6×	greyish brown	band-and-patch pattern, Saint George (Georgius), handle looped	ditto
(89-4)	ditto	13.8×6.7×	pale brown	concentrated circlets on discus	ditto
(89-6)	ditto	11.2×6.5×	brown	looped handle missing, soot-stained on nozzle	ditto
151-5 (88-9)	ditto, disarranged	7.5×5.8×	dark brown	incensory, pierced handle	undetermined
148-4 (87-4)	Room 1, east part of the floor	8.0×6.3×4.1	yellowish grey	concentric circle design and others, stub handle	moulded
151-6 (89-1)	Room 1, east part	5.4×6.2×	pale brown	handle ornament, saint or bishop	ditto

UNEARTHED AREA : Eastern Area Adjoining Chapel A, Disarranged Soil

Fig. no. (Pl. no.)	Dimension(cm) l.×w.×h.	Color	Design	Technique
148-9 (88-8)		pale brown	two saints	moulded
148-10		pale greyish brown	sheep or horse	ditto
149-1		light reddish brown	rib pattern, stub and loop handles	ditto
150-8	×7.6×5.2	yellowish brown	row of short strokes looped handle	ditto

UNEARTHED AREA : Building 5, Disarranged Soil

Fig. no (Pl. no.)	Dimension(cm) l.×w.×h.	Color	Design	Technique
149-4	×7.5×	dark reddish brown	horse, triangular patterns adding grains, row of short strokes around discus	moulded
149-8		greenish grey	undetermined	ditto
150-1 (89-5)	×7.0×	greenish brown	without drcorations	ditto
150-2	×6.9×	dark brown	concentrated circlets on discus, row of short strokes	ditto
150-3		pale brown	concentrated circlets, granular patterns loop handle	ditto
150-4	×8.3×	greenish grey	row of short strokes, row of granular patterns	ditto
150-5		ditto	concentrated circlets on discus, two rows of short strokes, wavy line on shoulder	ditto
150-7		ditto	two rows of short strokes, wavy line	ditto
150-10		ditto	small rosettes, branches	ditto
(88-6)	9.9×6.7×	brown	looped handle missing	ditto

UNEARTHED AREA : Building 9, Disarranged Soil

Fig. no (Pl. no.)	Dimension(cm) l.×w.×h.	Color	Design	Technique
149-2	×8.8×7.3	pale yellowish brown	three paired concentric circlets, semi-circular patterns, radiating dotted lines on discus, looped handle	ditto
148-7		pale brown	saint and animal, row of short strokes	ditto
149-5		pale reddish yellow	concentrated circlets, row of short strokes around discus, others undetermined, looped handle	ditto
149-9		pale brown	branch bearing leaves circlet	ditto
150-6		ditto	undetermined	ditto
150-9		ditto	small rosettes, two rows of short strokes	ditto
150-11		ditto	loop handle	ditto
150-12		greenish grey	ditto	ditto
150-13	×6.7×	pale yellowish brown	concentrated semi-circular small rosette	ditto
151-2		brown	without decoration	ditto
151-3		light orange	ditto	ditto
(88-3)	10.6×7.4×4.7	brown	stub handle lacking	ditto

UNEARTHED AREA : Building 2

Fig. no. (Pl. no.)	Layer	Dimension(cm) l.×w.×h.	Color	Design	Technique
147-1 (87-3)	Room 2, on the floor	7.9×6.1×3.9	pale brown	band of radiating pattern, continuous circlet patterns on discus, circular pattern on bottom	moulded
148-1 (87-5)	Room 1, on the floor	7.9×6.3×4.0	brown	radiating circlet arc and straight lines inscribed on bottom, stub handle	ditto
148-2 (87-2)	Room 2, on the floor	8.4×6.8×4.5	ditto	double spiral motif and others	ditto
148-5 (87-6)	ditto	8.7×6.3×3.6	yellowish grey	concentric semi-circles in segments, stub handle, symmentrical S-figures and straight line inscribed on bottom	ditto

UNEARTHED AREA : Other Sections

Fig. no (Pl. no.)	Layer	Dimension(cm) l.×w.×h.	Color	Design	Technique
146-1 (86-2)	East Trench in the site	×5.6×2.8	dark grey	with lug	moulded
146-2 (86-5)	ditto	×5.0×2.2	reddish brown	with pierced lug, volutes on nozzle	ditto
146-10 (86-6)	under the Sacred Road of the Central Temple	7.6×7.3×4.2	yellowish grey	frog pattern (?)	ditto
146-11	Chapel B shaft, disarranged	7.4×6.6×	pale brown	palm branch design	ditto
151-4 (89-8)	ditto	×7.2×	green	glass-glazed	ditto
146-8 (86-4)	North Trench in the site		brownish gold	frog pattern	ditto
146-12 (87-1)	Building 1, on the floor	7.5×5.9×2.7	brown	rediating petals	ditto
146-13	northwest corner of the Hypostile Hall		pale brown	undetermined pattern	ditto
148-3 (88-2)	Building 6, disarranged	9.9×7.4×	brown	human head part, r-figured, row of strokes, stub handle	ditto
149-6	ditto		light brown	granular pattern on discus	ditto
148-6	Building 10, disarranged		pale beige	radiating petals	ditto
149-3	ditto	11.4×8.6×	deep reddish orange	radiating lines, rows of circlets, double banded looped handle	ditto
148-8 (88-7)	northwest part of the Middle Court East	×8.5×5.9	light yellowish brown	Christ and two sheep facing each other, looped handle	ditto
149-10	Room 6, Building 8, above the floor	×7.2×	greyish white	concentrated circlets on discus	ditto
150-14	Room 6, Building 8, disarranged		pale yellowish grey	circlets and wavy line	ditto
151-7 (89-2)	adjoining the North Gate eastward	5.2×6.0×	pale brown	handle ornament, Saint George (Georgius)	ditto
151-1 (89-7)	site surface	9.7×7.4×	ditto	without decoration	ditto
(86-3)	front area of Chapel A		pale reddish		ditto

(88-5)	Room 4, Building 8, disarranged	12.8×8.5×	pole brown	cross, concentrated circlets on discus	moulded
(89-3)	Building 8 in the Middle Court, disarranged	12.0×6.5×	ditto	loop handle missing	ditto

(KAWANISHI, H.)

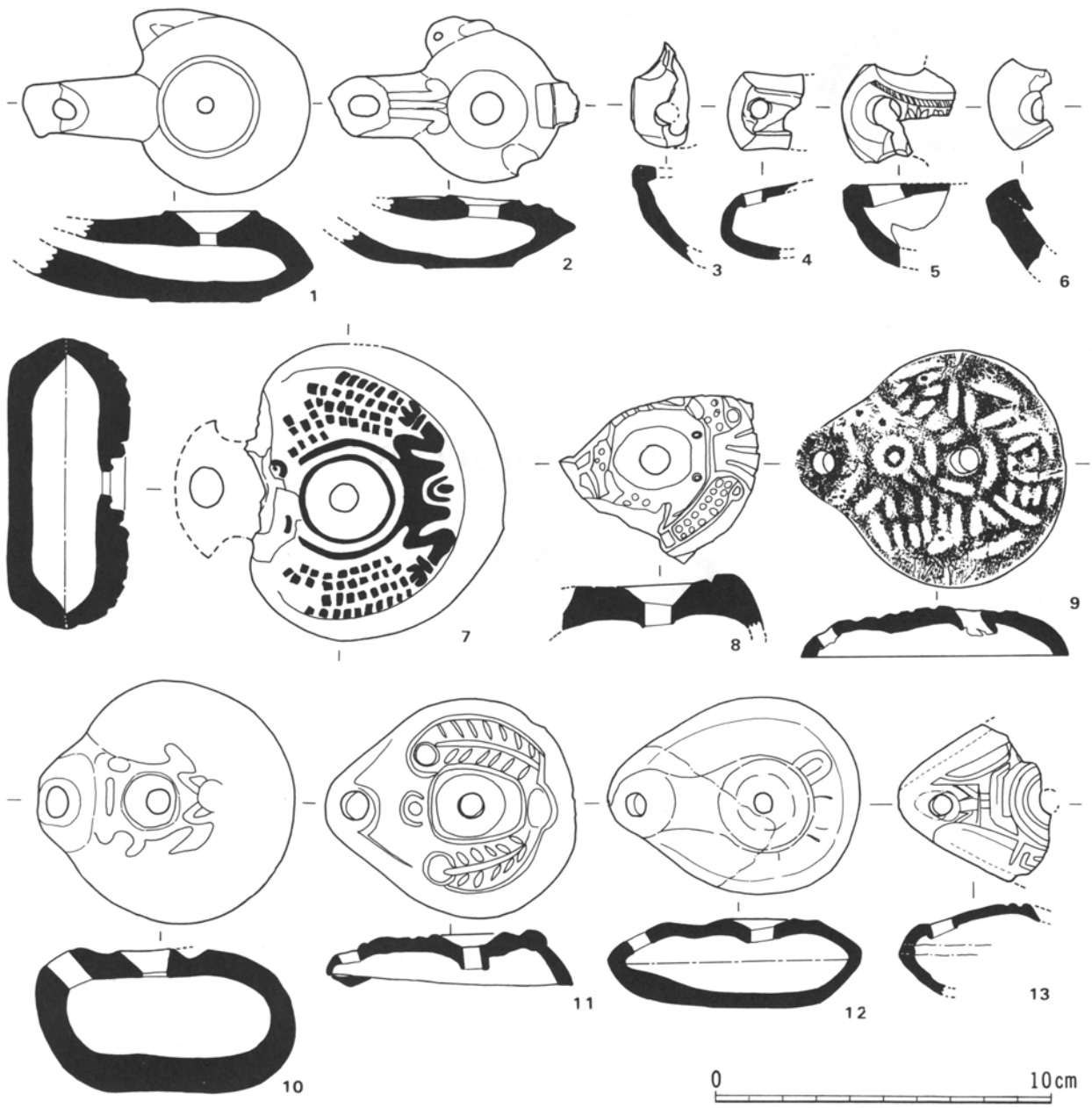

Fig. 146 Pottery lamps

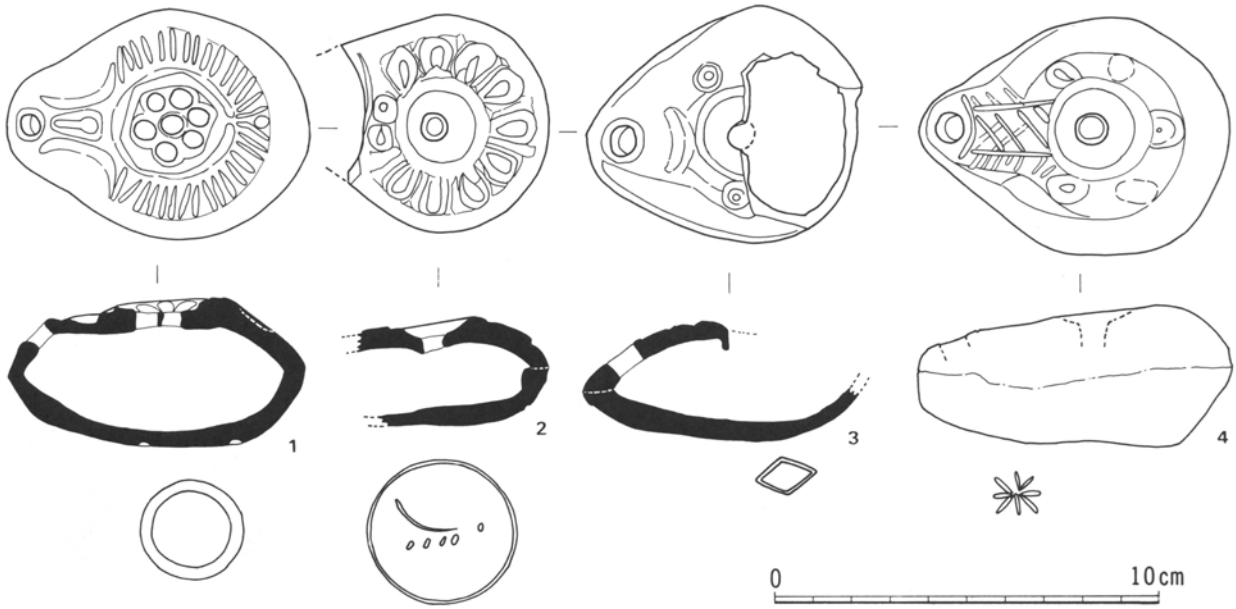

Fig. 147 Pottery lamps

8 CLAY OBJECTS

Fig. no (Pl. no.)	Layer	Form	Dimension	Design	Remarks
152-1 (90-7)	eastern area adjoining Chapel A, disarranged	female face	w. 5.2 cm	painting, hair black, face red	lowest part lacking
152-6	ditto	animal	w. 7.6	painting, reddish brown, white	lacking
152-10 (90-8)	ditto	human figure	h. 9.9	sedentary	
152-2 (90-4)	southeast part of the Middle Court East, disarranged	human head	h. 6.4		hand-shaped, lowest part lacking
152-3 (90-1)	western area around the South Court, disarranged	hedgehog or tortoise	l. 7.6		
152-4 (90-2)	west side of the Sacred Road of Serapeum, disarranged	human head	h. 5.1		hand-shaped, lowest part lacking
152-5 (90-3)	Room 2, Building 8, disarranged	horse	h. 7.8		lowest part lacking
(90-9)	ditto	stamp	d. 3.4	cross	
152-7 (90-6)	Layer 3, East Trench in the site	Bes		painting, head and ears yellow, breast and belly blue	moulding
152-8 (73-33)	site surface	moulding for coin			see p. 199
152-9 (73-43)	Chapel B shaft, disarranged	ditto			see p. 197
152-11 (90-5)	North Trench in the site, disarranged	elephant, with disc wound by trunk			moulding
(90-10)	ditto	human hand	l. 6.7		
152-12 (90-11)	lower layer, inside the stone circle in the South Court		7.3×3.0	some writings	sandy paste
(90-12)	Chapel A shaft, disarranged	stamp seal	d. 2.5	unidentified, pierced hole	
(90-13)	Room 6, Building 9, on the floor	stamped object	1.2×0.8	with two similar stamps, upper halves of two bodies, man and woman turning their backs each other, cross above their heads	

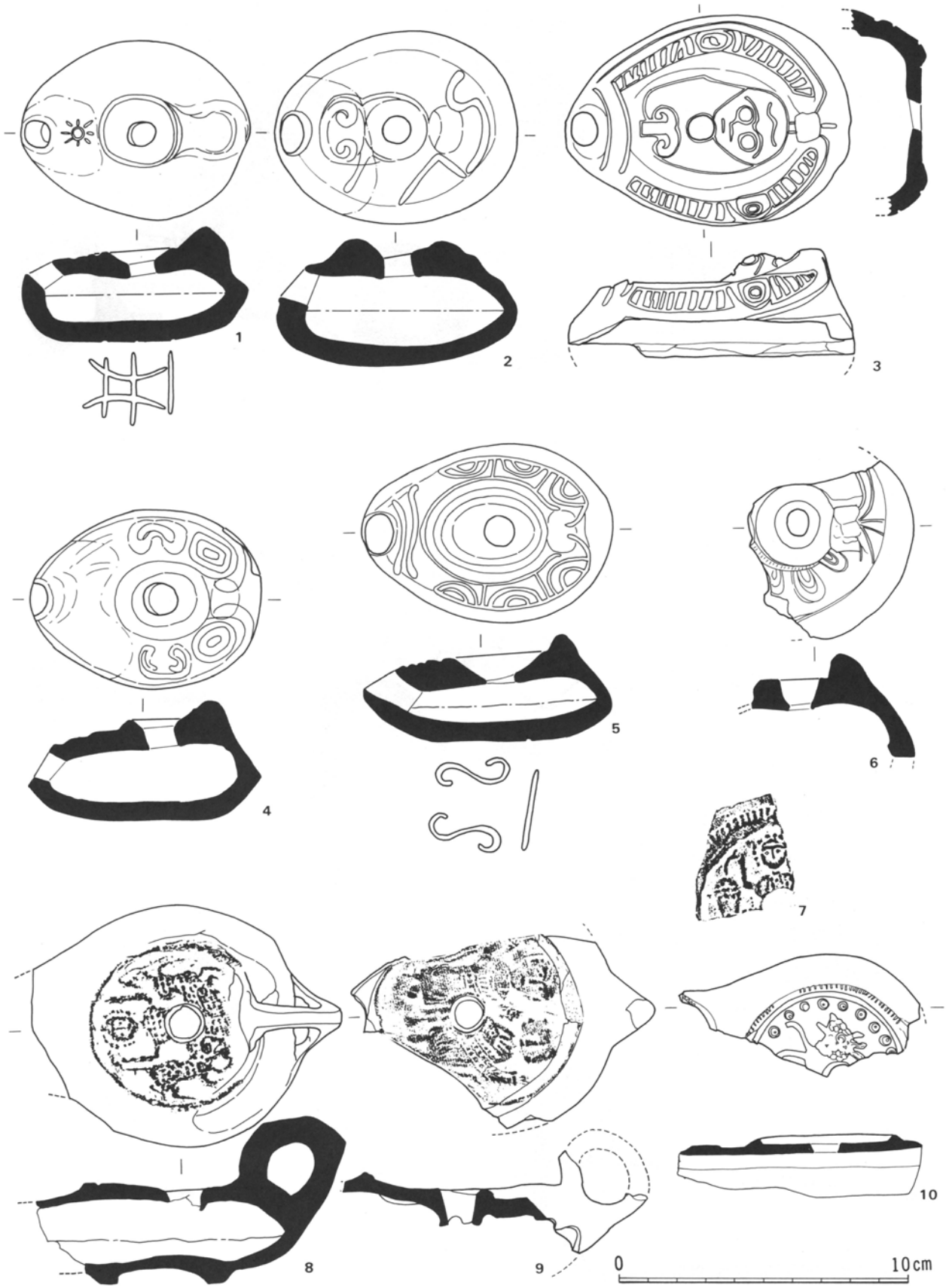

Fig. 148 Pottery lamps

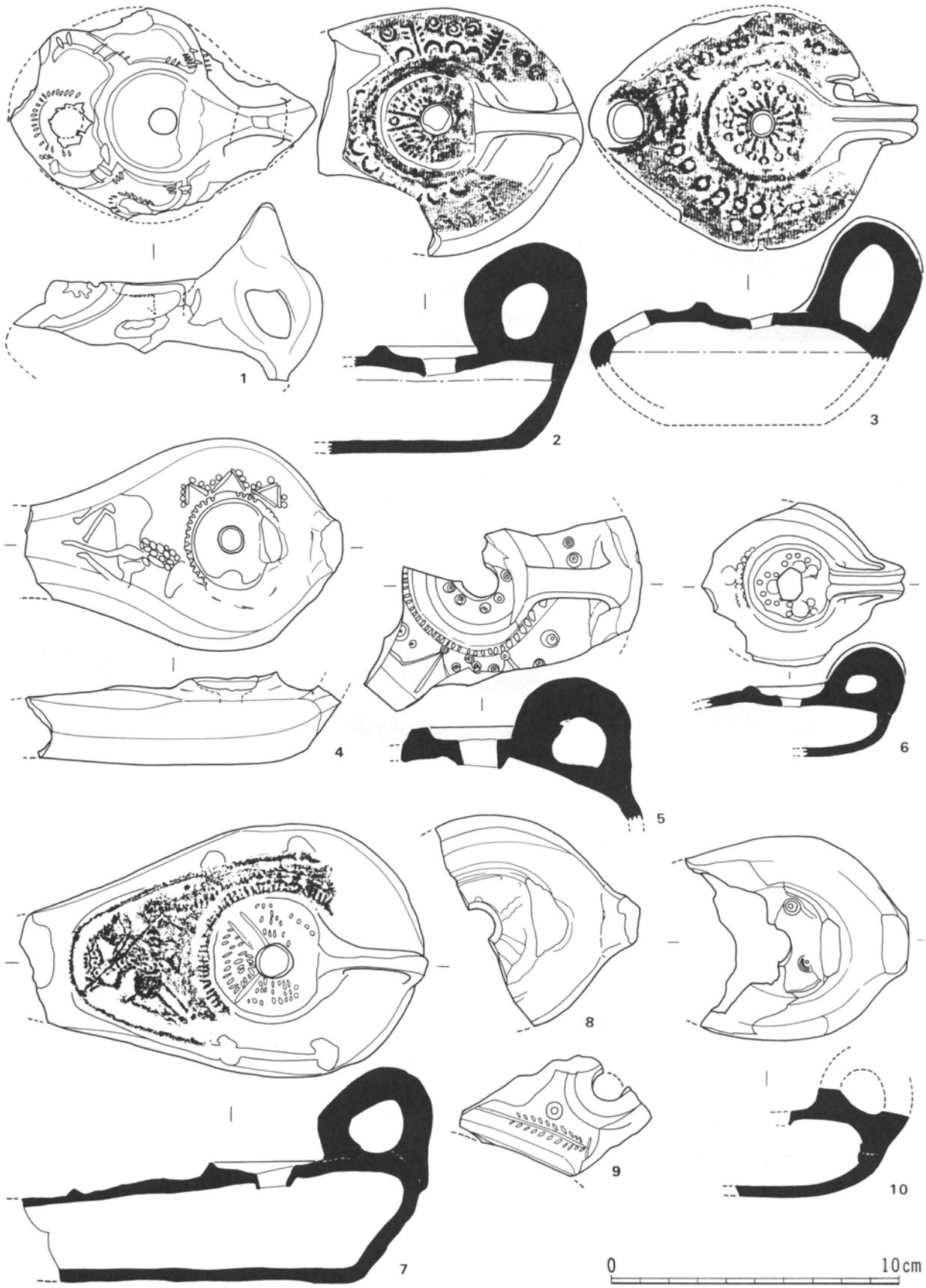

Fig. 149 Pottery lamps

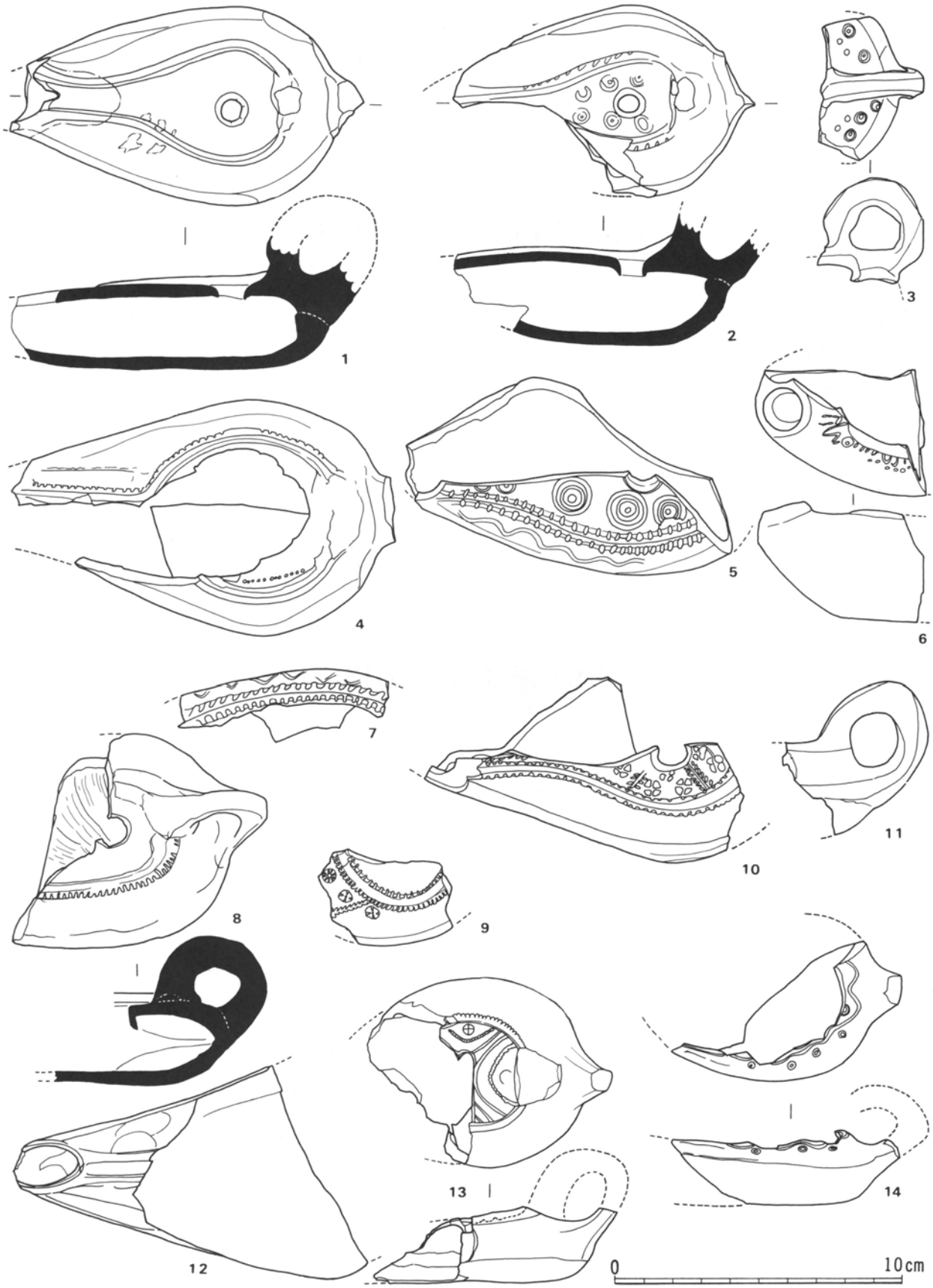

Fig. 150 Pottery lamps

111 (90-15)	"Pool" Area, disarranged	Hathor amulet	h. 2.6	plaster left on surface	moulding, three pierced holes
113-4	ditto	crown of goddess ?	h. 6.8	red and black stripes on the white ground	

(KAWANISHI, H.)

9 UNFIRED CLAY OBJECTS

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
153-9	Building 5, disarranged	weight (?)	l. 12.3 w. 7.5	with stamp	
153-10	North Trench in the site	weight (?)	d. 12.6		
153-11	ditto	spindle (?)	d. 6.2		
153-12	ditto	spindle (?)	d. 7.3		
(90-14)	western part of Building 6, disarranged	stamp seal for papyrus scroll	d. 1.2	cross	accompanied with papyrus texts
(91-11)	Room 3, Building 4, stuck to the wall	stamped	d. of stamp 16.0	horse	

(KAWANISHI, H.)

10 AMPHORA STOPPERS

UNEARTHED AREA : Building 5, Disarranged Soil

Fig. no. (Pl. no.)	Language and Marks	Remarks
154-8	ϵ]ΛΗΛΧΙΜ[ϵ olive galore	fragment, *ἐληα=ἐλία*, ΧΙΜϵ=ϹΙΜϵ
154-9 (91-4)	undecipherable	
154-12	composite and symbolic letters (?)	
155-13	herringbone and symbolic letters	fragment
155-15 (92-9)	cross, W is undetermined	
153-8	one kind of cross (?)	
155-16 (92-5)		
155-17 (92-3)	crosses	
155-18	undetermined	fragment
155-19	metamorphosed cross	ditto
155-20	cross	ditto
155-21	undetermined	ditto
155-22	ankh, cross symbol of life	
155-23	tree (?) metamorphosed cross	
156-27	amphora (?)	lower part lacking
156-28	tree (?), undetermined	fragment
156-29	dragon (?)	fragment

156-30 (92-6)	animal, horse (?)	
156-31	horse	fragment
156-32 (92-1)	animal, lion (?)	
156-33	pigeon spreading wings, with nimbus	
156-34	some geometric pattern	fragment, same stopper as above
156-35 (92-8)	bird spreading wings	
156-36	peacock (?)	
156-37	animal (?)	
156-38	two animals facing each other (?)	fragment
156-39	undetermined	same stopper as above
156-40	undetermined	fragment, same stopper as above

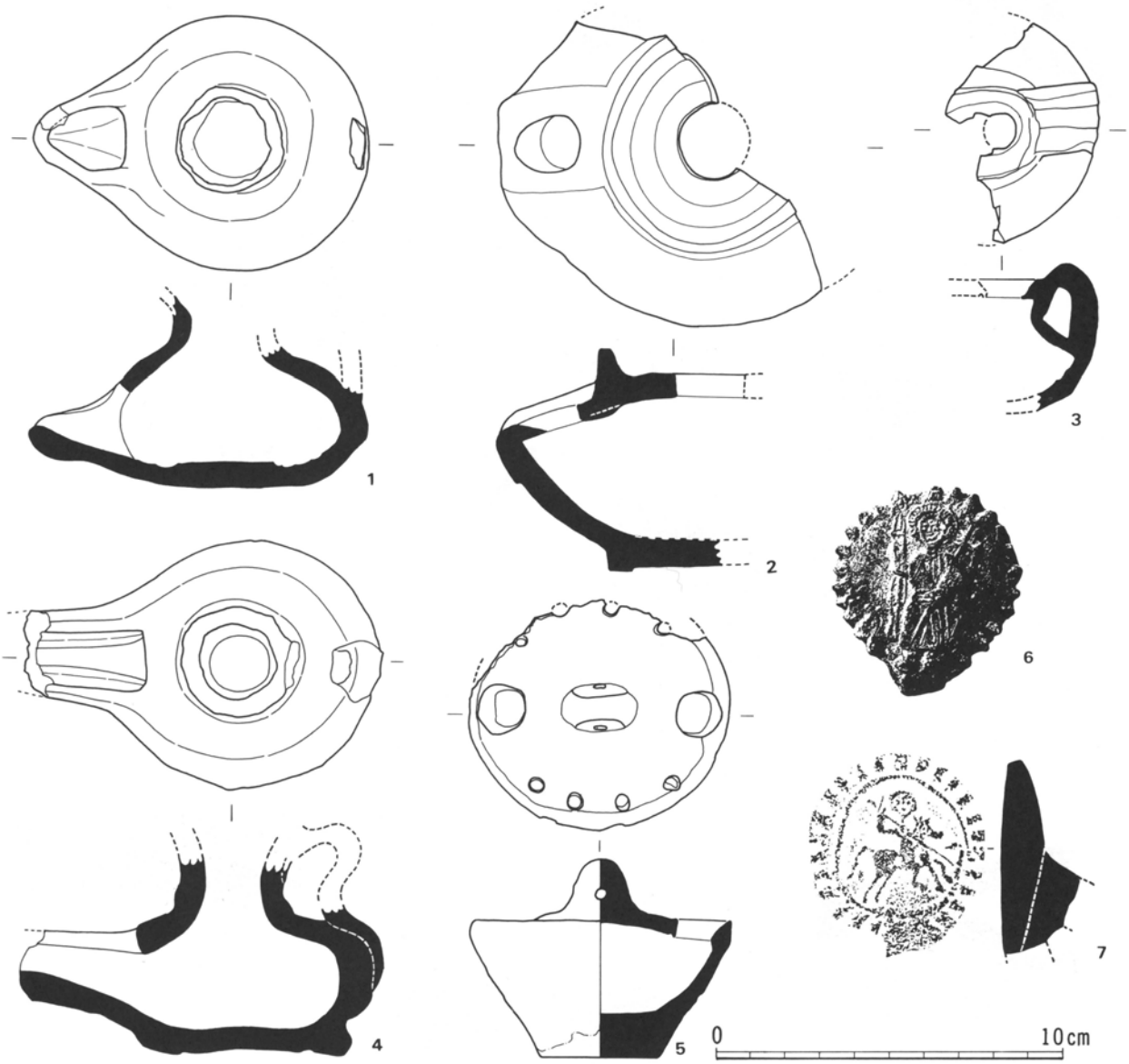

Fig. 151 Pottery lamps, except for No. 5, an incensory



Fig. 152 Clay objects

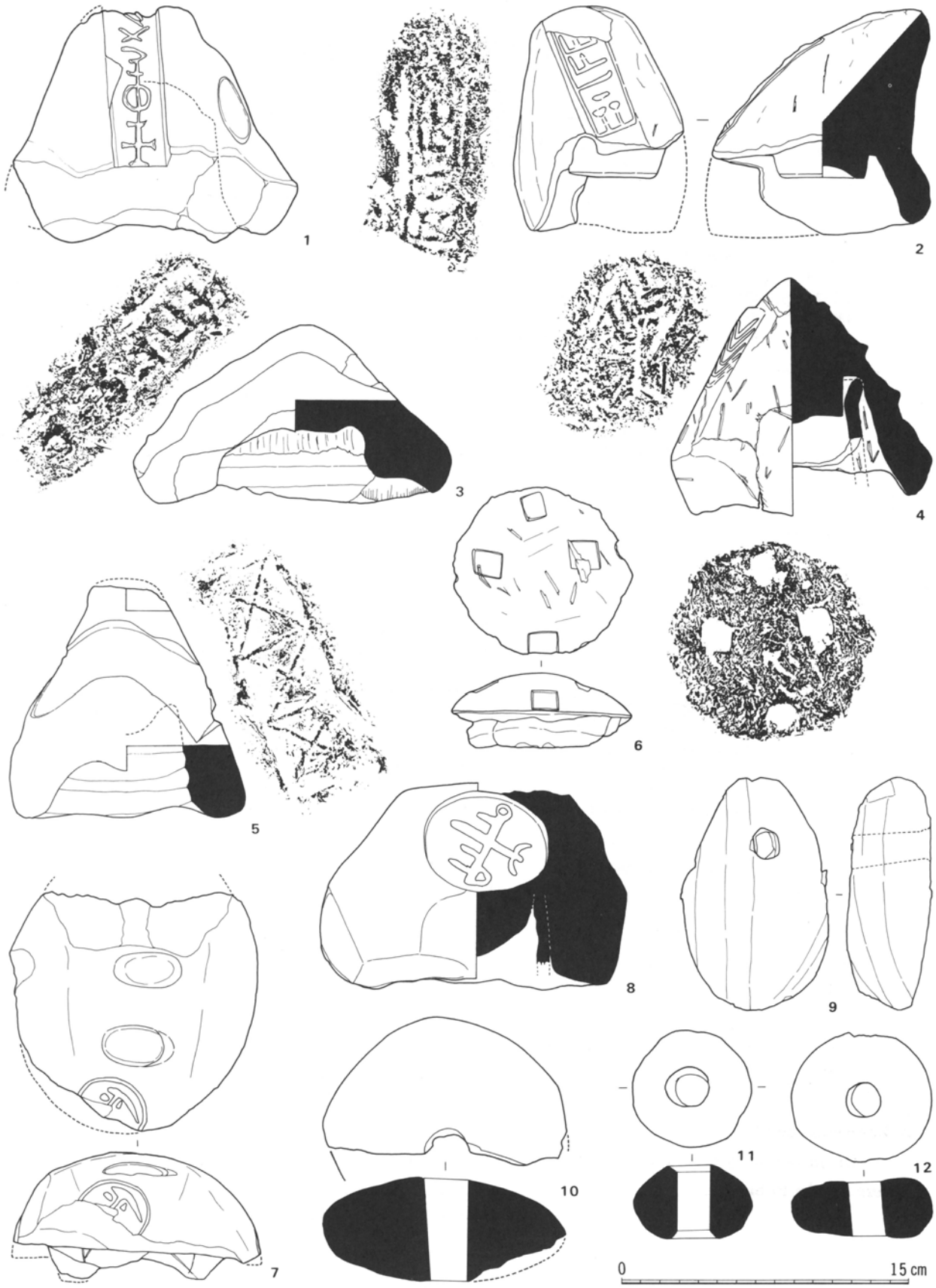

Fig. 153 Unfired clay objects

UNEARTHED AREA : Room 5, Building 8

Fig. no. (Pl. no.)	Layer	Language and Marks	Remarks
154-1	on the floor	undecipherable	
154-2 62-1 (92-10)	ditto	saint	same stopper as above
154-11 (92-4)	disarranged	star, symbolizing Maria	
155-24	ditto	animal	
155-25	ditto	animal, horse (?)	
155-26 (92-2)	ditto	bird spreading wings (?)	

UNEARTHED AREA : Other Sections

Fig. no. (Pl. no.)	Layer	Language and Marks	Remarks
153-3 154-3 (91-2)	eastern area adjoining Chapel A, Phase 5, disarranged	Π ΚΑΡΟΤ(ΗC) *Καλος* in ancient Greek means beautiful ; here it means good like in modern Greek (cf. Papyrus No. 26)	
154-4 (91-3)	ditto	same stamp as above	
153-5 154-10 (91-8)	ditto	geometric pattern, meaning cross (?)	
154-5 (91-7)	Room 3, Building 9, disarranged	*ΠΕΗΡΠ* meaning wine, star light symbolizing Maria	fragment
154-6	Building 6, on the floor	*E, X*	fragment
153-2 154-7 (91-6)	Room 2, Building 2, on the floor	*EΛ) EION* meaning oil (?) inverted letters	
153-4 155-14 (91-9)	Building 1, on the floor	herringbone	fragment
153-1 (91-1)	Room 4, Building 4, on the floor	*+θῶ χαϱ〔ις* thanks god	*θω=θεῷ*
(91-5)	Building 5, disarranged		
(91-10)	Room 7, Building 9, on the floor	herring bone	
(92-7)	eastern area around the South Court, disarranged	star	lower part missing
153-6	Room 1, Building 2, on the floor	red painting on the rectangular stamp	
153-7	Middle Court East, disarranged	undetermined	

Acknowledgement

Dr. Jacque Jarry taught me the Greek and Coptic letters stamped on stoppers. I would like to show my sincere thanks to him.

(KAWANISHI, H.)

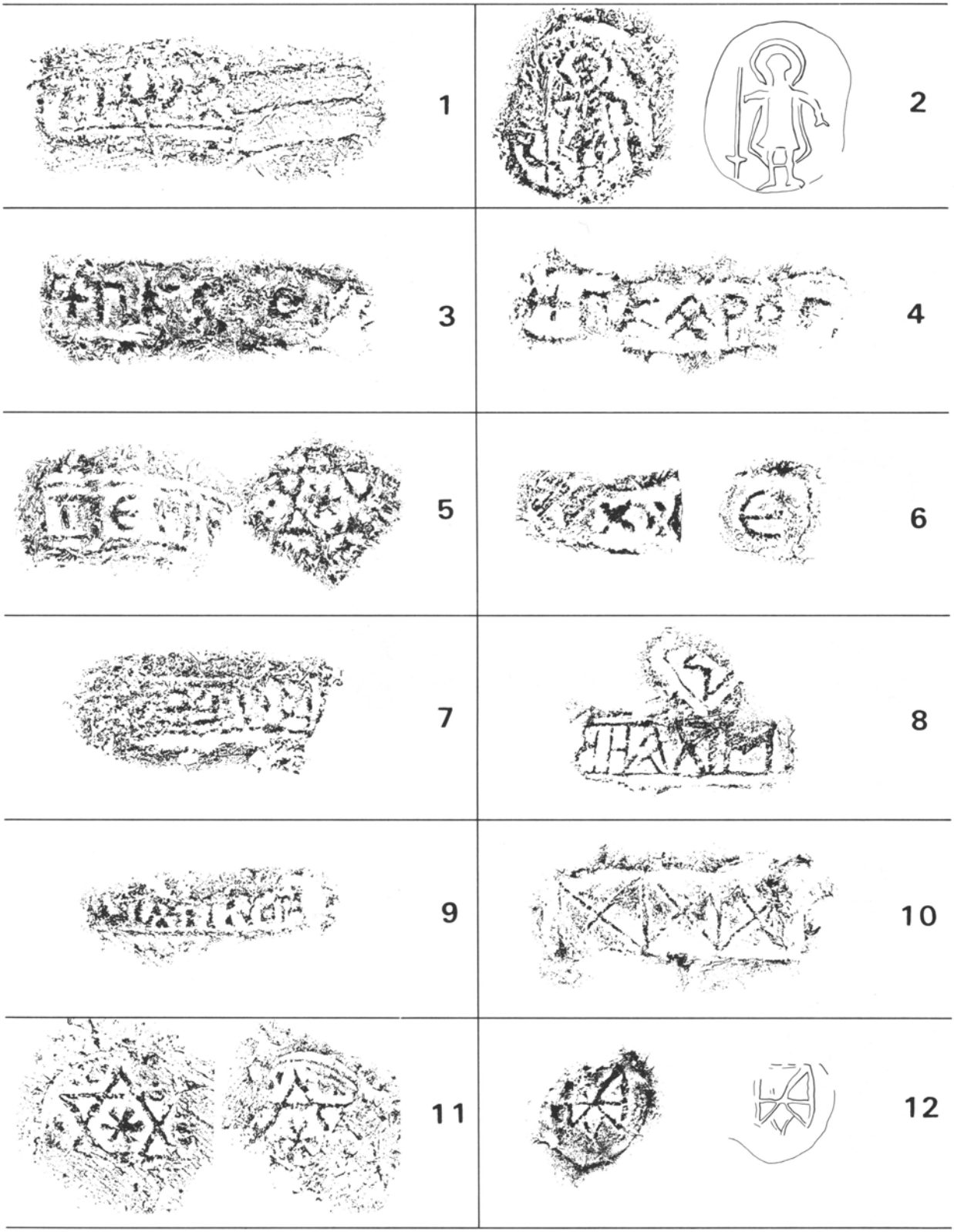

Fig. 154 Stamps on the amphora stoppers (scale 1/3)



Fig. 155 Stamps on the amphora stoppers (scale 1/3)

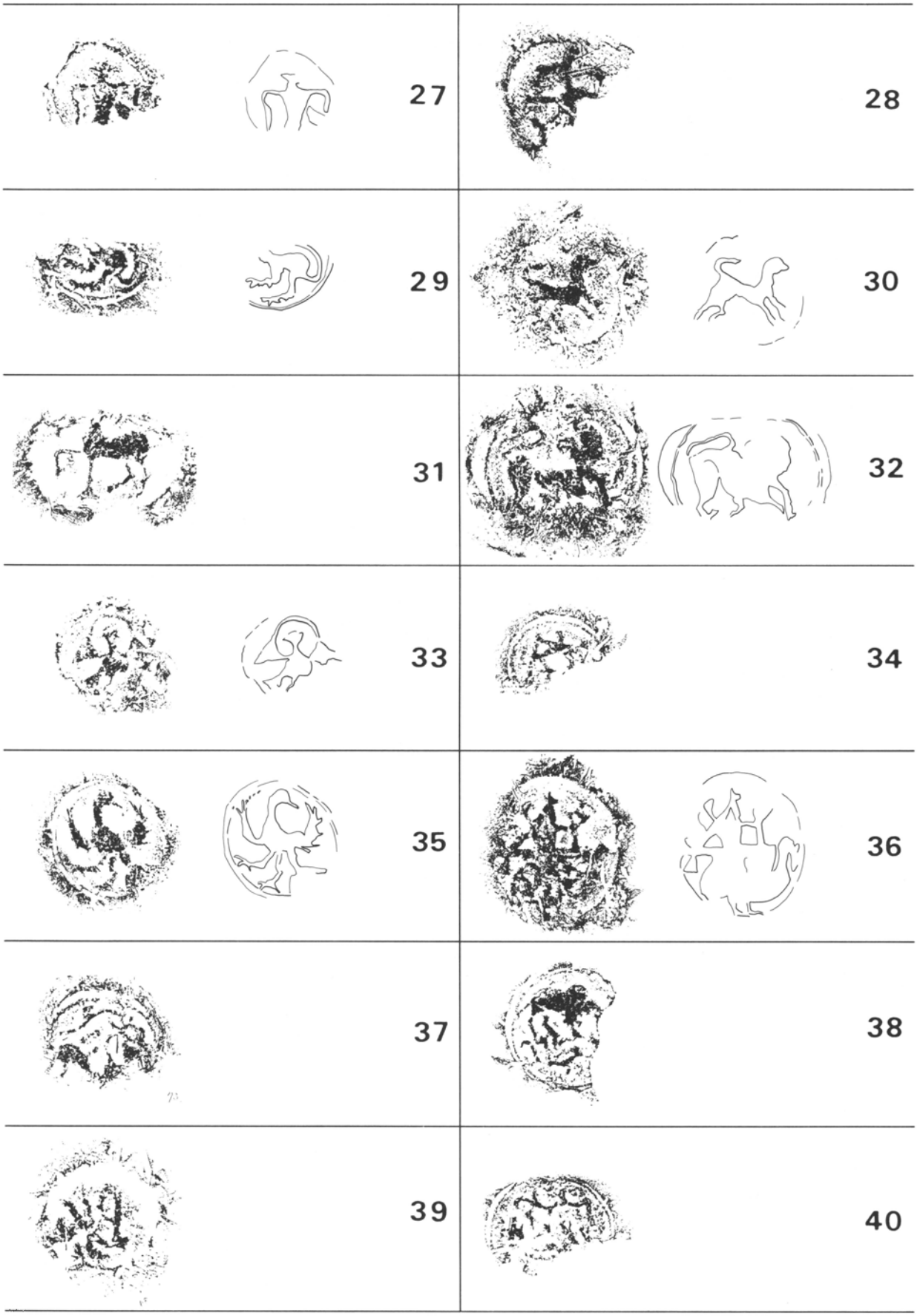

Fig. 156 Stamps on the amphora stoppers (scale 1/3)

11 BEADS, AMULETS AND MISCELLANEOUS ACCESSORIES

UNEARTHED AREA : Chapel A Shaft

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-20	ditto	stone, 5B 5.5/9	l. 2.9 cm	rectangular column-shaped bead
157-23	disarranged	glass, 10R 2/3	d. 0.9	globular bead
157-24	ditto	ditto	d. 1.0	barrel-shaped fragment
157-31	ditto	ditto	d. 1.1	globular bead
158-3	ditto	glass	w. 4.8	human figure, brown body, green necklace
159-3	ditto	faience, sky blue	h. 1.4	Udjat-eye, black patch and trim
(IV-8)	ditto	glass	d. 0.7	globular, multi-colored bead

UNEARTHED AREA : South Chamber of Chapel B Shaft

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-5 (95-6)	A-III	carnelian, 7R 4/10	l. 2.0 cm	oval seal, Griffin and lion inscribed
157-8 (96-16) (V-I)	C~F-II	glass	w. 1.8 t. 0.8	sheet, green, white, red, blue, yellow
157-13	II	glass, 3PB 2.4/8	d. 1.1	globular bead
157-14	disarranged	stone, 10R 4.5/10	d. 0.5	ditto
157-15	ditto	faience, 5GY 5/8	d. 0.7	ditto
157-16	ditto	glass, 10B 4/12	d. 0.6	ditto
157-22	ditto	glass, 3PB 1.5/4	l. 1.0	polyhedral bead
158-2 (95-18)	G-III	faience, bright bluish green	d. 3.6	knob (?)
158-7 (96-15)	C-I	glazed composition	h. 4.5	vulture wing, dark blue, strong green
158-10	C~F-II	faience, blue	d. 1.7	knob ?
158-12	F-III	faience, 5B 5.5/9	d. 7.2	lid of vessel
158-13	C~F-II	faience, pale blue	l. 2.2, w. 1.3, d. 1.7	flat bead
159-7 (95-7)	D-III	quartz, white	h. 1.0	scarab without inscription
159-9 (95-5)	C-F-II	faience, blue	w. 1.2 h. 0.8	scarab, Ramses V
159-12	E, F-II	faience, bright bluish green	h. 1.1	amulet
159-14	E, F-II	faience, pale blue	h. 1.1	amulet statuette (?)
159-15	C~F-II	faience, blue	h. 1.2	amulet Bes
159-17	ditto	faience, dark blue	h. 3.6	amulet, Sakhmet with ankh-amulets
159-38	II	faience, blue	w. 0.4	finger ring (?)
159-39	C~F-IV	glass	l. 1.2	rectangular bead light brown, black, white stripe

SUPPLEMENT :

Beads. Many beads of faience, glass and stone were found mainly in Layers III and IV. They include short and long, large and small ones. The colors are blue, white, brown, light-brown and dark-green.

Ornaments in the shape of tear-drop (Fig. 159 nos. 28 and 36. Pl. 93 no. 1). They had originally been part of a broad collar with many cylindrical and round beads, etc..[1)]

Button shaped objects (Fig. 158 no. 2. Pl. 95 no. 18). They would have been attached to other objects, probably a cosmetic box or treasure casket, as knobs or ornaments.

Fragment of scarab (Fig. 159 no. 9. Pl. 95 no. 5). On the underside are carved three hieroglyphic letters. It is possibly the name of a king, probably "Ra (-meses) Amen-mery Amen (-khepsh · f)", Ramesses V.[2)]

Notes

1) HAYES, *SE*, Fig. 198 (p. 307), Fig. 199 (p. 308) ; GARSTANG, *BCAE*, Fig. 101.

2) PETRIE, W. M. F., *Scarabs and Cylinders with Names* (London, 1917), PL. XLVI. (20.3) RAMESSU V, pp. 11-16.

UNEARTHED AREA : Chapel B Shaft

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-1 (93-4) (IV-10)	disarranged	carnelian, 7R 4/10	w. 1.1 cm	polyhedral bead
157-2 (93-4)	ditto	ditto	l. 2.3	hexagonal column-shaped bead
157-3 (93-4)	ditto	ditto	l. 1.4	heptagonal column-shaped bead
157-7	ditto	glass (?) green	l. 1.0	pendagonal bead
157-11	ditto	glass (?) blue	l. 0.7	flat bead
157-17 (94-1)	ditto	glass, N 9.5, N1, 2.5Y 7/10	d. 1.4 (upper left)	globular, multi-colored bead
157-21 (93-1)	ditto	glass, 3PB 2.4/8	l. 1.9	circular cone-shaped bead
157-30		faience (?), pale	l. 0.6	flat bead
158-6 (V-2)	ditto	core glass		cup, ground : 5YR 2.4/4, saw-tooth patterns : 10B 3/8, 10Y 8.5/9
159-18 (94-9)	ditto	faience, 5G 5/4	h. 2.5	amulet face broken
159-28 (93-1)	ditto	faience, 5BG 5/4	h. 4.0	lotus-shaped bead
159-35 (93-1)	ditto	faience, 5G 7/2	l. 1.4	amulet (?)
159-36 (93-1)	ditto	faience, 5G 5/4	h. 2.0	lotus-shaped bead
(93-2)	ditto	faience, bluish green	h. 0.8 (upper left)	nail-shaped ornaments
(93-3)	ditto	faience, glass blue, green, yellow	max. d. 0.7	flat disc-shaped beads

(93-5)	disarranged	faience and glass, dark blue, dark red	max. l. 3.1	
(93-6)	ditto	faience, bluish green	max. h. 2.9	cylindrical beads
(94-3)	ditto	faience, blue	max. h. 1.2	amulet, Bes
(94-10)	ditto	faience, 5G 5/4	h. 2.3	amulet, upper part missing
(96-19)	ditto	glass	h. 2.3 (upper left)	beads

UNEARTHED AREA : Front Area of Chapel B

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-4	disarranged	amethyst, 7.5P 1.5/4 4.5/5	l. 1.8 cm	pseudomorphic column-shaped bead
157-18	ditto	glass	d. 1.0	globular, multi-colored bead : blue, white, brown, green from the innermost of eye
157-19	ditto	glass, brownish red	l. 2.8	human figure model (?)
159-8 (95-1)	ditto	faience, 5G 5/4	w. 0.9, l. 1.2 h. 0.6	scarab, Amen Ra' nb
159-27	ditto	faience, bluish green	l. 2.9	cylindrical bead
159-29	ditto	faience, dark blue	w. 0.7	round-headed trapezoidal decoration
159-30	ditto	ditto	w. 0.7	trapezoidal decoration
159-31	ditto	faience, pale green	d. 0.2	linked bead
159-32	ditto	faience, blue	d. 0.5	flat bead
159-33	ditto	ditto	l. 0.4	linked bead
(96-11)	ditto	glass, black	w. 1.2	lotus, saw-tooth
(96-12) (V-3)	ditto	faience, blue	l. 1.7	amulet

UNEARTHED AREA : Eastern Area Adjoining Chapel A

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-26	beside the coffin	stone, brown	d. 0.4 cm	barrel-shaped bead
157-27	near the coffin	glass, pale blue	l. 0.5	three-linked beads
157-28	ditto	glass	d. 0.5	multi-colored bead, dark blue parts onto green ground
157-34	disarranged	glass, dark green	d. 2.1	globular bead, linked (?)
157-51	beside the coffin	faience, pale greenish yellow	l. 1.3	cylindrical bead
159-4 (95-11)	disarranged	faience, blue	w. 0.8	signet ring
159-5 (95-10)	ditto	ditto	w. 0.9	ditto
159-11 (94-12)	ditto	ditto	w. 0.7 h. 0.8	statuette, amulet
159-37 (94-7)	ditto	faience, pale greenish yellow	l. 2.2	part of pectoral
(95-9)	ditto	faience, sky blue	w. 0.9	signet ring
(IV-1)	ditto	faience, pale green	w. 1.0	amulet, Thoth

UNEARTHED AREA : Eastern Rooms around the South Court

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-32	Room 6, disarranged	glass, transparent	l. 1.3 cm	flattened, swollen column-shaped bead
157-33	Room 5, disarranged	glass, pale	l. 1.0	two-linked beads
157-36	Room 4, disarranged	glass	l. 1.3	barrel-shaped bead, white dotted pattern onto black ground
157-39 (96-9)	Room 4, beneath the floor	glass, dark blue	h. 2.0	jar-shaped decoration, amulet
158-14	Room 4, disarranged	faience, dull green	d. 2.0	segmented globular bead

UNEARTHED AREA : Building 8

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-38	Room 6, disarranged	glass, brown	d. 1.6 cm	globular bead
157-47	Room 5, on the floor	glass, green	d. 0.7	cylindrical bead
157-54	ditto	glass, pale green	d. 0.7	ditto
157-55	Room 4, disarranged	glass, pale brown	d. 0.7	spindle-shaped bead
158-4 (95-15)	Room 5, disarranged	faience, blue	h. 1.8	vessel (?), lotus designs
158-8 (96-18)	Room 1, disarranged	core glass		vessel, ground : N1, pattern : 2.5Y 9/2
159-10	Room 5, disarranged	faience, blue	w. 0.8	statuette, amulet (?)
159-13 (94-14)	Room 6, disarranged	ditto	w. 1.0	amulet, Sakhmet (?)
159-19	Room 5, disarranged	ditto	w. 0.9	amulet

UNEARTHED AREA : Building 1

Fig. no.	Layer	Material	Dimension	Category
157-41	on the floor	glass	d. 0.5 cm	linked beads, silver color by erosion
157-43	ditto	glass, dark blue	d. 0.4	linked beads
157-49	ditto	faience, green	d. 1.6	globular bead
157-52	ditto	glass, dark blue	d. 0.4	barrel-shaped bead

UNEARTHED AREA : Building 2

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-25	Room 1, on the floor	glass, white	l. 1.0 cm	column-shaped bead
157-35	Room 1, disarranged	glass, dark blue	l. 2.1	twisted bead
159-22	Room 1, on the floor	faience, blue	d. 1.6	barrel-shaped bead
(IV-5)	ditto	glass, stone	l. 1.0 (upper right)	beads
157-42 (96-20)	Room 2, on the floor	glass, dark blue	d. 0.3	linked beads
157-44 (96-20)	ditto	glass, black	d. 0.7	globular bead
157-46 (96-20)	ditto	glass, yellow	d. 0.8	ditto
157-48 (96-20)	ditto	stone	d. 1.4	globular bead, pale green and white stripe
157-50 (96-20)	ditto	glass, dark green	l. 0.9	hectagonal bead
158-1 (94-15)	ditto	faience, pale green	w. 3.8 h. 4.1	ushabti
159-20 (96-20)	ditto	faience, blue	d. 1.5	globular bead with striped pattern
159-23 (96-20)	ditto	ditto	l. 1.6	bead
(IV-6)	ditto	glass	l. 1.6 (linked beads)	beads
(IV-7)	ditto	glass	d. 0.8	glass leaf contained

UNEARTHED AREA : Adjoining the North Gate

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-40	site surface	glass, dark blue	d. 0.7 cm	linked beads
159-2 (96-13)	northeastern area, disarranged	glazed composition	h. 1.5	Udjat-eye, amulet, light brown ground, blue patch and line
159-6 (95-3)	western area, disarranged	faience, yellowish green	w. 0.8, h. 0.6 l. 1.2	scarab, running lion (?)
159-25	northeastern area, disarranged	glass (?), blue	l. 0.7	cylindrical bead
159-34	ditto	faience, pale green	d. 0.7	globular bead

UNEARTHED AREA : "Pool" Area

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
160-1 (94-13) (IV-4)	disarranged	faience, sky blue	h. 2.5 cm	Horus, foot part missing
160-2 (94-11)	ditto	ditto	h. 2.0	child Horus (?), lower part missing
160-3	ditto	ditto	h. 2.8	god figurine, crown of Lower Egypt
160-8	ditto	ditto	d. 1.1	segmented, globular bead

160-9	disarranged	faience, sky blue	d. 1.2	segmented, globular bead
160-10	ditto	ditto	l. 1.0	segmented, barrel-shaped bead
160-12	ditto	glass	d. 0.6	barrel-shaped bead, upper part : yellow, lower part : green striped
160-13	ditto	faience, sky blue	d. 1.8	undetermined use, upper end lacking
160-14 (95-13)	ditto	ditto	h. 2.8	vessel, human-figures
160-6	near the furnace	ditto	h. 1.7	amulet, Hathor (?)
160-11	ditto	ditto	d. 0.8	globular bead
160-4 (94-5)	beneath the paving stones	ditto	h. 1.8	amulet, Bes

UNEARTHED AREA : Ashlar Building Ruin

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
160-5	disarranged	faience, sky blue	w. 1.6 cm	amulet (?)
160-7 (94-6) (IV-3)	ditto	ditto	h. 1.9	amulet (?), Sakhmet

UNEARTHED AREA : Other Sections

Fig. no. (Pl. no.)	Layer	Material	Dimension	Category
157-9	northwest corner of the Hypostyle Hall, depot	glass, black	cm	decoration, incised pattern
157-10	ditto	ditto		decoration, twisted pattern
157-29	ditto	glass, green	d. 0.6	bracelet (?)
(94-2) (IV-9)	ditto	glass	h. 3.6 (right)	
(IV-11)	ditto	glass	l. 3.9 (upper right)	decoration
157-6	Building 10, disarranged	amethyst	l. 0.7	pseudomorphic bead
158-5 (95-14)	ditto	faience, 5B 6.5/9	h. 2.6	vessel (?), lotus design
157-12	Building 6, disarrnged	limestone	d. 0.8	decoration, jar-shaped
157-37	Middle Court East, disarranged	glass, cobalt blue	d. 2.0	globular bead
157-53	ditto	glass, blue	d. 0.4	flat disc-shaped bead
159-26	ditto	faience, pale blue	l. 1.3	cylindrical bead
(96-10)	ditto	glass	h. 2.2	black, white pattern
157-45	eastern area around the South Court, disarranged	glass white	d. 0.7	globular bead
157-56	Room 1, Building 9, disarranged	glass, dark blue	d. 0.5	barrel-shaped bead
158-9	Room 5, Building 9, disarranged	earthen (?), green glass	w. 2.7	plaque with four inlaid glass, overlaid gold leaf
158-11 (94-16)	near S2, east area in the South Court, disarranged	faience, blue	w. 2.1	ushabti
159-24	ditto	ditto	l. 0.7	spindle-shaped, flat bead
159-1	East Trench in the site, Layer 4	glazed composition, pale	h. 2.3	Udjat-eye, amulet

159-16	ditto, Layer 4	faience, pale blue	h. 1.6	amulet
(IV-2)	ditto, Layer 4	faience	h. 3.4	amulet, Bes
(94-4) (IV-2)	ditto, Layer 3	faience, blue	h. 3.5	amulet, Bes
(94-8)	ditto, Layer 3	faience, blue	h. 2.2	amulet, Thoth
159-21 (95-17)	site surface	faience, 5BG 6/8	w. 1.7	amuletic finger-ring, open work
(96-14)	ditto	faience	w. 5.8	white and brown, striped
(96-17) (V-4)	Building 4 disarranged	glass	h. 1.5	plaque
(95-2)	southeast trench in the city wall, disarranged	faience, bluish green	0.9×0.7, h. 0.3	scarab, Amen-Ra' (?)
(95-4)	ditto	ditto	0.9×0.6, h. 0.6	scarab
(95-12)	North Trench in the site	faience, pale blue	w. 1.0, l. 2.0	finger-ring, ankh, scepter
(95-16)	southeast corner of the Western Temple Area	ditto	w. 1.9	amuletic finger-ring, open work

(KAWANISHI, H. and J. MIYAMOTO)

12 GLASS VESSELS

ROCK-CUT CHAPEL AREA

Conical lamp shade (Fig. 161 no. 1). White. 4th～5th century A.D. Excavated from accumulated soil in south chamber of Chapel B shaft.

Toilet bottle (Fig. 161 no. 2). Deep green. Post-4th century A.D. Excavated from accumulated soil in south chamber Chapel B shaft.

Rim (Fig. 161 no. 3). Green. Date undetermined. Not found in Karanis. Excavated from accumulated soil in south chamber Chapel B shaft.

Ringed bases (Fig. 161 nos. 4 and 5). No. 4 deep green and no. 5 white. 4th～5th century A.D. Excavated from accumulated soil in Chapel B shaft.

Handle (Fig. 161 no. 6). Deep bluish green. 4th～5th century A.D. Class XI A and B in Karanis. Excavated from accumulated soil in Chapel A shaft.

Base (Fig. 161 no. 7). Dark blue. Base of conical beaker or lamp. 4th～5th century A.D. Excavated from accumulated soil in Chapel A shaft.

Ringed base (Fig. 161 no. 8). Dark reddish brown. 4th～5th century A.D. Excavated from accumulated soil in Chapel A shaft.

Toilet bottle (Fig. 162 no. 30. Pl. V-7). Yellowish green. Date undetermined. Excavated from accumulated soil in front area of Chapel B.

Ornamental handle of jug (Fig. 161 no. 31). Blue. 4th century A.D. Similar to blue fins of Dolphin Cup masterpiece mentioned in *Glass of Caesars*. Excavated from accumulated soil in Chapel B shaft.

Zigzag coil ornament for vessel (Fig. 161 no. 32). Blue. 4th～5th century A.D. Class IIIA in

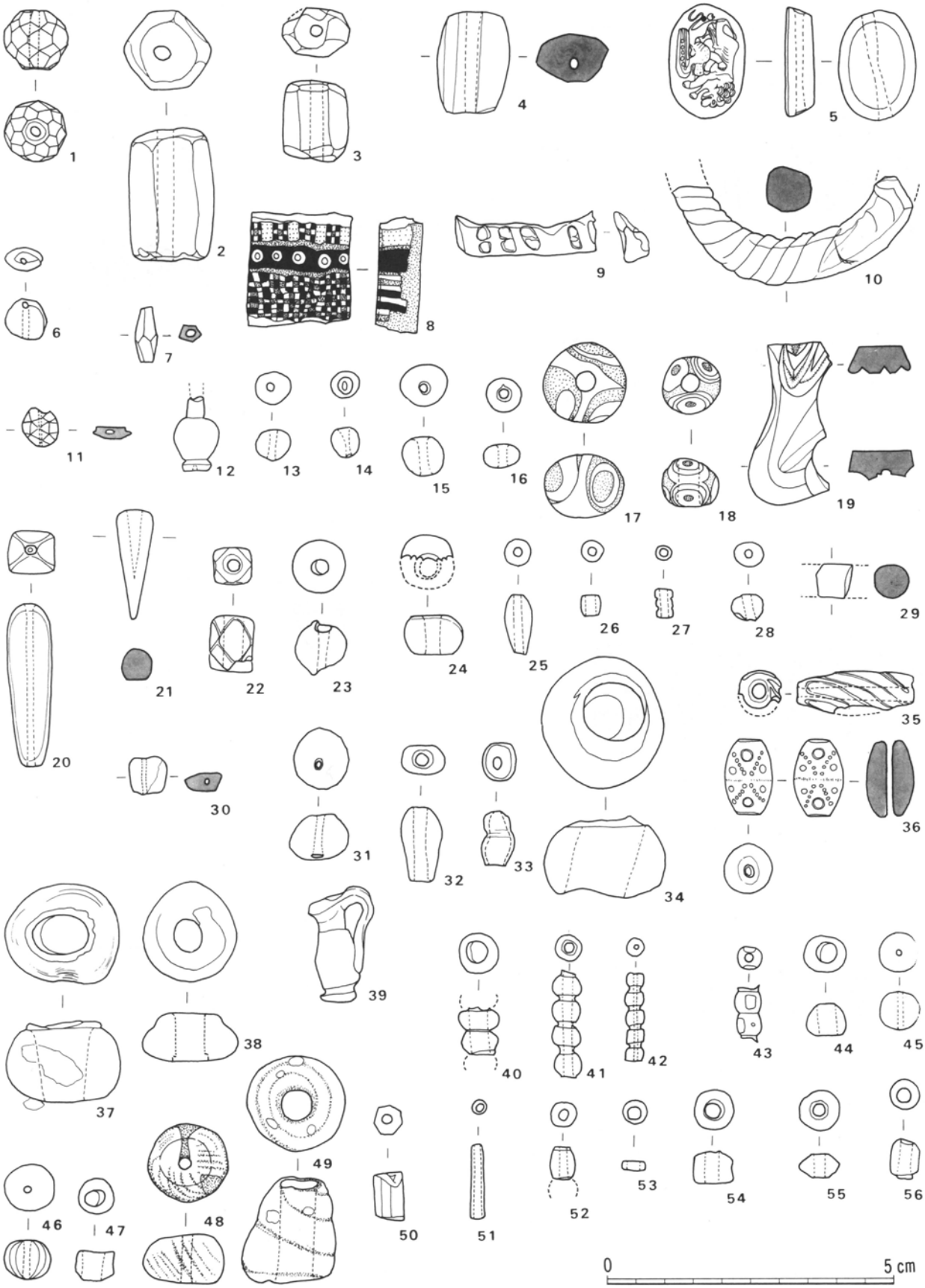

Fig. 157 Beads, amulets and miscellaneous accessories

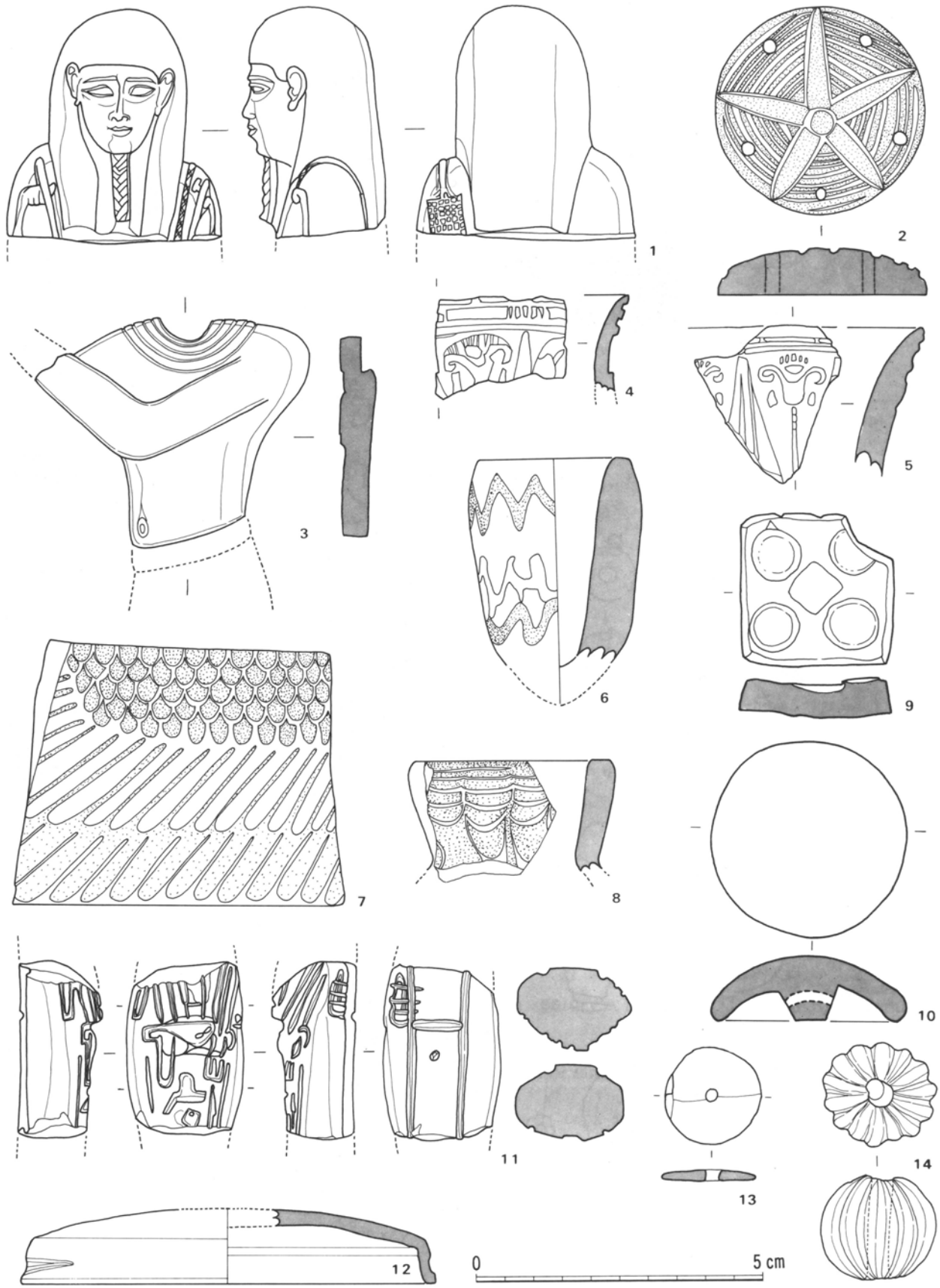

Fig. 158 Beads, amulets and miscellaneous accessories

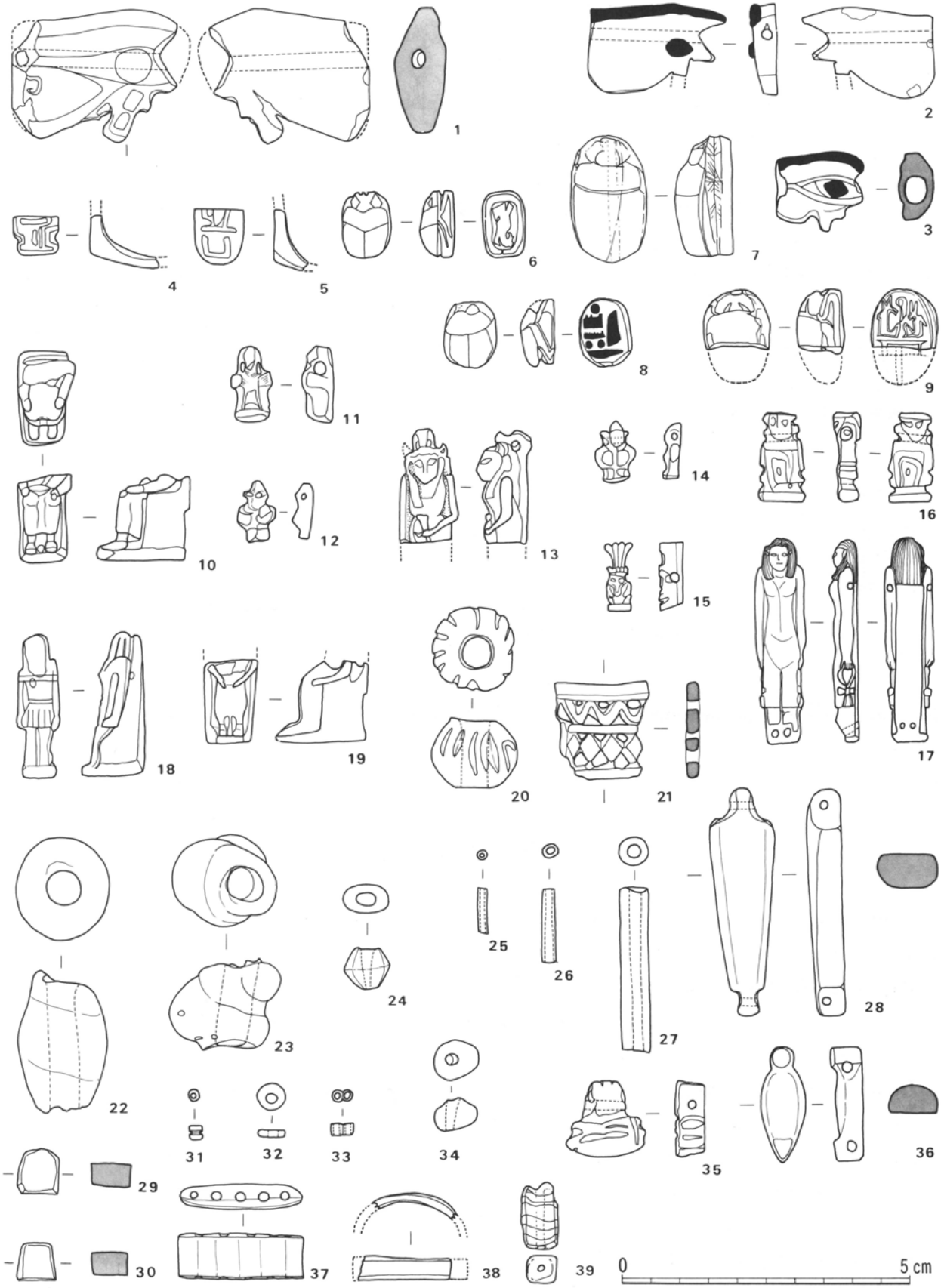

Fig. 159 Beads, amulets and miscellaneous accessories

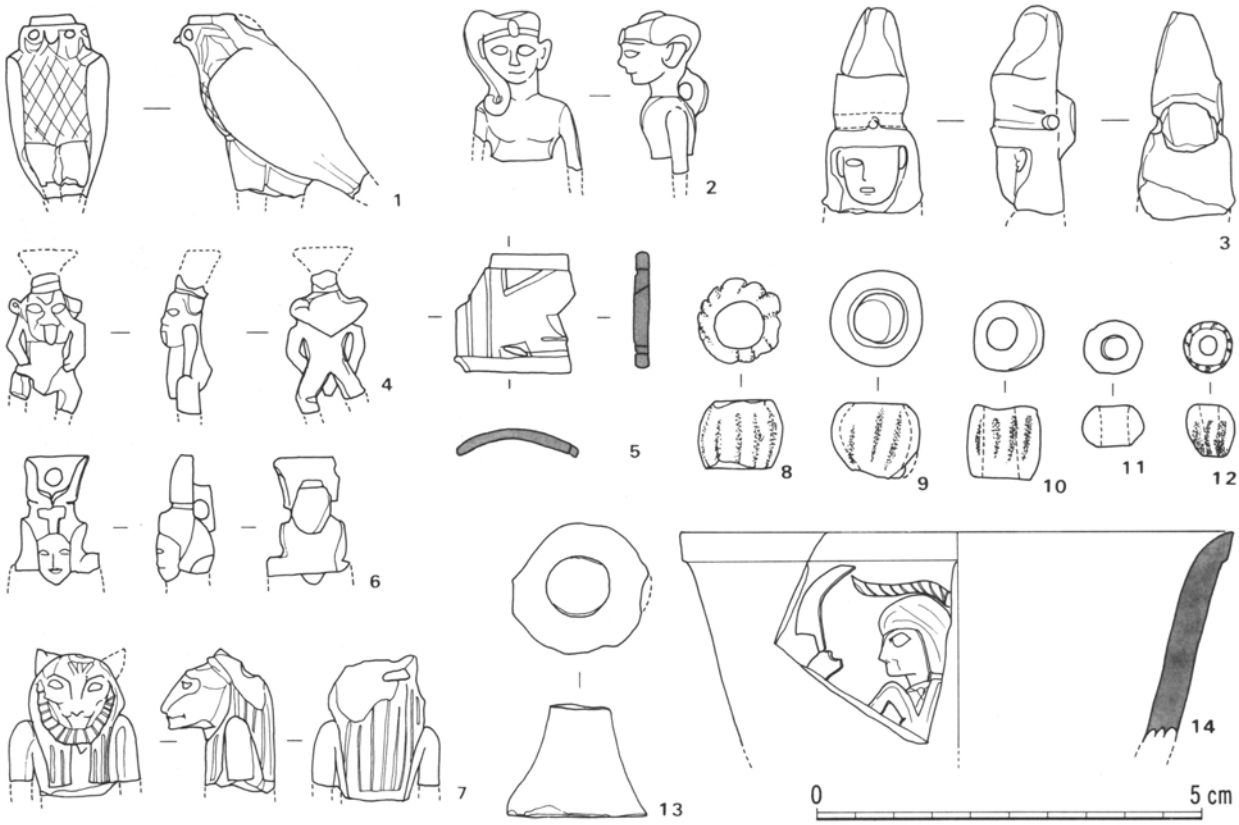

Fig. 160 Beads, amulets and miscellaneous accessories

Karanis. Similar type mentioned in *Roman and Pre-Roman Glass.* Excavated from accumulated soil in Chapal B shaft.

SOUTH COURT AND ITS SURROUNDING AREA

Base with coiled rings (Fig. 161 no. 9). Deep yellow green. 2nd～3rd century A. D. Class IX B in Karanis. Excavated from Layer 1 in southeast corner.

Base of toilet bottle (Fig. 161 no. 10. Pl. V no. 9). Very thick, green. 2nd～3rd century A. D. Class XIII in Karanis. Similar type mentioned in *Roman and Pre-Roman Glass.* Excavated from Layer 3 in southeast corner.

Drinking vessel stems (Fig. 161 no. 11. Pl. 96 nos. 5 and 6). Fig. 161 (Pl. 96 no. 5) is dark green. 6th to first half of 7th century A. D. Excavated from Layer 1 in southeast corner. Pl. 96 no. 6 is brown. Excavated from accumulated soil in the north colonnade. Large number of stems of this type but of various degrees of transparency unearthed in Akoris. Considering that some glass crucibles have been found in Akoris, it is possible that the cloudy vessels originated here.

Ringed base (Fig. 161 no. 12). White. 2nd～3rd century A. D. Similar type mentioned in *Roman and Pre-Roman Glass.* Excavated from Layer 1 in southeast corner.

Bowl bases with bosses (Fig. 161 nos. 13 and 14. Pl. V-8). No. 13 deep bluish green, no. 14 white.

These are bases of bowls with bosses pinched up. This type of glassware was also found in the Gilan District in Iran, and according to Fukai's chronology it belong to the 1st～3rd centuries A.D. Excavated from Layer 4 in southeast corner.

Rim (Fig. 161 no. 15). Yellow. Date undetermined. Not found in Karanis. Excavated from Layer 3 in southeast corner.

Base with horizontal loop (Fig. 161 no. 16): Bluish green. 1st～2nd century A.D. Similar type mentioned in *Roman and Pre-Roman Glass*. Excavated from Layer 1 in southeast corner.

Drinking vessel stems (Fig. 161 nos. 17, 18 and 26). Green. Nos. 17 (Pl. 96 no. 7) and 18 (Pl. 96 no. 1) 4th～6th centuries A.D., no. 26 6th to first half of 7th century A.D. Excavated from accumulated soil in eastern area adjoining chapel A.

Rim of jug with trail and handle (Fig. 161 no. 27). Body transparent with brown specks. Trail and handle pale green. 3rd～4th centuries A.D. Similar type is mentioned in *Roman and Pre-Roman Glass* and *Glass of the Caesars*. Excavated from accumulated soil in eastern area adjoining Chapel A.

Flask (Fig. 162 no. 1). Deep green. 3rd～4th century A.D. Excavated from accumulated soil in Room 4.

Toilet bottle (Fig. 162 no. 2). Deep green. Date undetermined. Excavated from accumulated soil in Room 4.

Handles (Fig. 162 nos. 3 and 6). Dark yellowish green. Second half of 3rd to 4th century A.D. Excavated from accumulated soil in Room 4.

Bases (Fig. 162 nos. 4 and 5). Deep green. 4th～5th century A.D. No. 5 is base of conical lamp. Excavated from accumulated soil in Room 4.

Handle (Fig. 162 no. 7). Yellowish green. 4th～5th century A.D. Excavated from accumulated soil in western area.

Drinking cups (Fig. 162 nos. 8 and 9). Dark green. 6th to first half of 7th century A.D. Excavated from accumulated soil in Room 4.

MIDDLE COURT AREA

Drinking cups (Fig. 162 no. 12. Pl. 96 nos. 2～4). Fig. 162 no. 12 (Pl. 96 no. 2) is greenish yellow. 6th to first half of 7th century A.D. Excavated from accumulated soil in Building 5. Pl. 96 nos. 3 and 4 is green. No. 3 measures 4.1cm and no. 4 3.1cm in diameter. Excavated from accumulated soil in the Middle Court.

Toilet bottle (Fig. 162 no. 13). Greenish yellow. Date undetermined. Excavated from accumulated soil in Building 5.

Base of drinking cup (Fig. 162 no. 14). Deep green. 6th to first half of 7th century A.D. Excavated from accumulated soil in Building 5.

Folded vessel rims (Fig. 162 nos. 38 and 39). White. Rim of no. 38 folded outside and plain in shape. Post-5th century A.D. Not found in Karanis. The rim of no. 39 folded inside. Date undetermined. Not found in Karanis. Excavated from accumulated soil in Building 8.

Toilet bottle (Fig. 162 no. 40). Yellowish. Date undetermined. Excavated from accumulated soil in Building 8.

Cupped rim of flask (Fig. 162 no. 41). White. 4th century A.D. Class XII A in Karanis. Similar type mentioned in *Glass of the Caesars.* Excavated from accumulated soil in Building 8.

Handle (Fig. 162 no. 42). Green. This is a part of rim with handle. This type of glass material was found at al-Fustat. According to Shindo's chronology, it belongs to the 7th or 8th century A.D. Excavated from accumulated soil in Building 8.

Cup base (Fig. 162 no. 43. Pl. 96 no. 8). White. Date undetermined. Not found in Karanis. Excavated from accumulated soil in Building 8.

Ringed bases (Fig. 162 nos. 44 ~ 47). Nos. 44 and 47 yellowish green. These bases are the most common type unearthed at Akoris. They probably date to 4th century A.D. No. 45 green. 2nd~3rd century A.D. Class III A in Karanis. No. 46 white. Date undetermined. Not found in Karanis. Excavated from accumulated soil in Building 8.

MIDDLE GATE AREA

Rim (Fig. 161 no. 19). White. Date undetermined. Not found in Karanis. Excavated from accumulated soil in the southwest area adjoining the west pier.

Base (Fig. 161 no. 20). Deep green. Date undetermined. Not found in Karanis. Excavated from accumulated soil in the north colonnade of Middle Court West.

Toilet bottle (Fig. 161 no. 21). White. 4th~5th century A.D. Excavated from accumulated soil in the north colonnade of Middle Court West.

Ringed base (Fig. 161 no. 22). Deep green. 4th~5th century A.D. Excavated from accumulated soil west of west pier.

Islamic glass (Fig. 161 no. 23). Body deep green with red enamel lines. Excavated from accumulated soil in the north colonnade of Middle Court West.

Base of flask (Fig. 161 no. 24). Bright bluish green. 4th ~ 5th century A.D. Excavated from accumulated soil in the north colonnade of Middle Court West.

Neck of flask (Fig. 161 no. 25). Dark green. 4th~5th century A.D. Excavated from accumulated soil in the north colonnade of Middle Court West.

BUILDING 9

Toilet bottles (Fig. 162 nos. 10 and 11). Deep green. No. 10 bears pinched decorations. Date undetermined. Not found in Karanis. Excavated from accumulated soil.

Zigzag coil ornaments for vessel (Fig. 162 nos. 15 and 17). No. 15 white, no. 17 green. 4th~5th century A.D. Both belong to Class III A in Karanis. Similar type mentioned in *Roman and Pre-Roman Glass.* No. 15 excavated on floor of Room 6 and no. 17 from accumulated soil.

Ornamental handle (Fig. 162 no. 16). White. 4th~5th century A.D. Excavated from accumulated soil.

Bowl base with bosses (Fig. 162 no. 18). White. 1st ~ 3rd centuries A.D. Excavated from accumulated soil.

Base with scallopped rim (Fig. 162 no. 19). Yellowish. 2nd~3rd century A.D. Class IX C in Karanis. Excavated from accumulated soil.

Rim (Fig. 162 no. 20). Date undetermined. Not found in Karanis. Excavated from accumulated soil.

Ringed bases (Fig. 162 nos. 21~23. Pl. V nos. 5 and 6). No. 21 strong yellowish green. Conical lamp base. 4th or 5th century A.D. Nos. 22 and 23 are white with coiled rings. Date undetermined. Excavated from accumulated soil.

Conical lamp shades (Fig. 162 nos. 24 and 25). Yellowish white with large blue patches for decoration attached to body. 4th~5th century A.D. Excavated from accumulated soil.

Conical lamp shade base (Fig. 162 no. 26). Deep yellow-green. 4th~5th century A.D. Excavated from accumulated soil.

Coiled rim of bowl (Fig. 162 no. 27). Yellow. Rim coiled outside. 4th~5th century A.D. Class III A in Karanis. Excavated from accumulated soil.

Folded vessel rim (Fig. 162 no. 28). White. Plain rim folded outside. Post-5th century A.D. Excavated from accumulated soil.

Base (Fig. 162 no. 29). White. Date undetermined. Excavated from accumulated soil.

ADJOINING AREA OUTSIDE THE NORTH GATE

Dish rims (Fig. 163 nos. 1~3). Yellowish green. Nos. 1 and 2 moulded bowls. First half of 1st century A.D. No. 3 coiled rim of bowl. 4th~5th century A.D. Class IA in Karanis. Excavated from accumulated soil in Room 2 of Building 2.

Jar (Fig. 163 no. 4). White. Date undetermined. Not found in Karanis. Excavated from accumulated soil in Room 2 of Building 2.

Drinking vessel (Fig. 163 no. 5). White. 2nd to first half of 3rd century A.D. Class VII A in Karanis. Excavated from accumulated soil in Room 2 of Building 2.

Islamic glass (Fig. 163 no. 6). Bluish green with two enamel lines around lower part of rim. Excavated from accumulated soil in Room 2 of Building 2.

Toilet bottles* with *rim folded inside (Fig. 163 nos. 7 and 8). White. This type of glass material was also found in Karanis in large quantities. The date is undetermined due to the small size of the fragments, however, according to their very rough texture, they are post-4th century A.D. Excavated from accumulated soil in Room 2 of Building 2.

Conical lamp shades (Fig. 163 nos. 9~22). Nos. 9 and 10 bear blue patches attached to white body. No. 15 has white horizontal lines. Nos. 18~22 are bases of conical lamp shades. Nos. 18~20 are thick-pointed and Nos. 21 and 22 are coiled blue bases with blue color. Dates undetermined. Excavated from

accumulated soil in Room 2 of Building 2.

Base (Fig. 163 no. 23). Dark yellow. Base of conical beaker or lamp. 4th century A. D. Excavated from accumulated soil at front of the North Gate.

Ringed bases (Fig. 163 nos. 24 and 25). Yellowish green. Second half of 5th to 6th century A. D. Excavated as above.

Base with coiled ring (Fig. 163 no. 26). Blue. 2nd～3rd century A. D. Class IXB in Karanis. Excavated from accumulated soil Room 2 of Building 2.

Folded ring base (Fig. 163 no. 27). Green. 4th～5th century A. D. Class III A in Karanis. Excavated from accumulated soil Room 2 of Building 2.

Base with high ring (Fig. 163 no. 28). Yellowish green. 4th～5th century A. D. Excavated from accumulated soil in Room 2 of Building 2.

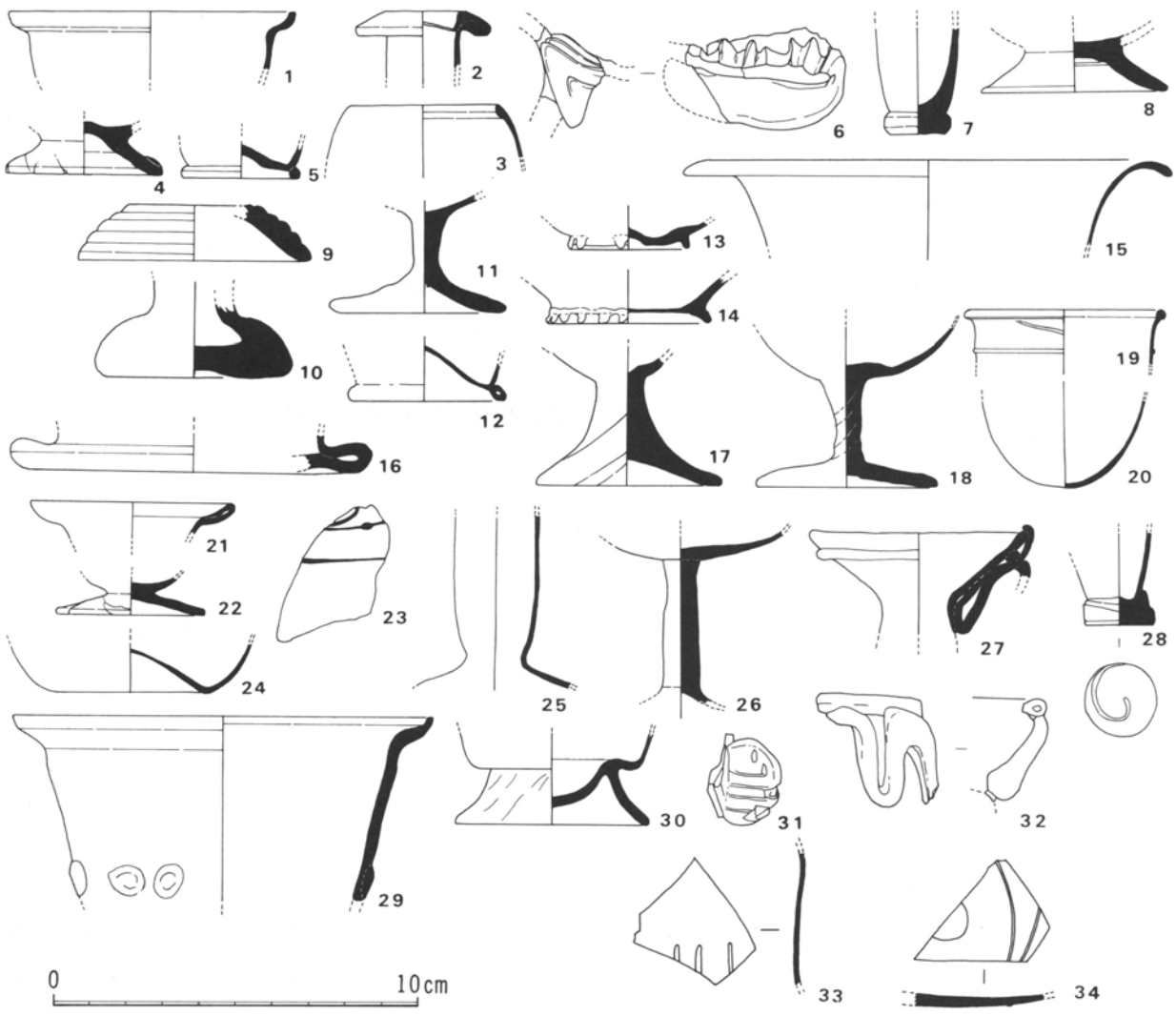

Fig. 161 Glass vessels

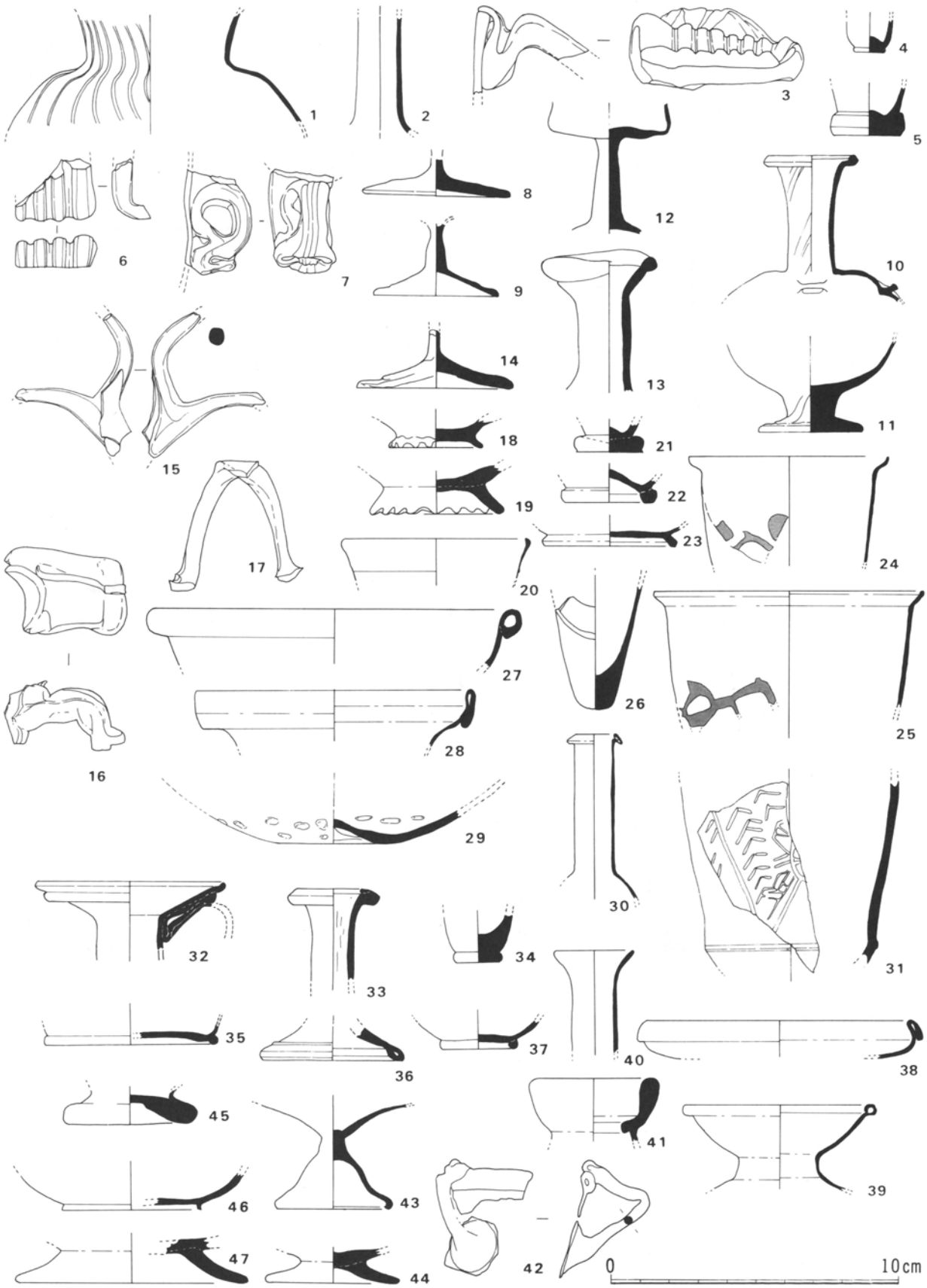

Fig. 162 Glass vessels

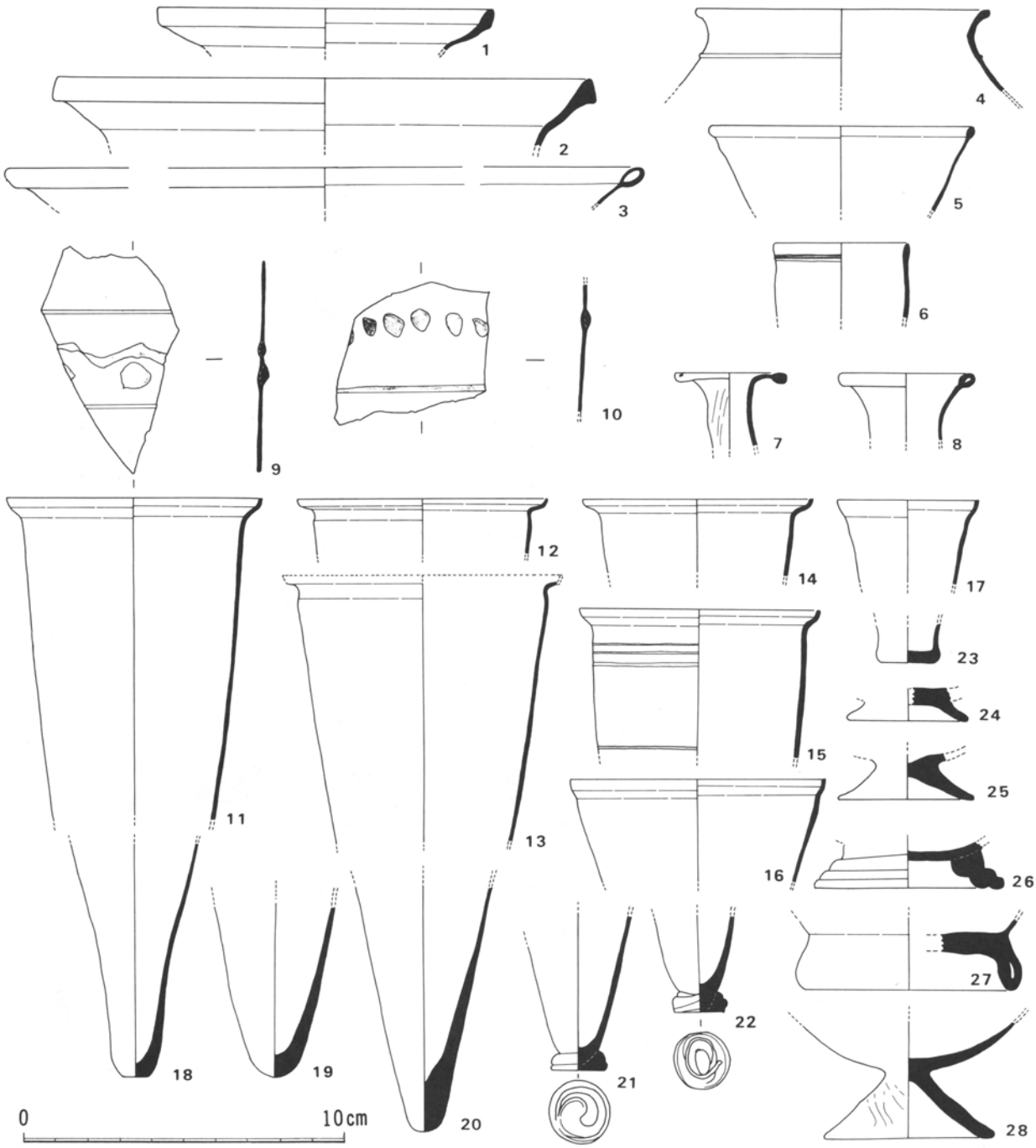

Fig. 163 Glass vessels

NORTH TRENCH

Goblet (Fig. 162 no. 31). Light greyish green. Moulded. A geometrical design is raised on the side. Date undetermined. Excavated from accumulated soil.

Jug with handle (Fig. 162 no. 32). Vivid yellowish green. 3rd～4th century A.D. Excavated from accumulated soil.

Toilet bottle (Fig. 162 no. 33). Deep green. Date undetermined. Excavated from accumulated soil.

Base (Fig. 162 no. 34). Olive yellow. Base of conical lamp. 4th～5th century A.D. Excavated from accumulated soil.

Ringed bases (Fig. 162 nos. 35～37). Nos. 35 and 36 transparent, no. 37 deep greenish blue. White. 4th～5th century A.D. Excavated from accumulated soil.

SITE SURFACE

Conical lamp shades (Fig. 161 nos. 28 and 29). Greenish yellow. No. 29 has blue patches attached to the yellowish green body. Dates undetermined.

Rounded base with ring (Fig. 161 no. 30). White. 2nd～3rd century A.D. Class III A in Karanis.

Deep bowls (Fig. 161 nos. 33 and 34). White. 2nd～3rd century A.D. Both belong to Class III B in Karanis. No. 33 is a fragmentary body adorned with straight, sunken lines made by a wheel-cut technique. No. 34 is a fragmentary base. A faced-cut circular pattern is left on the bottom. Two thin projected lines are attached, one is for a partition between the bottom and the body, and the other for a decoration on the body.

Drinking vessel stems (Pl. V no. 10). 4th～6th centuries A.D. Class VII A in Karanis.

Ringed bases (Pl. V no. 11). 4th～5th century A.D.

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(CHIKIRA, A.)

13 TEXTILES

Abbreviations
An : Average angle
Br : Brocade
C : Cotton
Cf : Cover factor
Co : Colored weft (Tapestry)
Dia : Apparent diameter (mm)
Dimen : Dimension (cm)
Do : Double yarn
L : Linen
Ma : Material
Pl : Ply yarn
S : S-twisted
Se : Sewing thread
Si : Single yarn
Sp : Spinning
T : Twist
Tc : Thread count
Th : Thread
Tm : Twist multiplier
Tr : Triple yarn
Tw : Two ends spun
W : Wool
Wa : Warp
We : Weft
Z : Z-twisted

UNEARTHED AREA : Chapel A Shaft, Disarranged Soil

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
102-42	10.0×4.7	tapestry	ground : weft-faced plain	Wa	W	2.5Y 7/10 gold	Si	S	6
				We	W	2.5Y 7/10 gold	Si	S	
				Co	W	10GY 3/4 dark yellowish green 7.5RY 2.4/5 dark wine	Si	S	35
				Co	L	5YR 5/10 deep orange	Si	S	
103-58	8.3×22.0	tapestry, mat or basket, soumak	weft rib (2 warps)	Wa	L	2.5Y 8.5/3 pale reddish yellow	Si	S	12
110-15			2 wefts	We	W	7.5P 2.4/8 deep purple 1R 3/10 deep purplish red	Si	S	36
			1 weft	We	W	9YR 5.5/8 brownish gold 5GY 3/3 grayish olive green 3PB dark blue	Si	S	24
				Co	L	2.5Y 8.5/3 pale reddish yellow	Tr		
104-66	12.0×34.0	tapestry	ground : plain	Wa	L	2.5Y 8.5/3 pale reddish yellow	Si	S	13
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	15
				Co	W	N 2.4 dark gray 1R 3/10 deep purplish red 10R 7.5/7 yellowish pink 5YR 5/10 deep orange 5B 2/4 dark greenish blue 5G 2.4/3 dark green 5GY 5/8 deep yellow green	Si	S	
108-106	12.0×22.0	plain		Wa	C	2.5Y 7.5/6 dull reddish yellow	Si	S	13
				We	C	2.5Y 7.5/6 dull reddish yellow	Si	S	21
			hand-drawing			7.5RP 3/9 deep red purple 5YR 3/0.5 dark brownish gray			

UNEARTHED AREA : Chapel B Shaft, Disarranged Soil

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
100-33	6.2×11.6	tapestry, soumak		Wa	W	5YR 5/10 deep orange	Si	S	9
				We	W	3PB 1.5/4 dark blue 9YR 5/5/8 brownish gold 2.5Y 7/10 gold 10R 4.5/10 deep reddish orange 7R 4/10 deep yellowish red 10G 2.4/3 dark bluish green	Si	S	37

			mixed spinning strands of deep orange and gold fibers used as human face.	We	W	5YR 5/10 deep orange 2.5Y 7/10 gold	Si	S	
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
108-102	5.0×1.6	plain		Wa	S	Pale green, pale brown	Si		33
				We	S	Pale green, pale brown	Si		45
108-108	14.4×7.5	plain		Wa	C	9YR 6.5/5 light yellowish brown	Si	Z	29
				We	C	9YR 6.5/5 light yellowish brown	Si	Z	30
			printing			5GY 5/8 deep yellow green 5.5Y 4/4 olive			
112-42	15.7×3.0	warp-faced basket, (band weaving)	26 warp pairs, striped pattern	Wa	L	5YR 4/4 brown 7R 4/10 deep yellowish red	Si	S	18
				We	L	5YR 4/4 brown	Si	S	8

UNEARTHED AREA : Front Area of Chapel B

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
99-24 110-8	7.2×7.1	tapestry, soumak	ground : plain	Wa	L	2.5Y 8.5/3 pale redish yellow	Si	S	13
				We	L	2.5Y 8.5/3 pale redish yellow	Si	S	
				Co	W	2.5y 7/10 gold 5B 2/4 dark greenish blue 4R 3.5/10 deep red 5GY 3/3 grayish olive green	Si	S	
				Co	L	2.5Y 8.5/3 pale reddish yellow	Si	S	

UNEARTHED AREA : Eastern Area Adjoining Chapel A, Disarranged Soil

Pl. no.	Dimen	Texture	Ma	Note
97- 5	8.0×30.7	tapestry, soumak, ground : weft-faced plain	Wa : W We : W	selvage
98-10	40.0×46.5	ditto	Wa : W We : W Co: W.L	
100-34	11.0×33.5	tapestry		
105-68	13.3×25.4	swivel	Wa : L We : L Br : L	Tape ; swivel Wa : W We : W Br : L

Pl. no. (Fig. no.)	Dimen	Texture	Note	Th	Ma	Color	T	Sp	Tc	Di	An	Tm	Cf
102-41	5.2×6.2	tapestry		Wa	W	5GY 3/3 grayish olive green	Si	S	10	0.48	62.33	3.476	4.80
				We	W	4R 3.5/10 deep red [3PB 1.5/4dark blue blended yarn]	Si	S	38	0.47	64.33	3.254	17.86
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	38	0.65	68.66	1.912	24.70
102-46	10.5×5.0	tapestry		Wa	W	5G 5/4 dull green	Si	S	9	0.63	48.66	4.443	5.67
110-10				We	W	1R 3/10 deep purplish red 3PB 1.5/4 dark blue 5YR 2.4/4 dark brown (7P 3.5/5.5 dull purple blended	Si	S	30	0.42	63.66	3.751	12.60

						yarn) 2.5Y 6/8 gold								
103-50 VI-5	22.5×12.5	tapestry, twining		Wa	W	2.5Y 8.5/9 bright reddish yellow	Si	S	10	0.67	48.33	4.227	6.70
110-11			ground : weft-faced plain, weft thread count in ground : 24/cm	We	W	2.5Y 8.5/9 bright reddish yellow 5G 5/4 dull green 7R 7.5/7 yellowish pink 9YR 9/2 pale beige 10GY 3/4 dark yellowish green 1R 3/10 deep purplish red 5G 3.5/7 deep green N1 black 3PB 3/2 dark grayish blue	Si	S	50	0.33	71.33	3.258	16.50
104-61	17.0×12.7	tapestry	ground : plain, hemming stitch	Wa	L	9YR 6.5/5 light yellowish brown	Si	S	12	0.61	56.00	3.519	7.32
				We	L	9YR 6.5/5 light yellowish brown	Si	S	11	0.79	64.00	1.965	8.69
				Co	W	9YR 3/3 dark yellowish brown 5.5Y 4/4 olive 9YR 4/4 yellowish brown 2.5Y 6/8 gold 7R 4/10 deep yellowish red N2.4 dark gray	Si	S		0.56	55.00	3.980	0.00
104-64	16.5×13.6	plain	piece of swivel weave attached	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	18	0.67	65.66	2.148	12.06
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	22	0.61	65.66	2.359	13.42
		warp rib		We	W	10R 2/3 dark reddish brown	Si	S	22	0.41	42.00	8.662	9.02
		tapestry		Co	W	5G 2.4/3 dark green	Si	S		1.15	68.66	1.081	0.00
				Co	W	4R 6/11 rose	Si	S		0.64	61.66	2.681	0.00
		swivel		Wa	W	3PB 1.5/4 dark blue	Pl	Z		0.73	65.00	2.033	0.00
				Wa	W	3PB 1.5/4 dark blue	Tw	S		0.55	70.00	2.106	0.00
				We	W	3PB 1.5/4 dark blue	Si	S		0.68	60.00	2.702	0.00
			double yarn	Br	L	2.5Y 7.5/6 dull reddish yellow	Si	S		1.11	90.00	1.376	0.00
				Br	L	2.5Y 7.5/6 dull reddish yellow	Si	S		0.55	60.33	3.296	0.00
105-71 111-20	12.0×4.0	double	edge of sleeve with a piece of decorated cloth [swivel 5G 7/5 light green]	We	L	9YR 5.5 brownish gold	Si	S	24	0.61	60.66	2.932	14.64
				Wa	L	9YR 5.5 brownish gold	Si	S	12	0.82	67.33	1.621	9.84
				Se	L	9YR 8.5/5 light yellowish orange	Do	Z		1.00	43.33	3.373	0.00
105-70 110-16	15.0×17.5	knotted pile	ground : weft-faced rib	Wa	W	2Y 4/5.5 brownish olive	Si	S	12	0.66	39.33	5.885	7.92
				We	W	5YR 2.4/4 dark brown	Si	S	36	0.36	74.00	2.535	12.96
			pile	We	W	2Y 4/5.5 brownish olive	Si	S		1.50	52.00	0.167	0.00
106-79 111-17	15.5×2.4	swivel	ground : warp rib (twin wefts)	Wa	W	3PB 1.5/4 dark blue	Do	Z	20	0.79	62.33	2.112	15.80
				Wa	W	3PB 1.5/4 dark blue	Si	S		0.48	63.00	3.378	0.00
				We	W	3PB 1.5/4 dark blue	Si	S	20	0.73	81.00	0.690	14.60
				Br	L	2.5Y 8.5/3 pale reddish yellow	Tr			1.48	90.00	1.033	0.00
				Br	L	2.5Y 8.5/3 pale reddish	Si	S		0.65	58.33	3.020	0.00
106-82		swivel		Wa	W	3PB 1.5/3 dark blue	Do	Z	14	0.58	58.66	3.341	8.12
				Wa	W	3PB 1.5/3 dark blue	Si	S		0.54	55.66	4.026	0.00
				We	W	3PB 1.5/3 dark blue	Si	S	10	0.88	51.33	2.894	8.80
				Br	L	2.5Y 8.5/3 pale reddish yellow	Tr			1.50	90.00	1.019	0.00
				Br	L	2.5Y 8.5/3 pale reddish yellow	Si	S		0.67	69.00	1.823	0.00
107-89	26.0×26.0	weft-faced plain	grandrelle yarn	Wa	W	2.5Y 7.5/6 dull reddish yellow	Pl	Z	11	1.22	55.00	1.826	13.42
				Wa	W	9R 4/4 yellowish brown	Tw	S	11	0.6	45.00	5.305	6.60
				Wa	W	2.5Y 7.5/6 dull reddish yellow	Tw	S	11	0.6	55.00	3.714	6.60
				We	W	3PB 1.5/4 dark blue	Si	S	6	1.12	47.66	2.589	6.72
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	6	1.18	58.33	1.663	7.08
107-91	19.5×6.3	weft-faced plain	twining	Wa	W	5GY 3/3 grayish olive green	Si	S	10	0.58	58.00	3.429	5.80
				We	W	4R 3.5/10 deep red	Si	S	30	0.45	74.33	1.983	13.50
107-98	45.0×10.0	simple knot	netting		L	2.5Y 7.5/6 dull reddish yellow	Pl	Z		2	31.66	2.580	0.00
					L	2.5Y 7.5/6 dull reddish yellow	Tw	S		1.15	56.66	1.820	0.00
108-100	12.0×5.5	plain	checker pattern	Wa	C	3PB 1.5/4 pale reddish yellow 3PB 1.5/4 dark blue	Si	Z	14	0.55	64.00	2.822	7.70

				We	C	3PB 4/5 pale reddish yellow 3PB 1.5/4 dark blue	Si	Z	18	0.36	69.00	3.394	6.48
108-104 112-48	3.4×28.7	plain	oval pattern, printing	We	C	1R 3/10 deep purplish	Si	Z	22	0.33	66.66	4.160	7.26
				Wa	C	1R 3/10 deep purplish	Si	Z	25	0.26	62.66	6.327	6.50
108-107	5.5×7.5	plain	tie-dyeing	Wa	C	3PB 1.5/4 dark blue	Si	S	29	0.91	51.00	2.832	26.39
				We	C	3PB 1.5/4 dark blue	Si	Z	29	0.42	71.66	2.511	12.18
109-110 111-27 112-32	12.5×12.0	weft-faced plain	edge, selvage	Wa	W	1R 3/10 deep purplish red	Si	S	10	0.54	58.33	3.635	5.40
				We	W	1R 3/10 deep purplish red	Si	S	20	0.55	64.33	2.781	11.00
			striped pattern	We	L	2.5Y 8.5/3 pale reddish yellow	Si	S		0.51	56.00	4.209	0.00
109-111 112-36	14.0×6.5	plain	back stitch, hemming stitch	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	14	0.42	73.00	2.317	5.88
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	14	0.71	77.00	1.035	9.94
				Se	W	4R 3.5/10 deep red	Pl	Z		0.97	50.00	2.753	0.00
				Se	W	4R 3.5/10 deep red	Tw	S		0.79	81.00	0.638	0.00
				Se	W	N 2.4 dark gray	Pl	Z		1.09	35.00	4.170	0.00
				Se	W	N 2.4 dark gray	Tw	S		0.79	78.33	0.831	0.00
109-114	16.0×46.3	plain	selvage, hemming stitch	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	10	0.85	61.33	2.047	8.50
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	10	0.48	61.00	3.675	4.80
				Se	L	2.5Y 7.6/6 dull reddish yellow	Si	Z		0.88	25.00	7.757	0.00
109-116 112-43, 44			two pieces of cloth sewn together by top stitching seam										
	37.5×9.5	weft-faced plain	selvage	Wa	W	4R 3.5/10 deep red	Si	S	9	0.67	42.66	5.154	6.03
				We	W	4R 3.5/10 deep red	Si	S	24	0.61	79.66	0.951	14.64
	6.8×32.3	weft-faced plain		Wa	W	7R 7.5/7 yellowish pink	Si	S	10	0.58	61.66	2.959	5.80
				We	W	7R 7.5/7 yellowish pink	Si	S	42	0.39	73.00	2.495	16.38
				Se	W	5YR 7/4 dull orange	Do	Z		1.48	56.66	1.414	0.00
				Se	W	5YR 7/4 dull orange	Si	S		1.3	83.66	0.271	0.00
				Se	W	5YR 7/4 dull orange	Si	S		0.58	66.00	2.443	0.00
110-1		tapestry		Wa	W	4R 3.5/10 deep red	Si	S	10	0.83	67.66	1.575	8.30
			medallion	We	W	5G 5/4 dull green 3PB 1.5/4 dark blue 2.5Y 6/8 gold 4R 3.5/10 deep red 9YR 5.5/8 brownish gold 3PB 1.5/4 dark blue	Si	S	48	0.36	60.66	4.968	17.28
		tapestry	designed face	We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	52	0.33	75.33	2.524	17.16
112-34	15.0×3.5	weft-faced plain	selvage containing 4-4-4 differently colored warps	Wa	W	1R 3/10 deep purplish red	Si	S		0.39	43.50	8.600	0.00
				We	W	1R 3/10 deep purplish red	Si	S		0.91	77.33	0.786	0.00
112-37, 45	1.8×12.8	weft-faced plain	back stitch, hemming stitch	Wa	W	3PB 1.5/3 dark blue	Si	S	16	0.31	47.33	9.464	4.96
				We	W	3PB 1.5/3 dark blue	Si	S	24	0.73	59.33	3.512	12.89
				Se	W	4R 4.5/14 vivid red	Pl	Z		0.76	54.66	2.969	0.00
				Se	W	4R 4.5/14 vivid red	Tw	S		0.39	67.33	3.408	0.00
				Se	W	5Y 8/13.5 vivid yellow	Pl	Z		0.76	53.66	3.080	0.00
				Se	W	5Y 8/13.5 vivid yellow	Tw	S		0.39	75.33	2.136	0.00
				Se	W	10G 3/7 deep bluish green 5GY 5/8 deep yellow green 9Y 8/13 vivid greenish yellow		Z		0.58	53.00	4.135	0.00
				Se	W	10G 3/7 deep bluish green 5GY 5/8 deep yellow green 9Y 8/13 vivid greenish yellow	Tw	S		0.39	77.33	1.834	0.00
112-46	21.3×15.0	weft-faced plain	grandrelle yarn	Wa	W	2.5Y 7.5/6 dull reddish yellow	Pl	Z	10	0.82	37.33	5.089	8.20
				Wa	W	2.5Y 7.5/6 dull reddish yellow	Tw	S	10	0.69	59.00	2.771	6.90
				Wa	W	9R 4/4 yellowish brown	Tw	S	10	0.7	52.00	3.552	7.00
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	6	1.21	64.33	1.264	7.26
				We	W	4R 5/6 dark rose	Si	S	6	1.5	59.00	1.275	9.00
				We	W	7.5P 1.5/4 dark purple	Si	S	6	1.45	45.00	2.195	8.70
112-47	15.0×18.0	plain	trace of woven tapestry medallion	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	10	0.47	69.66	2.509	4.70
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12	0.74	63.00	2.191	8.88

(181)	11.0×13.0	plain knotted pile (sehna)	selvage	Wa	L	2.5Y 6/8 gold	Si	Z	26	0.14	41.66	25.548	3.64
				We	L	2.5Y 6/8 gold	Si	Z	23	0.08	50.00	33.386	1.84
(178)	21.5×27.0	loop pile	overcast stitch	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12	0.55	64.66	2.739	6.60
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	13	0.65	51.66	3.872	8.45
				Se	L	2.5Y 7.5/6 dull reddish yellow	Si	S		0.85	66.66	1.615	0.00

UNEARTHED AREA : Room 4, Eastern Area around the South Court, Disarranged Soil

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
99-17	6.5×5.1	tapestry, soumak	ground : weft-faced plain	Wa	W	2.5Y 7.5/6 dull redish yellow	Si	S	11
				We	W	2.5Y 7.5/6 dull redish yellow	Si	S	26
				Co	W	7.5P 2.4/8 deep purple	Si	S	
				Co	L	2.5Y 8.5/3 pale reddish yellow	Do	S	
101-36	13.0×6.5	tapestry		Wa	W	7.5rp 2.4/5 dark wine	Si	S	
				We	W	7.5RP 2.4/5 dark wine 2.5Y 7/10 gold 1R 3/10 deep purpliph red 5BG 2/4/3 dark blue green			
101-37	16.5×10.5	tapestry	ground : weft-faced plain	Wa	W	2.5Y 7/10 gold	Si	S	12
				We	W	2.5Y 7/10 gold	Si	S	34
				Co	W	7.5P 1.5/4 dark purple	Si	S	64
				Co	L	2.5Y 8.5/3 pale reddish	Si	S	
102-43	10.5×10.8	tapestry, soumak	ground : weft-faced plain	Wa	W	5YR 2.4/4 dark brown	Si	S	9
				We	W	5YR 2.4/4 dark brown	Si	S	26
				Co	W	3PB 1.5/4 dark blue 2.5Y 7/10 gold 5BG 7/5 light turquoise	Si	S	
				Co	L	2.5Y 7.5/6 dull reddish yellow	Si	S	
102-44	8.5×8.7	tapestry, soumak		Wa	W	2.5Y 7.5/3 dull reddish yellow	Si	S	10
				We	W	7R 4/10 deep yellowish red 5GY 3/3 grayish olive green 2.5Y 7.5/6 dull reddish yellow	Si	S	26
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
103-54	9.0×6.8	tapestry	ground : plain	Wa	W	9YR 5.5/8 brownish gold	Si	S	9
				We	W	9YR 5.5/8 brownish gold	Si	S	12
				Co	W	5YR 5/10 deep orange 3PB 1.5/4 dark blue 9YR 5.5/8 brownish gold 5GY 5/8 deep yellow green	Si	S	
				Co	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
104-59 110-9	4.2×4.0	tapestry	green warps cause color changes (blue into deep green, dark wine into dark brown)	Wa	W	5GY 5/8 deep yellow green	Si	S	9
				We	W	3PB 1.5/4 dark blue 2.5Y 6/8 gold 7.5RP 2.4/5 dark wine	Si	S	41
104-60	10.5×7.0	tapestry, twining	ground : weft-faced plain	Wa	W	2.5Y 7/10 gold	Si	S	12
				We	W	2.5Y 7/10 gold	Si	S	27
				Co	W	3PB 1.5/4 dark blue 7.5RP 2.4/5 dark wine 7R 4/10 deep yellowish red	Si	S	
106-77 VI-8	20.5×10.0	swivel	ground : plain	Wa	W	7R 4/10 deep yellowish red	Pl	Z	13
				We	W	7R 4/10 deep yellowish red	Si	S	10
				Br	L	2.5Y 8.5/3 pale reddish yellow	Tr	S	
106-85	10.0×5.2	float	ground : warp rib	Wa	W	3PB dark blue	Pl	Z	15
				Wa	W	7R deep yellow red	Pl	Z	
				We	W	3PB dark blue	Si	S	26
				We	W	2.5Y 7.5/6 dull reddish yellow 9YR 6.5/11 gold	Si	S	
				Br	L	2.5RO 8.5/3 pale reddish yellow	Tr	S	
107-95	8.5×5.5	plain, weft-faced plain, striped pattern	folded cloth, wound linen yarn 56cm in length	Wa	W	7R 4/10 deep yellowish red	Si	S	12
				We	W	7R 4/10 deep yellowish red	Si	S	18
				Se	L	2.5Y 8.5/3 pale reddish yellow (orange yellow)	Si	S	

107-97	10.0×9.0	weft-faced plain	blanket stitch	Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	10
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	36
				Se	W	1R 3/10 deep purplish red 3PB 1.5/4 dark blue	Pl	Z	
108-105 111-23	25.0×16.0	plain	checker pattern, alternations of 4 yellow and 6 blue warps	Wa	C	2.5Y 8.5/3 pale reddish yellow 3PB 1.5/4 dark blue (5B 4.5/5 dull greenish blue in discolored parts)	Si	Z	15
			alternations of 4 yellow and 112 blue wefts	We	C	3PB 1.5/4 dark blue (5B 4.5/5 dull greenish blue) 2.5Y 8.5/3 pale reddish yellow	Si	Z	15
111-22	12.0×14.0	basket	piece dyed, 3PB 6.5/6 light blue	Wa	L	5.5Y 9/1.5 pale yellow	Si	S	10
				We	L	5.5Y 9/1.5 pale yellow	Si	S	6
111-30	16.5×28.0 10.2×26.0	weft-faced plain	edge	Wa	W	1R 3/10 deep purplish red	Si	S	8
				We	W	1R 3/10 deep purplish red	Si	S	21
		swivel	attached fragment, 2 or 3 red warps, 3 yellow wefts	Wa	W	1R 3/10 deep purplish red	Si	S	
				We	W	2.5Y 7.5/6 dull reddish yellow (orange yellow)	Si	S	

UNEARTHED AREA : Southeast Corner of the Western Temple Area, Surface Layer

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
97-7	18.4×6.7	tapestry	selvage containing 3 warps	Wa	W	9YR 5.5/8 brownish gold	Si	S	8
				We	W	9YR 5.5/8 brownish gold	Si	S	30
				We	W	10R 2/3 dark reddish brown 9YR 8/2 pale beige 5GY 3/3 grayish olive green N 2.4 dark gray	Si	S	30
98-9	20.5×15.7	tapestry	ground : weft-faced plain, selvage containing 4 warps	Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	8
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	34
				Co	W	3PB 1.5/4 dark blue 4R 3.5/10 dark red 5BG 5/4 dull blue green 10GY 3/4 dark yellowish green 2.5Y 7/10 gold 2.5Y 7.5/6 dull reddish yellow	Si	S	
				Co	L	2.5Y 9/5 light reddish yellow	Si	S	
98-11 110-2	8.5×17.2	tapestry, soumack		Wa	W	4R 3.5/10 deep red	Si	S	13
				We	W	4R 3.5/10 deep red 3PB 1.5/4 dark blue 9YR 6.5/11 gold 4R 2.4/5 dark red	Si	S	31
				We	L	9YR 5.5/8 brownish gold	Pl	Z	
98-12	17.0×11.5	tapestry		Wa	W	5GY 3/3 grayish olive green	Si	S	8
				We	W	2.5Y 6/8 gold 7.5RP 2.4/5 dark wine 4R 3.5/10 deep red N2.4 dark gray (5G 2.4/3 dark green RP 2.4/5 dark wine (through a loupe)	Si	S	60
98-14 110-3	12.5×9.7	tapestry, soumack		Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	10
				We	W	3PB 1.5/4 dark blue N 2.4 dark gray 5YR 5/10 deep orange 5GY 5/8 deep yellow green 2.5Y 6/8 gold	Si	S	60
				We	L	2.5Y 8.5/3 pale reddish yellow	Do	Z	
98-15	10.0×20.0	tapestry, soumack	medallion	Wa	W	2.7Y 7/10 gold	Si	S	11
				We	W	5BG 2.4/3 dark blue green	Si	S	35

						4R 3.5/10 deep red 5GY 3/3 grayish olive green 7/5P 2.4/8 deep purple 9YR 6.5/5 light yellowish brown			
99-18	7.2×23.0	tapestry, surmack	ground : weft-faced plain	Wa	W	2.5Y 7/10 gold	Si	S	14
				We	W	2.5Y 7/10 gold	Si	S	47
				Co	W	7.5P 1.5/4 dark purple	Si	S	
				Co	L	9YR 6.5/11 gold	Si	S	
			darning	Se	W	2.5Y 7.5/6 dull reddish yellow	Si	S	
99-19	11.2×7.8	tapestry	tapestry weft thread lost	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	15
99-20 VI-6	9.5×17.0	tapestry	ground : weft-faced plain	Wa	W	2.5Y 6/8 gold	Si	S	13
				We	W	2.5Y 6/8 gold	Si	S	40
				Co	W	5BG 2.4/3 dark blue green 5G 2.4/3 dark green 3PB 1.5/4 dark blue (through loupe) 2.5Y 6/8 gold 9YR 5.5/8 brownish gold 4R 3.5/10 deep red	Si	S	
100-26 110-4 VI-4	58.7×5.0	tapestry, soumack		Wa	W	4R 3.5/10 deep red	Si	S	10
				We	W	4R 3.5/10 deep red 5GY 3/3 grayish olive green 5BG 5/4 dull blue green 5/5Y 6/8 olive yellow 5GY 2.4/3 dark green	Si	S	56
100-27	17.0×12.0	tapestry		Wa	W	2.5Y 6/8 gold	Pl	Z	5
110-6				We	W	5YR 2.4/4 dark brown 1R 3/10 deep purplish red 5G 2.4/3 dark green 5GY 5/8 deep yellow green 5YR 5/10 deep orange	Si	S	31
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
100-28	27.0×10.6	tapestry		Wa	L	9YR 5.5/8 brownish gold	Pl	Z	5
110-5				We	W	7R 5/14 vivid yellowish 5B 2/4 dark greenish blue 10GY 3/4 dark yellow green 5B 3/8 deep greenish blue 9YR 4/4 yellowish brown 5B 2/4 dark greenish blue 2.5Y 8.5/1 pale reddish yellow 3PB 1.5/4 dark blue 7.5RP 2.4/5 dark wine 1R deep purplish red 7.5RP 5.5/10 purplish rose 5BG 2.4/3 dark blue green 7R 4/10 deep yellowish red 5GY 3/3 grayish olive green 2.5Y 7/10 gold	Si	S	37
				We	L	N 9.5 white	Si	S	
101-35	20.5×16.7	tapestry, weft-faced plain		Wa	W	9YR 5.5/8 brownish gold	Si	S	9
				We	W	9YR 5.5/8 brownish gold N1 black 9YR 3/3 dark yellowish 2.5Y 6/8 gold	Si	S	26
101-38	23×15.2	tapestry	ground : weft-faced plain	Wa	W	2.5Y 6/8 gold	Si	S	10
				We	W	2.5Y 6/8 gold 7.5RP 2.4/5 dark wine 7R 4/10 deep yellowish red 5GB 2.4/3 dark blue green 10R 4.5/10 deep reddish orange 5.5Y 4/4 olive 2.5Y 7.5/6 dull reddish yellow	Si	S	32
102-40	21.0×14.9	tapestry	selvage	Wa	W	9YR 5.5/8 brownish gold	Si	S	8
				We	W	9YR 5.5/8 brownish gold IR 3/10 deep purplish red 9YR 3/3 dark yellowish brown 5YR 2/1.5 dark grayish brow	Si	S	32
102-45	9.6×7.4	tapestry, soumak		Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	10
				We	W	5GY 5/8 deep yellow green 5YR 5/10 deep orange	Si	S	28

						2.5Y 6/8 gold N2.4 dark gray 10R 2/3 dark reddish brown			
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
104-65	15.7×2.2 8.0×2.0	tapestry	band for hem decoration, 2cm wide	Wa	L	2.5Y 8.5/3 pale reddish yellow	Pl	Z	7
				We	W	2.5Y 8.5/3 pale reddish yellow 5YR 2/1.5 dark grayish brown	Si	S	35
105-69 110-14	22.0×16.5	loop pile		Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	9
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12
				Br	W	7.5RP 5.5/10 purplish rose 2.5Y 7.5/6 dull reddish yellow 10R 4.5/10 deep reddish orange 2.5Y 6/8 gold 3PB 1.5/4 dark blue 1R 3/10 deep purplish red	Pl	Z	
105-75 111-18	10.5×5.0	swivel	selvage, 3 red warps (4R 3.5/10 deep red)	Wa	W	7.5RP 2.4/5 dark wine	Pl	Z	12
			ground : warp rib (twin wefts)	We	W	3PB 1.5/4 dark blue	Si	S	16
				Br	L	2.5Y 8.5/3 pale reddish yellow	Tr	Z	
105-67 110-13	8.3×7.0 4.0×4.5	swivel	ground : plain	Wa	L	2.5Y 8.5/3 pale reddish yellow	Si	S	16
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	14
				Br	W	10G 2.4/3 dark bluish green 3PB 1.5/4 dark blue 2.5Y 7/10 gold 7R 4/10 deep yellowish red	Tr	Z	
106-86	30.0×18.0	warp-faced plain		Wa	W(?)	5YR 2.4/4 dark brown 2.5Y 7/10 gold 5YR 5/10 deep orange	Pl	S	9
				We	W(?)	5YR 2.4/4 dark brown	Pl	S	4
106-83	11.3×4.3	float	ground : warprib	Wa	W	4R 3.5/10 deep red	Pl	Z	11
				Wa	W	3PB dark blue	Pi	S	
				We	W	4R 3.5/10 deep red	Si	S	20
			triple yarn	Bo	W	3G 3.0/4.5 dark green 8YR 6.0/6.5 light yellowish brown	Si	S	
			triple yarn	Bo	L	2.5Y 8.5/3 pale redish yellow	Si	S	
107-88	10.5×11.0	plain		Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	6
				We	W	2.5Y 7.5/6 dull reddish yellow 5YR 2/1.5 dark greenish brown	Si	S	11
107-94 111-24, 26	14.5×8.5	sprang		Wa	W	5GY 3/3 grayish olive green 2.5Y 6/8 gold 5B 2/4 dark greenish blue 2.7Y 7.5/6 dull reddish yellow	Pl	Z	
108-99	10.0×12.0	plain	checker pattern	Wa	L	2.5Y 8.5/3 pale reddish yellow 5B 3/8 deep greenish blue	Si	S	7
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	9
109-109 112-35	33.0×26.7	weft-faced plain	blanket stitch, back stitch	Wa	W	5BG 2.4/3 dark blue green	Si	S	13
				We	W	5BG 2.4/3 dark blue green	Si	S	20
				Se	W	4R 3.5/10 deep red 2.5Y 7/10 gold	Pl	Z	
109-112 111-28	11.4×8.8	weft-faced, twining	edge	Wa	W	2.5Y 6/8 gold	Si	S	9
			selvage	We	W	5YR 5/10 deep orange	Si	S	14
109-113	12.0×7.0	plain	child's tunic sleeve	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	14
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	15
				Se	W	2.5Y 7.5/6 dull reddish yellow	Pl	Z	
109-115 111-31	3.8×14.0	weft-faced plain	edge	Wa	W	3G 3.0/4.5 dark green	Si	S	8
				We	W	4R 3.5/10 deep red	Si	S	32
				We	W	8YR 6.0/6.5 light yellowish brown	Si	S	20
110-12	19.2×1.7	tapestry	ground : plain	Wa	L	2.5Y 8.5/3 pale reddish yellow	Si	S	12
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	13
				Co	W	4R 3.5/10 deep red 2.7Y 6/8 gold 5GY 3/3 grayish olive green 5BG 2.4/3 dark blue green 9YR 6.5/5 light yellowish brown	Si	S	
111-25	7.9×12.7	tapestry, twining		Wa	W	5YR 5/10 deep orange	Tr	Z	10
				We	W	5YR 5/10 deep orange	Si	S	25

						9YR 3/3 dark yellowish brown 2.5Y 6/8 gold			
112-38	11.1×9.7	tapestry, weft-faced plain	darning	Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	10
				We	W	2.5Y 7.5/6 dull reddish yellow 2.5Y 7/10 gold 3PB 1.5/4 dark blue 2.5Y 8.5/3 pale reddish yellow 5G 5/4 dull green 10R 4.5/10 deep reddish orange	Si	S	54
				Se	W	2.5Y 8.5/3 pale reddish yellow	Pl	Z	

UNEARTHED AREA : Building 4

Pl. no.	Dimen	Texture	Material	Note
97- 2	6.6×5.9	plain	Wa : L We : L	on the floor, Room 2
98-13	21.4×29.0	tapestry, soumack, ground : weft-faced plain	Wa : W We : W	repair, medallion sewn to the ground, disarranged soil
103-48	22.0×8.8	ditto	Wa : W We : W, L	Room 2, disarranged soil

UNEARTHED AREA : Middle Court East, Disarranged Soil

Pl. no.	Dimen	Texture	Material	Note
97- 1	16.6×17.7	plain, soumak	Wa : W, Pl, Z We : W, Pl, S Br : W, Pl, S	
97- 3 VI-1	27.4×28.0	tapestry, soumak, ground : weft-faced plain	Wa : W We : W	sleeve, selvage Type 2
97- 6	21.5×28.0	tapestry, ground : plain	Wa : L We : L Co : W	sleeve, hemming stitch selvage
99-21	7.2×4.0	tapestry, soumak, ground : plain	Wa : L We : L Co : W	2 warps
99-22	15.1×13.9	tapestry, ground : plain	Wa : L We : L Co : W	hemming stitch
99-23	5.5×7.0	tapestry, soumak, ground : weft-faced plain	Wa : W We : W Co : L	
100-29	4.2×11.7	tapestry	Wa : W We : W	loop pile, floral design
100-30 VI-3	16.8×12.3	tapestry, ground : weft-faced plain	Wa : W We : W Co : W	
100-31 VI-2	15.7×9.0	ditto	Wa : W We : W	
101-39	17.9×34.7	ditto	Wa : W We : W	
103-53	4.0×15.2	tapestry	Wa : W We : W	selvage Type 2
103-57	11.6×7.0	tapestry, soumak, ground : weft-faced plain	Wa : W, Pl We : W, Pl Co : L, S, W, S	

104-62	12.0×10.3	tapestry, ground : plain	Wa : L We : L Co : W	
104-63	18.5×12.5	tapestry, ground : plain	Wa : L We : L Br : W	tapestry, two warps
105-73	11.0×13.2	swivel	Wa : W We : W Br : L	L : double yarn
105-74	7.0×8.5	float	ditto	
105-76	3.0×13.0	swivel, ground : warp rib (twin weft)	Wa : W, Pl We : W Br : L	L : 3 double yarns
106-78	7.8×19.0	swivel, ground : plain	Wa : W We : W Br : L	
106-81	7.3×4.7	float (?), ground : plain	ditto	
107-90	10.0×7.7	weft-faced plain	Wa : W We : W	stripe pattern

UNEARTHED AREA : Middle Court West, Disarranged Soil

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
97-8	33.0×7.2	tapestry	ground : weft-faced plain, selvage	Wa	W	2.5Y 6/8 gold	Si	S	
				We	W	2.5Y 6/8 gold	Si	S	
				Co	W	10GY 4.5/7 strong yellowish green 5GY 3/3 grayish olive 3PB 1.5/4 dark blue 7R 4/10 deep yellowish red 2.5Y 7.5/6 dull reddish yellow 9YR 8.5/5 light yellowish orange	Si	S	
99-16	9.4×4.8	tapestry, soumak	ground : weft-faced plain	Wa	W	5YR 5/10 deep orange	Si	S	10
				We	W	5YR 5/10 deep orange	Si	S	25
				Co	W	N2.4 dark gray	Si	S	
				Co	L	2.5Y 8.5/3 pale reddish yellow	Tr	Z	
99-25	7.5×5.5	tapestry	ground : weft-faced plain	Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	10
				We	W	2.5Y 7.5/6 dull reddish yellow	Si	S	30
				We	W	5YR 2/1.5 dark grayish brown	Si	S	
				Co	L	9YR 8/2 pale beige	Si	S	
100-32 110-7	7.1×9.6	plain		Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	14
		tapestry	round tapestry sewn to the ground (twin warps)	Wa	L	2.5Y 7.5/6 dull reddish yellow	Si	S	12
				We	W	4R 3.5/10 deep red 3PB 1.5/4 dark blue 5G 2.4/3 dark green	Si	S	40
			hemming stitch	Se	L	2.5Y 7.5/6 dull reddish yellow	Pl	Z	
103-51	7.7×12.2	tapestry		Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	9
				We	W	2.5Y 7.5/6 dull reddish yellow 5BG 2.4/3 dark blue green 7.5RP 2.4/5 dark wine	Si	S	38
103-56	3.5×9.2	tapestry	weft rib (twin warps), ground : plain	Wa	L	2.5Y 8.5/3 pale reddish yellow	Si	S	15
				We	L	2.5Y 8.5/3 pale reddish yellow	Si	S	15
				Br	W	5G 2.4/3 dark green 3PB 1.5/4 dark blue 9YR 5.5/8 browish gold	Si	S	40
105-72 111-21	17.7×7.5	weft-faced compound	mixed spinning, shade of brown	Wa	W	9YR 5.5/8 brownish gold 9YR 8.5/5 light yellowish orange	Pl	S	7
			mixed spinning, shade of green and blue	We	W	5B 2/4 dark greenish blue	Si	Z	12
106-80 111-19 VI-7	9.0×5.2	float		Wa	W	3PB 1.5/4 dark blue 4R 3.5/10 deep red	Pl	Z	11
				Wa	W	3PB 1.5/4 dark blue 4R 3.5/10 deep red	Pl	Z	11

				Br	W	10R 4.5/10 deep reddish orange	Do	S	
107-87	4.0×8.0	weft-faced plain		Wa	W	2.5Y 7.5/6 dull reddish yellow	Si	S	11
				We	W	2.5Y 7.5/6 dull reddish yellow 10R 4.5/10 deep reddish orange	Si	S	42
107-92	23.7×4.5	tapestry	many wefts on the reverse 33 warps, band	Wa	W	2.5Y 7.5/6 dull reddish yellow	Pl	Z	7
				We	W	2.5Y dull reddish yellow	Si	S	20
				Co	W	7.5RP 2.4/5 dark wine 9YR 5.5/8 brownish gold 2.5Y 6/8 gold 10R 4.5/10 deep reddish orange 5G 2.4/3 dark green 5GY 5/8 deep yellow green 4R 3.5/10 deep red 7.5RP 2.4/5 dark wine	Si	S	
				Co	L	9YR 8/2 pale beige	Si	S	
108-101	7.8×10.0	mat or basket	checker pattern, two twin blue warps and two twin yellow warps, alternating.	Wa	L	10B 3/8 deep blue 2.5Y 8.5/3 pale reddish yellow	Si	S	14
			6 twin blue, wefts and 5 twin, yellow wefts alternating.	We	L	10B 3/8 deep blue 2.5Y 8.5/3 pale reddish yellow	Si	S	14
108-103	36.0×12.2	plain	1R 3/10 deep purplish, 7.5RP 4.5/6 dull red purple 4R 3.5/10 dull red the solid color reverse.	Wa	C		Si	S	25
112-39				We	C		Si	S	26
111-29	9.5×11.0	plain	edge	Wa	W	5BG 2.4/3 dark blue green	Si	S	10
				We	W	5YR 2.4/4 dark brown	Si	S	10
		weft rib	stripe at the 3-1-3 interval on the reverse.	We	L	9YR 5.5/8 brownish gold	Si	S	
112-33	15.2×7.5	weft-faced plain	selvage warp containing 3, over- cast stitch, running stitch, hemming stitch	Wa	W	9YR 5.5/8 brownish gold	Si	S	8
				We	W	9YR 5.5/8 brownish gold	Si	S	35
				Se	W	4R 3.5/10 deep red	Pl	Z	
112-41		braiding, plain	piece dyed, small piece of cotton cloth tied up.	Wa	W	5YR 2.4/4 dark brown		Z	
				Wa	C	4R 3.4/10 deep red	Si	S	
				We	C		Si	Z	

UNEARTHED AREA : Building 6, Disarranged Soil

Pl. no.	Dimen	Texture	Material	Notes
97- 4	24.6×39.1	tapestry, ground : weft-faced plain	Wa : W We : W	sleeve, darning, selvage Type 2, hemming stitch
103-52	6.8×11.6	ditto	Wa : W We : W Co : W	
103-55	6.1×6.7	tapestry	Wa : L, Pl, S We : W, L, S	
106-84	3.6×7.1	swivel, ground : warp rib (twin weft)	Wa : W, Pl We : W Br : L, triple	
107-93	5.9×10.5	tapestry	Wa : 22 warps, grandrelle yarn We : W, Si, Z	Z<2S, land 2S

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
103-49	12.5×12.3	tapestry	ground : weft-faced plain	Wa	L	2.5Y 7.5/6 dull reddish yellow	Pl	Z	10
				We	L	2.5Y 7.5/6 dull reddish yellow	Si	S	22
				Co	W	7.5RP 2.4/5 dark wine 2.5Y 7/10 gold 10GY 3/4 dark yellow green 7R 6/11 strong yellowish pink 9YR 6.5/11 gold	Si	S	37
107-96	7.5×3.5		armhole (?) muddy adhesive		W	7.5RP 3/9 deep red purple	Si	S	
				Br	W	3PB 1.5/4 dark blue 5.5Y 7.5/11 strong yellow	Si	S	

UNEARTHED AREA : Site Surface in the Western Temple Area

Pl. no.	Dimen	Texture	Note	Th	Ma	Color	Tw	T	Tc
102-47	9.0×23.0	tapestry, soumak	ground : weft-faced plain	Wa	W	2.5Y 7/10 gold	Si	S	10
				We	W	2.5Y 7/10 gold	Si	S	38
				Co	W	10R 4.5/10 deep reddish orange 10YR 7.5/8 light orange 3PB 1.5/4 dark blue 5G 5/4 dull green 7.5RP 2.4/5 dark wine 9YR 5.5/8 browish gold	Si	S	
				Co	L	2.5Y 8.5/3 pale reddish yellow	Si	S	
112-40	1.0×14.0	braided with seven strings	8 folded yarn by Z-spin	Wa	W	2.5Y 7/10 gold	Si	S	

(TATSUNO, M.)

14 OTHER MISCELLANEOUS OBJECTS

GYPSUM

Fig. no. (Pl. no.)	Layer	Form	Dimension	Design	Remarks
(77-1)	Chapel A shaft, disarranged	cartonnage	w. 10.6 cm	cross mark	fragment
(77-2)	ditto	ditto	w. 7.0. (largest)	Anubis, scepter flagellum	ditto
(77-3)	in Coffin I	human ear	h. 4.0 (upper)		ditto
164-1 (77-4)	Chapel B shaft, disarranged	the deceased mask of coffin	w. 10.1		made of clay, plastered with gypsum
164-12	front area of Chapel B	hand	l. 3.8		fragment
(77-7)	Room 2, Building 10, disarranged	obelisque-shaped	h. 15.3		
164-11 (77-6)	southeast corner of the Western Temple Area, Layer 3	Horus stele	w. 6.7	paired crocodiles	fragment, see p. 322
164-16 (77-5)	ditto, Layer 4	crocodile	w. 16.2		ditto

164-15	ditto, Layer 4	foot	h. 5.9		ditto
(77-8)	North Trench in the site	spindle	d. 4.8		
164-13	eastern area adjoing Chapel A, disarranged	left foot	h. 5.4		fragment

BONE AND HORN WORKS

Fig. no. (Pl. no.)	Layer	Form	Material	Dimension	Design
164-2	eastern area adjoining Chapel A, disarranged	undetermined	horn	w. 2.8 cm	incised line
164-6 (113-9)	ditto	neadle	ditto	l. 4.7	
164-10 (113-12)	ditto	undetermined	ditto	l. 5.6	concentric circles
164-3 (113-5)	Room 4, eastern area around the South Court, disarranged	decoration	ivory (?)	w. 3.2	openwork
164-4 (113-10)	site surface	undetermined	horn	w. 2.4	geometrical incised patterns
164-5	Room 6, Building 11, disarranged	needle	ditto	l. 6.3	incised patterns
(113-6)	south chamber, of Chapel B shaft, F～G-III	inlaid eye	ivory	h. 2.3	black colored pupil, gold foil
164-8	ditto, A-III	undetermined	ditto	h. 3.5	moulding
164-7 (113-8)	Room 5, Building 9, disarranged	ditto	ivory (?)	l. 4.5	ditto
164-9 (113-11)	Room 1, Building 2, on the floor	decoration (?)	horn	w. 1.2	diagonal, incised lines
113-5 (113-7)	"Pool" Area, near furnace	spatula	bone	l. 20.5	

NATURAL OBJECTS

Pl. no. (Fig. no.)	Layer	Form	Material	Dimension	Remarks
114-1 (164-14)	Room 1, eastern area around the South Court, disarranged	spoon (?) with pierced hole	shell, *Bivalvia*	3.5×3.5 cm	
114-2	southeast corner of the Western Temple Area, Layer 1		ditto	5.4×4.1	
114-3	front area of Chapel B, disarranged	bead	shell, *Cypraeide*		
114-10	ditto	crocodile mummy	head	l. 13.5	
114-4	"Pool" Area, disarranged		shellfish, *Murex brandaris*	w. 2.3	
114-5	south chamber of Chapel B shaft, B-I, II	skull	female, age 50～60		
114-6	ditto, disarranged	ditto	male, age *c.* 40		
114-7	Chapel B shaft, disarranged	crocodile mummy	head		
114-8	ditto	ditto	ditto	l. 85	
114-11	ditto	ditto	rear part of body	l. 52	
114-12	ditto	ditto	ditto	l. 114	
114-9	Chapel C shaft	ditto	foot part	l.20	covered with date palm ribs

(KAWANISHI, H.)

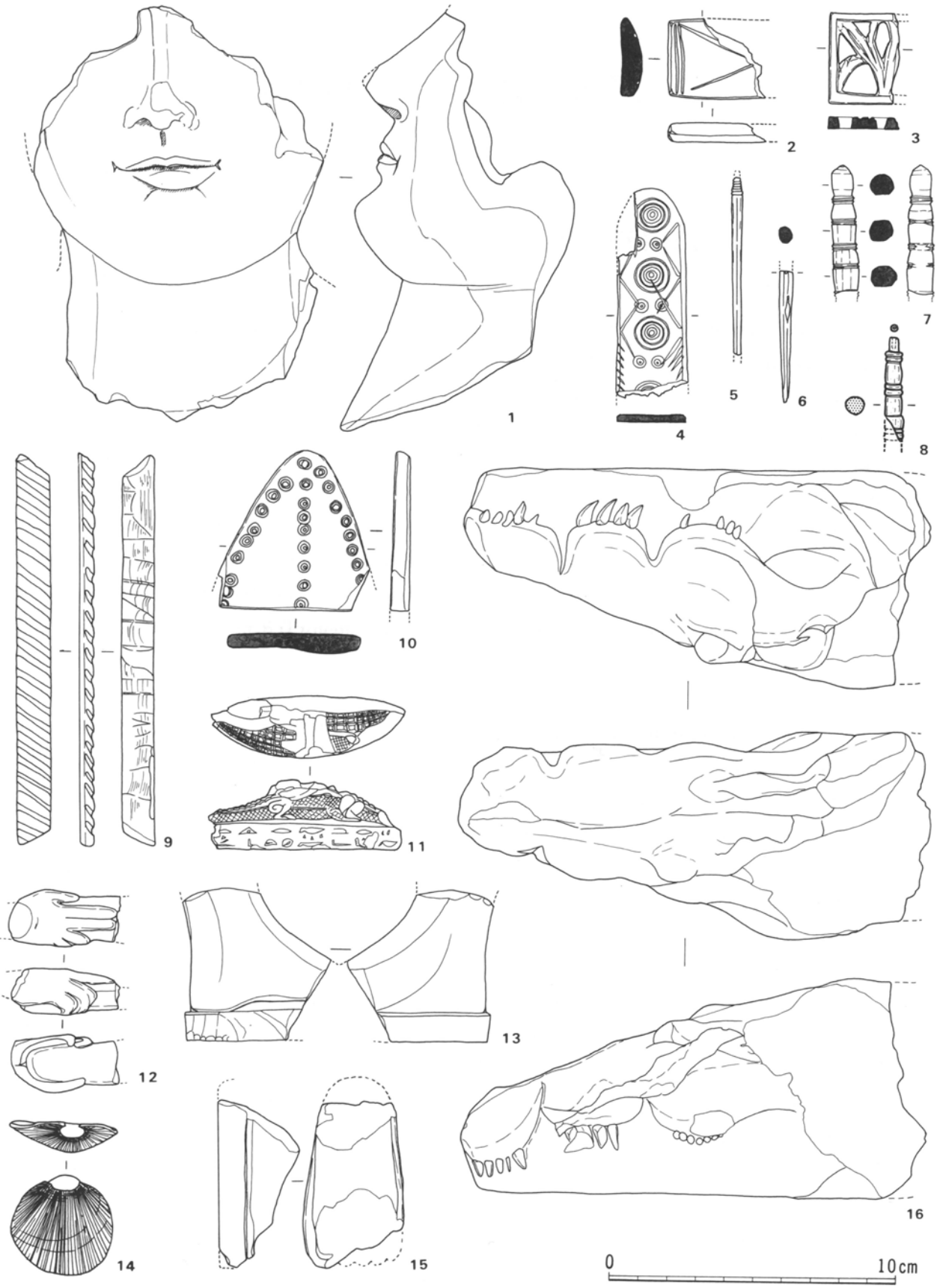


Fig. 164 Other miscellaneous objects

IV
ARCHEOLOGICAL STUDIES

1 CHRONOLOGY OF POTTERY

A large quantity of shards unearthed in Akoris are dated from the Third Intermediate Period to the Coptic Period. Shards from the Ptolemaic Period to the Early Roman Period are, however, small in quantity in the Western Temple Area compared to shards of other periods. This is so not only in the Western Temple Area but also in the "Pool" Area to the north of it. Nevertheless, an exception to this paucity must be made in the East Trench near the Central Temple Area where many shards belonging to that period were discovered. Whether this difference is by fortuity or not, cannot be known as our area of investigation in Akoris has, after all, been limited. One dig made in the southeast corner of the Western Temple Area where the age of the shards changed continuously revealed, Layers 1 and 2 (6～7th century A.D.), Layer 3 (4th～5th century A.D.), Layer 4 (2nd～3rd century A.D.), Layer 5 (1st century B.C.～1st centuries A.D.), Layer 6 (Ptolemaic Period), Layer 7 (Late Dynastic Period) and Layers 8 and 9 (Third Intermediate Period).

THIRD INTERMEDIATE PERIOD : In the "Pool" Area, from the soil near the furnace which was broken by the large outer wall built with a small thin type brick, pottery belonging to the Third Intermediate Period, including cups with pointed base, vases, bowls, platters, lids, clay vessel supports, etc. were discovered (Figs. 112 and 113). We would like to comment on some characteristic shards among them.

Imports (Fig. 112 no. 20). A small imported Phoenician jug of a type which, according to Patricia M. Bikai, dates from the first half of the 8th century B.C. was discovered. Its upper part and handle were missing, but the globular body with a low ring base was made of a fine, pink clay, on which red slip was painted. Similar jugs were discovered at Qurna and Ashmunein, and in the report on the latter, this type was dated 750～650 B.C., a dating not too different than the dating established by Bikai.[1)]

Clay vessel supports (Fig. 113 nos. 2 and 3. Pl. 85 no. 6). These hand-made objects have a hollow body with two horn-like projections and either a short or a loop handle. They have often been called a 'fire dog' in the West. Curiously, in ancient Japan a similar object called a 'haniwa dog' was also used. Haniwa is a general term for unglazed earthenware artifacts dating back *ca.* 1700 years. Though both of these objects are named for their shape, that of a dog's face, the name is not related to its function, which D. A. Aston recently proposed was that of a support for a cooking-pot over a fire.[2)] In Japan, Yukio Kobayashi in 1941 discussed these haniwa dogs and gave the same opinion, which is still accepted, after noticing fire traces on the surface of the 'ears'.[3)] We found a fire dog which had soot on the same part as Kobayashi's haniwa dog. Aston suggested that three pieces made a set and were used with the

ears down which would mean the soot would adhere to the outside of the cylindrical body, a situation neither Kobayashi nor we found. We can only assume, then, that cooking pots were placed on the ears as Kobayashi has stated. Concerning the thumb size perforations in the side and top of the bodies, it is supposed to have been a tecnique used to aid the firing process and prevent breakage. Clay vessel supports seemingly disappeared after the Third Intermediate Period, but the reason is not clear.

Platters (Fig. 112 nos. 24 and 25). Several coarse, hand-made piece of pottery with double rim were found in Layers 8 and 9 in the southeast corner of the Western Temple Area (Fig. 50 nos. 25 and 26) and in the lower layers of Room 4 in Building 10 (Fig. 75 no. 10), in addition to the lower layer around the furnace in the "Pool" Area . In general, they were unearthed not only in the layers of the Third Intermediate Period but also the layers of the Late Dynastic Period and are assumed to be parts of some sort of platter.

Bowls (Fig. 50 nos. 22 and 23). While shallow bowls with round base were common in the Third Intermediate Period, a single deep coarse bowl with exterior cord-marks and a flat-bottom was unearthed only in Layer 8 in the southeast corner of the Western Temple Area.

Carinated bowls (Figs. 50 no. 8 and 53 no. 15) can be divided into two types, that is, a vertical rim type and a spread rim type like a phiale (Fig. 50 no. 24). Though these two types were found both in the Third Intermediate Period and the Late Dynastic Period, the vertical rim type was rare in the former.

LATE DYNASTIC PERIOD : It is difficult to determine with precision the period of certain pottery. Just as in the case of the carinated bowl mentioned above, some types can be estimated by comparing the quantity uncovered in one period compared to another. Wide, spread-mouthed jars with a thickened lip (Fig. 50 no. 7) were also found in both the Third Intermediate and the Late Dynastic Period layers, but was rare in the former. Bowls and jars which have rims doubled back some distance on the exterior are common in the Late Dynastic Period, and were found in particular in the Layer 7 in the southeast corner of the Western Temple Area (Fig. 50) and the western area around the South Court (Figs. 53 and 54). In the latter, a shard with a carinated shoulder characteristic of a Phoenician amphora was discovered (Fig. 53 no. 24).

PTOLEMAIC PERIOD : Many shards belonging to this period were unearthed from the 4th～5th layer in the East Trench (Figs. 119～128. Pls. 79 nos. 1～9, and 80 nos. 1, 2 and 4), the lower layers under the stone circle in the South Court (Fig. 39 nos. 2 and 8) and the North Trench in the site (Figs. 130 and 131). In the Ptolemaic Period, pottery types are different from those in the prior periods. Bowls with an inward curved rim and a base ring are the most common in this period as are pots with a flat lip and beakers with a round base. As for jar stands, not only the usual everted edge type but also a very low type sides with either concave or concave-convex sides were uncovered in Akoris.

EARLY ROMAN PERIOD : Shards belonging to the Early Roman Period were taken from Layers 1～3 in the East Trench (Figs. 120～128) and the lower layers under the stone circle in the South Court (Fig. 39 nos. 9, 14 and 16). From Layer 2 in this trench, coins (Pl. 72 nos. 2, 3 and 5) belonging to the second half of the 1st～the first half of the 3rd centuries A.D. were found. Layers 4 and 5 correspond to this



Fig. 165 Typology of cooking pots and amphorae

period in the southeast corner of the Western Temple Area, but shards were few there. Two bowls with a triangular lip in section is common in this period (Fig. 120 nos. 2 and 3). A rare pottery type, a red slip carinated pot with a round base and two handles (Fig. 39 no. 9) was unearthed from the lower layer of the stone circle.

LATE ROMAN PERIOD: A large variety of shards dating to the 4th～5th century A. D. was found in Buildings 1 and 2 (Figs. 80～82, and 85～93), those dating from the end of the 6th century through the 7th century were found in Building 4 in the Middle Court (Fig. 58), and many shards belonging to the 6th～7th century A. D. were unearthed in disturbed soil throughout the site including the Western Temple Area.

Amphorae. Amphorae in this period can be divided into two major groups by their grooved pattern,

that is, the early group has a gentle, wave-like pattern, while the later group has a sharp, close pattern, much like sawtooth. An amphora (Fig. 97 no. 1) discovered under the Sacred Road of the Central Temple Area has two loop handles at the top, and a square-shouldered body which tapers in a straight line toward the bottom. It is decorated with the former grooved pattern, which according to the report on Tell el-Maskhuta,[4] is assumed to date from the mid-2nd century A.D., a date based on a similar type amphora found in the Early Roman and Islamic Period ruins of Quseir al-Qadim.[5] However, taking a closer look at these two amphorae and the amphora in Akoris, we see that in addition to the presence or lack of a groove decoration, they are different types according to the forms of the lips and shoulders. The amphorae found at Quseir al-Qadim is without a grooved decoration and has an inverted lip and sloping shoulders. Therefore, we cannot agree that these three date to the same Early Roman Period. John W. Hayes dated this Akoris type amphora from the 5th~6th century A.D.,[6] but we think that this date is too late. The report on Ashmunein dated it earlier, to the late 4th century A.D. In the case of Akoris, since this type amphora was in the same layer as a group A frog type lamp, we suppose it dates from the same 4th century A.D.[7]

A 'Gaza jar' type amphora (Fig. 81 no. 1) was found in Building 1. It has a short vertical lip, two loop handles and a stocky body.

Jar. A white slip jar (Fig. 98 no. 7) was found in the same layer as the amphora and a frog lamp of group A under the Sacred Road of the Central Temple Area. It has a long neck, inverted lip and a handle. The square-shoulders and slim body becoming narrow at the bottom are common elements with the amphora mentioned above. In the same layer, an oil jar (Fig. 98 no. 6) was found.

Red slip ware. According to Hayes, red slip ware in Egypt is divided into African red slip, Egyptian red slip and 'Late Roman C' ware, however, the last is limited to the Nile Delta region.[8] African red slip ware, on the other hand, has not been abstracted in Akoris. Among the Egyptian red slip ware found in various places in the site were flanged bowls with a coarse roulette pattern on the outside dating from the 6th~the first half of the 7th century A.D. As an example, a flat-based plate (Fig. 87 no. 20) unearthed in Building 2 was mentioned. It was stamped with a radiating palm branch and circle motifs, the earlist example of these stamps were supposed by Hayes to dated from the second half of the 5th century A.D.[9]

Pottery with painting. Painted pottery is divided into two groups that with a white slip coat and that with red slip coat. As for pottery in the former group, large-mouthed jars with two handles (Figs. 80 no. 14, 91 no. 1) unearthed in Buildings 1, 2 and a fragment painted a man's face (Fig. 112 no. 6) unearthed in "Pool" Area are mentioned. The course pinkish clay was coated on the outside with a yellowish cream slip on which a plant was painted. Almost all of the red slip coated group are, however, carinated bowls (Fig. 85 no. 22) on which a wave pattern, a circle or a check is painted in black or white.

Pottery decorated with gouged line. A jar with a gouged decoration (Fig. 58 no. 2) was found in Building 4. After gouging large concentric half circles on the shoulder, horizontal lines which were made by a comb-like implement divided this decorated band into two parts. In the upper part, many small hollows fill up in the triangular spaces between the half circles and a grind-stone type line pattern fills in the lower part.

A squat narrow-mouthed bottle and a goblet with the similar pattern were found in disarranged soil covering Building 9. The former has a decoration of gouged concentric arcs and rows of small circles

along the outer rim of the arcs on the shoulder. The fragment of goblet has also gouged concentric circles or half circles. Both the bottle and the jar have the common feature of a step at the border between the neck and shoulder and was probably made in Middle Egypt. There is another type of gouged decoraiton. This type has close, short, straight gouged lines, and decorates a goblet, a miniature jar and a table amphora, which were found in disarranged soil in Building 5. Jugs with the latter type were unearthed in Karanis, and Hayes classified them as Abu Mena buff ware,[10] and date them from the late 6th～7th century A.D.

Notes

1) SPENCER, *EA III*, p. 47.
2) ASTON, D. A., *Ancient Egyptian "Fire Dog" — A New Interpretation* (*MDIK*, 45, Wiesbaden, 1989), pp. 27-32.
3) KOBAYASHI, Y., *Legs of Earthen Utensils* (*The Journal of the Archaeological Society of Nippon*, vol. 31, no. 5, Tokyo, 1931), pp. 28-50.
4) HOLLADAY, J. S. Jr., *Tell el-Maskhuta* (Malibu, 1982), pp. 58-59.
5) WHITCOMB, D. S. and J. H. JOHNSON, *Quseir al-Qadim 1980* (Malibu, 1982).
6) HAYES, J. W., *Roman Pottery in the Royal Ontario Museum* (Toronto, 1976), no. 365.
7) BAILEY, *EA IV*, pp. 39-41.
8) HAYES, *LRP*, pp. 368-369.
9) *ibid.*, pp. 395-397.
10) HAYES, *op. cit.*, p. 53 no. 275.

(TSUJIMURA, S.)

2 CHRONOLOGY OF MUD BRICKS

There were some attempts to chronologize bricks in Egypt before Alan J. Spencer, but they failed to realize the result they had anticipated due to a methodological weakness. Spencer adopted a new method which divides the various sizes of brick by place of usage. As the width of brick is usually half of its length, he adopted the length as the size of the brick. In consequence, he discovered that large bricks were used for official buildings, while small bricks were used for houses and private tombs except in the Archaic, the Late Roman and the Coptic Periods.[1] According to his diagram showing the change of brick size, there is a difference of several centimeters between the large and small types from the Late Period to the Coptic Period, however, compared to the difference before the Late Dynastic Period it is minor, so it should be said that the difference becomes smaller after the 30th Dynasty. Futhermore, he described the change of brick size in the following manner : both types increase in size until the Middle Kingdom, followed by a fluctuation until the 26th Dynasty after which there is a decrease until modern times. Though in the large type the change is noticeable, in the small type it is not necesearily so, as the brick size of the latter shows little change from the Middle Kingdom to the Ptolemaic Period. And so there arises some questions concerning the details of his conclusions, granted its outline is convincing.

In addition, why he neglected thickness as a factor of brick size remains a question, too. Taking up the samples from the 30th Dynasty to the Roman Period which he measured in Armant, their length decreases with time. However, the difference in thickness between the medium type before the reign of Tiberius and the small type after the reign of Gaius is rather more noticeable than the difference in length. That is, the former is thick, and the latter is thin. Thickness is one of the important factors in chronologizing bricks in Akoris as well.

In our chronologizing bricks, in the Western Temple Area we observed the relationships between walls built upon other walls or walls that had been cut, in addition to the change in brick size in reconstructed walls in the Western Temple Area. Examples are found in each section of this report. The chronological change in size of brick is presumed to have been as follows : A small, thinner type of various dimensions (26~31 × 13~15 × 6~7cm) → a large, thin type (38 × 18 × 7cm) → a small, thin type (32 × 16 × 7cm) → a large, thick type (38 × 18 × 12cm) → a small, thick type (32 × 16 × 12cm) → a 29cm type (29 × 14 × 10cm) → a 26cm type (26 × 13 × 8cm) → a 24cm type (24 × 12 × 8cm), the first size being oldest, the last the newest. Actual measurements may vary slightly, so the numerical value given here is that of the most common. To comfirm this order, we observed similar samples among walls remaining outside the Western Temple Area (Tab. 24). As for bricks in variance with the most common size, especially in the case of brick which does not follow the 2 : 1 rule of length against width, judgement would not be made according to the length alone. In addition to the size, mixture is also an important factor, because brick of the large, thin type was tempered with much white grit, while brick of the large, thick type was tempered with a large amount of vegetable fiber. For example, the unusual brick measuring 34 × 18 × 8cm used in the wall found in the East Trench near the Central Temple Area was tempered with much white grit, and therefore, though it is shorter by some 4cm, it had better be included in the large, thin type. If this is done, there is no example which violates the order mentioned above. According to the chronological order of mud bricks we established, the thickness of brick is a more basic factor than the length. As can be seen then, based on our order, the two types of brick size which Spencer indicated, do not appear at the same time in Akoris. In any case, the change in size of brick from the Third Intermediate Period to the Coptic Period in Akoris is not a simple decrease but shows a more complex pattern than the general change which was shown by Spencer. Though we do not know whether the order in Akoris is applicable in other sites or not, it is possible that change in each site is more complex than the general change in Egypt as a whole.

Secondly, we would like to presume the date of each brick type. In the Western Temple Area, pottery shards belonging to the Third Intermediate Period were unearthed around the walls of the large, thin type brick in the lower layers of Room 4 of Building 10, around the city wall and in the lowest layer at the southeast corner.

In the north trench of the site, pottery shards belonging to the Late Dynastic and the Ptolemaic Periods were found on a small, thin type brick wall, while pottery belonging to the Ptolemaic and the early Roman Periods and walls made of the large, thick type were found in the lower layers under the stone circle in the South Court. Therefore, it is thought that a small, thin type was used in the first half of the Ptolemaic Period, a large, thick type was used from the second half of the Ptolemaic Period. And thus it is possible that the Western Temple was completed in the Early Roman Period. The south part

of the east outer wall was repaired by a small, thick brick (see p. 61). As the pottery lamp belonging to the second half of the 3rd century A. D. was found in the layer which almost matches that at the bottom of the wall, this type is estimated to date to around that century. A bronze coin bearing the inscription of Arcadius was found in Building 2 made of a 29cm type brick outside the North Gate, so if it dates from the end of the 4th century to the first half of the 5th century, as we suppose the small, thick type which is earlier than it is estimated to date from the end of the 3rd to the first half of the 4th century.

In the Middle Court Area on the floor of Building 4 which used a 26cm type and a 24cm type bricks, pottery belonging to the second half of the 6th～7th century A. D. was unearthed.[2] The most recent type on the chronology, the 24cm type, is estimated to correspond to the most numerous and most recent papyri (Pls. 135 no. 38 and 138 no. 54) dating from the end of the 6th to the second half of the 7th century A. D.[3]

Tab. 24 MUD BRICK SIZE

〈Around Road A〉 (cm)

No.	Upper Layer	Middle Layer	Lower Layer
No. 1	24×12×8 (8)		26×13×8 (7)
2	26×13×9 (7)		29×14×10(6)
3	24×12×8 (8)		32×16×12(5)
4	24×12×8 (8)		29×14×9 (6)
5	24×12×8 (8)		29×14×11(6)
6	24×12×8 (8)		32×16×12(5)
7	29×14×11(6)	32×16×11(5)	36×18×13(4 ?)
8	25×12×8 (8)	29×14×11(6)	35×17×11(5 ?)
9	32×16×11(5)		36×18×7 (2 ?)
10	24×12×8 (8)		29×14×11(6)
11	26×13×9 (7)		32×14×10(5)
12	24×12×8 (8)		29×14×12(6)
13	26×13×8 (7)		32×16×11(5)
14	24×12×8 (8)		29×14×9 (6)
15	24×12×8 (8)		38×16×12(4)

〈Around Road C〉 (cm)

No.	Upper Layer	Middle Layer	Lower Layer
16	25×13×8 (7 ?)		29×14×9 (6)
17	24×12×8 (8)		32×16×10(5)
18	24×12×8 (8)		26×13×9 (7)
19	24×12×8 (8)		29×14×8 (6)
20	24×12×8 (8)		29×13×9 (6)
21	26×13×8 (7)		32×16×10(5)
22	24×12×8 (8)		29×14×9 (6)
23	26×13×9 (7)		32×16×9 (3)
24	26×13×9 (7)		29×14×10(6)
25	32×16×12(5)		31×15×7 (3)
26	32×16×12(5)		32×16×7 (3)
27	29×14×8 (6)		34×18×9 (2 ?)
28	25×13×8 (7)		29×14×10(6)
29	24×12×8 (8)	29×14×9 (6)	32×14×10(5)
30	32×16×11(5)		36×18×7 (2)
31	32×16×11(5)		36×18×8 (2)

Note : The number in parenthesis refers to the chronological order. As for the road names indicated above, referred to *Roads in Akoris* (see pp. 460 ff).

Notes

1) SPENCER, A. J., *Brick Architecture in Ancient Egypt* (Warminster, 1979).
2) HAYES, *LRP*.
3) Though Papyrus No. 19 dated from 794 A. D. in disarranged soil in Building 5, the date is supposed to be too late for the pottery.

(TSUJIMURA, S.)

3 CHRONOLOGY OF POTTERY LAMPS

As the result of our excavations in Akoris since 1981, we found scores of pottery lamps, most of which belong to the Coptic Period. We would like to present a chronological proposal for the lamps by classifying them into three types, that is, pre-frog, frog and post-frog.

PRE-FROG TYPE LAMPS : Two lamps were unearthed from the same first layer in the East Trench near the Central Temple Area. Both of them have a circular body, or container for oil, a long nozzle and a perforated lug. One of them colored reddish brown has two long volutes on the nozzle and a handle trace can be seen behind the discus (Fig. 146 no. 2. Pl. 86 no. 5). If it were included in the red-burnished class categorized by John W. Hayes, it would date to the 2nd～1st century B. C.[1] The other one has neither patterns of volutes nor handle, and its filling hole is extremely small compared with the former (Fig. 146 no. 1. Pl. 86 no. 2). Judging from its dark grey color and its features, this is probably the product of Bubastes in the Delta region, and Hayes supposed that it was from the 1st century B. C.[2]

Among the pre-frog type lamps are those classified Neo-Hellenistic, and one of these with a short nozzle was found in Layer 4 at the southeast corner of the Western Temple Area (Fig. 146 no. 7. Pl. 86 no. 1). The Neo-Hellenistic type categorized by Donald M. Bailey has a square-shouldered body at the short, splayed nozzle.[3] This style lamp is similar to those of the Ptolemaic Period which probably accounts for its name. On the shoulder of this type lamp, there are two kinds of patterns, that is, one has radiating grooves and the other one palm-leaves and the rear legs of some animal. The lamp we found has the latter pattern. The rear legs are shown as bent at the knees, which is different from the expression of frog's legs on a frog type lamp. In the British Museum catalog there are two Neo-Hellenistic type lamps which have not only rear legs but also a monkey's face in front of the discus and so we may assume that the legs found on pre-frog type lamp are in fact those of a monkey.[4] The reason why the monkey was chosen as decoration on lamps originates in Egyptian mythology. That is, the god Thoth who takes the shape of a baboon is lord of the moon and his attributes were often a writing palette or a palm leaf in Egyptian mythology. The motif of a monkey with palm leaves was thus wide spread in Egypt.

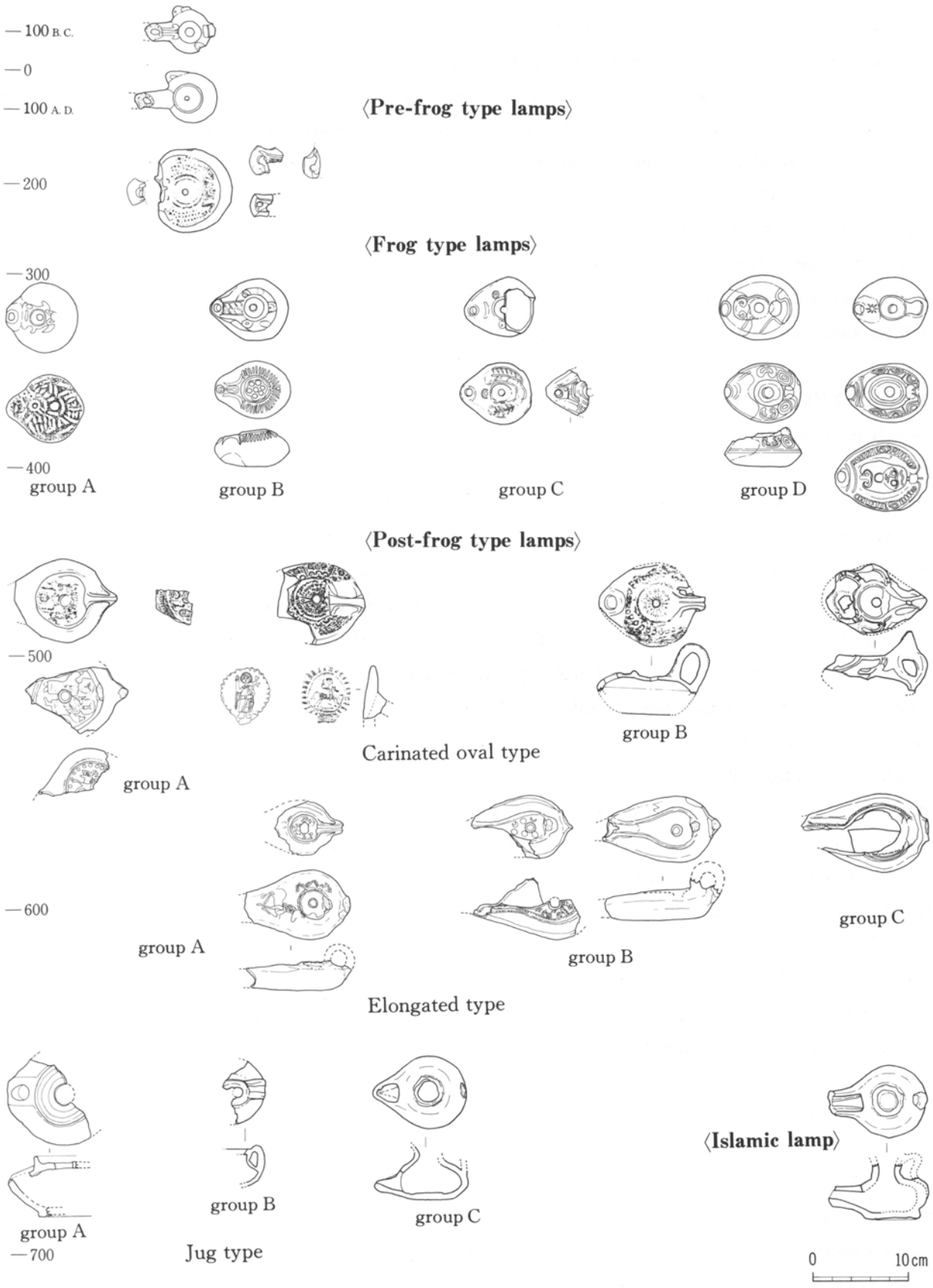


Fig. 166 Chronology of pottery lamps

There are several opinions concerning when this type lamp was in use, the earliest being the 1st century A. D.. and the latest the 5th century. In Akoris, Layer 4 in which the lamp was unearthed was certainly accumulated before the period of the 29cm type brick. Additionally, if a crocodile shaped plaster object (Fig. 164 no. 16. Pl. 77 no. 5) and the magical Horus stele (Fig. 164 no. 11. Pl. 77 no. 6) which were unearthed in company with this lamp in the same layer are any indication of the prosperity of the Western Temple, it is considered that the period of the layer is probably before the second half of the 3rd century A. D. when the dedication of stelae was discontinued by the Roman Emperors. Therefore, we would like to date it from the 2nd century A. D. to no later than the first half of the 3rd century, a span somewhat earlier than that which Bailey claimed[5], the 3rd～4th century.

A plural nozzle type lamp was found in Layer 4 in the vicinity of the Neo-Hellenistic lamp, a fact which would also date it from the same pre-frog type period (Fig. 146 no. 3).

FROG TYPE LAMPS : These include lamps which have an oval body without a loop handle and some which have a frog relief on the top. Those with the relief are thought to be older and thus bear responsibility for the name given to this type of lamp. In Akoris, none have an explicit the distinct relief pattern. Although the frog is described in the Bible as an animal bringing calamity, it was regarded as a symbol of rebirth and eternal life by the Copts. According to Egyptian mythology, the goddess Heket, represented in the form of a frog, assists in the fashioning of the child in the womb and presides over its birth in her capacity as midwife. Hence, it appears that the frog motif connected as it was with birth and rebirth, was probably revived by using it in connection with the Resurrection of Jesus Christ.

The frog type lamps unearthed in Akoris, that is lamps with an oval body, can be divided into four groups as follows : Group A has a regular circular body and a small discus (Fig. 146 no. 10. Pl. 86 no. 6), Group B an oval body on which a pattern between the discus and the wick hole is expressed in a shape similar to a nozzle (Fig. 147 nos. 1 and 4. Pls. 86 no. 7 and 87 no. 3), and Group C has an oval body which widened in the rear, and instead of the pattern connecting the discus and the wick hole, patterns such as a short horizontal line or a small boss are expressed there (Figs. 146 no. 9～11 and 147 nos. 2 and 3. Pl. 87 no. 1). Groups A～C have no handle, and both the 0.5～0.8cm in diameter filling hole, and the 0.6～0.9cm wick hole, are small compared to the fourth group, Group D (Fig. 148 nos. 1～6. Pl. 87 nos. 4～6).

The fourth group, D, contrasts in a striking way with Groups A～C in that a stub handle is found, the frontal part has lost its tip and the filling hole at 0.9～1.2cm in diameter and the wick hole at 1.0～1.4cm in diameter are enlarged. In addition, they have an elliptical discus, in which one example shows a human head. In common with Group C, they have a horizontal line or a rosette patterns between the discus and the wick hole.

We would now like to discus the period of these groups. In Akoris, Groups B, C and D were unearthed from the accumulated soil in Building 2 made of a 29cm type brick and built outside the North Gate. As the latest coin found in the soil belong to the end the 4th century A. D., the lamps are estimated to be included within that period of time. At the same time, a Group A lamp was found in disarranged soil in Building 9 and in a lower layer under the Sacred Road of Serapeum. In the layer where the latter one was found, a table amphora (Fig. 98 no. 7) belonging to the beginning of the 4th century A. D. was also unearthed. Lamps of Group C were unearthed with a bronze lamp from the depot (see p. 192) at the

northwest corner in the Hypostyle Hall, and all coins found there belong to the middle of the 4th century A.D. Layer 3 at the southeast corner in the Western Temple Area from which a lamp in the same group was unearthed was accumulated after a wall of a 29cm type brick was built. Furthermore, the lamp with a human head relief was found beneath a building west of the Middle Gate using brick of a 26cm type which in our order came after the 29cm type brick. Though it is certain that all groups are connected with the 29cm type brick in such a manner, we cannot determine the period of each group or make a chronological order stratigraphically at this point.

POST-FROG TYPE LAMPS : Many carinated oval type and elongated type lamps were unearthed in disturbed soil on paving stones in the Western Temple Area whereas few frog type lamps were found there. Lamps made after the frog type are divided into three sub-types, the above mentioned the carinated oval type (Fig. 149 nos. 1～3. Pl. 88 nos. 7 and 8) and the elongated type (Figs. 149 nos. 4～10, and 150 nos 1～14. Pls. 88 nos. 4～6, and 89 nos. 3～6), and in addition, a jug type.

Carinated oval type. This type of lamp has an enlarged body, a triangular tip, and a loop handle. This type can be divided into two groups according to color and pattern of the discus. Group A is a lamp having a concrete relief such as one or more saints, sheep or horses, and colored a brownish buff (Fig. 148 nos. 8 and 9. Pl. 88 nos. 7 and 8). Similar lamps have been found in the large religious center Abu Mena to the west of Alexandria, and in Faiyum. Comparing them, the former seems to be more decorative on the shoulder and has a shorter frontal line. If so, the lamps in Akoris are close to the latter. Group B has a red slip color and a radiating pattern (Fig. 149 no. 3). Bailey supposed that some similar lamps unearthed from Hermopolis (Ashmunein) and Karanis were made in Middle Egypt.[6)]

There is another type which we supposed was also made in Middle Egypt. It is a lamp with a shield, one of which found in Antinoë was unique with its high stand and white slip on reddish brown clay. The body of the lamp is similar to Group B not only in shape but also in its radiating pattern in the discus. Contrary to those lamps found at Akoris, however, this one is intact with shield, and the shield is the relief of a human face.[7)]

Although two circular shields unearthed in Akoris measuring *ca.* 5.5cm in diameter and *ca.* 1cm in thickness lack bodies (Fig. 151 nos. 6 and 7. Pl. 89 nos. 1 and 2), they are probably included to Group B judging from the lamp of Antinoë. On each of these is picture the figure of a saint, one of which is holding a long stick with a cross at the tip, similar to the saint pictured in the stamp of the amphora stopper (Fig. 154 no. 2) unearthed in Building 8.[8)] The saint on the other shield is a horse-mounted St. George, engaged in the extermination of a dragon. Rounded notching is found on the outer edges of the shields. On the lower half of the back of this shield and at the foot, there is a broken attachment presumed to be part of a handle, and part of the leg support from the upper surface of a lamp respectively.

In Akoris, the carinated oval lamps were found together with elongated and jug lamps in disturbed soil covering buildings made of 26cm and 24cm type bricks. Therefore, we cannot discuss the relationship between the carinated oval type and the other types stratigraphically. However, judging from the lamps of Abu Mena, Group A is probably from the 5th to 6th century A.D., and if that is correct, they are related to the 26cm type brick which is earlier than the 24cm type brick.

In disarranged soil to the east of Chapel A, a curious red slip lamp was found (Fig. 149 no. 1). This lamp has an oval body which is close to the frog type. On the top of the lamp, the four ribs extending to the four sides from the circular rim of the discus look like the legs of a frog which is facing the front tip of the lamp. What is curious about this lamp is its unusual composite handle with a spike-like top similar to a North African red slip lamp, and with a loop at the bottom. It is considered that this lamp belongs to the same period as the carinated oval type due to both its handle and to its corrupted frog shape.

Elongated type. The body of this type lamp lengthens toward the tip and has a loop handle. Though these lamps are all greyish-green or pale reddish-yellow in color and decorated with geometrical patterns such as circles, waves and feathers along the rim, they can be classified into three separate groups. Group A has a circular discus (Fig. 149 nos. 4～7. Pl. 88 nos. 4～6). One of those found at Akoris has, in addition, a relief of a horse between the discus and the wick hole and geometrical patterns around the discus itself. Group B has a discus rim which is not closed, and both sides of the rim curve as they taper toward the tip, creating a streamline shape (Fig. 150 nos. 1～3, and 5～14. Pl. 89 nos. 3～6). Group C also has an open discus rim, but it differs in that the extended rim ridges are in parallel (Fig. 150 no. 4). Group B is the largest in quantity among the groups found here. Group A due to its iconical reliefs, is supposed to be a little earlier than the other groups and so is considered transitional.

Jug type (Fig. 151 nos. 1～4. Pl. 89 nos. 7 and 8). Two jug lamps were unearthed from disturbed soil in the Western Temple Area. One of the jug lamps cannot be classified as such in the strict sense. The lamp, descended from the frog type, has a circular body and a raised box-like platform from the discus rim to and around the wick hole (Fig. 151 no. 2). The high, circular discus rim of this lamp is not seen in the lamps before the jug type. Furthermore, a large filling hole such as this lamp possesses is seen neither in the frog type nor in the carinated oval type lamps. Making great account of these factors, we call it jug type Group A for convenience.

Another lamp, which we call Group B, has a squat, conical body in vertical section with a high, flaring discus rim (Fig. 151 no. 3). The filling hole is small, and its handle is a wide band type. Many similar lamps were found in Upper Egypt, especially Edfu. According to the complete lamps of this type which were found in the other sites, they have a cylindrical, angled nozzle, however, in the case of Akoris the nozzle is missing and so its design remains a mystery. The lamp unearthed from Wadi Sarga is dated 550～650 A.D., and this is not so far from our own dating of this type lamp.[9)]

Group C lamp was taken outside of the Western Temple Area. It is a typical jug type with a squat body and a high flared rim and resembles a boot (Fig. 151 no. 1. Pl. 89 no. 7). Part of the handle was broken off. This type of lamp has a tapered nozzle different from the lamp of Group B. Both the triangular wick hole and the filling hole are large. In general, it is considered that the jug lamp was made on a potter's wheel, however, impressed on the inside of this lamp is the trace of a circular form, so that a moulding technique was probably used in the process of throwing. The shape of Group C was continued long into the Islamic Period.

A glazed jug lamp found in the disarrenged soil in the Chapel B shaft also evolved from Group C. It is assumed to date from the end of the Fatimid Period long after the abandonment of Akoris, and perhaps was left there by looters[10)] (Fig. 151 no. 4. Pl. 89 no. 8).

Notes

1) HAYES, J. W., *Ancient Lamps in the Royal Ontario Museum* (Toronto, 1980), pp. 26-29.
2) *ibid.*, pp. 23-25.
3) BAILEY, D. M., *A Catalogue of the Lamps in the British Museum* (London, 1988), pp. 226-227.
4) *ibid.*, Q 2098.
5) *ibid.*, p. 226.
6) *ibid.*, Q 2247.
7) *ibid.*, Q 2244. A Shield (Q 2245) found at Behnesa (Oxyrhynchus) is also in the shape of a human face.
8) A shield having a strong resemblance to this is possessed by the Royal Ontario Museum. However, its source is unknown. HAYES, *op. cit.*, (No. 543).
9) BAILEY, *op. cit.*, (Q 22749).
10) KAWADOKO, M., *Oil Lamps from al-Fustat* (*Orient* vol. 23, Tokyo, 1987).

(TSUJIMURA, S.)

4 CHRONOLOGY OF GLASS VESSELS

In Chapter III various forms of Roman glass vessels found in Akoris were described. As none of the artifacts were found *in situ* and the accumulated soil where they were excavated had been disarranged, their dates were decided according to the formal analogy of Karanis and other sites. The chronological order thus established is shown in the following figure (Fig. 167).

(CHIKIRA, A.)

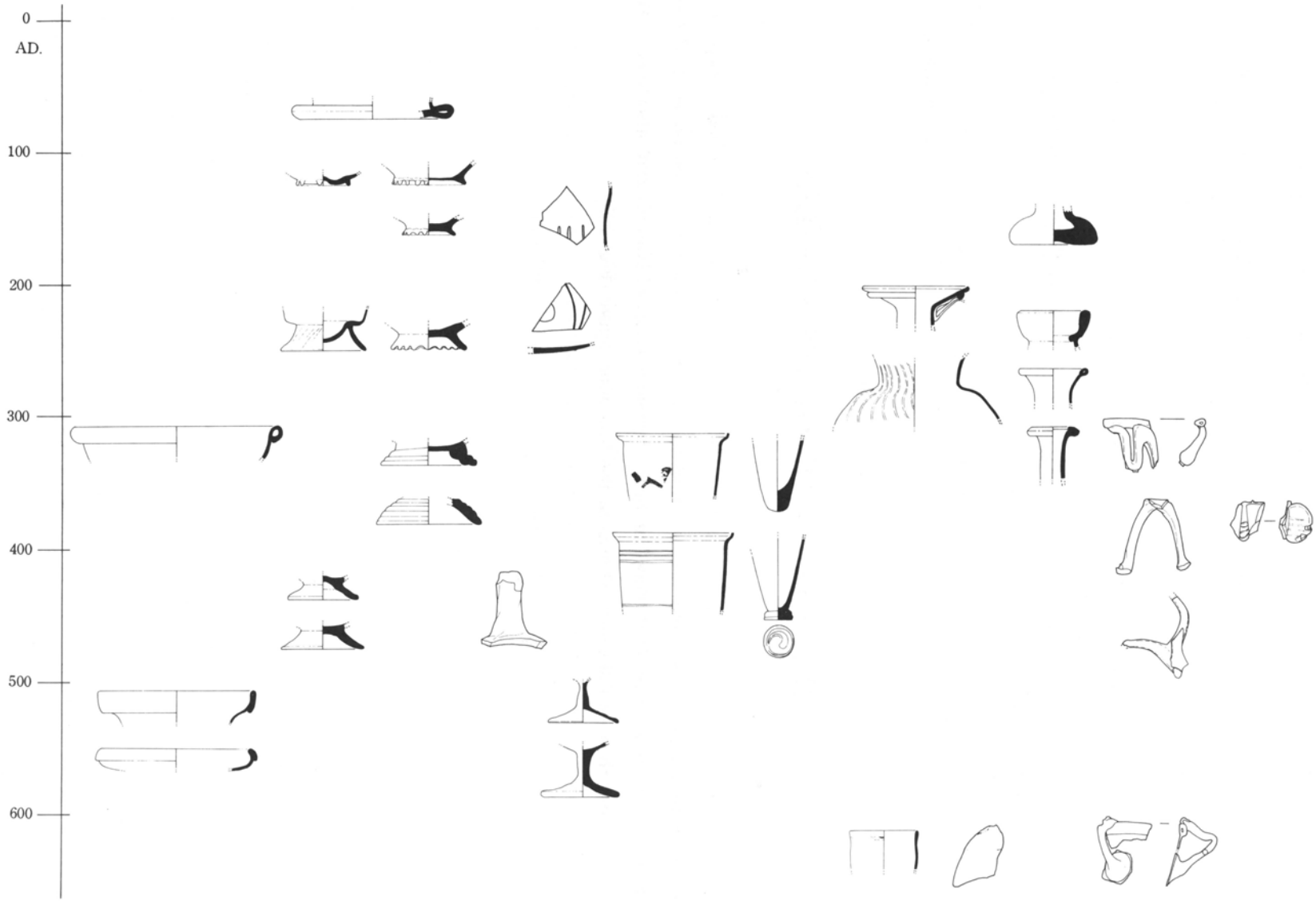


Fig. 167 Chronology of glass vessels

5 SOME OBSERVATIONS ON MASONRY CHISEL MARKS

Chisel marks left on limestone blocks and rock-cut structures in the site can be differentiated into four types A～D on a rough scale, hereafter referred to as Marks A～D respectively.

Mark A, has a continuous concave groove approximately 2cm in width, made with a chopping stroke (Fig. 169 nos. 1～3). Mark B is made with a long, rough stroke, which forms a V-shaped mark of irregular width (Fig. 169 nos. 4 and 5). Therefore, Mark B indicates that a pointed chisel or the corner of a flat one of unknown width was used as a tool. Mark C is made with intermittent, short chopping strokes which form rectangular marks (Fig. 169 nos. 6 and 7). The width is a narrow 0.5～1.0cm.

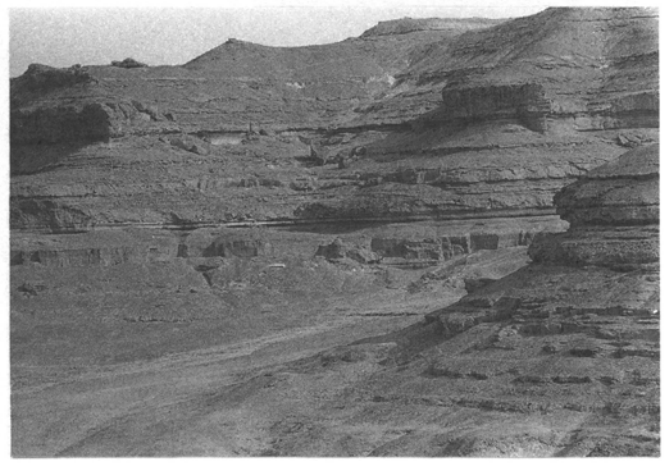


Fig. 168 Quarry near the site

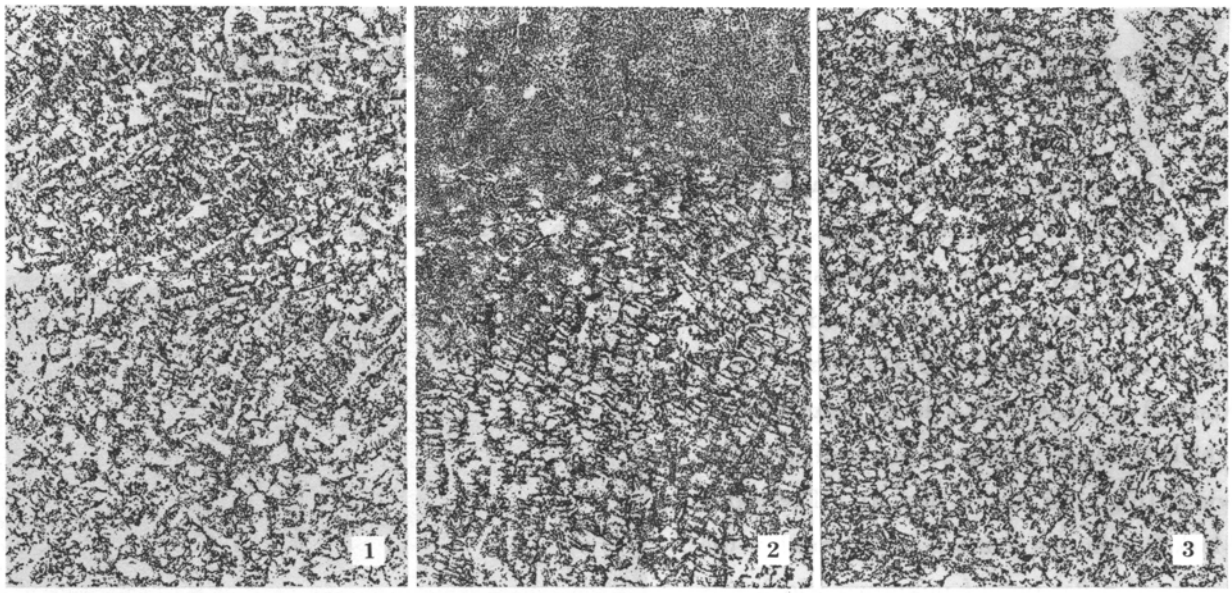
Chisel mark D is serrate, which suggests a chisel with a serrated edge (Fig. 169 nos. 8～11). The width and stroke length are diverse. Flinder Petrie regarded it as the mark of Greco-Roman masonry in Egypt.[1)]

Exemplifying the datable evidence as for each mark, the rock-cut shaft in Chapel B retains identifiable Mark A on all faces, i.e. the walls of the shaft and both funerary rooms, including the limestone blocks for each entrance. Without doubt this shaft goes back to the Middle Kingdom according to the funerary artifacts found within. As the tomb of Mentuhetep and the pyramid of Senwosret at Lisht[2)] have the same type of chisel mark. It is known that Mark A belongs to the Middle Kingdom. Of excavated masonry tools in Egypt, a flat copper chisel would probably have been employed and the fine chopping strokes suggest the usage of a wooden mallet.

The second room shaft of Chapel D, which is said to date to the Third Intermediate Period, bears Mark B. As the stroke is long, rough and forceful, it suggests that the metal serving as the chisel was harder than that of Mark A, i.e. bronze or iron.

In the case of the shaft tomb in Chapel C, Marks A and B were both detected. Mark A is on the shaft and the south subterranean chamber walls, and Mark B is on those of the two north subterranean chambers in which a large quantity of funeral statuettes were unearthed by Abou Seif. These statuettes dated to the Third Intermediate Period according to Gauthier's deciphering of the inscriptions on them, thus showing that the tomb of the Middle Kingdom was remodelled in the Third Intermediate Period.

Mark D is left on the walls of Chapel F, stone blocks forming the Western and Central Temples, etc. In these examples, two types can be descriminated, i.e. one is long and continuous, while the other is short and intermittent. Though it is unknown if this difference results from the tool or the treatment, the



1 : East wall, south chamber, Chapel B shaft (Mark A)
2 : West wall, south chamber, Chapel C shaft (Mark A)
3 : East wall, south chamber, Chapel E shaft (Mark A)
4 : East wall, Chapel D second room shaft (Mark B)
5 : West wall, north chamber, Chapel C shaft (Mark B)
6 : North wall, east entrance, Chapel A (Mark C)
7 : East wall, second room, Chapel B (Mark C)
8 : North wall, interior, Chapel F (Mark D)
9 : East wall, North Chapel (Mark D)
10 : Column, Chapel B (Mark D)
11 : Paving stone, Western Temple (Mark D)
12 : Relief, Ramses Ⅲ

Fig. 169 Chisel marks

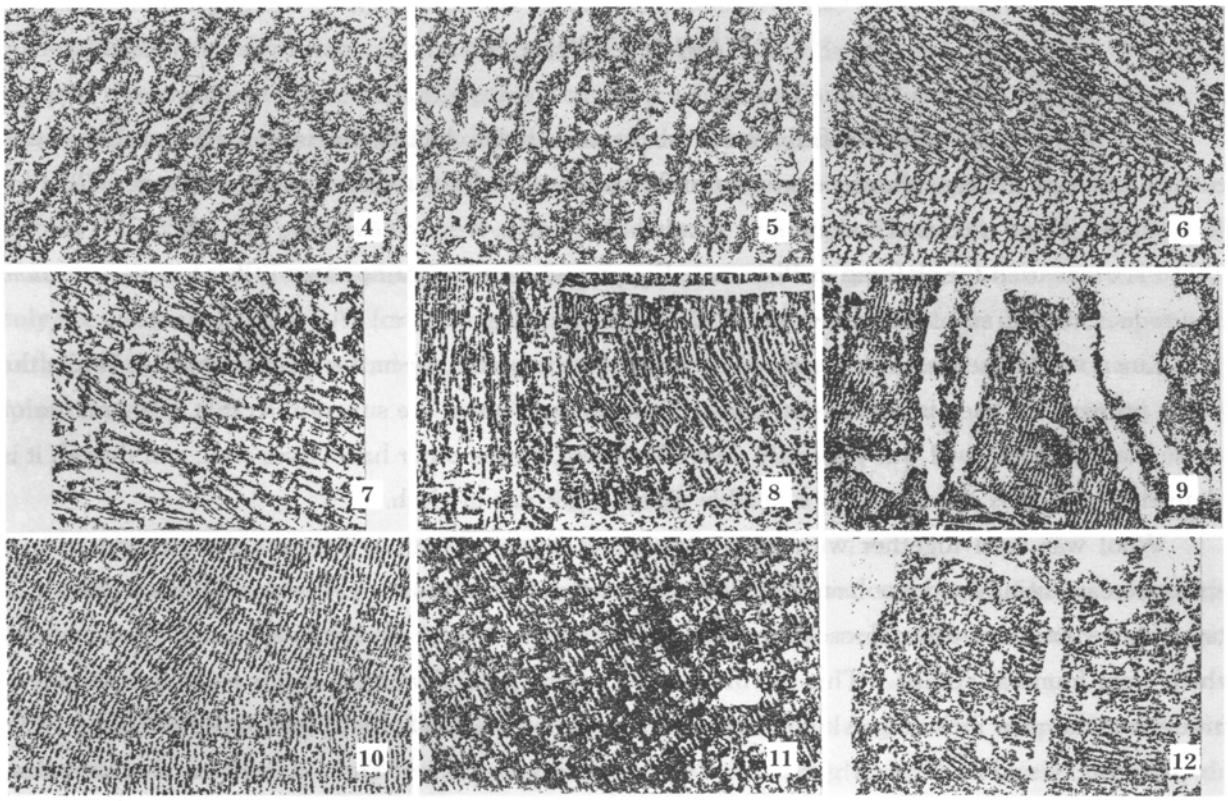
long stroke type seems to have been employed from an earlier date than the short type, judging from the fact that the two Ptolemaic rock cut chapels, that is the North Chapel and Chapel F, contain similar long stroke marks.

The Greco-Roman masonry structures in the site bear Mark D, as do the cartouche of Ramses Ⅲ inscribed on the west cliff (Fig. 169 no. 12) and the limestone blocks in the tomb of the 26th Dynasty in Oxyrhynchus. Even if Petrie's opinion mentioned above is correct, the problem of the origin of the tool seems to be unsolved, because due to the above evidence, it is quite possible that the origin is in Egypt rather than in Greek.

Mark C is discerned on the east entrance of Chapel A and the inner room of Chapel B. In comparison with the other marks, the instances are scarce and clues as to date are not gained in the site. The chopping mark is so sharp and deep that this chisel with narrow edge is supposed to have been made of hard metal, probably bronze or iron. There is testimony that various chisels in type and material were used from the New Kingdom through the Late Dynastic Period, and some instances indicate that the same type of mark is left on the Late Dynastic Period tombs in other sites. Mark C would belong to the Late Dynastic Period.

Notes

1) Petrie, W. M. F., *Tools and Weapons* (London, 1917), p. 42.
2) Arnold, D., *Building in Egypt* (New York, 1991), p. 43.



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(KAWANISHI, H.)

6 TECHNOLOGICAL STUDY CONCERNING TEXTILES

More than 350 samples of textile were uncovered in Akoris. In addition to the 52 of these samples which were contributed to our organization through the courtesy of the Egyptian government, some 210 other samples, temporarily kept in our local storage house, were analyzed. More than 50 additional samples preserved in the Egyptian Museum were to be made available for our study, however, due to time limitations, we abandoned the idea of direct inspection and instead confined our data to what could be gleaned from photographs. As this data is massive, typical samples were selected for pictures and drawings contained in this report, and this data is shown on pp. 246～257. Based on this, we offer this report concerning the technology of weaving used in Akoris.

RAW MATERIALS

Five fibers types were identified among the pieces found in Akoris, that is, flax, hemp, wool, cotton and silk, however, most of the pieces consist of flax and wool. Flax, wool, cotton and silk were used for cloth, while, hemp was used for mummy bands.

Flax was used for clothing in Pharaonic Egypt, and as its scientific name is *Linen usitatissimum*, the product, thread and textile, is referred to as linen.

Linen was indeed an ideal material because of its superior sheen, feel and coolness. While the dyeing property of linen is poor, its strength, whiteness and luster are superior, so that it is a matter of course that the linen used was generally undyed. Wool, on the other hand, dyes well, and though it is relatively weak, it is elastic and is a flexible material for use in cloth.

Wool was used together with linen throughout Egypt. Various patterns were produced in a tapestry weave using dyed wool, on an undyed plain weave linen ground. Woolen weft is very weak, as stated above, and was woven loosely, so had, in some cases, disappeared from the samples of material which were found at Akoris. This use of wool on a linen ground was the major technique employed throughout the area including Akoris, however, the use of other materials was not uncommon.

Cotton is said to have originated in India and spread to the West. However, the naturalist-historian, Pliny, wrote in the 1st century A.D. that Egyptian priests wore vestments of a kind of cotton from the *gossypium* plant which grew in the area of Egypt nearest Arabia,[1] and many examples of such cotton cloth from the late Nubian Period have been excavated.[2] The cotton recovered in Akoris is awaiting chemical analysis for determination of its origin.

In Asia Minor, silk fabric had already appeared by the first millenium B.C., with the products from Amorgos being especially famous in the east Mediterranean area. However, as the silk was obtained from wild silkworms, the thread was impure and did not dye well, thus the purer Chinese silk imported from around the first century B.C. on was highly prized. As for Egypt, it is said that silk was introduced in Coptic cloth in the fifth century A.D. and was widely disseminated by the 7th century. And yet, all of the silk thread and fabric used in Egypt in this period seems to have been transported from the Byzantine Empire and the area around present-day Syria, and not China.[3]

As in the case of the cotton found in Akoris, the origin of the silk used there is awaiting the results of chemical analysis.

THREAD

There are many types of fibers used in weaving. Among these, those found on Akoris include the vegetable fibers, linen and cotton, and the animal fibers, wool and silk. These, with the exception of silk which is a filament fiber, are staple fibers which are spun and twisted.



Fig. 170 Types of twist

Spinning is done in two directions, the S-spin, twisted clockwise when seen from the head, and the Z-spin twisted counterclockwise (Fig. 170). It is said that

the twist in all Egyptian spinning is in the S direction, doubtless due to the fact that linen, the basic material used, naturally rotates in that direction upon drying.[4] The S-spin used in other yarns found in Egypt is thus deemed to have naturally come from their accustomed use of linen. When woolen thread was found in a Z-spin, it is thought to have imitated the better quality Chinese silk.

The threads used at Akoris are all S-spun, except those in one cotton (Figs. 178 and 180) and one woolen (Pl. 105 no. 72) piece which are Z-spun. While in the cotton piece, which is a plain weave, both of the warps and wefts are Z-spun, in the woolen piece, we see a weft-faced compound weave, whereby only the wefts are Z-spun. As for sewing threads, all are Z-spun ply with the single threads, S-spun akin to threads used in wearing. And yet, one piece of cotton thread has been found which is of a single Z-spin.

TEXTURE

The three basic types of weave include plain (Fig. 171), twill and satin. At Akoris most of the fabrics found were a plain weave until the Coptic Period when the twill weave was also employed.

SIMPLE PLAIN WEAVE (TABBY): A plain weave is the simplest form of warp and weft with variations in appearance created by the tightness of the weave. Patterns on the cloth are created by the use of a variation of colored thread in both warp and weft.

Balanced plain weave. This weave requires an equal density of thread used in both the warp and weft and is in the predominant weave found at Akoris.

Weft-faced plain weave. This weave is created by a high density weft which completely submerges the warp.

Wool and other animal hair is very short, has rough scalelike fibers which when rubbed tend to shed, so they are not well-suited for warp. In order to counter this, the warp is reduced in relation to the weft so as to prevent its weakening and mistakes during the weaving process. The result is that the warp is completely hidden by the weft.

Pl. 107 no. 91 shows an example where the warp is green and the weft is red. As can be seen, the warp is not visible, however, these two colors, contrasting as they do, give the finished surface color a deepened effect.

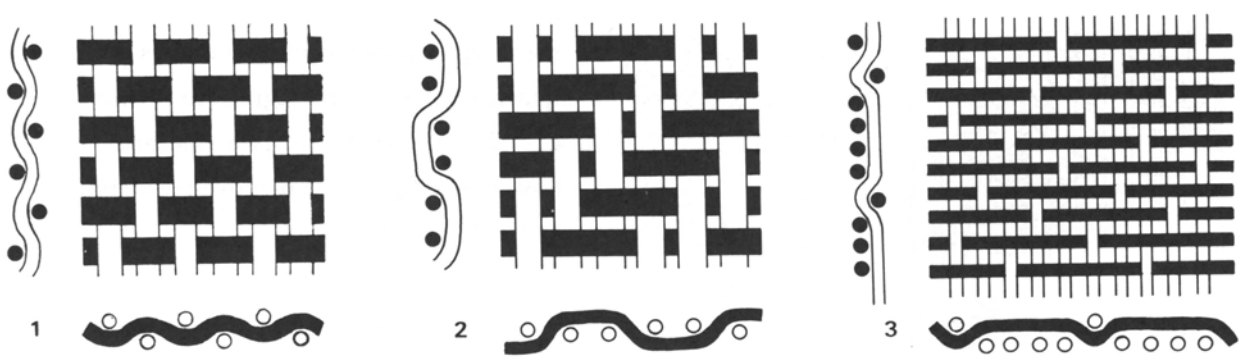


Fig. 171 Three basic types of weave (1: Plain weave, 2: Twill weave, 3: Satin weave)

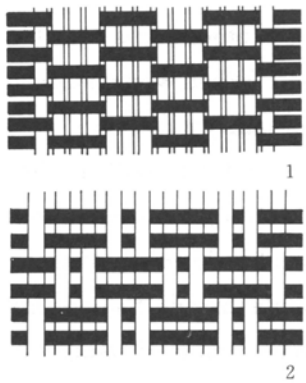


Fig. 172 Derivative plain weave (1 : Weft rib weave, 2 : Mat weave)

Warp-faced plain weave. Another type of plain weave is called the warp-faced plain weave. In this weave, the weft is decreased in number in relation to the warp. Four pieces have so far been found at Akoris.

Derivative plain weave. Most of the remnants found at Akoris have been a plain weave, however, derivative forms which enhance the texture have also been uncovered. These include a weft-rib weave (Fig. 172 no. 1) which employs two or more warps and one weft, and a mat or basket weave (Fig. 172 no. 2. Pls. 108 nos. 101, and 111 no. 30) which employs two or more threads in both weft and warp. The former weave emphasizes the waves of the warp while the latter creates a rough texture.

TAPESTRY WEAVE: The typical tapestry weave is a complicated process of reversing the weft at the point where a different color is to be employed on the same line thus rendering a weft of disconnected threads. The result is a weft-faced plain weave of various colors. At the point where there is a color change, this technique as explained above results in a slit due to the discontinuous or broken weft, referred to as hatsuri in Japanese. As the very nature of the slit results in a horizontal weakness, it must be limited in length.

In another type of tapestry weave, the boundary between two colors utilizes one warp. The weft of one color reverses direction on that warp in groups of two or three followed by a similar group of the different color from the other direction, thus anchoring the warp relatively securely. This is the least complicated of the various methods known (Fig. 173 no. 1). It is seen in one fragment found at Akoris.

Another fragment found at the Akoris dig is similar, but the wefts at the border warp are pinched together very tightly so as to resemble the teeth of a saw. This is known as dovetailing (Fig. 173 no. 2).

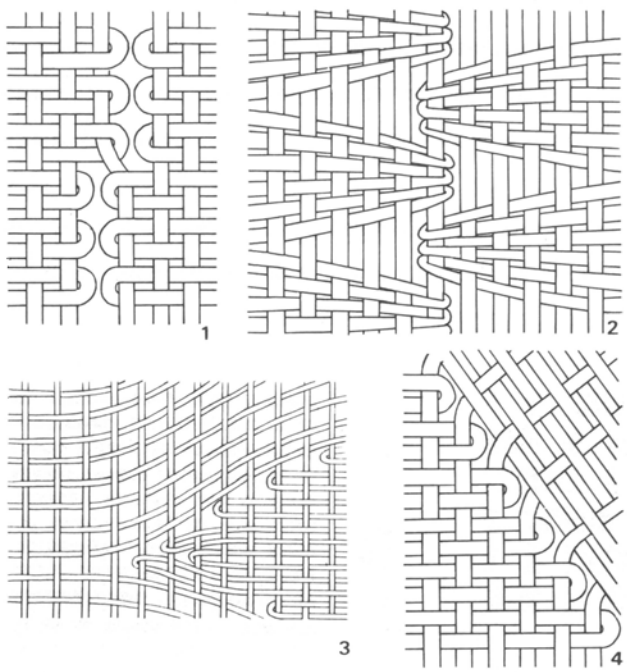


Fig. 173 Tapestry techniques (1 : Slit 2 : Dovetail 3 : Bending weft tapestry weave 4 : Bending warp and weft tapestry weave)

In a usual weave, the warp and weft are perpendicular, however, at Akoris, tapestry remnants with a different angle were found. In these remnants, the weft seems to flow around areas of different color in a complicated pattern (Fig. 173 no. 3). In several remnants, the warp is pulled at various angles by the weft which remains at 90 degrees to it (Fig. 173 no. 4). By using these two methods, leaves, flowers and figures were woven (Pls. 102 no. 46, and 103 no. 50).

These various technique of tapestry weave are found in the area around Syria,[5] and also in the South American Andes where there was a broader range of techniques and much

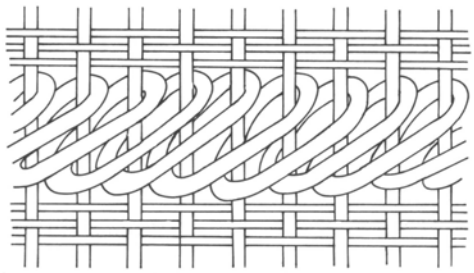
more refinement[6]. The lack of refinement found at Akoris is most noticeable when one views the backside of the material. Here, in contrast to the work so far found in the other areas where both front and back were of equal refinement, the thread used in the tapestry weave applied over a plain weave is exposed on the backside (Pl. 104 no. 61), thus destroying the pattern there.

SOUMAK (WEFT-WRAP WEAVE) : In the common soumak, the weft either wraps or turns around one or more warps. A special feature of soumak is that textures present different appearances on the upper and under sides. Though the weaving can, in most cases, proceed from either the left or right direction, in this report it is described from the former.

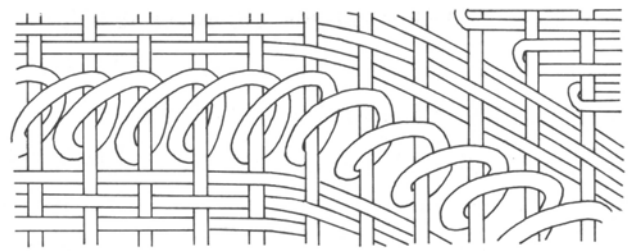
Fig. 174 (Pl. 110 no. 2) is an example of a double soumak. A weft crosses over three warps diagonally, turns around the head warp in a counterclockwise direction, and goes back under the next warp. It then turns around and crosses over the top of three warps to repeat the 3 forward 2 back process. The weft thus turns around each warp two times.

Another instance, shown in Fig. 175 (Pl. 110 no. 1), indicates a different technique. A weft crosses over two warps diagonally and wraps around the last warp to repeat the process in a 2-1 clockwise movement.

In the instance shown in Fig. 176 (Pl. 110 no. 2), while plain weaving proceeds on the ground cloth, longitudinal strands wrap the warps and wefts regularly. Tracing the strand disposition, we see it moves in a clockwise direction in which it crosses over two warps and two wefts makes a complete turn under the latter warp, crosses two wefts, then makes another complete turn under the warp. It then



Figs. 174 Horizontal soumak



Figs. 175 Horizontal soumak

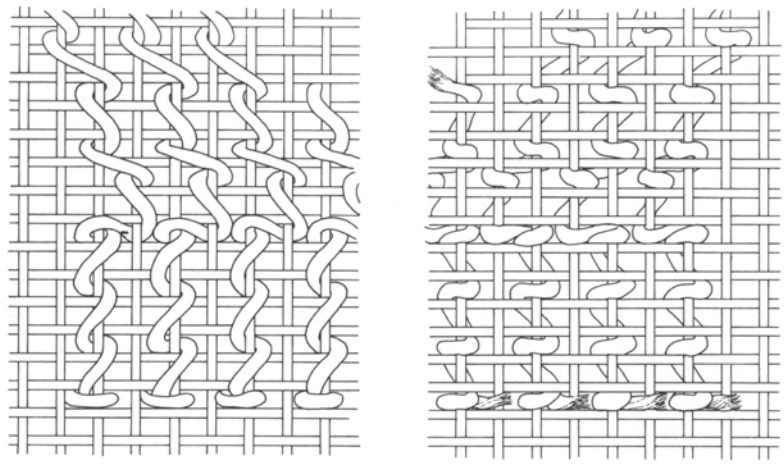


Fig. 176 Longitudinal soumak

crosses a single weft before making a complete turn under the next warp on the right. After crossing two more wefts, it turns under the same warp and crosses back over the warp on the left and it begins a counterclockwise movement going under the warp before crossing over it and two wefts. It then makes a complete turn under the warp, then repeats the movement around two more sets of two wefts each. The strand ends by crossing over the warp and being tucked in horizontally to the left. The clockwise, counterclockwise moves vary the effect of the design.

Soumak found in Akoris is often curved (Fig. 175) and used for emphasizing the tapestry outlines and filling up the slits, or is inlaid as a pattern (Pl. 110 no. 1).

Exs. : Pl. 97 nos. 1, 3 and 5. Pl. 98 nos. 10, 11 (Pl. 110 no. 2), 13, 14 (Pl. 110 no. 3) and 15. Pl. 99 nos. 17, 18, 21, 23 and 24. Pl. 100 nos. 26 (Pl. 110 no. 4) and 33. Pl. 102 nos. 43～45 and 47. Pl. 103 nos. 48, 57 and 58 (Pl. 110 no. 15).

TWINING (WEFT-TWINED WEAVE) : It is common in this technique for paired wefts to intertwine at an interval of warps, one weft going under the warp and the other over to achieve the affect of braiding. There are, however, various other technique.

In the instance found in Akoris (Fig. 177. Pl. 111 no. 25), three wefts are used in a set. Each of them continues over and under the warps in a 4 over 2 under sequence. The sequence of each thread is staggered so as to begin two warps after the previous one. The first and second wefts intertwine at the point where the first begins its two under movement and the second its four over movement. The second and third intertwine at the same point of their journey, so that two wefts intertwine at every other interval between warps.

Exs. : Pl. 103 no. 50 (Pls. 110 no. 11 and VI no. 5). Pl. 104 no. 60. Pl. 107 no. 91. Pl. 109 no. 112 (Pl. 111 no. 28). Pl. 111 no. 25.

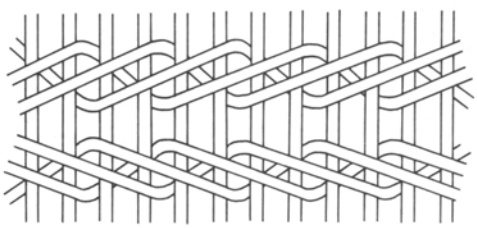


Fig. 177 Twisting in a 4 over 2 under sequence

PILE WEAVE : Though pile weave is generally classified into two groups according to the threads forming the pile, warps or wefts, the warp pile weave is not existent in Coptic textile.

Loop weave. This is usually a plain weave with some of

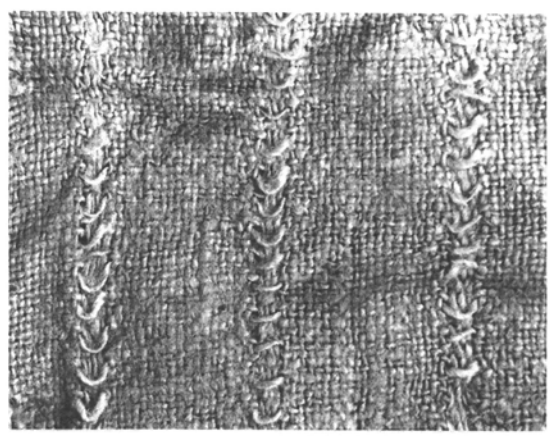


Fig. 178 Loop pile

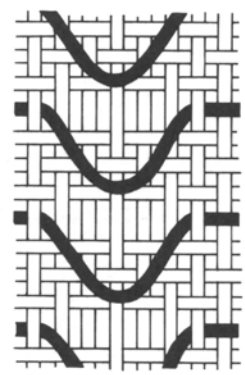


Fig. 179 Loop pile

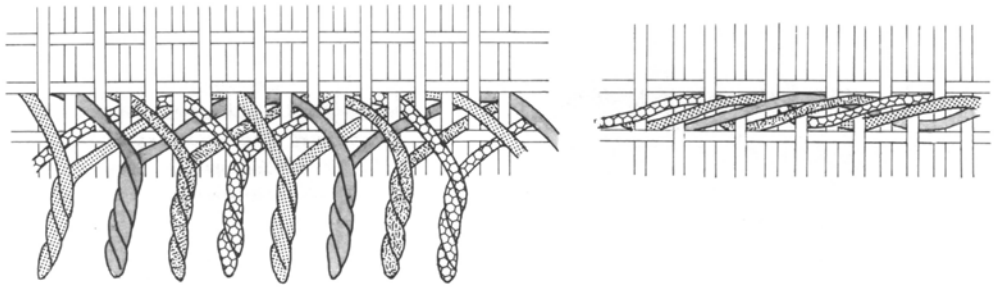


Fig. 180 Loop pile

the wefts pulled out at intervals to make loops which are left uncut. In Figs. 178 and 179, every fourth weft in a plain weave is loosened as it skips over five warps. This striped piling appears at a interval of twenty warps.

In the case of Fig. 180 (Pl. 105 no. 69) ,the wefts are in a 4 under 4 over sequence. As the weft crosses over the four warps, it is pulled so as to make a loop which then naturally twists.

Knotted pile. Looped wefts are twined or coiled around warps, and then each loop is cut.

Figs. 181 and 182 is sehna or Persian knotting found at Akoris. Every twenty wefts, paired wefts cross over six warps and then are pulled down to the left, under two warps. They make a loop and return back under the warps to their original position to repeat. Each loop is cut. Though the ground in this example is a plain weaving, a 2 under 2 over sequence in the weft appears every eighteen warps to create a striped pattern.

This knotted pile cloth is sewn on the back of the loop-pile weaving mentioned above (Figs. 178 and 179) in such a way as to make front and back faces. This example was used as the back face.

In Fig. 183 (Fig. 105 no. 70. Pl. 110 no. 16), paired wefts cross under the first paired warps of the weft-faced plain weave and over the second and under the third to reach the fourth pair. After turning around over and under this pair, they return to the third, turn around over and under it and then repeat the whole process. The paired wefts which wrap the first paired warps on the extreme right in the sequence are loosened and then at the end of the weaving process, cut. Therefore the cutting takes place at every other warp. This technique is derived from the soumak.

The instance shown in Fig. 184 (Pl. 105 no. 70) is also a derivative of soumak. The two wefts cross under and over a pair of warps and are then drawn up between themselves thus forming a tight knot.

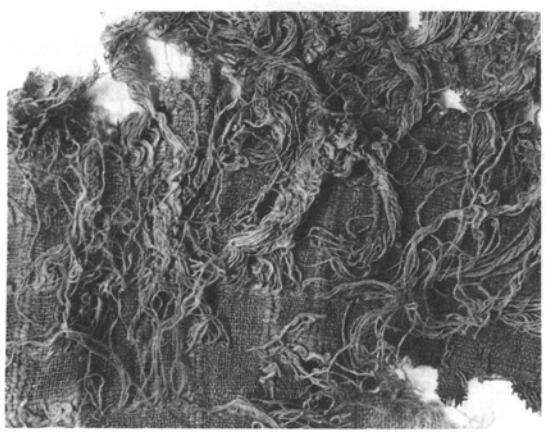


Fig. 181 Knotted pile (sehna)

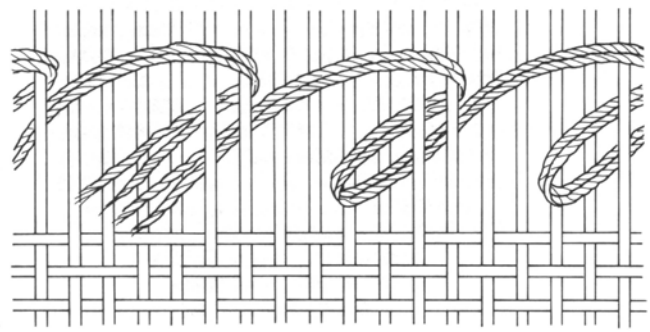


Fig. 182 Knotted pile (sehna)

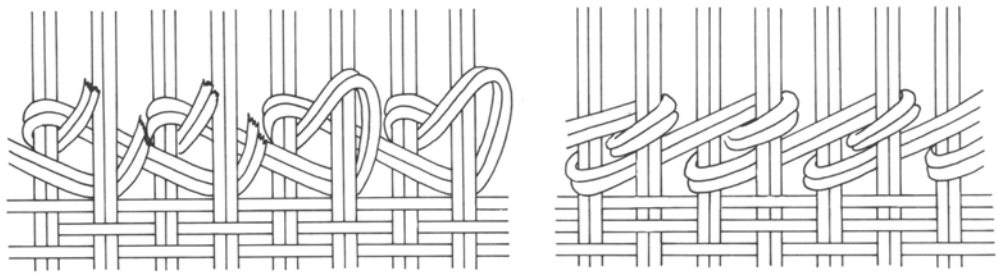


Fig. 183 Knotted pile

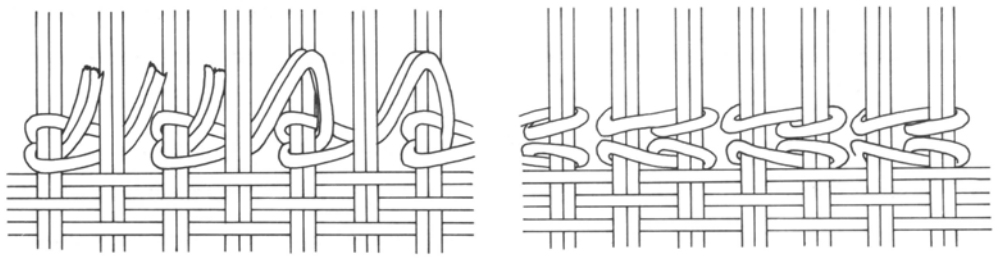


Fig. 184 Knotted pile

The paired wefts then cross under the next paired warps leaving a loop on the surface. The loops are cut upon completion of the weaving.

In one view it is deemed that each weft is handled independently and then the two are paired and cut. However, as the paired wefts in this cloth adhere closely, the paired weft process would seem to have been the method chosen in this example. That being the case, the work would proceed from right to left.

According to Burnham, the latter two, Figs. 183 and 184, are included in the sehna knot group.[7)]

BROCADE: In general, the brocade is formed by warps, wefts and patterning threads and is treated as one kind of the plain weave.

All Coptic brocade is related to the weave used in Chinese and Persian silk brocade. Silk is a long, strong, smooth and very thin filament which is well suited for warp. It is thus natural that due to the culture of silk worms Chinese developed weaving techniques that emphasize warps. Wool on the other

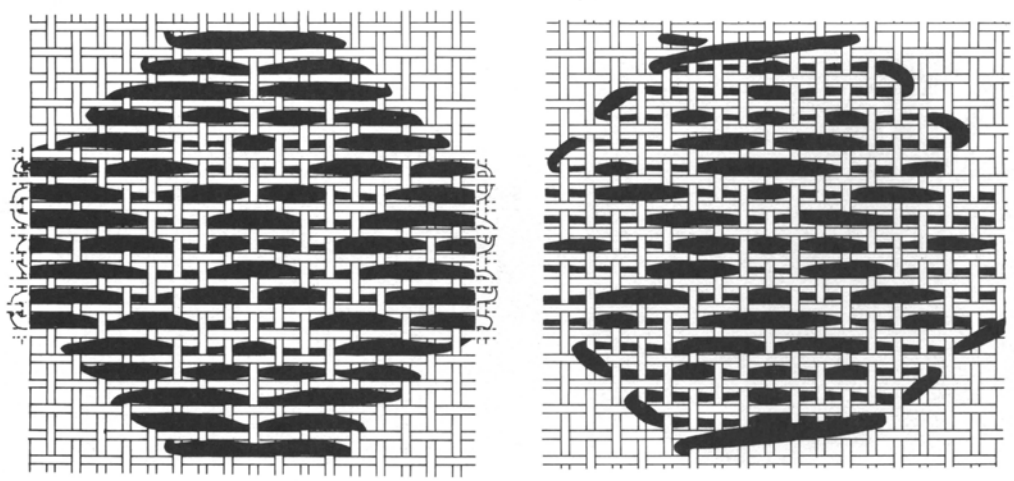


Fig. 185 Swivel weave

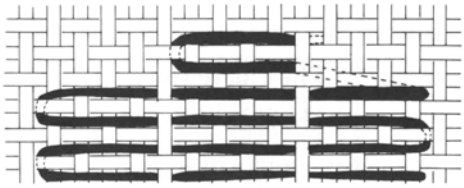


Fig. 186 Swivel weave

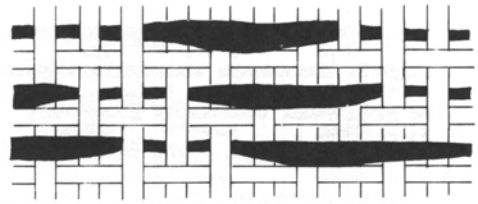


Fig. 187 Float weave

hand is a short staple fiber not suitable for warps and so textures produced in China by the warp had to be made by the weft in the Middle East. Thus, this difference in weaving was born from the difference in the threads available.[8)]

Swivel weave. The swivel weave found at Akoris (Pl. 106 no. 79) uses a wool thread for the ground which is woven in a plain weave, and during the process, a design created by a linen weft is added. This patterning weft crosses over three or more ground warps and then under one to repeat. When the weft reaches the fixed end of one motif, it is brought back behind one warp and one weft to begin the next return weft in that motif (Fig. 185).

In another example, shown in Fig. 186 (Pl. 105 no. 67), patterning wefts are left unbound and do not make loops. The weft crosses over one to seven warps and then under one to five depending on the part of the pattern involved. When the weft reaches the end of the motif, it is brought back behind a ground weft to begin the next weft in that motif. These patterns are sometimes described as loop weave, but should be categorized as swivel weave. Such a mistake is probably made as patterning wefts completely cover the surface.

The former imitated silk brocade while the latter was derived from the pile weave.

Exs.: Pl. 104 no. 64. Pl. 105 nos. 67, 68, 73, 75 (Pl. 111 no. 18) and 76. Pl. 106 nos. 77 (Pl. VI no. 8) ~79 (Pl. 111 no. 17), 82 and 84.

Float weave. The float weave is one where plural wefts that make patterns extend unbound over several warp units on either face of the fabric. The ground is a plain weave. The difference from the swivel weave is that each weft makes only a line from selvage to selvage (see p. 286) and most of the floating is seen on the back surface of the textile.

In the example of Fig. 187 (Pl. 106 no. 80)found in Akoris, the ground is a plain weave of wool where the warp is a twisted ($z<^{S}_{S}$) thread and the weft is of two threads, each S-twisted thus producing the impression of a twill weave. The float patterns are created with two lines of woolen weft thicker than weft of the ground and the patterning weft runs from selvage to selvage.

Exs.: Pl. 105 no. 74. Pl. 106 nos. 80, 81, 83 and 85.

Weft-faced compound weave. In the case of Fig. 188 (Pl. 105 no. 72), one kind of warp in two movements and two different kinds of wefts moving in opposite ways form a plain weave. Though, in the actual sample from Akoris, of the wefts only the three thread floats are visible. The warps are covered by the wefts, but in fact there are two kinds, (a) are main warps and (b) binding warps. Thus, this sample seems to be a weft-faced compound plain weave. As the ground wefts assume either a greenish or a beigish color and the patterning wefts beige, the wefts are indistinguishable, and in addition, the remnant available is very small, so what the pattern shows is undetermined.

Double weave. As for Fig. 189 (Pl. 105 no. 71), the ground wefts bind the warp in a 1 over 1 under

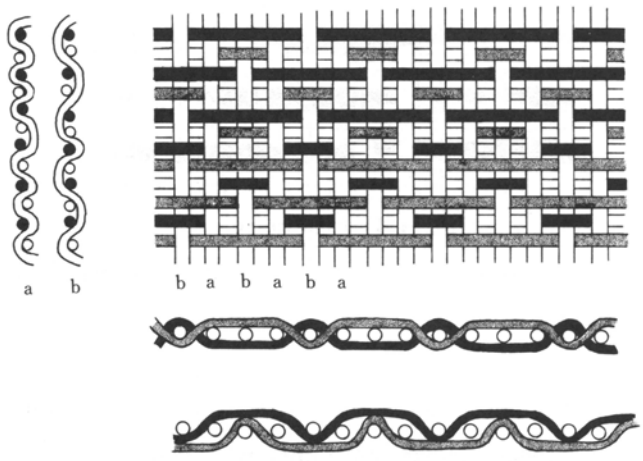


Fig. 188 Weft-faced compound weave

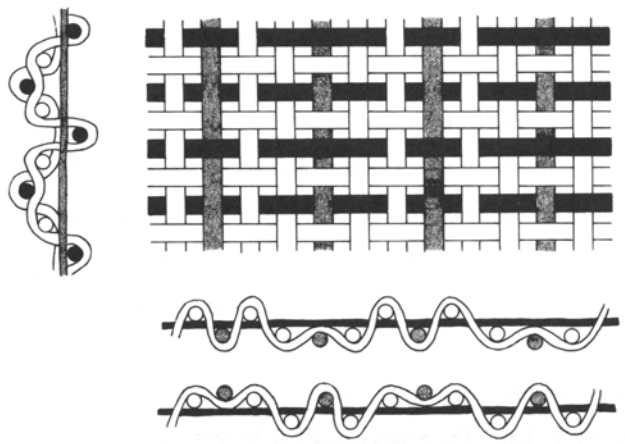


Fig. 189 Double weave

sequence, but the sequence is not alternated, thus the warp are always either over or under them. The patterning wefts, on the contrary, show in a 3-1-1-1 sequence. As the wefts, unlike the warps, alternate, they form strong ribs equally on both sides of the cloth. The warps are as stated of two kinds : a plain weave and a patterning warp in a 3-1 sequence. All the threads, warp and weft, are of the same color and material.

SELVAGE AND EDGE :

Selvage. Observing the treatment of the wide vertical edges or selvage found in Akoris, where wefts turn back, several methods are differentiated in the textile found, and they can be divided into three types from the viewpoint of technique (Figs. 190 and 191).

Type 1 is characterized by a plain texture (Fig. 192. Pl. 105 no. 71). The wefts, passing through the warps alternatively to form a plain weave, reach the selvage part, turn around the last warp and then run back in the opposite direction.

Type 2 is that where the selvage is reinforced with plural warps (Figs. 193 and 194). As wefts forming a plain weave approach the selvage, they pass over and under plural warps serially several times. The number of the passed warps among the examples found at Akoris vary, including 2-2 (Fig. 193), 3-8-5 (Fig. 194) and 6-8-8 sequences from the inside.

Type 3 is that where an independent strand is used in the selvage for reinforcement. While wefts pass over and under plural warps three times in the same manner as in Type 2, and the independent strand is passed through the selvage warps in the same sequence (Fig. 195. Pl. 112 no. 34). As for another instance (Fig. 196. Pl. 112 no. 32), two cords and a strand are availed in the selvage part to attain more stoutness. The wefts pass over and under the two cords and turn around the outer cord akin to Type 1. And a strand goes under and around the outer cord then turns around under the inner one so as to bind the two together. The turning is done between two adjoining wefts, but after turning around the inner cord, the strand crosses over three wefts to begin the next wrapping.

Exs. : Pl. 97 nos. 3～8. Pl. 98 no. 9. Pl. 102 no. 40. Pl. 103 no. 53. Pl. 105 no. 75 (Pl. 111 no. 18). Pl. 109 nos. 110 and 112 (Pl. 111 no. 28), 114 and 116. Pl. 112 nos. 32～34.

Edge. There can be found five types of edges.

In the case of Type 1, the warp of equal length is formed of a continuous thread (Fig. 197). Thus

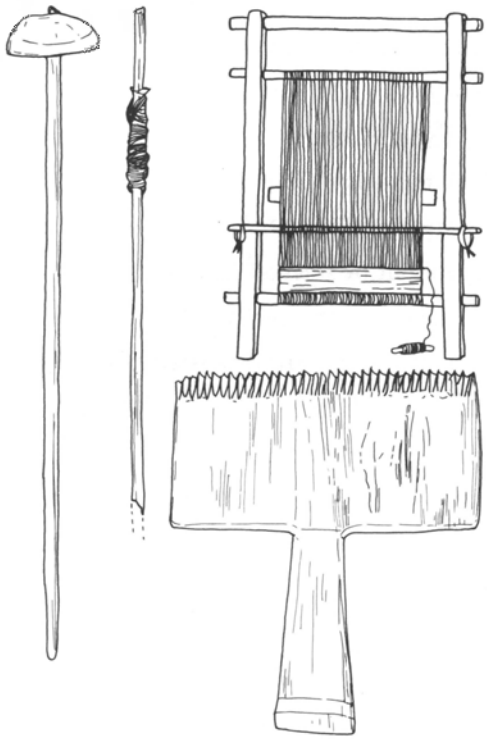


Fig. 190 Loom and weaving tools

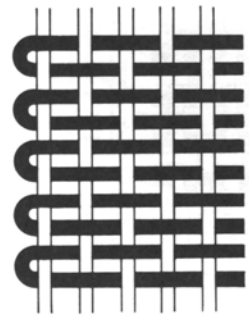


Fig. 192 Selvage Type 1

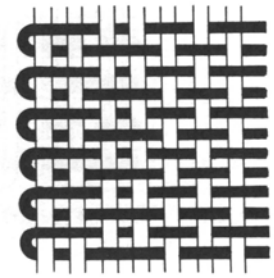


Fig. 193 Selvage Type 2, 2-2 sequence

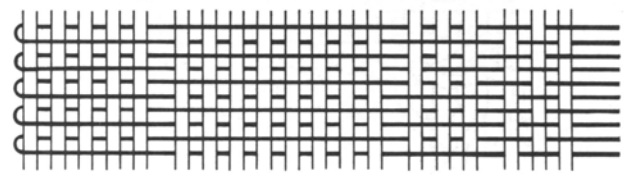


Fig. 194 Selvage Type 2, 3-8-5 sequence

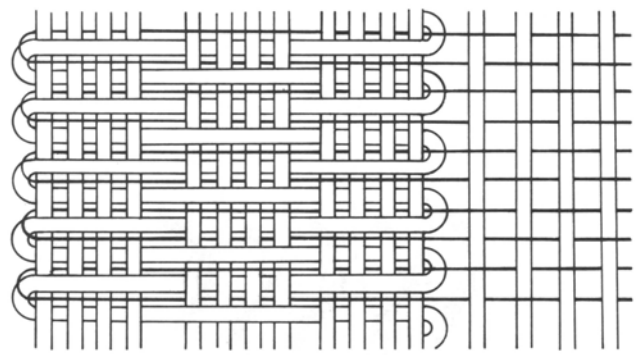


Fig. 195 Selvage Type 3

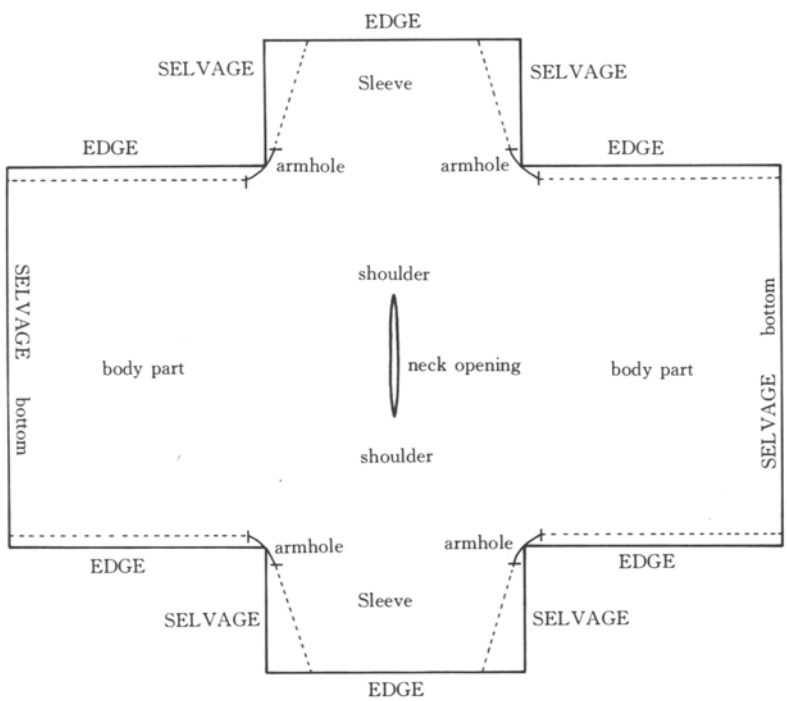


Fig. 191 Name of each part of tunic

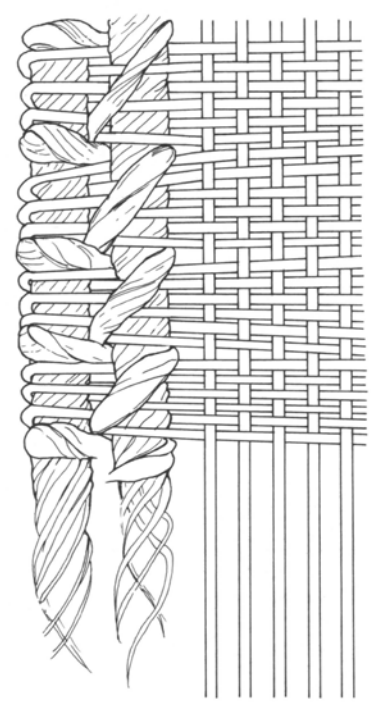


Fig. 196 Selvage Type 3

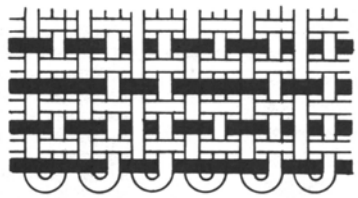


Fig. 197 Edge Type 1

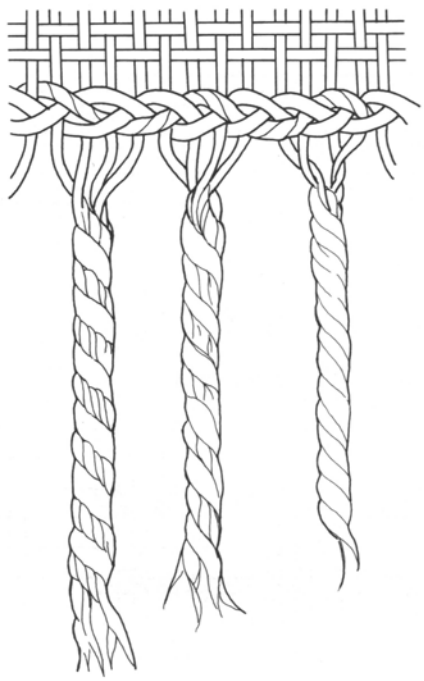


Fig. 198 Edge Type 2

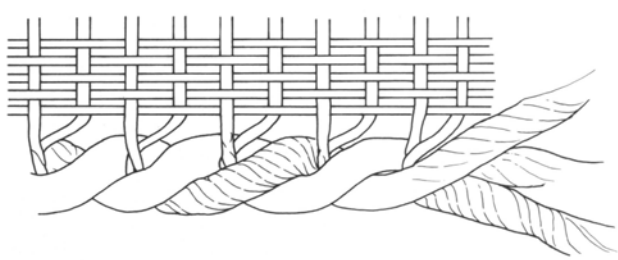


Fig. 199 Edge Type 3

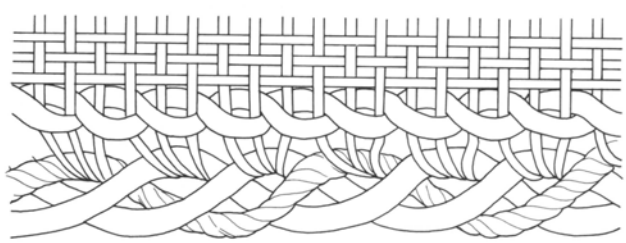


Fig. 200 Edge Type 4

in the finished piece the looped edges of the warp make a simple turn around the outermost weft, akin to Type 1 selvage.

In Type 2, three horizontal strands are braided at the edge (Fig. 198. Pl. 111 no. 29). Yet, it is undetermined if these braided strands are independent or formed from the end of the selvage warps. In this remnant, the warp ends, freed from the loom, are Z-twisted two by two into strands and then two Z-twisted strands are S-twisted to make a fringed edge.

As for Type 3 two loose warps are S-twisted two by two into strands and 16 strands are then Z-twisted to make a cord (Fig. 199. Pl. 111 no. 30). Three Z-twisted cords are then S-twisted to make a thick cord. If this method were continued, the cord would become thicker and thicker toward the end as more thin cords were added. In order to prevent this, the warp edges must have been cut at a proper length to maintain a consistent thickness.

In Type 4, two horizontal strands are intertwined every two warps in a 2 over 2 under sequence (Fig. 200. Pl. 111 no. 27). The warps which pass through this are cut as in Type 3 and Z-twisted in three's to make cords. Three Z-twisted cords are S-twisted to make a thicker cord edge.

In Type 5, three horizontal Z-twisted strands are twined clockwise around double S-twisted warp strands probably by tablet weave (Fig. 201. Pl. 111 no. 28). Each horizontal strand follows in a 1 over 2 under sequence. Another three adjoining strands are twined in the same fashion counterclockwise. Due to damage to the cloth found, it cannot be confirmed if the two threads are in fact one, however because the material used is different, they are independent of the warps. The double warp strands passing through the

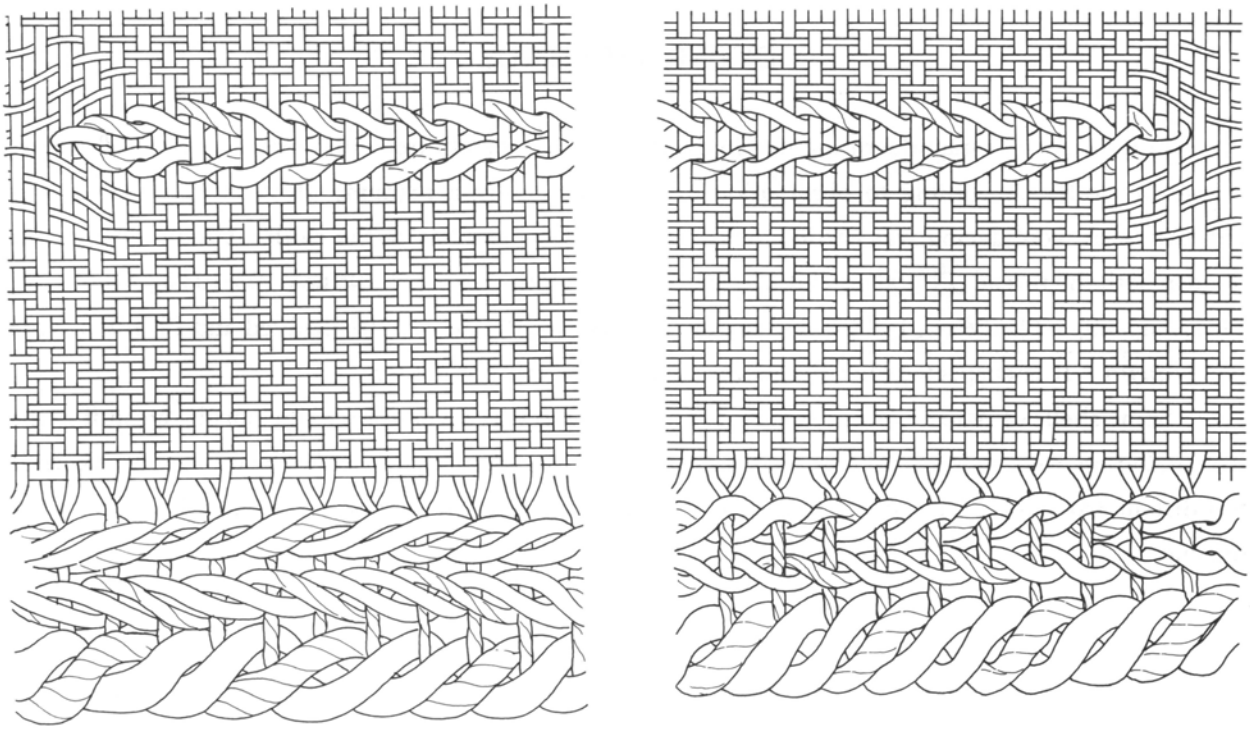


Fig. 201 Edge Type 5

twining are disposed in the same manner as in Type 3 to make a thick cord.

In this plain weaving, decorative twining is interposed in the ground at a distance from the edge. Paired Z-twisted threads are twined around the warps in 2-2 sequence except where they turn back to the starting point. Since the twining is reversed between the upper and lower rows, they take the appearance of a chain.

Exs. : Pl. 109 nos. 110 (Pl. 111 no. 27.), 112 (Pl. 111 no. 28), 115 (Pl. 111 no. 31). Pl. 111 nos. 29 and 30.

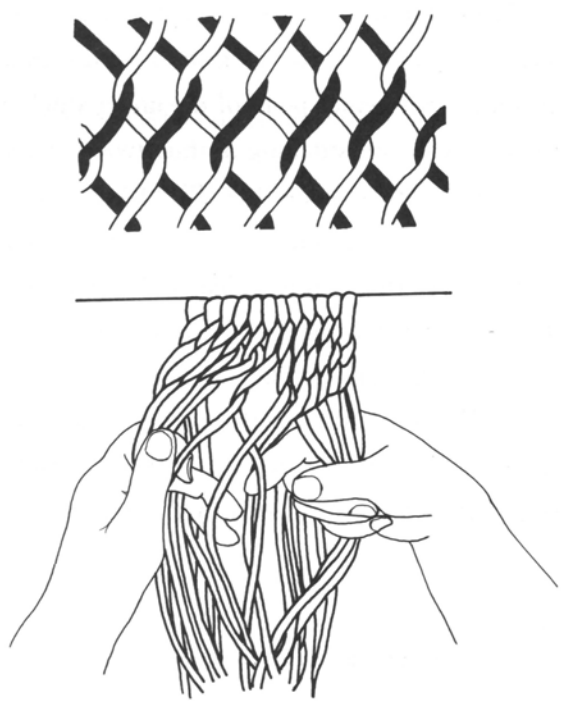


Fig. 202 Sprang

Sprang. This method is done by inter-linking the warp threads that are fixed at either one or both ends, and do not require any threads to stabilize them (Fig. 202). The work is carried out row by row from the fixed end of the warps. In the case where both ends are fixed a single weft is threaded through the center to prevent unraveling. Various colors can be skillfully woven in a Z-twisted direction to create geometric designs as shown in the example found in Akoris (Pl. 107 no. 94).

DYEING TECHNIQUE

In the course of manufacturing textile dyeing can be done at three different stages i.e. in the fiber, thread or cloth. According to observation of our remains by a scanning electron microscope, it is indicated that wool dyeing was carried out in the fiber stage and flax in the cloth. Cotton dyeing was done in both the thread (Pl. 108 nos. 99, 100 and 105) and cloth stages (Pl. 108 nos. 103, 104 and 106～108. Pl. 112 no. 39). Pl. 108 no. 108 (Pl. 112 no. 39) are printed, Pl. 108 no. 107 tie-dyed and Pl. 108 no. 106 hand-drawn. It is suspected that the pieces of printed-cloth are modern.

Some shells of *Murex brandaris* (Pl. 114 no. 4) which was favored for a fine purple dyestuff in the Roman Period, were found in Akoris. As they must be alive when used to make the dye and as Akoris is too distant from their habitat for that, it is enigmatic as to why they were brought here if not for dyeing.

COSTUME

TAILORING : Techniques of stitching and sewing found in Akoris are mentioned here.

Hand stitch. Five ways of stitching were found, the first being the back stitch (Fig. 203. Pl. 109 no. 111). Beginning with a long stitch on the underside of the cloth, the needle is brought back on the upper surface to the center point of the under stitch where the next long underside stitch begins. Each length of the underside stitching is thus twice as long as that on the upper side.

Exs. : Pl. 109 nos 109 (Pl. 112 no. 35) and 111 (Pl. 112 no. 36). Pl. 112 no. 37 (45).

The second stitch is the overcast stitch (Fig. 204). In this method, the needle is brought from under the cloth and then a diagonal stitch is made over the edge of the fabric and the process is repeated. The end of the thread is tied in a knot.

Ex. : Pl. 112 no. 33

The third stitch is the half-cross stitch (Fig. 205), which is used for hemming and for decorative needlework. A long stitch is made diagonally on the upper side of the cloth and next a short stitch at a right angle to the direction of the stitching is made on the underside, after which the process is repeated.

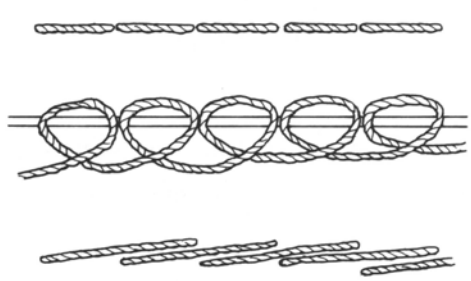


Fig. 203 Back stitch

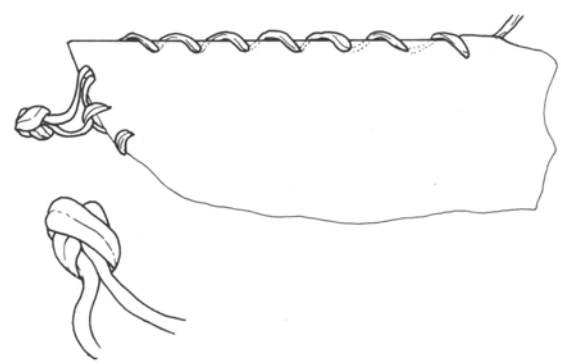


Fig. 204 Overcast stitch

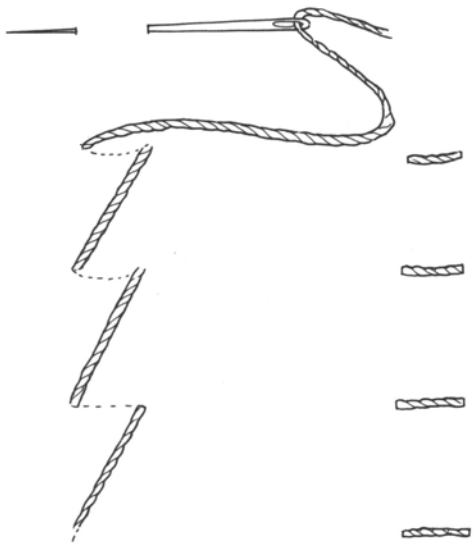


Fig. 205 Half-cross stitch

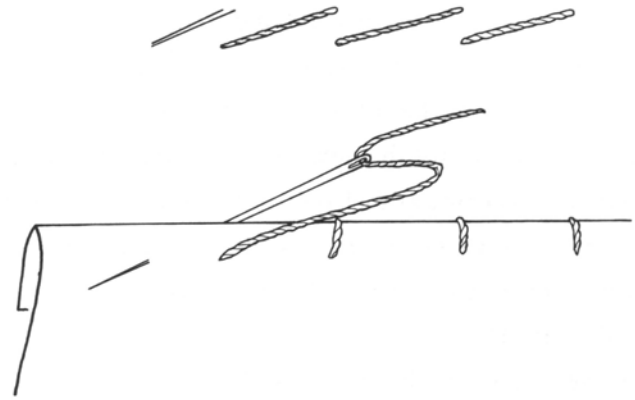


Fig. 206 Hemming stitch

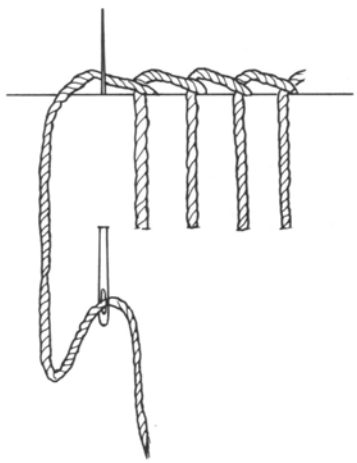


Fig. 207 Blanket stitch

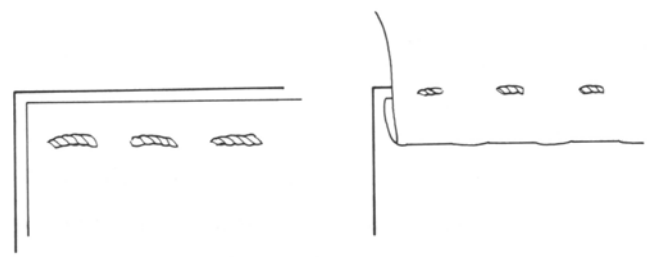


Fig. 208 Method for sewing together

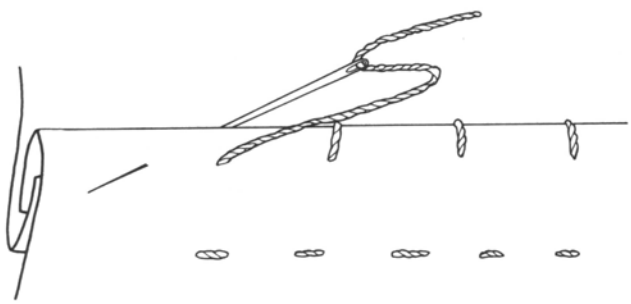


Fig. 209 Method for sewing together

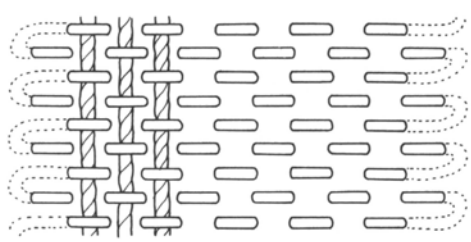


Fig. 211 Darning

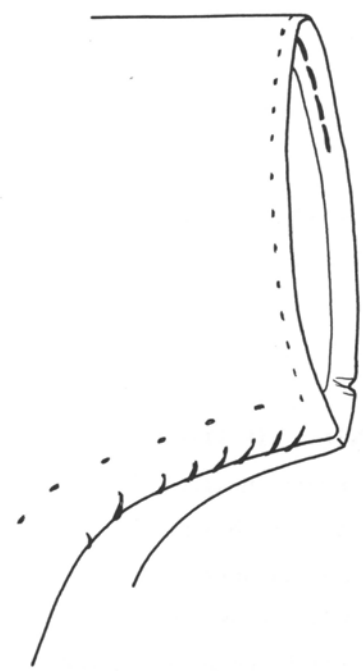


Fig. 210 Tunic sleeve

The fourth stitch is the hemming stitch (Fig. 206). A half-cross stitch is used on a folded cloth edge. The stitch crosses over the edge at short and regular intervals as in the overcast stitch.

Exs.: Pl. 97 nos. 4 and 6. Pl. 99 no. 22. Pl. 100 no. 32. Pl. 104 no. 61. Pl. 109 nos. 111 (Pl. 112 no. 36) and 114. Pl. 112 nos. 33 and 37.

The fifth stitch is the blanket stitch (Fig. 207. Pls. 109 no. 109, and 112 no. 35). This stitch is used to prevent the raw edges of a weaving from loosening. The needle is inserted through the fabric from the top surface toward the outer edge at a right angle and the thread is held in place at the edge. The next stitch is repeated in such a way that when the needle reaches the edge line, it is brought up between the thread of the previous stitch and the edge of the fablic and then pulled up. The stitches on the upper and under sides show an equal appearance.

Ex.: Pl. 107 no. 97

Sewing. Two methods can be detected in sewing together separate pieces of cloth.

In one method, shown in Fig. 208 (Pl. 109 no. 116), called a topstitched seam, two fabrics are placed one upon the other with the edges spaced a little apart. They are sewn together with a regular over-under running stitch. The upper cloth is then folded over the stitching and the two are again sewn with another running stitch which is made through the upper cloth and the previously formed outer border of the under cloth.

By the other method called flat-felled seam as shown in Fig. 209 (Pls. 109 no. 111, and 112 no 36), two pieces of fabrics are placed one upon the other with the edges spaced a little apart and sewn with over-under running stitch as in the first method. The edge of the lower cloth is folded over the edge of the upper and then the upper cloth is folded back over both edges so that the two edges enclose each other. They are then hemmed together with a half cross stitch.

In this child's sleeve (Fig. 210. Pl. 109 no. 113), one edge of the cloth has been folded back in a double fold and the opposite edge brought around and tucked into the fold. Beginning with the inside, the two edges and the other shell have been sewn together so as to form a lip which has in turn been sewn to the shell. In both cases a hemming stitch has been used. The sleeve opening, which is a raw weaving edge, is turned inside and the folded part is sewn by a running stitch akin to uneven basting. A trace of the warp treatment is detected on the folded part.

Darning. In Fig. 211 (Pl. 112 no. 38), though the order is unknown, a running stitch proceeds horizontally returning at both ends in a continuous thread. Vertical strands are then passed under the stitches of each row and do not form a weave.

Ex. Pl. 99 no. 18.

BAND AND STRING:

Tapestry weave. These bands, which form part of the decoration of a tunic, are a tapestry weave. The instance shown in Pl. 107 no. 92 has 33 warps and measures 4.5cm in width, and that shown in Pl. 107 no. 93 has 22 double folded cablet warps, and is 5.4cm in width. That shown in Pl. 104 no. 65 has 12 warps and is 2cm in width.

Warp-faced plain weave. In the instance shown in Pl. 112 no. 42, warps and wefts, both S-twisted, are paired and as the warps are closed together in warp-faced plain weave, they become prominent.

There are 26 warp pairs and the width of this hemp material measures 3cm. The usage of this band is probably for wrapping a cloth covered mummy. Dark brown and red strands are partially used to make a striped pattern. The red coloring is dye and the dark brown originates in the primary material. A band-loom is deemed to have been used for producing the band (Fig. 212).

Ex.: Pl. 112 no. 42.

Braiding. Six S-twisted wool threads, are Z-twisted together and then the Z-twisted strand paired with another Z-twisted strand. Three pairs of Z-twisted strands are braided together (Pl. 112 no. 41). A piece of red cotton cloth passes through the braid and its ends tied together. The usage is undetermined.

In another instance (Fig. 213. Pl. 112 no. 40), eight wool threads, each S-twisted, are Z-twisted together and then seven of these Z-twisted strands are plaited in a 2 over 2 under sequence. The width is 1cm and the usage is undetermined.

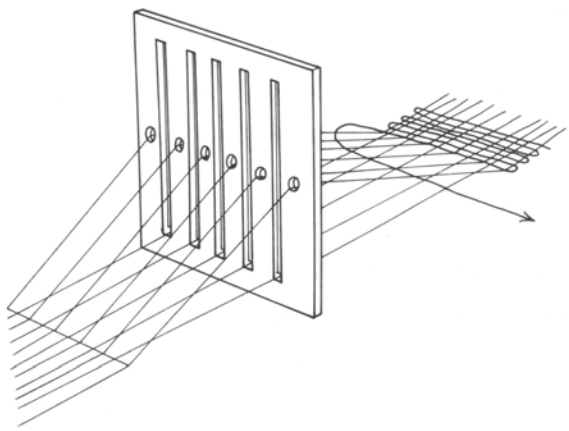


Fig. 212 Method for warp-faced plain weave band
(STRONG, D. and D. BROWN ed. *Roman crafts*, p. 173, Fig. 284)



Fig. 213 Braiding

Notes

1) PLINY, *Naturalis Historia*, vol. 19 no. 15.
2) BERGMAN, I., *Late Nubian Textiles* (Stockholm, 1975).
3) The news that silk possibly, but not certainly, from China had been found in the hair of an Egyptian mummy dating to *c.* 1000 B.C. surprised us. However, if this proves to have been obtained from wild silkworms in Asia Minor, silk production must have already existed there in the first millenium B.C. (*National Geographic*, vol. 184, no. 5, Nov. 1993).
4) LUCAS, *AEMI*, p. 141.
5) FUJII, H. (ed.), *Al-Rafidan*, vol. 1 (Tokyo, 1980), pp. 82, 83.
6) Miyako Suzuki, Ohara of Gallary Art, an authority on Andes textile.
7) BURNHAM, D. K., *Warp and Weft* (New York, 1964).
8) It is said that the appearance of Coptic brocade came after the Muslim Conquest in 640 A.D.

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(KAWANISHI, H. and M. TATSUNO)

7 TECHNOLOGICAL STUDIES OF BASKETS AND OTHER FIBER WORKS

PLAITING (Pl. 113 no. 2) : The basket is plaited using the *hamsawi* or five split palm leaf method to make a band which is then wound spirally with adjacent edges fastened by a thread passing between each fold of the leaves (Fig. 214). The handles, which are of palm trunk fiber, consist of three double-folded and S-spun strings, which are Z-spun together.

WRAPPING : Two techniques have been found at Akoris. One, shown in Fig. 215, is probably of the bottom part of a shallow basket. The foundation is made of a hard material such as loose split ribs of a palm frond which is then coiled. According to the traditional basketry still alive in the Egyptian villages, single palm leaves are threaded through the eye of a large needle and used to wrap the the coil, and at the same time, by threading it through the fibers between the leaves of the previous turn, attach it to the previous coil. Though this basket remain does not reveal the detail to that extent, judging from its appearance the same technique must have

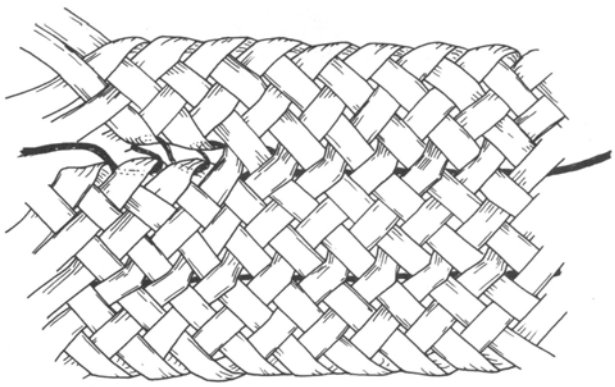

Fig. 214 Plaiting



Fig. 215 Basket made by wrapping

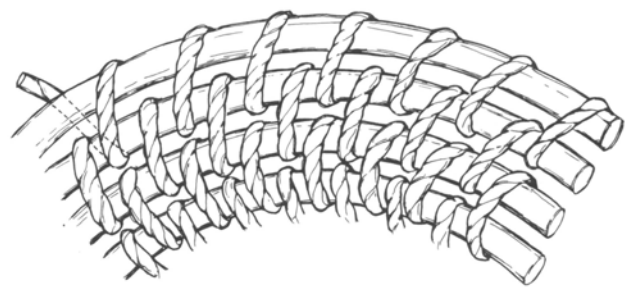

Fig. 216 Wrapping

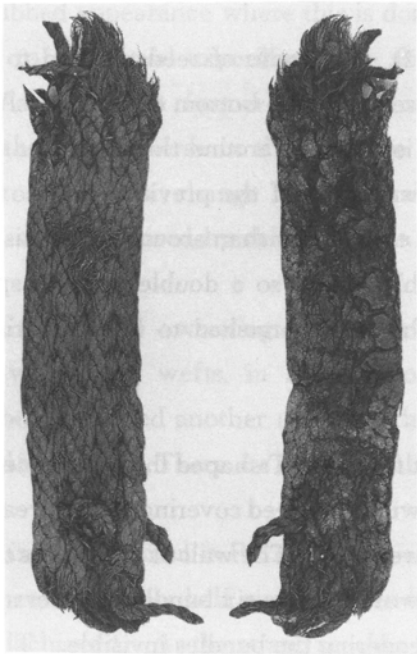

Fig. 217 Band woven by tablets

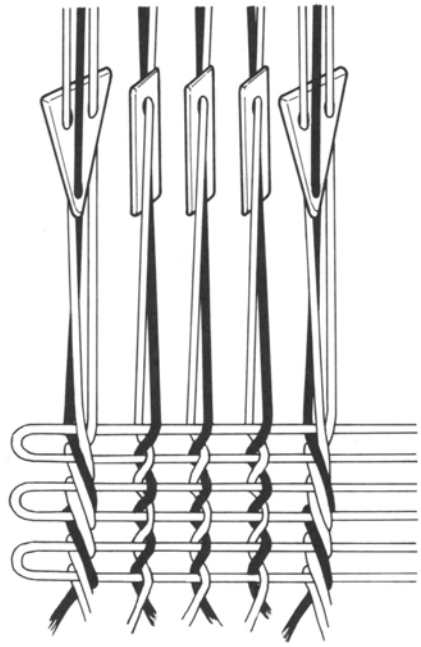

Fig. 218 Positioning of tablets

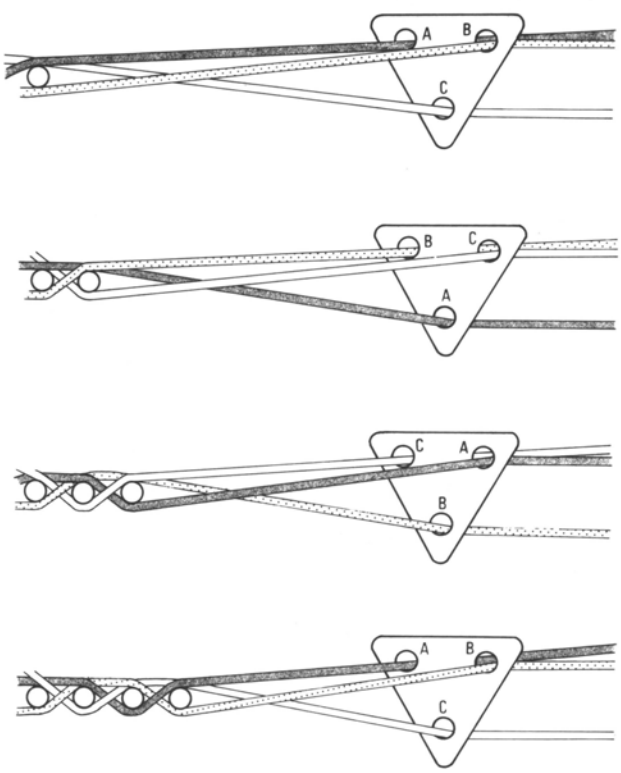

Fig. 219 Process of tablet weaving

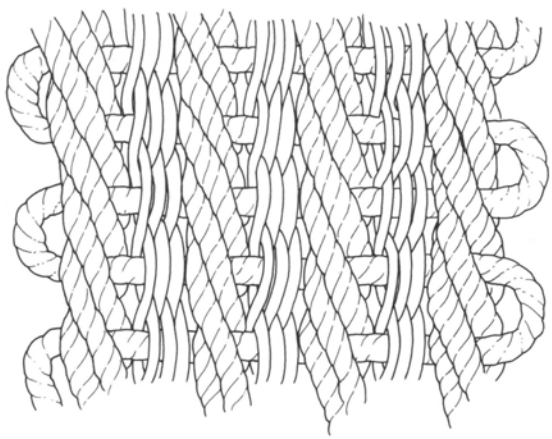

Fig. 220 Upper face of the tablet weave

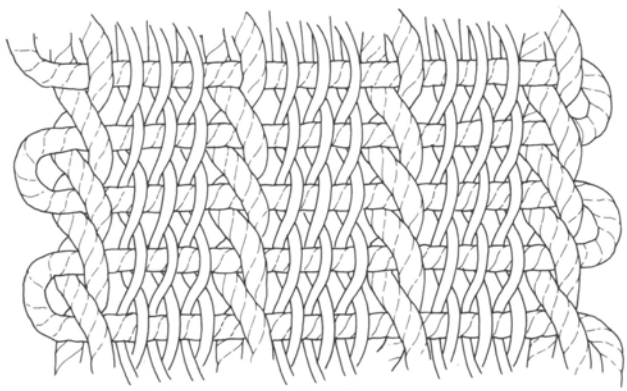

Fig. 221 Lower face of the tablet weave

been availed.

Another example is of a small basket (Pl. 113 no. 1). A bundle of reeds is used to make this basket. It is coiled in a counterclockwise spiral from the center of the bottom (Fig. 216). As the coils are made, a twisted string, formed by two S-spun strands, is wrapped around the two outer coils at the same time. The thread passes through the gaps in the wrapping of the previous turn so that when finished, it appears to progress toward the outer, or upper, edge rather than around. As this continues, the gap between neighboring threads becomes unavoidably wider, so a double wrap is sporadically carried out to narrow it. Braiding consisting of three threads is attached to form the rim and the periphery of the bottom of the basket.

MATTING (Pl. 113 no. 4) : This shoe was used on the right foot . A T-shaped thong is made of slightly twisted narrow-split reed held together with a soft, twisted wide-split reed covering. The weaving of the split reed in the wall and inner sole is akin to 2 over 2 twill weaving. The wall of the shoe is trimmed by a Z-spun double-folded palm string. The sole is a twined work, that is, six bundles of fiber are laid side by side and intertwined by two double-folded palm fibers rendering the bundles invisible. The wall and the inner and outer soles are sewn together with a double-folded, S-spun string.

TWINING (Pl. 113 no. 3) : Reeds or vines are arranged side by side and every two are intertwined by a pair of two threads of the same material. The right reed or vine of one pair is then inter twined to the left one of the adjoining pair thus forming a new pair. The example below is a fishtrap (?).

TABLET WEAVING (Fig. 217) : Thirty strings made of palm bark fiber are served as a warp in this band. They are composed of 12 double-folded Z-spun strings, and 18 single S-spun strands. The 18 single strands go through two holes in each of nine tablets from the back while the 12 double-folded strings go through three holes in each of four tablets from the front face. Three of the two-holed tablets are positioned between two three-holed triangular tablets in 1-3-1-3-1-3-1 sequence (Fig. 218).

The tablets are held in such a way that two of the three strings in a three string tablet are on the top and one below thus resulting in a total of 17 strings above 13 strings below. Every time the three-holed tablets are turned counterclockwise 120 degrees and the two-holed ones 180 degrees likewise, a double-folded and S-spun weft is passed from one side to the other through the upper and lower strings (Fig. 219). As the number of strings in the two groups is not altered by this turning, the lower face of the resulting band, consisting of the lower 13 strings has an outward appearance of plain weaving (Figs. 220 and 221).

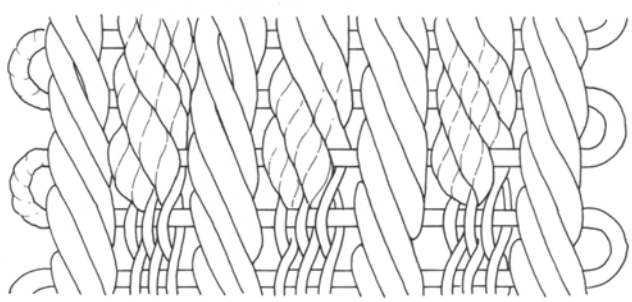

Fig. 222 Changing part in the tablet weave

The weaving procedure is changed at the end of this fragment. Six single strands in the two holed tablets are converted to three double-folded Z-spin strings and these three strings then go through three-holed tablets (Fig. 222). Therefore, seven three holed tablets come to work here as a whole giving the material a

weftless, ribbed appearance where this is done. According to our actual experiment, the shift from the latter to the former is easier and smoother than the reverse in the progress of work, but how this change was actually employed is not disclosed by this fragment..

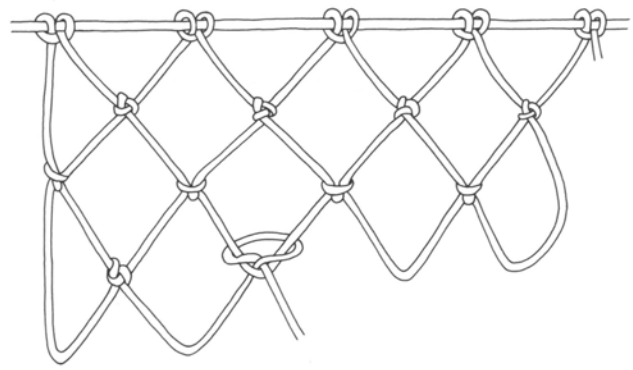

Fig. 223 Netting

NETTING: Though weaving has two elements, warps and wefts, in network one strand is looped around another and then they are knotted together. There are diverse techniques for this, such as simple looping, twist looping, squat knot, etc.

The instance shown in Pl. 107 no. 98 is a simple knot technique. The strand is looped and tied to the former row at points half way between knots (Fig. 223). The illustrated knotting is so tight that a stout net is achieved. As the strand reaches the end of the row and returns, the loops are naturally made in reverse so that the front of the knot and the back of the knot appear in alternating rows.

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Tab. 25. BASKETS AND OTHER FIBER WORKS

Pl. no. (Fig. no)	Layer	Dimension	Category	Technique
113-4	front area of Chapel B, disarranged	l. 28.0 cm	shoe	matting
113-2	eastern area adjoing Chapel A, disarranged	w. 54.5	basket	plaiting
(217)	Room 4, eastern area around the South Court, disarranged	l. 30.0 w. 4.0	band	tablet weaving
(215)	Room 4, Building 4, on the floor	d. 18.0	basket	wrapping
113-1	ditto	d. 11.4, h. 3.0	basket	wrapping
113-3	southeastern part in the Middle Court East, disarranged	l. 5.2 (right)	fishtrap (?)	twining

(KAWANISHI, H.)

V
PHILOLOGICAL STUDIES

1 PHARAONIC

STELAE AND STONE BLOCKS

FRAGMENTARY RELIEF OF PINUDJEM I (Fig. 224. Pl. 115 upper) : This limestone fragment, probably a part of stele, found in the disordered soil at Chapel B shaft, measures 48cm in width, 14cm in depth and 32cm in height.

It shows two figures of the god Amon of different localities.

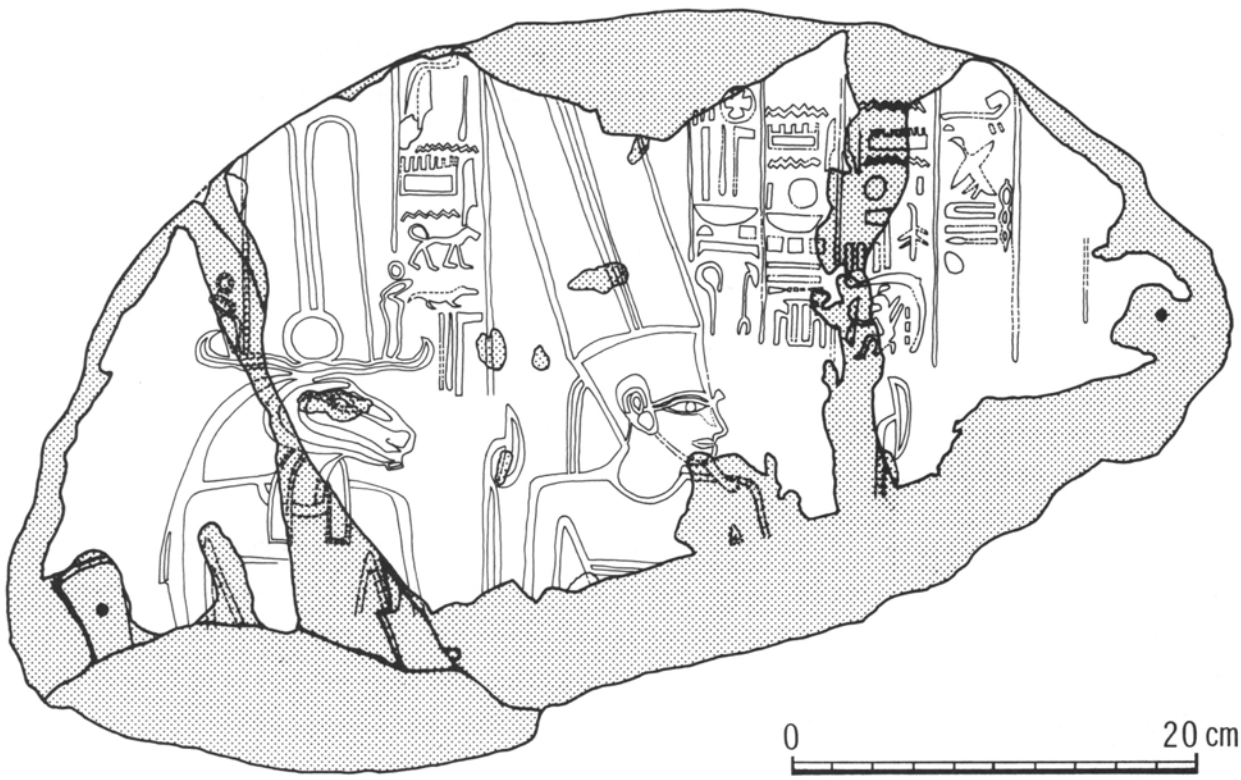


Fig. 224 Stele of Pinudjem I

Amon to the right, wearing his characteristic headdress with two tall plumes, is identified as Amon-Re' of Karnak, through the inscription in front of him (see below). It reads "[Speech by] Amon-Re', Lord of the Thrones of Two Lands, Foremost of [Karnak], Great God, Lord of Heaven, Ruler of Thebes".[1)]



Amon to the left, with a ram's head, wearing two plumes with a sun-disk, is identified as a local god, Amon-mai-khenty,[2] through the inscription in front of him (see below.), reading "Speech by Amon-mai-khenty,[3] Great God[4]".



To the extreme right of this fragment, we should have a human figure facing the deities. Although the figure itself has been lost, the fragmentary inscription showing the name and titles of this person survives.

It is restored as follows:



It reads "〔First Prophet〕 of Amon-〔Re'〕, King of the Gods, General〔issimo〕, Leader, Pinudjem, justified, son of 〔Piankh〕[5]". This inscription shows that the person meant here is probably Pinudjem I, who assumed the high priesthood of Amon from the end of the 20th Dynasty (*c.* 1070 B.C.) to Year 15 or 16 of Smendes of the 21st Dynasty (*c.* 1055 B.C.), and thereafter, the titles and regalia of King at Thebes until about Year 8 of Psusennes I, the second successor of Smendes (*c.* 1032 B.C.)[6].

This relief can date from the earlier years of this Pinudjem I, probably before assuming the royal titles and regalia, since only his non-royal titles are shown here.[7]

The dedication to local Amon-mai-khenty by Pinudjem I shown here might suggest the importance of Tehneh, which is located to the near south of El-Hibeh, the northern limit of Pinudjem I's sphere of influence as well as the northern boundary of Thebaid during the 21st to the 25th Dynasties.[8] In any case, it reflects certain prosperity of the cult of this local Amon in those days.

Notes

1) The part in the bracket is a restoration.

2) Amon-mai-khenty(*'Imn-m3i-ḫnty*), or Amon-maw-khent (*'Imn-m3w-ḫnt*) is probably a local god whose cult center existed near, or at Tehneh. cf. ERICHSEN, W, *Papyrus Harris I* (Bruxelles, 1933), S. 72, l.12 ; GARDINER, A. H., *AEO II* (London, 1947), p. 94* ; YOYOTTE, J., *Amon m3i ḥr ḫnty à Kawa et à Tehneh* (*Rd'E* 7, 1950), p. 193 ; HABACHI, JARCE, esp., pp. 74-75. Amon-mai-khenty has been also attested on a stele of Osorkon III, which was discovered at Tehneh in the season of 1982. Cf. The following report of Osorkon III, and Pl. 116 upper. I owe to Mr. D. Tomimura, who suggested the reading of mai-khenty, and provided with the bibliographical references above. Also cf. MONTET, P., *Géographie de l'Égypte Ancienne*, 2me partie (Paris, 1961), p. 168 ; KESSLER, *HTMS*, S. 254-258.

3) The writing of khenty with a crocodile () in mai-khenty here is a 'cryptography'.
For a sign of a crocodile used for a group khenty (*ḫnty*) (), cf. GRAPOW, H., *Studien zu den thebanischen Königsgräbern* (*Zeitschrift für ägyptische Sprache und Altertumskunde*, Bd. 72, 1936) S. 27-28.

4) The group *ntr ᶜ3* "Great God" here, particularly *ᶜ3* sign and a book roll determinative, looks like just slender vertical lines in the original. I owe to Mr. D. Tomimura, who pointed out to me the reading of them.

5) The name of the father of Pinudjem is totally lost here. However, the remaining space is fitting well for the name of Piankh, the father of Pinudjem I (see note 6 below), while it seems to be too small for the name of Menkheperre', the father of another Pinudjem, Pinudjem II (cf. HARRIS, J. E. and E. F. WENTE (ed.), *An X-Ray Atlas of the Royal Mummies* (Chicago and London, 1980), p. 156 ; KITCHEN, *THIP*, §§ 62, 226-227, 441.).

6) For Pinudjem I, cf. HARRIS and WENTE, *ibid.*, p. 155 ; KITCHEN, *ibid.*, §§ 62, 215-217, 219, 436, 441, 498, 499, and p. 465.

7) Cf. BECKERATH, *HÄK*, S. 255.

8) Cf. KITCHEN, *op. cit.*, §§ 209 (with n. 32), 210, 215, 444, 510 ; BAINES, J., and J. MÁLEK, *Atlas of Ancient Egypt* (Oxford, 1980), p. 129.

(UCHIDA, S.)

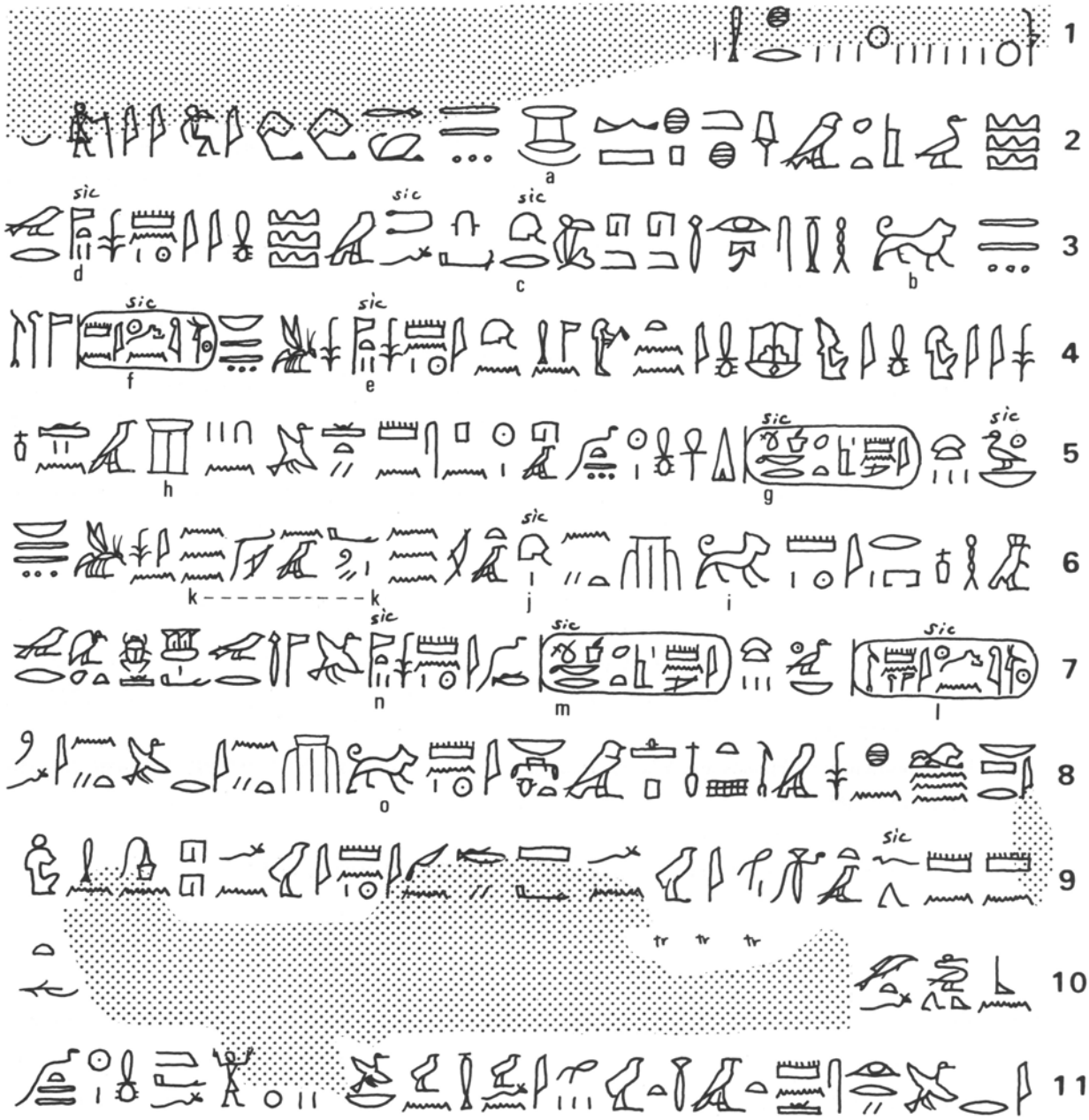
OSORKON III (777-749 B.C.) **STELE**[1] (Pl. 116 upper) : On October 20, 1982, this fine limestone stele was detected upside down in accumulated soil in Room 1 situated in the Coptic east part of South Court. While the round-topped upper part with a scene is missing, the lower part with a text, which measures, 51.0cm in height, 49.5cm in width and 11.0cm in depth, is generally good preserved. It consists of eleven written rows at intervals of around 4cm. Each row is divided by a horizontal line. Most of the first row and part of the second row is missing. Additionally, owing to damage extending from the ninth to the eleventh row, most of the writing in the tenth row is missing.

Notes to the text[2].

a. Hieratic of  *iti*, cf. MÖLLER, G., *Hieratische Paläographie*, 2 Aufl., Bd. II u. III (Leipzig, 1927 u. 1936), No. 529.

b. Here and below (i, o), Curling up of the tail is unusual for the writing of this sign (GARDINER, A. H., *Sign-List*, E 22). See also the fragmentary stele of Pinudjem I above (Fig. 224. Pl. 115 upper). It may be a local form of this hieroglyphic sign.

c. Here and below (j),  for  .



d. Here and below (e, n),  for .

f. Here and below (l), Re' sign above *stp* sign is superfluous.

g. Here and below (m),  for .

h. Perhaps  is a variant of *k3(r)i* (cf. SETHE, K., *Ägyptische Lesestücke*, 3 Aufl., Hildesheim, 1959, S. 71, 6), or conceivably hieratic of *g* (cf. MÖLLER, *op. cit.*, No. 395) showing the phonetic change of *g*>*k*. In either case is probably read *k3dy* (=*kt*).

k-k. is probably used as a preposition here, cf. ERMAN A., *Neuägyptische Grammatik*, 2 Aufl. (Leipzig, 1933), S. 77 § 174.

Translation. The part in [ ] is a restoration, and ( ) is a supplement.

1. [Regnal year] ... [under the Majesty of][3].....
2. Foreign lands[4] (?); Son of Isis, Horus, powerful of arm; Seizor of Two Lands, [great of] strength;

Chief of

3. Two Lands ; Lion, great of war-shouting, his fear is in foreign lands like Amon-Re', king of gods ; Great of
4. kingship like Atum, (lord of) the Sed-festival, like Tenen[5]; the First Prophet of Amon-Re', king of gods ; King of Upper and Lower Egypt, Lord of Two Lands : Wser-maat-Re' Setep-en-Amon, God, Ruler of Thebes ;
5. Son of Re', Lord of Appearings : Mery-Amon sa-Aset Osorkon (III), given life like Re' forever. (On) this day, 12 kady-vessels[6] of | *l.6* neḥeḥ-oil |[7] were put
6. at the Temple of Amon-Re'-mai-khenty[8] on the bank (by) the hand (lit. both hands) of the harbor master[9], by (the decree of) King of Upper and Lower Egypt, Lord of Two Lands :
7. Wser-maat-Re' Setep-en-Amon, God, Ruler of Thebes ; Son of Re', Lord of Appearings : Mery-Amon sa-Aset Osorkon (III). Amon-Re', king of gods, great god, great one who appeared at the beginning[10] ; Mut the great,
8. lady of Asher[11] ; Khons-in-Thebes-Neferhotep[12] ; Horus, lord of joy ; (and) Amon-Re'-mai-khenty[13] | *l.7* say | : "As for him
9. who shall move this stele, he shall (fall) to the s[word of] Amon-Re', he shall (fall) to the blaze of (her) Majesty of Sakhmet[14],
10. his corpse shall not enter[15].....
11. (But) as for him who shall maintain this stele, he shall enjoy the favour of Lord ... by his hand (?)[16] like Re' forever."

Commentary. This stele is delivering to us the fact that King Osorkon offered sesame oil to the Temple of Amon-Re'-mai-khenty. However, it is recognized that four kings in the 22nd and 23rd Dynasties called themselves Osorkon[17]. Of them the prenomen 'Wser-maat-Re' Setep-en-Amon' is limited to Osorkons II and III. Next, the nomen of Osorkon II (Mery-Amon sa-Bast Osorkon) has the epithet 'sa-Bast' meaning 'son of Bast', and Osorkon III's (Mery-Amon sa-Aset Osorkon) contains the epithet 'sa-Aset' meaning 'son of Isis'. The latter is identical to that written on this stele.

Additionally, the epithet 'God, Ruler of Thebes' found on this stele has never been seen in the case of Osorkon II[18]. Judging from this, there is no doubt that the stele belongs to Osorkon III of the 23rd Dynasty.

Construction of the Text is as follows :

Line 1 to the first half of line 5 : The datelines, i. e. the construction of 'Year x of King N, etc'. The date of the dedication is lost here, and it is followed by the royal titles, the epithets, the prenomen and the nomen of Osorkon III. So many designations for a king is exceptional. Moreover, it is seen at the first time here that Osorkon III himself had the title of the First Prophet of Amon-Re'. From these two points, this part of the text offers special interest.

The second half of line 5 to the first half of line 7 : Act of donation by King Osorkon III. It seems probable that the harbor master acted for the king here.

The second half of line 7 to line 10 : Curses on would-be transgressors.

Line 11 : Blessing on respecters of the act.

The construction mentioned above is a typical form of that period, and it comes under Stage III (i. e.

Later 22nd to 26th Dynasties) in the classification of donation texts by Kenneth A. Kitchen.[19]

The stele also tells us two historical facts : first, the cult center of a local god Amon-Re'-mai-khenty which probably existed nearby or at Tehneh in the New Kingdom[20] was still active in the time of Osorkon III, secondly, this area was certainly controlled by this king who reigned from Leontopolis (the capital of the 23rd Dynasty, now Tell Moqdam) in the Delta.

As for Osorkon III, in Lower Egypt, "he is far less attested in the north than his Tanite colleague", as mentioned by Kitchen.[21] From Memphis a small bronze plaque with his name has been found.[22] However, it is not sure whether a statue-base from there could belong to him or not has not been affirmed.[23]

In Middle Egypt, it is confirmed that Takeloth, Governor of Herakleopolis, was his son.[24] It is also said that Nimolot (D), Governor of Hermopolis, was presumably another son. But it is no more than a hypothesis at present, for positive proof is missing.[25]

At Thebes, the center of Upper Egypt, the name of Osorkon III is recognized on jambs of a chapel in Karnak,[26] and also included in the Nile Level Records engraved on the now lost quay of Karnak Temple.[27] Furthermore, it is known that the king afterwards appointed his son Takeloth above-stated as the First Priest of Amon[28] and his daughter Shepenupet I as God's Wife of Amon.[29]

According to these facts, it was generally supposed with almost certainty now that the authority of Osorkon III extended from Memphis as far as Thebes. However, supporting evidence to back up such a supposition was very scarce.

Fortunately, our mission unearthed the stele mentioned above, and by chance the British Museum mission also found another with both names of Osorkon III and his wife at El-Ashmunein in the same season of 1982.[30] It is noteworthy that new information about him has been obtained in Middle Egypt where his name was missing. Finally, these two stelae should be added to Dimitri Meeks' List A of donation stelae.[31]

Notes

1) The date of Osorkon III is based upon KITCHEN, *THIP*, p. 467.
2) I owe MS of the Text to Mr. Masato Koyama, and Readings of a, h and k-k were suggested by him and Mr. Sugihiko Uchida.
3) Only the lower part of the inscription is preserved, so, unfortunately, the date at the beginning is not quite certain.
4) Reading is uncertain, for the preceding part in line 1 is destroyed.
5) Primordial creator god, the same as Tatenen, cf. *Wb V*, S. 228, 1.
6) Probably a variant of *kt* which is a high-priced metallic vessel, cf. *Wb V*, S. 148, 9, 10 ; JANSSEN, JAC. J., *Commodity Prices from the Ramessid Period* (Leiden, 1975), § 153.
7) I. e. sesame oil, cf. *ibid.*, § 101.
8) See p. 301, note 2 above.
9) Cf. LESKO, L. H. (ed.), *A Dictionary of Late Egyptian*, vol. I (Berkeley, 1982), p. 32.
10) Cf. *Wb IV*, S. 406, 5-7.
11) Mut Temple and its precincts in Karnak, cf. *Wb I*, S. 135, 6.
12) The second name of Khons which means 'Beautiful-Rest' or 'Good of Peace', cf. *Wb, II*, S. 255, 12 ; BREASTED, J. H., *Ancient Records of Egypt*, vol. IV (Chicago, 1906), § 665, note f ; PRITCHARD, J. B. (ed.), *Ancient Near Eastern Texts Relating to the Old Testament*, 3rd ed. with Supplement (Princeton, 1969),

p. 30, note 12.

13) The same as note 8 above.

14) Cf. JANSSEN, Jac. J., *The Smaller Dâkhla Stela (Ashmolean Museum no. 1894. 107 b)* (*JEA*, 54, 1968). For the occurrence elsewhere of the same formulae, see *ibid.*, note cc (pp. 170-171).

15) Though untertain, the following lost part may be restored like [in the Necropolis ...] or [in the (Western) Cemetery ...], cf. MORSCHAUSER, S., *Threat-Formulae in Ancient Egypt. A Study of the History, Structure and Use of Threats and Curses in Ancient Egypt* (Baltimore, 1991), pp. 121-2.

16) Reading is not sure, for the preceding part is lost.

17) Cf. KITCHEN, *THIP*, p. 467, Tab. 3.

18) *ibid.*, §§ 69-71, 73 ; BECKERATH, *HÄK*, S. 259 u. 265.

19) Cf. KITCHEN, K. A., *Two Donation Stelae in the Brooklyn Museum* (*JARCE*, 8, 1969-1970), p. 67.

20) Cf. p. 300 and the bibliographical references in p. 301, note 2.

21) KITCHEN, *THIP*, § 312.

22) DARESSY, G., *Une Trouvaille de Bronzes à Mit-Rahineh* (*ASAE*, 4, 1902), pl. 1 ; *GLR III* p. 386, XV ; KITCHEN, *op. cit.*, § 312.

23) Cf. *GLR III*, p. 393, ; KITCHEN, *op. cit.*, § 312.

24) In Fragmental Stele published by H. Gauthier and in no. 4 of the Nile Level Records, Takeloth is designated as son of Tentsai who was one of Osorkon III's wives. Cf. GAUTHIER, H., *Un Curieux Monument des Dynasties Boubastites à Héracléopolis Magna* (*ASAE*, 37, 1937), pp. 18ff et pl. II. ; von BECKERATH, J., *The Nile Level Records at Karnak and Their Importance for the Libyan Period (Dynasties XXII and XXIII)* (*JARCE*, 5, 1966) ; *GLR III*, pp. 386-7 ; KITCHEN, *op. cit.*, pp. 476-7, Tab. 10.

25) Cf. KITCHEN, *op. cit.*, § 313.

26) *GLR III*, p. 385, VI ; PORTER, B. and R. L. B. MOSS, *Topographical Bibliography of Ancient Hieroglyphic Texts, Reliefs and Paintings*, vol. II, 2nd ed. (Oxford, 1972), p. 233, U ; KITCHEN, *op. cit.*, § 314.

27) von BECKERATH, J., *op. cit.* See also KITCHEN, *op. cit.*, § 314.

28) The same as the High Priest of Amon, cf. KITCHEN, *op. cit.*, p. 3, note 2 and passim.

29) Cf. KITCHEN, *op. cit.*, §§ 143, 314.

30) SPENCER, *EA II*, pp. 57-67 and pls. 100-110.

31) MEEKS, D., *Les Donations aus Temple dans l'Egypte du Ier Millénaire avant J.-C.* (in ; ed. by LIPINSKI, E. *State and Temple Economy in the Ancient Near East*, vol. II, Leuven, 1979), pp. 661-681.

Acknowledgement

My warmest thanks go to Mr. Masato Koyama and Mr. Sugihiko Uchida who gave me valuable suggestions and bibliographical references which have improved my work in many points.

(TOMIMURA, D.)

Editorial Note

A summary on this stele was published in our preliminary report[1)] of 1982 by Mrs. Madoka Suzuki. As she retired from our association in 1986, we asked the favor of Mr. Den Tomimura, a staff member of Egyptological Section, to prepare the final report concerning the stele.

Note

1) *Pre. Re. II*, pp. 13-16.

(KAWANISHI, H.)

FRAGMENTARY STELE (Pl. 115 lower): This stele whose upper portion is preserved, and found in the disordered soil at Room 4 of the eastern area around the South Court, measures 50cm in width, 17cm in depth and 38cm in height.

This limestone stele shows a scene which seems to be a mixture of some mythological themes.

The middle part shows Anubis tending a mummy, by whose head Isis is kneeling with her arms extended to it. This part is possibly related to Spell 151 of the Book of the Dead,[1] although a sitting figure above them cannot be identified. The legend in front of Anubis is as follows, and reads "////// ..(?)..respected of [the West], Master of secrets of embalming place, Anubis".[2]



The legend for Isis is as follows, but the reading is uncertain.



On both sides of them, two deities are shown, Osiris seated to the left, and Thoth standing with his palette, to the right. This portion seems to be related to the 'Judgement of the Dead', Spell 125 of the Book of the Dead.[3] The legend for Osiris is as follows, and reads "Osiris, presiding over//////everyday (?), Ram of Seger".[4]



The legend for Thoth is as follows, and possibly reads "//////himself, Creator of writing and language".



A male figure standing behind Osiris, lost to the waist, cannot be identified, while the figure on the right hand of Thoth is Seth shooting an arrow against Apophis.[5] Although Apophis itself is not shown

here, its name is mentioned in the legend in front of Seth, which is as follows, and reads "////// overthrowing (?) Apophis"[6].



On the lower half of this stele, five lines of horizontal inscription have been preserved, whose condition is generally good except the both ends and the fifth line. The inscription is as follows:



The translation is as follows.

(1) //////[Osiris], Great god, Foremost of Cavern, Ankh-beetle[7] rising on those dwelling on the desert, (and on) those who come into being ⟨in⟩ the Netherworld, Keeper of offerings of the temple (?)[8] //////

(2) //////(of) Apophis, Intestine[9], Powerful of respect in the temple, Ram of divine body[10], Seankh[11], Lord of Sepa[12], ..(?)..Per-nesut[13], Redju (?)[14] //////

(3) ////// at the north of Town of Scarab[15], Busiris, Out of it! Out of it![16] Go out from there, from the end (?)![17] Go out from Isle of Fire![18] Out of it! Out of it![19] Go out from[20] //////

(4) ////// Keeper of offerings (?)[21] of the East ////// under Re' as well as the road of Beautiful mound[22], the one who illumines //////

(5) //////....////// divine body[23] of..(?).//....//

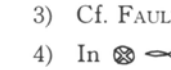
This stele seems to show the fusion of the cults of Osiris and Re', and probably dates from the Greco-Roman Period.

Notes

1) Cf. FAULKNER, R. O., *The Ancient Egyptian Book of the Dead* (London, 1985), pp. 146-148.

2)  is a cryptography which is used for *ḥry-ššt3 wt.*  is for *ḥry ššt3* (cf. DRIOTON, *Rd'E*, p. 40), for *w* (cf. PIANKOFF, A., *Le Livre du Jour et de la Nuit*, Le Caire, 1942, p. 102), for *t* (cf. DRIOTON, *ibid.* p. 45).  is a cryptography for *i* (cf. DRIOTON, E., *Recueil de Cryptographie Monumentale, ASAE*, 40, p. 422), and  for *n* (cf. GRAPOW, H., *Studien zu den thebanischen Königsgräbern, Zeitschrift für ägyptische Sprache und Altertumskunde*, Bd. 72, Leipzig, 1936, S. 28).

3) Cf. FAULKNER, *op. cit.*, pp. 30-31, pp. 34-35.

4) In  , we suggest that is used for *s* (cf. HORNUNG, E., *Das Amduat, Die Schrift des verborgenen Raumes.* Teil 1: Text, Wiesbaden, 1963, S. 76, Z. 7), and that is a scribal error for  (*r*). Seger, or Segeret is the name of Serapeum of L. E. 9 (Busirite). cf. GAUTHIER, H., *Dictionnaire des Noms Géographiques Contenus dans les Textes Hiéroglyphiques* (Le Caire, 1925-1931), tome V, p.

68. For "Ram", cf. note 10) below.

5) For Seth repelling Apophis as a crew of the sun barque, cf. TE VELDE, H., *Seth, God of Confusion.* 2nd ed. (Leiden, 1977), pp. 99-108. The representation of Seth armed with a bow is not common, but attested. Cf. TE VELDE, *ibid.*, Pl. XII, 2.

6) The first word is possibly *šhr* "to overthrow", which could take Apophis as its object. Cf. *Wb, Die Belegstellen, IV*, S. 64 (IV 257, 10).

7)  is a cryptography for *ᶜnḫ* (cf. DRIOTON, *Rd'E*, p. 38) So,  should be *ᶜnḫ* "Ankh-beetle (as a name of the Sun)" (cf. *Wb I.* S. 204, 8), while  at the end seems to be superfluous.

8)  is a cryptography for  (HORNUNG, *op. cit.*, S. 9, Z. 7). For *mꜣᶜ* "offerings" "offering", cf. *Wb II*, S. 23, 14. But,  at the end is unusual. For used for *n*, cf. DRIOTON, *ÄS*, p. 46. The reading of the last word, *ḥwt-ntr* "temple" is very tentative.

9)  is a cryptography for *p* (cf. DRIOTON, *JEA*, p. 119). So,  here should be *np* "Intestine (as a name of Apophis)" (cf. *Wb II*, S. 247, 11).

10) For *sr* "Ram" as an epithet of Osiris, or of Sun-god, cf. *Wb III*, S. 462, 12, 13.  is a cryptography for *ḏ* (cf. PIANKOFF, *op. cit.*, p. 101), so  should be *ḏt* "body" (cf. *Wb V*, S. 503-504).

11)  is a cryptography for *s* (cf. HORNUNG, *op. cit.*, S. 76, Z. 7), and  for *ᶜnḫ* (cf. DRIOTON, *JEA*, p. 119). So,  here should be *sᶜnḫ* as a name of Ptah-Sokar-Osiris (cf. *Wb IV*, S. 47, 19).

12) In  , is used for *p* (cf. DRIOTON, *Rd'E*, p. 46, and  is possively used for  to constitute *Sp3* "Sepa", a sacred place of Anubis (cf. *Wb IV*, S. 101, 1-4 ; GAUTHIER, *op. cit.*, tome V, pp. 27-28). "Lord of Sepa" is generally an epithet of Anubis (cf. *Wb IV*, S. 101, 2 ; VANDIER, J., *Le Papyrus Jumilhac*, Paris, 1961, p. 116, (120), p. 154, (120)).

13) For Per-nesut, which is the 'god's booth' of *Ḥwt-nswt*, the chief town of U. E. 18, cf. VANDIER, *ibid.*, pp. 249-250, (1066).

14) This possibly has relation to *Ḥwt-Rḏw*, the district sacred to Anubis, and to Osiris in U. E. 18 (cf. GAUTHIER, *op. cit.*, tome IV, pp. 108-109 ; GARDINER, *AEO II*, p. 110* ; VANDIER, *op. cit.*, pp. 39-40).

15) *Nỉwt-Ḫpr* "Town of Scarab" is the name of the sacred town of Abydos, sacred to Osiris. Cf. GAUTHIER, *op. cit.*, tome III, p. 80, tome VI, p. 145.

16) A tentative reading. In  , is a cryptography for *m* (cf. DRIOTON, *Rd'E*, p. 43), and for *w* (cf. PIANKOFF, *op. cit.*, p. 107). So, this group should be *mỉw mỉw*, which is a part of magical spell attested in the Pyramid Text (cf. *Wb II*, S. 41, 16). Faulkner's translation "Out of it !" (FAULKNER, R. O., *The Ancient Egyptian Pyramid Texts*, London, 1969, p. 129, § 687) is adopted here. In any case, this usage, if the interpretation is correct, should be very archaic.

17) A very tentative reading. is taken as an abbreviated writing of *prỉ* "to go out", as a cryptography for *m* (cf. note 16)), and for *i* (cf. DRIOTON, *Rd'E*, p. 49), should be *pr m-ỉm m pḥ* (?) "Go out from there, from the end (?) !".

18) For the reading of , cf. note 17). For *ꜣỉt-nsrsr* "Isle of Fire", a mythological place in the Netherworld, cf. GAUTHIER, *op. cit.*, tome I, p. 28.

19) Cf. note 16.

20) Cf. note 17.

21) Cf. note 8.

22) *ꜣỉt-nfr (t)* "Beautiful mound", a place in L. E. 3 (?). Cf. GAUTHIER, *op.cit.*, tome I, p. 28.

23) Cf. note 10.

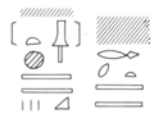
LIMESTONE BLOCK WITH A RELIEF AND AN INSCRIPTION (Pl. 116 lower) : This block was found diverted to the north side of the entrance of Room 2 in the east area of the South Court. It

measures 90cm in width and 57cm in height.

The sunk relief shows a part of the figures of two deities, the goddess Sakhmet to the left, and the god Nefertum to the right.

In front of Sakhmet, two columns of inscription showing the name and epithet of Sakhmet are partly preserved.

They are as follows[1]:



They read "Great ////// of Two Lands ////// Sakhmet of Two Lands (?)".

Note

1) The bracketed part is a restoration.

LIMESTONE BLOCK (Pl. 117 no. 1): This fragment, found in the disordered soil at Chapel A shaft, measures 70cm in width, 50cm in depth and 60cm in height.

This shows a part of the standing figure of a king, facing left, and probably offering to a deity. Two vertical inscriptions are partly preserved. The inscription beside the king's figure is severely damaged, but it can be restored as follows, and reads "May every [protection], life, and dominion [behind] him be like Re' forever![1]".



Another inscription can be restored as follows, and reads "////////// tribute for you, Beb-necklace[2], I bring[3] for you Setjet-clothes[4] //////////". It refers to the king's act here.



This relief probably dates from the Greco-Roman Period.

Notes

1) For this restoration, we have profited by the note which Mr. J. Miyamoto made on the spot.
2) Cf. *Wb I*, S. 455, 6.
3) We take the sign showing a figure carrying a *ḫrp* sceptre as a cryptography for *ḫrp* "to bring" offerings to a god (cf. *ibid.*, *III*, S. 327, 13).
4) Clothes for god-statues. Cf. *ibid.*, *IV*, S. 349, 3.

LIMESTONE BLOCK WITH A RELIEF (Pl. 117 no. 5) : This block, found in the disordered soil at Chapel B shaft, measures 42cm in width, 38cm in height and 16cm in depth.

A deity with the necklace and bracelet is represented in sunk relief. Although the face is destroyed, this deity can be identified as the god Sobek. To the left of Sobek there is an arm with bracelet of another figure, perhaps a king seated on a chair. Above this figure, a part of a cartouche survives in which a part of  (*n*) sign is discernible.

LIMESTONE BLOCK WITH CARTOUCHES (Pl. 118 no. 1) : This limestone block was found at the eastern quarter around the Sacred Road. Its depth is about 63cm, and the inscribed surface is roughly 66cm wide by 33cm high. On the surface, a fragmentary coloured relief has been preserved, in which are the lower parts of two cartouches accompanied with a *nbw* sign respectively, and three column-like decorations in sunk relief between them.

The surface is covered by a layer of gypsum, and painted. Of the column-like decorations, the central one is painted in red, and those on its both sides in blue. The cartouches, *nbw* signs, and some of hieroglyphic signs in the cartouches are painted in red. The cartouche at the right  [1] is a part of "Berenike"[2], which is well known as the name of several female members of the Ptolemaic Dynasty. There have been six "Berenike"s known to us so far[3], and four of them are attested in hieroglyphic names. They are Berenike I, the queen of Ptolemy I (reign 315/05-282 B.C.), Berenike II, the queen of Ptolemy III (reign 246-222 B.C.), Berenike, the daughter of Berenike II, and Berenike III, the queen of Ptolemy X (reign 110-109 B.C. and 107-88 B.C.) and the coregent and queen of Ptolemy XI (reign 80 B.C.)[4]. Although our "Berenike" can be any one of these four, it's probable that she is Berenike II or III since their hieroglyphic names are more commonly attested than the other two "Berenike"s[5].

The second and left cartouche fragment might offer some clue concerning the identification. This fragment is the right and lowest end of the cartouche, and the traces carved in it, followed by a blank space, are as follows :



The second trace is completely filled up with gypsum, and a little gypsum still adheres to the first one. The group can be restored to something like the following one, although no royal name with such elements can be found.



However, if the last horizontal trace should not be a hieroglyphic sign but an accidental flaw, and thus the whole group should be the following one, two possible interpretations could be offered.



At first, these signs could be a part of the Horus name of Berenike II (*Ḥr s3t-ḥḳ3 irt-n-ḥḳ3*)[6]:



although in that case, it must be assumed that the last 𓏏 (*t*) and the determinative 𓊃 were not carved in our cartouche. Moreover, Horus name in a cartouche is unusual since it's usually written in a rectangular *srḫ* frame, or is not surrounded by any frame.

Therefore, concerning our cartouche, we must assume that a Horus name was wrongly carved in the cartouche. The fact that some gypsum fills up or adheres to the remaining signs and that the name was not finished, might suggest that this 'error' was found out halfway and corrected. This cartouche was probably made into a 'blank' cartouche which was so common in the Ptolemaic Period.

Alternatively, the whole group could be a part of one version of Berenike's name, which is attested for Berenike III.[7] In this case also, it must be assumed that this name had been left unfinished, and then the cartouche was made into a 'blank' one.

Consequently, it is possible that our "Berenike" of the right cartouche is Berenike II or III, although the assumptions above are rather speculative.

Notes

1) ////// represents the destroyed part.

2) There are several variations of the spelling even for the name of one "Berenike"., cf. *GLR IV*, pp. 220f., pp. 259-263, pp. 389-390 ; BECKERATH, *HÄK*, S. 288, S. 293. The cartouche on this block can be restored for example as follows :

 or  etc.

3) Cf. *LÄ I*, 700-702.

4) Cf. GAUTHIER, *op. cit.*, ; BECKERATH, *op. cit.*

5) Gauthier lists 14 attested Berenike II's (GAUTHIER, *ibid.*, pp. 259-262) and 5 attested Berenike III's hieroglyphic names (*ibid.*, pp. 389-390) respectively. But, for Berenike I, only two examples are attested (*ibid.*, pp. 220f.), and for Berenike, daughter of Berenike II, only one hieroglyphic example is known (*ibid.*, pp. 262-263).

6) Cf. GAUTHIER, *ibid.*, p. 260 ; BECKERATH, *op. cit.*, S. 288.

7) Cf. GAUTHIER, *ibid.*, p. 390.



However, the remaining blank space in our cartouche seems to be too small to include the signs under ⊿.

LIMESTONE BLOCK WITH CARTOUCHES (Pl. 118 no. 3): This block[1] was found at the eastern quarter around the Sacred Road. It is 61cm in depth, and its inscribed surface is 110cm wide by 34cm high. On the inscribed surface, apart from the fragment of a column of inscription at the left, the same elements as those of the block (No. 1), namely, three column-like decorations in sunk relief in the center, and the lower parts of two cartouches each of which is followed by a *nbw* sign on both sides, are preserved.

However, the names in the cartouches are not completely the same, and neither trace of colour nor gypsum has been preserved here.

The fragments of a column of inscription at the left can probably be restored as a *ʿnḫ* sign () followed by a *w* sign ().

The fragment of a cartouche to the right  [2] is a part of "Berenike" as well as one of those on the block (No. 1), although it can be restored differently.[3] Since different types of spelling can be found even for the name of each "Berenike",[4] and there are clearly common features between the block (No. 1) and (No. 3), it is probable that the names "Berenike" on the blocks (No. 1) and (No. 3) belong to the same person.

Therefore she can be any of Berenike I, II, or III, and if the assumption about the left cartouche of the block (No. 1) is right, she should be Berenike II or III.

The fragmentary cartouche to the left shows the trace of usurpation or recutting. It shows that the name "////// Caesar" () had been carved at first, and then the title "////// 〔*nty*〕[5] *ḫw* (= Augustus)" () was carved over it.[6] Since these name and title are so common as those of the Roman emperors, nothing certain can be said about their identification, even whether they belong to two different Emperors, or to one and the same.

It's clear that this left cartouche had originally belonged to the same period as the right cartouche, although nothing seems to have ever been carved in it except the later Roman name and title. Probably this cartouche had been left unfinished, or a blank cartouche common in the Ptolemaic Period, before it was reused in the Roman Period.

Notes

1) This block was described in KESSLER, *HTMS*, S. 280, Abb. 22a.

2) ////// represents the destroyed part.

3) There are several variations of the spelling. Cf. note 2 about the block (No. 1).

This cartouche can be restored for example as  , or  etc.

KESSLER 〔*op. cit.*, S. 280〕 gives no reading of this cartouche.

4) For example, the cartouche of Berenike I can be written as  as well as . Cf.

GLR IV, pp. 220f. For Berenike II, GAUTHIER, *ibid.*, pp. 259-262; BECKERATH, *HÄK*, S. 288. For Berenike III, cf. GAUTHIER, *ibid.*, pp. 389-390.

5) The word in [ ] is a restoration.

6) Also cf. KESSLER, *op. cit.*, S. 280.

LIMESTONE BLOCK WITH PAINTING (Pl. 118 no. 2): This block was found at the eastern quarter of the South Court. Its shape is a rough cube, and the inscribed surface is roughly 44cm high by 45cm wide. The surface is covered by a layer of gypsum, and painted. The uppermost portion is occupied by the lowest part of the same sunk relief as the one seen on the blocks (No. 1) and (No. 3), namely, three column-like decorations in the center, and two cartouches with *nbw* sign each on both sides. However, the cartouches are mostly lost except the lowest part of the right one. The colour, particularly of the left part, has been faded and blackened, but red colour is discernible on the 'column' in the center, and blue colour on those of both sides, thus showing the same colouring as on the block (No. 1).

However, the right *nbw* sign, and the cartouche to the right at least, seem to have been painted differently. Green colour is discernible on the former, and a trace of blue colour on the latter.

Below, there are a damaged projection, which seems to have been some decoration, and a horizontal band painted in red.

Further below, there is a coloured painting. Although its colour gets to be faded in several parts, it seems to show two portable shrines with the carrying poles placed on the stands. The carrying poles and stands, which are painted in yellow and partly in red, are relatively clear. The shrines are not clearly discernible, but their possible traces can be seen on the right stand and pole whose left parts are preserved.

Below, there are two horizontal bands, and the fragment of a line of hieroglyphic inscription in sunk relief. Some traces of pigment are partly discernible. This inscription can be restored as follows[1]:



Although it's not so certain to what words the signs at both ends belong, the inscription can tentatively read ////, *di s3 š3ᶜ ḫpr ḏd 'Inpw* ////, "////, (which) the son of the one who appeared at first gives, Anubis says ////".[2]

This fragmentary inscription is probably a part of a religious text, although its context is unknown. The spelling of *š3ᶜ ḫpr* is typical of the Ptolemaic Period. Considering its feature similar to the blocks (No. 1 and No. 3), this block can date from the reign of Berenike I, or rather Berenike II or III.

Notes

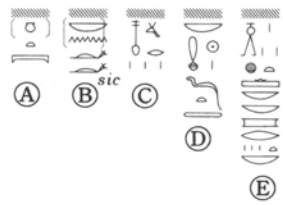
1) The restored parts are shown in brackets [ ]. The destroyed part is expressed as //////.

2) For  for *s3* "son", cf. SETHE, K. *Die aenigmatischen Inschriften*, in NORTHAMPTON, THE MARQUIS OF, W. SPIEGELBERG, and P. E. NEWBERRY, *Report on Some Excavations in the Theban Necropolis during the Winter of 1898–9* (London, 1908), p. 4*. For *š3ᶜ ḫpr* "the one who appeared at first (i.e. Creator)", cf. *Wb IV*, S. 406, 5, and *III*, S. 260.

LIMESTONE BLOCK WITH A RELIEF AND INSCRIPTIONS (Pl. 118 nos. 4~6): This block, which is 1.25m wide, was found at the eastern quarter around the Sacred Road. Although only the lower part of the sunk relief has been preserved on this block, it's clear that it shows two sitting, and one standing, figures.

The standing figure, dressed in the kilt with a pendant tail, is clearly a king. The two sitting figures facing him are deities. The similar scene is preserved more completely on another block dating from the reign of Nero, which was found elsewhere.[1] Five columns of inscription are partly preserved beside the figures.

They are as follows[2]:



The inscription Ⓐ, which is in front of the left deity, reads "////// Nut", showing the identity of the deity.

The inscription Ⓑ reads "////// every ////// to him".[3] It perhaps refers to some action of the right deity who is just behind it.

The inscription Ⓒ, which reads "////// beauty", however, refers to the action of the king.

The inscriptions Ⓓ and Ⓔ refer to the king as well, and read "////// Lord like Re' eternally", "////// tribute, everything, possessor of every favour of //////" respectively. Considering the similarity between this block and another block mentioned above, this block seems to date from the reign of Nero.

Notes

1) *Pre. Re. III*, Fig. 13, B. Also cf. KESSLER, *HTMS*, Abb. 20, S. 260-263.
2) ////// and [ ] represent the destroyed and restored parts repectively.
3) The traces of signs *nb* "every" and *n* "to" are barely discernible on their right ends. The sign *·f* "him" was wrongly inscribed twice.

LIMESTONE BLOCK WITH A FRAGMENTARY INSCRIPTION (Pl. 118 no. 7): This block was found at the frontage of the South Court, and is 30cm high by 36.5cm wide, and 60cm deep. The right edge of this block is roughly dressed, probably intended to be let into masonry. The fragment of one column of inscription has been preserved on the surface. Although its context is uncertain, the remaining part can be restored as follows.[1] It reads "////// Horus //////, tribute for you, *ir*[2] //////". This inscription probably dates from the Greco-Roman Period.

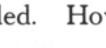


Notes

1) ////// and the part in [ ] represent the destroyed and the restored parts respectively.
2) Probably *irtt* "milk", cf. *Wb I*, S. 117.

RELIEF ON THE EAST OUTER FACE OF CHAPEL A (Pl. 118 no. 8): This relief[1], cut on the east outer face of Chapel A is located to the south of the eastern entrance of the chapel. The inscribed surface, which was originally covered with a layer of gypsum, and is 2 m high by 1.4 m wide, has been seriously damaged, and its lower portion has been partly preserved.

To the right, a large male seated figure, possibly of a deity, reaching out his hands was carved in raised relief.[2] The portion above his shoulder is completely lost, and the height of the remaining portion is about 1.1 m.

In front of this large figure, and facing it, a small kneeling figure being about 22 cm high has been preserved. It's unfinished, and its face, parts of the right hand and of the legs are lost. The remaining trace, however, seems to show that this figure represents a male carrying a vessel on his right hand, probably making offerings to a deity in front of him. The trace of a column of hieroglyphic inscription with blue pigment has been preserved at the upper right of the small figure. His title and name, which was originally carved in this column, cannot be restored, since the remaining trace is limited to the lowest part of the column, and is too faded. However, the remaining lowest part reads  *m3ᶜ-ḫrw*, "justified"[3], which commonly accompanies the name of the deceased. Therefore, the small kneeling figure clearly represents the deceased. As for the identification of the large seated divine figure, nothing certain can be said. Although traces of several columns of inscription with blue pigment are discernible to the upper left of the figure, they are too fragmentary to offer any satisfactory reading.

To the left of this relief, there is a flattened surface of the almost same size. It's possible that some inscriptions were drawn on it, but the surface is so damaged that nothing is recognizable except a few traces of gypsum. At the base, a narrow shelf with a vessel-like small depression has been carved, but its function is unknown.

Concerning the date of the above, nothing certain can be said, although its possible that they are anterior to Chapel A.[4]

Notes

1) This relief was described in KESSLER, *HTMS*, S. 273, Abb. 21.
2) According to Kessler, this large figure represents a deity holding a *ᶜnḫ*-sign. Cf. *ibid.*, S. 273.
3) Cf. *ibid.*
4) Kessler takes this relief as the remnant of a rock-cut tomb later modifed to the chapel. Cf. *ibid.*

LIMESTONE BLOCK (Fig. 225): This block, left in the South Court, measures 90cm in width and 60cm in height.

A fragment of a column of inscription has been preserved with the heads of a man and a cat-headed deity. It dates from the Greco-Roman Period from palaeographic grounds.

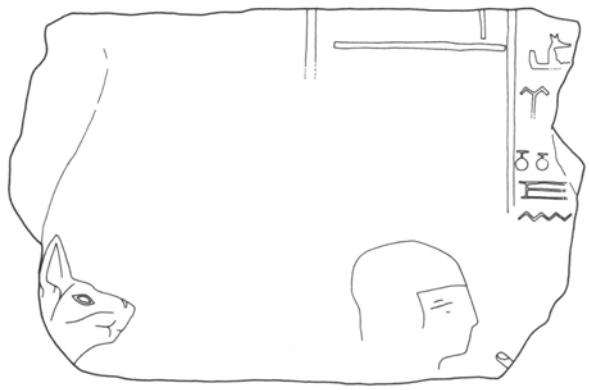


Fig. 225 Limestone block

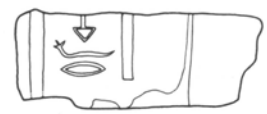


Fig. 226 Limestone block

LIMESTONE BLOCK (Fig. 226): This block, left in the Hypostyle Hall, measures 39cm in width and 15cm in height.

It shows the bottom of a column of inscription. It reads ////, *nfr* "beautiful ////".

LIMESTONE BLOCK (Pl. 119 no. 10): This block, found in Room 5 in the western area around the South Court, measures 73cm in width and 32cm in height. It shows the lower portions of two standing figures, facing each other. The female figure on the left is presumably a goddess, and the right figure is a king. The surviving portion of the inscription between them is as follows, and reads, "//////////// ...(?)...your sandals". It shows that the goddess is giving the rulership of foreign countries to the king here.



This fragment probably dates from the Greco-Roman Period.

(UCHIDA, S.)

PAPYRUS TEXTS

PAPYRUS No. 1, Demotic (Fig. 227, Pl. 125): This papyrus, which is 35 cm high by 19 cm wide, was found folded at the frontage of Chapel B. On its recto, 17 lines of demotic text are discernible. The first 9 lines are fragmentary and short. The remaining lines are relatively well preserved except the last 3 lines. The reading of the whole text is difficult partly owing to its unusual spellings, although a few words can be identified.[1)]

Note

1) E. g. Possibly *rn* "name" at the end of the fifth line, *mtw s3* (*w*) "belonging to the (priestly) phyle", or "through the hand of the phyle" at the beginning of the eleventh line, *itn* "land" at the beginning of the twelfth line, and so on.

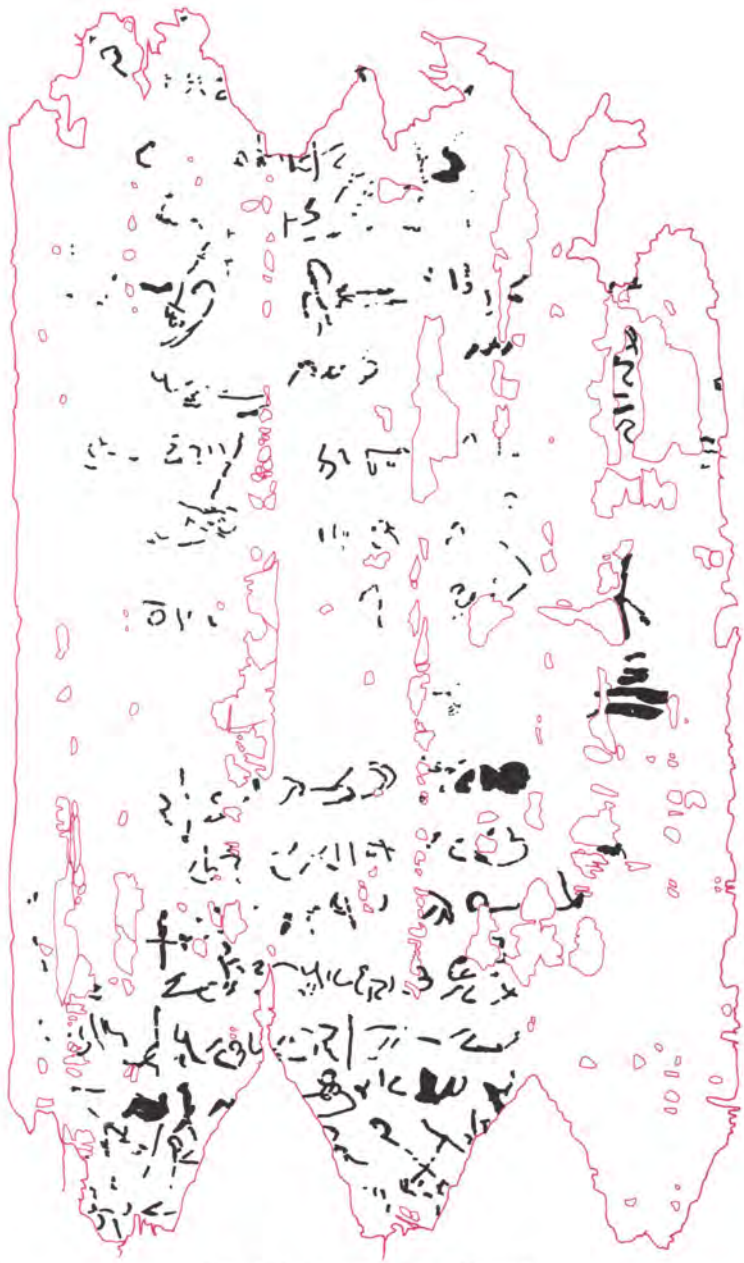


Fig. 227 Papyrus No. 1, Demotic

PAPYRUS No. 3, Demotic (Pl. 126):

....*P3-di-Ḥnsw s3 Pa-(?)*....	...., Pa-di-Khons, son of Pa- (?)....
....*-ns s3 St3-*....	....-nes, son of Seta-....

PAPYRUS No. 4, Demotic (Pl. 126):

....*n n3 ḏlḥ (w)*....	....to the small....
Illegible signs follow.	

PAPYRUS No. 5, Demotic (Pl. 126):

ḥsbt 31(·*t*) *ibd* 2....	Regnal year 31, the second month of....

n (?).... to (?)....

Illegible signs follow.

Tab. 26 PAPYRI

Pl. no.	Layer	Dimension	Language	Fibers
125-1	front area of Chapel B	19×35 cm	demotic	horizontal
126-3	Chapel D	2.5×3.5	demotic	horizontal
126-4	ditto	2×2	demotic	horizontal
126-5	ditto	4.0×3.5	demotic	horizontal

(UCHIDA, S.)

OSTRACA

OSTRACON No. 1, Demotic (Pl. 148) : This ostracon is a palimpsest, on which several unidentified signs had been drawn at first, and then two lines of demotic text were drawn on them. The reading of this text which is fragmentary and susceptible to different interpretations, is quite uncertain.[1)]

Note

1) I owe to Drs. J. H. Johnson and R. Ritner, who gave me valuable suggestions.

OSTRACON No. 2, Demotic(Pl. 148) : Ten lines of demotic text are barely discernible on this ostracon. Since they are mostly faded and obscured, their reading is very difficult. Several traces of personal names are perhaps discernible in several lines.

OSTRACON No. 3, Demotic (Pl. 148) : Only a part of three lines of a demotic text has been preserved. In the first line, an illegible sign is followed by words *r-ḥry* "up" and possibly *gm* "to find".

The second line is difficult to read, but we possibly have *ỉir-ḥr* "in front of" here.

As for the third line, only the beginning of which has been preserved, we cannot give any clear reading.

Tab. 27 OSTRACA

Pl. no.	Layer	Dimension	Language
148-1	southeast corner of the Western Temple Area, Layer 4	6.0×5.0 cm	demotic
148-2	under the paving stones, Middle Court East	11×13	demotic
148-3	Room 3, Building 4, on the floor	3.0×4.2	demotic

(UCHIDA, S.)

WOODEN OBJECTS

FRAGMENT OF A COFFIN (Figs. 43 and 228. Pl. 24): This fragment is a part of the outer right side of a wooden coffin discovered from a tomb to the east of Chapel A. The surface, covered with plaster and painted in black, is decorated with some scenes and columns of hieroglyphic text drawn in white.

To the right end, a part of a fragmentary and unidentified figure survives. To the left of it, the following text is preserved.[1]



It reads "////// (?) to him ////// [take out] the heart.[2] He has gone[3] ////// place free (?) //////".

The scene to the left of this text shows an offering table and probably a standing mummy, the body of which is partly preserved.

To the left of this scene, is drawn a figure of a male with his head shaven, probably a priest. He holds a bouquet in his each hand. He is accompanied with the following text.



It reads "////// (?) He goes out[4] (?) ////// (?) //////. The *w*^{c} *b* priest attends on him,[5] //////. He repeats[6] turning his back on //////".

To the left of this scene, another male with his head shaven carrying a pole with funerary outfits on his shoulders is drawn.[7] In front of him, the following text is preserved.

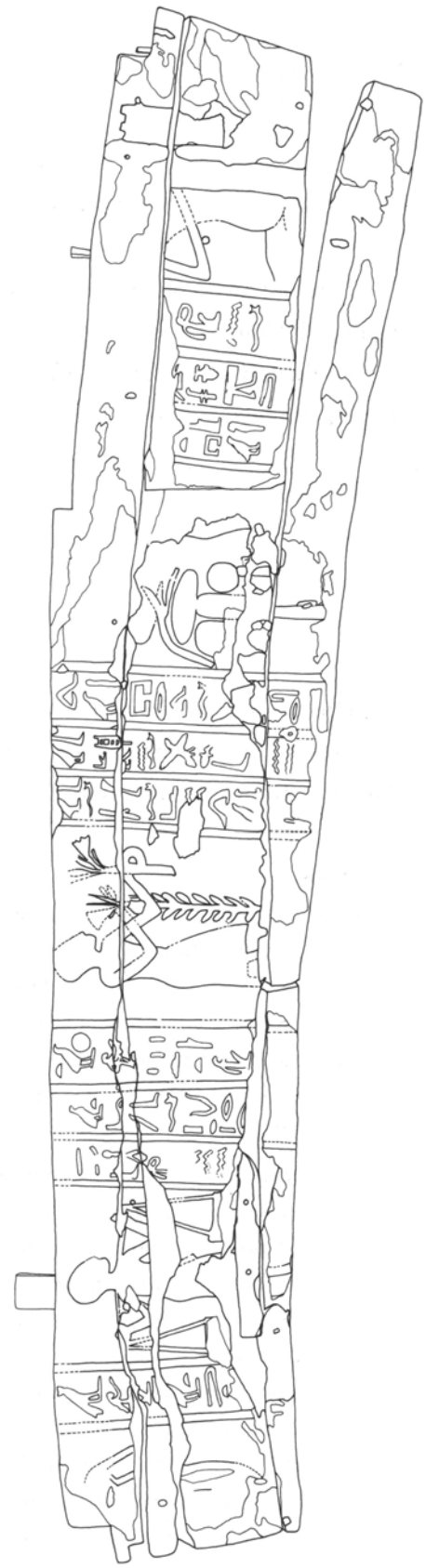


Fig. 228 Painting on the outside of the anthropoid coffin



The first two columns possibly read "////// female singers,[8] speech ////// (?) May he purify the Opening of Mouth ceremony from[9] //////". The reading of the last column is not clear.

To the left end, a fragmentary scene probably showing female mourners is accompanied with the following fragmentary text, whose reading is not clear.



The whole scene with text seems to express a scene of funerary ceremony. The drawing on a coffin showing non-divine figures is attested among the 18th Dynasty coffins,[10] and it's possible that this coffin dates from the same period.

Notes

1) ////// and [ ] represent the destroyed and restored parts respectively. Unidentified words are shown with (?).
2) *šd ḥ3ty*. Cf. OTTO, E., *Das ägyptische Mundöffnungsritual* (Wiesbaden, 1960), Teil 1 : Text, S. 44 (Szene 23, Ib), S. 96 (Szene 43b).
3) *sw šm(w)*, taken as Late Egyptian First Present. Cf. GARDINER, A. H., *Egyptian Grammar*, 3rd ed. (London, 1957), § 124 ; ČERNY, J. and S. I. GROLL, *A Late Egyptian Grammar*, 3rd ed. (Rome, 1984), Ch. 19 (particularly, 19, 9.).
4)  (*bw*) seems to be out of place here. It's tentatively taken as an error for (*iw*), and the sentence following *iw* as *iw* (·*f*) *sḏm·f* form in Middle Egyptian ('Aorist').
5) Cf. note 4. However, *bw* here might belong to a preceding sentence, and the sentence below it might be Optative ("May the *wʿb* priest attend on him //////"). *ʿḥʿ n*~ "to attend on~". Cf. FAULKNER, R. O., *A Concise Dictionary of Middle Egyptian* (Oxford, 1962), p. 47.
6) Cf. note 4.
7) Such a person carrying a pole is attested in some scenes of funerary procession. E. g. in the tomb of Ramose (T55), cf. WILKINSON, C. K., *Egyptian Wall Paintings* (New York, 1983), p. 132 (30. 4. 37) ; in the tomb of Nakhtamun (T341), cf. *ibid.*, p. 151 (33. 8. 20). Also cf. NAVILLE, E., *Das aegyptische Todtenbuch der XVIII. bis XX. Dynastie*, Bd. I (Berlin, 1886), Taf. III, L. e.
8) A tentative reading. *ḥnwt*, cf. *Wb III*, S. 286, 11-13.
9) A tentative reading. I cannot find any parallel for the purification of the Opening of Mouth ceremony itself. *ʿb*~*r*.... "to purify ~ from...." cf. *ibid.*, *I*, S. 175, 10.

10) E. g. TAYLOR, J. H., *Egyptian Coffins* (Aylesbury, 1989), Fig. 23 ; *LÄ V*, pp. 435-436, Abb. 2.

BASE FOR AN OSIRIS STATUETTE (Fig. 134 no. 1. Pl. 68 no. 1) : Found in Chapel B shaft. This is a base for a statuette, probably of Osiris, which should have stood on a projection on the upper face of this base.[1)]

One line of hieratic inscription is drawn on the three sides, and several unidentified signs on the other side. The hieratic inscription, whose reading is uncertain in its several signs, is possibly transcribed as follows.



It is tentatively translated as "Osiris, given life, child (?), who was dragged to the West[2)] (?), Gewawa[3)]". This inscription possibly refers to the deceased, who was the owner of this base. Several other signs on the other side cannot be identified, but at least they don't seem to be directly related to the hieratic inscription above.

This base can date from the Late Period or from the Greco-Roman Period.

Notes

1) A similar object and some Osiris statuettes were found in our excavation. Cf. *Pre. Re. VI*, p. 9, Fig. 7, Pl. 16 Nos. 2-5, 8.

2) This part is tentatively read (*st3 r imn(t)*) "who was dragged to the West (i.e. who was brought to the necropolis)". For this expression, cf. LÜDDECKENS, E., *Untersuchungen über religiösen Gehalt, Sprache und Form der ägyptischen Totenklagen* (*MDIK*, 11, 1943), S. 82, 155. is interpreted here as a variant writing of *imnt* "West". Cf. *Wb I*, S. 84, 86.

3) This personal name, not in RANKE, H., *Die ägyptischen Personennamen* (Glückstadt, 1935-1952), is probably related to a word *gw3w3* of *Wb V*, S. 168, 8.

FRAGMENT OF A BOARD (Fig. 229. Pl. 69 no. 22) : This wooden board was found at the front area of Chapel B.

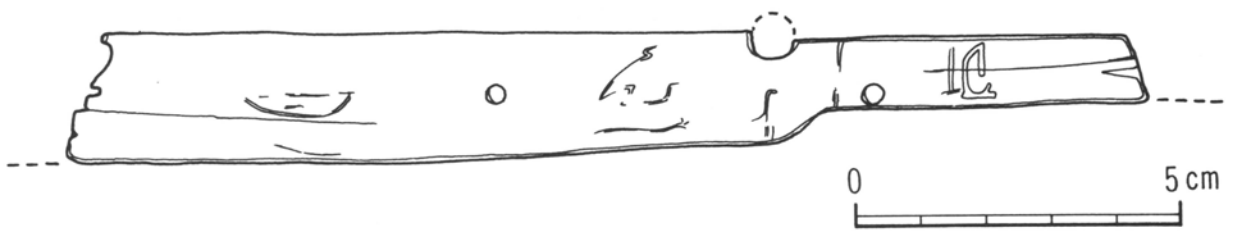


Fig. 229 Wooden board with hieratic

A few hieratic signs are preserved on its surface although they are very fainted, and barely discernible[1)]. These signs are the parts of a hieratic text written vertically, and four columns are preserved partly. Although a word, possibly "Osiris" (*Wsir*) (), can be found in the first column, the signs in the other three columns have been preserved only fragmentarily. In the second column, nothing but unidentified traces can be found, and in the last two columns, only a few fragmentary signs

are discernible.[2]

The text possibly dates from the Late New Kingdom or after.

Notes

1) I owe to Mr. J. Miyamoto, who pointed out to me the existence of these signs.

2) In the third line, the traces of a few signs, perhaps *p3y* () followed by *·f* ( ) are preserved, and thus could mean "his ////". In the fourth line, *nb* () is followed by an unidentified sign, and could mean "the lord of ////", or "every ////", and so on.

(UCHIDA, S.)

GYPSUM

FRAGMENT OF A MAGICAL 'HORUS STELE' (Fig. 164 no. 11. Pl. 77 no. 6) : Found in Layer 3 of the southeast corner of the Western Temple Area. It's a fragment of one of the magical stelae, well-known as 'Horus stelae', on each of which the god Horus as a child standing on two crocodiles is shown.[1]

On this fragment, we have only a part of two crocodiles and a fragmentary hieroglyphic inscription.

This inscription, a part of protective spell, is as follows,[2]



and it can read as "//// your [protection], in order to [double] your immunity, to seal mouths of ////".

This fragment can date from the Late Dynastic Period, or from the Greco-Roman Period.

Notes

1) For 'Horus stelae', cf. *LÄ III*, 60-62 ; HELCK, W., und E. OTTO, *Kleines Wörterbuch der Ägyptologie* (Wiesbaden, 1970), S. 154.

2) The parts in [ ] and //// are restored and destroyed parts respectively. The restoration is made from a parallel text on another Horus stele in the Pushkin Museum of Fine arts, Moscow. Cf. HODJASH, S., and O. BERLEV, *The Egyptian Reliefs and Stelae in the Pushkin Museum of Fine Arts, Moscow* (Leningrad, 1982), No. 186, R. 1. (9), on pp. 257-258, cf. Pl. 186 (II) on p. 257. Also cf. KÁKOSY, L., *Selected Papers [1956-73]* (Budapest, 1981), p. 217, ll. 6-7.

(UCHIDA, S.)

GRAFFITI

These graffiti[1] (Figs. 230 and 231) are preserved on the west wall of the entrance of Chapel B. They were drawn in black ink on a layer of gypsum covering the wall. The highest graffito is situated at the point 3.63 m high above the floor level, and the lowest one at the point 1.71 m high.

The graffiti seem to have been drawn in different periods, since the traces of earlier and faded



Fig. 231 Graffiti

graffiti are discernible under later ones, thus forming a kind of 'palimpsest'.

Because of this and that a layer of gypsum was lost extensively with the graffiti on it, its' very difficult to read remaining graffiti. Furthermore, the remaining graffiti have been blackened with soot and have faded.

Most of the graffiti were written in demotic, and seem to be 'accounts', in which names of people, numbers of days, and the amount of commodities are mentioned.[2]

A hieratic graffito consisting of two lines is discernible around the point 2.3 m high above the floor level. It can be transcribed as follows:



This can be translated as follows.[3]

1. "Regnal year (?) 13 (?) ////////// (?), Shu, The Two Ladies, Pre', the one who overleaps the whole (?) Two Lands, Horus, chosen of great gods ."
2. "the one who sends Hapi,[a] ////, Sobek, Lord of Bachu,[b] the great (?) lord of Anasha[c](Life, Prosperity, Health)".

Commentary.

a) I. e. inundation.

b) Contrary to my previous interpretation (cf. *Pre. Re. VI*, pp. 49-50), I now follow Dr. E. F. Wente in taking the epithet here as *nb B(3)ḥw* "Lord of Bachu".[4] Bachu (*B3ḥw*) "Eastern mountain" is commonly attested in the epithet of Sobek.[5]

c) Although the spelling is not necessarily clear here, it seems to be certain that this word represents Anasha (modern Nazlat el-'Amudain), which is well attested in the epithet of Sobek as one of his cult centers near Tehneh.[6]

The first line of this graffito, including *nbty* "The Two Ladies", well-known royal title, should be some kind of royal titulary[7], and particularly so, if the reading "regnal year" is correct. However, it's unknown to which king this 'titulary' belongs. Some kind of royal name might have been drawn in the space after the number "13", but it has been lost almost completely.

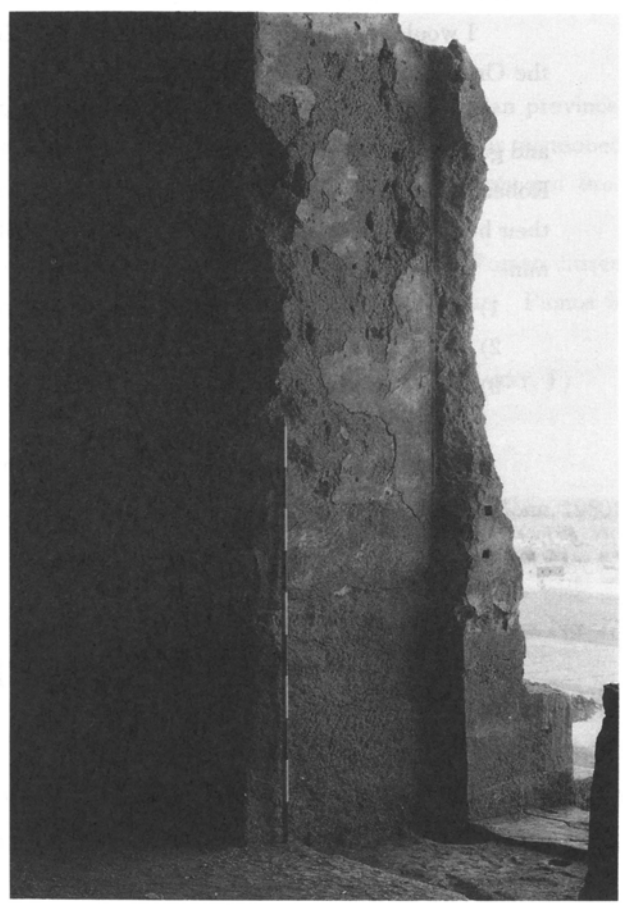


Fig. 230 Entrance of Chapel B with the graffiti

The second line shows the name and epithets of the god Sobek.[8] The epithet "the one who sends Hapi" shows the traditional association of Sobek with the Nile and its flood.[9] The other two epithets show the local importance of the cult of Sobek.

This graffito can date from the Late Period or the Ptolemaic Period from its paleographic features.[10]

Notes

1) These graffiti were described in KESSLER, *HTMS*, S. 275-276.
2) I owe this information to Dr. Janet H. Johnson and to Dr. Robert Ritner. Also cf. *ibid.*, S. 276.
3) ////// represents the destroyed part.
4) Personal communication from Dr. Wente. Cf. *LÄ V*, 1002, 1006, 1016. I owe this bibliographical reference to him. Also cf. KESSLER, *op. cit.*, S. 276.
5) *LÄ I*, 594.
6) Dr. Wente suggested me the reading *'Iw-nš* "Anasha" for this word in the personal communication. The responsibility of transcription is, however, mine. For Anasha, cf. *LÄ I*, 253; GARDINER, *AEO II*, p. 95* ; MONTET, P., *Géographie de l'Egypte Ancienne*, IIme partie (Paris, 1961), pp. 168-169.
7) Dr. Wente suggested in the personal communication the possibility that this is a royal titulary.
8) I owe this idea to Dr. Wente.
9) Cf. *LÄ V*, 996, 998.
10) KESSLER, *op. cit.*, S. 275-276, dates these whole graffiti to Dyn. 26 or not so later.

Acknowledgements

I would like to give sincere thanks to Drs. Edward F. Wente, Janet H. Johnson, and Robert Ritner, of the Oriental Institute, Univ. of Chicago.

Dr. Edward F. Wente checked a part of my interpretation, particularly my reading of hieratic texts, and gave me valuable suggestions. I owe materials of cryptography to him. Dr. Janet H. Jonhson and Dr. Robert Ritner gave me valuable suggestions and advice particularly about some demotic texts. Without their help, this report could never have been completed. Responsibility for the contents, however, remains mine.

1) Dr. Edward F. Wente, professor of Egyptology, the Oriental Institute, Univ. of Chicago
2) Dr. Janet H. Johnson, professor of Egyptology, the Oriental Institute, Univ. of Chicago
3) Dr. Robert Ritner, the Oriental Institute, Univ. of Chicago (now assistant professor of Egyptology, Yale Univ.)

I am also greatly indebted to Mr. Den Tomimura and to Mr. Junji Miyamoto.

(UCHIDA, S.)

2 GREEK, COPTIC AND ARABIC

STELAE AND STONE BLOCKS

STELE WITH GREEK INSCRIPTION (Pl. 121 no. 1): Found in Building 10, part of diving wall

between Rooms 3 and 4.

1	*Ὑπέρ Τιβερίου Καισα-*	In the name of Tiberius Caesar
	ρος Σεβαστοῦ Και Ἰου-	Augustus and Livia Augusta,
	λιάς Σεβαστῆς Ἡραί	to Hera and Aphrodite
	Αφροδείτηι Κοσσεινία	Cosseinia Paula
5	*Παυλὰ καὶ Πιῶνος*	and Pionos (dedicated)
	LIE φαρμοῦθι ς	15th year (of his reign) month
		Pharmouthi 6th day

This inscription, 54cm in width, is the earliest dedication in Roman Akoris that was ever excavated. Though another inscription of Tiberius's reign had been found, it had no connection with the Western Temple as it was on an inscription in a necropole (cf. LEFEBVRE, 1 p. 360, No. 55). *Ἀκωρις* was feeling the weight of Roman domination as early as the 1st century A.D. Livia Augusta is the mother of Tiberius (cf. *IGRR I* 1150, III 157). This stele is also the first dedication to Aphrodite found in Akoris. There are many dedications to *συννάοι θεοί* (cf. LEFEBVRE, 1 p. 343, LEFEBVRE, 2 pp. 51-54, No. 1-11, *IGRR I* 1134). So, Aphrodite is also one of the *συννάοι θεοί*, and the Western Temple is characterized further by its "*Συννάοι θεοί*". Lines 4-5 *Παυλά* is a woman. And in Akoris another stele is dedicated by men and women. Further, Paula and Pionos dedicated a stele to the goddesses Hera and Aphroditè only.

This inscription dates from 1 April, 29 A.D. (MOCHIZUKI, K.)

Supplement

As Mr. Mochizuki writes, it is the earliest stele dedicated after Egypt became a Roman province. This stele is also the first stele dedicated to the goddesses Hera and Aphroditè in Akoris. Hera is mentioned in inscriptions related to the Flood. Does it mean that even Aphrodite belonged to the *σύνναοι θεοὶ* mentioned in a lot of inscriptions found in the temple ?

Cosseinia Paula (Cossinius as a praenomen appears in one of Cicero's speeches) is a Roman citizen from the gens Paula. As a Roman citizen, her name comes before her companion's name. Pionos is certainly no Roman citizen.

(JARRY, J.)

Reference

BERNARD, E.,, *Sur une inscription d'Akôris* (*Zeitschrift für Papyrologie und Epigraphik*, No. 39, Bonn, 1980), p. 178.

CAGNAT, *IGRR*.

LEFEBVRE, G., *Inscriptions Grecques de Tehneh* (*Egypte*) (*Bulletin de Correspondance Hellénique*, No. 27, Paris, 1903), pp. 341-390 ; *La Fête du Nil à Akôris* (*BSAA*, 18), pp. 46-59.

WAGNER, *NIA*, pp. 51-56, Pls. VII-VIII.

STELE WITH GREEK INSCRIPTION (Pl. 120 no. 1) : The date is under the reign of Caligula. Height 57cm. Width, 37cm. Found at the southeast corner on the outer wall in the Western Temple Area.

1	*Ὑπὲρ Γαίου*	In the name of Gaius
	Καίσαρος	Caesar

	Σεβαστοῦ	Augustus
	Γερμανίκου	Germanicus
5	*τὸ περίβο-*	the enclo-
	λον Σούχω	sure to Suchos
	καὶ Ἄμμων[ι]	and Ammon,
	θ[εο]ῖς μεγίστ[οις]	the greatest gods
	.....ε[ὐ]χ[η.....	

The stele is in the shape of an oblong plate with a round top, a smooth face and a rough and stained back, which suggests that it was fitted somewhere in a significant location in the temple.

L. 1-4 : C. Julius Caesar Germanicus (Caligula), Emperor A.D. 37-41.

L. 5-6 : the neutral form *τὸ περίβολον* is very rare, but in the *Pre. Re. IV*, p. 32, K. Mochizuki reports on the term used in the same way on a votive stele in the Crocodile Temple (Reg. No. 21016, the Greco-Roman Museum, Alexandria). It may refer to a cistern, a wall, or the precincts of the temple.

L. 6-8 : the deities were worshiped in Akoris and frequently appear on other inscriptions.

L. 9 : a reading suggested by J. Jarry.

(TAKAHASHI, H.)

Supplement

The last line is quite damaged. The very beginning was occupied by the end of the word *μεγίστοις*. Accordingly there is no place for *ἀγαθῇ τύχῃ* which is found in other inscriptions. The only solution is *ὑπὲρ εὐχῆς*.

Caius Caesar Augustus Germanicus (Caligula) reigned from 37 through 41.

(JARRY, J.)

STELE WITH GREEK INSCRIPTION (Pl. 120 no. 2) : Date, August 29/30, A.D. 202. Height, 31cm. Width, 26cm. From the site surface.

1	*.....ἀνέ-*	
	θ]ηκα εὐ[χὴν]	I have put up a prayer
	L(ἔτους) ί Σεουήρο[υ]	in the 10th year of the reign of Severus,
	καὶ Ἀντωνίνο[υ]	Antoninus
5	*[καὶ Γέτα] τῶν*	and Geta, the
	Κυρίων	Lords
	Σεβαστῶν	Augusti.
	Θώθ ά	Thoth 1st.

L. 3 : L. Septimius Severus, Emperor A.D. 193-211.

L. 4 : M. Aurelius Antoninus (Caracalla), Emperor A. D. 211-217.

L. 5 : L. Septimius Geta, younger brother of Caracalla, whose damnatio memoriae was widely executed after his assassination by his elder brother.

STELE WITH GREEK INSCRIPTION (Pl. 120 no. 3): Date is the late principate. Height, 33cm. Width, 39cm. Part of the dividing wall between Rooms 1 and 2 in the South Court of the Western Temple Area.

1	.....[τὸ]	
	ἀπο[δοχε]ῖο̣ν	the storehouse
	αὐτο[ῦ] οἴκου	of the house
	Κάσ[ι]ος Ῥοῦφος	Casius Rufus,
5	τριήραρχος ἀνέ-	trierarch, has
	θηκεν ἐπ' ἀγαθῷ	built in good intentions.
	L(ἔτους) Τ̣ῦβι ιζ΄	In the third year, Tybi 17th.

L. 1-2: a reading suggested by Jarry. Bernard reads [κ]αὶ τοῦ̣ [παντὸς].

L. 4: otherwise unknown.

L. 5: there have been two votive steles by trierarchs (*ASAE*, 6, p. 150, No. 3, *IGRR I.* 1131, *Pre. Re. IV*, p. 30, BERNAND, *IGLA*, pp. 31-2, 18.; *ASAE*, 4, p. 150, No. 4, *IGRR I.* 1130, BERNAND, *op. cit.*, pp. 28-9, 16.3) and one by an admiral of the classis Augusta Alexandrina (*ASAE*, 4, p. 151, No. 7, *IGRR I.* 1129, *Pre. Re. IV*, p. 29, BERNAND, *op. cit.*, pp. 32-4, 19.) found in Akoris.

(TAKAHASHI, H.)

Supplement

L. 2: the left stroke of the delta is still clearly visible on the left side of the rubbing made by the Japanese team. (*Pre. Re. VI*, Fig. 20 p. 55) The lower part of the epsilon is also very distinct. Furthermore the distance between both the vertical strokes of the *Π* is the same as in the *Π* of ἐπ' ἀγαθῷ. A Tau would have been more distant from the iota of *Καί*. Hence the reading ἀποδ̣ [οχ] ε̣ῖον. Possibly the inscription commemorated not only the construction of the storehouse, but the construction of other outbuildings.

The year is missing as for the inscriptions of the trierarchs Aurelius Alexander (16, 3) and Herennius Straton (18) and Charicles, navarch, which did not mention any reign (19). But the trierarch Aurelius Avitianus, in a latin inscription, mentions the prefect Claudius Julianus, who was in charge from the spring or the summer of 203 through the summer of 206. Our inscription should belong to the same period. But a prefect of the same fleet, classis Augusta Alexandrina, came and heard Memnon in Thebes, the 7th of March 134 A. D. (Q. Marcius Hermogenes, Inscr. du colosse de Memnon (1960). Therefore a 3rd century dating is not completely certain. (JARRY, J.)

Inscriptions Pl. 120 nos. 1, 2 and 3 were originally published in *Pre. Re. I*, pp. 9-11, with a transcription, which had regrettably a number of errata, and a translation and commentary in Japanese. Supplementary readings for nos. 1 and 3 by J. Jarry appeared in *Pre. Re. VI*. And they were republished by Leclant (LECLANT, J, *Fouilles et travaux en Egypte et au Soudan 1981-1982. Orientalia*, 52, 1982, p. 489, Pl. 28, Fig. 33, 34) and by Bernand (BERNAND, *IGLA*, pp. 4-5, 2., pp. 20-1, 11., pp. 26-7, 14). (TAKAHASHI, H.)

FRAGMENT OF A GREEK STELE (Fig. 232): From the site surface.

.....τύχῃ.....	.....to the tyche.....

(MOCHIZUKI, K.)

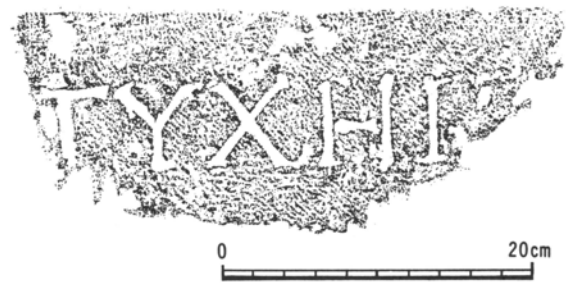


Fig. 232 Greek inscription

GREEK INSCRIPTION ON THE EAST PIER OF THE HYPOSTYLE HALL (Pl. 121 no. 2):

μεγίστοις θεοῖς Ἰακωβ	To the greatest Gods, Jacob
ος καὶ Μένας ἐπ	and Menas,
άρ]χος Ἀκωρίτων	eparch of the people of Akoris
ἐπ΄ ἀγαθῷ	in a good intention

The inscription was engraved beneath an erased cartouche.

The Jewish name Jacob in a dedication to pagan Gods is very strange. Perhaps this Jacob was a Jew converted at least superficially to paganism like his Byzantine homonym, the Jacob of the "Doctrina Jacobi nuper converti" who became a Christian.

An *ἐπάρχων* appears in a Coptic inscription, (*Pre. Re. VIII*, p. 46) Papyrus No. 46.

(JARRY, J.)

INSCRIPTION ON THE PAVING STONE OF THE MIDDLE COURT EAST (Pl. 121 no. 3):

+ ⲥⲛⲧⲉ *NAYC*	two ships
[*K*] *E ΠΛΩΤΟϹ*	and something floating (fit for navigation)

In Job XL 26 S(B pl) ϫⲟⲉⲓ, ϫⲏⲟⲩ (ϫⲟⲓ, ϫⲁⲓ, ϫⲁⲉⲓ) which usually stands for *πλοῖον* or *ναὺς* translates *πλωτὸς*. *ναὺς* is feminine and *πλωτὸς*, if considered as an adjective, would be masculine. Therefore *πλωτὸς* should be considered as a substantive.

(JARRY, J.)

PAPYRUS TEXTS

PAPYRUS No. 2, Coptic (Pl. 126):

ⲉⲗⲓⲁⲥ	Elias,
ⲡⲓⲥ [ⲧⲟ]ⲥ ⲭⲣⲓⲥ [ⲧⲟⲥ] (cursive)	Christ, Christ
ⲗ	
..ⲟⲥ *ὁμοίως* (*ἀ*)*μνι* ⲃ ⳋ	..os, similarly, two ewes, .90
Ἀνούφιος *ὗς* ⲱ	Anouphios, a pig 800
Ἀ	
ⲅⲡ ⲁ̀ⲣ (*ἄρουρα*)	86 arourai

'[*A*]ρύστον ὗς νω	Ariston, a pig 850
ϰ	
ϣ	
$\overline{\text{ΠϬ}}$ (ΠϬΟΙϹ)	The Lord
ϹΟΜϹ	consider
ε στοιχεῖ	certifies

It looks more like a draft than a real receipt. As usual, the scribe keeps writing in Greek but the spelling has become completely phonetic. Some Coptic words appear at the very end but it is difficult to realize if there is an connexion between the words ΠϬΟΙϹ , ϹΟΜϹ and *ε στοιχεῖ*.

PAPYRUS No. 6, Coptic (Pl. 127) :

ϕΑΜΘΝΩΘ ΜΗΝΟϹ Κ ΜΟϰ[ΙΜΟϹ..
..ΛΟΝ ΑΠΟΛΛΩΟΝ
ΑΡΩΟΝ ΝΑΡΙϹΤΩ[Ν
ΘΟΝΙΩ[Ϲ Θ]ΝΘϩ ΑΥΚΩ[Τ

The 20th of the month of Phamenoth. Mokh(imos ?)
Apollon
Aron son of Ariston
They built for eternity

L. 4 : the expression, for eternity is repeated twice, in Greek ΘΟΝΙΩϹ (*αἰων*) and in Coptic ΘΝΘϩ.

L. 2 : it is hard to find a restitution for the beginning of the line. It could be ΑΠΟΛ]ΛΟΝ ΝΑΠΟΛΛΩ ΟΝ , with an understandable omission of the second Ν .

PAPYRUS No. 7, Coptic (Pl. 127) :

ΠϣΘΝ ΙΟΝΑϹ ΠΘΤΟ[ΟΥΑΒ	the son of Ionas saint
ΠΙΩΤ ΟΥΜΘΡΟϹ	Father Homeros

PAPYRUS No. 8, Coptic (Pl. 127) :

ΑΝΟΚ ΙΩΝΝΑ ϣΘΝ ΑΡΙ..	I am Jonas son of Ari...
[ΜΑΚΑ]ΡΙΟϹ ΑΠΑ	The blessed Apa...
μέρος ἐνθάδε	A part here...
..πιος ἄρχων	Appios (?) archonte

The document is a curious mixture of Greek and Coptic. The names are Coptic (ϣΘΝ : son) but the text itself is Greek.

PAPYRUS No. 9, Greek (Pl. 128) :

τῆς ἔωνος (αἰωνος)	of the era (or eternity)
reverse writing : *απ Μ(αρτύρων)*	81 of the Martyrs (=365 of the Lord)

PAPYRUS No. 10, Greek (Pl. 128):

Θεοῦ Υ[ίος	son of God

PAPYRUS No. 11, Greek (Pl. 128):

ἐλαύνω	I take
ε Παπε	the fifth of Paopi

PAPYRUS No. 12, Greek (Pl. 128):

Ακ]οριs ἐν κόρρα τῆς οἰκίας	..Akoris at the entrance of the house
ἀ]σφάλλοσε ὁ π [·····	insured

PAPYRUS No. 13, Greek (Pl. 128):

φόρ(ος) ἐώνι(ος)	eternal tax

PAPYRUS No. 14, Coptic (Pl. 128):

ⲡ ⲛⲟⲩⲃ	the gold

PAPYRUS No. 15, Coptic (Pl. 128):

ⲱⲕⲉⲙ̣	sad
ⲃⲁⲕ]ⲕⲩⲗⲟⲥ	Bak]kylos
ⲓ̲]ⲱⲛⲁⲥ	J]onas
ⲓ̅ⲣ̅	110 (date ?)

PAPYRUS No. 16, Greek and Coptic (Pl. 128):

ⲃⲉⲗϫⲉ··	a pot
ⲗⲁ]ϩⲉ ⲥⲛⲧⲉ ⲛϩ	two measures of oil
ἄλλως μόνον ἀ[σέβεια, ἀσέβης ?	otherwise only the kharraj (?)
[ⲛⲓⲕⲏ]ⲫⲟⲣⲟⲥ ⲥⲟⲩⲗⲓ ⲗ[ⲑⲱⲣ··	Nikephoros, the first of Athor

L. 2: ⲗⲁϩⲉ could be a writing for ⲗⲁϩⲗⲓ, nominative plural of ⲗⲁϩⲏ *λαη*. Cf. CRUM, p. 149.

L. 3: there is only one way to complete this Greek word: *ἀσέβεια* or *ἀσέβης* impiety, unfaithfulness, unfaithful. Maybe an allusion to the خرّاج, a tax levied by the Moslem state on the unfaithful, i. e. the Christians.

L. 4: the first letter of the month seems to be an alpha. There is only one month beginning with an alpha: ⲁⲑⲱⲣ. As a matter of fact, it is a bohairic form. As the document is half Greek, maybe the scribe dispensed with the initial hori. We preferred [ⲛⲓⲕⲏ]ⲫⲟⲣⲟⲥ to *φόρος* (tax). A nominative without any complement is unlikely before a date.

1 ⲗⲁϩⲏ = 5*ξεσταί*

PAPYRUS No. 17, Coptic (Pl. 128):

[ⲣⲟⲙ]ⲡⲓ ⲛ̅ (ⲙⲁⲣⲧⲩⲣⲱⲛ) ⲏ...	Year of the Martyrs...8
[ⲉⲡⲉ]ⲡ ⲕⲑ ⲏ ⲓⲛ [ⲁⲓⲕⲧⲓⲱⲛⲟⲥ]	the 29th of Epep, the eighth year of the

indiction

The abbreviation for Martyrs is quite normal but the shape of the ro is rather unusual. Epep is the only saidic month ending in a *Π*. Therefore our restitution.

PAPYRUS No. 18, Greek (Pl. 128):

Νίκα Χστ (Χρίστος) Christ triumphs

PAPYRUS No. 19, Coptic (Pl. 129):

1 ⲉⲣⲟⲟⲩ ⲟⲩⲱ ⲧ[ⲁⲥ]ϥⲁⲗ[ⲓⲁ], ⲡⲁⲛⲧⲟⲕⲣⲁⲧⲱⲣ
ⲉⲗⲁⲩ ⲛ̀ⲥⲱⲃ ⲛ̀ ⲁⲣⲱⲛ ⲉⲃⲟⲗ ⲉⲧⲃⲉ ⲉⲥⲕⲉⲛ
ⲉⲛⲁⲕ ⲛⲧⲁⲥϥⲁⲗⲓⲁ, †ⲉⲟⲣⲧⲏ ⲛ̀ⲭⲟⲓⲁⲕ
ⲁⲛⲟⲕ [ⲑⲱ]ⲙⲁⲥ ⲱⲛ ⲡⲙⲁⲕⲁⲣⲓⲟⲥ ⲡⲉⲗⲁⲭ[ⲓⲥⲧⲟⲥ..
5 ⲁ ⲛⲁⲥⲧⲁⲥⲓⲟⲥ [ⲡⲁⲡⲛⲟⲩ]ⲧⲉ ⲱⲉⲛ ⲡⲙⲁⲕⲁⲣⲓⲟⲥ ⲡⲉⲙ̄ⲣ̄(ⲓⲧ) ⲓⲱ[ⲁⲛⲛⲉⲥ..
ⲉⲩⲡⲁ)ⲗⲉⲓⲛⲟⲥ ⲱⲉⲛ ⲥⲁⲙⲙⲟⲛ
ⲧⲡⲣⲟⲥ [ⲉⲩⲭⲏ] ⲡⲧⲥⲛⲉ ⲡⲓⲱⲧ
..ⲟⲥ ⲥⲁⲙⲟⲓ
ⲁⲩ]ⲣⲏⲗⲓⲟⲥ ϥⲱⲧⲉⲓⲛⲟⲥ ⲉⲧⲟⲓ ⲙⲉⲧⲣⲉ..
10 ⲣⲟⲙ] ⲡⲉ ϥ ⲓ ⲙ(ⲁⲣⲧⲩⲣⲱⲛ) ⲡⲁ̣ⲣⲙ̣ⲥ̣ⲁ̣ⲧ̣..
ⲑⲱ]ⲙⲁⲥ ⲣⲛⲁⲛⲁⲱ ⲉ ⲡⲙⲁⲕⲁⲣⲓⲟⲥ ⲡⲉⲧⲟⲩⲗⲁⲃ..
ⲣⲉϥⲧⲓ]ⲥⲁⲡ [ⲉⲩⲡⲁ]ⲗⲉⲓⲛⲟⲥ ⲙⲉⲣⲧⲉ

1 for them, terminated the bond. (the day of the) Pantocrator
took away Aron's things which were along...
for you the bond. The festival of Khoiak
I am Thomas son of the blessed and humble...
5 Anastasios and Paphnutios, son of the blessed and beloved Ioannes
Eupaleinos son of Ammon
the prayer which wants the Father...
...os .O that...
Aurelius Photeinos which has been certified...
10 year 510 of the Martyrs (=794 of the Lord) Pharmouthi (?)
Thomas swore on the blessed and holy...
the judge Eupaleinos certifies

PAPYRUS No. 20, Greek (Pl. 129):

ὁ ἅγιος Ὀννόφι[ος

Saint Onnophios (probably dialectal for Anouphios)

PAPYRUS No. 21, Greek (Pl. 129):

εἶπε τὴν αὐτὴ[ν he said the same...

PAPYRUS No. 22, Coptic (Pl. 129):

ⲙⲉⲧ]ⲁ̣ϫⲩ ⲕⲓⲟⲛⲁⲥ ⲅⲉⲟⲣⲅ[ⲓⲟⲥ

ⲧⲙⲟⲩ ⲣⲁⲧⲫ ⲛⲧⲟⲧⲫ

between the columns George (or six columns)

burnt his feet and hands

L. 2: ⲛ indicates here a correlation, not a causal relation

PAPYRUS No. 23, Coptic (Pl. 129): (maybe Greek if Prasche is a name)

ⲉ] ⲗⲁⲓⲱ ⲣⲟ ⲙⲛ...

ⲓⲱ.. ⲡⲣⲁⲱⲉ

..I]ⲏⲣⲟⲛⲓⲙ [ⲱ

Olive-tree 170 and

...ios...Prasche (name) or ⲡⲣⲁⲱ (meaning unknown, relative to irrigation)

Hieronymos

PAPYRUS No. 24, Coptic (Pl. 129):

ⲱⲁⲛⲱ	tending
ⲫⲓ]ⲗⲟⲑⲉⲟⲥ ⲡⲱⲏ[ⲣⲉ	Brother Philotheos
ⲙⲉ]ⲧⲣⲉ ⲉⲡⲁⲫ[ⲣⲟⲇⲓⲧⲟⲥ..	Epaphroditos certifies

PAPYRUS No. 25, Coptic (Pl. 129):

..ⲛⲱⲉⲛ ⲓⲟⲛⲁⲍ ⲧⲉⲧ..	son of Jonas, mixed (?)
..ⲡⲓⲱⲧ ⲟⲩⲙⲉⲣⲟⲥ..	The father Homer

The scribe is confusing *o* and *ou*: *Οὔμερος* for *Ὅμηρος*. A sigma seems to have been added to ⲓⲟⲛⲁ above the line.

PAPYRUS No. 26, Coptic (Pl. 129):

ⲟⲛⲁ ⲟⲩⲉⲗⲁϫⲓⲥⲧⲟⲥ ⲛⲉⲗⲁⲩⲟⲛ ⲁⲩⲱ ⲟⲩⲃⲱ ⲛⲥⲩⲕⲏ ⲛⲁⲑⲏⲛⲟⲩⲟⲛ

ⲥⲧⲁⲫⲩ]ⲗⲁ ⲛⲁⲑⲉⲛⲁⲓⲟⲛ ⲏⲣⲡ ⲥⲣⲟⲥ ⲁⲩⲱ ⲕⲁⲗⲟⲧⲏⲧⲱⲥ ⲡⲏⲣⲡ ⲛⲃⲟ

ⲥⲓⲧⲟⲩⲥ ⲉⲧⲉⲣⲟⲩⲣⲉ̣[ⲓⲉ ⲕⲁ]ⲧ̣ⲁ̣[ⲧⲣⲟ]ⲡⲟⲛ ⲛⲁⲑⲏⲛⲁⲓⲟⲛ ⲥⲓⲧ̣...

a very small olive-tree and an Athenian fig-tree

Athenian grapes. The wine is strong and of fine quality. The wine of vines...

corn which is cultivated according to Athenian methods. Sow...

It is quite incredible to find at that time such an enthusism for Athenian plamts and Athenian methods.

PAPYRUS No. 27, Coptic (Pl. 130): Three isolated fragments, of the same writing and belonging, without any doubt, to the same papyrus.

ⲉⲧ ⲙⲉⲧⲣⲉ..	certifies
ⲛⲧⲓⲁⲥⲫⲁⲗⲓⲁ ⲛⲑ..	insurance

ⲟⲧⲧ..	
ⲙⲓⲭ]ⲁⲓⲗ	Michel
ⲉⲩⲟⲓ.. ⲉⲩϣⲓ	they allowed
ⲛⲁⲩ	see

L. 2: ⲁⲥⲫⲁⲗⲓⲁ has probably the meaning of financial insurance, not of security.

PAPYRUS No. 28, Coptic (Pl. 130):

1 ....ⲙ$\overset{ⲱ}{\text{ϯ}}$ (ⲙⲁⲣⲧⲩⲣⲱⲛ)	of the Martyrs (date)
..ⲱⲟⲩ ⲛ ϥⲧⲟⲟⲩ ⲛϩⲟⲗⲁⲕ .. ⲧⲧⲛ	four chains (to irrigate)
..ⲓ] ⲱⲁⲛⲛⲏⲥ ⲡϣⲛ ⲗⲟⲩⲥⲉⲧⲧⲓⲟⲥ	John, son of Lucetius
.. ⲛ ⲛⲓⲱⲁⲛⲛⲏⲥ ϣⲁⲡ ⲉϩⲟⲟⲩ	son of John bought cows (or the day)
5 ⲉ ⲡⲉⲃⲱⲧ	The fifth of the month
ϩ]ⲛ ⲡⲁϣⲧϩ [ⲓ]ⲏⲥ̣ⲟ̣ⲩ̣ⲥ̣	in which belongs to the place. Jesus

L. 3: ⲗⲟⲩⲥⲉⲧⲧⲓⲟⲥ is probably a transcription of the Latin name Lucetius. The spelling does not reflect the correct pronunciation but results from a confusion between the Greek lunar sigma and the Latin C.

L. 5: the day of the month has been written between two lines (cf. picture).

PAPYRUS No. 29, Coptic (Pl. 130):

ⲡⲩⲗⲟⲛⲁ ⲡⲁⲣⲁϣ	ⲙ	ⲥⲡ	*Θεὸς νίκα*
ⲧⲁⲛⲓ	ⲙ	ⲥⲑ	*Θεὸς νίκα*
ⲟⲩⲁⲛ ⲟⲩⲃϩⲩ	ⲙ	ⲥ	*Θεὸς νίκα*

The door of the ⲡⲣⲁϣ (meaning unknown, relative to irrigation)

M (millensimus ?) 280. God triumphs

the dyke (ⲧⲁⲛⲓ for ⲧⲏⲛⲉ) M 207. God triumphs

one trench (ⲃϩⲩ for ⲃⲟϩⲓ, ⲁⲩⲕⲉ, trench) M 200. God triumphs

PAPYRUS No. 30 (Pl. 130): No letters.

PAPYRUS No. 31, Coptic (Pl. 130):

ⲑϥ ⲁⲅⲉ(ⲛⲏⲥ ?)	Amen, Agenes ?

PAPYRUS No. 32, Greek (Pl. 131):

(left)

ἀρ (ουρα) λη $\underline{\mu}$ *(ὁμοίως) τρίτον ο...οϛ ὁ* $\underline{\mu}$ *(οίως)* $\overset{\theta}{\lambda}$ *ἀ (ρουρα)*

$\underline{\mu}$ *(ὁμοίως) εὔτομο β ὁ* $\underline{\mu}$*(οί)ως* $\overset{\theta}{\lambda}$ *ἀρ (ουρα)*

(right)

ει ὁ $\underline{\mu}$ *(οίως)* $\frac{o}{\prime}$ *αι (ἀρουρα?)*

[τρι or *τεταρ]τον η/ω ὁ* $\underline{\mu}$ *(οίως)*

aroura 38, similarly third 76, similarly $\frac{9}{30}$ aroura

similarly seventh 6.2 similarly $\frac{9}{30}$ aroura

on the right, same papyrus, but something is missing between the two fragments:

15 similarly $\frac{70}{10}$ aroura (?)

third or four]th 8/800 similarly...

The two numbers which occurred in succession or on top of one another could be a reference to some surviving tax similar to the jugatio-capitatio: how many capita, how many jugera.

PAPYRUS No. 33, Coptic (Pl. 131):

1 ..ⲑ ⲡⲁⲣⲁ(ⲥⲕⲉⲩⲏ) ϩⲁⲧⲱⲣ ⲓ, ⲅ ⲓⲛⲇ. ⲡⲉⲗⲁⲭ(ⲓⲥⲧⲟⲥ) ⲁⲙⲟⲗⲗⲱⲛ ⲛ ⲡⲧⲏⲣⲱ

..ⲛⲧⲛⲉϩ ⲛⲑ ϩⲁⲗ(ⲁⲕ) ⲡⲧⲣⲓⲉⲛⲥ ⲁⲡⲁ (ⲡⲁ)ⲡⲛⲟⲩⲧⲉ ⲧⲙⲉⲗⲉⲧⲏ ⲛⲧⲁϩⲟ

..ⲙⲙⲟⲟⲩ ⲧⲉⲣⲉⲩⲛⲁ ϩⲁⲗ(ⲁⲕ) ⲛⲗⲁⲕ ⲙⲟⲟⲩ ⲕⲉⲣⲃⲉϫⲉ ⲉⲓ..

..ⲟⲙ(ⲟⲓⲱⲥ) ..ⲑⲙ ϩⲗⲗⲟⲕ ⲧⲁϩⲟⲛⲥ ⲛⲟ ⲧⲣⲓⲉⲛⲥ ⲕ..ⲁ..

5 ..ⲡⲁϫⲱⲛ ⲱⲛ ⲡⲁⲩⲗⲟⲥ ⲟⲏ ⲧⲣⲓⲉⲛⲥ .... ⲛⲣⲁⲕ..

1 Friday, the tenth of Hathor, the third year of the indiction, the very humble Apollon, son of Ptersch

oil 59, chain, 80 triens, Apa Paphnutius, take care of...

Water; check the chain of the buckets of water; you pay the salary

Similarly...49; the chain is broken...78 triens...and

5 Pachon son of Paul, 78 triens.....bucket

L. 3 and 5: notice the confusion frequent in Coptic between ⲗ and ⲣ.

PAPYRUS No. 34, Coptic (Pl. 132):

1 †ⲡⲁⲣⲁⲥⲕⲉⲩⲏ ⲥⲟⲩ ⲓⲁ ⲁⲛⲟⲛ ϩⲏⲗⲓⲁⲥ ⲛ ⲱⲙⲁⲙⲟⲩⲛ ⲁⲩⲱ ⲡⲟⲓⲙ

ⲉⲛ ϩⲛ ⲁⲩⲏⲧ ⲱⲛⲟⲛⲧⲓⲥ ⲟⲩϫⲁⲓ ⲙⲉⲗⲉⲧⲁ ⲛⲧⲁϩⲟ

ⲙⲙⲟⲟⲩ (ⲛⲛ)ϩⲓⲉⲉⲩ ϩⲛ ⲡⲥⲡⲁⲧ ⲙⲡⲓⲁⲣⲟ..

ⲣⲉⲧ ⲁⲛⲧⲟⲛⲓⲟⲥ ⲡⲣⲉⲥ(ⲃⲩⲧⲉⲣⲟⲥ) ⲧⲉϫⲣⲓⲁ ⲟⲩϩⲣϫ

5 ⲟⲙ(ⲟⲓⲱⲥ) ⲁⲛⲧⲓⲱϫⲱ ⲣⲙⲙⲟⲟⲩ .. ⲟⲏ. ⲟⲙ(ⲟⲓⲱⲥ) ⲍⲟⲏ

ⲡⲟⲥ (ⲡⲕⲩⲣⲓⲟⲥ) ⲁⲣⲓⲡⲁⲙⲉⲩⲓ ⲙⲛ ⲥⲉⲗⲥⲗ ⲉⲣⲟⲟⲩ

†ⲃⲁⲡⲧⲓⲥⲧⲏⲥ

ⲟⲙ(ⲟⲓⲱⲥ) ⲁⲛⲑⲉⲙⲓⲱ

1 Friday, the eleventh, we, Elias, son of Shamun and Poimen

of the monastery of Schnontis, greetings. The work to reach

the water of the water-wheels on the bank of the Nile

the method of the priest Antonius, must be set in order...

5 Similarly, Antiochus, the water-specialist...78 similarly Zoe.

May the Lord remember them and console them

Baptist

Similarly Anthemius...

L. 2: ⲱⲛⲟⲛⲧⲓⲥ: cf. PREISIGKE, *Πανσοντε* ⲡⲱⲟⲛⲧⲉ, *Τσονεσόντις*

L. 4: ⲡⲣⲉⲥ abbreviation for ⲡⲣⲉⲥⲃⲩⲧⲉⲣⲟⲥ.

PAPYRUS No. 35, Coptic (Pl. 133):

ⲧⲉⲕⲛⲟⲥⲓ ⲥⲛϩⲉⲛⲓ ϥⲕⲁⲁϥ ⲛⲧⲛⲁⲓⲃⲱ[ⲕ]..
ⲛϩⲓ ⲉⲧⲉ ⲛⲁⲓ ⲛⲉⲃⲧⲱⲟⲩ ⲛⲕⲉⲛⲩⲓ ⲛⲁⲣ ⲛⲛϩ..
ⲙ ⲉϫⲟⲩⲧ ⲥⲁϥⲃⲉ ⲛⲁⲓⲧⲣⲉ ⲛⲃⲁⲛⲓⲡⲉ ⲙⲉⲣⲟϥ..
ⲧⲓⲟⲩ ⲥⲁⲟⲛ ϩⲁⲣⲁⲕ ⲛⲓⲱⲡⲉ ⲙⲉϩⲙⲓ ⲛⲁⲓⲧⲣⲉ..
ⲁⲅⲁⲑⲟⲛ ⲛⲁⲓ ϩⲱⲱⲧⲛⲑⲛ ⲛⲟϥ ⲛⲧⲁⲓ ⲃⲓⲧⲟⲩⲉⲓ..
ⲉⲣⲟⲟⲩ ⲟⲩⲁ ⲣⲟⲱ ⲗⲉⲗⲟϩ ⲙⲛ ⲛϩ..
ϩⲟ[ⲙⲏⲣ] ⲟⲥ (or ϩⲟⲛⲟⲣⲓⲟⲥ) ⲱⲛⲕ ⲉⲃⲟⲗ, ⲃⲓ ϩⲟⲗⲁⲕ ⲛⲛ..
ϩⲱⲱⲣ..
ⲛ..ⲧⲣ..ⲥ ⲛⲧⲁⲓ ⲭⲁ[ⲣ]ⲧⲓ[ⲥ..
..ⲛⲑⲛ ⲛⲟⲩϥⲉ. ⲁⲓⲧⲁϩⲁϥ ϩⲁ ⲡⲓⲁⲣⲭⲓ[ⲙⲁⲛⲇⲣⲓⲧⲏⲥ..
ⲡⲁⲗⲁⲙⲓⲁⲥ ⲉⲧⲩ ⲛⲁⲓ ⲥⲛⲉⲉⲛⲉⲓ ⲛϩⲟⲗⲁⲕ ⲥⲁⲩⲟϩ..
ⲉⲣⲙⲏⲥ..

1 He left your great irrigation pump with these servants
for me, which are these two vessels and a bucket of oil
27 ⲗⲓⲧⲣⲁⲓ (1 ⲗⲓⲧⲣⲁ = 12 ounces) of fetters, 40 for him
five people employed at the chains for the pumping work, 50
5 Agathon, these chains are useful for you, as for me, I need twelve shoes
for them a measure of fruits of the dûm palm, and oil
Homer (or Honorios) left in a hurry ; twelve chains
Hor
.....this paper
10 ...for your use ; he put it down for the archimandrite
Saint Palamias, this irrigation pump with chains ; he gathered
Hermes

L. 1 : ⲥⲛϩⲛⲉⲛⲓ probably ⲥⲛϩⲓⲛⲓ, irrigation machine, K 153 ساقيه خطارة ; ⲛⲧⲁⲓⲃⲱⲕ for ⲛⲧⲛⲛⲁⲓⲃⲱⲕ.

L. 2 : ⲃⲧⲱⲟⲩ for ϥⲧⲟⲟⲩ.
ⲕⲉⲛⲓⲩⲓ for ⲕⲛⲛⲉ.
ⲁⲣ for ⲁⲣⲉ, ⲁⲗⲉ bucket.

L. 3 : ϫⲟⲩⲧ ⲥⲁϥⲃⲉ : ϫⲟⲩⲱⲧ ⲥⲁⲱϥ
ⲃⲁⲛⲓⲡⲉ : ⲃⲉⲛⲓⲡⲉ (*σκεύος* and usually *σιδηροῦς*) ; chains, fetters.

L. 4 : ⲥⲁⲟⲛ, ⲥⲁⲩⲟⲛ servant.
ϩⲁⲣⲁⲕ for ϩⲁⲗⲁⲕ, *κρίκος*. Note again the confusion between ⲗ and ⲣ.
ⲙⲉϩⲙⲓ, ⲙⲉϩ, ⲙⲁϩ ⲙⲟⲟⲩ draw water.

L. 5 : ϩⲱⲱⲧⲛⲑⲛ : ϩⲱⲧⲧⲏⲩⲧⲛ (cf. MALLON, *Grammaire Copte*, p. 237).
ⲧⲟⲩⲉⲓ, ⲧⲟⲟⲩⲉ, ⲑⲱⲟⲩⲓ shoes, pair of shoes.

L. 6 : ⲣⲟⲱ : ⲣⲁⲱ measure.
ⲗⲉⲗⲟϩ : ⲗⲓⲗⲟⲟϩⲉ, ⲗⲉⲗⲱϩⲉ, ⲉⲗⲟⲟϩⲉ, ⲗⲟϩⲉ.

مقلة مقل dûm palm.

L. 7 : in case it would be possible to find a place for a letter between the end of the name and ⲱⲛⲕ , it would be possible to understand ⲡⲱⲛⲕ, to draw or to empty water. As a matter of fact the distance between the two words is very short.

ϩⲟⲗⲁⲕ : ϩⲁⲣⲁⲕ.

L. 8 : cf. Apa Hôr in "Apophtegmata Patrum".

L. 9 : ⲭⲁⲣⲧⲓⲥ : Greek word *χάρτης*.

L. 10 : ⲉⲧ̅ⲩ̅ abbreviation for ⲉⲧⲟⲩⲁⲁⲃ.

ⲥⲛⲉⲉⲛⲓ different spelling for ⲥⲛϩⲉⲛⲓ (cf. line 1).

ⲥⲁⲩⲟϩ : ⲥⲱⲟⲩϩ, ⲥⲁⲩϩ, ⲥⲁⲟⲩϩ.

the spelling is always quite phonetic and reflects very exactly the pronunciation in Middle Egypt at that time. ⲙⲛ seems to have been simplified and written ⲛ. This fact is corroborated by other papyri from the same site.

Finally, what do we learn from those documents (Nos. 27, 29, 33-35) about irrigation in Akoris at the very beginning of the moslem occupation. Of course, that people were digging trenches, or small canals and were building dykes and dams. It has always been so, from the very beginning of Egyptian history. The mention of an irrigation machine (ⲥⲛϩⲉⲛⲓ̈) is more significant. This machine was working with the help of chains and rings (parts of chains ?) : ϩⲟⲗⲁⲕ. This word comes up constantly in our texts. Maybe the oil (ⲛϩ) which is mentioned again and again was used to lubricate the aforesaid chains. Anyway the reader gets the impression that people were drawing water from the Nile as people actually draw water from a well with a bucket dangling at the end of a chain (the word ⲕⲛⲛⲉ means probably that kind of bucket.) In Crum's dictionary the word ⲥⲛϩⲓⲛⲓ is translated by the arabic خطارة ، ساقية. Nevertheless according to our texts, it does not seem to work like a modern saqia. The "Endless screw" was certainly not in use at that time. But the Papyrus No. 34 mentions ϩⲓⲉⲉⲩ which could mean both canal and saqia. So it is hard to say the Copts at that time had no saqia.

These papyri give us also significant information about the prices of products at that time, and the dialectal peculiarities of that region. The Akoris dialect deserves certainly a more thorough study.

PAPYRUS No. 36, Coptic (Pl. 134) :

1	† ⲉ ⲡⲁⲛⲉ (ⲡⲁⲁⲛⲉ)	The fifth of the month of Paoni
	ⲱⲗϩⲓⲗ ⲉⲭⲱⲓ	pray for me
	ⲡⲁ] ⲗⲉⲟⲗⲟⲅⲟⲥ ⲟⲛⲟ [ⲩⲏ	Paleologos, last year
	ⲥⲉⲛⲧ ⲥⲧⲓ ... ⲙⲙⲟⲥ	two feddans. for her
5	ⲡⲁⲙⲉ	.....
	ⲕⲉⲗⲓⲁ ⲛϩⲟⲗⲟ ⲥⲁⲩϩ ⲉⲭⲟ [··	The cells of the whole community for···
	ⲭ] ⲉⲉⲕ ⲓⲟⲁⲛⲉⲥ ⲡⲁⲣⲭⲉⲡⲓⲥⲕ [ⲟⲡⲟⲥ ...	died the archbishop Ioannes
	ⲱ̅ⲟⲥ ⲓⲱϩⲁⲛⲉⲥ ϩⲟⲥ ⲟ ...	the boethos (?) Ioannes rented
	ⲁⲙⲓⲛ ... ⲉⲗⲓⲁⲥ ⲡⲁⲣ [ⲭⲓⲙⲁⲛⲇⲣⲓⲧⲏⲥ ?	Amen....Elias the ar(chimandrite)
10	ⲡⲡⲣ [ⲉⲥⲃⲩⲧⲉⲣⲟⲥ] ⲉⲣⲡⲣⲟⲥ [ⲉⲩⲭⲏ	priest....pray...

This papyrus was very hard to decipher and very fragmentary but it seems related to some religious events of that period (hence the mention of the archbishop). It gives us a precious and significant information about the monastery itself. The monks were living in isolated cells (Kellia) just like their neighbours dwelling in ancient stone-quarries in Deir Abu Hennes.

PAPYRUS No. 37, Coptic (Pl. 134):

ⲟⲛⲟⲙⲁ ⲟⲛⲟⲙⲁ ⲟⲛ	in the name of

It is the beginning of a chant, cf. Papyrus No. 49, Verso.

PAPYRUS No. 38, see pp. 341, 342.

PAPYRUS No. 39, Greek (Pl. 135):

1	*ἀεὶ ἴχθυς*	Always Ikhthys (Christian symbol)
	Σώ]τηρ Ἔνοχ	Enoch
	Ἰ]άκωβ	Jacob
	ἀεὶ νίκα Ἰήσους	Jesus triumphs always
5	*...α μοὺ*	a of me
	τοῦ	
	ῃ σου	yours

ⲁⲙⲟⲩ could be Coptic but in this case a shift from Greek to Coptic would be unusual.

Anyway it is not a real document but a sort of exercise in Greek. Some monk in order to get used to some liturgical sentences repeated them like a homework on a piece of papyrus.

PAPYRUS No. 40, Coptic (Pl. 135):

ⲛⲓ]ⲕⲁ ⲡ̅ⲟ̅ⲥ̅(ⲡⲓⲕⲩⲣⲓⲟⲥ) ⲧⲟⲃⲓ ϵ ⲓⲛ(ⲁ) ⲓⲁ

ⲁⲛ]ⲏⲕⲟⲟⲥ ϵⲣⲟⲟⲩ ϵⲃⲟⲗ[ϩⲛ..

ϩⲁⲏ. ⲟⲩⲭⲁⲓ ϩⲛ[ⲡⲉⲧⲣⲓⲁⲍ or ⲡⲭⲟϵⲓⲥ ϵⲧⲟⲩⲁⲁⲃ..

The Lord triumphs. (month of) Tobi the 5th, the eleventh year of the indiction

(somebody) who was not obedient to them from...

end. Greetings (be safe) in the holy Trinity

L. 2: I preferred *ἀνήκοος* to *ὑπήκοος*, which was equally possible, because the meaning becomes more satisfactory. Somebody expelled the disobedient ones from (ϵⲃⲟⲗ ϩⲛ) somewhere.

PAPYRUS No. 41, Coptic (Pl. 135):

ⲱⲣⲕ ⲛⲛⲟⲩⲧϵ	swear by God
ⲣⲭⲏ ϵⲭⲟⲛ	...rdje for us
ⲕⲓⲁ]ϩⲕ ⲡⲣⲟⲧ[ⲏⲥ ⲓⲛⲁ.]	the twenty first of Khoiak, the first year of the indiction
ⲁⲛⲟϭ	oath

L. 2: ⲣⲭⲏ for ⲣⲟⲕϩϵ. Probably a part of a place-name. Cf. *Πκεμρόχ* (*P. Oxy.* 19).

L. 4: ⲁⲛⲟϭ : probably dialect for ⲁⲛⲁⲱ, oath. (Cf. l. 1, ⲱⲣⲕ)

PAPYRUS No. 42, Coptic (Pl. 135):

ⲉ]ⲓⲥ ⲧⲟ ⲟⲛⲟⲙⲁ ⲛⲟⲩⲏⲗ ⲁϥϭⲣⲟ	In the name Emmanuel he triumphs
ⲉⲓⲥ ⲟⲛⲟⲙⲁ ⲛⲟⲩⲏⲗ ⲭⲣⲓⲥⲧⲟⲩ	In the name Emmanuel, Christ
ⲉⲓⲥ ⲟⲛⲟⲙⲁ ⲉⲙⲏⲗ ⲭⲣⲓⲥⲧⲟⲩ	In the name Emmanuel Christ
ⲉⲓⲥ ⲟⲛⲟⲙⲁ ⲏⲗ ⲭⲣⲓⲥⲧⲟⲩ	In the name Emmanuel Christ

This text is again a fragment of a chant very similar to the precedent (No. 37). The second line seems to have been repeated underneath in a more awkward writing and later deleted. Anyway it looks more like a writing exercise than a real copy of a chant.

Cf. McKinnon, J., *Music in early Christian Literature* (Cambridge, 1987), pp. 51-63. "Fourth century Alexandria and desert monasticism", with references from Anastasius, Synesius of Cyrene, Pachomius, Evagrius, Ponticus, Palladius, Isidorus of Pelusium and Apophthegmata Patrum ; Gerold, T., *Les Pères de l'Eglise et la Musique* (reprint, Genève, 1973), chapter VII, Caractères de l'esthétique musicale des Pères de l'Eglise.

PAPYRUS No. 43, Recto, Greek (Pl. 136):

πν]εῦμα νομα τοῦ Ὑιοῦ κὲ τοῦ	(holy) Spirit, name of the Son and
ὅ]νομα τρίτον ἐν ὀνόματι	name, third, in the name
καὶ τοῦ Ὕιοῦ κε πνεῦμα.	and the son and the Spirit

Obviously, it is a fragment of a chant, maybe repeated. Hence the word *τρίτον*, third.

PAPYRUS No. 43, Verso, Coptic (Pl. 136):

† ⲏⲗⲓⲁⲥ ⲗⲓⲟⲛ ⲥⲩⲙⲉⲱⲛ ⲉⲩⲥ[ⲧⲁⲑⲓⲟⲥ..	Elias, Leon, Symeon, Eustathios
ⲧⲣⲓⲧⲟⲛ ⲉⲩⲑⲩⲙⲓⲟⲥ	one third, Euthymios.....
ⲧⲣⲓⲧⲟⲛ	one third.....

PAPYRUS No. 44, Recto, Coptic (Pl. 136):

ⲙⲏ	
† ⲭⲙⲅ ⲧⲉⲙⲓⲥ[ⲧⲓⲟⲥ..	Christ, Michel, Gabriel, Themistios
ⲁⲱ ⲉϥϫⲟⲓ. ϣⲗⲏⲗ.	Alpha, omega, pray for me

We could not find the meaning of the two first letters *MH* on top of the document. Maybe a Greek *μη* : do not.

PAPYRUS No. 44, Verso, Coptic (PL. 136):

1 † ⲥⲓⲙⲙⲉⲟⲛ ⲉ ⲭⲱⲣⲟⲥ	Symeon to the choir
ⲉⲛ ⲟⲛⲟⲙⲁⲧⲓ ⲧⲟⲩ ⲑⲉⲟⲩ (ⲟ)ⲛⲟⲙⲁ	In the name of God, name
ⲧⲟⲩⲧⲟ ⲟⲛⲟⲙⲁ ⲉⲙⲏⲟⲗ ⲁϥϭⲣⲟ	this name, Emmanuel, he triumphs
ⲭⲥ(ⲭⲣⲓⲥⲧⲟⲥ)ⲁⲱ ⲏⲓⲥⲟⲩⲥ ⲭⲣⲓⲥⲧⲟⲥ	Christ, alpha omega, Jesus Christ
5 ⲡ̅ⲛ̅ⲙ̅ⲁ(ⲡⲛⲉⲩⲙⲁ) ⲉ̅ⲑ̅(ⲟⲩⲁⲃ)(ⲟ)ⲛⲟⲙⲁ ⲉⲑⲟⲩⲁⲃ	The Holy Spirit, holy name
ⲁⲗⲗ(ⲏⲗⲟⲩⲓⲁ) (ⲟ)ⲛⲟⲙⲁ ⲉⲛ ⲧⲱ ⲛⲟⲙ(ⲁ)	Allelouia, name, in the name
ⲃⲏⲙⲁ ⲧⲟⲩⲧⲟ ⲛⲧⲁⲛ	this stage of us

ϵϵN (O)NOMATI ϵN TW NAM(ATI)	in the name, in the name
ϵN IHC XPICTOY	in the name of Jesus Christ

L. 3 : ϵMHOA probably ϵMMANOYHA ; cf. Papyrus No. 42.

ATϵPO is probably a translation of XPICTOC NIKA (cf. the battle of the Milvius bridge "In hoc signo vinces").

L. 4 : HICOYC the iota and the eta have been interverted.

L. 7 : BHMA seems clear but the writing is so erratic that it could be a mistake for (O)NOMA. In that case the translation would be "This name is ours", i.e. we are Christians.

This chant is essentially a repetition of "In the name of Christ" which reminds us of 2M ΠPAN MΠNOYTϵ (see Papyrus No. 56). From time to time only the stressed syllables have been written down.

PAPYRUS No. 45, Coptic (Pl. 136) :

1	MN MATAI[OC..	and Matthew
	..A]PON N ΠICϵ[NTIOC..	Aron son of Picentios
	XϵN ΠϵK[..	your
	P ϵXOOQ	do for him
5	MAKAPIOC	Makarios (or blessed)
	ϵM]MAY	there
	TOY AYW	and
	A]YW ΠϵTϵQ[..	and which is
	TOOT	hand
10	ϵTTϵN[TA	which belongs to...
	ϵK KϵP	you do
	OYXAI	greetings

PAPYRUS No. 38, Coptic (Pl. 135) :

1 ..]INOC NϵTϵ ϵ[2OY]N
AY ϵTϵ TONTϵN ϵPOQ ...
ΠϵTAYXOKXϵKOY...
† AYW NATQ ΠAPA ...
5 TWBϵ NKYPIAKH INA Γ MAPT (YPWN)
ϵ ϵW ΠAPA KϵPIM
POMΠ]ϵ ΓY COYAT AYW ϵQWI
MMAY NAΠOΦYΓION AQ[.. (or AY)

1 ...inos and those who are inside
who are like him...
they have beaten them...
and he was freed by...
5 in the month of Tobi, Sunday, the third year of the indiction, year of the Martyrs

he got hanged by Kerim

in the year 403 (=687 of the Lord), the first (of Tnoout) and he hanged..

there in the shelter

This document proves that there was a certain amount of Moslem repression (imprisonment, hanging) two years before the insurrection. There is a discrepancy between the year of the indiction (688) and the year of the Martyrs 687. This discrepancy disappears if we read ⲁⲩ, line 7.

PAPYRUS No. 46, Recto, Coptic (Pl. 137) : First of all, Papyrus No. 38 referring to things which happened two years before the insurrection in 687, shows that the relations between Copts and Moslems were deteriorating rather quickly. Let us turn to the written testimonies related to the events of the year 689. The first is likely to be a translation of a letter written by a Moslem called 'Antar, whose name occurs in another document.

1 ⲁⲛⲧⲁⲣ ⲥⲁϥ ⲥⲟⲩⲙⲧ ⲓⲛⲁ.

ⲙⲁⲣⲧⲩ(ⲣⲱⲛ) ⲉⲩ ⲟⲩⲕⲁⲥ ⲟⲩϫⲁⲓ ⲁⲩϩⲓ[ⲟⲩⲓ or ⲟⲩⲓⲛϩⲁⲡ]

ⲓⲱⲁⲛⲏⲥ ⲡⲱϣⲉⲛ ⲛⲡⲃⲟ̣ⲏ̣ [ⲑⲟⲥ..

ϩⲁⲙ]ⲁ̣ⲗⲁⲥⲓⲧⲓⲥ ⲛⲧⲏⲣⲟⲩ ⲁ̣ⲟϥⲗⲉϥ ⲛⲗⲁⲟⲥ ⲛ[ⲭⲣⲓⲥⲧⲓⲁⲛⲱⲛ

5 ..]ⲣⲓⲱⲛ ⲉⲡⲁⲣⲭⲱⲛ ϩⲛ ⲛ̣ⲣⲁ̣ⲛ ⲛⲡⲥⲟⲓⲥ

ⲧⲁⲕⲧⲟ ⲛⲡⲙⲁⲗⲗⲟⲛⲧⲟⲛ (for ⲙⲁⲗⲗⲟⲛⲟⲛⲧⲟⲛ)

ⲁⲩⲱ ϩⲱⲧϥⲟⲩ ⲛⲧⲏⲣⲟⲩ

ϩⲛⲡ]ⲣⲁⲛ ⲛ ⲡⲛⲟⲩⲧⲉ ⲥⲁⲟⲩϩⲥ. ⲟⲩⲱⲱ ⲁⲙⲓ[ⲣ..

1 Antar. Yesterday, the tenth, the fourth (?) year of the indiction, the year 405 of the Martyrs (689 of the Lord) to Uqas, greetings. They rejected (or condemned).

John, son of the Boethos.

the Arabs, all together destroyed the Christian (?) people

5 the eparch...ion, in the name of the Lord

surrounded the quarrelling people

and he killed them all

in the name of God, the community (or convent) The amir wanted...

L. 1 : ⲛⲧⲁⲣ rather than ⲛⲧⲁⲓ̈. ⲓⲛⲁ maybe ⲓⲛⲁ(ⲓⲕⲧⲓⲱⲛⲟⲥ) or ⲓⲛ(ⲁⲓⲕⲧⲓⲱⲛⲟⲥ)ⲁ.

L. 2 : ⲟⲩⲕⲁⲥ : probably an Arabic name اوقاس.

L. 3 : ⲡⲃ. The beta is very clear and preceded by an article. The word should be ⲃⲟⲏⲑⲟⲥ.

L. 4 : we restituted arbitrarily ⲭⲣⲓⲥⲧⲓⲁⲛⲱⲛ. As a matter of fact, the meaning is obvious but, as the document is a translation, the word chosen by the scribe may have been different.

L. 5 : ⲣⲓⲱⲛ : probably, end of a proper name. Maybe Hilarion.

L. 6 : ⲙⲁⲗⲗⲟⲛⲧⲟⲛ for ⲙⲁⲗⲗⲟⲛⲟⲛⲧⲟⲛ with the omission of the second ⲟⲛ. The Greek word is written very clearly, but the genitive ending is rather strange. Furthermore *μαλλώνω* is a Byzantine word and does not belong to the regular koinè. The word survived in coptic because it is very similar to the Coptic ⲙⲁⲗϩ (same meaning).

This letter is quite different of the others. It does not mention any brother and does not use any of the traditional Christian expressions. The twice repeated Islamic invocation, in the name of God, which

might be a translation of بسم الله gives the impression of a translation from some official document. This letter is likely to convey the impression that the disorders started with a fighting between Amalecites (Arabs from the Red Sea desert, converted to Islam ?) (Akoris was the terminal of a caravan road, starting from the Red Sea coast) and Copts. The authorities, i. e. the Eparch, whose title got distorted through some confusion with the more frequently occurring *ἄρχων*, tried to separate the fighting groups. But he did not observe a strict neutrality. People got killed, mainly Copts. That is what the following documents seem to tell us.

PAPYRUS No. 46, Verso, Coptic (Pl. 137): This document tells us how the monks, obviously flabbergasted by the extent of the tragedy, reacted to the events, and decided some sanctions against the Moslems.

1 ⲁⲛⲟⲕ ⲉⲓⲉⲣ ⲉⲡⲓⲥⲧ[ⲟⲗⲏ..
ⲛⲱϩⲣⲉ ⲉⲛⲟⲭ ⲙⲛ ⲟⲩ[..
ⲁⲩⲱ ⲉⲓⲱϣⲛⲉ ⲉⲣⲟⲧⲛ
ⲙⲛ ⲛⲉⲱϩⲣⲉ ⲧⲓⲧⲁⲙⲟ
5 ϫⲉ ⲁⲩⲧⲁⲙⲟⲓ ⲉⲃⲟⲉ (for ⲉⲑⲃⲉ) ⲥϫⲓ
ⲡⲁⲣⲙϩⲁⲧ ⲧⲏⲥ ⲧⲉⲧⲁⲣ[ⲧⲏⲥ ⲓⲛⲇⲓⲕⲧⲓⲱⲛⲟⲥ
ϫⲣⲓⲁ ⲙⲙⲟⲛ ⲁⲩⲱ ⲕⲙⲡⲉⲣ..
ⲟⲩⲧ(ϩⲁⲛ) ⲧⲉⲣⲙⲏⲥⲏⲛⲏ
ϩⲁⲙ]ⲁⲗⲥⲓⲧⲟⲩ ⲛ ϫⲁⲓϥⲟⲩⲣ..

1 I wrote a letter
to the brethren Enoch and ou...
and I greeted them
and the brethren. I tell them...
5 They told me about what has been said...
in Phamenoth, the fourth year of the indiction
it is not necessary and you will not...
nor the charity
the Arabs Ibn (i.e. Beni) Djaifour or the Arabs and (ⲛ for ⲙⲛ) the Djaifour

L. 8: cf. the papyrus about forbidden fishing and poachers from the South. The word is a deformation of the Greek *ἐλεομοσύνη*.

According to this document the monks seem to have made an enquiry about the events and taken some decisions about the "Amalecites" i. e. the Arabs. Among others, they refuse to do them any charity any more.

PAPYRUS No. 47, Coptic (Pl. 138):

ⲫⲓ]ⲗⲟⲑⲉⲟⲥ ⲡⲉ...	Philotheos the...
ⲟⲥ.. ⲁ ⲕ(ⲕⲉⲣⲁⲧⲓⲟⲛ?) ⲁϥⲱⲉ	...Os...one keration (?)
. ⲓⲥ.	...is

PAPYRUS No. 48, (Pl. 138): Undecipherable because too short.

PAPYRUS No. 49, Coptic (Pl. 138):

..ⲁⲧⲓⲟⲥ.. ⲁⲗ	...atios

PAPYRUS No. 50 (Pl. 138): Undecipherable because too short.

PAPYRUS No. 51, Coptic (Pl. 138):

ⲗ ⲡⲉⲥⲧⲁⲓⲟⲩ..	ninety
ⲡⲉϥ..	

This papyrus should be related to some transaction.

PAPYRUS No. 52, Coptic (Pl. 138):

ⲁϥⲥⲛ ⲛⲟⲃⲓ	the sin died
ⲡ̣ⲁⲡⲁ.	The Apa...

PAPYRUS No. 53, Coptic (Pl. 138): This document is only a list of Arabic names recorded here for some unknown reason.

ⲛⲕⲁⲥⲓⲣ ⲙⲛ ⲫⲁⲓⲗ	Kāsir and Fāíl
ⲛϩⲁⲥ	(b)n 'As
ⲓⲥⲁⲕ ⲛϩⲁⲙⲁⲗⲥⲓⲧⲟⲩ	Ish'aq the Amalecite

PAPYRUS No. 54, Coptic (Pl. 138):

1 ⲉⲗⲗⲁⲩ ⲥⲁⲟⲩϩⲥ ⲙ(ⲁⲣⲧⲩⲣⲱⲛ) ⲁⲡ, ⲡⲉⲧⲉⲣⲟⲙⲡⲉ ⲛ[ⲕⲟⲥⲙⲟⲥ ?]
ⲡⲁⲛⲧⲱⲕⲣⲁⲧⲱⲣ ⲙⲛ ⲧⲁ ⲡⲉⲙⲉⲧⲟ[ⲩⲣⲟ...]
ⲕⲁⲧⲁ ⲕⲉⲣⲟ ⲓⲙⲧⲁⲣ ⲛϩⲁⲥ
[ϩⲛ] ⲧⲥⲟⲙ ⲙⲡⲓⲁⲟⲩⲟⲥ ⲙⲁⲣⲕⲟⲥ ⲡⲁⲣ(ϫⲏⲉⲡⲓⲥⲕⲟⲡⲟⲥ or ϫⲓⲙⲁⲛⲁⲣⲓⲧⲏⲥ)
5 ⲉ
ⲙⲡϥⲁⲣⲙ[ⲟⲩ]ⲑⲓ ⲓⲏ ⲛⲧⲉⲧⲁⲣⲧⲏⲥ (ⲓⲛⲇⲓⲕⲧⲓⲱⲛⲟⲥ)..

1 All the congregations in the year 314 of the Martyrs (598 of the Lord)
which is the.....year.....
The Almighty and what belongs to the kingdom...
At the time of Imtar n Has
5
By the strength of the Logos, Marcos (archbishop or archimandrites). The 18th of the month of Pharmouti, the fourth year of the indiction.

L. 1 : ⲡⲉⲧⲉⲣⲟⲙⲡⲉ which is the year. The scribe was probably giving the year in another era, the era of the world, or the Christian era. ⲥⲁⲟⲩϩⲥ : for ⲥⲟⲟⲩϩⲥ congregation.

L. 3 : Imtar (b)n Has : maybe a brother of 'Amr ibn 'As, the conqueror of Egypt. This inscription is the second to provide us with a chronological indication. The first line gives us the date of an event

which concerned all Severian communities at a date given in the year of the Martyrs, then transcribed into another era, probably the era of the world (ⲡⲉⲧⲉⲣⲟⲙⲡⲉ).

Unfortunately the last number is hard to decipher : ⲁ or ⲇ. It would be possible to read alpha but its shape would be much more crumpled than the other alphas of the inscription. Therefore I would prefer a delta with a sort of appendice at its very top (which happens quite frequently).

If we read ⲁⲓⲧ the event would have occurred in 595, when the patriarch John the Faster died. If we read ⲇⲓⲧ 598 it would coincide with the antimonophysite persecution initiated by Domitianus (of Melitene) in Syria and the massacre of the Oriental monastery in Edessa, when more than 500 monks were killed outside the city wall, near the gate of Beit Šemeš (the house of the Sun). No doubt, all monophysite communities in Egypt reacted to the massacre and maybe our text is a proof of it. The reaction is probably related to the so-called Aykallah insurrection, which in spite of the insufficiencies of the text of John of Nikiou seems to happen at the very end of Mauritius' reign

As for the expression ⲕⲁⲧⲁ ⲕⲉⲣⲟ (in Greek *κατὰ καίρον*) it is easy to recognize behind the Greek letters an Arabic name, maybe a brother of the conqueror of Egypt (at least 25 years his younger).

This inscription is related to Papyrus No. 46 (same indiction). The scribe compares the events of 689 to the old and famous massacre of 598. He possibly read it in a Syrian chronicle. Hence the mention of the year of the world (used for example by Theophanes and Malalas)

PAPYRUS No. 55, Coptic (Pl. 139) :

1 ⲧ ⲛⲱⲟⲣⲡ ⲙⲛ ⲡⲱⲗⲅⲉ. ⲁⲛⲟⲕ ⲡⲁⲡⲛⲟⲩⲧⲉ ⲉⲓⲥⲁⲓ ⲉⲓⲱⲓⲛⲉ ⲉⲡⲁⲙⲏⲣⲓⲧ.
ⲛ ⲱⲏⲣⲉ ⲓⲱⲁⲛⲛⲏⲥ ⲙⲛ ..... ⲙⲛ ⲓⲟⲩⲗⲓⲱ ⲁⲩⲱ ....
ⲗⲉⲱⲛⲧⲓⲟⲥ ⲧⲓⲧⲁⲙⲱ ⲙⲙⲟⲕ ⲓⲱⲁⲛⲛⲏⲥ .... ⲏⲗⲓⲟ [ⲇⲱⲣⲟⲥ ..
..ⲟⲩ ⲉⲫⲟⲩⲱ ⲃⲓⲛⲁⲛⲧⲓⲟⲥ ⲁⲩⲱ ⲡⲓⲱⲧ
5 ..ⲡⲁⲗⲟⲩ ⲁ....ⲡⲁⲏⲛ ⲃⲓⲛⲁⲛⲧⲓⲟⲥ ⲡ̄ⲕ̄ⲥ (ⲡⲕⲩⲣⲓⲟⲥ)..ⲙⲛ ⲛⲉⲛⲉⲓⲱⲱⲧ ⲁⲩ [ⲱ..
[ⲁ]ⲫⲟⲩ ⲟⲧⲧⲡⲟⲩ ⲇⲟⲙⲉⲛⲧⲓⲁⲛⲟⲥ ⲕⲟⲥⲧⲁⲛⲧⲓ [ⲛⲟ]ⲡ [ⲟⲗⲉⲱⲥ] ⲭⲟⲧⲡ..

1 At he beginning was truly the Logos (John I, i) I am Paphnutius who sends
Greetings to his beloved brethren John and.....Julius and.....
Leontios, I inform you (that) John.....Heliodoros
He arrested Venantius and the Father.....
5 the children except Venantius. The Lord and our Fathers.....
(Aphou.) or : as Domentianus of Constantinople imprisoned (and) defeated.....

L. 1 : ⲛⲱⲟⲣⲡ ⲙⲛ ⲡⲱⲗⲅⲉ John I, i. The following expression reminds us of the Azarias letter, Mallon, A., *Grammaire Copte*, p. 142. ⲙⲛ = ⲙⲙⲟⲛ, ⲙⲁⲛ truly.

L. 4 : ⲃⲓⲛⲁⲛⲧⲓⲟⲥ cf. Venantius Fortunatus ; probably a Byzantine V. I. P. of Latin origin.
ⲡⲕⲥ : abbreviation for ⲡⲕⲩⲣⲓⲟⲥ.
ⲛⲉⲛⲉⲓⲱⲱⲧ : ⲛⲉⲛⲓⲟⲧ our Fathers.

L. 6 : ⲟⲧⲧⲡⲟⲩ (ϭ for ⲟⲩ / ⲟ for ⲱ) : cf. Crum ⲱⲧⲡ, ⲁⲡⲧ, ⲟⲧⲡ, ⲟⲡⲧ shut, enclose, imprison.
ⲭⲟⲧⲡ : ⲧⲱⲧⲡ, be defeated or defeat.
ⲁⲫⲟⲩ can be a name but also a transcription of the Greek *ἀφ'οὗ* : as, because.

This inscription does not give us any clue, except in its last sentence. Domentianus of

Constantinople was a friend of the monothelite patriarch Cyrus (Al Muqauqas). We know him very well, thanks to the chronicle of John of Nikiou. He played a significant part during the moslem conquest and the dynastic quarrels which followed Heraclius' death.

As this document is obviously related to the same events as the preceding papyri, the last line is probably an allusion to the part Domentianus played in the Muqauqas' persecutions against the monophysites. John of Nikiou told us already that Domentianus killed a lot of Gaïanites at the bridge of Dafāschir. According to this text, Domentianus did not spare the Severians either As Papyrus No. 53 compares the Moslem repression in Akoris to the unfamous massacre of 500 severian monks by Domentianus of Melitene in Homs, the scribe here, in order to enhance the extent of the tragedy, makes a similar comparison to Domentianus' actions (before and during the Arab conquest), still vivid in the Copts' memory.

What do we learn from these papyri about the dramatic events which occurred in 689 in Akoris ? There must have been a significant insurrection and subsequently a lot of repression to justify a comparison with the rather infamous massacres perpetrated by Domitianus of Melitene in Syria and by Domentianus in Egypt in the name of monothelism. The Moslem authorities, who had indulged for several years in a repressive policy (cf. Papyrus No. 38) seem to have taken the opportunity of a conflict between Coptic city-dwellers and Moslem Bedouins from the Red Sea desert to crack down on the whole Christian population, including the Coptic convent. No doubt there were a lot of casualties, even if we take into account the usual Egyptian propensity to exaggerate.

Who were the protagonists in the conflict ? On the Moslem side 'Antar ibn 'As who could have been a very much younger brother of 'Amr ibn 'As, the conqueror of Egypt and who was certainly the governor of the province. (This insurrection occurred more than forty years after the end of the conquest) ; on the Christian side, a leader called Ioannes who seems to bear the main responsibility for the drama and was the son of a Boethos. He seems to have been at least arrested and condemned.

The second protagonist was a Westerner with a Latin name (a Latin-speaking family, perhaps, sent to Egypt by the Byzantine government). The "Lord" Venantius must have been a very important person at that time in Akoris, perhaps a landlord, or possibly that ⲉⲡⲁⲣⲭⲱⲛ mentioned in Papyrus No. 51 Recto.

As for the monks, there seem to have been a lot of casualties among them. That would explain the comparison with the massacre of Beit Šems, mentioned in Michel the Syrian's Chronicle.

PAPYRUS No. 56, Greek (Pl. 140) :

μαρ[τύ]ροσε	He made him a martyr...

PAPYRUS No. 57, Coptic (Pl. 140) :

1	ϭⲉⲥ ⲡⲛⲙⲟⲥⲧ	...exalted the hated ones...
	ⲭ]ⲣⲏⲥⲧⲟⲓ	.the good ones.
	† ⲁⲛⲟⲕ ⲟ..	I am O..
	ⲁⲅⲁⲡⲏ	..agape.
5	(†) ⲧⲱⲱⲧ ⲁⲩⲱ..	.help and...

ⲁⲛⲟⲕ ⲓⲱϩⲁⲛ [ⲛⲉⲥ ...I am Joannes

ⲡⲣⲉⲥⲃ]ⲩⲧⲉⲣⲟⲥ ..priest.

ⲁ]ⲙⲁⲗⲉⲓⲥⲓⲧⲏⲥ Arab. (Amalecite)

L. 1 : ⲥⲉⲥ=ⲭⲓⲥⲉ, ⲥⲓⲥⲓ, ⲭⲉⲥⲧ, ⲥⲁⲥ . .

The mention of an agape and (in the second fragment, last line, in a different handwriting) of Arabs, and the fact that the papyri discuss the matter of a burial probably mean that somebody fell a victim to the Moslem repression. The beginning of the second line (that God let the hated ones, i. e. the Moslem conquerors prevail) confirms this impression. According to Papyrus No. 59 found in the same batch, these events occurred during the seventh indiction, i. e. three years after the insurrection, which happened during the fourth indiction.

PAPYRUS No. 58, Coptic (Pl. 140) :

1 ⲭⲉⲛ ⲕⲁⲙ ⲁⲓⲟⲥⲕ [ⲟⲣⲟⲥ . . from Kam (name of a place) Dioscoros....

ⲱⲣⲕ ⲛ . . swear

ⲁ]ⲅⲁⲡⲉ . . agape...

ⲁ]ⲙⲏⲛ ⲱ̄ [ⲁⲏⲗ] Amen, pray...

5 ⲛⲁⲓϥ pity him

ⲡⲁⲃⲱⲧ ⲫⲁⲣⲙ [ⲟⲩⲑⲓ . . in the month of Pharmouthi...

L. 4 : Schai, with an abbreviation symbol on top of it. After Amen, we made a restitution of ⲱⲗⲏⲗ, which is usually abbreviated.

PAPYRUS No. 59, Coptic (Pl. 140) :

ⲉⲃ]ⲧⲟⲙⲏⲥ ⲓⲛⲁ [ⲓⲕⲧⲓⲱⲛⲟⲥ]ⲏ, ⲩⲧⲁ . .

ⲛⲁⲕ ⲛⲧⲱⲧ . .

ⲛⲉ ⲁⲩⲱ . .

seventh year of the indiction, 7, seven...

to you the hand and...

The number of the indiction is repeated twice. Note the iotacism in the name of the letter *ητα*.

PAPYRUS No. 60, Coptic (Pl. 140) :

ⲡⲁⲣⲁ ⲡⲉⲙⲁⲕ [ⲁⲣⲓⲟⲥ

ⲉⲣⲱ]ⲧⲉⲛ ⲕⲁⲧⲁ ⲕⲁ [ⲓⲣⲟ

ⲁⲕ ⲙⲡⲁⲣⲙϩⲁⲧ

from the blessed... (or maybe the defunct ; cf. Arab مرحوم)

for you at the time of

the 24th of the month of Pharmouthi

According to the Greek expression ⲕⲁⲧⲁ ⲕⲁⲓⲣⲟ this papyrus seems to belong to the political group of documents.

PAPYRUS No. 61, Coptic (Pl. 139) :

1 ϩⲙ ⲡⲣⲁⲛ ⲙⲡⲛⲟⲩⲧⲉ, ⲁⲛⲟⲕ ⲁⲃⲣⲁϩⲁⲙ ⲉⲓⲥϩⲁⲓ ⲉⲓⲱⲓⲛⲉ ⲉ ⲡⲁⲙⲉⲣⲓⲧ ⲛⲥⲟⲛ ⲓⲱⲛⲁⲑⲁⲛ ⲙⲛ ϩⲉⲗⲓⲁⲥ ⲙⲛ ⲥⲟⲩⲏⲣⲟⲥ ⲙⲛ ⲱⲉⲛⲟⲩⲧⲉ..

2 ⲁⲓⲉⲓ ⲉⲃⲟⲗ ϩⲓ ⲧⲟⲟⲧϥ ⲛⲧⲁϥⲉⲑⲁ ⲛⲧⲁⲥ ⲧⲛⲟⲟⲩⲧ ⲉⲧⲃⲉ ⲧϩϥⲧⲛ, ⲁⲓⲉⲓ ⲉϩⲏⲧ ⲉⲡⲁϥⲉⲗⲱ ⲛⲁⲉ ⲱⲛϩⲟⲩ ⲛϩⲧⲛ ⲙⲡⲉⲱ ⲉⲓ ⲉϩⲏⲧ..

3 ⲛϩⲩ ⲛⲉⲩⲥⲱⲗⲉ ⲛⲉⲣⲱⲙⲉ ⲉⲩⲭⲟⲗⲉ ⲙⲙⲟⲟⲩ ⲁⲩⲱ ⲁⲩⲭⲛⲟⲩⲓ ⲛⲁⲉⲥⲟⲩ ⲥⲱⲡⲉ ϩⲁ ⲧⲉⲧϩϥⲧⲛⲁⲉⲡⲟⲛ ϩⲛ ⲧⲉⲧⲛⲟϥ..

4 ⲕⲛⲟⲩⲭⲓ ⲛⲧⲁⲓ ⲉⲡⲓⲥⲧⲟⲗⲏ ⲙⲡⲉⲣⲁⲉ ⲛⲕⲟⲱⲥ ⲙⲡⲉⲕⲧⲁϩⲟ ⲛⲧⲁϫⲏ ⲙⲛ ⲕⲱⲗⲁⲉ ⲛⲓⲙ ⲛⲧⲁ ⲧⲁϥⲉⲑⲁ ⲥⲁϩϥ..

5 ⲉⲧⲉⲡⲓⲥⲧⲟⲗⲏ ⲧⲓ ⲉⲙⲛⲁⲓ ϩⲉⲧ ⲛⲉ ⲉⲣⲟⲟⲩ ⲁⲩⲱ ⲉⲓ ⲉⲡⲙⲁ ⲛⲁⲃⲓ ⲟⲩⲉϯ ϩⲁⲙⲙⲟⲓ ⲙⲡⲉⲥϩⲉ ⲉϫⲏⲩ ⲉϯϩⲁⲡ ⲁⲩⲱ [ⲙⲓ]ⲭⲁⲉⲗ..

6 [ⲧϩϥⲧⲛ] ϫⲉⲡⲟⲛ ⲥⲱⲧ ⲉⲓⲥⲧⲉ ⲙⲡⲉⲱ ⲉⲃⲟⲗ ⲕⲁⲛⲓ ⲛⲟⲩϥⲓ ⲉⲃⲟⲗ ⲁⲙⲟⲩ ⲉⲣϩⲥ ⲙⲡⲉⲕⲥⲱⲙⲁ ⲙⲟⲛ ⲧⲉϫⲣⲓⲁ ⲡⲉⲛⲁⲃⲓⲁ[ⲁⲛ..] ⲡⲉⲛⲁⲃⲓ ⲥⲁ[ϩⲱϥ ⲉⲃⲟⲗ ⲉⲙⲙⲟⲕ]

7 ⲙⲟⲛ ⲛⲧⲉϫⲣⲓⲁ ⲁⲛ ⲙⲉⲥ ⲧⲛⲟⲟⲩⲧ ⲉϩⲏⲧ ⲉⲧⲃⲉ ⲧϩϥⲧⲛ ⲁⲩⲱ ⲕⲛⲧⲟⲩⲛ ⲛⲁⲉⲙⲉⲗ ⲙⲛ ⲉⲧⲉⲣⲱⲓⲥ ϩⲛ ⲡⲁϥ [ⲉⲗⲱ]

8 ⲙⲉ ⲧⲟⲛ ϩⲉⲧ ⲛⲣⲱⲙⲉ ⲭⲉ ⲥⲟⲩϩⲉ ⲱⲁ ϩⲧⲟ ⲉⲩⲉⲓⲉ ⲛⲱⲟⲣⲡ ⲙⲡⲥⲛⲁⲩ ⲁⲩⲱ ⲟⲩⲱⲱⲧ ⲙⲡⲛⲟⲩⲧⲉ..

9 ⲁⲩⲱ ⲛ..ⲛⲧⲁⲩ ⲁⲩⲱ ⲉⲛⲉⲩ ⲧⲉⲣⲙⲏⲥⲏⲛⲏ ⲥⲣⲓⲁ ⲉⲛⲁⲛⲉ ⲕⲛⲧⲟⲩⲛ....

1 In the name of God, I, Abraham, write greetings to my dear brethren Jonathan, Elias, Severos and Schenoute...

2 For his business, Tafetha's man Tnoout went North to find some fish. He went North to Pafelo and he threw your nets ; he was not permitted to go North...

3 They went and gathered the people and treated them as enemies ; getting irate they asked them : who has taken fishes with scales on your account...

4 If you lie in this letter, he will not live and he will be destroyed ; he will not fish in the swamp (of reeds). If you say who it was among Tafetha's people, write it.....

5 the letter ; give them here some silver... I forgive (you) about the sin. If you don't speak (in the letter) about the nets, I shall judge him and Michel....

6 the fish with scales ; he will be arrested and he will not get the authorization to leave. If you deliver gold, go South and your body will not need any more to sin... and the sin (will get away from you).

7 The young Tnoout will not need to go North for the fish and the camel-figs and what is preserved in Pafelo...

8 Give money to the men and gather first the pigs, the horses and the donkeys ; don't be late and God's worship.....

9 and...his own and give some charity and make an offering of figs...

L. 1 : ϩⲙ ⲡⲣⲁⲛ ⲙⲡⲛⲟⲩⲧⲉ under influence of the moslem expression بسم الله The introduction is very similar to the beginning of the Azarias letter, cf. Rossi, F., *Di Alcuni Codici Copti del Museo Egizio di Torino*, 1895 et *AZ*, XVI, 1878, p. 12 ; reproduced in Mallon, A., *Grammaire Copte*, p. 142.

L. 2 : ⲧⲁϥⲉⲑⲁ is a feminine name. Therefore the suffix ⲛⲧⲁⲥ means that Tnoout is related to Tafetha : underling, servant or even member of her family, we don't know. ϩⲓ ⲧⲟⲟⲧϥ, a masculine form, refers to somebody else. ⲡⲁϥⲉⲗⲱ : ⲡ should be an article. ⲁϥⲉⲗⲱ could be a composed word : the flies of the swamp, which became a toponym. It bears probably no relation to ⲉⲗⲱ, ⲁⲗⲱⲓ, net

which we'll find later in its plural form : ⲉⲗⲏⲩ.

ⲛⲭⲉ is probably a dialectal form for ⲛⲟⲩⲭⲉ throw. This spelling has never been met before.

L. 3 : ⲭⲟⲭⲉ a yet unknown dialectal form for ⲭⲁⲭⲉ enemy. The following letter which looks like a badly written ⲭ is very probably the result of some mistake. ⲭⲟⲕⲭⲉⲕ (ⲭ for ⲕ) in which the scribe would have forgotten the first kappa is rather unlikely.

ⲛⲭⲉⲥ dialectal form for ⲛⲟⲩⲥⲥ to be cross, to be angry : they interrogated him in anger.

ⲧⲉⲧⲛⲟϥ : for ⲧⲉⲧⲛⲛⲟϥ where an intermediate ⲛ would have been forgotten. ⲧⲉⲧⲛ is here a possessive adjective.

L. 4 : ⲕⲛⲟⲩⲭⲓ the first present, which will be used several times afterwards, has a double meaning, imperative and conditional at the same time : if you lie, such and such thing will happen to you ; if you don't write, I'll get him judged.

ⲧⲁϩⲟ has here the meaning (quite seldom but attested) of fishing.

ⲁⲭⲏ which means usually reeds (ⲁⲭⲓ) means here swamp (cf. Crum).

L. 5 : ⲉⲡⲙⲁ with an epsilon, the upper part of which has disappeared ; ⲉⲡⲙⲁ means here : as for.

ⲉⲓ : third Present.

L. 6 : At the very end of the sentence we restituted ⲥⲁ[ϩⲱϥ ⲉⲃⲟⲗ ⲉⲙⲙⲟⲕ] according to a similar expression on the ceiling of the church of Deir Abu Hennes. (*BSAC*, 29, 1990) p. 73.

ⲗⲉⲡⲟⲛ Greek word meaning scale, probably a repetition of the previously used strange expression ⲧⲏϥⲧⲛⲗⲉⲡⲟⲛ fish with scales.

ⲉⲓⲥ[ⲧⲉ] : some remnants of strokes can be seen on the papyrus : nevertheless ⲉⲓⲥ[ⲧⲉ], there is, is more a guess than a real reading. ⲁⲛⲓ=ⲉⲓⲛⲉ. ⲛⲟⲩϥⲓ=ⲛⲟⲩⲃ (cf. ϩⲱϥ=ϩⲱⲃ).

L. 7 : ⲕⲛⲧⲟⲩⲛ ⲛⲭⲉⲙⲉⲗ , a rather mysterious expression. I was tempted to understand صبارة . Indian figs but it is more probably a fruit which has no obvious relation with figs as we know them. ⲭⲉⲙⲉⲗ for ⲥⲁⲙⲟⲩⲗ, ⲭⲁⲙⲟⲩⲗ. ⲣⲱⲓⲥ is here a passive form, meaning be watched, protected ; the swamp was probably watched, as nowadays, by some ghafirs. ⲙⲟⲛ for ⲙⲙⲛ, ⲙⲙⲟⲛ, not strengthened by ⲁⲛ.

L. 8 : ⲧⲟⲛ for ⲧⲛ, see Crum.

ⲉⲩⲉⲓⲉ : probably a dialectal plural of ⲉⲓⲱ, ⲉⲓⲟⲩ, ⲉⲟⲩ donkey. ⲱⲗ, ϩⲧⲟ, ⲉⲩⲉⲓⲉ without any connexion, means probably domestic animals.

L. 9 : ⲉⲛⲉⲩ : from ⲉⲓⲛⲉ, to bring.

ⲉⲣⲙⲏⲥⲏⲛⲏ, a bad spelling for the Greek *ἐλεομοσύνη* with confusion (quite usual in Coptic) of rho and lambda ; similarly ⲟⲣⲓⲗ for ⲟⲗⲓⲗ which usually means a burnt offering. It seems to mean in this case a mere offering, without any burning, as a compensation for the stolen "camel-figs".

The fact that a part of this papyrus is lacking on the right side makes it difficult to get a correct interpretation. The very beginning reminds us of the beginning of the famous Azarias letter ; accordingly the document is likely to be a letter from a monk in the Akoris convent. This letter is related to a case of trespassing and poaching in an area where fishing was forbidden and which probably belonged to the convent ; that's why Abraham thinks it necessary to inform his brethren. A certain Tnoout, who seems rather young, came from the South in order to steal some fish and camel-figs (?) with

Tafetha's people. They came from far away as they carried with them horses, donkeys and even pigs (which proves that they were Christians). Very probably they were nomads or semi-nomads, more or less under control of the local authorities, which explains the sentence "they were not allowed to go North". They got caught and handled rather roughly by locals. After this appears some official, probably a magistrate, who has the power to judge (ϯϩⲁⲡ). The delinquents must confess their crime (write a letter) and if they comply with paying a certain amount of money, give some charity and make an offering of figs they will get permission to go back home. The magistrate does not charge Tnoout directly but his principal, Tafetha. Tnoout is obviously just an underling.

Furthermore, unlike some other papyri of the same batch, there is no mention of any Moslem names. The matter gets settled between Copts only.

Finally this incomplete text would give us much more interesting information if the missing part is found. Nevertheless, even in its present form, it gives us a significant account of the daily life in Egypt at the very beginning of the Moslem occupation.

PAPYRUS No. 62, Coptic (Pl. 141):

1 ⲉⲓ ⲉⲣⲏⲥ ⲓⲱϩⲁ[ⲛⲛⲏⲥ .. ⲣ ⲙⲁⲕⲁⲣⲓⲟⲥ ⲡⲣⲩⲥ(ⲡⲣⲉⲥⲃⲩⲧⲉⲣⲟⲥ)ϫⲉ ⲉⲓⲥ ⲧⲉⲕ
ϫ]ⲁⲓⲫⲉⲣ ⲙⲁⲙⲁⲥ .... ⲉϫⲟⲟⲩ ⲉⲱⲛ(ⲁⲓⲱⲛ)ⲛⲓⲣⲏⲛⲏ..
ⲛⲁϩ[ⲧ..ⲛⲁ ..... ⲁⲟⲥ ⲛⲙⲁⲕⲁⲣⲓⲟⲥ ⲙⲛ ⲛ..
ⲛⲧⲁ ..... ⲛ]ⲙⲁⲕ ϩⲁⲣⲟⲓ
5 ⲉⲣⲟⲟⲩ..ⲉ ⲱⲗ[ⲏⲁ ..... ⲉϫⲟⲟⲩ ⲛⲉⲥ ⲡⲟⲥ
ⲧⲏⲣ(ⲙⲁⲣⲧⲩⲣⲱⲛ) ⲁⲩ ⲓⲁⲛⲛⲉⲥ ⲙⲁⲕⲁⲣⲓⲟⲥ ⲉⲩⲉⲱ
ⲉⲩⲉⲛⲓ ⲛⲁⲥ ⲙⲙⲟⲟⲩ ⲉⲩⲉⲛⲓ ⲉⲣⲱⲧⲉⲛ ⲟⲩϫⲁⲓ

1 to the South Ioannes....the blessed priest
Djaifer. Mamas.....for them an era of peace
believe.....the blessed and
.....with you before me
5 for them.... pray .....for them, the Lord was nice
in the year 401 of the Martyrs (685 of the Lord) the blessed Ioannes
he brought them to us, he brought you salvation

According to line 2, the relations between the nomads (Beni Djaifer) and the monks seem to have been much better at that time (4 years before the insurrection)

We separated on purpose this papyrus from the documents related to the insurrection, as it does not bring out any clear-cut evidence. Nevertheless, it could be the missing link between the tale of poaching in the marshes and the insurrection of 689. As a matter of fact, we cannot avoid the strange feeling that there should be some correlation between that incongruous tale and the big political events which rocked Akoris in 689. The "poaching" papyrus is by far the best written and the best preserved. It cannot be unrelated to the insurrection. As a matter of fact Papyrus No. 62 provides a clue. Johannes (maybe the same Johannes who played a significant role during the insurrection) went south, the same south from where came Tnoout, and afterwards there was an era of peace. Possibly the poaching incident could be related to Johannes' mission in the south. In this case the nomads who came and stole fish in the vicinity

of Akoris could be related to the ϫⲁⲓϕⲉⲣ mentioned in the same papyrus no. 62 and who appears up constantly in all papyri cconcerning the incidents of 689. It cannot be ascertained : as a matter of fact, as we said previously, the thieves whose leader was Tnoout were Christians ; they brought pigs with them and their names were Egyptian names. Furthermore we assumed, according to the Semitic sounding of ϫⲁⲓϥⲟⲩⲣ that they had been immediately converted to Islam (or eventually came straight from the Arabic Peninsula). Nevertheless, according to the contents of No. 62, it is very tempting to see in the poaching incident, maybe temporarily resolved by Johannes' mission in the south, the first of a series of quarrels which culminated in the brawl between the nomads and the inhabitants of Akoris, which the eparch tried to suppress without any success (see Papyrus No. 46). In that case the poaching incident would be probably immediately anterior to 685 and would have been the spark which ignited the conflagration.

PAPYRUS No. 63, Coptic (Pl. 142) :

1	ⲗⲓⲥⲓⲁⲥ ⲙⲛ	Lysias and
	ⲕⲗⲏⲣⲟ]ⲛⲟⲙⲟⲥ ⲙⲛ	heir and
	..ⲧⲏⲥ ⲙⲛ	···tes and
	ⲙⲛ ⲡⲱⲏ[ⲣⲉ	and the brother
5	ϩⲛ ⲡⲣⲁⲛ] ⲙⲡⲛⲟⲩⲧⲉ	in the name of God

L. 1 : ⲗⲓⲥⲓⲁⲥ for ⲗⲩⲥⲓⲁⲥ .

PAPYRUS No. 64, Coptic (Pl. 142) :

·ϛ ⲉⲧⲟⲩⲁ[ⲁⲃ	saint
ⲧⲟⲟⲧⲕ	your hand
ⲡⲃⲁⲡⲧ[ⲓⲥⲙⲁ..	baptism

According to the remaining words, this document seems to be related to some religious event, consecration or baptism, as the last word suggests it.

PAPYRUS No. 65, Coptic (Pl. 142) : The following papyri are related to theological problems and help us to understand to which church the convent belonged and against which heresies the monks were fighting.

1 † ⲁⲛⲟⲕ ⲱⲉⲛⲟⲩⲧⲉ
ⲉⲃⲟⲗ ϩⲛ) ⲟⲩⲥϩⲓⲙⲉ ⲁϥⲥⲟⲡⲉ
ⲥⲛⲉⲛⲧⲉ ⲉϩⲟⲩⲛ ⲟ[ⲩⲁ ?..
ⲱⲟⲛ]ϥ ⲉⲣⲟⲟⲩ ⲁⲡⲁϫ ⲡ..
5 ⲗⲟⲓⲡⲱⲛ ⲡⲛⲟⲩⲧⲉ
ⲉⲧ]ⲛⲁⲛ[ⲉϥ] ⲁⲣⲓ[ⲡ] ⲛⲁⲓ̈ ⲉ[
ⲉϩⲣⲁⲓ̈

1 I am Schenoute.....
He took from a woman..
both inside one..

united them once for all...

5 therefore God..

He who is good may he have mercy on..

toward me.

According to the use of a lot of Greek words, this text was probably translated from the Greek. It lays the stress on the unity of Christ but also on His human side and does not seem to insist on the *κένωσις*. As the part of the document mentioning the word "nature" has been deleted, it is hard to decide whether it belongs to a moderate Chalcedonian theology like Leontius of Byzantium doctrine or to a moderate Severian tendency (e.g. Philoponos' theology). But according to the other documents, the second interpretation is more likely.

PAPYRUS No. 66, Coptic (Pl. 142):

χc

1 ..ⲁⲣⲓⲟⲥ ⲧⲁⲣⲫⲧⲁⲥⲓⲁ ⲛⲥⲱⲙⲁ ⲕⲩⲣⲓⲟⲥ ⲁ[ⲡⲉⲗ]ⲁⲛⲑⲱⲥ ⲧⲁⲡⲫⲣ[ⲟⲥⲩⲛⲏ..

..ⲁⲛ ⲥⲟⲩⲁ ⲛⲑⲱⲃ ⲡⲁⲣⲁⲥⲕⲉⲉⲩⲏⲩ..ⲛ ⲙ2ⲟϥ ⲡⲁⲡⲟ[ⲥⲧⲁⲥⲓⲥ?]

..ⲓ]ⲱⲥⲏⲫ ⲡⲁⲫⲁⲥⲓⲁ ⲕⲩⲣⲓⲟ ⲓ̅ⲥ̅ ⲛⲉⲡⲓⲟⲥ ...

..ⲧⲁⲡⲟⲥⲧⲁⲥⲓⲥ ⲛⲉⲣⲏⲥⲓⲥ ⲛⲧⲓⲱⲟⲩ ⲛⲁⲕ[ⲗⲏ]ⲣⲟⲥ

5 ..ⲡⲁⲛⲧⲱⲕ]ⲣⲁⲧⲱⲣ. ⲧⲁⲡⲓⲫⲣⲟⲥⲓⲥ ⲛⲁⲕⲗⲏⲣⲟⲥ ⲧⲁⲡⲛⲟⲫⲣ[ⲟ ⲥⲓⲥ] ⲓⲟⲩⲗⲓⲁ[ⲛⲟⲥ...

..ⲓⲉⲓ ⲁϥⲣⲛⲟⲃⲓ ⲛⲧⲓⲱⲟⲩ'[..ⲥⲱ]ⲙⲁ ⲕⲩⲣⲓⲟⲥ

..ⲁⲡⲟⲗⲗⲱⲛ, ⲁⲛⲟⲩⲫⲓⲟⲥ, ⲡⲟⲓⲙⲉⲛ..ⲡⲟⲩ2ⲱⲣ

ⲁⲑⲱⲓⲟⲥ ⲥⲉⲣⲁⲫ...

1 The incorruptibility of the Lord's infinite body. The humility...

The first of the month of Tobi, Friday, of the 6... year of the Martyrs. The fact of the apostasy...

Joseph. The Lord's aphasy when he was a baby

The apostasy of the heresy of pride in our inheritance (condition)....

5 The Almighty. The humility of our inheritance (condition)...Julian

He committed the sin of pride... The Lord's body....

Apollo, Anouphios, Poimen, Pouhor..

The innocent Seraphim

L. 1: ⲁⲣⲫⲧⲁⲥⲓⲁ for *ἀφθαρσία*, .ⲁⲡⲉⲗⲁⲛⲑⲱⲥ for *ἀπέραντος*.

L. 2: ⲡⲁⲣⲁⲥⲕⲉⲉⲩⲏ for *παρασκεύη*.

2ⲟϥ for 2ⲱⲃ.

L. 3: ⲕⲩⲣⲓⲟ ⲓⲥ abbreviation for *Κύριος Ἰήσους*.

ⲛⲉⲑⲱⲓⲟⲥ : ⲑ for ⲡ. ⲛⲉⲡⲓⲟⲥ for *νήπιος*.

L. 5: ⲧⲁⲡⲓⲫⲣⲟⲥⲓⲥ: *ταπεινοφροσύνη* = ⲧⲁⲡⲛⲟⲫⲣ(ⲟⲥⲓⲥ?)

ⲓⲟⲩⲗⲓⲁ[ⲛⲟⲥ] rather than ⲓⲟⲩⲁⲁ.

L. 8: ⲁⲑⲱⲓⲟⲥ = *ἀθῷος* innocent who does not deserve to be punished (i. e. who has not committed the original sin).

This theological text denounces clearly two different heresies. One of them is very well known. The mention of the incorruptibility of Christ's body shows without any doubt that the author refers to the

aphthartodocet heresy. Julian who appears on the fifth line is obviously Julian of Halicarnassos, whose controversy with Severos about the incorruptibility of Christ's body resulted in a schism inside the monophysite church.

The second heresy is harder to identify. The allusion to the humility of our inheritance, i. e. of our condition (opposed to the boastful conception the Julianists had of an immortal and incorruptible Adam before the Fall) is not very meaningful. The Severian conception of a corruptible human nature could be very easily considered as humility. Fortunately the fifth line provides us with an interesting detail, the aphasy of Christ when he was an infant.

That passage cannot refer to the Severian church but to the Agnoet heresy (heresy whose head had been Themistius who laid such a stress on the human natural properties (*ποιότητες φυσικὲς*) of the single nature that he recognized human weaknesses in Christ, such as the fact he did not know which day he would die : therefore the name of Agnoets). But in the name of which orthodoxy does the author condemn both heresies ? Probably as a Severian. The Severians believed that Adam before the Fall was corruptible but had been temporarily preserved by an influx of divine Grace from the imperfections of his nature.

This grace was taken away from him after the Fall. Our document mentions the grace of aphtharsia, incorruptibility. Nevertheless it could very well be monothelite-inspired. The monothelites, irrespective of their Chalcedonian or monophysite origin, were bound to reject the Agnoet teaching which distinguished in Christ, not only two wills, *θελήματα*, but two faculties of knowledge, *γνωρίσματα*, one human and fallible (therefore he did not know the day of his own death) the other divine and perfect.

What do we learn from this document about both heresies ? First, that for the Julianists, Christ's body is not only incorruptible but infinite. This detail reminds us of a text of Michel the Syrian about the Fantasiasts or Julianists "After that, they divided into factions. Some followed a certain Ammonius, who said that our Lord's body has been neither created, nor limited, nor perceptible, so that, when he was in the holy Virgin's bosom, he was something uncreated, infinite ; at the same time he was in the bosom, his body was in the heaven, at the same time he was hanging from the cross, he was in the sky" (Michel the Syrian II, p. 194).

As far as Agnoetism is concerned, this inscription lets us discover a new theme of the controversy, that Christ could not speak (*ἀφάσια*) in the cradle, that Christ as an infant could not speak as an adult. Furthermore the author lays the stress, surely for reasons of morality, on the humility (*ταπεινοφροσύνη*) (which, according to the apophtegms, was for monks a highly recommended virtue) of our condition and on the opposition between the boastful conception of our condition (mistake of the aphthartodocets who considered Adam before the Fall as incorruptible) and the Agnoet humble conception of the same condition. The blame laid on the Agnoets is perfectly understandable. But in what does the Agnoet conception of Adam before the Fall differ from the Severian or monothelite conception ? Severians as well as Agnoets considered Adam before the Fall as corruptible, subject to sufferings and death. Where is the difference ? Maybe the Agnoets refused the Severian conception of Adam freed temporarily (thanks to the divine grace) from the sufferings and the death to which he was subjected according to nature. This matter is no doubt tied to the incarnation problem. Was this man (Adam) freed or not from his imperfections, thanks to the divine Grace ? For Severians yes. For Agnoets who considered

that Christ was subject to human imperfections, ignorance of certain things and impossibility to speak during his childhood, Adam before the Fall was only partially granted the Grace. It is really sad that the whole inscription did not survive. It would have provided us with a lot of significant information about the Agnoet heresy.

PAPYRUS No. 67, Coptic (Pl. 143):

ⲛⲑ

† ⲁⲛⲟⲕ ⲁⲛⲟⲩⲫⲓⲟⲥ ⲙⲛ ⲡⲉⲗⲁⲭ[ⲓⲥⲧⲟⲥ ...

ⲁϩⲱⲣ ⲡⲱⲉⲛ ⲛ... ⲥⲉⲛⲟⲩ ⲡⲱⲉ[ⲛ ...

ⲁⲩⲱ ⲧⲁⲩⲫⲁⲥⲧⲓⲁ ⲛⲁⲕⲣⲓⲃⲏⲥ ⲁⲫⲁⲥ[ⲧⲓⲁ ...

5 ⲡ]ⲛⲟⲩⲧⲉ ⲟⲛ ⲉⲩⲱ ⲡⲱⲉⲛ ⲛⲡⲛ[ⲟⲩⲧⲉ ?...

ⲟⲩ]ⲱⲱ ⲛⲡⲛⲟⲩⲧⲉ ⲧⲉϩⲟ ⲛϩⲟⲗⲟ ⲁⲩⲱ ⲡⲩⲟⲛ ⲙⲛ...

.... ⲉⲧⲁⲓ ⲉⲛⲩⲱ ⲧⲉⲃⲛⲉⲟⲩ ⲟⲛ ⲁⲩⲱ ⲫⲩ[ⲧⲁ

ⲛⲧⲉⲫⲧⲱ[ⲣⲁ ...

1 Amen

I am Anouphios and the humble

Ahor, son of.....Senof son of...

incorruptibility and the complete incorruptibility

5 God has allowed the Son of God...

God's love has organized the Universe and the Son...

He has allowed the beasts and the plants...

of the corruption...

L. 3: ⲥⲉⲛⲟⲩ name, cf. ⲕⲟⲩⲓⲥⲛⲟⲃ (B. M. 1075).

L. 4: ⲁⲩⲫⲁⲥⲧⲓⲁ and ⲁⲫⲁⲥ[ⲧⲓⲁ]: mistake for *ἀφθάρσια*.

L. 6: ⲧⲉϩⲟ=ⲧⲁϩⲟ rather than ⲧⲁⲛϩⲟ with omission of the ⲛ. ⲩⲟⲛ (*ὑόν*) is no accusative.

L. 7: ⲫⲧⲱ[ⲣⲁ=*φθόρα*.

This text was unfortunately half destroyed but it tells us about the same theological problems as the former inscription. The mention of incorruptibility and exact (or more probably: complete) incorruptibility is surely an allusion to the aphthartodocets. The last sentence means probably that God created beasts and plants corruptible. The scribe probably wanted to say, when he copied two Greek words of the document he was translating, that the Universe (ϩⲟⲗⲟ) and the Son were also corruptible. Unfortunately the sentences are so incomplete that it is hard to reach a plausible conclusion. Nevertheless, the theological inspiration of this document does not considerably differ from the preceding.

PAPYRUS No. 68, Coptic (Pl. 143):

ⲙϩⲛⲓ ⲁⲡⲣⲓⲗⲓⲱ ⲁⲩⲣⲏⲗⲓⲟⲥ ⲱⲛ ⲁⲛ†ⲱϫ[ⲟⲥ ...

..ϫⲁⲣⲁ ⲛ ⲁⲫⲧⲁⲥⲓⲁ. ⲟⲩⲱϩ ⲡⲉⲫⲧⲁⲣⲥⲓⲁ ...

.. ⲁⲡⲟⲫⲁⲥⲓⲥ ⲛⲥⲛⲁⲩ ⲛϩⲉⲣⲉⲥⲓⲥ ⲛⲟⲩⲱⲛ ...

In the month of April (in Greek) Aurelius, son of Antiochus...

The grace of incorruptibility and the corruptibility dwelled
The rejection of both heresies.: there was...

L. 2: ⲁⲫⲧⲁⲥⲓⲁ=*ἀφθαρσία.*
ⲫⲧⲁⲣⲥⲓⲁ=*φθάρσις.*

L. 3: ⲛⲟⲩⲱⲛ : probably for ⲛⲉ ⲟⲩⲟⲛ.

This document is typically Severian inasmuch the scribe, for the first time, insists on the influx of divine Grace which temporarily preserved Adam from his corruptibility. Furthermore for him there are two big heresies as a matter of a fact, Julianism and Agnoetism. No mention is ever made of the Chalcedonian heresy.

PAPYRUS No. 69, Coptic (Pl. 143):

1 .. ⲥⲁⲛⲁⲧⲏⲥ ⲙⲛ ⲛⲁⲧⲁⲛ ⲙⲛ ⲛⲁⲑⲁⲛⲁⲏⲗ
ⲉⲣⲟⲩ ⲙⲛⲏⲙⲙⲓⲟ, ⲑⲩⲣⲉⲓⲟⲛ ⲛⲁⲡⲉⲗⲁⲛⲧⲏⲥ
.. ⲉⲣⲟⲛ ⲛⲁ ⲉⲛϩ ⲛⲙⲙⲟⲥϯ ⲕⲣ ⲥⲱⲣ
[ⲁⲣⲓ] ⲃⲉⲉⲭⲉ ⲛⲉⲕ ⲃⲱⲕ ⲉ ϩⲟⲛⲧ ⲡⲣⲟⲙ[ⲡⲉ
5 ⲙⲁⲣⲧⲏⲣⲱ ϯ

1 .....sanates and Nathan and Nathanael
to them a commemorative monument. The infinite shield
for me.....forgive: for the eternity the hatred. Lord Saviour
give their salary to your servants...priest...year of the
5 Martyrs

L. 2: ⲙⲛⲏⲙⲙⲓⲟ: bad spelling of the Greek *μνημεῖον*
ⲁⲡⲉⲗⲁⲛⲧⲏⲥ: confusion of ⲗ and ⲣ. *ἀπεράντης*

L. 3: ⲕⲣ ⲥⲱⲣ : *Κύριος Σώτηρ*

L. 4: ⲡⲣⲟⲙ : probably ⲡⲣⲟⲙⲡⲓ but unfortunately, the year is missing.

L. 5: ⲙⲁⲣⲧⲏⲣⲱ : iotacism for *μαρτύρω(ν).*

The word ⲁⲡⲉⲗⲁⲛⲧⲏⲥ was mentioned in another document (No. 66) with a different spelling (ⲁⲡⲉⲗⲁⲛⲑⲱⲥ). The fantasiast conception of an infinite God seems to have influenced even the orthodox monks of Akoris.

PAPYRUS No. 70, Coptic (Pl. 144):

ⲓⲱⲛⲁⲥ ⲙⲛ ⲓⲱⲁⲛⲛⲉⲥ ⲛⲉⲗⲓⲁⲥ ϩⲟⲥ (for ϩⲱⲥ)
ⲁⲩ ⲛⲧⲁⲛ ⲗⲁⲁⲩ ⲉϩⲟⲩⲛ ⲡⲣⲓⲟⲩⲉⲓ
ⲕ ⲛⲧⲁⲉⲓⲁ ⲙ(ⲏⲛⲟⲥ) ⲁⲑⲱⲣ ⲕⲉ ⲙⲁⲣⲧⲩⲣⲱⲛ ⲩ

Ionas and Ioannes son of Elias filled...
nothing belonging to us in the land of inferior quality...
a complimentary gift, the 25th of Athor, 400 of the Martyrs (=684 of the Lord)

L. 2: ⲡⲣⲓⲟⲩⲉⲓ could possibly be a place-name: (inside) Riouei. ⲣⲓⲟⲩⲉⲓ=ⲣⲟⲟⲩⲉ, ⲣⲟⲉⲓⲟⲩⲉ. Cf. *Ψβρουε* (Greek) P. Lond. 4, 188.

L. 3: ⲯ is a well-known abbreviation for ⲙⲁⲣⲧⲩⲣⲱⲛ.

The document seems to refer to some agricultural activity, filling ditches and reclaiming some land of inferior quality, maybe marshes ; hence the word ϩⲱⲥ, to fill up, to cover up.

PAPYRUS No. 71, Coptic (Pl. 144) :

ⲟⲩⲧⲟ	between

PAPYRUS No. 72, Coptic (Pl. 144) :

ⲓ ⲓⲛⲇ(ⲓⲕⲧⲓⲱⲛⲟⲥ) ⲙⲏ(ⲛⲟⲥ)	tenth year of the indiction, month of...
ⲱⲣⲏⲩ ⲛ]ⲓⲥⲙⲁⲏⲗ ϩⲣⲟ[ⲕ..	(the sons of) Ismael quiet down

In the name Ismael the letter mu has been belatedly added between the sigma and the alpha.

PAPYRUS No. 73, Coptic (Pl. 144) :

ⲡⲥⲟⲓⲥ	The Lord..
ⲃⲁⲣ ⲱⲱ	eye, read...
ϫⲁⲓⲫ[ⲁⲣ..	Djaif (ar ?)...
ⲕⲁⲧⲁ[ⲕⲉⲣⲟ..	at the time of...

The second line is hard to explain. It could be a part of a place-name, like for example ⲙⲁⲛⲫⲁⲗⲟⲩⲧ ⲃⲁⲣ would be a mistake for ⲃⲁⲗ. The last letter of this second line, is decidedly not a tau, and the solution ⲃⲁⲣⲱⲧ, bronze, seems excluded.

The mention of Arabs (sons of Ismael is, like Amalecites, a biblical expression for the Arabs), and of the Beni Djaifar, whom we met previously in another papyrus related to the events of 689, the use of the Greek expression *κατὰ καίρο,* which we did not dare to complete by ⲓⲙⲧⲁⲣ ⲛ ϩⲁⲥ (he may have died in the meantime between the fourth and the tenth indiction) seems to indicate that this papyrus is related to the political and religious events of the end of the seventh century. Anyway, according to No. 72, six years after the insurrection, the repression seems to be over.

PAPYRUS No. 74 (Pl. 144) : Undecipherable because too short.

PAPYRUS No. 75, Greek (Pl. 144) :

...ὁ ἄ)γιος συ διὰ Ε...ν γραμμάτ(ων)

This inscription is likely to be related to Bernand's enigmatic inscription.

Γράμματα ἀχρημάτιστος ἔσση (*ἔσομαι,* 2nd pers. sing.)

Cf. BERNAND, *IGLA*, no. 28.

Anyway it is tempting to complete *ὁ ἅγιος σὺ* (for *σοὶ*) *ὁἰα...τῶν γραμμάτων.* The saint (explained) to you through the Scripture. In that case, *γράμματα* would not mean inscriptions, but the Holy Scripture itself. Bernand's enigmatic inscriptions would not be related to the old pagan sculpture but to a later period, when a sanctified anchorite was probably dwelling in this remote crevice between steep and slippery rocks.

Γράμματα in Bernand's inscriptions would be an allusion to that unknown Father and probably an ironical one "As for the Scripture (accusative of relation) you will be out of business". Maybe the irony

was strengthened by the unusual repetition, left and right, which reminds strangely of a very well-known formula "*καὶ σοὶ τὰ δίπλα*".

PAPYRUS No. 76, Coptic (Pl. 144):

ⲥⲩⲙⲉ ⲱⲛ	Symeon
ⲡ ⲥⲱⲓⲥ	The Lord

PAPYRUS No. 77, Coptic (Pl. 144):

..ⲡⲱⲉⲛ	son
..ⲁⲩⲱ ⲟ	and
..ⲱⲕ ⲉⲡ	

PAPYRUS No. 78, Coptic (Pl. 144):

ⲧ ⲟⲛⲟ ⲥ...

Maybe Dionos. or a cross and the beginning of a name: Ono...

PAPYRUS No. 79, Coptic (Pl. 145):

ⲧⲣⲓⲧⲟⲛ ⲱⲛⲟⲩ(ⲧⲉ)	a third, Schenouti (?)

PAPYRUS No. 80, Coptic (Pl. 145):

ⲁⲩⲱ ⲉⲥ..	and...
..ⲓⲥ ⲃ̅ⲏ̅(ⲑⲟⲥ) ⲥⲧ ⲟⲓⲭⲉⲓ	...) is Boethos certifies

PAPYRUS No. 81, Coptic (Pl. 145):

ⲃⲁⲗ]ⲥⲁⲙⲱⲛ	Balsamon

PAPYRUS No. 82, Coptic (Pl. 145):

1	ⲁⲱⲉ	promises
	ⲡ]ⲟⲓⲙⲉⲛ	Poimen
	ⲓⲱⲛⲁⲥ ⲛⲓⲟⲩⲗ ⲓⲟⲥ..	Ionas son of Ioulios
	ⲃⲓⲑⲓ (for ⲃⲟⲏⲑⲏ) ⲭⲣ(ⲓⲥⲧⲟⲥ) ⲧⲱⲃⲉⲥ	Christ help, repay it
5	ⲉⲩⲑⲓⲙⲓⲟⲥ ⲉⲩ?ⲣⲟⲕ	Euthymios, they stop
	ⲧⲱⲙⲁⲥ ⲃⲓ ⲉⲧⲟⲟⲧⲕ	Thomas, 12, to your hand

L. 4: ⲧⲱⲃ could mean seal as well as repay.

Even if these documents are unrelated, they seem to belong to the same sort; contracts related to some real estate or commercial transaction.

PAPYRUS No. 83 (Pl. 145): Undecipherable because too short.

PAPYRUS No. 84, Coptic (Pl. 146):

1	ⲟⲩⲱⲧ	sent
	ⲙⲁⲧⲁⲓⲟⲥ	Matthew
	ⲙⲓⲭⲁⲏⲗ	Michel
	ⲡⲁ)ⲩⲗⲱ ⲙⲛ	Paul
5	ⲁⲣ)ⲭⲁⲅⲅⲉⲗⲟⲥ	archangel

PAPYRUS No. 85, Coptic (Pl. 146):

ⲗⲩⲥⲓⲁⲥ	Lysias
ⲙⲓ)ⲭⲁⲗⲟⲥ	Mikhalos
ⲑ)ⲱⲑ ⲧⲏ〔ⲥ...ⲓⲛⲁ〕	(month of) Thoth, indiction ?
ⲁⲙⲏ〔ⲛ..	Amen

PAPYRUS No. 86, Coptic (Pl. 146):

ⲧⲁⲓ ⲧⲁⲕⲁϥ..	destroyed him

PAPYRUS No. 87, Coptic (Pl. 146):

ⲧⲉⲙⲉⲣⲓⲧ ⲁ (?)	the beloved (feminine)
.....	

PAPYRUS No. 88, Coptic (Pl. 146):

ⲡ) ⲁⲡⲁⲥ	Papas (or the Apa S.)
ⲟ ⲙⲛⲧⲧⲉ	ten
ⲟⲓⲁ ⲧⲁ2	

PAPYRUS No. 89, Coptic (Pl. 146):

ⲡⲣⲉ(ⲥⲃⲩⲧⲉⲣⲟⲥ..	priest
ⲉⲗⲛ	..eln...

PAPYRUS No. 90, Coptic (Pl. 146):

ⲛⲙⲁⲣⲑⲟⲥ	Marthos
ⲡ) ⲛⲟⲩⲧⲉ ⲙⲟⲛⲓ...	God

PAPYRUS No. 91, Coptic (Pl. 146):

ϣⲛ ⲓⲱⲛⲁ〔ⲥ.....ⲟⲛ	son of Ionas

PAPYRUS No. 92, Coptic (Pl. 147):

1	ⲧⲩⲃⲓ..ⲁⲛⲟⲛ
	ⲭⲟⲉⲓⲥ ⲙⲛ ⲡⲓⲱⲧ
	ⲡⲣⲩⲥ(ⲡⲣⲉⲥⲃⲩⲧⲉⲣⲟⲥ), ⲩⲟⲥ(ⲃⲟⲏⲑⲟⲥ ?)
	..〕ⲱⲛ ⲁⲟⲙⲛⲧⲓⲁⲛⲟⲥ. ⲡ ⲕⲥ(ⲕⲩⲣⲓⲟⲥ) ⲛⲙ ϣⲁϣ〔ⲙ?...
5	ⲑⲱⲙⲁⲥ ⲛⲓⲱⲛⲁⲥ ⲙⲛ..ⲥⲟⲗⲟ〔ⲙⲱⲛ

1 month of Tobi...we
The Lord ...and the Father...
the priest, Boethos
..on Domentianos., the Lord with...
5 Thomas son of Ionas...Solomon

According to the mention of Domentianos this papyrus should belong to the group of documents related to the insurrection. ⲫⲁⲁⲫ could be related to ⲫⲓⲫⲉⲙ phantom, shadow (phantasiasts ?)

PAPYRUS No. 93, Coptic (Pl. 147) :

1	..ⲥⲛⲁⲩ ⲉⲃⲱⲟⲩ ⲃⲟⲛⲧ	two oxen, the priest...
	..ⲣⲓⲟⲥ ⲥⲟⲩⲓⲉ ⲉⲡⲓⲡ ⲧ	...rios, the 15th of Epip...
	ⲓⲏ ⲥⲛⲟⲩϯ ⲥⲟⲩⲁ ⲡⲁ (ⲁⲡⲉ)	...18, two the first of Paopi...
	..ⲏⲣⲓⲟⲥ ⲥⲟⲩ	...erios (.....) th (date)
5	ⲕⲩⲣⲟⲥ ⲡⲱⲏⲣⲉ	Cyrus, son of...
	ⲥⲟⲩ..	(.....) th (date)

(JARRY, J.)

GENERAL CONCLUSION

The documents found at Akoris are unique. They belong to a not very well known period of Egyptian history. For example we know through Arab historians a lot of so-called Coptic insurrections which happened after 700, but we have never heard of any local insurrection between the last Byzantine attempt at reconquest in 646 and the very beginning of the 8th century.

What do we learn from them : first, that there must have been some dissident communities in Akoris itself or in its immediate vicinity ; the accent laid on the theological peculiarities of Julianism and Agnoetism in the "theological" papyri, cannot be understood, if some Julianists and Agnoets had not survived until that time,. Equally conspicuous is the absence of any reference to the Chalcedonian church, the theology of which is never discussed. The monks of Dei Abu Hennes may have been Chalcedonian, as they translated directly some apophtegms from the original Greek instead of using some monophysite Coptic translation. But at Akoris the Chalcedonian church does not seem worth mentioning.

Obviously the convent of Akoris was Severian. The monks refer with horror to the great massacre at Emesos (Homs), committed by a Domitianus (of Melitene) whom they do not clearly distinguish from Cyrus' friend, the Domentianus who killed the Julianists at the Dafaschir bridge, during the Arab conquest. Was there any monothelite tendency in Akoris, any leaning towards the monothelite church (still prevailing at that time in Constantinopolis) ? If they really mention in the same breath Domitianus (of Constantinopolis) (of Melitene) and Domentianus (of Constantinopolis) the case is closed : they were real Severians, hostile to anything Chalcedonian. But a name Domentianus appears again in another papyrus (No. 92) (was it the same Domentianus or another ?). It is hard to tell

what the name means for them : hatred or nostalgic remembrance.

According to these papyri, what remains of the use of Greek at that time ?. The administration still uses it for its documents and its receipts. Some other people try to emulate them, with dubious results and a lot of mistakes.

Anyway the fact that the monks still know the rules of iotacism and use, even in Coptic, the vowels or the groups of vowels which in Greek are pronounced iota to transcribe the sound i, proves that Greek is still alive : a strange Greek, badly pronounced, without any declinations, a Greek without any complicated words and any subtleties, but nevertheless a Greek of sorts. (probably very similar to the awful slang every Algerian fellah used to produce at the time of the French occupation.)

But why that after 50 years of Moslem occupation ? It was probably a matter of tradition : old habits die hard after 1,000 years of uninterrupted use of Greek as the only language of cultural level and cultural value. But there may be another reason. The current attitude among Copts is no more an attitude of distrust and hatred. The bad sides of the Byzantine occupation have slowly disappeared in the memory of the Copts, erased by some more recent examples of Moslem brutality. Greeks at least were fellow Christians ; slowly the Byzantine period began to look like a lost Paradise. Therefore the growing interest for anything Greek, Athenian olive oil, Athenian corn, Athenian figs (Athenian, not Byzantine : the word was not chosen at random).

Furthermore these documents were written at a time when the Arabs had suffered a major defeat before the walls of Constantinopolis (in 678). The calife Muawiya had to play a tribute in gold to the Byzantine emperor and his grip on power was weakened by renewed chiite insurrections. We know today it was just a set-back, that a Moslem army would reappear before Constantinopolis in 718. Nevertheless for people who still remembered how 70 years before a Persian defeat before the same walls was followed by the reconquest of the whole of Egypt and Syria, the tremendous defeat of 678 may have meant the beginning of the end.

Our documents tell us about an insurrection. As before said, it is not only the only Coptic reference to any Coptic insurrection against Moslem rulers (for the so-called Coptic insurrections of the 8th century we got only Arab sources) ; it is the only mention of an insurrection between 646 and the end of the century. The trouble in Akoris started with a brawl between nomads of the desert (we learn the name of the tribe, the Beni Djaifour), probably converted to Islam, and Christians from Akoris. It degenerated quickly and the eparchos in charge (probably some Christian working for the Moslem rulers) had to put down the disorders. How he did that, we do not know. Anyway the incident was followed by a brutal repression, ordered this time without any doubts by Moslem authorities. People got executed or imprisoned at the orders of a certain 'Antar ibn 'As, who could have been a younger brother (at least 25 years his younger) of the conqueror of Egypt 'Amr ibn 'As.

On the other side (i. e. the Christian side) people with latin names like Venantius (probably a land-owner), civil servants like John the boethos, and a lot of monks (the scribe compares the repression, not without a certain amount of oriental exaggeration, to the massacre of 500 monks in Homs in 598) were victims of the Arab repression.

As it could be expected of Egyptian documents, a lot of papyri deal about irrigation methods and irrigation problems. Strangely enough, no mention has been made of norias (except the word ⲁⲓⲏⲏⲩ

which may have a different meaning). The people of Akoris used more primitive contraptions with buckets and chains (which needed greasing; hence the mention of buckets of oil).

Anyway irrigation, grazing (flocks of sheep) and fishing (people from the south were not allowed to go fishing in the marshes around Akoris) were the main elements of daily life and daily routine in Akoris.

Tab. 28 PAPYRI

UNEARTHED AREA : Near the West Furnace in the Eastern Area Adjoining Chapel A

Pl. no.	Dimension	Language	Fibers	Remarks
126- 2	13×19 cm	Coptic	horizontal	
127- 8	11× 6	Greek, Coptic	vertical	legal document
128-17	4× 7	Coptic	horizontal	economy
128-18	3× 2			

UNEARTHED AREA : Building 5, Disarranged Soil

Pl. no.	Dimension	Language	Fibers	Remarks
127- 6	11× 6 cm	Coptic	horizontal	architecture
128- 9	13× 5	Greek	vertical	
128-10	3.5×3.5	Greek	horizontal	
128-11	7× 4	Greek	vertical	
128-12	8× 4	Greek	vertical	tax
128-13	4× 2	Greek	vertical	
128-14	2.5× 2	Coptic	vertical	
129-20	5× 1	Coptic	vertical	religion
129-21	5× 2	Coptic	vertical	tax
129-22	6.5×2.5	Coptic	vertical	religion
129-23	6× 4	Greek, Coptic	vertical	agriculture
129-24	5.5× 5	Coptic	vertical	legal document
129-25	7×2.5	Coptic	vertical	religion
129-26	18× 4	Coptic	vertical	agriculture (olives)

UNEARTHED AREA : Western Part Adjoining Walls 5 and 6 in the Middle Court West

Pl. no.	Dimension	Language	Fibers	Remarks
130-27	5.5× 2	Coptic	vertical	economy
130-28	11× 4.5 cm (left)	Coptic	vertical	irrigation
130-29	15× 6	Coptic	vertical	irrigation
130-30	5× 7	no letters	vertical	
130-31	8×2.5	Coptic	vertical	
131-32	13× 7	Greek	vertical	tax
131-33	18×15.5	Coptic	vertical	irrigation
132-34	18×16	Coptic	vertical	irrigation
133-35	20×16	Coptic	vertical	irrigation
134-36	9×9.5	Coptic	horizontal	economy
134-37	16×14.5	Coptic	vertical	religion
135-38	7×10	Coptic	horizontal	historical events
135-40	7× 6	Coptic	vertical	economy
135-41	3.5×5.5	Coptic	horizontal	economy
135-42	9×15	Coptic	vertical	chant
136-43	10×3.5	Greek(recto) Coptic(verso)	vertical horizontal	chant

136-44	9×10.5	Coptic(recto) Coptic(verso)	vertical horizontal	religion chant
136-45	4×16	Coptic	vertical	
137-46	11×11	Coptic(recto) Coptic(verso)	vertical horizontal	historical events historical events
138-47	6× 4	Coptic	horizontal	tax
138-48	4.5× 3		horizontal	
138-49	3.5×1.5	Coptic	vertical	
138-50	2×1.5		vertical	
138-51	5× 4	Coptic	vertical	
138-52	3.5× 4	Coptic	vertical	religion
138-53	10× 4	Coptic	vertical	historical events
138-54	11× 7	Coptic	horizontal	historical events
139-55	22× 6	Coptic	vertical	historical events
140-56	4× 2	Greek	vertical	historical events
140-57	6× 7	Coptic	vertical	historical events
140-58	5× 5	Coptic	vertical	historical events
140-59	6× 5	Coptic	vertical	
140-60	14×14	Coptic	horrical	historical events
139-61	36× 8	Coptic	vertical	politics
141-62	26×13	Coptic	vertical	
142-63	3.5×5.5	Coptic	horizontal	religion
142-64	3.5×3.5	Coptic	horizontal	religion
142-65	10×11	Coptic	vertical	religion
142-66	16× 8	Coptic	vertical	
143-67	13× 8	Coptic	vertical	religion
143-68	16.5× 5	Coptic	vertical	religion
143-69	14× 7	Coptic	vertical	theology
144-70	13× 6	Coptic	vertical	agriculture
144-71	5× 5	Coptic	vertical	
144-72	5×3.5	Coptic	vertical	historical events
144-73	5×6.5	Coptic	vertical	religion
144-77	5× 4	Coptic	vertical	
144-78	7×3.5	Coptic	vertical	
145-79	15×3.5	Coptic	vertical	
145-80	6× 3	Coptic	horizontal	
145-81	5×1.5	Coptic	vertical	
145-82	7× 9	Coptic	vertical	economy
145-83	3×3.5 (upper left)		small fragments	
146-84	4× 7	Coptic	vertical	religion
146-85	5× 6	Coptic	vertical	religion
146-86	5× 4	Coptic	vertical	
146-87	8× 3	Coptic	vertical	religion
146-88	3× 6	Coptic	vertical	religion
146-89	1.5× 5	Coptic	vertical	religion
146-90	5× 4	Coptic	vertical	religion
146-91	4× 2	Coptic	vertical	religion
147-92	19× 7	Coptic	vertical	
147-93	19.5× 7	Coptic	vertical	

UNEARTHED AREA : Other Sections

Pl. no.	Layer	Dimen (cm)	Language	Fibers	Remarks
128-15	front area of Chapel B	4× 6	Coptic	horizontal	legal document
127- 7	Middle Court East, disarranged	13× 8	Coptic	vertical	
128-16	ditto	7× 5	Coptic	horizontal	oil
129-19	Building 5, on the floor	16×12	Coptic	vertical	economy
135-39	Middle Court West	3×7.5	Greek	horizontal	
144-74	South Court, western area	1× 2		horizontal	
144-75	ditto	3× 2	Greek	horizontal	
144-76	ditto	2× 2 (right)	Coptic	horizontal	

(JARRY, J.)

OSTRACA

OSTRACON No. 4, Greek and Coptic (Pl. 148):

† ϩⲉⲣⲙⲏⲥ ⲉⲣⲉⲙⲓⲧⲏⲥ
ⲫⲁⲱⲫⲓ ϥⲧⲟⲟⲩ ⲓⲛⲇ. ⲁ ⲱⲟⲩ
ⲛⲓⲁⲧ̣ ⲭⲣ (ⲓⲥⲧⲟⲥ) ⲧⲉ ⲕⲁⲓ ⲟ ⲗⲟⲅⲟⲥ
ⲇⲏⲙⲓⲟⲩ [ⲣⲅⲟⲥ.

Hermes, hermite
Phaophi the fourth, the first year of the indiction
happy be Christ and the Logos
demiourgos

This ostracon offers a strange mixture of Coptic and Greek expressions (*ἐρεμίτης, τε καὶ ὁ Λόγος, δημίουργος*).

OSTRACON No. 5, Greek (Pl. 148):

1	+*Ἄρχων πάρ Ἄγέν[η)*	The archon (received) from Agenes
	ἔλαιον ὑπέρ Ἐνωχ...	oil for Enoch
	Παχών ξ(έστας)φο...ὁ βο(ήθος...	Pachon, sextiarii 570, The boethos
	στοιχεῖ τρῖς (?)	certifies, three times
5	*Τῦβι κα Ἰνδ. α*	month of Tobi 21, first indiction

OSTRACON No. 6, Greek (Pl. 148):

+*Ἐνώχ Ἀνουφίου*
Ἄλλος Ἄθως Ἀνουφ(ίου) Κερά(τια)ε

νούμμοι γ Μεχιρ Ἰνδ. α. Ἰω(άννης) Βοή(θος

Enoch, son of Anouphios

Another, Athos, son of Anouphios, five keratia

three nummi. Mechir, first indiction. Iohannes boethos

Κερατιον : ⲕⲉ is obviously the abbreviation of keratia. ⲕ should mean the next subdivision, i.e. nummi (1 *κεράτιον*=12 *νούμμοι*). But it can't be an abbreviation for *νούμμοι*. The kappa with a stroke of abbreviation could correspond to a transcription of the Arabic قرش. *μ* should be for millesimus.

OSTRACON No. 7, Greek(Pl. 149) :

☧ *νίκα Ἀμέ*

ριος Κόσμα φ(όρου)?

ι κεράτια καὶ β νούμμοι Μαρτύρων Υ

Ἰωάνης στοιχεῖ

Christ triumphs. Ame

rios, son of Cosmas, tax of A(ndrismos) ?

ten keratia, two nummi. 400 (of the Martyrs=684 of the Lord)

Ioanes certifies

This document is a bit more difficult to decipher but it belongs obviously to the same sort. The same boethos, Ioannes, certifies the document. For the first time it gives us clearly a datation, with the usual abbreviation for *Μαρτύρων* : ⲙⲅ. Therefore the three documents belong to the end of the 7th century. They were released immediately before the historical events, the testimonies of which appear in the same batch of papyri. They bear the date of the first indiction (the insurrection of Akoris occurred during the fifth indiction).

OSTRACON No. 8, Greek (Pl. 149) :

+*Μ(ηνὸς) Φαμ(ενο)θ α ΙΔ(ἰνδίκτιωνος) γ*

απα Μαριαμε ἀρ(χμανδρίτης) φόρου αλ

Βοέθος Σευήρος στοιχεῖ

The first of Phamenoth, the third year of the indiction

Apa Mariame archimandrite, for tax, 31

The Boethos Severos certifies

L. 2 : *ἀρ* (cursive r) : probably an abbreviation for *ἀρχμανδρίτης* ; but maybe *ἄρουρα*

OSTRACON No. 9, Greek (Pl. 150) :

+*Σευῆρος Ἀνουφίου ὑπὲρ φόρ(ου) Ἀνδ(ρίσμου)*

Κερά(τια) ε καὶ πέντε νούμμοι ιε μ.

+*Ὁμ(οίως) ὑπερ φόρου Ἀνδ(ρίσμου) κερά(τια) ε καὶ ια*

γ νουμμοι.. μ φ(ορου) $\frac{\lambda\gamma}{\varkappa}$ *ι Πααχων Ἰνδ α*

Ἰωάννης βοή(θος) στοιχεῖ

Severos, son of Anouphios. For the tax of andrismos
Five keratia and five nummi and 15 millesimi
Similarly for the tax of andrismos, five keratia and eleven millesimi
three nummi.....millesimi. Tax... $\frac{33}{20}$ tenth of Paopi first indiction
Johannes, boethos certifies

Nos. 6-9 texts are tax receipts, No. 9 certainly and Nos. 6~8 probably, for andrismos, a poll tax of the early arabic period. No. 6 is issued to Enoch, son of Anouphios (and mentions another brother) and No. 9 to the son of the same man : both are for amounts in keratia and subdivisions of the keration. They are signed by Iohannes, a boethos. Both bear month and indiction dates.

OSTRACON No. 10, Greek (Pl. 150) :

+ *Ἄρχων ἐν ϥοιβε πάρ Ἄγένη ἔλαιον*
ξ(έστ)ας οη, καὶ ἐνθάδε ἔλαιον
χοίακ=α Ἰνδ, α

The archon in Foibe (received) from Agenes oil
78 sextiarii and here oil
[month] of Khoiak, first, first year of the indiction.

The texts No. 5 and 10 are orders to Agenes, an elaiourgos, for delivery of amounts of oil, in sextiarii (*ξεσται*), both dating from a first indiction. In the second text the oil is supposed to be delivered in a place called Foibe, the name of which reminds of *Θῆβαι*, if we take the iotacism into account.

OSTRACON No. 11, Greek (Pl. 150) :

Θε]όδωρος	Theodoros

OSTRACON No. 12, Coptic (Pl. 150) :

ⲉϩⲟⲟⲩ...	oxen
ⲥⲓ ⲥⲙⲏ ⲉ...	listen to E[...

ⲉϩⲟⲟⲩ in the meaning of day would be preceded by an article. Therefore I chose the above translation.

OSTRACON No. 13, Greek (Pl. 150) :

ΒΚΤ μαρτύρων ε C
Γεωργιος γμ ε C
Φιλοθεος θω ε C

322 (of the martyrs=606 of our era)		206
George	43	206
Philotheos	809	206

It remains hard to understand why the same number appears at the end of each line.
The meaning of the numbers which follow both names, George and Philotheos remains obscure.

OSTRACON No. 14, Coptic (Pl. 151):

ⲡ ϩⲱⲣ ⲡⲉⲡⲓⲕⲟⲡ〔ⲟⲥ〕 ⲡⲓⲱⲧ

ⲕⲁⲑ(ⲟⲙⲟⲓⲱⲥ) ⲃ ⲟⲙⲟ(ⲓⲱⲥ) ⲁ⸗ⲭ

ⲉⲡⲓⲕⲟⲡⲟⲥ : *for* ⲉⲡⲓⲥⲕⲟⲡⲟⲥ

the bishop Hor, the father.....

similarily 2 similarily 611

This inscription gives a probably the name of a previously unknown bishop of Akoris.

OSTRACON No. 15, Coptic (Pl. 151):

1 ..ⲡⲟⲓⲙ〔ⲉⲛ..

ⲉⲓⲉ ⲙⲉⲧⲣⲉ ⲛⲉⲙⲁⲕ ⲛ..

ⲡⲣ]ⲉⲥⲃⲩⲧⲉⲣⲟⲥ ⲉⲓⲉϫⲟⲓ ⲉⲉⲣⲟⲕ..

ⲡⲟⲓ]ⲙⲉⲛ ⲟⲓ ⲛⲙⲁⲕ ⲁⲩⲱ ϫⲉ ⲧⲁϩⲙ..

5 ⲁⲩⲱ ⲁⲕⲁⲡⲉ ⲛⲓⲙ ⲛⲧⲁⲕⲁⲥ..

ⲛⲙⲟⲛ ⲉⲓⲱⲁⲛϫⲟⲟⲥ ϫⲉ ⲡⲟⲓⲙⲉⲛ..

1 Poimen...

I will certify with you...

priest, I will tell you...

Poimen (has been ?) famous with you and was chosen...

5 and the agape in order that somebody buries (him ?)...

with us, if I say, but Poimen...

L. 5 : ⲕⲁⲥ =ⲕⲱⲱⲥ, ⲕⲱⲱⲥⲉ, ⲕⲉⲥ, ⲕⲟⲟⲥ.

1 ⲧⲁⲩⲱ ⲧⲓⲡⲣⲟⲥⲕⲏⲛⲉⲥⲏ〔ⲥ..

ⲓⲥ ⲡⲛⲟⲩⲧⲉ ⲛⲉⲙⲁⲕ ϫⲉ ⲁ〔ⲩⲱ.. 〕

ⲁⲩⲱ· ⲉⲣⲉ ⲡⲛⲟⲩⲧⲉ ⲛⲁϩⲙⲉⲕ

ⲁⲩⲱ ⲉⲓⲉ ϩⲓⲧⲓⲙⲉ ⲛⲉⲙⲁⲕ

5 ⲉⲙⲙⲁⲩ ⲡⲃⲉⲕⲉ

1 and the proskynesis...

God be with you and...

and God will save you...

and I will pay (give the price) with you...

5 there is the salary...

L. 1 : ⲡⲣⲟⲥⲕⲏⲛⲉⲥⲏⲥ = *Προσκύνησιζ*. ⲧⲓⲙⲉ = *τιμη*

This (unfortunately incomplete) document is about preparations for a burial, agape, salary and who is going to foot the bill.

Who is going to be buried ? According to what remains of the ostrakon, it seems to be Poimen (the fourth line looks like an obituary) but it is impossible to be completely sure.

OSTRACON No. 16, Coptic (Pl. 151):

1 ⲁⲥⲫⲁⲗⲓⲁ

ⲥⲟⲩ ⲁ ϫⲟⲓⲁⲕ ⲓⲛ (ⲇⲓⲕⲧⲓⲱⲛⲟⲥ)

ⲕⲅ

ⲕ̸ *ἄλλος* ⲁϥ

5 *στοιχεῖ*

1 Security.

The first of Khoiak, the third year of the indiction.

23

Nummi (?) Other, 94

5 certifies

L. 4 : the abbreviation at the beginning of the line could mean : nummi, cf. Ostraca Nos. 6 and 9.

OSTRACON No. 17, Greek (Pl. 151) :

β Κ(εράτια) ἡ εἰκία σ ...	Two keratia, the house of...
εἶπε μη π ...	he said not to...
φλω ...	Phlo ...

L. 1 : The abbreviation is very similar to Ostraca Nos. 9 and 10. *εἰκία* for *οἰκία* is a typical case of iotacism

L. 3 : *φλω* should be the beginning of a name.

OSTRACON No. 18, Coptic (Pl. 151) :

1 ϯⲁ ⲛⲁⲕ ⲱⲣⲉⲧⲉⲥⲧⲏⲥ (ⲱⲣⲉⲥⲧⲏⲥ)	I am Orestes
ⲑⲉⲟ (ⲥ) ϫⲣⲟⲥ (ϫⲣⲓⲥⲧⲟⲥ)	Christ God
ⲡⲁϩⲟⲙ ⲉⲥⲱⲟⲩ ⲗⲏ	Pakhom : sheep 38
ⲡⲁϩⲱⲙ ⲡⲡⲁⲡⲥⲁⲧ	Pakhom, son of Papsat
5 ⲉⲛⲱϫ ⲡⲁⲟⲩ ⲝ	Enoch, son of Paou : 60
ⲙⲉⲧⲣⲉ ⲙⲁϩⲣⲟⲟⲩ	Mahroou certifies
ⲡⲁⲡⲛⲟⲩⲧⲉ ⲯ ⲉⲥⲱⲟⲩ	Paphnutius : 700 sheep
ⲡⲉⲧⲏⲣⲟⲩ=ⲗⲱ ⲉ (ⲥⲱⲟⲩ)	all together : 830 sheep
ⲁⲛⲁⲕ ⲙⲛⲉⲥⲟⲱⲩ (ⲉⲥⲱⲟⲩ)	I am the shepherd

L. 1 : Orestes got confused in the spelling of his own name.

L. 2 : abbreviations for *Θεος* and *Χριστος*

L. 3 : ⲉ is probably an abbreviation for ⲉⲥⲱⲟⲩ

The number of sheep given in the total (830) is at variance with the itemization of 38 + 60 + 700, which gives a total of 798. This discrepancy is probably owing to the inclusion of the shepherd's own flock in the total. Or maybe Pakhom, son of Papsat is not the same as the preceding Pakhom, and Orestes forgot the number of his sheep.

OSTRACON No. 19, Coptic (Pl. 152) : Receipts in Coptic on a very large vase, for the sale of lambs.

1 ϯϩⲙⲡⲣⲁⲛ ⲙⲡⲛⲟⲩⲧⲉ ⲙⲛ ⲡⲁⲣϫⲓⲁⲅⲅⲉⲗⲟⲥ ⲙⲓϫⲁⲏⲗ

ⲡⲁϥ ⲡⲇⲓⲁϫⲟⲛⲟⲥ ⲛⲉⲏⲟⲩⲃ ⲛⲧⲉ ⲉⲏⲱⲧ ⲡⲙⲁⲕⲁⲣⲓⲟⲥ ϣⲉⲛ ⲉⲑⲩⲛⲁ

ϩⲓⲧⲟⲟⲧϥ ⲡϣⲉⲛ ⲓⲱϩⲁⲛⲏⲥ ⲡⲓⲉⲏⲱⲧϯ

	α	ἡ ἀμιν (For ἄμνη) στοιχεῖ		
οιμιως (for ὁμοίως)	β	ἡ(ἀμινοι)	στοιχεῖ	Φπ
οιμιως	γ	ἡ ἀμινοι	στοιχεῖ	Φπγ
οιμιως	δ	ἡ ἀμινοι	στοιχεῖ	Φ ϥ̄ ξ
οιμιως	ε	ἡ ἀμινοι	στοιχεῖ	Φπ
οιμιως	ϛ	ἡ ἀμινοι	στοιχεῖ	Φοα
οιμιως	ϩ	ἡ ἀμινοι	στοιχεῖ	Φ ϥ̄
οιμιως	η	ἡ ἀμινοι	στοιχεῖ	Φ ϥ̄ γ
οιμιως	θ	ἡ ἀμινοι	στοιχεῖ	Φξθ
οιμιως	ι	ἡ ἀμινοι	στοιχεῖ	Φνγ

In the name of God and the archangel Michel
For the diacon Job of the blessed father, son of Ethuna
From (from the hand of) the father son of John.

	1	the female lamb	certifies	
similarly	2	the female lamb	certifies	580
similarly	3	the female lamb	certifies	583
similarly	4	the female lamb	certifies	596
similarly	5	the female lamb	certifies	580
similarly	6	the female lamb	certifies	571
similarly	7	the female lamb	certifies	590
similarly	8	the female lamb	certifies	593
similarly	9	the female lamb	certifies	569
similarly	10	the female lamb	certifies	553

L. 2 : ⲇⲓⲁⲭⲟⲛⲟⲥ for ⲇⲓⲁⲕⲟⲛⲟⲥ

The inscription is posterior to the Arab conquest. Therefore the nearly Moslem beginning : in the name of God. But after that the document mentions only the archangel Michel, not both archangels Michel and Gabriel, as usual. The church, which had the son of Ethuna as a priest and Job as a diacon, was therefore certainly dedicated to the archangel Michel.

The beginning is Coptic. After that the old Greek indications are still in use but strangely distorted in their spelling. The iotacism, already prevailing at that late period, creates amazing confusions *ὁμίως* for *ὁμοίως*, *ἀμίνοι* for *ἄμνη*. The use of Greek in the documents is already a dead tradition and the scribe has not the faintest notion of spelling and declination : *ἄμνοι*, a nominative masculing plural, is used for a feminine singular.

OSTRACON No. 20, Greek, (Pl. 153) : Isolated sentence on the other side of the same ostracon

++ ἡ ἀμινιαι ἡνια ηοι χμγ

ΧΜΓ=Χριστος Μιχαηλ Γαβριηλ

Christ Michel, Gabriel

It is easy to recognize in this distorted sentence the word of the previous inscription, *ἀμινοι* but

repeated twice, with an inversion of the beginning and the ending of the word. It could be translated female lamb, 643.

But *XMΓ* is a very well known abbreviation for *Χριστος, Μιχαηλ, Γαβριηλ*, Christ, Michel, Gabriel (cf the church of Qalblauze in Northern Syria) Maybe the scribe did not understand at all his model, which was of religious inspiration : ⲱⲟⲩⲛⲓⲁⲧ, ⲱⲟⲩⲛⲓⲁⲧ, blessed Christ and Michel and Gabriel, and botched it according to the wording of his previous task : a receipt for the sale of ten lambs to the priest of the next church.

OSTRACON No. 21, Coptic (Pl. 154) :

1	☦ⲕⲁ ⲭⲣ (ⲛⲓⲕⲁ ⲭⲣⲓⲥⲧⲟⲥ)	Christ triumphs
	ⲧⲙ̄ⲙⲉ (ⲧⲙⲙⲉⲣⲓ) ⲥⲛⲧⲉⲛⲧⲟ	At noon, both of you,
	ⲓ2 ⲕⲁ 2ⲛ ⲡⲙⲁ 2ⲗ	destroy 21 idols at a pagan place
	ⲛ ⲕⲁⲱ ⲙⲛⲧ ⲓ2 ⲥ	both of you destroy ten idols
5	ⲛⲧⲉⲛⲧⲟ ⲉ ⲡⲉⲕⲫⲧ	going to Keft (Coptos ?)
	2ⲛ ⲧⲕⲟⲩⲩⲛ ⲕⲁⲱ	in Edkou

L. 1 : ☦ⲕⲁ is probably an abbreviation for ⲛⲓⲕⲁ .

L. 2 : ⲧⲙⲙⲉ abbreviation for ⲧⲙⲙⲉⲣⲓ, noon.

ⲥⲛⲧⲉⲛⲧⲟ : at the very beginning we thought it was the name of a place, just like ⲡⲧⲉⲛⲉⲧⲱ or ⲧⲁⲡⲁⲧⲱ but there should have been a preposition like 2ⲛ before it. It is more likely to understand ⲥⲛⲧⲉ two, and ⲛⲧⲟ, you, feminine plural ; hence the meaning both of you. ⲥⲛⲧⲉⲛⲧⲟ reminds also of ⲛⲧⲥⲛⲧⲉ, both together.

ⲕⲁⲱ has of course a transitive meaning : to break down, to destroy.

L. 4 : ⲙⲛⲧ dialectal form for ⲙⲏⲧ, ⲙⲉⲧ ten.

L. 5 : first we read ⲡⲉⲕⲫⲟ, ⲫⲟ means canal. But there is no meaning in this reading. It is more likely to read the last letter as a tau like the preceding letter, not like a half omicron. Thus we get a name like Coptos in Upper Egypt.

L. 6 : ⲧⲕⲟⲩⲩⲛ looks like ⲧⲕⲱⲟⲩ, Edkou (MALLON, A., *Grammaire, Copte* p. 218)

This ostrakon should be older than the preceding ones and from the period when Schenouti systematically destroyed idols through the whole of Egypt.

OSTRACON No. 22, Coptic (Pl. 154) :

(recto)

1 ⲣ

..ⲣⲓⲁ..

ⲙⲁⲕⲁ]ⲣⲓⲱ ⲓⲁ̣ [ⲕⲱⲃⲱ

ⲁ] ⲑⲱⲣ ⲓⲛ [ⲁⲓⲕⲧ...

5 ⲥ]ⲟⲩⲭⲱ ⲑ[ⲉⲱ ⲙⲛ

ⲓ ⲓⲱⲃ ⲁ̣ⲁ̣[ⲟⲥ ⲛ2ⲉⲗⲗⲏⲛ

ⲱⲥ]ⲛⲁⲥ ⲁⲓ2 ...

(verso)

1 ⲧⲉⲃⲓ ⲁ

ⲱⲣⲑⲟⲁ [ⲟ2ⲱ

ⲑⲉⲩⲫⲟⲛ [ⲉⲓ] ..

ⲙⲁⲕⲁ]ⲣⲏⲱ ⲓⲁ [ⲕⲱⲃⲱ..

5 ⲱⲥ]ⲛⲁⲥ ⲁ [ⲓ2..

ⲙⲛ] ⲁⲙⲙⲟⲛ ⲉⲧ [ⲉ

ⲓⲱⲃ?] ⲉ ⲗⲁⲟ [ⲥ ⲛ2ⲉⲗⲗⲏⲛ...

ⲉⲛⲱ [ⲭ.. ?

..ϫⲉ ⲛ ⲉⲥ..
..ⲱⲛ ⲣⲉⲛ..
..ⲟⲩ ⲛϩ ⲟ..
..ⲧⲁ..

ⲉⲏ

the blessed Jacob
month of Hathor, Indiction
The God Soukhos
handicraft of the people of the pagans
strike the idol
oil ...

coffin (or reliquary)
orthodox
god-killer
to the blessed Jacob
strike the idol
Ammon which ...
The people of the pagans
Enoch

There is not much left of both ostraca, probably not more than a third of each, but there is an obvious parallelism between both texts. L. 3 (recto) and l. 4 (verso) are similar (the mention of ⲧⲉⲃⲓ, for ⲧⲁⲓⲃⲉ, ⲧⲏⲏⲃⲉ, ⲧⲉⲉⲃⲉ, ⲧⲁⲓⲃⲓ coffin or reliquary, authorizes another restitution, ⲙⲁⲣⲧⲩⲣⲓⲱ martyrion ; in that case ⲓ̲ⲁⲕⲱⲃⲟⲩ would be a genitive). L. 7 (recto) and l. 5 (verso), are also similar, which enabled us to restitute ⲁⲓϩ on the recto inscription.

There is also a parallelism between ls. 5 and 6 (recto) and ls. 6 and 7 (verso). But we did not dare to restitute ⲉⲏⲱⲃ, for ⲉⲓⲟⲡⲉ, ⲓⲟⲡⲓ, ⲓⲉⲃ, ⲓⲏⲃ fabrication, craft, on the right side., line 9.

What the purpose of these inscriptions : very probably to commemorate an offering (of oil on the recto side), to the martyrion, or the tomb of somebody called Jacob. Why was he so famous ? First we read a lambda at the end of l. 2, verso, which would lead to ⲟⲣⲑⲟⲗⲟⲅⲓⲁ and ⲑⲉⲟⲩⲫⲱⲛⲏ with the omission of an omicron. But that lambda with a slim and short right stroke and a thick left stroke would have been very different of the indiscutable lambda of l. 7. Therefore we preferred ⲱⲣⲑⲟⲇⲟⲝⲟⲥ and ⲑⲉⲩⲫⲟⲛⲉⲩⲥ, god-killer. This could have been an allusion to the monophysite ending of the Trishagion and to a quarrel between orthodoxs and monophysites but the mention of the God Soukhos and of ⲁⲓϩ, for ⲓϩ demon, idol, as in No. 21, leads us to another interpretation : Jacob has been destroying idols, killing pagan Gods, in this case the famous pair of Ammon and Soukhos, so well represented in Akoris.

Comments

Ls. 2 and 3 verso : we restituted normal Greek datives but it is not sure the Coptic scribe knew the correct dative form of ⲫⲟⲛⲉⲩⲥ. The first upsilon of ⲑⲉⲩⲫⲟⲛⲉⲩⲥ is strange. A Ionian (or Dorian) form is unlikely. Maybe the scribe forgot really the omicron of a genitive of ⲑⲉⲟⲥ.

OSTRACON No. 23, Greek (Pl. 154) :

Μύρων Myron

OSTRACON No. 24, Coptic (Pl. 154):

..ⲧⲟ	God has (forgiven ?)...
..ⲥⲉ ⲟ ⲑⲉ⸤ⲟⲥ..	a judgment ...
..ⲟ⸣ⲅⲁⲡ	

L. 1: ⲧⲟ is the end of a passive past.

L. 2: ⲥⲉ is the end of an aorist, third person singular, probably *ἠλέησε*, he has forgiven. This Greek word in the middle of a Coptic inscription is certainly a very usual word, constantly used in the liturgy.

L. 3: ⲁⲡ judgment with an indefinite article.

OSTRACON No. 25, Greek (Pl. 154):

Γοφ	
καλ	
εῖν	to call

the first three letters could be a date: 573

OSTRACON No. 26, Coptic (Pl. 154):

Λ⸣όγος	Logos
Ἰ⸣χθυς	Fish (anagramm of Jesus, son of God, Saviour)
αω	Alpha omega

OSTRACON No. 27, Coptic (Pl. 154):

ⲁ̣ⲫ̣ⲉ̣ⲣⲟⲩⲟ ⲟ	he answered

OSTRACON No. 28, Coptic (Fig. 233):

ⲁ ⲛⲡⲁⲉⲓⲱⲧ ⲅⲉⲱⲣⲅ⸤ⲓⲟⲥ	of our father George
ⲧⲏⲛ ⸤ⲉ	dyke
ⲓⲟⲩ ⲁⲩⲱ	and

No picture of this inscription was available. As an ⲓⲥⲩ ending is impossible in Coptic, we preferred a ⲓⲟⲩ. A part of the omicron has been probably deleted.

L. 2: maybe ⲧⲏⲛ ⸤ⲓⲥ, place name. In that case, ⲓⲟⲩ should be the ending of one the *Κώμαι* cited by DREW-BEAR, M., *Le Nome Hermopolite* (Ann Arbor, 1979) pp. 383-6. As a matter of fact there are five possibilities *Ἀδελφίου, Ἡγίου, Ἰσίου, Παρίου, Ὠφελίου* (The name of a monastery such as *Ζωίλου* is not excluded).

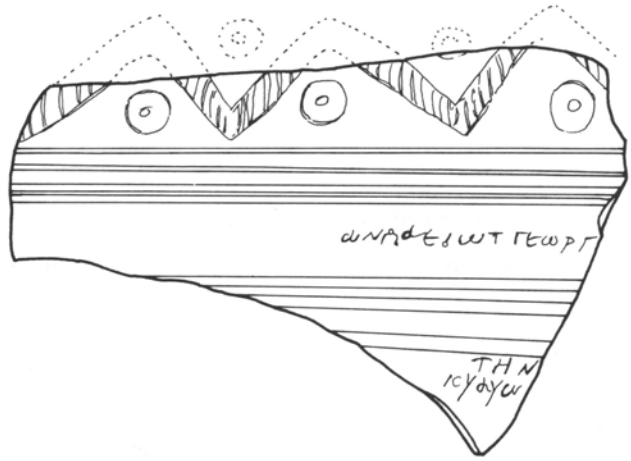


Fig. 233 Ostracon No. 28

Tab. 29 OSTRACA

UNEARTHED AREA : Building 4

Pl. no.	Layer	Demension	Language	Remarks
151-16	Room 2, on the floor	7.0× 7.5 cm	Coptic	receipt
152-19	ditto	18.2×32.8	Coptic	lamb receipt
153-20	ditto	16.7×27.7	Greek	agriculture

UNEARTHED AREA : Middle Court East

Pl. no.	Layer	Demension	Language	Remarks
150-12	on the paving stones	4.0× 4.0 cm	Coptic	
151-15	Building 5, disarranged	16.0×19.0	Coptic	religion
154-21	north part, disarranged	8.0× 9.5	Coptic	destruction of idols
154-27	disarranged	10.5× 8.1	Coptic	inscription

UNEARTHED AREA : Building 9

Pl. no.	Layer	Demension	Language	Remarks
148-5	Room 3, disarranged	6.5× 8.2 cm	Greek	oil order
148-6	ditto	7.1× 6.3	Greek	tax receipt
149-7	ditto	11.2× 8.9	Greek	tax receipt
150-9	Room 3, on the floor	12.0× 7.2	Greek	tax receipt
150-10	ditto	11.0× 7.8	Greek	oil delivery
151-14	Room 3, disarranged	10.5×11.4	Coptic	religion

UNEARTHED AREA : Other Sections

Pl. no. (Fig. no.)	Layer	Demension	Language	Remarks
150-13	Sacred Road of the Central Temple	6.9× 5.7 cm	Greek	
148-4	eastern area adjoining Chapel A	8.5× 5.0	Greek, Coptic	historical events
149-8	South Court, on the paving stones	7.9× 6.9	Greek	tax receipt
150-11	Room 5, Building 8, disarranged	3.5× 7.5	Greek	man's name
(233-28)	Room 6, Building 8, disarranged	20.1×13.4	Coptic	

151-17	Sacred Road of the Central Temple	5.2× 4.6	Greek	receipt
151-18	northeast corner of the Western Temple Area, surface layer	11.4×12.1	Coptic	sheep
154-22	ashlar building ruin, northward from the North Gate	5.2× 8.1	Coptic(recto) Coptic(verso)	red writing, historical events red writing, historical events
154-23	Middle Court West	5.4× 5.6	Greek	red writing
154-24	Room 4, Building 10, disarranged	3.2× 4.4	Coptic	legal document
154-25	Chapel A shaft	3.0× 4.6	Greek	
154-26	South Court West	3.8× 4.3	Coptic	religion

(JARRY, J.)

PARCHMENTS

The fragments of parchment discovered among the debris are probably not tax rolls but accounts. According to one datation (670 Hejra) they would date back to the beginning of the 14th century. They show lists of names separated by vertical lines and underneath each name is written the amount of the debt. Such fragments are rather common ; a great lot of them has been discovered during excavations but they have never hitherto been studied.

This is going to be just a preliminary introduction to the study of those documents which could provide us clues about the religious (one Jewish name, one Christian name) and ethnic (one Turkish name) composition of the clientele. The same Jewish name appears a second time in a very short fragment.

Anyway, these parchments do not provide a real book-keeping. They are just a memo of sorts, in order to remember names, debts, or deliveries. They are very far away from the double-entry (a method of book-keeping in which each transaction is entered twice, once to the credit of some account, and once to the debit of another) which was used during the same period by Italian treadesmen from Lombardy in the whole of western Europe.

PARCHMENT No. 1, Recto, Arabic (Pl. 155) :

الحمد لله

ر	لوى ١ لطفي رشيد عاس	ساليم مدرسة ٤ على طيب ٤٩	رشيد ١٠٠الا يعوضهم سلّى طار مده	رشيد حويوك مد	محمد حلال سو رفيق ٢٣	على سو ٤٢١	٥ بن علي ٩	٤٠ على ٤٥
		بالحسام ٤ رفيق معهم ر ق ٤ رفيق عن (ارتفق عن)	مد ٥ يعوضهم ٢ ق		رفع ٦ ٩٤	بكم		صاع ٥

Glory to God

r	Levi (Lawi) 1 Lutfi Raschid CAs	Salim Medrese 4 CAli Tayeb 49	Raschid except indemnity for them consolation	Raschid Höyük extended	Mohammed Hilal bad Rafiq 23	CAli bad	5 Ben Ali 9 421	40 CAli 45

extended it got away

Discount (mistake for حسم) 4 in association with them 4 q(urush) 2 as a substitute for them (or profit from, or correction from)	extended 5 indemnity for them 2 qurush	raised 6 94	for you	cubic measure 5

PARCHMENT No. 1, Verso, Arabic (Pl. 155):

بعث

مصر ست ستمائه

وسير بها بطرف ...	مصر ٢٤٥	سله منّ مائه
	٤١	رسل ٦١٦
كان ٢٦٥٦		سعد
		له بينهما
		٢ ق ٩

sent
six hundred six Cairo

and he dispatched them	245 Cairo	baskets, gave hundred
in the region of ...	41	he sent 616
There was 2656		Saad
		between
		both of them for him.
		9 qurush 2

The obvious reading بطرف (l. 3) proves that the letter ن which looks like a *nun* is in fact a *fa* or a *qof*.

PARCHMENT No. 2, Recto, Arabic (Pl. 155):

ستمائة و سبعين ٤

بسم الله

على سعد بن الفضل

سبع	دير على	محمد
٨١٤٥	ق٦	

670 (Hejra)
In the name of God
^{C}Ali Sa^{C}ad ben Al Fadl

Sabi ^{C}(or Nabi^{C})	Deir ^{C}Ali	Mohammed
8145	(monastery)	
	6 q(urush)	

PARCHMENT No. 2, Verso, Arabic (Pl. 155):

الفاسي	Al Fasi
صفي	Safi
اسد	Asad

PARCHMENT No. 3, Recto, Arabic (Pl. 155):

رسميه

اسد

لوى كمال قمح

١١٥ | ٦ | ٢

سير بها ١٦

official documents

Kemal Asad Levi

wheat

115 extended | 6 | 2

he dispatched 16

PARCHMENT No. 3, Verso, Arabic (Pl. 155):

٣	فحم	٢	١	١

مد

3	coal	2	1	1

extend

PARCHMENT No. 4, Recto, Arabic (Pl. 156):

بعد

صدّ ١٠	صعد ٤٤	حرّر ٥	عريف ١	بيوت ٦٠

بسم الله

after

revision 10	increase 44	revision 5	acknowledgement 1	houses 60

In the name of God.
(in fact 1+10+5+44=60)

PARCHMENT No. 4, Verso, Arabic (Pl. 156):

ما في سنة

٤٩٩ ولي ملم ٤

المال	لوكيس	عبد لو	مال
ا	ق ٤	ق ١	ق٩

محمد ابو

What in the year ···
the associate
4 millims 499

merchandise	Lucas	CAbdalu	merchandise
1	4q(urush)	1q	9q

Mohammed Abu ···

PARCHMENT No. 5, Recto, Arabic (Pl. 156):

١٦١

	سعد	نبع
مد	١	٤٤

طيب

161

	Sa'ad	Nab^{C}
extended	1	44

Tayeb

PARCHMENT No. 5, Verso, Arabic (Pl. 156):

٨	مصر	٥	١٠	علي
	مد			
	لوي	مرّر	للطيف	

٤١١٠ ولي

رشيد ٥

عاج

8	Cairo	5		
	extend		10	CAli
	Levi	refusal	for Latif	

associate 4110 Raschid 5
ivory

I should like to express my thanks to prof. Sirou Tanaka of the Kyoto University of Foreign Studies, who was a great help in the publication.

Tab. 30 PARCHMENTS

Pl. no.	Layer	Dimension	Language	Remarks
155-1	front area of Chapel B	8.8 × 9.0 cm	Arabic(recto) Arabic(verso)	
155-2	ditto	4.8 × 4.8	Arabic(recto) Arabic(verso)	
155-3	ditto	8.5 × 6.2	Arabic(recto) Arabic(verso)	
156-4	ditto	5.7 × 5.0	Arabic(recto) Arabic(verso)	
156-5	ditto	4.0 × 5.0	Arabic(recto) Arabic(verso)	

(JARRY, J.)

GRAFFITI

GRAFFITO No. 1, Coptic (Pl. 156):

1 ⲧⲉⲕ ⲉⲡⲓⲥ [ⲕⲟⲡⲟⲥ
ⲕ] ⲉⲧ
ⲉ [ⲕ] ⲓⲟⲛⲉⲥ
ⲓⲏⲥⲟ]ⲩⲥ ⲭⲥ ⲛⲓⲕⲁ
5 ⲁⲅⲓⲟⲥ

1 its bishop (feminine pronominal adjective : maybe of the town)
built
columns
Jesus Christ triumphs
5 saint

GRAFFITO No. 2, Greek (Pl. 156) : Inscription on a piece of plaster probably fallen from a wall

(ἀ) νῆλθεν (εἰς τὸ ἱ)ερ(ὸν Σούχου κ) αὶ Ἄμμωνος καὶ Ἕρ(μου καὶ Ἥ)ρας καὶ τῶν συν (νάων θεῶν) με(γί)στων

—— rose to the sanctuary of Souchos, Ammon, Hermes, Hera and the supreme gods who dwell in the same temple.

According to other similar inscriptions, the contents must be completed as follows "*τὸ ἐπαγαθὸν νέον ὕδωρ μετὰ πάσης χαρᾶς καὶ ἱλαριάς*" the new welcome water amidst general happiness and rejoicing. cf. BERNAND, *IGLA*, inscr. 29, 30, 31, 32, 33, 34, 36, 37, 38, 39 and maybe 40.

This flood, rather exceptional, occurred over 20 years from 284 through 305, between the 3rd and the 16th of August. Our inscription should be related to that period. It is the first inscription which was not found on a column.

Tab. 31 GRAFFITI

Pl. no.	Layer	Dimension	Language	Remarks
156-1	East Trench in the site, Layer 1	14×12.7 cm	Coptic	religion
156-2	Middle Court West	30×10	Greek	architecture

(JARRY, J.)

CLOTH

PIECE OF CLOTH, Coptic (Pl. 97 no. 2):

ⲡⲉⲑⲱ — The Ethiopian

ⲱⲙⲁϭ — Maunas

ⲛⲁⲥ

The third letter of the proper name could be a cursive omicron or a combination of omicron and upsilon. Anyway the pronunciation was not very different.

Ethiopia at that time means either Nubia or real Ethiopia already converted to monophysitism. An inscription in Guez (but without any vocalisation) has been previously found in Deir Abu Hennes, in the vicinity of Akoris.

(JARRY, J.)

VI
CHEMICAL STUDIES

1 X-RAY FLUORESCENCE ANALYSIS OF GLASS AND POTTERY

INTRODUCTION

Over the years, there have been many methods employed for the analysis of archeological objects. The artifacts, such as ancient glass and pottery have been often studied by X-ray fluorescence (XRF) analysis, emission spectrography, neutron activation analysis and so on.

But, since archeological objects should not be damaged during analysis, it is difficult to obtain some informations about the source of glass and pottery. One of the advantages of XRF analysis is that it is a nondestructive method and samples can be measured without damage. The XRF technique is simple enough that even untrained archeologists can use it. Measuring time is short and many samples can be analyzed because multiple elements can be measured at the same time.

In this paper, the results of elemental analysis of the glass and pottery excavated at Akoris, Egypt, will be reported as well as principal components analysis and cluster analysis based on the obtained XRF data.

SAMPLES

Analyzed samples were from the glass and pottery fragments excavated at Akoris in Egypt (Tab. 32). The types of pottery included amphorae, bowls and jars. The colors of them are ranged from reddish-brown, dark-brown to yellowish-grey. There were some fragments with black carbon or slip on their surfaces. The fragments of glass were colored in green, cobalt blue or pale violet.

These samples were measured after 15 minutes of ultrasonic cleaning.

EXPERIMENTAL

Measurements were made by energy dispersive mode with a Si (Li) detector. The Sample was placed on a sample holder and was excited by a Rh X-ray tube in a vacuum. After measurement for 500 seconds, every peak was identified by comparisons of known peaks of elements. The elements detected were ; aluminum (Al), silicon (Si), potassium (K), calcium (Ca), titanium (Ti), manganese (Mn), iron (Fe),

rubidium (Rb), strontium (Sr), yttrium (Y), and zirconium (Zr). Then based on the X-ray intensity of each peak, weight percentage of each element was calculated by fundamental parameter (FP) method.

Pottery was cracked in order to obtain fresh section and then three points, the right side, the reverse side and the fresh section, were analyzed. Fragments of glass were measured from the right side.

X-ray intensity data and the calculated data were analyzed statistically by principal components analysis and cluster analysis.

RESULTS AND CONSIDERATION

POTTERY : It thought that the composition of body clay of pottery changes during long term storage in the earth soil. Water containing ions intrudes the body clay and the ions replace the ions in clay. The change is not uniform over the whole body, and the surface is more contaminated than the center body. Also the surface of the pottery is often decorated with slip or heated by fire. Therefore, the center of the clay body has more similar composition of original clay than it's surface. Three points of the same fragment, the right side, the reverse side and the center section, were analyzed to clarify the difference in the composition between surface and center.

Table. 33 shows the weight percentage of sample calculated by FP method.

The plots for classifying these samples are given in Figs. 234, 235 and 236. The values for plot are given as follows.

Sr%=Sr intensity/T1

Zr%=Zr intensity/T1

Ca%=Ca intensity/T2

T1=total intensity of Rb, Sr, Y and Zr

T2=total intensity of K, Ca, Ti, Mn and Fe

The analytical results of the contemporary pottery from Al-Fustat, placed in present Cairo, is also given in figures for comparison. The pottery from Al-Fustat fell into different category from that of Akoris.

The % weight plot was also similar to this plot. The values of Sr% and Zr% didn't change much, but the values of Ca% varied widely. These figures indicate that the composition of clay is different between surface and center section. Particularly, Ca% of surface is larger than that of center section. The typical X-ray spectra are given in Fig. 237. Chlorine and sulfur, probably from the earth's soil, are detected in the spectra of the surface sample. Fig. 238 shows the principal components analysis based on the intensities of K, Ca, Mn, Fe, Sr and Zr. The data from surface is over more wide range than those of center. Therefore, only the analytical data of the centeral samples are treated in the following results, because we found it was difficult to classify the samples by the surface data.

The diagram of cluster analysis of center section samples is shown in Fig. 239. This diagram indicates the following four clusters.

The samples containing much calcium (>10% CaO) have yellowish gray body or pale gray body

and have larger Sr spectrum than Zr spectrum. The difference between surface and section is not so much because these fragments were not fired and the clay consists of very fine grains and the slip on the surface is the same the body clay. This group is called group A. The samples that belong to this group are as follows:

akor35, akor40, akor41, akor45～akor51, akor53～akor56, akor67～akor69, akor74, akor75

The samples containing little calcium have brown body and a smaller Sr spectrum than Zr spectrum. The difference between surface and section is larger except in fired samples with black carbon. This group is called by the name of group B. The following samples belong to group B.

akor08～akor12, akor14～akor21, akor23～akor28, akor30～akor34, akor36～akor39, akor42, akor52, akor57～akor66, akor70～akor73

Group C is the cluster that has larger Sr spectrum than Zr spectrum and has smaller calcium spectrum than that of group A. Five samples are included in this category.

akor22, akor23, akor29, akor43, akor44

Only akor13 doesn't belong to above three groups and is similar to group B but has only Ca spectrum is larger than that of group B.

Microscopic observation was also carried out. The results are as follows. The numbers of grains of each mineral are listed.

	bi	ol	opx	cpx	coho	oxho	zi	ep	op	total	others
group A(akor35)	−	0	7	67	5	91	0	0	18	188	0
group B (akor24)	+	0	4	91	5	69	0	0	18	187	12

bi=biotite, ol=olivine, opx=orthopyroxene, cpx=clinopyroxene,
coho=commonhornblende, oxho=oxyhornblende, zi=zircon,
ep=epidote, op=opaque minerals
+=detected, −=not detected

The clay of group A probably contains carbonate, because the clay of akor35 creates bubbles when hydrochloric acid was added. The clay of group B contains biotite.

GLASS: The weight% of the fragments of glass were calculated by FP method and given in Tab. 34. Some X-ray fluorescence spectra of the fragments are also shown in Fig. 240.

Glass is not a chemical compound. It is a mixture of oxides. The main component of glass is silica and some oxides such as Na_2O, K_2O and CaO are added as modifiers. The main properties of glass are governed by the major constituents. The color of glass is determined by the presence of various metallic oxides, usually small amounts.

The green color of the glass of Akoris was yielded by iron. Akor01G, akor03G, akor04G and akor05G have much manganese oxide that was used as a decolorlant of green caused by iron. Mn^{2+} tints glass pink that is a complementary color to green. These samples have much iron. Akor05G also has much manganese, but the color is pale pink. This is due to much manganese and little iron. Above samples that have higher manganese contents are called A_1. Akor2G is cobalt blue and contains copper, cobalt and lead as colorlants. There is little manganese in akor7G～akor11G(A_2). The bluish green of these samples is owing to iron.

The man constituents of the glass of Akoris are the oxide of silicon, aluminum, potassium, calcium

and iron. Following samples have similar iron content. This group is called B_1.

akor1G, akor2G, akor04G, akor07G

The samples containing less iron than $B_1$is calling B_2.

akor03G, akor05G, akor06G, akor08G～akor11G

Trace elements detected were strontium and zirconium. It is indicated that the content of these elements represents the difference of areas where the raw materials occurred. The samples are classified two groups based on the Sr/Zr ratios. One has larger Sr intensity than Zr intensity, and the sample except akor9G～akor11G belong to this group (C_1). The group of akor9G～akor11G has smaller Sr intensity than Zr intensity (C_2).

Therefore, the samples of glass are classified as follows as the results of above discussions.

sample	Mn	Fe	Sr and Zr
akor1G	A_1	B_1	C_1
akor2G	A_2	B_1	C_1
akor3G	A_1	B_2	C_1
akor4G	A_1	B_1	C_1
akor5G	A_1	B_2	C_1
akor6G	A_2	B_2	C_1
akor7G	A_2	B_1	C_1
akor8G	A_2	B_2	C_1
akor9G	A_2	B_2	C_2
akor10G	A_2	B_2	C_2
akor11G	A_2	B_2	C_2

The classification of glass is uncertain because of the shortage of samples and the lack of the samples of other sites.

Acknowledgment

I am grateful to J. Masujima for microscopic observation of clay.

Tab. 32 ANALYZED SAMPLES OF POTTERY

No.	Sample name	Unearthed area	Notes
akor08	amphora, neck	unidentified	dark brown
akor09	ditto	Bldg. 2, R1	ditto
akor11	amphora, shoulder	Bldg. 2, R2	dark brown, white patterning
akor12	amphora, neck	Bldg. 1	dark brown
akor13	amphora, belly	unidentified	ditto
akor14	amphora, neck	Bldg. 1	ditto
akor15	ditto	Bldg. 2, R1	ditto
akor16	amphora, bottom	Bldg. 2, R1	ditto
akor17	ditto	adjoining North Gate	ditto
akor18	amphora, base	Bldg. 1	ditto
akor19	ditto	Bldg. 2, R1	reddish brown
akor20	ditto	Bldg. 2, R2	brown
akor21	ditto	Bldg. 1	reddish brown
akor22	ditto	Bldg. 2, R1	brown
akor23	ditto	adjoining North Gate	blackish brown
akor24	bowl, rim	Bldg. 11, R6	reddish brown
akor25	ditto	Bldg. 2, R1	ditto, rim with slip

akor26	bowl, rim	Bldg. 2, R2	reddish brown, inner face with slip
akor27	ditto	Bldg. 1	reddish brown, rim and inner face with slip
akor28	ditto	Bldg. 2, R2	ditto
akor29	ditto	adjoining North Gate	pale brown
akor30	ditto	Bldg. 1	reddish brown, rim and inner face with slip
akor31	ditto	ditto	ditto
akor32	bowl, base	ditto	ditto
akor33	plate, rim to base	Bldg. 2, R1	ditto, soot-stained
akor34	jar, rim to base	Bldg. 2, R2	reddish brown, inner face with slip
akor35	jar with handle, rim	ditto	reddish brown, outer face with slip and botanical pattern
akor36	jar, rim	Bldg. 11, R6	reddish brown, soot-stained on outer face
akor37	jar, neck	Bldg, 2, R2	pale brown
akor38	bowl, rim	ditto	reddish brown, upper part with some pattern drawn in black
akor39	jar, lower part	Bldg. 1	dark brown, slip
akor40	jar, body	Bldg. 2, R2	dark yellowish grey, slip
akor41	jar with handle, shoulder	ditto	pale brown
akor42	jar, bottom	ditto	reddish brown, burnishing marks, soot-stained on lower face
akor43	jar, body	adjoining North Gate	yellowish grey, outer face with slip
akor44	ditto	ditto	black, second firing
akor45	bowl, base	Bldg. 2, R1	brown, some white material stuck to surface
akor46	table amphora, base	Bldg. 2, R2	yellowish grey
akor47	ditto	ditto	yellowish grey, slip
akor48	ditto	Bldg. 2, R1	ditto
akor49	ditto	ditto	dark yellowish grey
akor50	table amphora, spout	Bldg. 2, R2	yellowish grey, slip
akor51	ditto	ditto	dark yellowish grey
akor52	ditto	Bldg. 2, R1	dark brown
akor53	ditto	Bldg. 2, R2	pale brown, slip
akor54	ditto	ditto	yellowish grey
akor55	ditto	Bldg. 2, R1	yellowish grey, slip
akor56	jar, spout	Bldg. 2, R2	ditto
akor57	pot, rim	ditto	dark brown
akor58	ditto	ditto	dark brown, soot-stained
akor59	ditto	ditto	rim with burnishing marks, soot-stained
akor60	ditto	ditto	dark brown, soot-stained
akor61	ditto	Bldg. 2, R1	dark-brown, soot-stained
akor62	ditto	ditto	dark brown
akor63	bowl, base	Bldg. 11, R6	dark brown, grit- and vegetable-tempered
akor64	large pot, body	adjoining North Gate	pale brown, grit- and vegetable-tempered
akor65	amphora, neck	Bldg, 2, R1	dark brown
akor66	plate, rim	adjoining North Gate	ditto
akor67	jar, body	Bldg, 2, R2	yellowish grey, slip, some pattern drawn in black
akor68	ditto	Bldg. 1	yellowish grey, slip
akor69	ditto	ditto	ditto
akor70	pot, body	Bldg. 2, R2	dark brown, soot-stained
akor71	ditto	ditto	ditto

akor72	pot, base	ditto	ditto
akor73	pot, body	ditto	ditto
akor74	jar, body	Bldg. 2, R1	pale brown, slip
akor75	jar with handle, body	Bldg. 2, R2	ditto

(MOCHIZUKI, A)

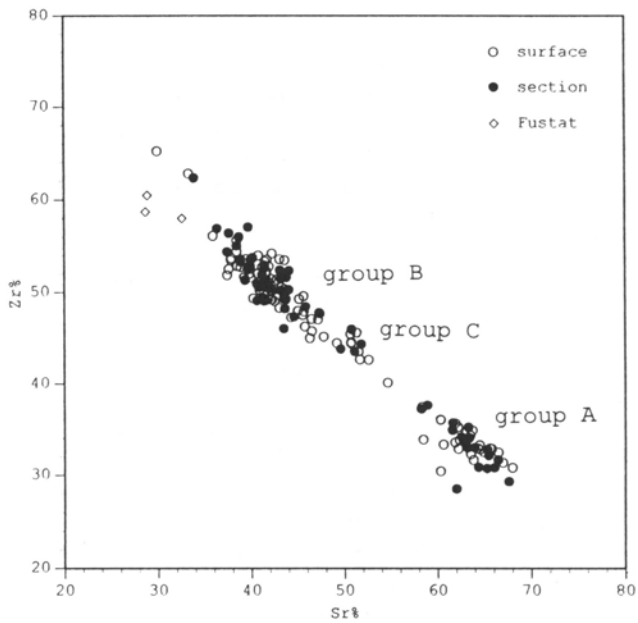


Fig. 234 Strontium % and zirconium % of the analyzed pottery

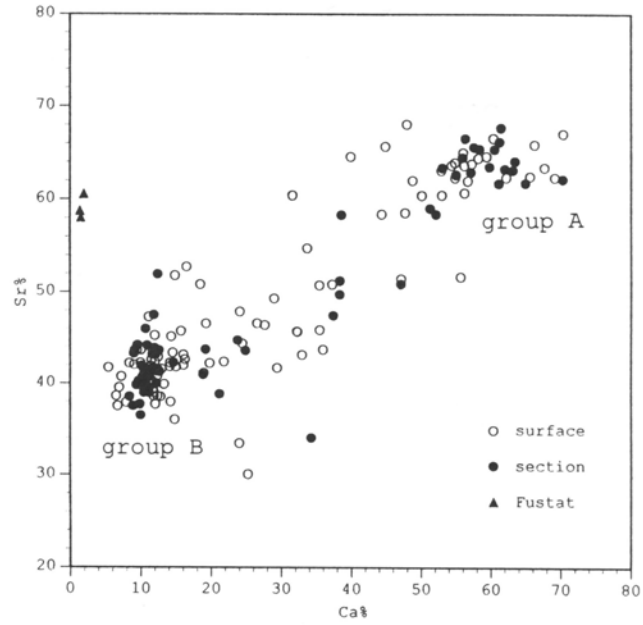


Fig. 235 Strontium % and calcium % of the analyzed pottery

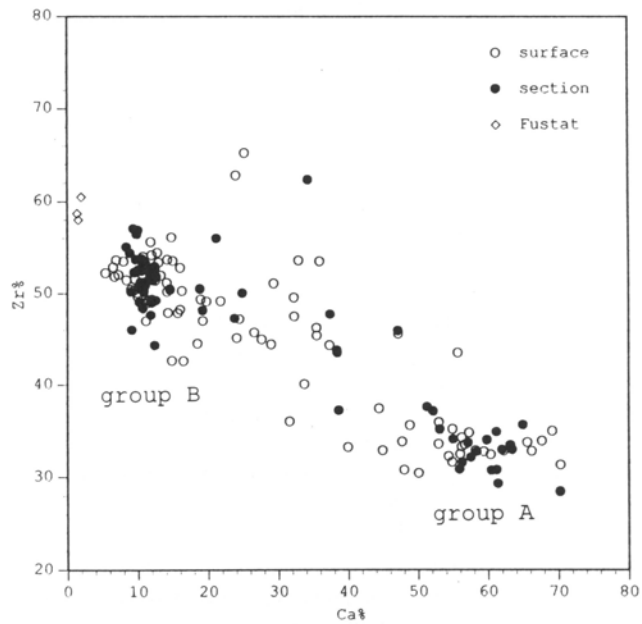


Fig. 236 Zirconium % and calcium % of the analyzed pottery

Sr%=Sr intensity/T1
Zr%=Zr intensity/T1
Ca%=Ca intensity/T2
T1=total intensity of Rb, Sr, Y and Zr
T2=total intensity of K, Ca, Ti Mn and Fe

Tab. 33 ANALYTICAL RESULTS OF POTTERY (weight %)

NUMBER	Al2O3	SiO2	K2O	CaO	TiO2	MnO	Fe2O3	Rb2O	SrO	Y3O3	ZrO2
akor08a	11.00	51.84	4.22	17.39	1.98	0.08	12.82	0.02	0.38	0.01	0.53
akor08b	10.30	49.24	2.54	17.68	2.66	0.14	16.71	0.02	0.42	0.02	0.59
akor08c	13.75	61.73	1.66	9.36	1.83	0.24	10.84	0.02	0.32	0.03	0.42
akor09a	14.96	54.99	3.31	5.90	3.00	0.27	16.89	0.03	0.37	0.02	0.54
akor09b	6.67	37.09	2.54	14.14	4.54	0.59	33.44	0.07	0.56	0.05	0.75
akor09c	15.82	58.22	1.59	4.30	2.96	0.25	16.11	0.03	0.37	0.05	0.57
akor11a	14.51	56.12	3.50	4.99	3.15	0.22	16.90	0.02	0.37	0.03	0.42
akor11b	14.29	56.68	2.17	5.66	3.04	0.22	17.45	0.02	0.26	0.03	0.37
akor11c	16.30	59.39	1.59	4.69	2.75	0.20	14.66	0.01	0.24	0.02	0.33
akor12a	14.64	58.21	2.97	5.25	2.85	0.21	15.40	0.01	0.25	0.01	0.37
akor12b	10.35	50.62	3.61	6.88	3.68	0.23	23.85	0.04	0.39	0.06	0.59
akor12c	15.20	59.68	2.34	4.45	2.83	0.18	14.86	0.01	0.24	0.02	0.37
akor13a	12.05	59.11	4.67	10.09	2.03	0.11	11.03	0.03	0.33	0.02	0.83
akor13b	12.30	61.30	2.89	9.17	2.26	0.10	11.05	0.03	0.38	0.02	0.83
akor13c	11.14	61.13	2.30	12.95	1.76	0.13	9.75	0.02	0.35	0.02	0.75
akor14a	15.79	58.83	2.37	4.36	2.83	0.18	15.14	0.02	0.25	0.02	0.38
akor14b	10.13	48.81	3.54	6.55	3.59	0.31	26.20	0.05	0.47	0.06	0.67
akor14c	14.44	59.36	2.01	5.10	2.83	0.25	15.51	0.01	0.27	0.02	0.37
akor15a	15.71	60.63	1.53	4.27	2.61	0.22	14.51	0.02	0.26	0.01	0.39
akor15b	8.04	44.25	2.30	10.44	4.46	0.39	29.34	0.03	0.43	0.03	0.62
akor15c	14.67	60.85	1.37	5.05	2.57	0.25	14.73	0.02	0.26	0.02	0.39
akor16a	14.45	57.41	3.84	4.93	2.57	0.31	15.94	0.02	0.29	0.05	0.39
akor16b	5.57	34.14	2.12	21.32	3.87	0.54	31.61	0.04	0.47	0.05	0.66
akor16c	15.10	61.83	1.59	3.74	2.52	0.21	14.47	0.01	0.30	0.01	0.41
akor17c	11.45	53.31	2.50	5.24	3.60	0.30	23.36	0.01	0.13	0.02	0.16
akor18a	12.16	53.41	3.66	8.28	2.79	0.46	18.67	0.02	0.34	0.02	0.41
akor18c	11.60	54.14	3.10	6.42	3.72	0.30	20.56	0.01	0.10	0.00	0.12
akor19a	14.87	57.73	2.44	6.33	2.42	0.25	15.43	0.02	0.29	0.02	0.38
akor19c	14.62	57.33	1.89	5.10	2.80	0.25	17.28	0.03	0.36	0.06	0.55
akor20a	14.38	54.19	4.40	7.50	2.88	0.23	15.94	0.02	0.27	0.02	0.36
akor20c	16.22	53.62	2.45	5.00	3.07	0.27	18.77	0.03	0.32	0.03	0.45
akor21a	18.08	55.23	3.99	4.05	2.70	0.19	15.17	0.03	0.31	0.03	0.43
akor21b	10.14	46.21	3.94	9.10	3.95	0.31	25.62	0.03	0.40	0.01	0.58
akor21c	16.11	61.55	2.08	4.09	2.47	0.17	13.02	0.02	0.26	0.02	0.38
akor22a	12.25	52.85	2.31	18.64	1.86	0.20	10.32	0.06	1.21	0.03	0.89
akor22b	11.76	54.89	2.29	18.99	1.42	0.12	9.33	0.02	0.79	0.02	0.80
akor22c	10.17	54.05	2.03	20.45	1.36	0.17	10.63	0.03	0.76	0.02	0.79
akor23a	13.33	58.42	2.06	13.63	1.63	0.11	9.82	0.03	0.65	0.02	0.67
akor23c	7.92	55.57	1.92	18.09	1.99	0.11	13.70	0.03	0.43	0.02	0.50
akor24a	13.64	53.79	3.72	11.05	2.39	0.26	14.59	0.02	0.35	0.03	0.38
akor24c	15.36	59.98	2.63	4.86	2.44	0.19	14.01	0.03	0.26	0.02	0.40
akor25a	20.22	50.79	4.16	6.16	2.67	0.18	15.30	0.02	0.28	0.02	0.40
akor25c	16.28	60.83	1.52	3.80	2.68	0.21	14.16	0.02	0.26	0.02	0.39
akor26a	19.91	54.15	5.42	3.81	2.09	0.15	14.04	0.02	0.21	0.02	0.32
akor26b	19.68	58.64	3.31	3.48	2.07	0.14	11.20	0.02	0.23	0.02	0.33
akor26c	16.40	60.36	1.16	5.08	2.57	0.23	13.74	0.01	0.24	0.03	0.34
akor27a	19.25	54.86	5.43	2.61	2.02	0.13	15.25	0.02	0.23	0.02	0.36
akor27c	15.45	61.20	1.31	4.02	2.66	0.22	14.63	0.03	0.26	0.02	0.36
akor28a	18.84	53.11	3.89	4.13	2.77	0.19	16.53	0.02	0.31	0.02	0.41
akor28b	21.31	51.84	7.41	1.80	2.10	0.12	14.95	0.02	0.25	0.02	0.36
akor28c	15.79	61.25	1.36	4.19	2.59	0.18	14.10	0.02	0.32	0.02	0.38
akor29a	5.35	36.66	2.25	35.98	1.97	0.27	16.86	0.02	0.46	0.03	0.44
akor29c	11.21	50.63	2.72	18.70	2.08	0.20	13.90	0.03	0.38	0.01	0.38
akor30a	19.91	55.30	3.64	3.55	2.61	0.17	14.34	0.01	0.26	0.04	0.36
akor30c	16.89	58.24	2.26	4.27	2.63	0.16	14.84	0.03	0.37	0.04	0.52
akor31a	15.37	51.90	5.80	5.61	2.62	0.22	17.86	0.03	0.31	0.04	0.48
akor31c	15.33	64.53	1.38	3.48	2.39	0.16	12.24	0.02	0.22	0.02	0.39
akor32a	20.20	54.03	4.65	3.32	1.53	0.07	15.76	0.02	0.21	0.03	0.34
akor32c	14.25	56.75	1.48	9.40	2.70	0.19	14.63	0.01	0.30	0.03	0.49
akor33a	14.04	59.30	2.15	6.86	2.48	0.18	14.29	0.03	0.46	0.02	0.43
akor33b	14.44	54.16	1.96	7.32	2.44	0.14	18.84	0.03	0.45	0.02	0.43
akor33c	14.13	62.86	1.41	4.79	2.43	0.15	13.51	0.02	0.46	0.02	0.45
akor34a	17.78	58.43	3.61	2.77	2.16	0.19	14.54	0.03	0.26	0.02	0.39
akor34b	19.35	57.24	3.06	2.55	1.92	0.11	15.32	0.03	0.22	0.02	0.35
akor34c	14.96	61.53	2.37	3.30	2.57	0.21	14.50	0.02	0.27	0.03	0.44
akor35a	0.30	22.16	1.79	55.31	1.25	0.36	18.08	0.01	0.61	0.02	0.39
akor35c	11.19	45.10	2.05	29.60	1.27	0.14	10.10	0.01	0.47	0.01	0.29
akor36a	11.00	52.12	6.37	8.31	2.72	0.27	18.48	0.04	0.41	0.05	0.52
akor36b	14.81	56.39	3.07	6.35	2.71	0.23	15.79	0.03	0.37	0.03	0.45
akor36c	16.01	59.95	2.61	4.65	2.48	0.18	13.50	0.03	0.33	0.05	0.45
akor37a	15.82	54.76	1.81	11.24	2.34	0.23	13.22	0.02	0.36	0.04	0.40
akor37b	15.47	53.35	1.80	12.23	2.43	0.24	13.99	0.02	0.30	0.04	0.33
akor37c	15.09	55.23	1.55	10.43	2.54	0.24	14.46	0.03	0.27	0.02	0.33
akor38a	16.48	46.70	6.23	3.63	1.76	0.60	24.01	0.04	0.29	0.05	0.46
akor38c	16.55	59.91	1.86	3.60	2.56	0.19	14.69	0.03	0.36	0.02	0.47
akor39a	12.77	51.90	3.77	11.14	2.51	0.24	17.09	0.03	0.31	0.04	0.42
akor39b	4.94	37.60	3.69	14.60	3.83	0.55	33.88	0.03	0.57	0.06	0.66
akor39c	16.50	58.89	1.41	5.01	2.67	0.21	14.82	0.03	0.26	0.03	0.35
akor40a	6.82	65.01	0.56	21.96	0.56	0.05	4.50	0.01	0.45	0.00	0.27
akor40c	10.30	42.03	1.11	34.07	1.14	0.14	10.55	0.01	0.57	0.01	0.35
akor41a	9.89	56.49	2.84	20.00	1.08	0.13	9.11	0.03	0.35	0.02	0.23
akor41b	6.31	45.79	4.39	28.32	1.23	0.17	13.17	0.05	0.52	0.03	0.30

akor41c	4.42	34.21	2.27	46.08	1.04	0.21	11.21	0.04	0.48	0.03	0.25
akor42a	21.32	54.06	5.77	4.47	1.89	0.11	11.93	0.02	0.24	0.02	0.36
akor42c	15.41	58.59	1.66	6.10	2.82	0.16	14.73	0.03	0.29	0.02	0.40
akor43a	10.57	56.57	2.87	14.69	1.70	0.18	12.40	0.04	0.72	0.03	0.60
akor43b	9.59	61.15	3.71	11.96	2.06	0.14	9.88	0.05	1.16	0.02	0.79
akor43c	13.82	55.10	2.30	15.35	1.66	0.13	10.31	0.05	1.01	0.03	0.75
akor44a	11.64	48.78	3.21	18.67	2.29	0.19	14.45	0.03	0.51	0.03	0.51
akor44c	19.03	60.70	1.11	10.79	1.02	0.06	6.68	0.02	0.40	0.02	0.39
akor45a	6.53	35.87	1.76	40.62	1.40	0.35	12.70	0.00	0.66	0.05	0.41
akor45c	10.33	45.80	2.17	26.62	1.83	0.28	12.32	0.01	0.51	0.03	0.37
akor46a	8.19	42.57	0.43	37.89	0.96	0.12	9.19	0.00	0.58	0.02	0.31
akor46c	10.09	38.16	0.85	35.49	1.39	0.15	12.97	0.02	0.81	0.02	0.43
akor47a	10.45	48.85	1.02	27.39	1.36	0.08	10.26	0.00	0.51	0.01	0.32
akor47b	12.43	46.94	1.29	26.88	1.41	0.12	10.29	0.01	0.54	0.01	0.33
akor47c	10.40	45.82	1.46	29.59	1.26	0.12	10.73	0.01	0.55	0.01	0.32
akor48a	11.51	48.23	0.90	26.08	1.45	0.11	11.08	0.02	0.55	0.02	0.31
akor48c	12.98	49.01	1.47	24.12	1.39	0.23	10.25	0.01	0.46	0.01	0.29
akor49a	12.53	50.18	0.89	22.22	1.84	0.10	11.62	0.00	0.57	0.01	0.30
akor49c	13.58	48.85	0.67	25.29	1.28	0.08	9.69	0.01	0.51	0.01	0.28
akor50a	9.30	42.14	1.02	32.54	1.25	0.12	12.88	0.01	0.64	0.02	0.37
akor50c	11.65	45.50	1.75	29.43	1.12	0.10	9.88	0.01	0.50	0.02	0.27
akor51a	10.98	48.94	0.69	23.64	1.93	0.11	13.05	0.00	0.55	0.02	0.36
akor51c	12.14	51.38	0.48	23.88	1.42	0.14	9.92	0.01	0.53	0.02	0.33
akor52a	14.96	57.08	3.12	6.12	2.85	0.24	15.13	0.03	0.28	0.02	0.38
akor52c	15.53	60.52	1.90	4.28	2.67	0.22	14.33	0.02	0.27	0.03	0.41
akor53a	9.15	46.77	1.22	30.02	1.34	0.21	10.48	0.01	0.73	0.00	0.41
akor53c	11.12	44.15	1.48	31.39	1.21	0.09	9.74	0.02	0.70	0.02	0.42
akor54a	11.87	48.25	0.87	25.47	1.43	0.12	11.33	0.02	0.54	0.02	0.37
akor54b	11.57	45.69	0.97	28.43	1.38	0.10	11.23	0.02	0.52	0.03	0.32
akor54c	12.78	47.99	0.94	26.49	1.31	0.21	9.73	0.02	0.47	0.01	0.29
akor55a	10.08	49.92	1.37	22.06	1.84	0.27	13.68	0.01	0.69	0.01	0.39
akor55c	11.32	45.63	1.09	24.37	5.60	0.07	11.11	0.02	0.63	0.02	0.46
akor56a	5.32	34.77	1.44	42.41	1.62	0.18	13.59	0.01	0.60	0.01	0.34
akor56b	9.58	43.91	1.60	30.64	1.59	0.12	11.91	0.01	0.57	0.02	0.33
akor56c	11.36	43.64	1.48	31.03	1.36	0.11	10.39	0.01	0.58	0.01	0.29
akor57a	14.11	55.25	7.97	5.04	2.45	0.21	15.17	0.03	0.32	0.02	0.52
akor57c	14.17	61.85	2.21	3.55	2.59	0.24	14.67	0.03	0.34	0.04	0.56
akor58a	14.80	55.95	3.28	5.34	2.89	0.18	16.84	0.04	0.39	0.03	0.56
akor58c	16.43	61.74	1.70	3.78	2.61	0.13	13.02	0.03	0.31	0.04	0.43
akor59a	3.09	28.78	4.46	28.20	3.77	0.67	30.08	0.07	0.60	0.04	0.69
akor59c	15.83	58.74	1.07	5.30	2.85	0.22	15.33	0.02	0.26	0.02	0.36
akor60a	11.89	49.06	4.98	10.34	3.15	0.28	19.68	0.03	0.34	0.05	0.47
akor60b	11.27	53.83	4.71	5.95	3.16	0.27	20.20	0.02	0.34	0.05	0.45
akor60c	15.34	59.85	1.79	3.92	2.86	0.19	15.55	0.01	0.25	0.01	0.41
akor61a	16.37	59.39	1.72	4.80	2.35	0.17	14.53	0.02	0.38	0.03	0.47
akor61b	13.75	57.71	2.54	5.18	2.89	0.22	17.01	0.03	0.39	0.04	0.50
akor61c	15.53	61.71	1.30	4.20	2.47	0.17	13.93	0.02	0.38	0.03	0.50
akor62a	15.68	56.21	4.01	5.67	2.79	0.22	14.89	0.03	0.27	0.03	0.40
akor62b	15.21	58.54	3.41	5.28	2.78	0.21	14.41	0.00	0.07	0.06	0.07
akor62c	15.56	60.02	1.32	4.58	2.93	0.23	14.83	0.02	0.28	0.03	0.39
akor63a	8.16	45.63	5.92	18.67	2.56	0.28	18.20	0.01	0.36	0.03	0.44
akor63b	10.74	51.13	5.67	14.38	2.40	0.37	14.73	0.01	0.37	0.04	0.39
akor63c	13.02	52.70	4.81	9.27	2.76	0.24	16.65	0.02	0.31	0.04	0.40
akor64a	14.28	59.57	5.01	4.48	2.21	0.26	13.67	0.03	0.26	0.04	0.37
akor64b	11.76	60.28	3.99	5.28	2.38	0.28	15.46	0.03	0.27	0.03	0.43
akor64c	13.17	62.31	3.29	4.65	2.23	0.21	13.60	0.03	0.28	0.04	0.38
akor65a	15.59	57.56	3.78	4.17	2.90	0.27	15.19	0.02	0.30	0.03	0.39
akor65c	16.11	57.91	1.69	4.54	3.08	0.23	15.86	0.02	0.30	0.04	0.42
akor66a	12.65	49.13	4.31	15.97	2.49	0.23	14.55	0.02	0.40	0.04	0.48
akor66b	13.03	51.75	5.19	11.73	2.47	0.27	14.94	0.03	0.36	0.04	0.44
akor66c	12.55	52.66	5.74	9.14	2.71	0.25	16.22	0.03	0.38	0.05	0.53
akor67c	17.33	54.69	1.47	19.18	0.85	0.07	5.91	0.01	0.43	0.01	0.24
akor68a	6.14	58.68	0.80	25.39	0.89	0.07	7.53	0.01	0.41	0.02	0.25
akor68c	14.77	52.83	1.36	23.95	0.80	0.05	5.75	0.01	0.35	0.09	0.23
akor69a	14.72	48.47	1.09	23.68	1.32	0.10	10.05	0.01	0.49	0.02	0.30
akor69b	13.71	48.37	1.24	24.69	1.42	0.08	9.91	0.02	0.50	0.01	0.29
akor69c	12.42	49.86	1.42	25.14	1.23	0.09	9.34	0.01	0.43	0.02	0.24
akor70a	15.27	57.33	4.61	5.13	2.43	0.19	14.54	0.03	0.24	0.04	0.39
akor70b	16.74	61.33	1.92	3.78	2.47	0.20	12.95	0.03	0.31	0.04	0.46
akor70c	16.16	62.72	1.32	3.74	2.36	0.17	13.04	0.02	0.23	0.02	0.40
akor71a	14.79	56.51	4.33	6.29	2.52	0.18	14.88	0.03	0.24	0.03	0.39
akor71c	17.01	62.28	1.29	4.08	2.35	0.17	12.34	0.02	0.24	0.03	0.34
akor72a	15.23	57.21	4.37	5.33	2.62	0.17	14.60	0.02	0.26	0.01	0.35
akor72c	16.42	62.89	1.21	3.89	2.40	0.16	12.53	0.03	0.24	0.02	0.38
akor73a	9.91	46.04	6.96	9.09	3.70	0.32	23.33	0.04	0.30	0.03	0.54
akor73b	10.71	52.79	3.28	9.65	3.28	0.28	19.16	0.02	0.57	0.04	0.57
akor73c	15.23	62.37	1.70	4.81	2.40	0.19	12.75	0.04	0.29	0.03	0.37
akor74a	12.12	52.03	3.30	18.03	1.68	0.13	12.02	0.02	0.61	0.00	0.36
akor74c	10.37	43.96	2.41	31.12	1.37	0.12	9.98	0.01	0.55	0.02	0.36
akor75a	10.25	46.02	1.48	28.70	1.37	0.25	11.22	0.02	0.58	0.03	0.37
akor75c	9.67	42.56	1.96	33.16	1.50	0.12	10.36	0.01	0.58	0.02	0.34

a:right side, b:reverse side, c:section

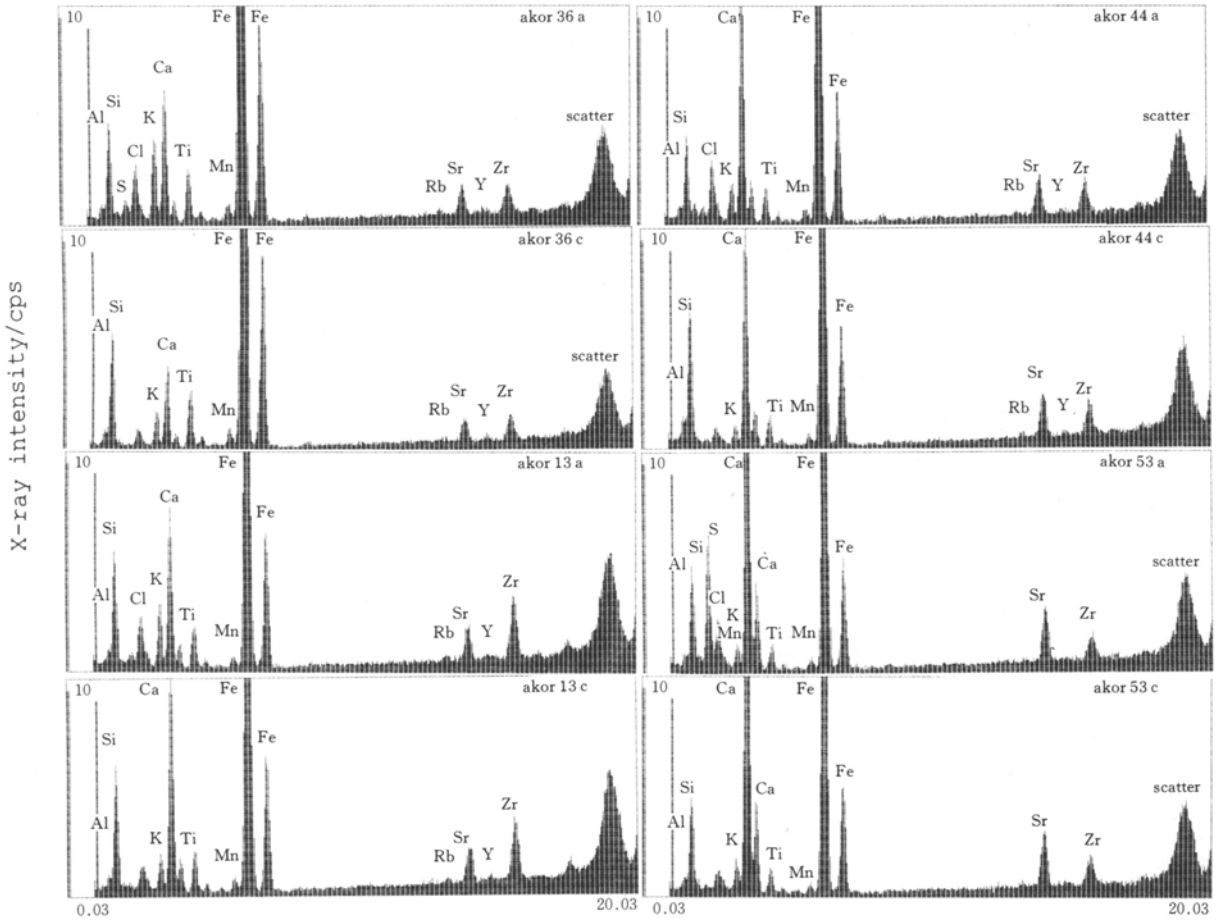


Fig. 237 Typical X-ray fluorescence spectra of the analyzed fragments

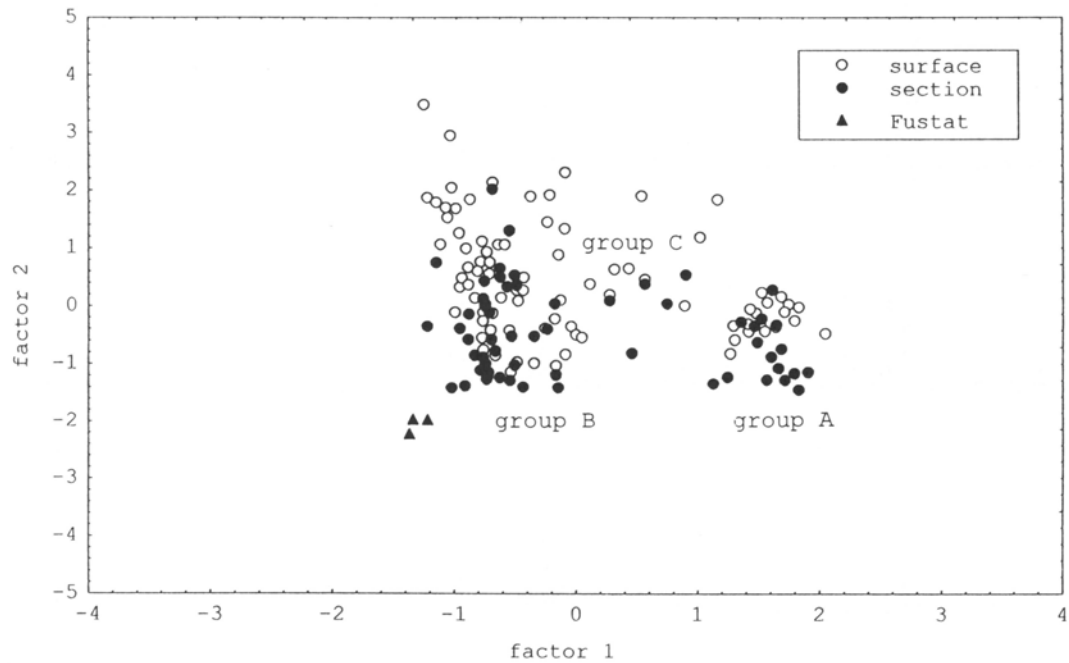


Fig. 238 Principal component analysis of the section samples

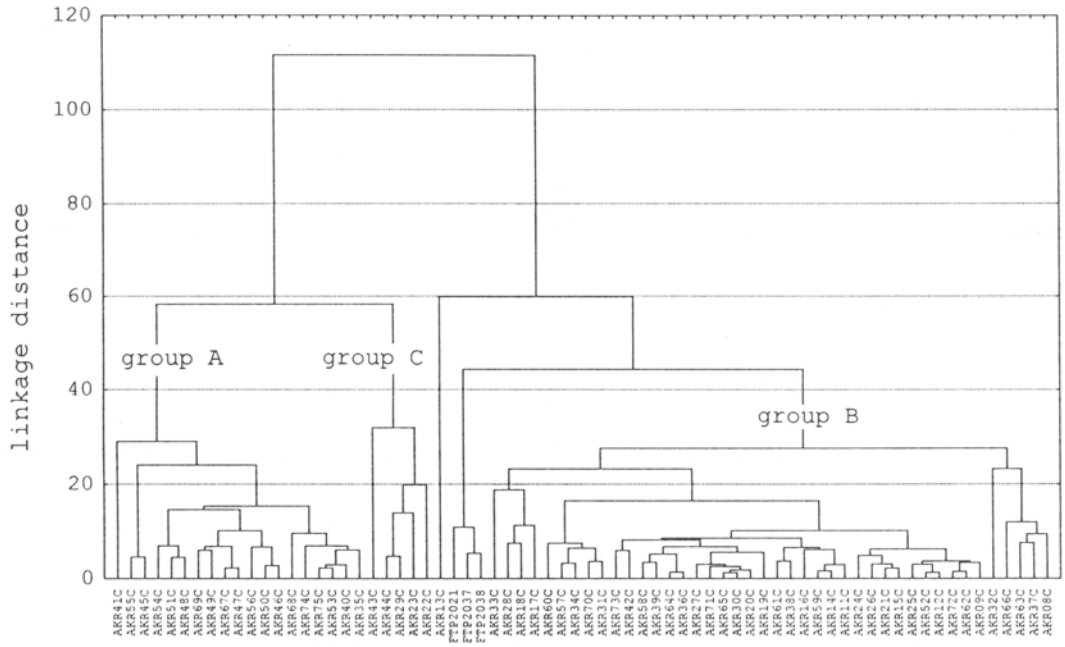


Fig. 239 Cluster analysis of the section samples

Tab. 34 ANALITICAL RESULTS OF GLASS (weight %)

number	Al_2O_3	SiO_2	K_2O	CaO	TiO_2	MnO	Fe_2O_3	SrO	ZrO_2	Co_2O_3	CuO	PbO
akor01G	6.25	76.15	1.04	6.58	0.64	4.93	4.30	0.07	0.04			
akor02G	4.72	77.92	0.37	9.38	0.13	0.19	5.01	0.07	0.01	0.56	0.67	0.97
akor03G	5.74	81.13	0.41	9.63	0.07	2.06	0.87	0.08	0.01			
akor04G	6.71	74.95	0.95	7.74	0.89	5.05	3.56	0.08	0.07			
akor05G	5.63	81.07	0.19	9.65	0.06	2.42	0.91	0.07	0.01			
akor06G	4.65	77.67	1.87	13.65	0.14	0.36	1.57	0.08	0.02			
akor07G	6.95	78.35	3.73	7.31	0.15	0.23	3.23	0.05	0.01			
akor08G	4.94	85.25	0.05	8.06	0.15	0.03	1.48	0.03	0.02			
akor09G	4.96	82.58	0.07	10.21	0.55	0.03	1.51	0.04	0.05			
akor10G	6.48	87.29	0.68	3.92	0.31	0.04	1.25	0.02	0.03			
akor11G	6.46	81.17	0.72	9.91	0.37	0.01	0.30	0.02	0.04			

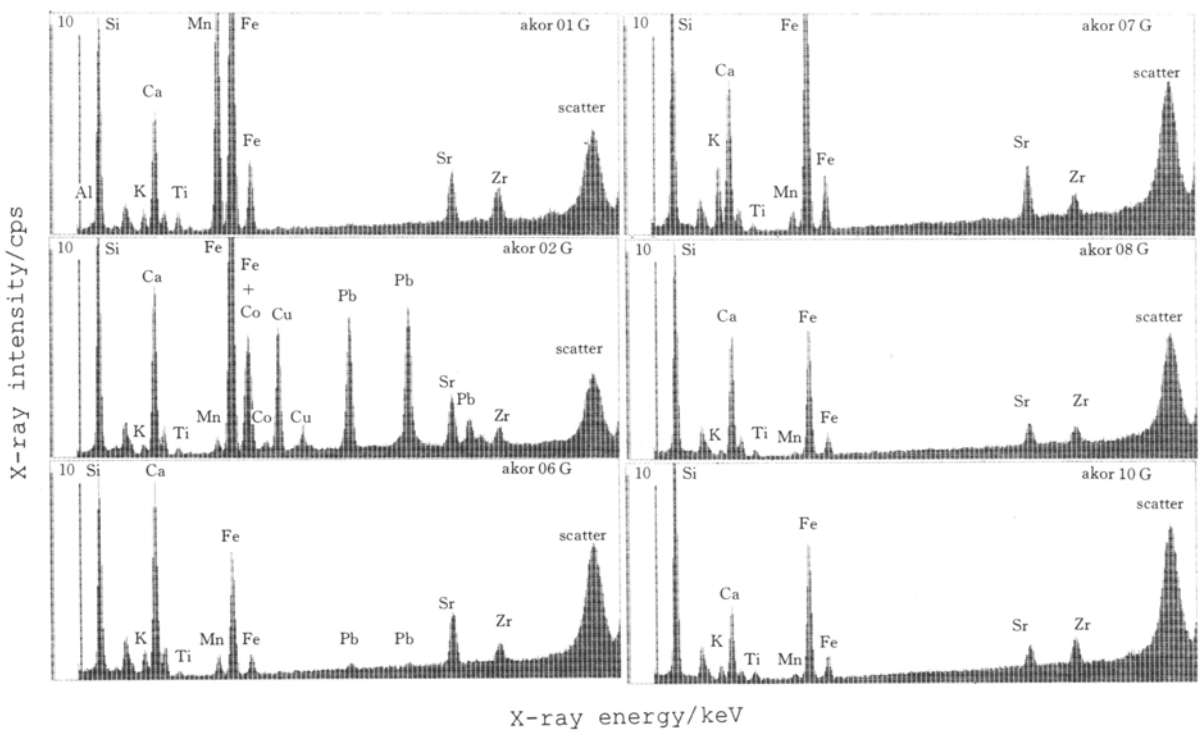


Fig. 240 Some X-ray fluorescence spectra of the glass samples

2 IDENTIFICATION OF DYESTUFFS

INTRODUCTION

During the whole term of excavation in the site of Akoris, a large amount of fragments of fabrics had been found. It is remarkable that almost fragments had been kept in good appearance, because of good climate and geological conditions at the buried site. As several kinds of fragments are still keeping its color, we intended to identify natural dyestuffs used for fabrics to understand dyestuffs used at that era. To our knowledge, there were no systematic studies on natural dyestuffs used for Egyptian fabrics at that period.

To minimize the amount of sample fragment for analysis, we mainly constructed a micro analytical procedure. Taking fibers of few cm long, dyestuff was extracted using mixture of formic acid and methanol. After measuring visible absorption spectrum, several components of dyestuff were separated using high performance liquid chromatography. The identification of each compounds were performed by mass spectrometry, detecting diagnostic ions at corresponding retention time. By comparing the experimental results with that obtained by authentic known compounds, correct understanding of obtained by authentic known compounds, correct understanding of ancient dyestuffs used was established.

It seems rare that an analytical system, called LC/MS, was applied for the identification of ancient dyestuffs.

Moreover, the combination of the results obtained in this chapter with the explanation of textile fabrication techniques in another chapter will contribute to understanding of civilization of Akoris site in Greco-Roman period.

EXPERIMENTALS

APPARATUS:

1) UV and visible absorption spectra : Double beam spectrometer used was UV-160A type (Shimadze Co.).
2) High performance liquid chromatography : The apparatus used was LC6A system of Shimadze Co. Separation column was a reversed-phase type of Cosmosil 5C18AR (150mm × 4.6mm ID). Mobile phase was the mixture of methanol and 0.1 M ammonium acetate (2% acetic acid) with gradient mode according to the time program shown in Fig. 273 (1). Flow rate of carrier solution was 1ml/min. Detecting system was UV or visible absorption at a suitable fixed wavelength.
3) Liquid chromatography/mass spectrometry (LC/MS) : QP-1000 type made by Shimadze Co. was used as thermospray mode. The experimental conditions for mass specitrometry for each Figure are summarized as follows :

Fig. No	Tip. temp.	Control temp.	Block temp.	TH temp.	Vapor. temp.	Scan mode (m/z)
Fig. 243	316-281	149-154	275-281	281-284	237-267	120-1000/3 s
Fig. 244	306-251	147-146	286-285	306-251	242-272	150-1000/3 s
Fig. 245	206-164	150-128	283-285	286-280	237-255	140-650/3 s (gain 3)
Fig. 248	212-170	158-140	291-290	287-293	247-264	5 cycle/sec (gain 4)*
Fig. 251	209-162	153-136	280-287	288-290	221-258	140-600/3 s (gain 3)
Fig. 252	209-163	154-137	283-290	290-292	232-279	5 cycle/sec (gain 4)
Fig. 255	209-155	150-126	277-285	286-285	220-252	140-600/3 s (gain 3.3)
Fig. 257	210-158	153-132	277-285	285-288	225-285	5 cycle/sec (gain 4)*
Fig. 260	211-161	153-133	278-285	286-288	246-259	140-650/3 s (gain 3.4)
Fig. 261	211-161	153-133	278-285	286-288	246-259	140-650/3 s (gain 3.4)
Fig. 262	210-160	154-133	281-287	288-290	250-259	5 cycle/sec (gain 4)*
Fig. 264	215-175	139-129	278-284	271-274	250-274	140-1000/3 s
Fig. 265	206-164	150-128	283-285	286-280	237-255	140-650/3 s (gain 3.2)
Fig. 267	210-160	154-133	281-287	288-290	250-259	5 cycle/sec (gain 4)*
Fig. 270	206-164	150-128	283-285	286-280	237-255	140-650/3 s (gain 3.2)
Fig. 272	206-164	150-128	283-285	286-280	237-255	140-650/3 s (gain 3.2)

(N. B.)* : Selected ion monitoring
Liquid chromatographic conditions are the same with 2).

EXPERIMENTAL PROCEDURES: The characteristics of sample fragments of fabrics are summarized in Tab. 35. Small amount of sample fibers (2-15mg) were taken in a test tube (15mm ID × 100mm) and 0.5-4.0ml mixture of formic acid (20%) and methanol (v/v) was added. The extraction of dyestuff was performed on a hot bath (80°C) during 1 to 3 hours. After the same procedures were repeated 3-12 times, total extracted solution was filtered using membrane filter (EKICHRODISCO AcroLC, Gelman Sciences Japan Ltd.). The filtrate was pretreated with SEP-PACK PLUS tC18 (Waters Co.) and the solution volume was adjusted to 1-2ml. After the measurement of absorption spectra, the detection wavelength was fixed to the absorption maximum of each sample solution. The further investigation were performed by LC/MS, and the specific ion was identified. To compare the results with authentic standard compounds, sample fragment dyed with known natural dyestuff was also analysed with the same procedure. By comparing the mass number of specific ion for this procedure with that of unknown sample, the natural dyestuff used was estimated.

As dyestffs such as carthamin and shell purple was difficult to extract with 20% formic acid/methanol, about 100 μl dimethylformamide was used for the second extraction instead of mixture of formic acid and methanol. After extraction on the hot bath (60°C), the extracted solution was kept one day at room temperature. The following precedure for the analysis is the same with that described above for other sample solution.

REAGENTS: All the reagents used were of reagent grade (Nakarai Co.).

The chemical structures of typical dyestuffs mentioned in this chapter were explained in Fig. 273 (2).

Tab. 35 SAMPLE FIBERS

Sample No.	Pl. no. Fig. no.	Color		Weight	Size	material
1	Pl. 109-116 Pl. 112-43	red	carmine	6.4mg	1.5cm×3	wool
2	Fig. 241-2		crimson	5.3mg	1.3cm×5	wool
3	Pl. 112-34		carmine	5.1mg	5.0cm×1	wool
4	Pl. 112-46		indian pink	14.7mg	3.5cm×1	wool
5	Pl. 109-110 Pl. 111-27 Pl. 112-32		russet brown	13.8mg	2.0cm×9	wool
6	Pl. 107-91		cardinal red	1.9mg	1.0cm×3	wool
7	Pl. 107-89		ruby	2.5mg	1.2cm×1	wool
8	Pl. 112-46	violet	plum	4.4mg	1.8cm×1	wool
9	Fig. 241-6		plum	7.7mg		wool
10	Fig. 241-7		old lilac	14.5mg		wool
11	Fig. 241-1		raspberry	4.1mg		wool
12	Fig. 241-3		raspberry	6.6mg		wool
13	Pl. 112-37	yellow	lemon yellow	6.6mg	2.5cm×1	wool
14	Fig. 241-5		lemon yellow	4.9mg		linen
15	Pl. 103-50 Pl. 110-11		yellow ochre	8.3mg		wool
16	Pl. 108-107	blue	indigo	1.8mg	1.0cm×20	wool
17	Fig. 241-4		indigo	1.9mg	1.5cm×1	wool
18	Pl. 107-91	green	evergreen	12mg	2.4cm×4	wool
19	Pl. 104-64		malachite green	5.9mg	2.5cm×1	wool
20	Pl. 103-50 Pl. 110-11	black	ivory black	7.6mg		wool

RESULTS AND DISCUSSION

RED DYESTUFF : After evaporating the extracted solvent for sample No. 1 and 2, absorption spectra of both samples were measured in methanol as shown in Fig. 242. Taking into account a similar spectrum of pure purpurin in methanol, it is considered that both No. 1 and 2 are containing red compound like purpurin. In Fig. 243, the chromatogram of No. 1 has peaks at 23.4, 25.9 and 29.2 min. by detecting the absorption at 500nm. As authentic alizarin (M. W. 240) has the peak at 25.9 min, and its mass spectrum also had diagnostic ion at m/z 241 (MH^+), it is clear that sample No. 1 contains alizarin. The peak at about 30 min. of No. 1 is also due to purpurin (M. W. 256). At the same retention time, the unknown molecules having ions at m/z 283, 245 and 275 are found in mass chromatogram. The corresponding molecules are not yet identified. The mass specta and mass chromatogram of authentic alizarin and purpurin are shown in Fig. 245. Compared with this, No. 1 and No. 2 must be dyed with some kind of European madder, *Rubia tinctrum* L. or *Rubia pergrina* L. The assignment for strong peaks (retention time : ca. 10 min) at m/z 206, 223 etc. in mass chromatogram are not yet possible. These ions

seem due to another kind of vegetables. Sample No. 2 is also found to contain alizarin and purpurin as shown in Fig. 244. On mass chromatogram, peaks at about 25 min. have diagnostic ions at m/z 285 and 301 : the former ion corresponds to that of munjistin (M. W. 285) and that of latter is pseudopurpurin (M. W. 300). It is well known that these molecules are contained in madder vegetable. The peak at about 40 min. had ion at m/z 335, which is not still assigned.

Fig. 246 shows the extracted solution (10% formic acid in methanol) of No. 3 having absorption maximum at 480nm. Chromatogram shown in Fig. 247 has main peaks at 25, 27 and 30 min. Corresponding mass chromatogram had ions at m/z 301, 285 (retention time 25 min.), 241 and 257 (Fig. 248). Authentic European madder (*Rubia tinctorum* L.) contains alizarin, purpurin, munjistin and pseudopurpurin as color component. The results by LC/MS give us that quasi molecular ions have peaks at 25 min. (the same retention time for munjistin and pseudopurin), 27 min, and 30 min. As these components were found for No. 3, this sample also must be dyed with European madder.

The fibers of No. 4 (Indian pink color) and No. 8 (plum color) are taken from the same fabrics. The absorption spectrum of No. 4 has the maximum at 465nm. By detecting at this wavelength, LC analysis was performed as shown in Fig. 247, and main peaks were found at 11, 24, 27 and 30 min. The coresponding ions in mass chromatogram are m/z 301, 285 (retention time at 24 min.) 241 and 257. Therefore, No. 4 is considered to contain European madder. The peaks at the retention time about 11 min. coincide with ions in mass chromatogram at m/z 192 and 236. These peaks were generally found in samples of many other fabrics.

As anthraquinons in madder generally degrade during long term, one must take into consideration for the another possibility that No. 1 to No. 4 is due to Indian madder (*Oldenladia umbellata* L.). However, it is known that the modern Indian madder contains fewer amount of alizarin compared with another anthraquinons. Therefore, No. 1 to No. 4 presumably due to European madder. At present, we are not be able to compare our results with the another kind of European madder (for example, *Rubia pergrina* L.) grown in Egypt.

No. 5 shows absorption shoulder at about 430nm (Fig. 249). By detecting at this wavelength in LC analysis, a peak was obtained at 27 min. This component gave ion at m/z 241 in mass chromatogram. This data corresponds to that of alizarin. The characteristics of this sample is that alizarin is the only main component, and is different from sample No. 1 to No. 4. We concluded therefore that No. 5 is dyed with the different kind of unknown madder.

No. 6 and No. 7 show similar absorption spectrum in 10% formic acid in methanol solution (Fig. 249). In LC analysis (Fig. 250), their chromatograms are also similar with that of No. 5 and showed peak at 27 min. Furthermore, their mass chromatograms shows ion at m/z 241 which is the same with that of alizarin. In conclusion, No. 5 to No. 7 are dyed with the same kind of unknown madder.

VIOLET DYESTUFF : The absorption spectrum of No. 11 has maximum at 604 and 430nm (Figs. 249 and 253). The chromatograms measured at 604 and 430nm were shown in Fig. 254. At 604nm detection, a peak appeared at 29 min. This peak had a diagnostic ion at m/z 263 in mass chromatogram (Fig. 255). According to the above-mentioned results, No. 11 was confirmed to contain indigo. Besides, the chromatogram measured at 430nm had a peak at 27 min. (Fig. 254). The result of LC/MS analysis

showed that this peak gave ion at m/z 241 which corresponds to that of alizarin. As mentioned earlier, this component must also be unknown kind of madder.

The results obtained for No. 8 was shown in Fig. 249 (Absorption spectrum), Fig. 254 (LC analysis at 430 and 608nm detection) and Fig. 255 (LC/MS analysis). It is clearly understood that the characteristics of No. 8 is the same with No. 11 : dyed with indigo and unknown kind of madder.

The experimental results for No. 12 were shown in Fig. 249 and Fig. 253 (absorption spectrum), Fig. 254 (LC analysis detecting at 420 and 610nm) and Fig. 255 (LC/MS analysis). No. 12 was dyed with the same dyestuff with No. 8.

The absorption spectrum of No. 10 has a maximum at 604 and 480nm. By detecting at 304nm, chromatogram had a peak at 29 min (Fig. 256). Furthermore, LC/MS analysis showed this peak had a diagnostic ion at m/z 263 : namely it coincides with that of indigo.

On the other hand, by detecting at 480nm, chromatogram of No. 10 showed a group of peaks at 24, 27 and 29 min (Fig. 256). By LC/MS analysis, these peaks gave diagnostic ions at m/z 285, 301 (retention time at 24 min.), 241 nad 257, respectively. As mentioned earlier, the results indicate that the component having a absorption maximum at 480nm is due to European madder.

The results obtained for No. 9 are shown in Fig. 246 (Absorption spectrum), Fig. 256 (LC analysis detecting at 420 and 605nm) and Fig. 257 (LC/MS analysis). The characteristics of No. 9 is the same with that of No. 10 : in other words, dyed with indigo and European madder.

YELLOW DYESTUFF : Absorption spectra of No. 14 had a maximum at 346nm (Fig. 258).

By measuring at 340nm, chromatogram showed main peaks at 13 and 23 min. Further LC/MS analysis showed that a peak at 13 min. had a diagnostic ion at m/z 287 [aglycon + H]$^+$, 180 [glucose]$^+$ and 499 [MH$^+$], and another peak at 23 min gave ion at z/z 287 [MH$^+$] (Fig. 260). One of the presumed compound for M=286 is weld (*Ruseda luteola* L.), because it is possible to assign a peak at 13 min. to aglycon of luteolin, and another peak at 23 min to luteolin (M. W. 286). As we did not have a sample of weld, Japanese vegetable Kariyasu (*Miscanthus tinctorius*, Hack) containing luteolin was used as reference material. The extracted solution of Kariyasu showed the same retention time and mass chromatogram as shown in Fig. 261. It is therfore confirmed that the characteristics of No. 14 is very similar with that of Kariyasu. It is known that Weld is a popular vegetable containing luteolin, for dyeing of yellow color in Europe.

The results obtained for No. 13 were shown in Fig. 258 (Absorption spectrum), Fig. 259 (LC analysis detecting at 340nm) and Fig. 262 (LC/MS analysis). The characteristics of No. 13 is same with that of No. 14 : the dyestuff is estimated to be Weld.

Absorption spectrum of No. 15 (yellow ochre) does not show distinct maximum (Fig. 268). By detecting at 340nm, LC analysis was performed and two broad peaks were found at around 13 and 25 min. (Fig. 269). By LC/MS analysis, these peaks had diagnostic ions at m/z 165, 192, 211, 206, 220, 223 and 231. The vegetable species containing such components are not yet identified.

BLUE DYESTUFF : After evaporating extracted solution of No. 17, absorption spectrum was measured in methanol solution, and a maximum appeared at 604nm (Fig. 253). By detecting at 604nm,

chromatogram showed a main peak at 29 min. (Fig. 263). The corresponding diagnostic ion was at m/z263[MH^+] which coincides with that of indigo (See Fig. 263). Dyeing vegetable for No. 17 must be therfore either of *Isatis tinctoria*, *Indigofera tinctoria* L. or *Indigofera argentea* L. It is already known that these vegetables have been used dyeing blue color in Egypt.

The results obtained for No. 16 was explained in Fig. 253 (Absorption spectrum), Fig. 263 (LC analysis at 604nm) and Fig. 265 (LC/MS analysis). The characteristics for No. 16 is the same with that of No. 17.

GREEN DYESTUFF : Absorption spectrum of No. 19 was shown in Fig. 253 and Fig. 258. It had a maximum at around 604nm and a shoulder at 340nm. The results of LC analysis by detecting at both wavelength were assembled in Fig. 266. A peak (604nm detection) having retention time at 29 min. had a diagnostic ion at m/z 263 which coincides with that of indigo (Fig. 267). Whereas, by using 340nm detection, two peaks were found at 13 and 29 min. A peak at 29 min is due to indigo (Fig. 266) and another peak at 13 min had diagnostic ion at m/z 180 and 287. Furthermore, another peak was found at 24 min., of which diagnostic ion was m/z 287 (Fig. 267). In summary, green color of No. 19 was dyed with indigo and Weld.

The results by No. 18 were assembled in Fig. 253 and Fig. 258 (Absorption spectra), Fig. 266 (LC analysis at 604 and 340nm) and Fig. 267 (LC/MS analysis). The two kind of dyestuffs, indigo and weld, were used for dyeing No. 18.

BLACK DYESTUFF : Absorption spectrum of No. 20 showed maximum at 650nm (Fig. 253). By detecting at this wavelength, chromatogram showed a peak at 29 min. (Fig. 271). Mass chromatogram gave diagnostic ion at m/z 263 corresponding to indigo (Fig. 272). Furthermore, by detecting at 340nm, chromatogram showed broad peaks similar to No. 15 (yellow orchre) (see Fig. 268). LC/MS analysis showed diagnostic ions at m/z 165, 192, 211. 206, 220, 234 and 248 (Fig. 272). The peak patterns are similar with that of No. 15 (see Fig. 269). Though, such patterns of diagnostic ions are generally found in another samples, the vegetable species are not still identified. It is probable that these are mixed compounds of tannin analogues.

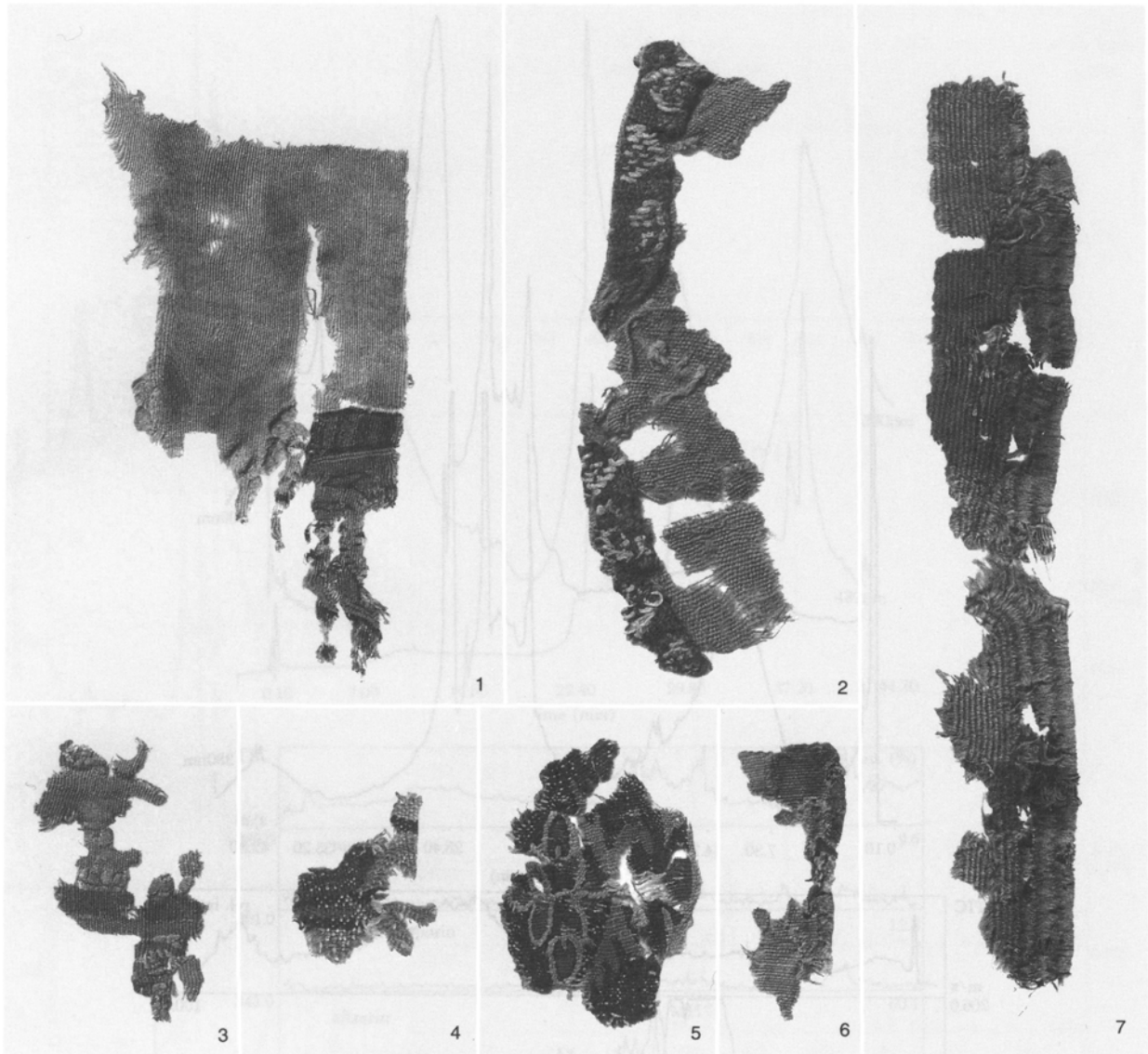


Fig. 241 Analyzed samples found in Akoris (see pp. 246 ff)

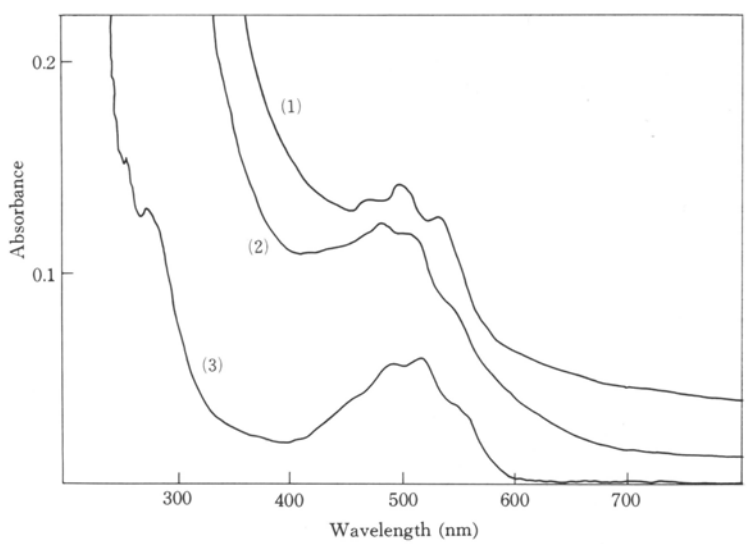


Fig. 242 Absorption spectra of Nos. 1, 2 and purpurin
(1) No. 2, (2) No. 1, (3) purpurin

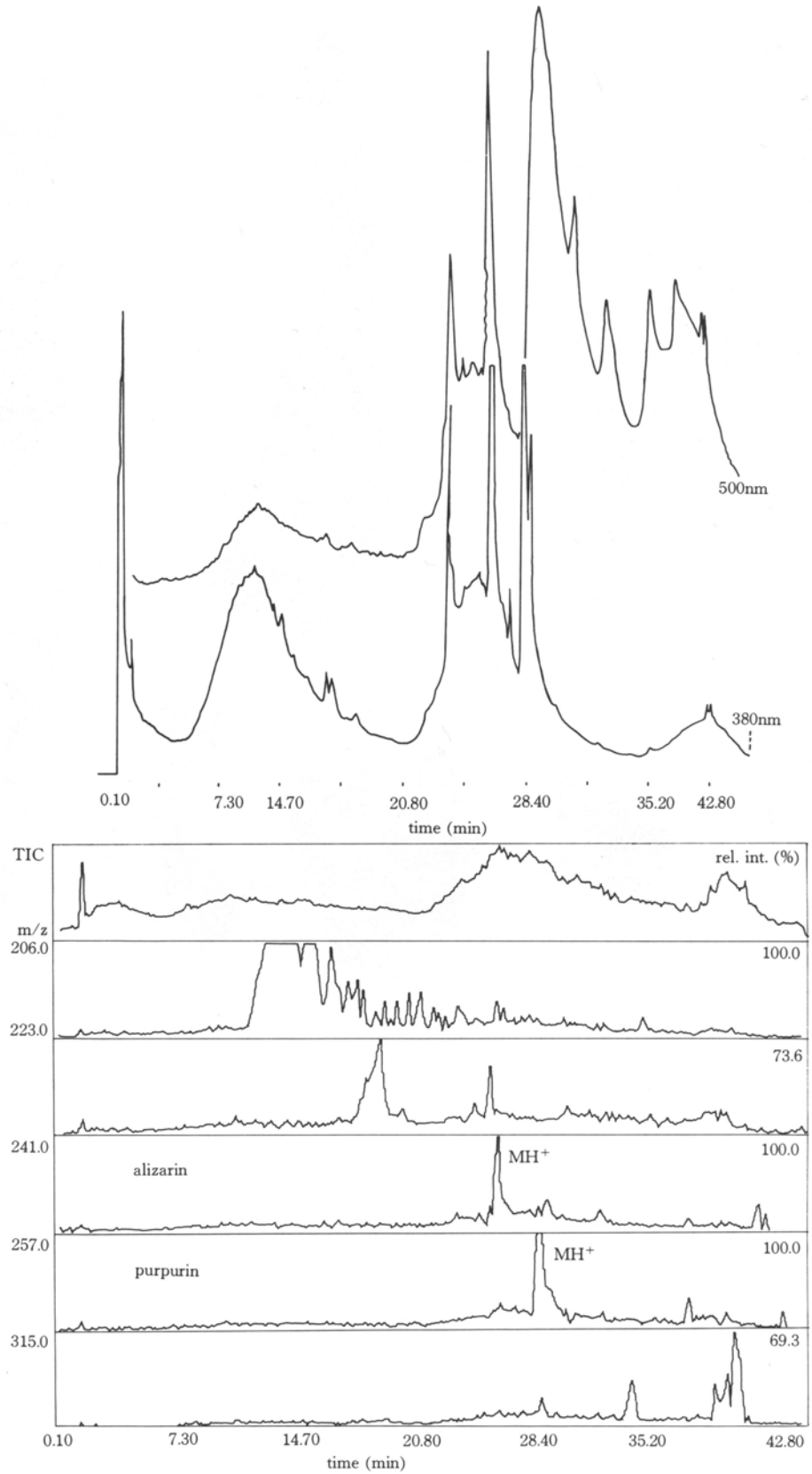


Fig. 243 Chromatograms and mass chromatograms of No. 1

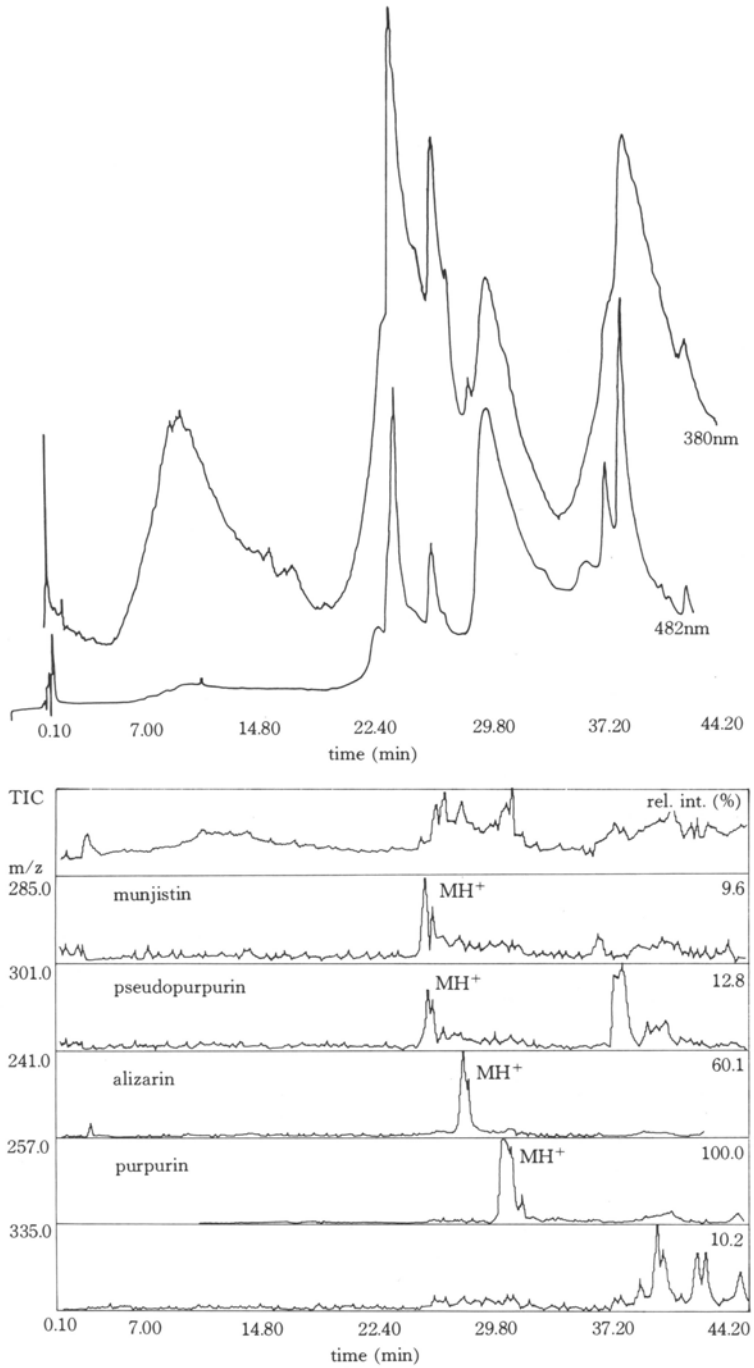


Fig. 244 Chromatograms and mass chromatograms of No. 2

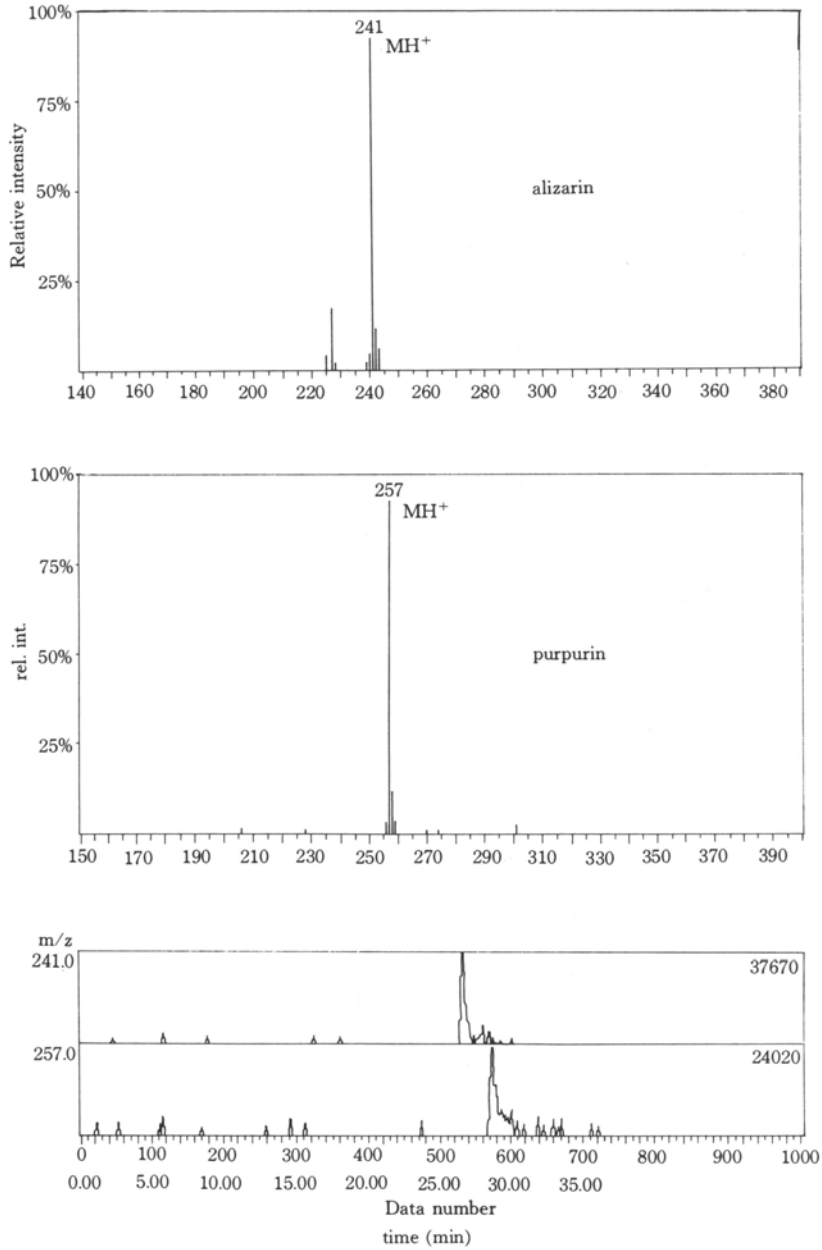


Fig. 245 Mass spectra and mass chromatograms of alizarin and purpurin

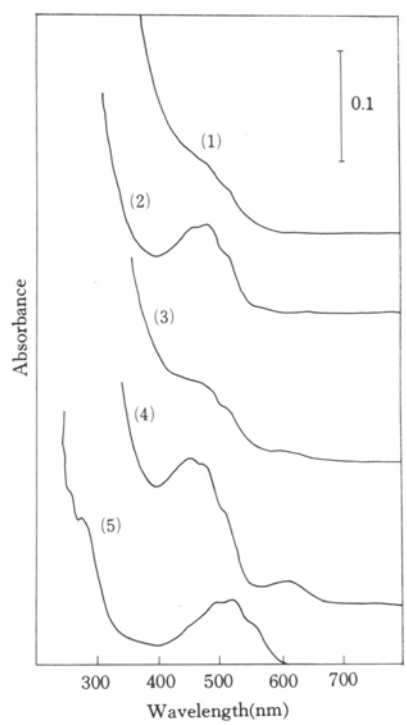


Fig. 246 Absorption spectra

(1) No. 8 (S.×1/3), (2) No. 3 (S.×1), (3) No. 10 (S. × 2/3), (4) No. 9 (S. × 2/5), (5) purpurin (S.×1)

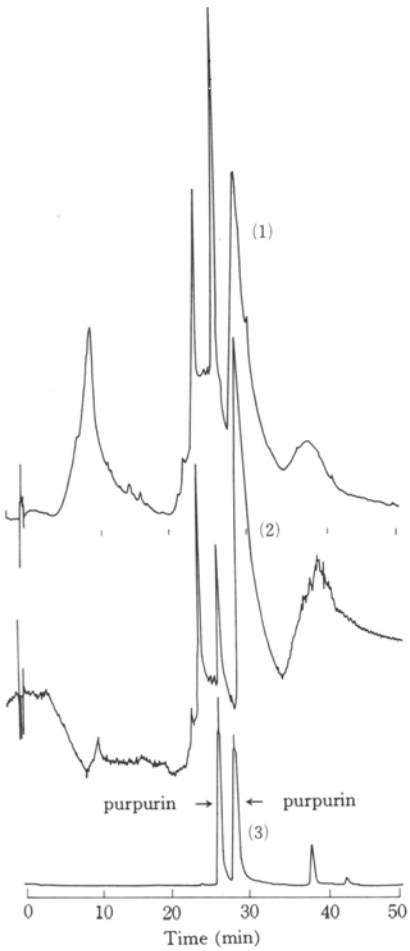


Fig. 247 Chromatograms of Nos. 8 and 3
(1) No. 8 (465 nm), (2) No. 3 (480 nm), (3) alizarin and purpurin (465 nm)

Fig. 248 : see next page.

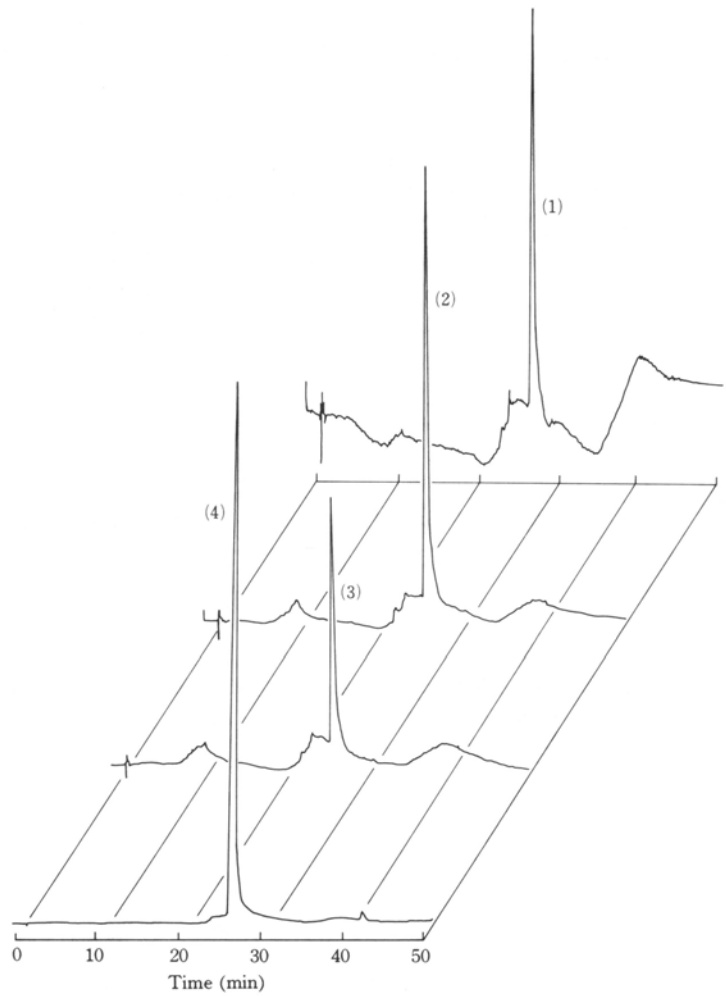


Fig. 250 Chromatograms of Nos. 6, 7, 5 and indigo (430 nm)
(1) No. 6, (2) No. 7, (3) No. 5, (4) indigo

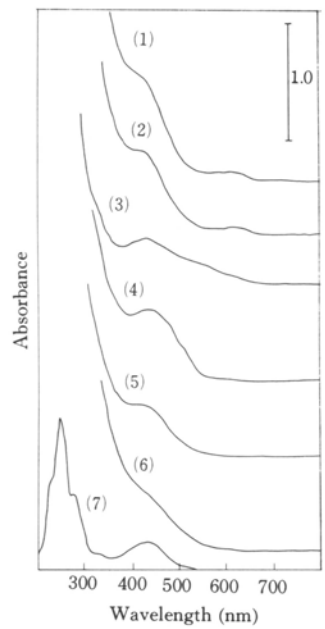


Fig. 249 Absorption spectra
(1) No. 12 (S.×5), (2) No. 11 (S.×5), (3) No. 8 (S.×1.5), (4) No. 6 (S.×7.5), (5) No. 7 (S.×5), (6) No. 5 (S.×1.5), (7) alizarin (S.×1)

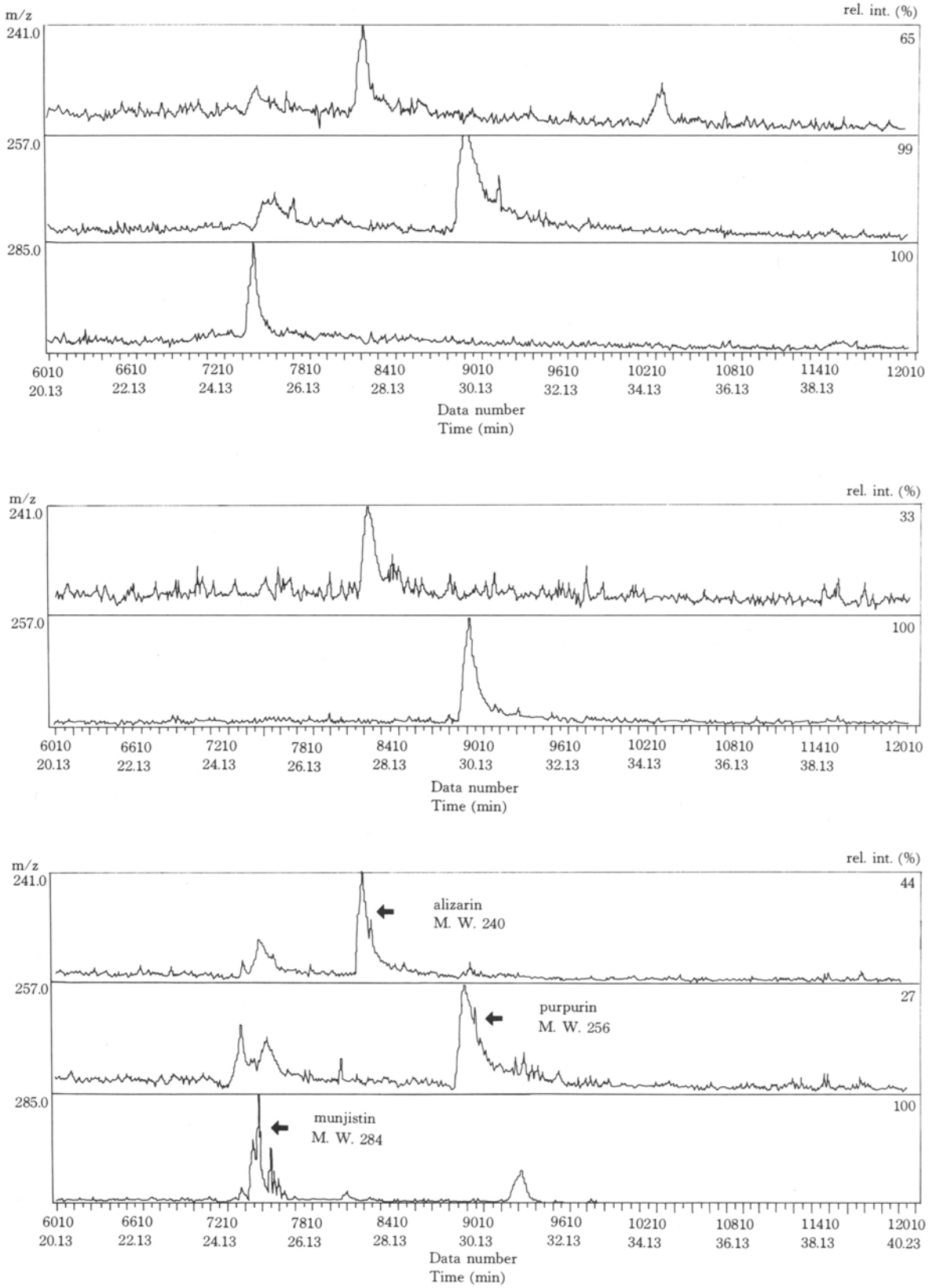
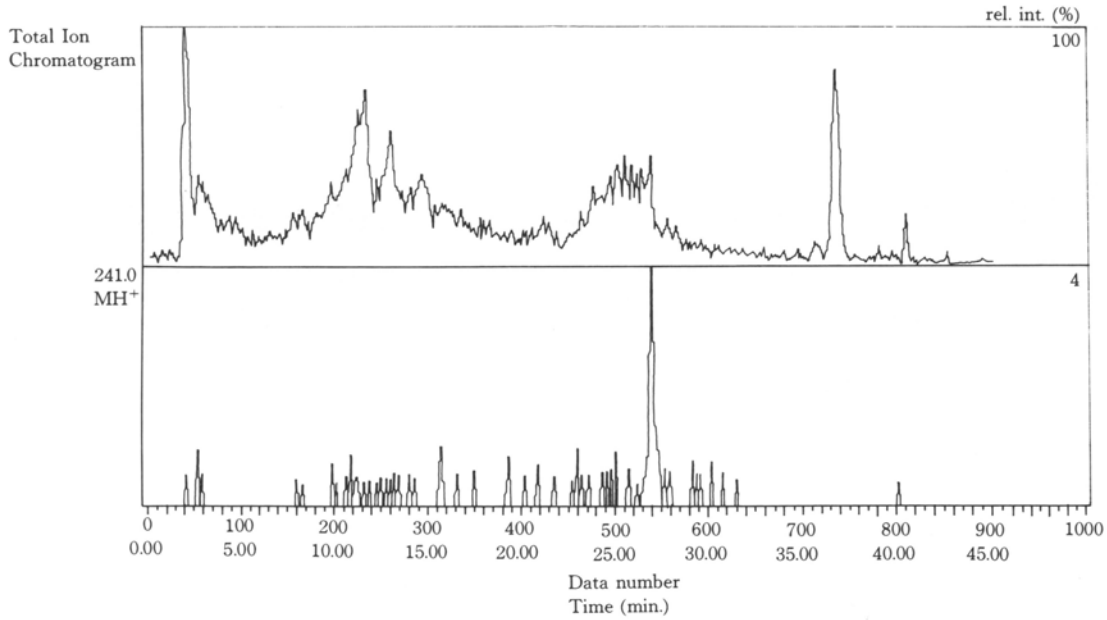


Fig. 248 Mass chromatograms of Nos. 8, 3 and European madder
(1) No. 8, (2) No. 3, (3) Extracted European madder



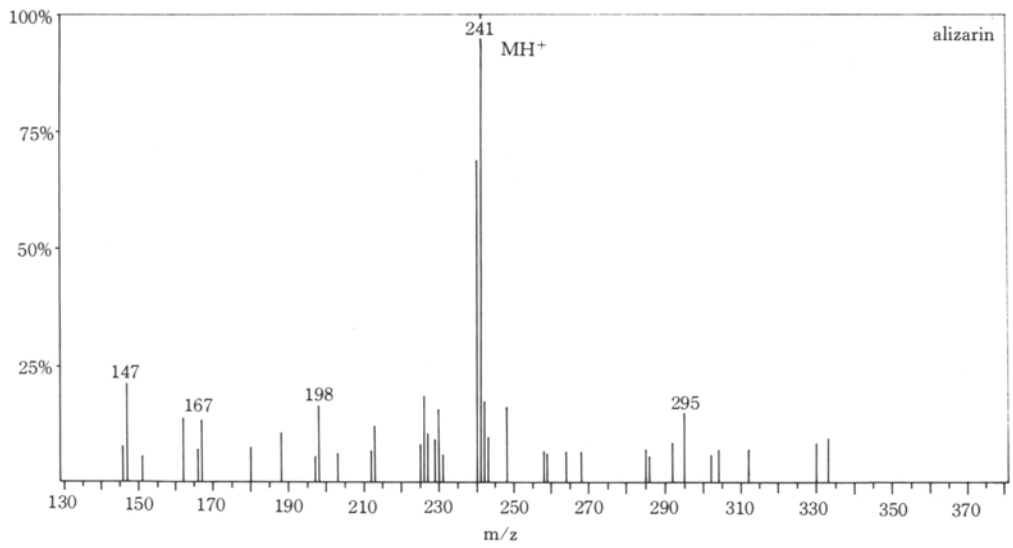


Fig. 251 Mass chromatograms and mass spectrum of No. 5 and alizarin

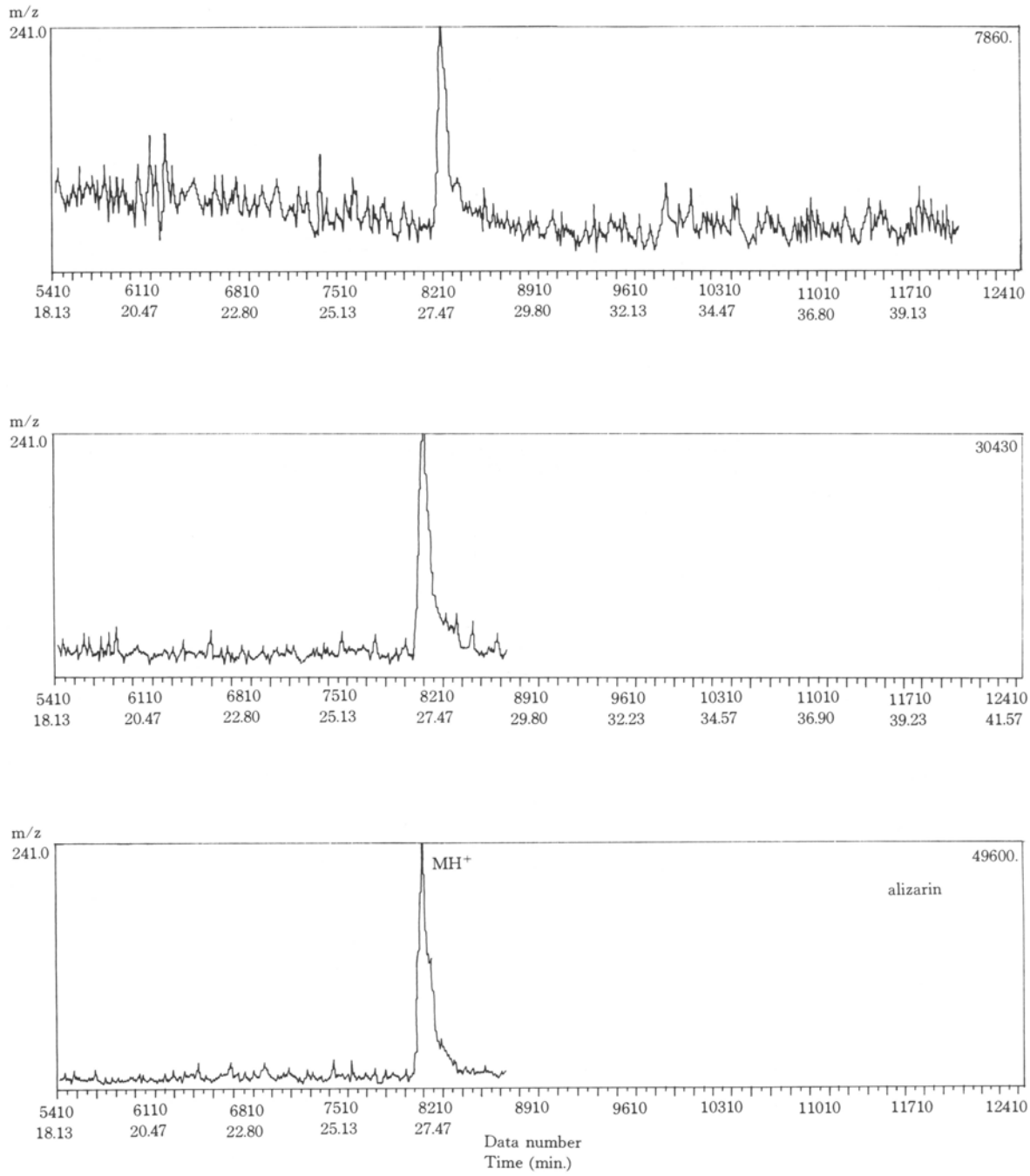


Fig. 252 Mass chromatograms of Nos. 6, 7 and alizarin
(1) No. 6, (2) No. 7, (3) indigo

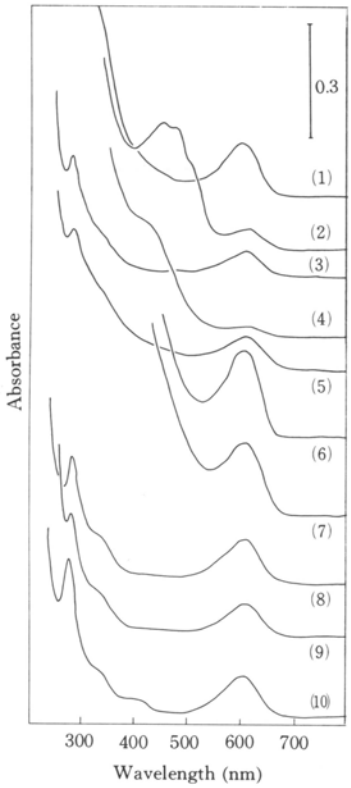


Fig. 253 Absorption spectra
(1) No. 11 (S.×5), (2) No. 9 (S.×1), (3) No. 10 (S.×1), (4) No. 12 (S.×5/3), (5) No. 20 (S.×5/3), (6) No. 19 (S.×50), (7) No. 6 (S.×5), (8) No. 16 (S.×5/3), (9) No. 17 (S.×1/2), (10) indigo (S.×1)

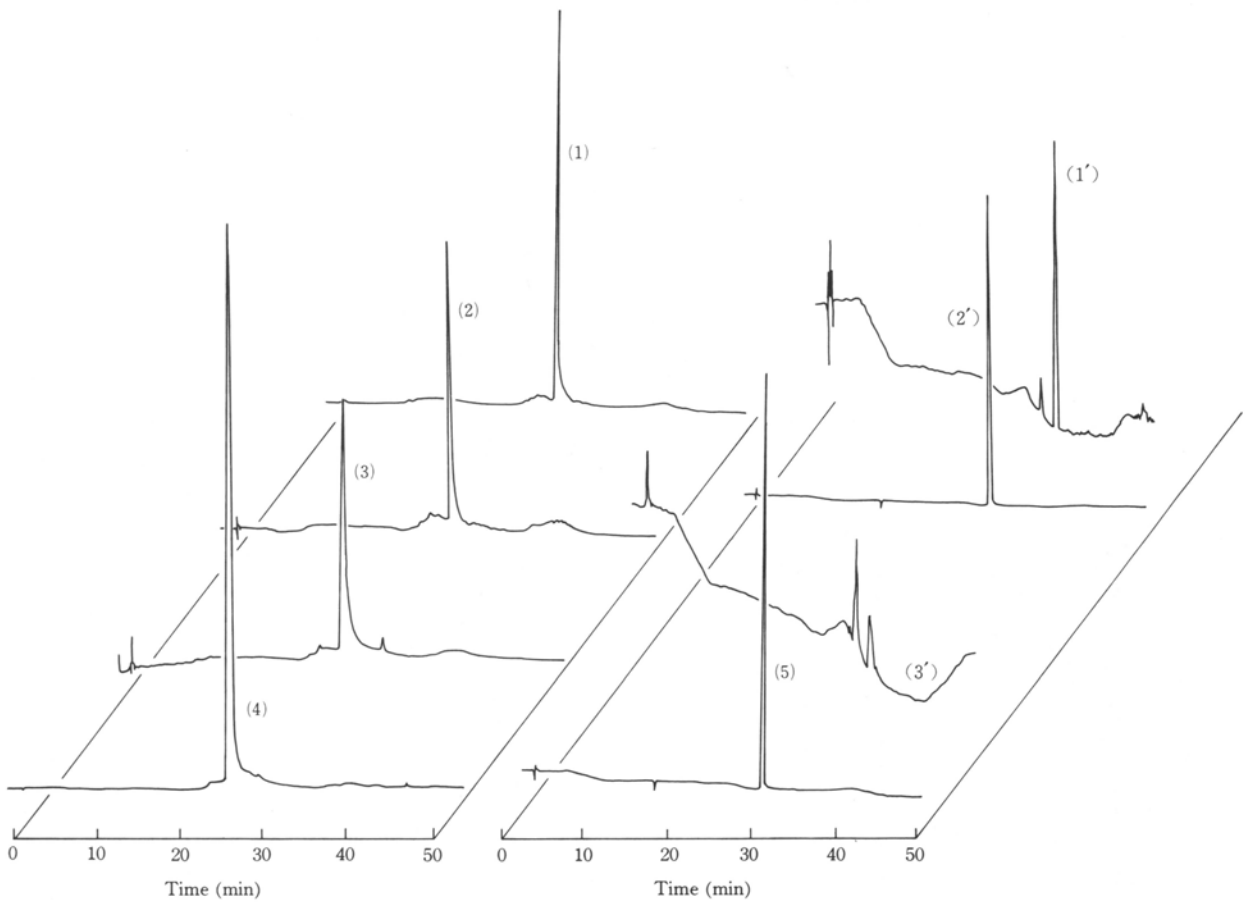


Fig. 254 Chromatograms of Nos. 12, 11, 8, alizarin and indigo
No. 12 (1) 430 nm, (1′) 604 nm
No. 11 (2) 430 nm, (2′) 604 nm
No. 8 (3) 430 nm, (3′) 604 nm
alizarin (4) 430 nm, indigo (5) 604 nm

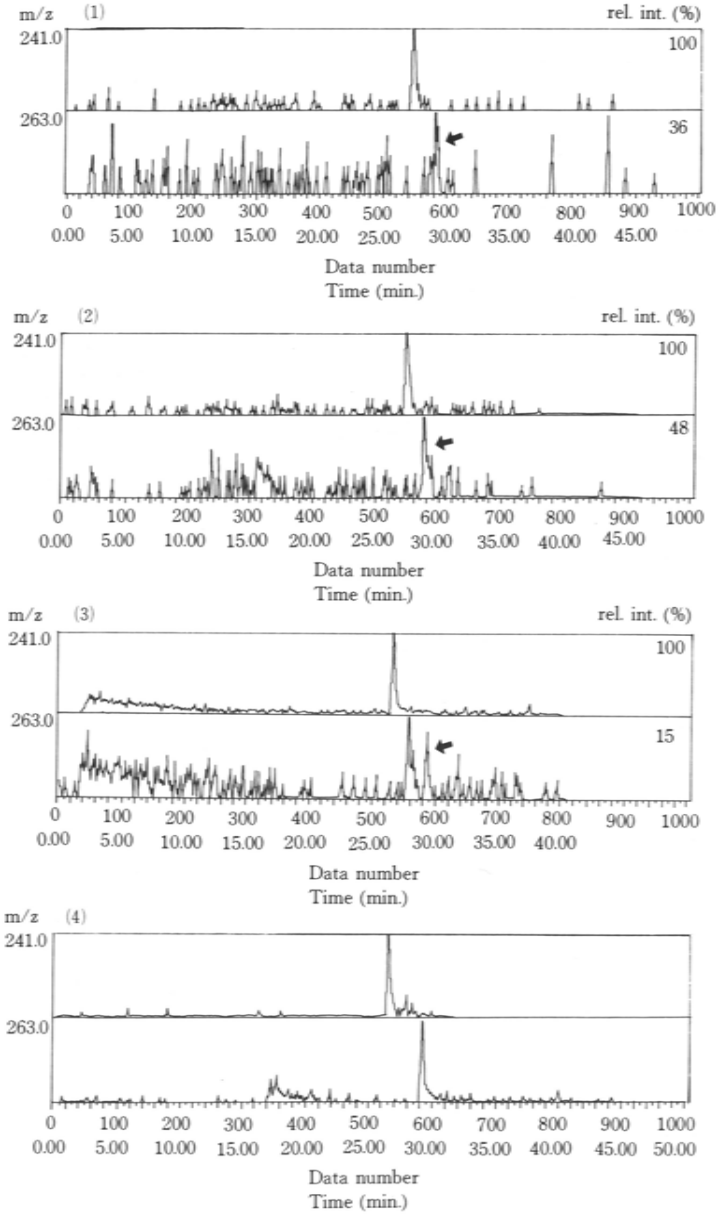


Fig. 255 Mass chromatograms of Nos. 11, 12, 8, alizarin and purpurin
(1) No. 11, (2) No. 12, (3) No. 8, (4) alizarin and indigo

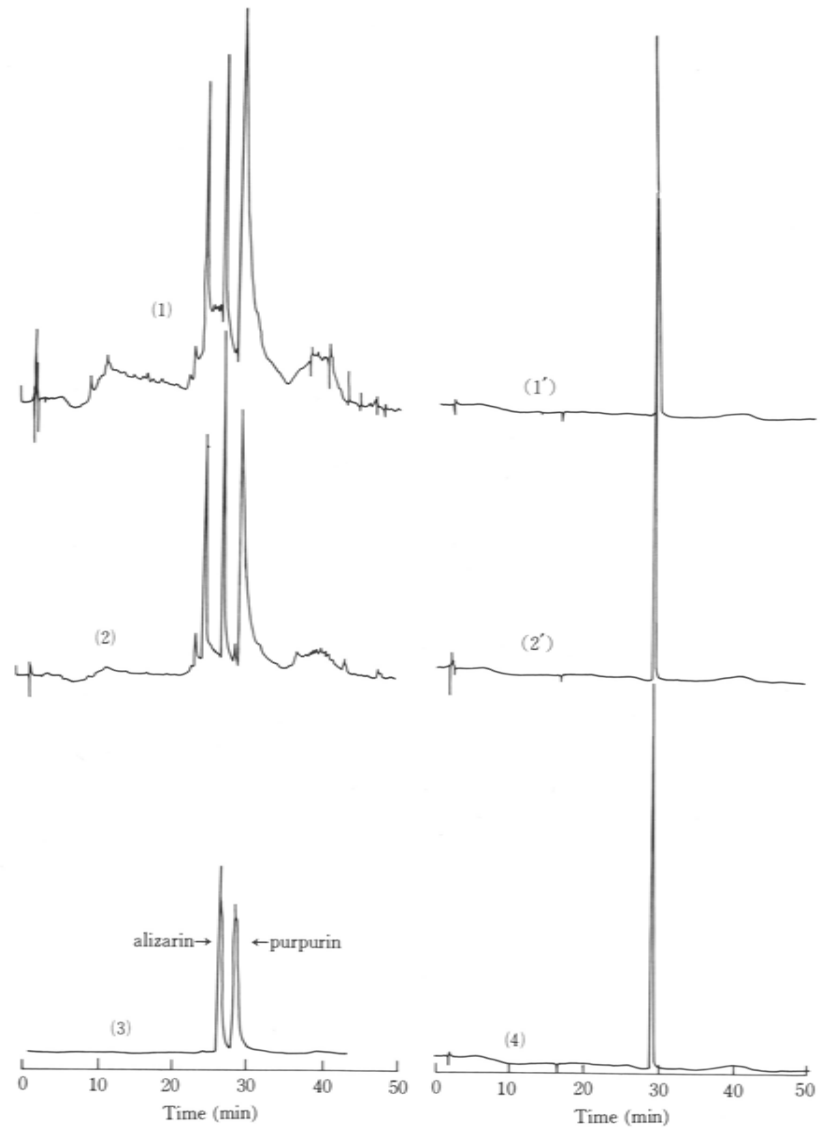


Fig. 256 Chromatograms of Nos. 10, 9, alizarin, purpurin and indigo
No. 10 (1) 480 nm, (1′) 604 nm; No. 9 (2) 480 nm, (2′) 604 nm; (3) alizarin + purpurin (465 nm); (4) indigo (640 nm)

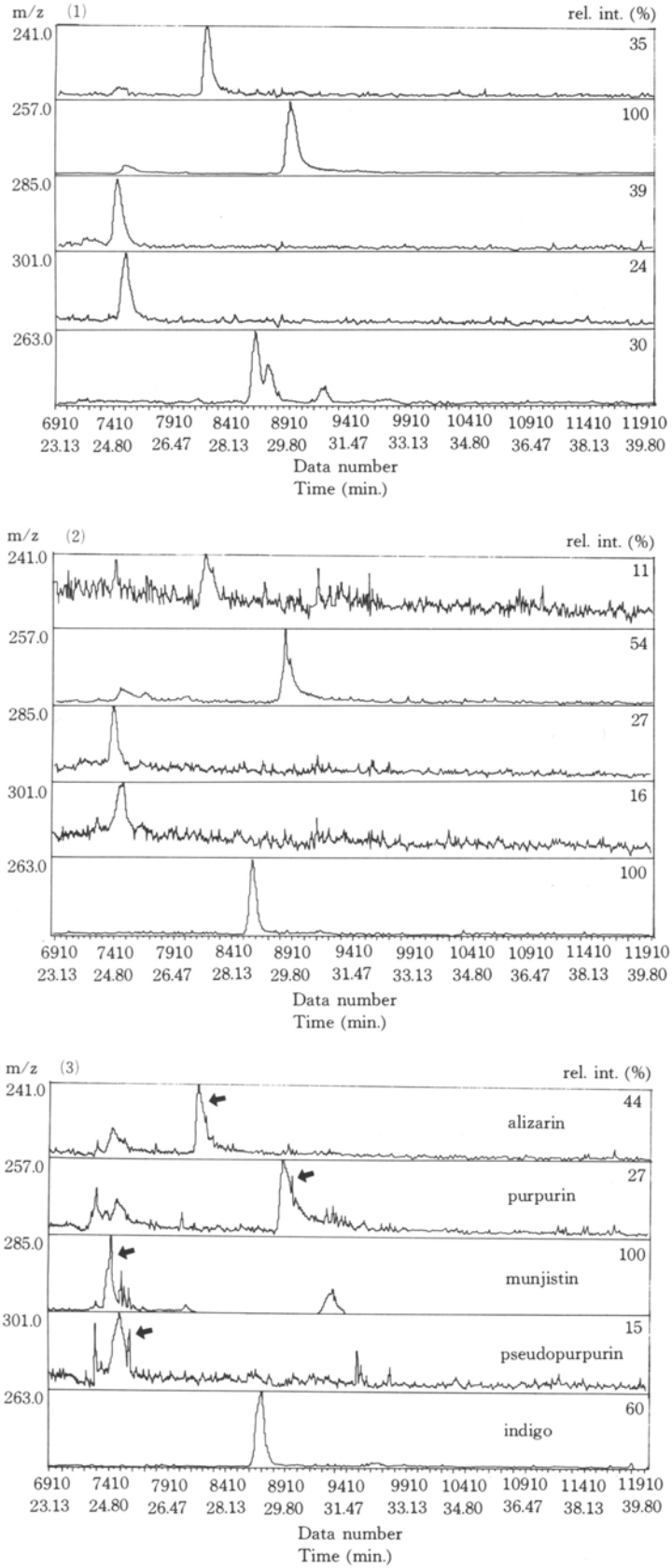


Fig. 257 Mass chromatograms of Nos. 9, 10 and European madder
(1) No. 9, (2) No. 10, (3) European madder

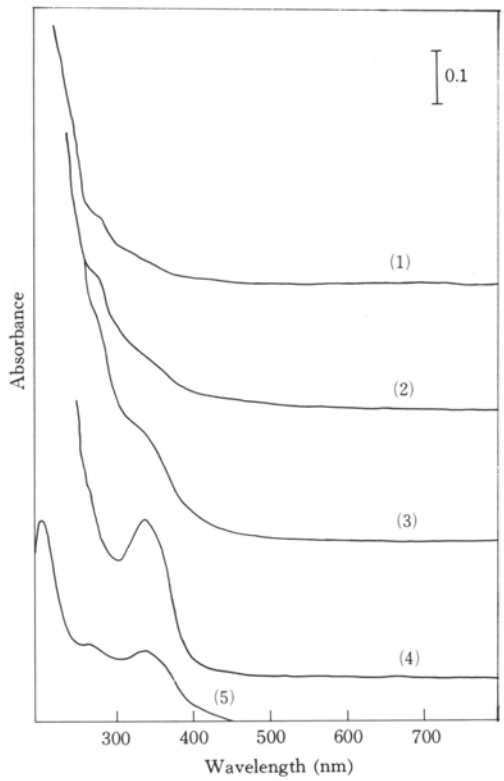


Fig. 258 Absorption spectra of Nos. 18, 19, 13 and 14
(1) No. 19 (S.×1), (2) No. 18 (S.×2/5), (3) No. 13 (S.×1), (4) No. 14 (S.×2/5), (5) Kariyasu

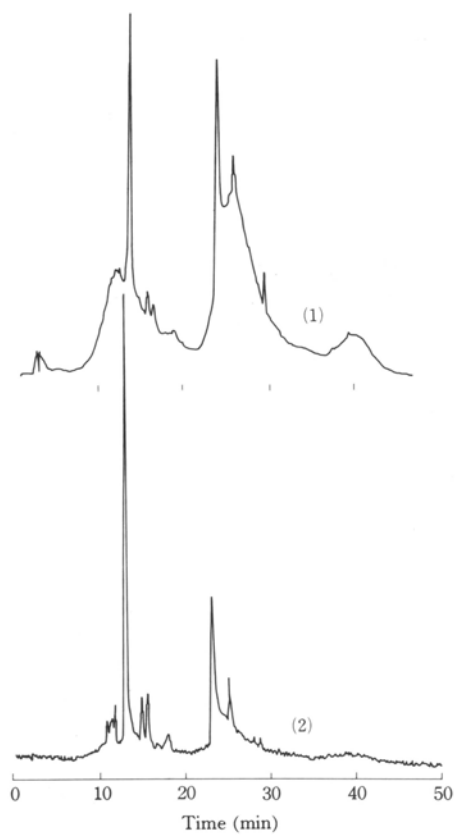


Fig. 259 Chromatograms of Nos. 13 and 14 (340 nm)
(1) No. 13, (2) No. 14

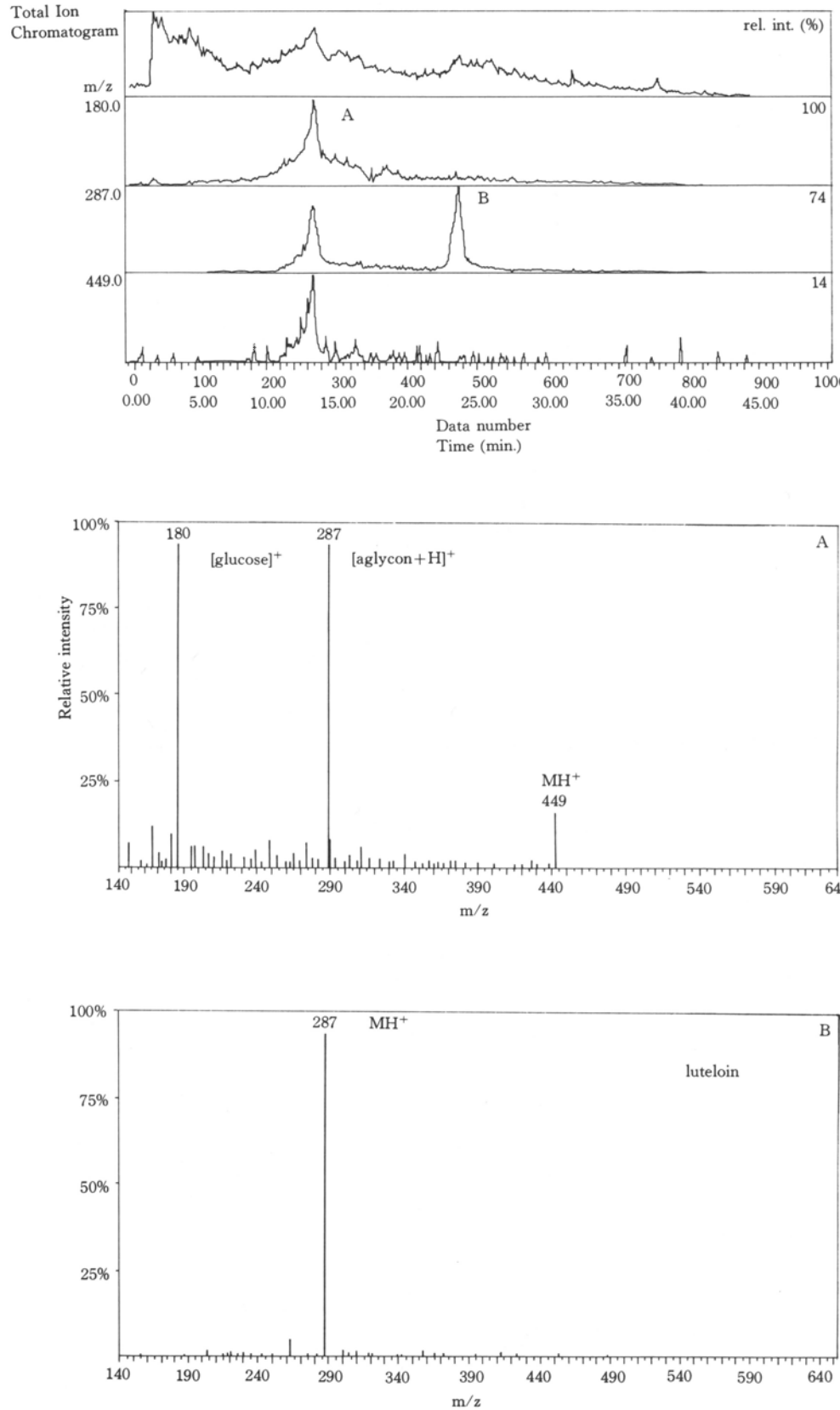


Fig. 260 Mass chromatogram and mass spectrum of No. 14

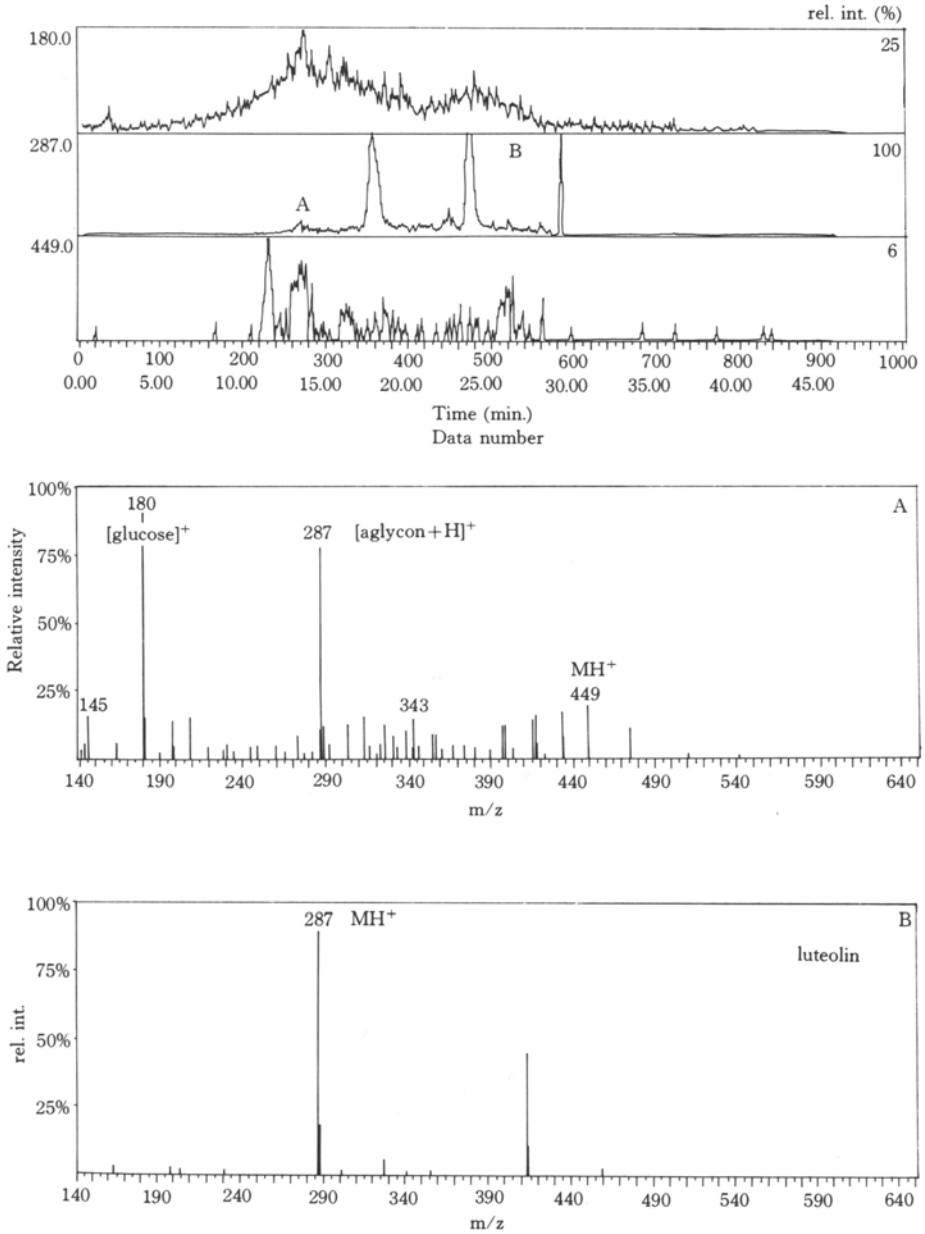


Fig. 261 Mass chromatogram and mass spectrum of kariyasu

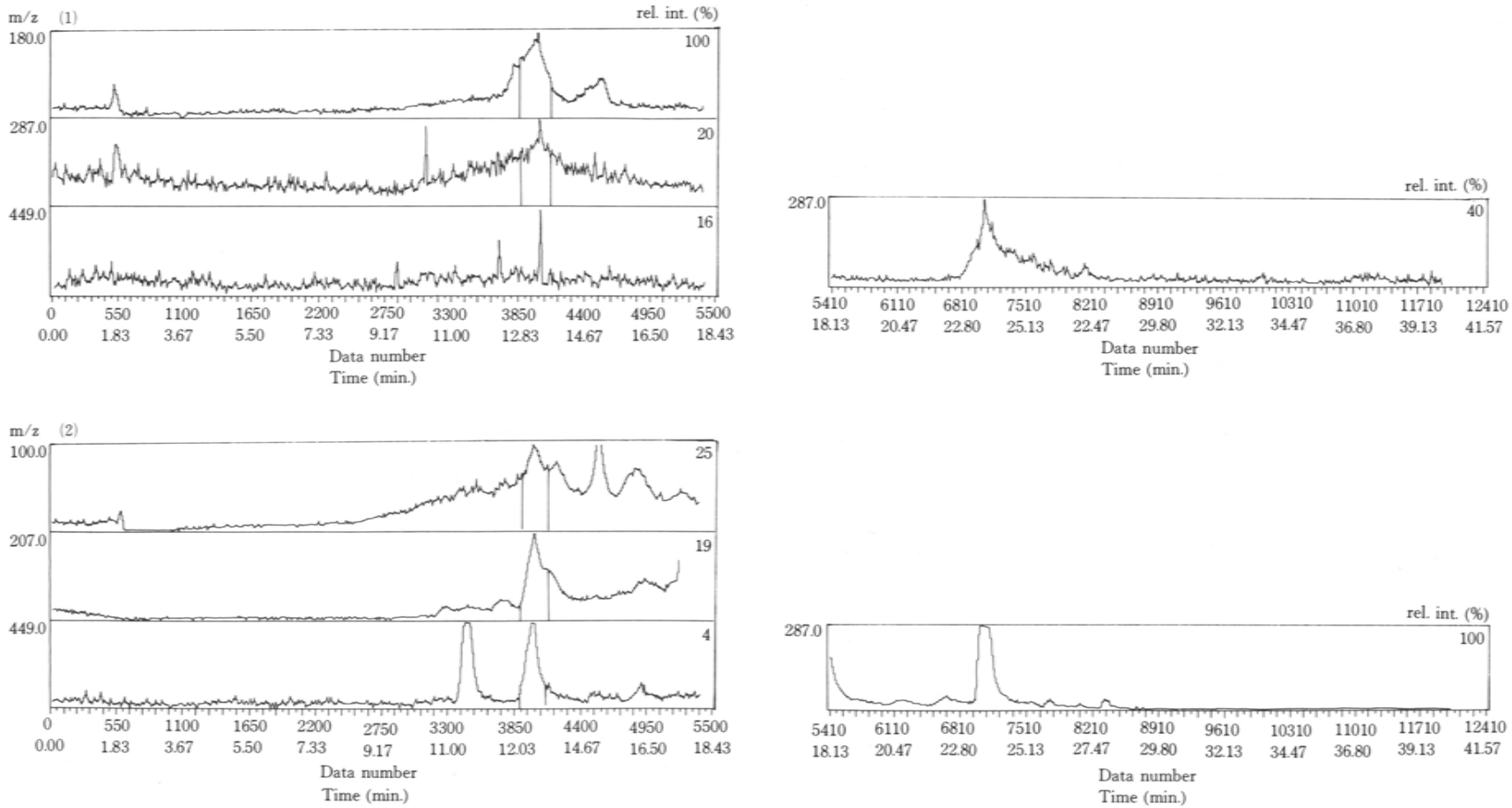


Fig. 262 Mass chromatograms of No. 13 and kariyasu

(1) No. 13, (2) kariyasu

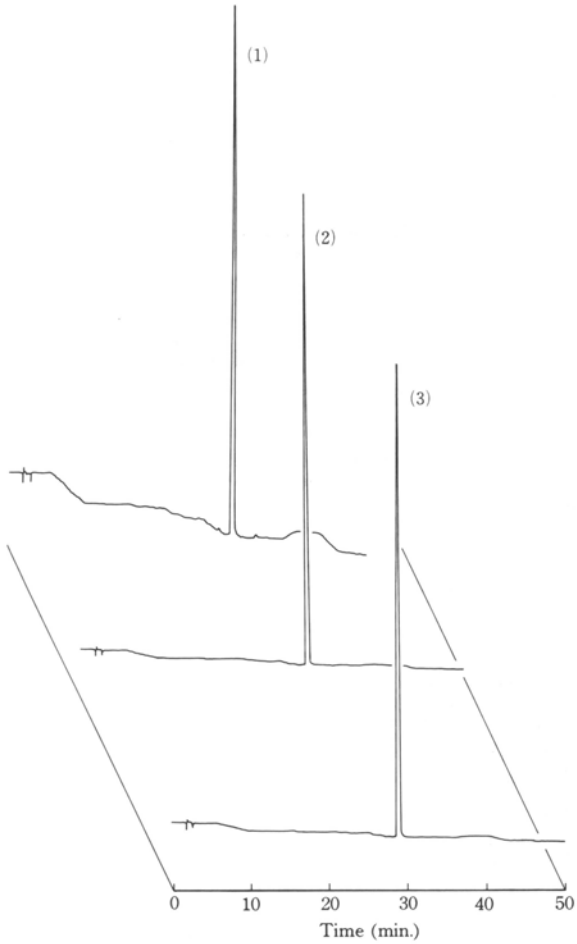


Fig. 263 Chromatograms of Nos. 16, 17 and indigo (604 nm)
(1) No. 16, (2) No. 17, (3) indigo

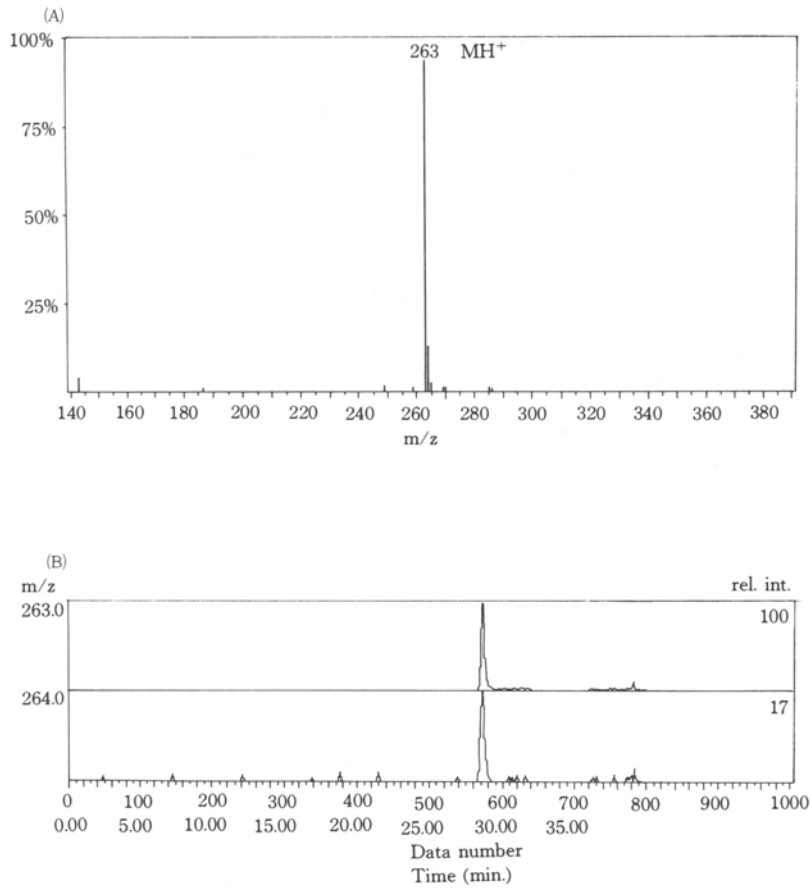


Fig. 264 Mass spectrum (A) and mass chromatogram (B) of indigo

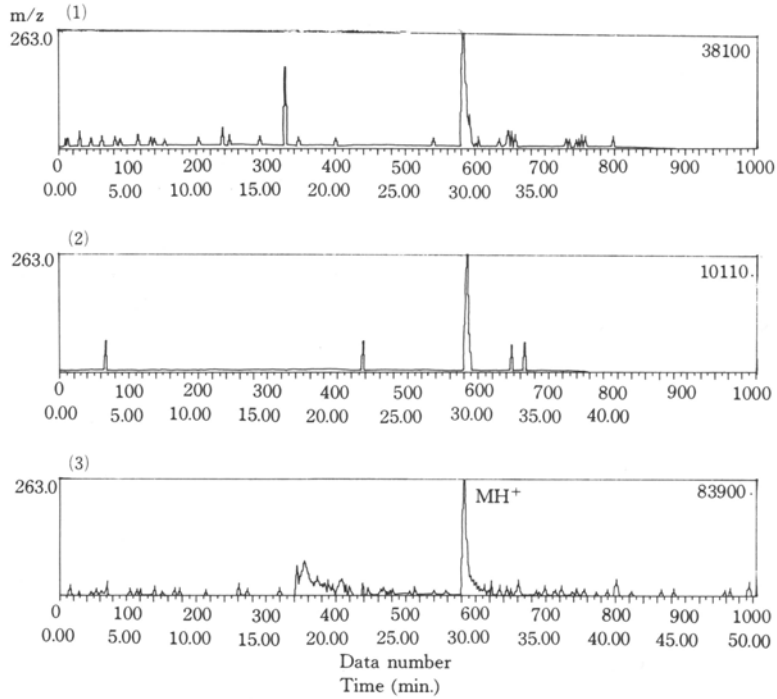


Fig. 265 Mass chromatograms of Nos. 16, 17 and indigo
(1) No. 16, (2) No. 17, (3) indigo

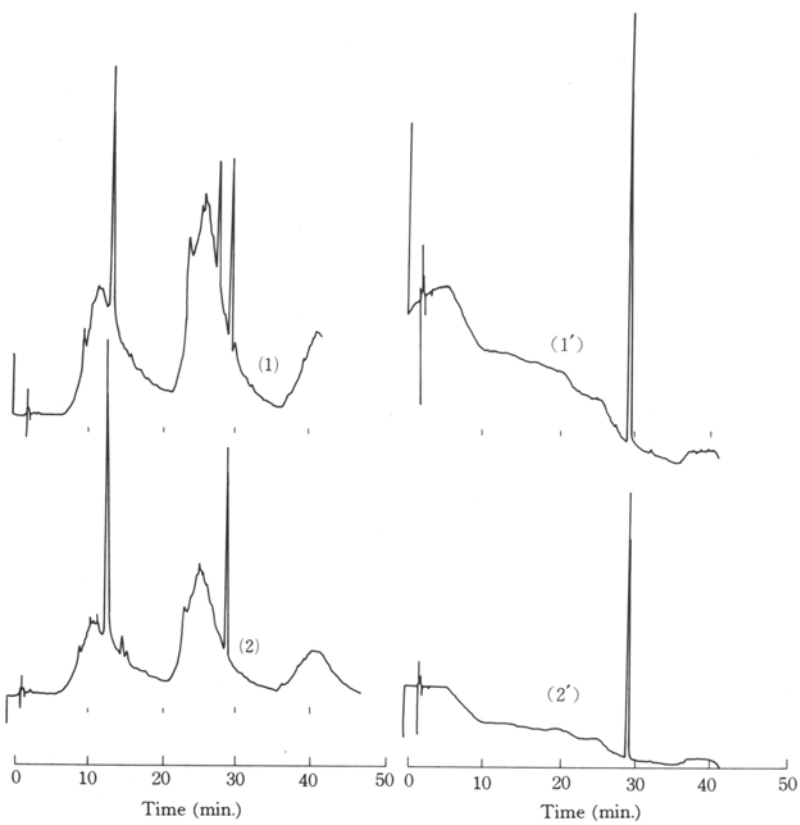


Fig. 266 Chromatograms of Nos. 18 and 19
No. 18 detected at (1) 340 nm, (1′) 604 nm
No. 19 detected at (2) 340 nm, (2′) 604 nm

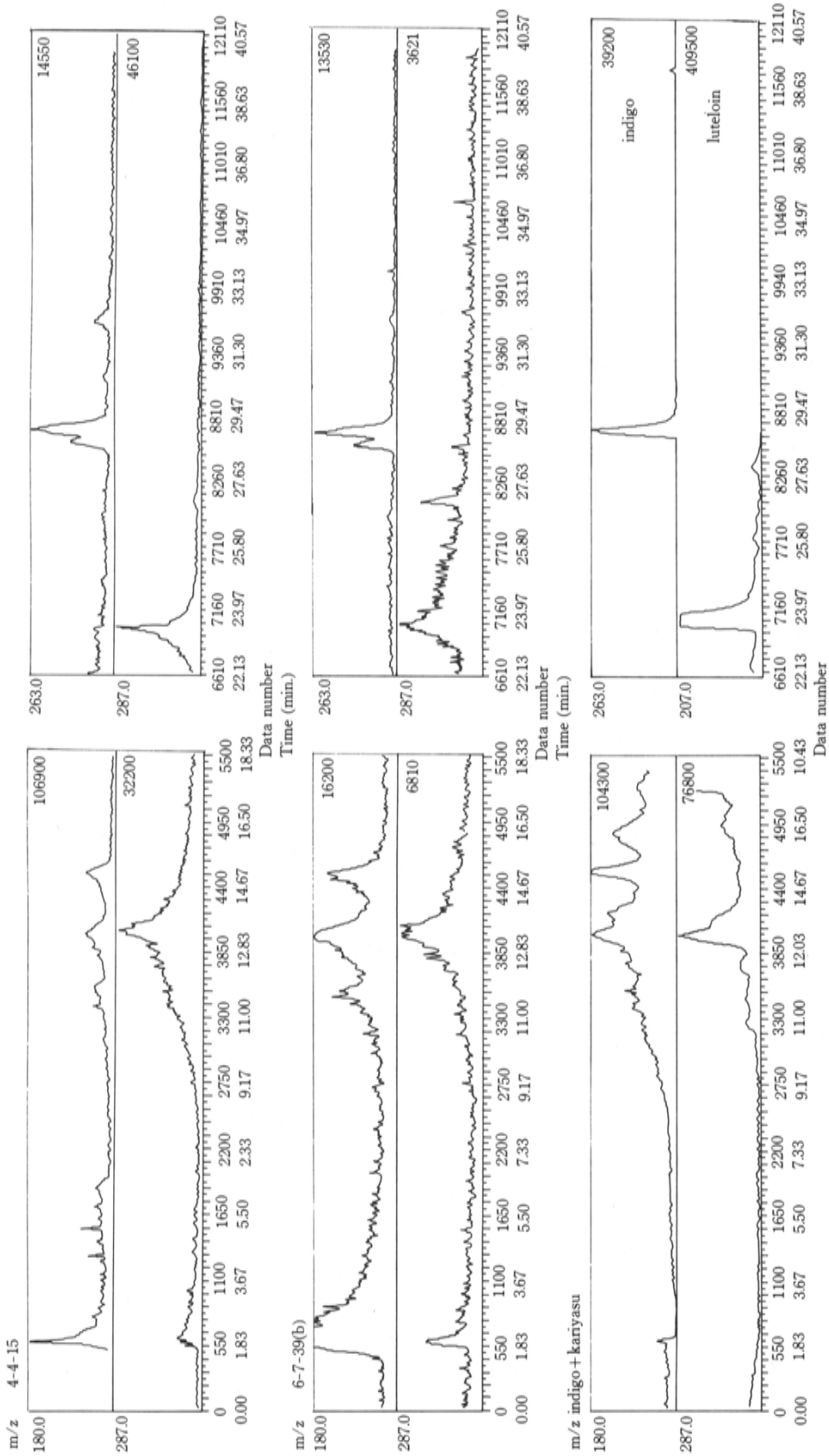


Fig. 267 Mass chromatograms of Nos. 18, 19 and indigo + kariyasu
(1) No. 18, (2) No. 19, (3) indigo + kariyasu

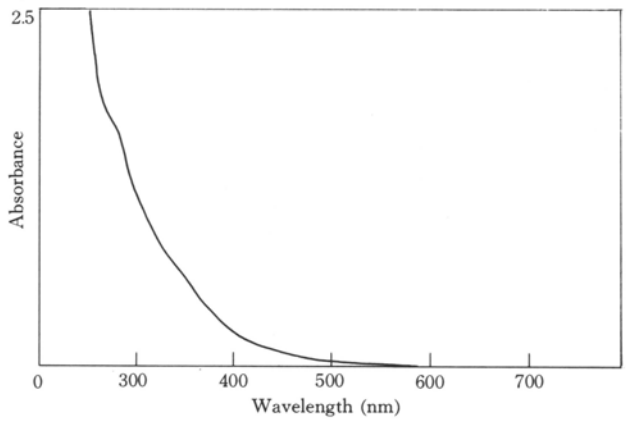


Fig. 268 Absorption spectrum of No. 15

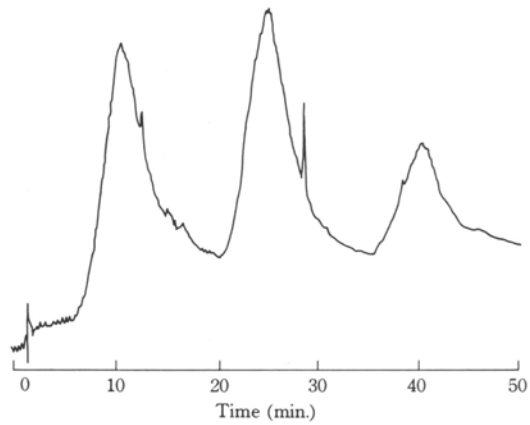


Fig. 269 Chromatogram of No. 15

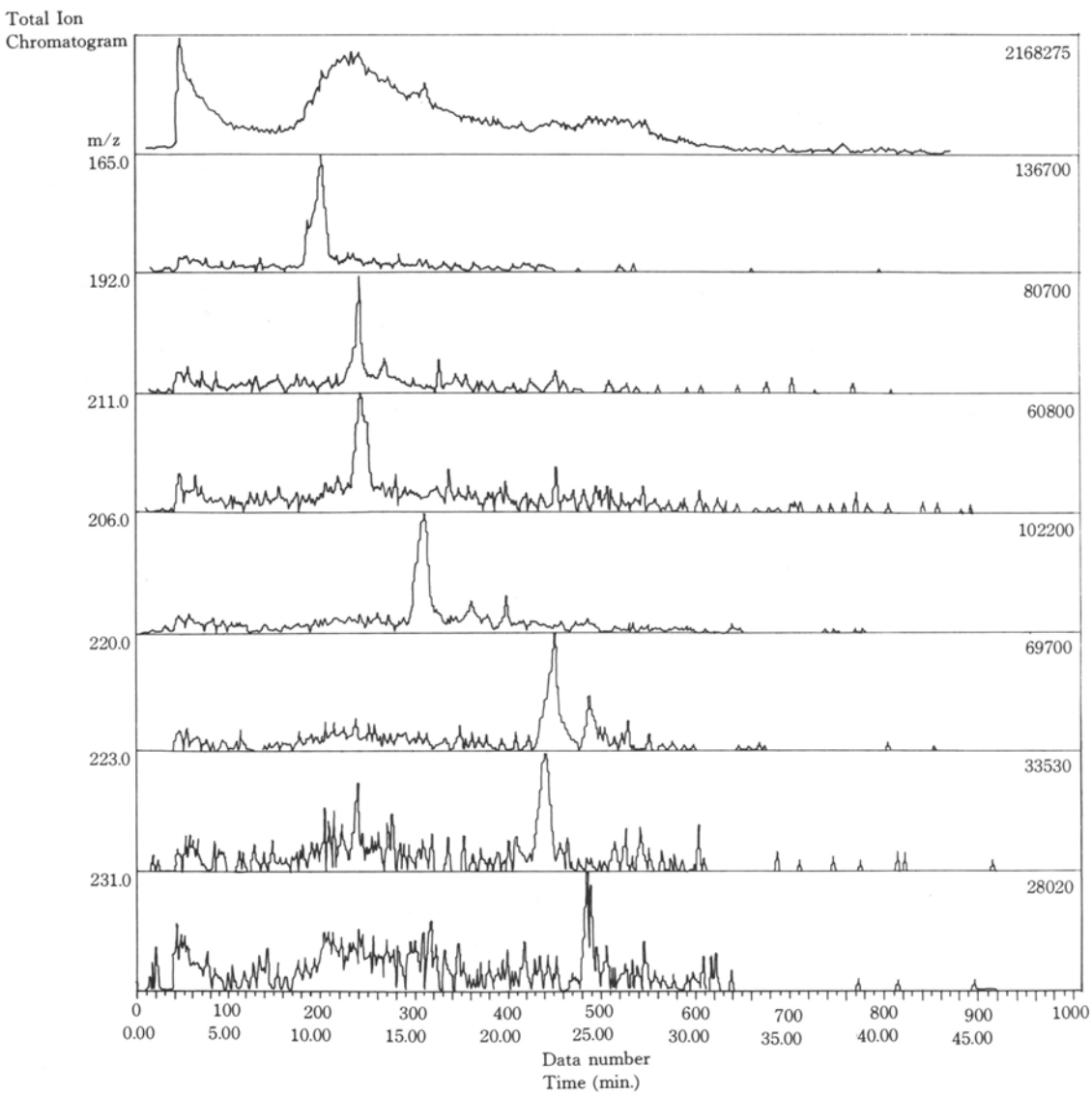


Fig. 270 Mass chromatogram of No. 15

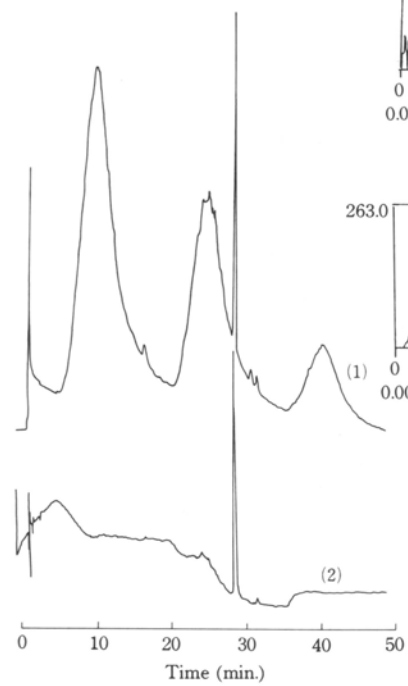


Fig. 271 Chromatogram of No. 20
Detection wavelength : (1) 340 nm, (2) 604 nm

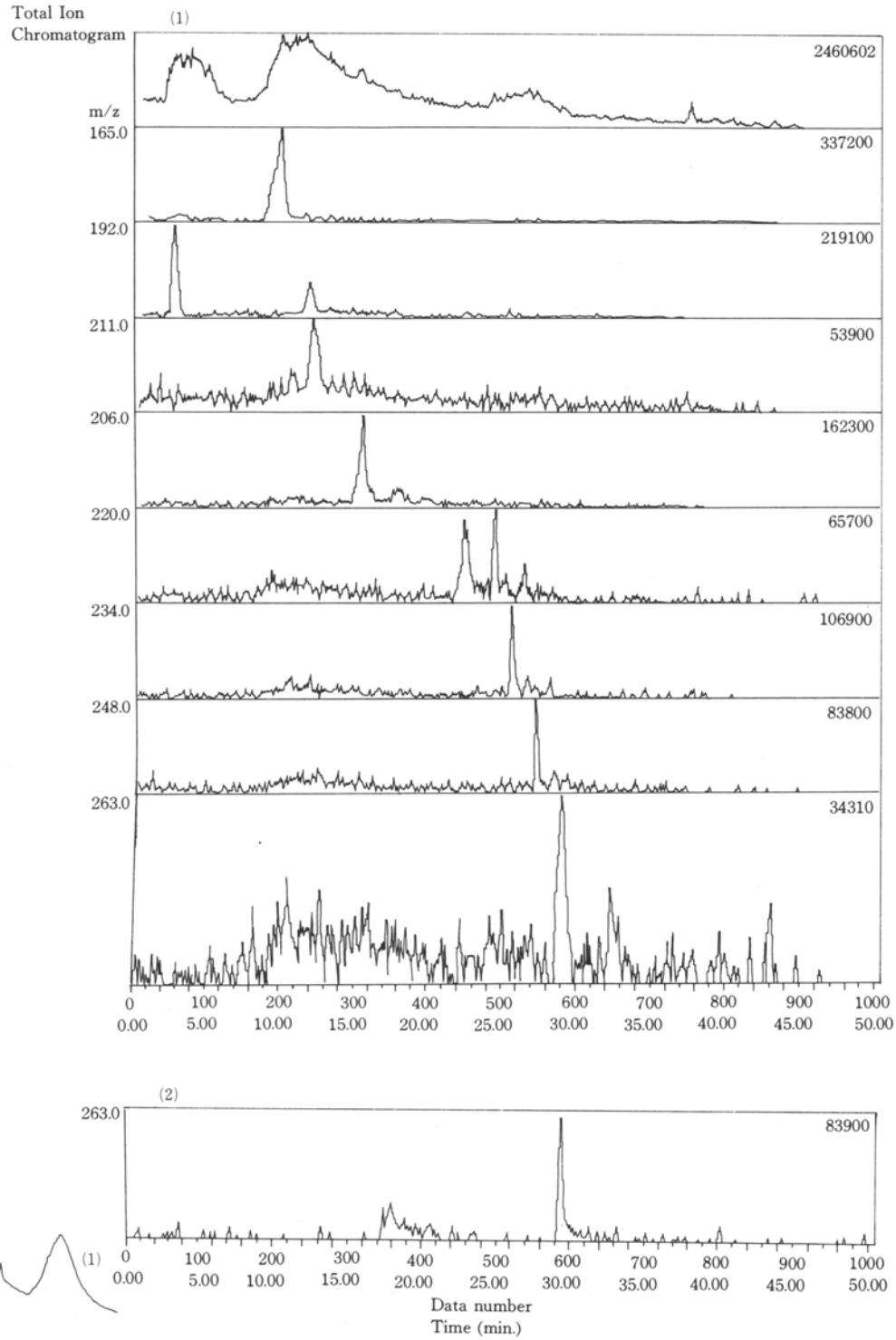
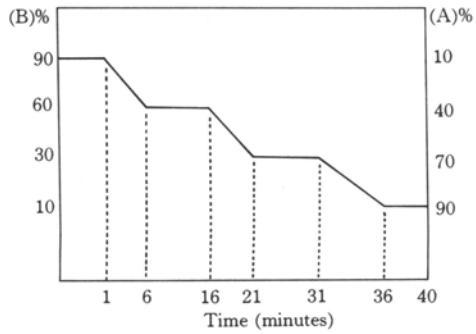
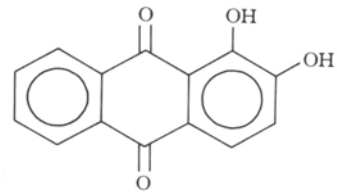


Fig. 272 Mass chromatograms of No. 20 (1) and indigo (2)

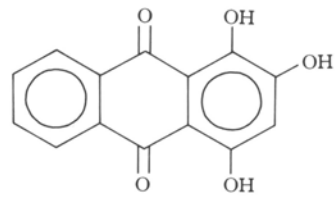
(1)



(A) methanol
(B) 0.1M ammonium acetate+acetic acid (2%)

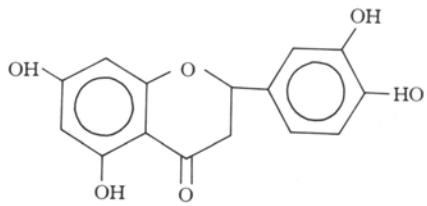


Alizarin
(M. W. 240)

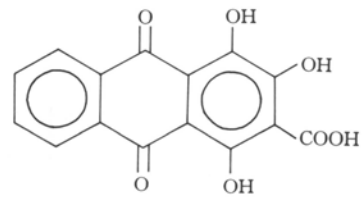


Purpurin
(M. W. 256)

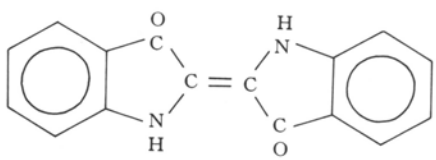
(2)



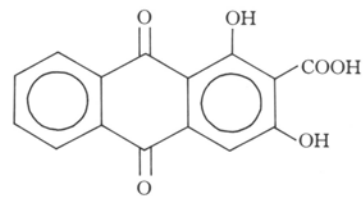
Luteolin
(M. W. 286)



Pseudopurpurin
(M. W. 300)



Indigo
(M. W. 262)



Munjistin
(M. W. 284)

Fig. 273 Appendix
(1) Time program for gradient elution
(2) Chemical structure of dyestuff

CONCLUSIONS

Tab. 36 IDENTIFIED DYESTUFF

Sample No.	Pl. no. Fig. no.	Color	Identified Dyestuff
1	Pl. 109-116 Pl. 112-43	red	madder (*Rubia tinctorum* L.)
2	Fig. 241-2		madder
3	Pl. 112-34		madder
4	Pl. 112-46		madder
5	Pl. 109-110 Pl. 111-27 Pl. 112 no. 32		madder (?)
6	Pl. 107-91		madder (?)
7	Pl. 107-89		madder (?)
8	Pl. 112-46	violet	madder (?)+indigo
9	Fig. 241-6		madder (*Rubia tinctorum* L.)+indigo
10	Fig. 241-7		madder+indigo
11	Fig. 241-1		madder(?)+indigo
12	Fig. 241-3		madder(?)+indigo
13	Pl. 112-37	yellow	weld (*Reseda luteola* L.)
14	Fig. 241-5		weld
15	Pl. 103-50 Pl. 110-11		?
16	Pl. 108-107	blue	indigo
17	Fig. 241-4		indigo
18	Pl. 107-91	green	weld+indigo
19	Pl. 104-64		weld+indigo
20	Pl. 103-50 Pl. 110-11	black	indigo+?

By choosing sample fragments having typical color, we intended to clarify the characteristics of dyestuff used for fabrics excavated in the site of Akoris. The results obtained for this work was summarized in Tab. 36.

In summary, two kinds of madder was distinguished for red color dyestuff. One of them only contains alizarin as main component. The other is composed of alizarin, purpurin, munjistin and pseudo-purpurin. Though the latter dyestuff must be European madder (*Rubia tinctorum* L.) as destribed in several documents, the dyestuff for former species is not yet known. The another kind of European madder (*Rubia pergrina* L.) will be presumed for this dyestuff.

Violet color was found to be expressed by mixing indigo with either one of two kinds of madder. When madder containing only alizarin was used one component, the quantity of indigo used was usually quite few.

Brilliant yellow was colored with weld (*Reseda luteola* L.) containing luteolin. It was not possible to identify the dyestuff for yellow ochre color. It may be rather complex mixture of compound containing tannin analogues.

Blue color was dyed using indigo. Green color was obtained by mixing indigo with weld. Black color was also obtained by mixing indigo with unknown dyestuffs which is analogous with yellow orchre.

Throughout this research, it was found that LC/MS was very useful tool for the identification of natural dyestuffs.

(SATO, M., YAMAOKA, R. and N. SHIBAYAMA)

3 RESTORATION AND ANALYSIS OF THE BARQUE MODEL

RESTORATION

It took two seasons to complete the restoration of the barque, the first carried out by the undersigned and the second by J. Miyamoto.

When it was found in 1988, part had been damaged and part lost by burning as already mentioned. Thus only the solid pieces were removed at that time and the remainder left in the tomb to await chemical treatment. In 1989, several coats of the acrylic resin Paraloid B72, diluted by organic solvent, was applied with a soft brush, and after the final coating, the model was naturally dried in order to solidify the fragile parts and to make the pigments fast. All parts of the barque model were not destroyed then taken out successfully.

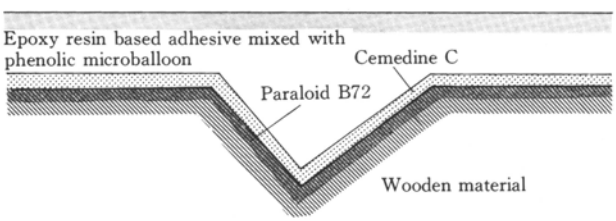


Fig. 274 Model of restoration

In 1990 after confirming that after one year the pieces of the barque were still consolidated enough by the chemical treatment to start restoration by supplying the deficient parts and assembling the whole. In supplying the deficient parts, rather than using the traditional bee's wax, a new material was adopted. This material was an epoxy resin[1] based adhesive mixed with phenolic microballoon, because after hardening it can be sculptured by knife without difficulty, and moreover, is lighter than bee's wax in weight. As for joining the scientifically restored parts to the wooden remains, a cellulose type adhesive Cemedine C was used. Cemedine C can be easily dissolved by organic solvent if and where a repair is required at a later data (Fig. 274). In addition, several stainless steel pins were inserted in the hull for reinforcement where the restored part was attached.

The restored part of the hull was coated with white powdered titan dissolved in Paraloid B72 and then painted to match the original color. The coloring materials were not chemical but mineral in order to prevent discoloration.

Note

1) As for epoxy resin two kinds of Araldite, GY 1252 and HY 837, were used in a 5 to 2 ratio.

Acknowledgement

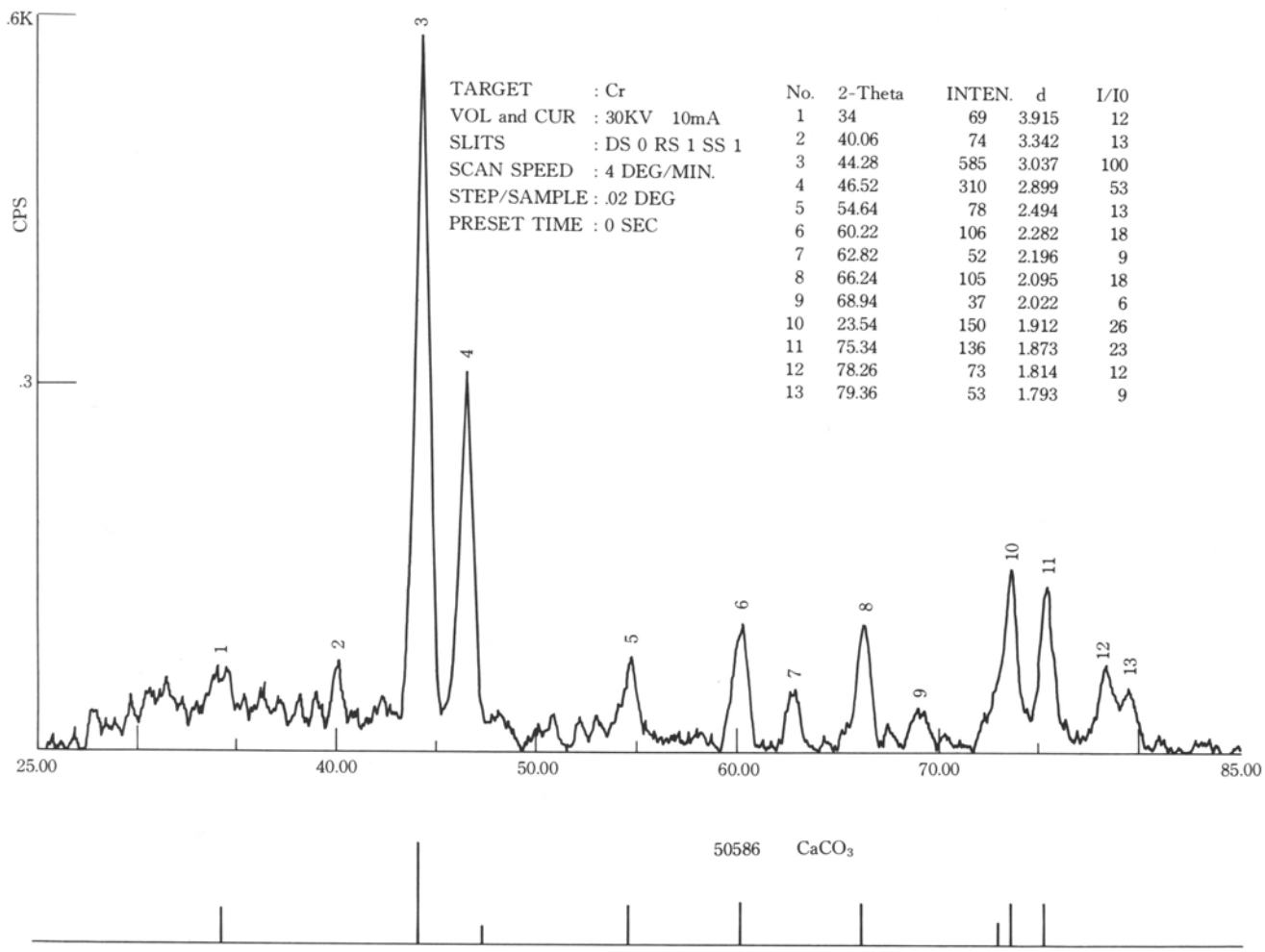
Special thanks are due to Dr. Shawy Nahra, Seiji Higuchi and Shigeo A-oki (Tokyo National Research Institute of Cultural Properties) and Masa-aki Sawada (Nara National Research Institute of Cultural Properties) for their advice and encouragement.

(HASHIMOTO, S.)

WOOD

The sample of wood available for the identification was so small, 1cm square, and so fragile owing to its dryness that it could not be cut without treatment for the embedding the material. Paraffin wax was used for this, and then the sample was cut into cross, radial and tangential sections for microscopic observation. The wood used in the barque model was identified as *Ficus* sp. (P1. 157).

Microscopic features of *Ficus* sp. : Diffuse porous wood. Vessels solitary and in radial multiples of 2-4. Axial parenchyma in wide bands alternating with fiber bands. Vessel perforations simple. Vessel-parenchyma pits with slit-like apertures, Rays with 5-14 cells wide, homocellular to



No.	2-Theta	INTEN.	d	I/I0
1	34	69	3.915	12
2	40.06	74	3.342	13
3	44.28	585	3.037	100
4	46.52	310	2.899	53
5	54.64	78	2.494	13
6	60.22	106	2.282	18
7	62.82	52	2.196	9
8	66.24	105	2.095	18
9	68.94	37	2.022	6
10	23.54	150	1.912	26
11	75.34	136	1.873	23
12	78.26	73	1.814	12
13	79.36	53	1.793	9

Fig. 275 Analysis of the white pigment by X-ray powder diffraction method

heterocellular, composed mostly of procumbent cells, sometimes of sequare or upright cells.

(ITOH, T. and S. HASHIMOTO)

PIGMENT

The barque model, including crew and equipment, was painted. Of various pigments used, white was the most common and so was analyzed at this time. Though unavoidably mixed with a very small amount orange, some white powder was exfoliated from the port side of the hull and analyzed by the X-ray powder diffraction method using a Rigaku Fully Automated X-ray Diffractometer System in the Nara National Research Institute of Cultural Properties. According to the result, the main ingredient was $CaCO_3$ (Fig. 275), while others are left undetermined at this time.

$CaCO_3$, which is contained in shells and limestone, is a commom material in Egypt. Limestone containing many fossils such as shells is also widely distributed around Akoris. Therefore, answers as to which shell or limestone was used for the white pigment, and from where it was obtained are awaiting further analysis.

(HASHIMOTO, S.)

VII
APPENDIX

1 BARQUE MODEL

POSITION AS FOUND (Fig. 23. Pls. 13~15)

This wooden model of a funerary barque[1] was found in Area A (Layers III~IV) in the south chamber of the Chapel B shaft, mentioned above (see p. 27). Unearthed around the hull of the barque, were the models of a bier with a mummy and funerary equipment which originally would have been laid out on the deck of the barque. In addition, many other parts of the model, for example, the equipment and crew, were scattered mainly around the hull, but also at the foot of the south wall in Areas E and D. Though unfortunately many of them had been broken, the technical level of this model as seen from the remains marks the work of a real sculptor in the Middle Kingdom.

MATERIAL USED

This model is made completely of wood and shows careful craftmanship even in the smallest details. The long and narrow hull is carved from a single solid block of wood. Judging from the grain, the wood appears to be that of a non-coniferous leave tree[2] (see p. 419).

STRUCTURE

HULL (Fig. 276. Pls. II upper, 62 and 63 no. 1) : The hull, half of which had been lost probably by fire, is composed of the forecastle and the deck. The front part of the hull, especially the forecastle, had been damaged by rocks which would have fallen from the collapsed ceiling. In spite of the damage, many fragments of the forecastle which were scattered around part of the main deck were reassembled and glued together, so that the bow has recovered its original form.

On the other hand, the remaining main deck, though broken into two large pieces, was found in comparatively good condition, though slightly swollen on the port side with this result the mast is not centered. The stern of the main deck had been burned along with the hull, though some traces of the deck planks and the seats for oarsmen remained (Tabs. 37, 38 and 42).

Forecastle. The pointed forecastle tilts up slightly as it approaches the tip of the bow, and on it

Tab. 37 DIMENTIONS OF EACH PART.

HULL (Figs. 276, 286. Pls. II, 62)

Length	As found	190.0 cm
	As restored	100.0 cm
	With steering oar	210.0 cm
Width	Max.	23.0 cm
Height	At bow	19.5 cm
	At middle	9.5 cm

CENTRAL BEAM (Figs. 276, 283. Pls. 62, 63)

Width	Av.	1.6 cm
	Max.	2.4 cm

SIDE BEAM (Figs. 276, 283. Pls. 62, 63)

Width	Av.	1.4 cm
	Max.	1.5 cm

THWART (Figs. 276, 283. Pls. 62, 63)

Width	Av.	1.1 cm

GUNWALE (Figs. 276, 283. Pls. 62, 63)

Width	Av.	0.8 cm

SEAT (Figs. 276, 277, 283. Pls. 62, 63)

Width	Av.	2.5 cm
Length	Av.	3.6 cm
Depth	Av.	1.3 cm

DECK PLANK (Figs. 276, 283. Pls. 62, 63)

Width	Av.	3.1 cm
Length	Av.	3.5 cm

STEERING OAR (Figs. 276, 277. Pl. 65)

Length	As found	77.0 cm ?
	As restored	69.5 cm
	Blade	17.0 cm ?
	Stem	60.0 cm
	Band	13.8 cm
	Tiller ?	14.7 cm
Diameter	Stem max.	1.6 cm
	Tiller max.	0.5 cm

STEERING POST (Figs. 276, 277. Pl. 65)

Height	As found	35.0 cm
	As restored	30.8 cm
Width	At middle	2.1 cm

MAST (Figs. 277, 278, 284, 285. Pl. 64)

Length	As found	60.0 cm ?
Diameter	Middle	1.6 cm

SPAR (Figs. 278-2, 3, 284. Pl. 64)

Length	As found	35.0 cm ?
Diameter	At middle	1.4 cm

CROTCH (Figs. 278-4~6, 283. Pl. 65)

Height	Model A	17.6 cm
	Model B	16.5 cm
	Model C	5.8 cm

CLEAT (Fig. 278-15, 16. Pl. 63)

Length	Av.	3.4 cm
Width	Av.	1.1 cm

OAR : Large (Fig. 279-11~15. Pl. 63)

Length	Blade	6.0 cm ?
Width	Blade	2.4 cm ?
Diameter	Stem	0.8 cm ?

OAR : Medium (Fig. 279-1~7, 9, 10. Pl. 63)

Length	Full	33.5 cm
	Blade : Av.	5.5 cm
	Stem : Av.	28.0 cm
	Band Av.	3.2 cm
Width	Blade : Av.	2.0 cm
Diamater	Stem : Av.	0.6 cm

OAR : Small (Fig. 279-8, 16, 17. Pl. 63)

Length	Blade : Av.	4.0 cm
Width	Blade : Av.	1.5 cm
Diameter	Stem	0.6 cm

MOORING STAKE (Fig. 278-11~14. Pl. 65)

Length	Model A (No. 11)	9.3 cm
	Model B (No. 12)	11.0 cm ?
	Model C (No. 13)	13.3 cm ?
	Model D (No. 14)	15.2 cm

MALLET (Fig. 278-7~10. Pl. 65)

Length	Model A (No. 7)	7.8 cm
	Model B (No. 9)	8.5 cm
	Model C (No. 10)	9.6 cm ?
Diameter	Av.	2.7 cm

GANGPLANK (Fig. 278-17)

Length	Present, max.	41.4 cm
Width	Av.	2.8 cm
Thickness	Av.	0.4 cm

MUMMY (Figs. 276, 282. Pl. 66)

Height	As found	18.0 cm ?
	Present, max.	13.0 cm

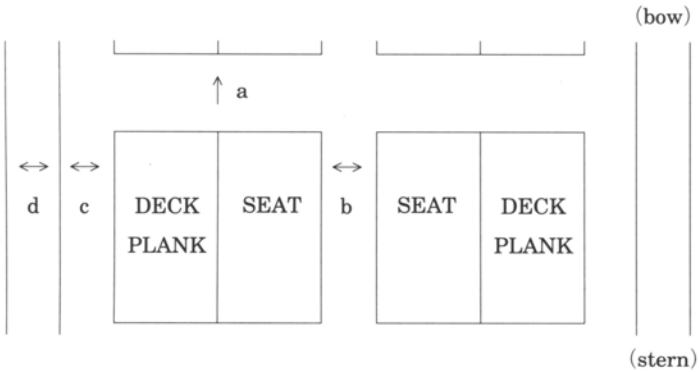
FUNERARY EQUIPMENT (Fig. 282. Pl. 66)

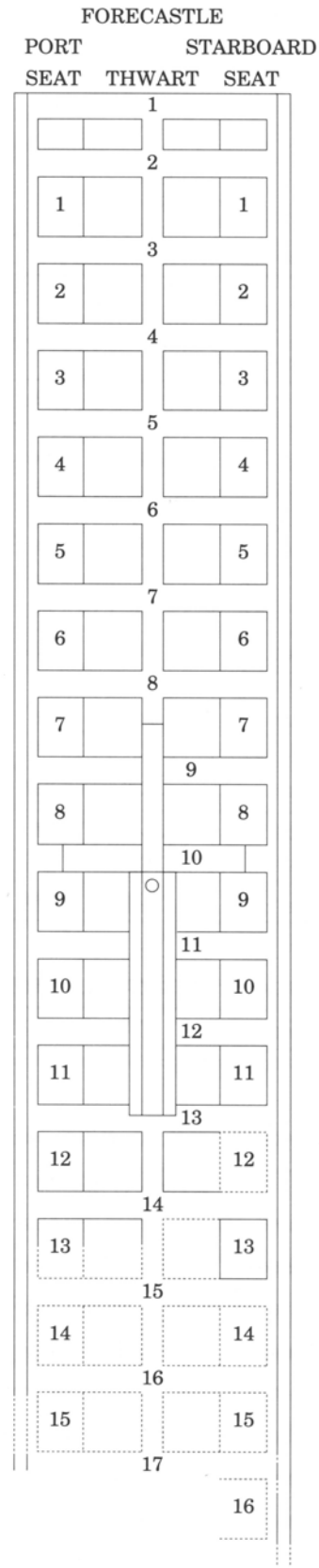
Roof :		
Length	Original	28.0 cm ?
	Present, max.	15.0 cm ?
Width		11.5 cm
Column :		
Height	Full	15.5 cm
Diameter	Stem : Av.	0.7 cm
Bier :		
Length	Full	22.9 cm
Width	Full	7.5 cm
Thickness	Av.	1.0 cm
Height	Av.	4.5 cm
Foundation :		
Length	Full	27.6 cm
Width	Av.	11.5 cm

three holes are perforated, one at the center near the bow and the others on both sides at the rear. These holes are assumed to have been used for pegs which fixed members of the crew to the deck (Fig. 276).

Gunwale. On both edges of the main deck, gunwales run from stern to bow where they merge into the forecastle. On the top surface of the gunwales, a series of small holes are pierced at regular intervals corresponding to the oarsmen's seats and each oar undoubtedly would have been held there by a loop of cord passed through the hole. No oar, however, was held in that position when the model was found. In addition to these holes, several wooden cleats are set at intervals on the gunwales. Four of these cleats were found in their original position, each fixed by two wooden pegs. They would have been used

Tab. 38 DETAILED DIMENSIONS OF THE PORT SIDE BEAM, THWARTS AND GUNWALE



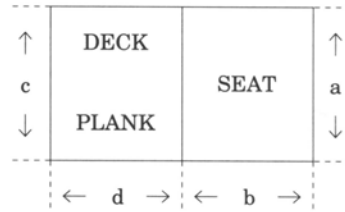


a : Thwart b : Central beam c : Side beam d : Gunwale (cm)

Thwart	a	b	c	d
1	0.6	—	1.3	0.8
2	0.9	1.0	—	—
3	1.0	1.2	—	—
4	1.0	1.2	1.3	—
5	1.0	1.4	—	—
6	1.1	1.5	1.2	0.9
7	—	1.5	—	—
8	1.2	1.8	1.4	0.9
9	1.0	1.9	—	—
10	1.3	2.4	1.4	0.9
11	1.3	1.1	—	—
12	1.1	1.2	1.3	0.8
13	1.3	1.2	—	—
14	1.0	1.6	1.5	0.9
15	—	1.6	—	—
16	—	—	1.4	—
Av.	1.1	*1.55	1.35	0.87
Av.		1.16 (11～13)		

*Without 11～13

Tab. 39 DETAILED DIMENSIONS OF THE SEAT AND DECK PLANK (Fig. 276)



a, c : Interval b, d : Width (cm)

	Seat		Deck plank	
Port	a	b	c	d
1	—	2.3	3.4	2.4
2	—	2.4	—	2.8
3	3.5	2.4	3.4	3.0
4	3.4	2.3	3.4	3.3
5	3.6	2.4	3.3	3.6
6	3.5	2.3	3.5	3.7
7	3.7	2.4	3.5	3.9
8	3.7	2.5	3.8	3.8
Av.	3.56	2.37	3.47	3.31
9	3.5	2.6	3.5	2.7
10	3.5	2.5	3.6	2.7
11	3.7	2.6	3.7	2.7
Av.	3.56	2.56	3.60	2.70
12	3.8	2.6	—	4.0
13	3.9	2.6	—	—
Av.	3.85	2.60	—	4.00

(cm)

	Seat		Deck plank	
Starboard	a	b	c	d
1	3.8	2.2	3.5	2.0
2	3.8	2.5	3.5	2.6
3	3.5	2.1	3.4	2.7
4	3.5	2.5	3.4	2.9
5	3.4	2.8	3.5	3.1
6	3.5	2.7	3.5	3.1
7	3.5	2.8	3.5	3.4
8	3.7	2.5	3.7	3.9
Av.	3.58	2.51	3.50	2.96
9	3.9	2.6	—	3.2
10	3.8	2.5	3.6	3.2
11	3.6	2.6	3.6	2.8
Av.	3.76	2.56	3.60	3.06
12	—	4.0	—	—
13	—	—	—	—
Av.	—	4.00	—	—

DIMENSIONS OF BETWEEN THE 1st AND 2nd THWARTS (cm)

Port	1.5	2.1	1.5	2.2

Starboard	1.5	2.3	—	—

to tie stays from the mast, spar or sail (Fig. 278 no. 15. Pl. 62).

The fragment of another cleat was found in the accumulated soil, but it is smaller than those on the gunwales, which gives evidence of the existence of another boat (Fig. 278 no. 16).

Bottom. The hull has a flat bottom, because either the model would need stability or because it is an accurate copy of an actual flat-bottomed barque.[3)]

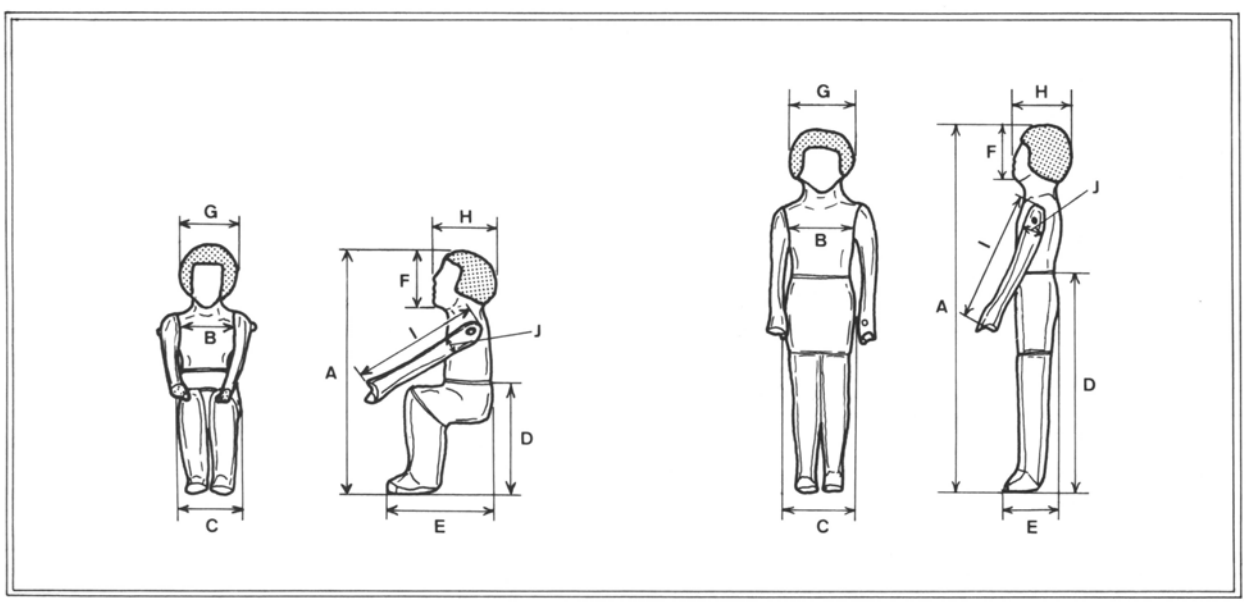
Thwart. The main deck is about 1cm lower than the forecastle. On the front face of the step down and on the inside face of the gunwales, a series of black stripes are painted (Fig. 276, A-A'). They may possibly represent a kind of strut.[4)] After the front step down to the main deck come fourteen thwarts, or cross timbers. The 11th to 13th thwarts are interrupted by a long rectangular slot behind the mast stepping. It is hard to say how many thwarts would have existed on the main deck, because the rear half of the hull was, as mentioned above, missing.

Beam. From fore to aft, three longitudinal beams are represented. The central beam is interrupted

Tab. 40 DETAILED DIMENSIONS OF THE CREW

(1) OARSMEN (Figs. 280, 281) (cm)

No.	Position	A	B	C	D	E	F	G	H	I	J
	Port										
1	1 ?	9.2	2.1	2.1	4.3	3.4	2.2	1.9	2.2	4.7	0.8
2	2 ?	9.6	1.7	2.4	4.4	3.4	2.0	1.9	2.1	4.2	0.8
3	3	10.3	2.5	2.8	4.8	5.1	2.4	2.5	2.2	4.7	0.8
4	4	9.7	2.4	2.6	4.5	4.4	2.4	2.3	2.5	3.8	0.7
5	5 ?	—	1.7	2.3	—	—	2.3	2.1	2.0	—	—
6	6	10.3	2.7	3.0	5.2	5.0	2.1	2.3	2.3	5.3	0.8
7	7	9.4	2.0	2.4	4.0	4.5	2.3	2.3	2.3	4.1	0.8
8	8	10.1	2.0	2.3	4.5	4.4	2.1	2.0	2.1	5.1	0.7
9	9	10.4	3.0	3.4	4.4	5.0	2.5	2.7	2.7	5.0	1.0
10	10	9.7	2.2	2.5	4.3	4.5	2.3	2.2	2.2	4.4	0.8
11	11	9.8	2.0	2.5	4.5	4.0	2.2	2.1	2.4	5.0	1.0
12	12	11.4	2.0	2.8	5.1	5.2	2.7	2.5	2.6	5.1	0.9
	Starboard										
13	1 ?	9.7	2.2	2.8	4.4	3.8	2.2	2.0	2.0	—	0.7
14	2 ?	—	—	2.6	4.6	4.3	2.2	2.2	2.1	—	—
15	3	9.7	2.1	2.5	5.2	4.1	2.5	2.2	2.2	4.0	0.7
16	4	10.3	2.0	2.7	4.9	5.1	2.3	2.3	2.3	4.4	0.9
17	5 ?	—	2.2	2.7	—	4.5	2.5	2.4	2.7	—	—
18	6	9.1	2.2	2.4	4.2	3.5	2.1	2.2	2.1	4.1	0.8
19	7	9.2	2.4	3.0	3.8	5.0	2.1	2.2	2.6	4.7	1.0
20	8	9.7	1.9	2.6	5.0	5.5	2.2	2.4	2.5	5.1	1.0
21	9	9.5	1.8	2.9	4.0	4.8	2.0	2.1	2.2	4.8	0.8
22	10 ?	9.2	2.2	2.1	4.2	4.2	2.4	2.3	2.4	—	—
23	11 ?	—	—	2.2	—	—	2.1	2.0	2.3	—	—
24	12 ?	—	1.5	2.2	—	—	2.2	2.2	2.1	—	—
Av.	—	9.8	2.1	2.5	4.5	4.4	2.2	2.2	2.2	4.6	0.8
25	Unknown 1	11.0	2.9	3.5	5.7	5.0	2.8	2.7	2.9	5.4	1.0
26	Unknown 2	12.0	2.2	3.1	5.4	4.5	2.4	2.8	2.8	5.0	—
Av.	—	11.5	2.5	3.3	5.5	4.7	2.6	2.7	2.8	5.2	1.0



(2) STANDING CREW (Fig. 281). The original position is unknown precisely (cm)

No.	Category	A	B	C	D	E	F	G	H	I	J
27	Standing man (1)	14.2	2.6	2.9	8.5	2.3	2.2	2.6	2.2	5.2	0.8
28	Standing man (2)	—	2.2	2.7	—	—	2.7	2.3	2.5	4.8	0.7
29	Standing man (3)	—	1.7	1.7	—	—	2.7	2.7	2.6	—	—
30	Officer (1)	12.5	2.7	2.5	6.5	2.1	2.2	2.5	2.8	5.5	0.7
31	Officer (2)	12.8	1.8	2.4	7.4	1.9	1.9	2.2	2.1	—	0.7
32	Officer ? (3)	—	2.4	2.1	—	—	2.0	2.3	1.9	5.1	0.7
33	Officer (4)	9.0	2.2	3.0	6.0	1.9	2.5	2.5	2.5	5.2	1.0
Av.	—	12.1	2.2	2.4	7.1	2.0	2.3	2.4	2.3	5.1	0.7

(3) CREW WITH THE SPECIAL ROLES (Fig. 281). The original position is unknown precisely (cm)

No.	CATEGORY	A	B	C	D	E	F	G	H	I	J
34	Pilot	—	2.4	—	—	—	2.6	2.8	2.6	6.1	0.7
35	Priest ?	—	—	—	—	—	2.5	2.2	—	—	—
av.	—	—	2.4	—	—	—	2.5	2.5	2.6	6.1	0.7
36	Steersman	11.5	2.1	2.3	6.2	2.5	2.0	1.8	2.1	5.0	1.0
37	Owner	8.2	2.6	3.1	—	4.9	2.5	2.6	2.8	—	—
Av.	—	9.8	2.3	2.7	6.2	3.7	2.2	2.2	2.4	5.0	1.0

(4) FRAGMENTS OF THE CREW : HEAD (Fig. 281) (cm)

No.	Head	A	B	C	D	E	F	G	H	I	J
38	H-1	—	—	—	—	—	2.0	2.1	2.5	—	—
39	H-2	—	—	—	—	—	2.7	2.1	2.3	—	—
40	H-3	—	—	—	—	—	2.4	—	—	—	—
41	H-4	—	—	—	—	—	2.2	2.0	1.9	—	—
42	H-5	—	—	—	—	—	2.2	—	—	—	—
43	H-6	—	—	—	—	—	—	—	—	—	—
44	H-7	—	—	—	—	—	—	—	—	—	—
Av.	—	—	—	—	—	—	2.3	2.0	2.2	—	—

(5) FRAGMENTS OF THE CREW : BODY (Fig. 281) (cm)

No.	Body	A	B	C	D	E	F	G	H	I	J
45	B-1	—	2.4	2.2	—	—	—	—	—	—	—
46	B-2	—	2.1	—	—	—	—	—	—	—	—
47	B-3	—	2.0	2.3	—	—	—	—	—	—	—
48	B-4	—	—	1.9	—	—	—	—	—	—	—
49	B-5	—	—	2.0	—	—	—	—	—	—	—
50	B-6	—	1.8	1.8	—	—	—	—	—	—	—
51	B-7	—	1.6	2.0	—	—	—	—	—	—	—
Av.	—	—	1.9	2.0	—	—	—	—	—	—	—

(6) FRAGMENTS OF THE CREW : UNKNOWN (Fig. 281) (cm)

No.	Part	A	B	C	D	E	F	G	H	I	J
52	X-1	—	2.1	—	—	—	2.7	2.6	—	—	—
53	X-2	—	2.7	2.9	—	—	2.5	2.7	—	—	—
Av.	—	—	2.4	2.9	—	—	2.6	2.6	—	—	—

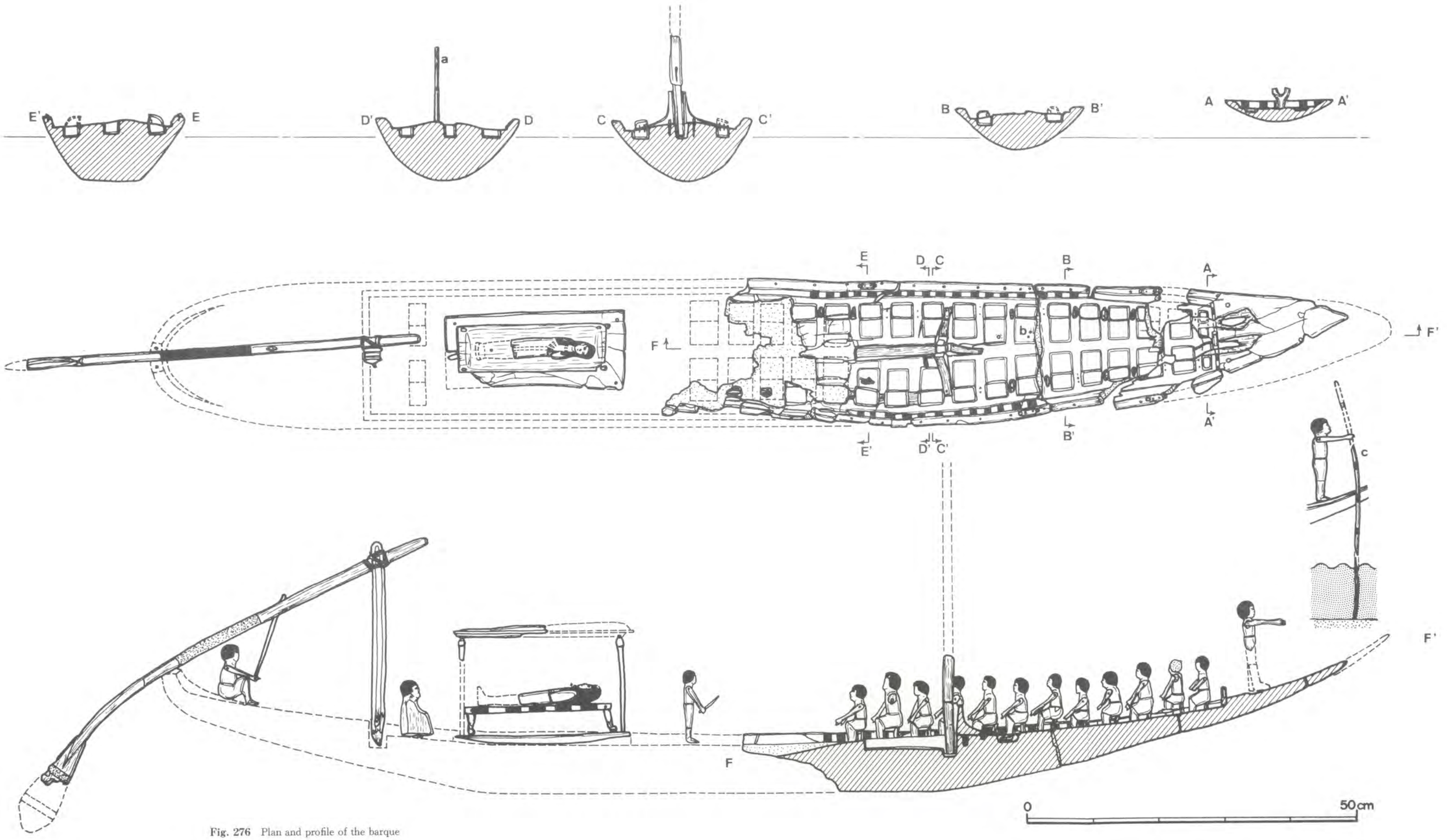


Fig. 276 Plan and profile of the barque

Tab. 41 NUMBER OF CREW UNCOVERED

Oarsman	26	Sailor	3	Officer	4
Pilot	1	Priest (head)	1	Steersman	1
Owner	1	Fragment (head)	7	Fragment (body)	7
Fragment (body with head)	2				

Tab. 42 COLORING OF THE BARQUE

HULL

Outside	Yellowish brown over plaster
Forecastle	Red ochre
Beam, thwart	Red ochre
Gunwale	Red ochre (top), black stripe (inside)
Deck plank	White

STEERING GEAR

Steering oar	Red ochre with a black band (faint) on the stem
Steering post	Red ochre

EQUIPMENT

Mast stepping	Red ochre
Mast, spar	Red ochre
Crotch	White
Cleat	Red ochre
Mooring stake	Red ochre
Mallet	Red ochre
Gangplank	Red ochre

CREW

Skin	Red ochre
Hair or wig	Black
Eye	Black and white
Cloth	White

MUMMY

Hair or wig	Black
Skin	Red ochre
Eye	Black and white
Floral collar	Blue, green, red, etc.
Body	White ?

FUNERARY EQUIPMENT

Canopy : Roof	Yellowish brown
Canopy : Column	Red ochre
Bier	Red ochre (top and legs), vertical black stripe (longitudinal side)
Foundation	Yellowish brown (top)

by the long rectangular slot, between the 10th and 13th thwarts (Fig. 277). Here the structural function of the central beam is taken over by two lighter beams running on either side of the slot. On the other hand, the sub-beams on each side of the main deck continue without interruption.

Seat and deck plank. On the main deck, the seats for oarsmen and the deck planks are arranged symmetrically on both sides. These seats and planks were detected in sixteen rows on the starboard side and fifteen on the port side, including those carbonized. Each seat consists of a stool and a rectangular hollow for the oarsman's feet. The stools are fixed on the thwarts by two thin wooden pegs, except in the case of the 9th stools, which are set on the knees of the mast stepping. The oarsmen were facing the stern and fixed on the stools by wooden pegs (Figs. 276 and 283-a). On fifteen of the remaining seats, the oarsmen were in their original positions, but it is unknown how many seats and planks had existed originally (Tab. 39).

Between the first and second thwarts, there is an oblong hole 2.1 × 1.5cm at each side of the main deck. They are narrow and shallow compared with the foot holes of the oarsmen's seats. It is supposed that each hole was the place for a standing figure, such as an officer.

The deck planks swell slightly and are painted white. On an actual barque, they were removable in response to necessity and the under space used for storage. The 9th to 11th deck planks

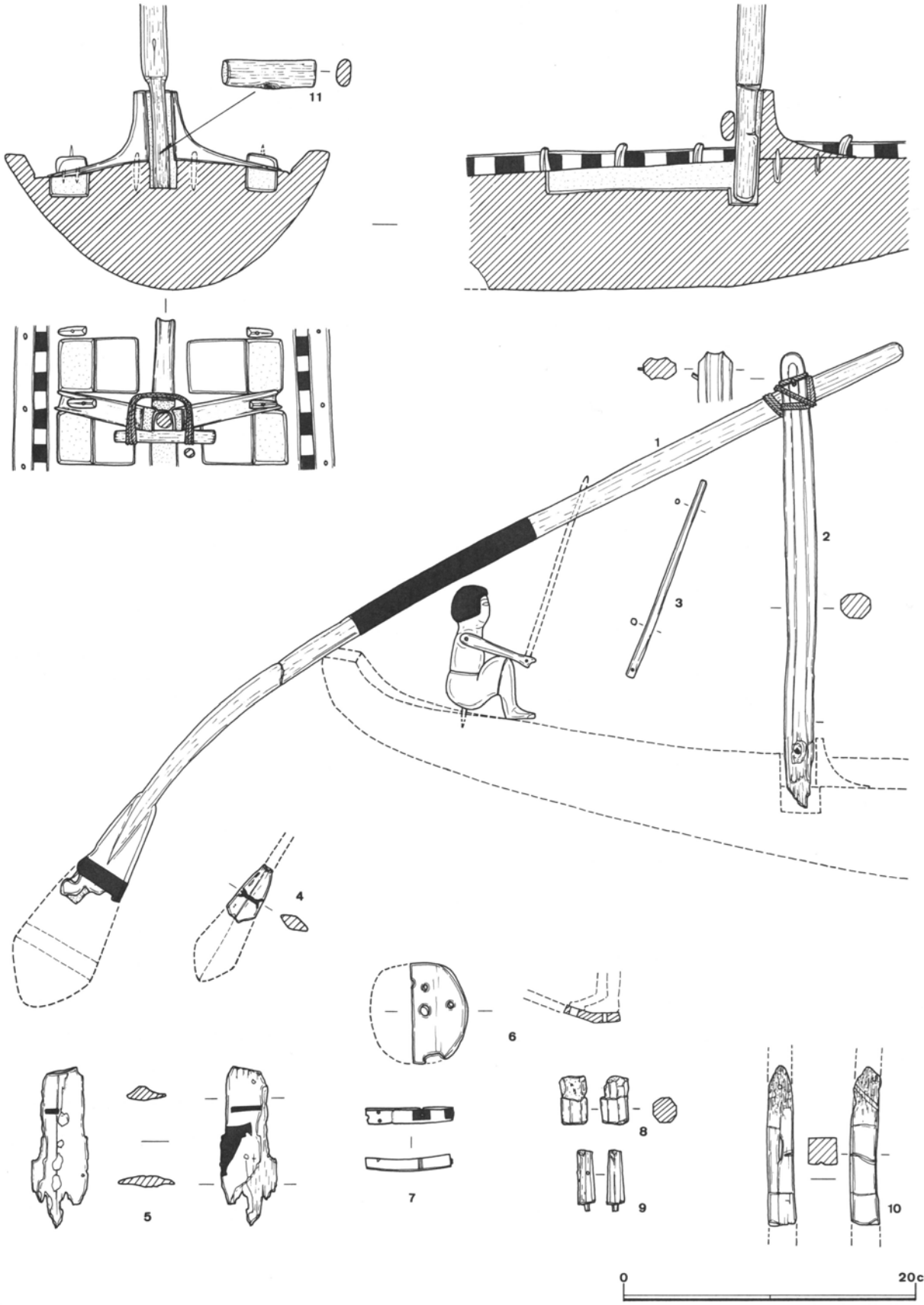


Fig. 277 Mast stepping, steering oars and other equipment

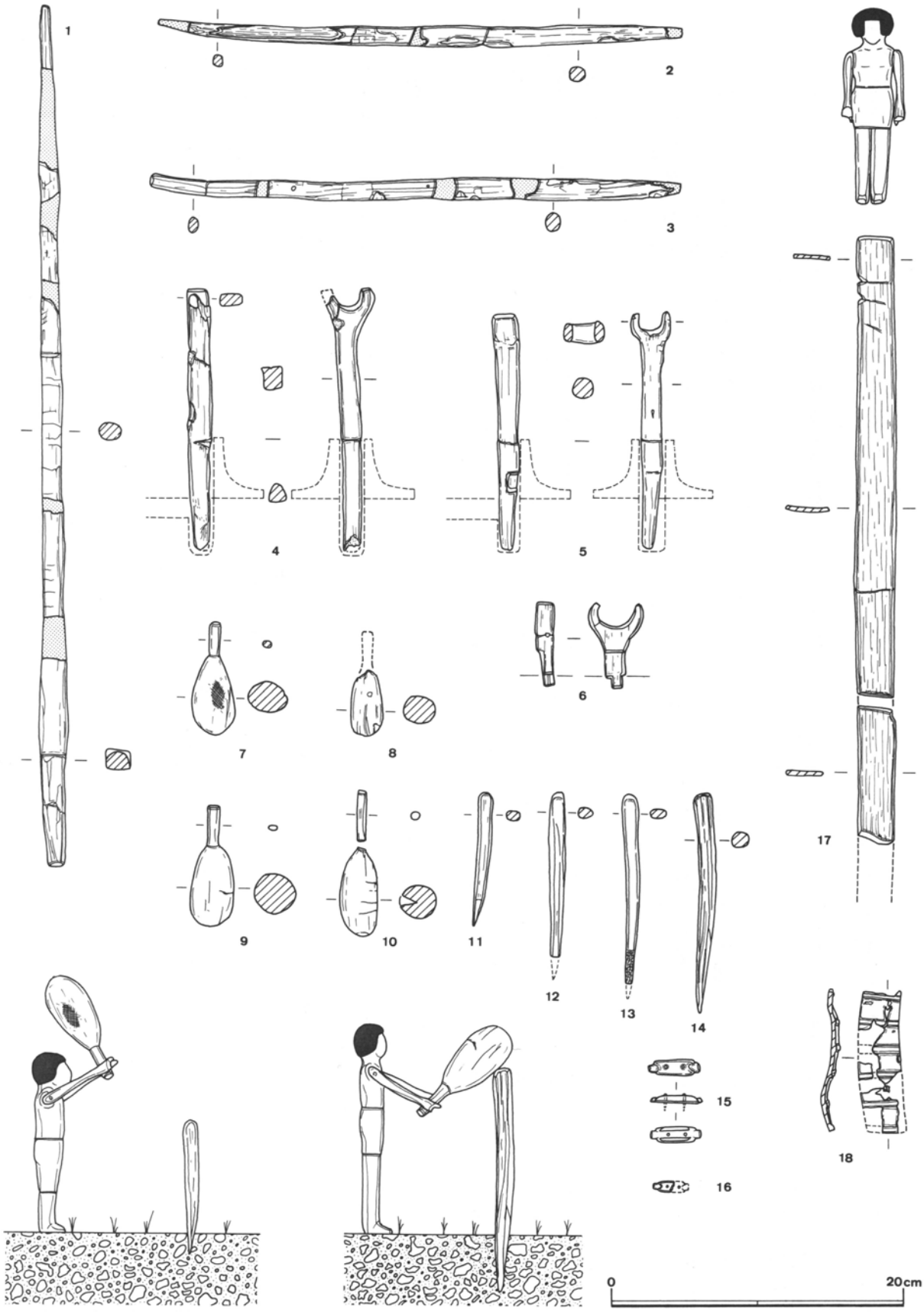


Fig. 278 Mast, spars and equipment

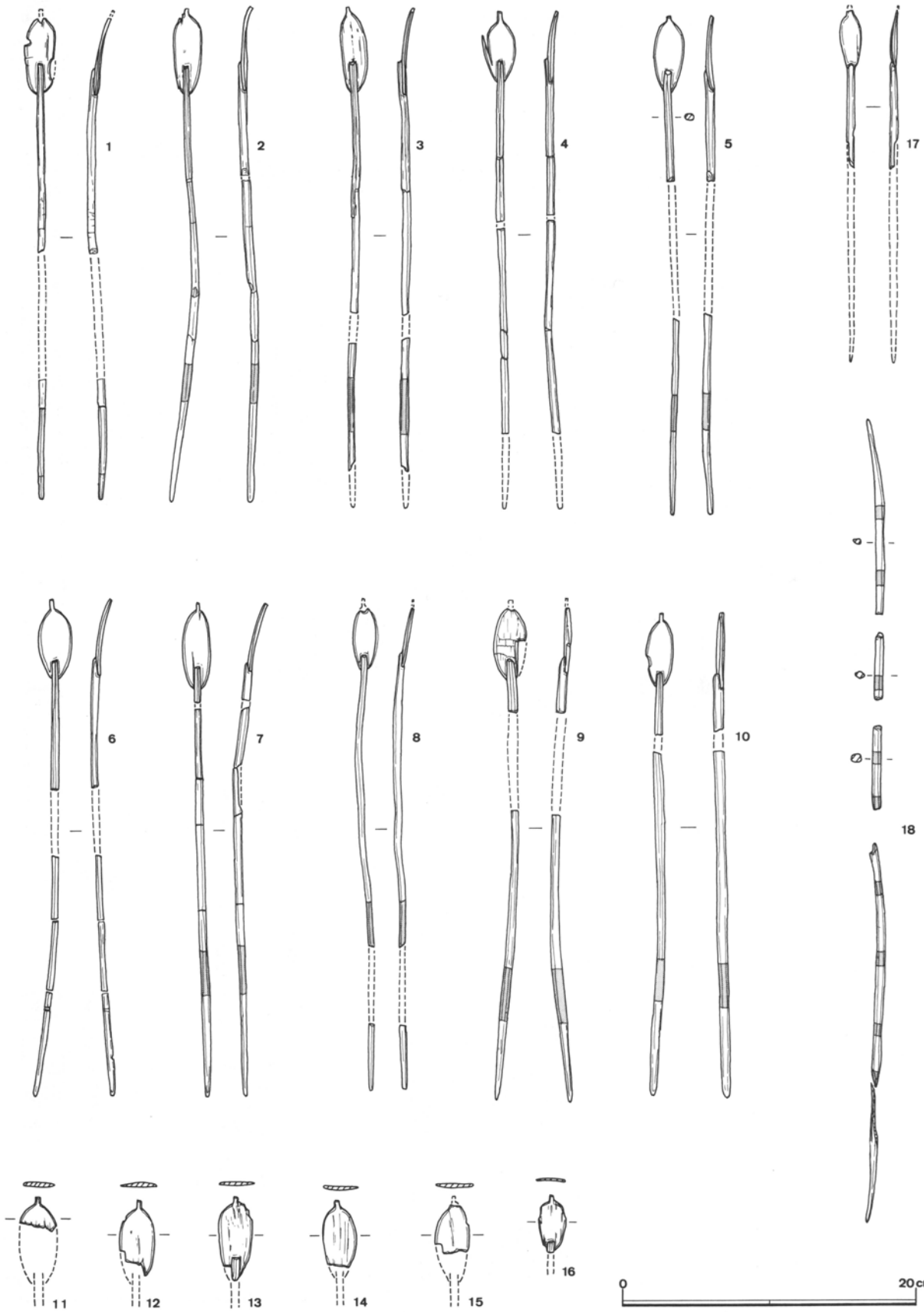


Fig. 279 Oars and punting pole(?)

are smaller than the others, in order to accomodate the long rectangular slot and the lighter central beams. On the 6th deck plank of the port side there are a pair of small holes with fragmentary wooden pegs which show that the figure of a crew had been fixed there (Figs. 276-b and 283-b).

Mast stepping. In the center of the main deck, a mast stepping is provided in order to fix the mast when the barque was under sail and to support a mast crotch (see below) when the mast was not in use (Figs. 276, 277, 283 and 284).[5] The stepping consists of three L-shaped knees, one pegged fast to the central beam and the others, with the stools of the oarsmen on them, to the 10th thwart. The inside face of each knee is curved to fit snugly around the mast or the mast crotch and hold them firmly in place (Fig. 277).

In addition to the knees, a short, thick bar which was found on the deck would be used for fixing the mast or the crotch. It is supposed that this was used horizontally behind the mast or crotch and secured to the knees by rope thus effectively holding the mast or the mast crotch (Figs. 277 and 284).

A tall rod stands beside the stepping on the starboard side (Figs. 276-a and 283-c). It is possible that a flag or emblem might have been hoisted on it, but this is unconfirmed.

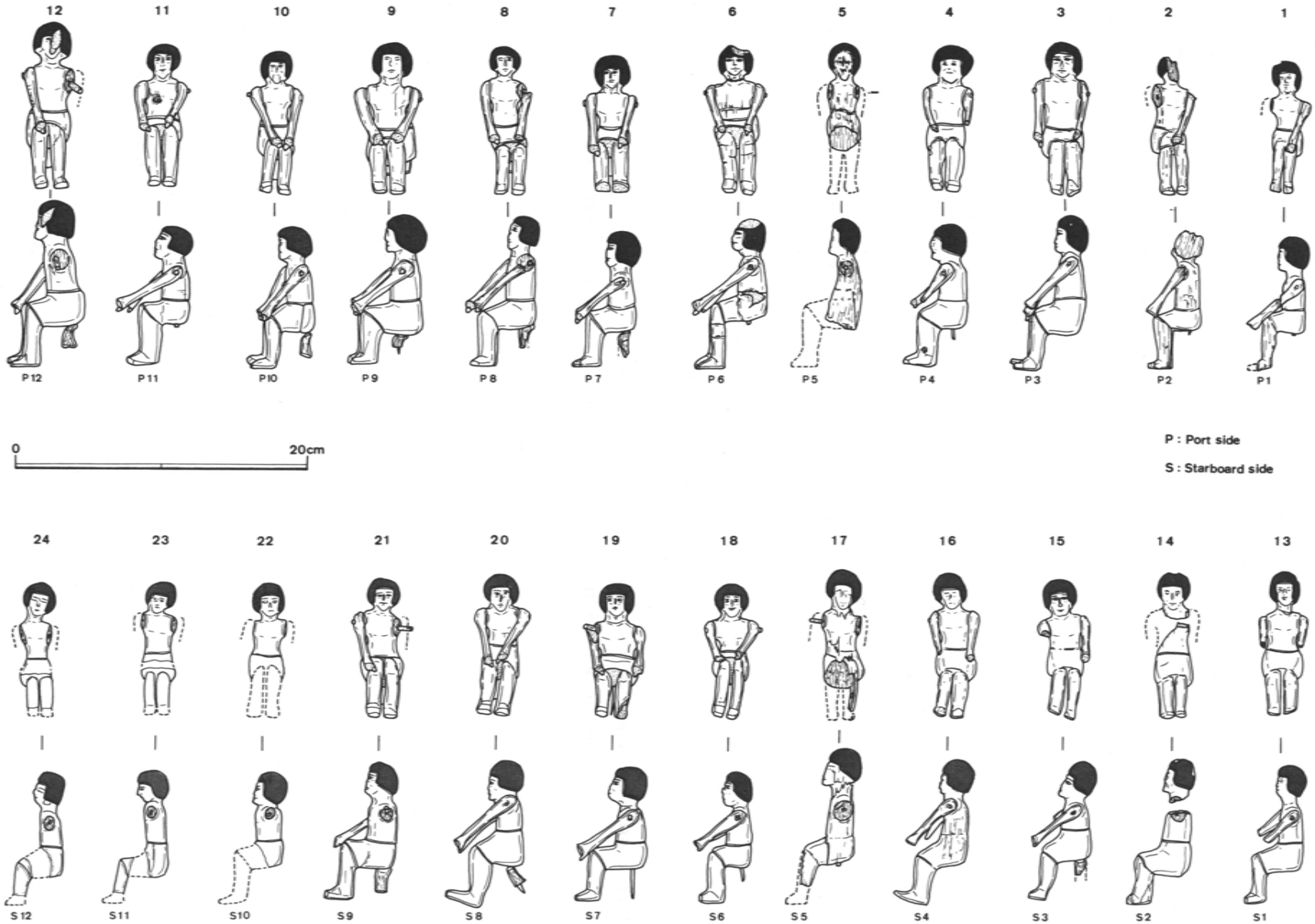
The long rectangular slot opens behind the stepping and by the aid of this slot, the mast, when not in use could be reclined easily toward the stern without pulling it up from the deck, and then rested on two crotches, a tall one set in the stepping and a short one at the front of the main deck (Figs. 283 G-G', 285 and 286). When such a barque was under sail, some blocks of wood may have been put into the slot to assist the interrupted thwarts and beam in giving a bit more rigidity for the hull and to secure space for crew activity.

Mast crotches. Three crotches which served as mast-rests were found around the hull. Two of them, 16.5cm and 18cm, are tall and the other, 6cm, is short.[6] In any case, the crotches are all painted white (Fig. 278 nos. 4～6).

The lowered mast and two spars would have rested on the crotches while the barque was being rowed. A tall one was set in the stepping instead of the mast itself and the short one was undoubtedly erected by mortise in the center of the 1st thwart or nearby, judging from some other examples from this period.[7] On the lower half of the tall crotches, one side is flat, so as to enable the bar to be more firmly bound to the stepping by rope (Figs. 283, 285 and 286). It is unknown why two tall crotches were found, but one of them might have been a reserve. However, it is also possible that it belonged to another boat.

STEERING GEAR (Figs. 276 and 277. Pl. 65 no. 1) : The steering gear consists of a steering post, a long steering oar (rudder) and a thin tiller all of which had been knocked off and damaged. The steering oar, in particular, had been broken into some fragments and the lower half of the blade burned, while the bottom of the steering post had been partially burned. They were originally set over the mid axis of the poop deck which is now lost. Judging from their form, they belong to a type of barque seen in the Middle Kingdom[8] used for actual use.

Steering oar (Fig. 277 no. 1). The large steering oar is similar in form to that of an oar for rowing. It consists of a large blade and a long stem with a black band which probably represents tarred rope. The stem shows a rounded section. The steering oar was undoubtedly fastened to the upper part of the post erected at the front of the poop deck. The lower part of the steering oar would be supported by a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P12
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P10
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P8
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P5
P4
P3
P2
P1
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20cm
P : Port side
S : Starboard side
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23
22
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18
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Fig. 280 Crew

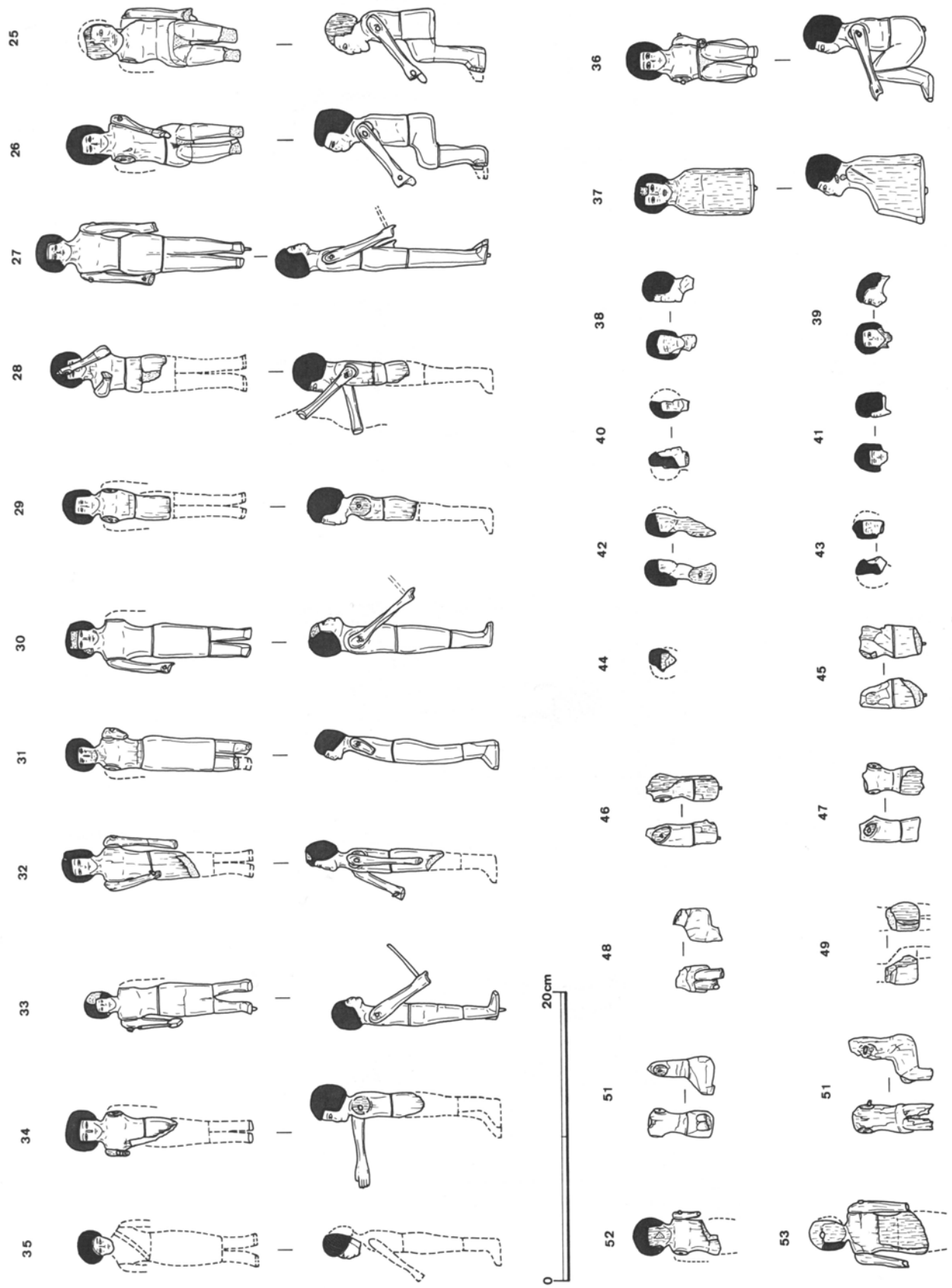
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Fig. 281 Crew

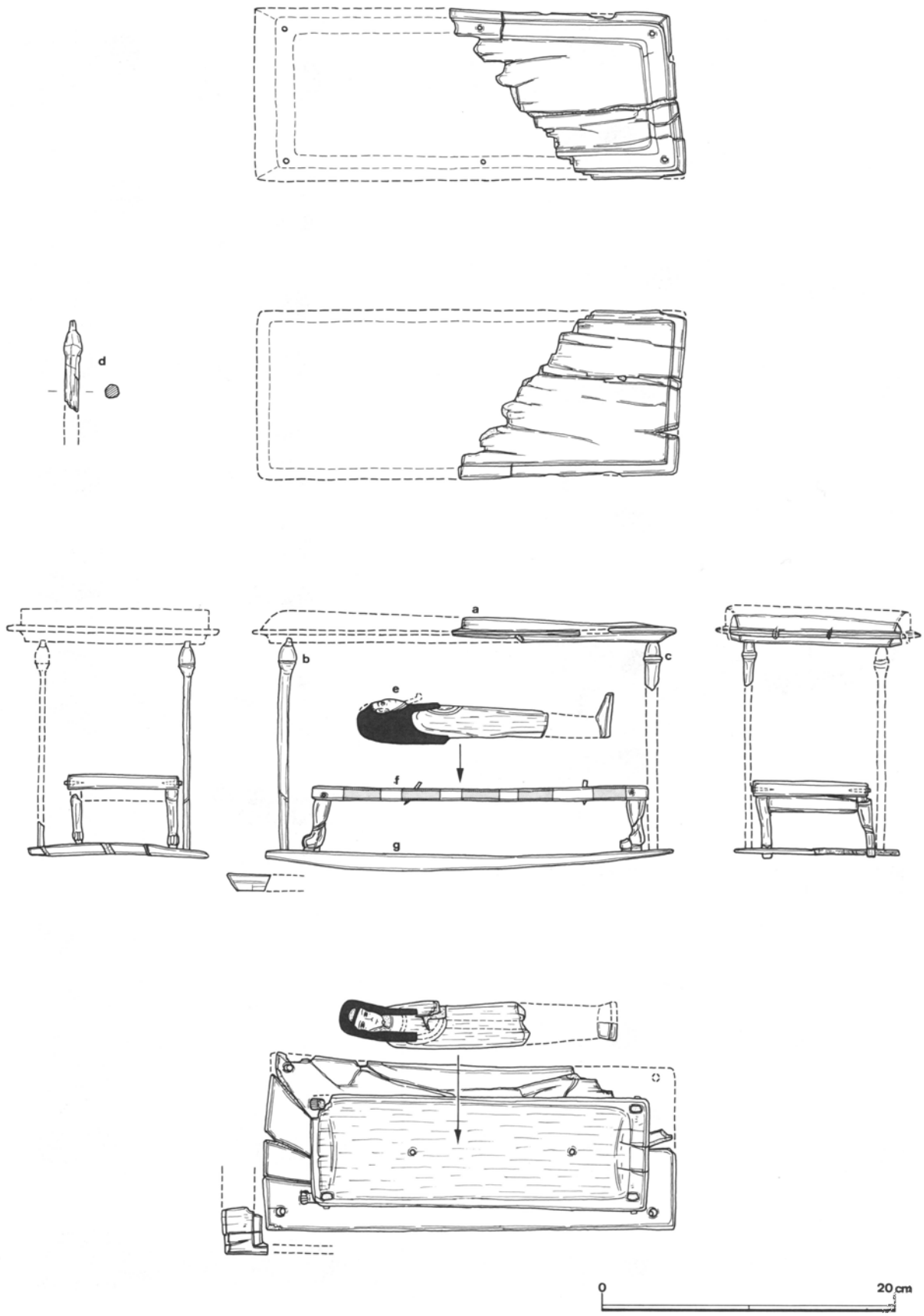

Fig. 282 Mummy, canopy, bier, etc.

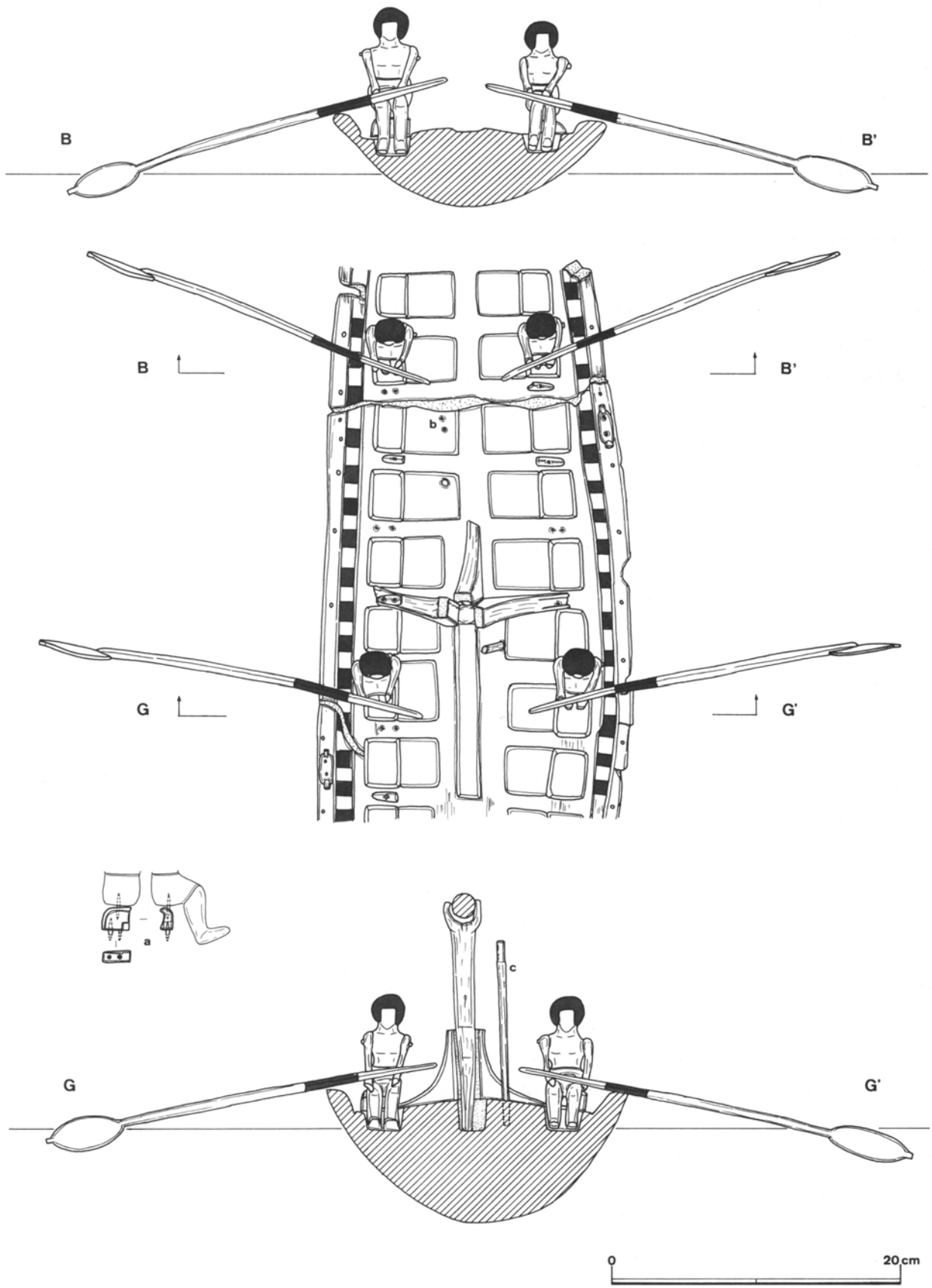

Fig. 283 Position of the oarsmen

rest at the edge of the stern and when the barque was moored to a bank or wharf, the tiller would be pulled out and the top rope removed so that the assembly could be be stowed on deck until the next sailing.[9]

Tiller (Fig. 277 no. 3). A little less than 24cm from the top of the stem, a diagonal hole is pierced for the insertion of the tiller. Though the stem is missing the tiller, a thin stick which was found near the east wall might belong to this barque. This stick is pierced with a hole through which a cord or peg was passed for lashing it to the hand of the steersman which also was pierced.

Steering post (Fig. 277 no. 2). The tall eight-sided steering post[10] was erected at the front of the poop deck. The upper half of the post is slightly grooved on the front and back faces, and at the top it is notched. On one side near the top, a wooden peg is fitted into the post so that the rope securing the steering oar to the post would not slip.

Other steering oars. Besides this steering gear, two fragments of other steering oars were found (Fig. 277 nos. 4 and 5). One of them is part of a blade. It is a similar type to that mentioned above, though smaller. Another fragment is also part of a blade. It is larger in size, but as it has been broken badly, the details are obscure. On the surface of these, some black color remains and it must represent the black tarred ropes used for joining the blade to the stem. Though we could not find anything else relating to these steering oars, their existence suggests that at least two other barque models, were furnished in this tomb.

MAST, SPARS AND SAIL (Figs. 278 nos. 1～3, and 284. Pl. 64 no. 2) : The mast and two spars had been broken into many fragments and scattered around the hull. The sail had been folded on the deck, but the details are unknown, because it had been reduced completely to ash. There was no evidence of the rigging. A fragment of either the mast or crotch was found within the slot behind the stepping. Some other unidentified fragments (Fig. 277 nos. 8 and 9) may also belong to equipment related to the mast or rigging.

As the mast and the spars are badly damaged, their dimensions and the structural details are unknown precisely. This model would not have been rigged, because it was rowed by many oarsmen, so that the mast and two spars would have been resting on the crotches.[11]

OARS (Figs. 279 and 283. Pl. 63 no. 2) : All oars had been broken into many fragments, and most of them were found mainly on or around the hull. The oarsmen are shown in a rowing posture and the oars would originally have been fastened by cordage loops to the hands of the oarsmen, however no oar was found in position. Several oars, perhaps extras, had been put on the main deck in front of the stepping.

In spite of damage about twenty oars were discerned. They are possible to classify by size : large, medium and small, most of them being of medium size. The different sizes of these oars show that one or more other models were furnished in this tomb. Each oar consists of an oval shaped blade with a point on the tip and a long, thin stem.[12] A black band around the stem must represent the black tarred ropes used to prevent wear when rowing.

MOORING STAKES AND MALLETS (Fig. 278 nos. 7～14. Pl. 65 no. 3) : At least, four stakes and four

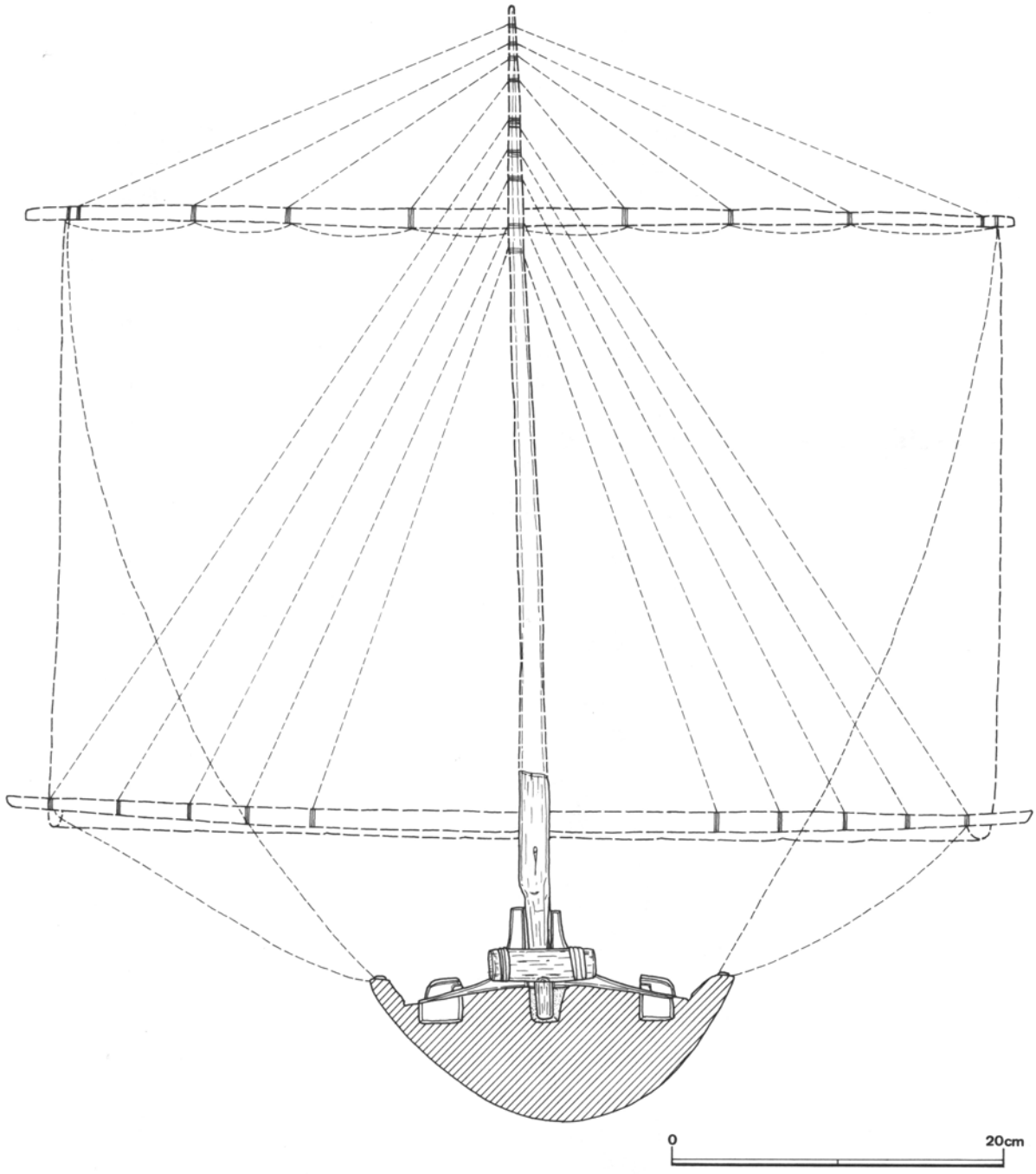

Fig. 284 Supposed reconstruction of rigging form

mallets were found, a pair of which were on the main deck (Fig. 278 nos. 7 and 12). Their condition was good. The plural existence of these also strongly suggest that other boats were furnished in this tomb. These stakes and mallets were used for mooring a boat.[13]

GANGPLANK (Fig. 278 no. 17. Pl. 64 no. 1) : This long, thin board was found on the main deck[14] and is presumed to have been used as a gangplank. Two fragments were recovered, however, a portion is missing.

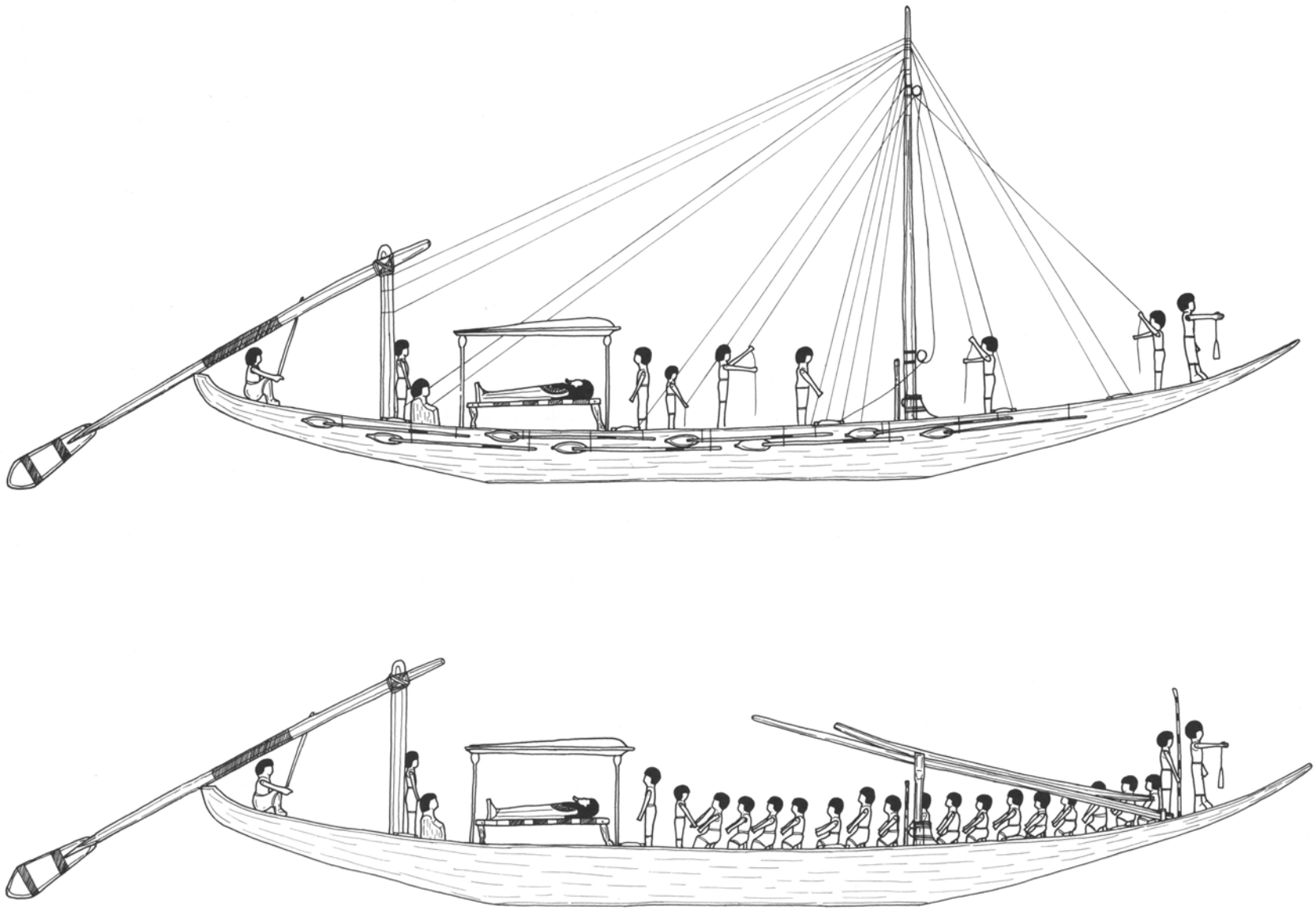

Fig. 285 Reconstructed navigation forms

OTHER FRAGMENTS : Some fragments of doors were found beside the hull (Fig. 278 no. 18. Pl. 64 no. 4) and were undoubtedly part of the wooden model. Such type of door usually belongs to a model house, a workshop or barque cabin in the Middle Kingdom.[15]

These fragments raise a question. If they had belonged to a cabin and if the cabin had been put on our barque model, what was its position in relation to the funerary bier ? Had the squatting figure of the owner been in the cabin ? If a cabin had been on the deck of this model, its original length must have been longer. It is possible that a cabin would not fit on this deck, in which case these doors would have belonged to another barque without funerary equipment, or to a different kind of model.

These door fragments, plural crotches, stakes, mallets, and steering oars from the tomb suggest, as mentioned above, the existence of at least one or two other vessels. In addition, the fact that oarsmen, cleats, oars and columns of the canopy can be classified into some different types according to size and style supports this prospect. It was not unusual for a man of a higher social class to have prepared several models as funerary articles for his tomb, such as seen in the tomb of the Chancellor Meketre at Thebes.[16]

In addition, other unidentified fragments might belong to this model. Fig. 279 no. 18 resembles the stem of an oar but is painted with a series of short black bands. The original shape and purpose are unknown, but it might be a punting pole (Fig. 276-c).[17] Fig. 277 no. 6 is perhaps a footstool for the pilot, and if so, it would have been set on the forecastle. Fig. 277 no. 7 is an unidentified fragment pierced by three small holes and its face is painted in red and black. Fig. 277 nos. 8 and 9 are fragments with polygonal section painted red. Fig. 277 no. 10, damaged by fire, might be a part of the steering post. It is painted in red.

CREW (Figs. 280 and 281. Pl. III. Tab. 40) : The crew was found mainly on the deck and around the hull and most of them were more or less damaged. For example, many arms were out of joint, while others were burned badly or broken. Many small fragments of figures, the oarsmen's feet or the lower half of their bodies, were found on the carbonized rear part of the main deck, also in a carbonized condition. Many figures had been thrown off the deck when some rocks had fallen from the ceiling, however, fifteen oarsmen remained in their original position.

This model was provided the personnel usually needed for such a boat. The crew consists of oarsmen, a steersman, pilot, officers, standing men, priest(?), and owner.[18] Now, thirty-seven figures of the crew are in complete form including those repaired or partially restored (see also, below). Besides these, there are the upper halves of two figures which cannot be identified due to damage (Nos. 52 and 53). Added to these are seven fragments each of heads and bodies (Fig. 281 nos. 38～51). If these heads belong to the bodies, the crew would amount to forty-six (Tabs. 40 and 41). But in this simple reckoning, small fragments of bodies, heads, legs, and arms are excluded. It is certain that not all the figures belonged to this model, for at least, two of the oarsmen are different from the others in size and in looks (Nos. 25, 26) and would belong to another boat. It is suggestive also that they were found in Areas D and F apart from the hull. After all, it is impossible to know exactly how many figures were provided with this model.

Oarsmen. Twenty-six oarsmen including the repaired or partially restored ones are in their original

form (Nos. 1～26). In addition, seven fragments of other bodies are evidently oarsmen (Nos. 45～51), so that at least, the oarsmen numbered thirty-three.

Each oarsman is fixed to his stool by a thin wooden peg (Fig. 283-a). When the model was found, fifteen oarsmen were in position sitting on their stools facing the stern (Figs. 276, 283, 285 and 286) and arms extended in a rowing attitude. The oarsmen wear only a short white skirt.[19]

The two oarsmen (Nos. 25 and 26) which are different are larger and have a hole drilled in their clenched hands.

Officers. There are four standing officers (Nos. 30～33). Three of them had been thrown off the deck, but a single figure (No. 33) was found in fallen state on the main deck. The officers wear longer white skirts and at least two of them hold or held sticks in their right hands,[20] unlike the standing men mentioned below.

Standing men. Three standing figures (Nos. 27～29) had been thrown off the deck, and therefore their original positions and roles can only be presumed. Considering that one of them has thin pegs on the soles of his feet and that fragmentary pegs remain in a pair of small holes pierced in a deck plank (Figs. 276-b and 283-b), this type of figures must have been fixed directly on the deck.

One figure (No. 27) is wearing a short white skirt like the oarsmen, but as the two other figures have lost their legs, the length of their skirts is unknown. Though there is a possibility that they are officers or sub-lookouts, one figure (No. 28) looks like he is engaged in raising or lowering the sail. His clenched fists have holes drilled through. In the case of a barque under sail, some rigging might have been fastened to his hand.[21]

Pilot. This figure (No. 34) was found in Area D away from the hull. If this figure had belonged to this model, it would be standing on the forecastle looking forward. Though the lower half of his body is lost by fire, his right arm with open hand is outstrechted.[22] His duty was to point out a proper course for safe navigation. His left arm is missing. Except for his arm, his appearance is not different from the officers.

Steersman. This figure (No. 36) was found lying on the deck with the officer (No. 33) mentioned above. Originally, it would have been squatting on the poop deck holding the tiller of the steering oar (Figs. 276, 277, 285 and 286). His left fist is pierced with hole which would have been used in tying it to the tiller with a cord. His right hand is missing. Judging from the fragment of a peg remaining in his buttocks, he had to be installed directly on the poop deck (Fig. 277). He wears a short white skirt.[23]

Owner. This figure (No. 37) is carved in one piece. The owner is draped in a long white garment. A part of a peg remains in his bottom and he might have squatted beside the mummy, but this can only be supposed.[24]

Priest (?). The fragment of an unusual head is noteworthy (No. 35). The hair is expressed by many parallel grooves. It seems to represent a man with heavy wig or perhaps a woman. The head suggests that this person was engaged in a special activity, probably as a mortuary priest or a mourning woman.[25]

Techniques and appearance. The body was carved out of a single block of wood except for the arms. Each arm with a clenched hand was carved separately, and then the arm was joined to a shoulder by a thin wooden peg. Some arms of the standing men have a hole in the hand. These hands had presumably held the threads extending from the rigging. In all cases the hands show the thumbs but the

fingers are not indicated. Both legs are carefully separated by carving out the wood between them. The only exception is the owner whose arms and legs are not represented.

Except for the owner who was dressed in a white robe, the crew is wearing only white skirts. The skirts of the oarsmen, steersman and standing man are short. The officer's skirts are long. These two types of skirt undoubtedly are due to the difference of their duties. The skin is red in all cases. These figures seem to be similar to some models found at other contemporary sites, so they would be a kind of stock model kept in storage by the craftsmen (see p. 30).

MUMMY AND FUNERARY EQUIPMENT (Fig. 282)[26]: Besides the model of a mummy, articles related to the funeral consist of a bier with four legs, and an open canopy with four flower-bud columns. They originally were set on a flat board foundation, but all had slipped off the barque (Fig. 23) and some parts were damaged. Except for the base of one column, the other columns and the roof were not in position nevertheless, based on the surviving parts, it was possible to reconstruct the original setting. They would have occupied a place on the missing rear half of the main deck behind the mast stepping (Figs. 276, 285 and 286) as seen in similar models from this period.

Canopy (Fig. 282-a). The canopy, though not in place when found, consists of a shrine shaped roof painted yellow and four columns with flower-bud capitals. The front half of the roof had been burned, but considering the form of the remaining rear part, the roof would have risen and then curved down at the front[27] and undoubtedly would have been joined to the columns by round mortises and tenons. One round mortise is situated at the mid-point of one side of the roof. As no corresponding hole exists on the foundation, it is supposed that the mortise would have been used for hanging some kind of ornamentation.

The red painted columns had been fitted into holes in the foundation board. One of the columns had kept its original form in spite of being broken into two pieces (Fig. 282-b). The original position of this column is apparent because the lower piece remained in the hole at the left corner of the foundation. The second column had lost the lower part of its stem (Fig. 282-c), and its original position is unknown. In addition, another column capital was found, but it is larger than the others and shows different features in modeling (Fig. 282-d) and thus must belong to another barque.

The canopy is that of a type of shrine or baldachin found in ancient Egypt usually on funerary barques. The canopy would shade the mummy from the blazing rays of the sun.

Mummy (Fig. 282-e). The mummi-formed figure might have been modeled after an actual anthropoid coffin, probably of the dead that was placed in the tomb[28]. It is possible that this figure symbolized the desire of the dead, that is, by preparing the figure, and the funerary barque itself, the dead would hope to be added to the seat of Osiris or to the followers of the Great God.

Due to the damage by fire, it is bent slightly to the side and though some fragments of the feet was found, the lower part of the legs are missing. The figure would have undoubtedly been stretched out upon the bier under the canopy. Behind the shoulder of the figure there is a hole with the fragment of a peg which was used to fix it to the bier, and judging from the two holes with pegs on the bier, one more hole should have been at the back of the missing legs of the figure.

The mummy has long black hair or a wig, and a trace on the chin shows that this figure once had a

beard, though it has been lost. The ears are carefully modeled. The colors of the broad floral collar on the breast are faded. Under the collar a vertical narrow band had extended toward the feet when the figure was found. On the band, were some mortuary inscriptions where the name of the dead might have been given, but now unfortunately, they have faded so as to be hardly discernable. Except for the head, the colors on the figure have suffered wholly from fire.

Bier (Fig. 282-f). The bier is a single board which is slightly sunken on the top, and supported by four legs in the shape of a lion's feet complete with toes.[29] The feet are expressed elaborately showing toes and muscles or tendons and all are in remarkably good condition. The plank and the legs are complete and are joined by mortises reinforced with a thin peg driven in from the side of the plank. In addition, under the plank there is a rectangular piece of wood joining the two rear legs. The legs and the wood are also mortised together. Traces of a similar piece of wood, now missing, also remain on the bier and forelegs.

The bier and legs are painted red, and vertical black stripes are painted on the longitudinal sides of the plank, but they are now almost completely faded.

Board foundation (Fig. 282-g). The flat board foundation for the bier and canopy is suffering from some cracks and has lost a portion of the right rear corner. It gradually tapers in thickness toward front and rear. The top surface is yellow but its back is not painted. Eight holes are pierced in the board and the columns for the canopy and the legs of the bier are fitted into them.

DATE, DESIGN AND USE (Fig. 286)

In many respects, the form of model barque shows that it was made during the Middle Kingdom, probably between the late 11th and early 12th Dynasty. This prospect is based on the fact that the proportions and the structure of this model are exactly the same as boats in wall drawings and other models found dating to that period.[30] This model has been restored based on such data. If our restoration is accurate, and we are convinced it is, the hull is narrow in relation to its length. As for the style of navigation, it is shown being rowed (Fig. 285). This barque belongs to a faster type propelled by many oarsmen, probably numbering over thirty. On the deck, mooring stakes, mallets, a gangplank and

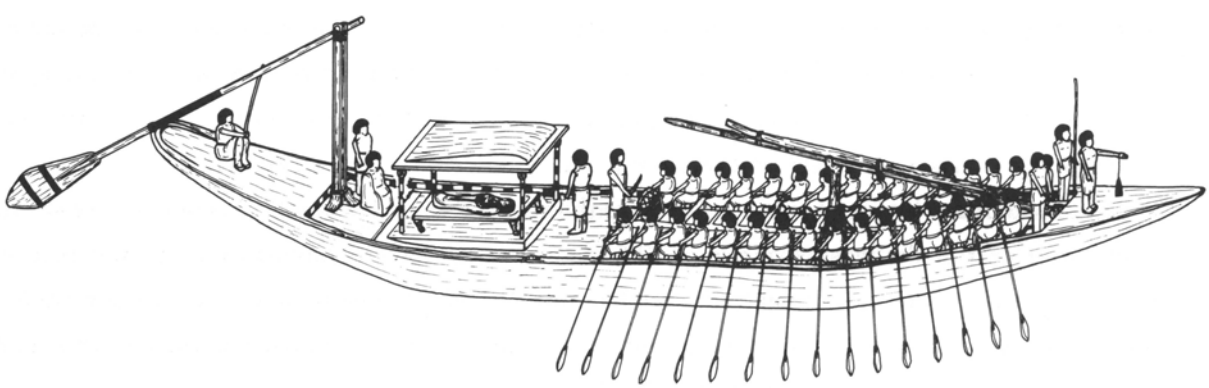

Fig. 286 Reconstruction of the barque

reserve(?) oars had been put. At the same time, this boat would have had a mast, spars and sail which could be rigged when they were required (Fig. 284).

The shape of the hull is different from that of the typical funerary barque of ancient Egypt. A funerary barque usually had a remarkable bow and stern curved upward and equipped with twin steering oars.[31] Such a barque was modeled after a very old form of papyrus boat[32] originally made of long bundles of papyrus reeds lashed together. Such papyrus boats were later used as models for barques used in funerary voyages. The design of this model shows, rather, the features of a Middle Kingdom "traveling boat".[33] Presumably, this model would belong to the type of boat which was pressed into service as a funerary barque in response to a necessity, and at such times would have been set up with temporary funerary equipment on the deck.[34] In the case of an actual boat, they would have been removed when they were not in use after the funeral.

In many points, the elaborate details of this model barque are quite realistic. Its construction suggests that the original barque could travel without being towed. It might have been modeled after an actual barque[35] used to transfer the dead from his residence, presumably on the west bank, to the tomb constructed on the east bank. Such a barque was necessary for crossing the river and the boats had an important bridge-like function in ancient Egypt (Fig. 286).

A different explanation concerning the model is also possible. This barque might have been modeled after an actual boat which had engaged in the last journey of the dead to and from Abydos. When a man died, his spirit journeyed on a ship upon the waters of the "Goodly West" in addition to making a voyage to the holy land, Abydos. The purpose of the journey to Abydos was undoubtedly so that, as the ancient Egyptians believed, the dead spirit could be added to the following of the Great God, Osiris,[36] and if at all possible, after death they desiered their corpse to make the journey on a funerary barque.

On the contrary, it is possible that this barque might have just symbolized such a sacred voyage rather than an actual one made by the owner of this tomb. It is not so difficult, however, to suppose that the owner of this tomb at Akoris had possessed many kinds of boats and barques with well-trained crews. This person must have used several kinds of vessels each for a particular purpose, that is, for official duties or for his private travel with the family.

This tomb would have been furnished with plural models, at least two, as stated above.[37] In the Middle Kingdom, the noble sometimes furnished their tombs with a pair of barques in the same proportion.[38] One being rowed and the other under sail. These boats had symbolized the desire for the sacred voyage to and from Abydos. The fact that many bronze figures of Osiris were found in and around the tomb of Akoris testifies to this desire, also. If the owner of this tomb or his chief mourner had furnished the barques according to such a custom, the partner of our model might have been set in the state of full sail for the sacred voyage to Abydos while ours represented the return.

If this model was an exact model of an actual barque of this period, what was the size of the latter ? We can assume the size of the actual one based on the dimensions of this model, and particularly the standing figures. Assuming that in ancient Egypt, men averaged about 167cm,[39] then the figures of the av. 12.1cm standing men of the model are carved on a scale of 1/14. Using this 1/14 scale, the maximum 22.4cm width of this model would be 314cm in the actual barque and the assumed length 190cm would be

assumed 2660cm. The width 2.5cm of a space for oarsmen's feet (Tab. 39-b) would be 35cm and the interval 4.7cm between stools (Tabs. 38-a and 39-a) would be 66cm (Tabs. 37, 39 and 40).

However, in an actual barque, this 35cm and 66cm size for a oarsman's space would be not enough. Probably, the oarsmen would be prevented from rowing by other oarsmen.[40] The hull of this model should be made on the larger scale than the figures. Such a lack of uniformity has usually happened on the wooden models of this age, one notable case being the famous models from the tomb of the Chancellor Meketre at Thebes.[41] A different scale for figures and hull, usually result in figures being on the larger scale than the hull. The ancient Egyptian craftsmen of this age seldom adhered to a uniform scale and seem to have not felt a restraint about the whole balance of a model.

The craftsmen stocked many figures and various kinds of parts for models in their workshops preparing for demand.[42] Figures in particular could be furnished and used indiscriminately different kinds of models. On the other hand, judging from the large variation shown in the models, the main parts, like the hull of this model, had to be made specially according to the order of the customer,[43] thus resulting in the different scales for hull and figures, an imbalance possibly permitted by the artistic mentality of the ancient Egyptians.

WHO WAS THE OWNER ?

It is well known that the ancient Egyptian nobles desired to possess all their goods in the next world, too. Naturally, they had prepared many funerary articles, some of which were model substitutes. The occupant of this tomb prepared many kinds of models, including the plural barques, in addition to his funerary articles and treasures like the elaborate coffin, statue, bronze mirror, colorful collar of beads and so on.

The quality of this barque model is the finest of those representing the Middle Kingdom so far found. Structurally similar barque models of this period have not survived so well and in spite of the damage, this barque model is important for it reveals much information, for example, the detailed structure of barques, the navigational system and the techniques used in the production of wooden models in this period.

As stated above, it is evident that this barque model was made in the Middle Kingdom and the features of the wooden headrest, the fragment of a wooden statue and the wooden coffin found in the tomb, support this prospect (see p. 182). The barque model had been placed in the tomb with these other funerary articles by the chief mourner who must have been a higher class dignitary or a noble of a nome, probably the 17th, of Upper Egypt.[44] Who could have cut the rock 10m deep and constructed such a large tomb ? Who was buried with the model in this tomb ? What kind of position in government had he held ? Judging from the general situation, it is obvious that the owner of the tomb was a nomarch, a person in the highest social class, or a family member. Whether the fragment of a wooden statue with a double crown found in the same chamber suggests a close relationship between the royal family and the person or not comes into question.

Though the barque model largely survived, the tomb had been plundered of important funerary

articles and then burned. Through these disasters the tomb lost almost all articles with inscriptions, and therefore it is difficult for the present to prove the person's identity, but there is a possibility that many fragments of the coffin containing some inscriptions which were found in this tomb and more research in the tomb area of Akoris will bring to us more concrete information in the future.

CHEMICAL TREATMENT AND RESTORATION

GENERAL VIEW OF THE RESTORATION : Many small fragments were damaged beyond repair or restoration. However, this barque model was restored, as far as possible, based on the data obtained by our studies.[45] At first, in the tenth season (1990), a small trial restoration of the mummy and the funerary equipment was attempted.[46] After the treatment, studies and tentative restoration of these parts,

Tab. 43 MATERIALS USED FOR PRESERVATIVE TREATMENT AND RESTORATION

MATERIAL	PURPOSE AND PLACE
Acrylic resin (Paraloid B72) diluted with organic solvent: [Toluene ($C_6H_5CH_3$), Acetone $(CH_3)_2CO$, density 15～20 %]	For solidifying all fragile parts of the barque
Epoxy resin adhesive mixed with Phenolic Microballoon	For restoring the rear half of the hull and many missing parts, for filling the numerous cracks
Cemedine C : Cellulose type adhesive	For joining many fragments and filling cracks
Wood	For restoring missing arms of the figures, seventeen looms of the new oars, etc.
Dental plaster	For restoring eight oarsmen and the body of a priest
Mineral pigment, dissolved in a solution of Paraloid B72	For painting all restored parts in their probable original colors

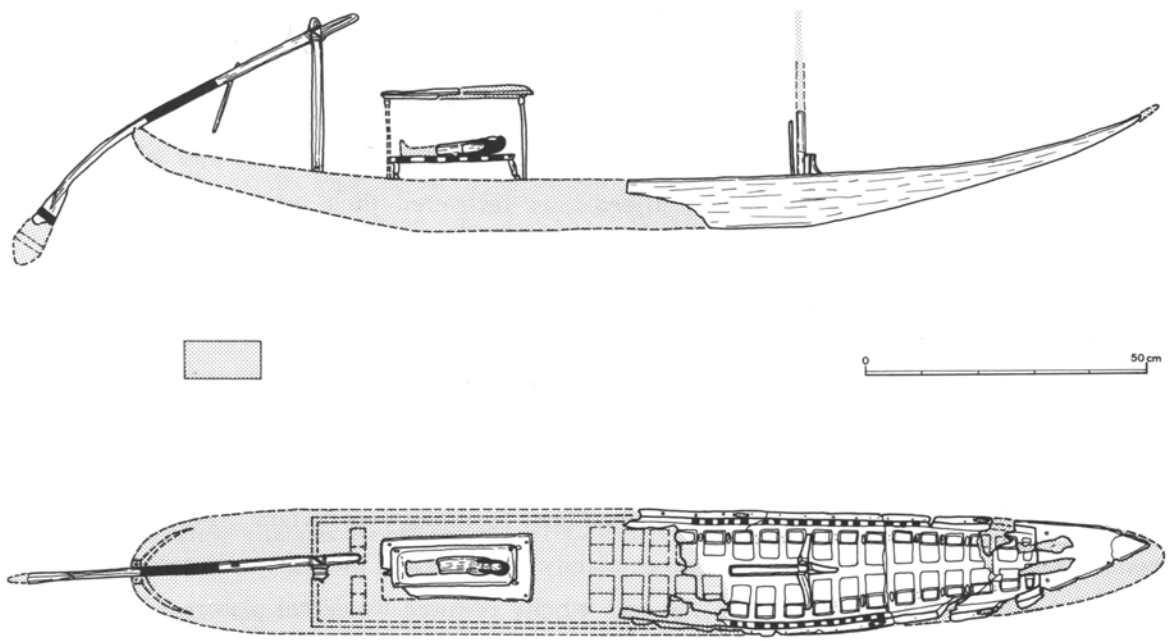

Fig. 287 Restoration of the barque

the general restoration of the model was carried out in the 11th season (1991). The lost portions were restored by using chemical resin, wood and other materials. Then, the repaired or restored parts were painted in their most probable original colors. Finally, our restoration reached the stage where it was possible to indicate the whole image of the barque (Fig. 287. Pls. II and 62).

The work has yet to be finished completely as supplementary work will be necessary, for example the continuous observation of the materials which were used for the restoration, that is, if and how they will change in quality in the future (Tab. 43).

Our restoration work here has been experimental, so that in the future, our non-traditional methods will bring interest, namely, how suitable the new materials are compared with the old, in restoring wooden objects in the Egyptian climate.

REPAIR AND RESTORATION OF EACH PART: At first, acrylic resin (Paraloid B72) diluted by organic solvent was applied in order to solidify all remaining parts. After this basic chemical treatment, each part was repaired and/or joined, while missing parts were restored.

Hull. After the basic chemical treatment, some cracks in the hull were filled and hidden with an epoxy resin adhesive mixed with phenolic microballoon resin. The lost rear half of the hull was entirely restored by an epoxy resin. After completion of the details, that is, the oarsmen's seats, deck planks, gunwales and stern, this restored part was joined to the surviving front half. And then several missing oarsmen's stools and cleats on the gunwale were restored.

Steering gear. After the basic chemical treatment, the broken fragments were glued together. Some lost parts of the blade and the post were restored by epoxy resin. Then the steering oar and the post were put back in their correct position over the restored poop deck as they probably were originally and the oar fastened to the post by new string.

Mast and spars. The badly fragmented mast and spars were solidified by the basic chemical treatment, then they were glued together when they could be identified. The lost parts were restored with epoxy resin.

Oars. All oars had been damaged badly, especially the thin blades which were broken into many fragments. After the basic chemical treatment, the fragments were glued together when possible to identify. In consequence of this repair, fifteen oars recovered their original form. In addition, seventeen oars were modeled newly of resin and wood so as to give each oarsman an oar.

Stakes and mallets. These were in a good state of preservation, so that after the basic chemical treatment, only minor repairs were made.

Gangplank. After the basic chemical treatment, the broken fragments were glued together and cracks filled with the resin.

Crew. Many arms had been knocked off the shoulders of the crew, and after the basic chemical treatment, they were rejoined to the shoulders when their positions were certain. The cracks were filled by resin. And then the lost part of the figures, mainly the arms and the legs, were restored by resin or wood. The body of a man (Fig. 281 no. 35) was wholly restored by dental plaster. In consequence, thirty-seven figures of the crew are in complete form, including the figures repaired or partially restored.

Before removal from the positions in which they were found, each figure of the crew was given a

number and their position and in the chamber condition were recorded. After repair and restoration, the figures were put back in their original or presumed positions on the deck. As eight seats remained unoccupied, eight oarsmen were modeled newly by the use of dental plaster and wood.

Mummy and funerary equipment. After the basic chemical treatment, the damaged portions were repaired or restored with resin.[47] The front half of the canopy, three columns, the mummy's legs and its beard were restored. The cracks in the mummy, the roof and the foundation were repaired by filling with resin and adhesive.

Coloring. All repaired or remade parts were painted according to the colors of the remaining original parts or to the colors as they probably were originally. Parts which were not repaired or restored were left untouched in their faded condition.

Notes

1) As previously reported, the barque model was lifted out over a period of two seasons, 1988-89. *Pre. Re. VIII*, pp. 10-20 ; *Pre. Re. IX*, pp. 5-25.
2) LUCAS, *AEMI*, ch. XVIII.
3) WINLOCK, H. E., *Models of Daily Life in Ancient Egypt* (Cambridge, Mass, 1955), p. 46.
4) GLANVILLE, S. R. K., *Catalogue of Egyptian Antiquities in the British Museum II ; Wooden Model Boats* (London, 1972), p. 20, no. 25361.
5) WINLOCK, *op. cit.*, p. 50, Fig. 85 ; GOTTLICHER, A. und W. WERNER, *Schiffs modelle im alten Aegypten* (Wiesbaden, 1971), Tf. XXXVII.
6) *Pre. Re. VIII*, Fig. 15, No. 10 ; *Pre. Re. IX*, Fig. 13, No. 14 ; GOTTLICHER und WERNER, *op. cit.*, Tf. XXXVII, 5 ; WINLOCK, *op. cit.*, Fig. 86.
7) Their positions are evident, judging from the wall drawings in the tombs at El-Bershe and Thebes, belonging to the Middle Kingdom. VANDIER, J., *Manuel d'Archéologie Égyptienne*, tome V (Paris, 1969), Figs. 102-1, 346.
8) HAYES, *SE.* p. 268. It is assumed to be a modified type of steering gear used in barques of the 6th Dynasty. GOTTLICHER und WERNER, *op. cit.*, Tf. XXVI, XXVII, XXXIII-XXXV, XLIII ; WINLOCK, *op. cit.*, Figs. 70-76, 84.
9) GLANVILLE, *op. cit.*, Figs. 37, 38 ; WINLOCK, *op. cit.*, pp. 48-50.
10) GLANVILLE, *op. cit.*, p. 20, No. 25361.
11) WINLOCK, *op. cit.*, Figs. 33, 34, 71 ; GOTTLICHER und WERNER, *op. cit.*, Tf. XXXVIII-IX.
12) GOTTLICHER und WERNER, *op. cit.*, Tf. XXXVI ; WINLOCK, *op. cit.*, Fig. 86.
13) GOTTLICHER und WERNER, *op. cit.*, Tf. XLI ; WINLOCK, *op. cit.*, Fig. 50.
14) *Pre. Re. IX*, Pl. 4.
15) GOTTLICHER und WERNER, *op. cit.*, Tf. XL ; WINLOCK, *op. cit.*, Figs. 10, 39, 63, 84 ; HAYES, *op. cit.*, Fig. 163. Fig. 163 shows that a real wooden door from the tomb of the 11th Dynasty at Thebes has a construction similar to this model door.
16) WINLOCK, *op. cit.*, ch. IV-V.
17) Similar poles are used for hanging cloth which covers a cabin. VANDIER, *op. cit.*, Figs. 102, 344.
18) The "crew" contains the officers, priest (?), owner and all other figures. GOTTLICHER und WERNER, *op. cit.*.
19) GOTTLICHER und WERNER, *op. cit.*, Tf. XXXVI ; WINLOCK, *op. cit.*, Figs. 37, 41, 43 ; GLANVILLE, *op. cit.*, Fig. 39-b, c.
20) GLANVILLE, *op. cit.*, Fig39-d.

21) GLANVILLE, *op. cit.*, Figs. 17, 46, 59-c ; WINLOCK, *op. cit.*, Figs. 33, 34, 42.

22) GOTTLICHER und WERNER, *op. cit.*, Tf. XIII, XVIII, XXII ; WINLOCK, *op. cit.*, Figs. 33, 35-37, 40-43 ; GLANVILLE, *op. cit.*, Fig. 59-b.

23) GLANVILLE, *op. cit.*, Figs. 6-a, b, 15-a, 29, 32-c ; GOTTLICHER und WERNER, *op. cit.*, Tf. XIX ; WINLOCK, *op. cit.*, Figs. 35, 40, 41, 43.

24) GLANVILLE, *op. cit.*, Figs. 39-a, 42, 50-a, 55-b.

25) GLANVILLE, *op. cit.*, Figs. 12-c, 15-c.

26) GLANVILLE, *op. cit.*, Pl. III, Fig. 10, 13 ; GOTTLICHER und WERNER, *op. cit.*, Tf. XL ; WINLOCK, *op. cit.*, Figs. 49, 78-81.

27) GLANVILLE, *op. cit.*, Figs. 10, 13, 14-a.

28) GLANVILLE, *op. cit.*, Figs. 10, 13, 14-b, 18-b ; GOTTLICHER und WERNER, *op. cit.*, Tf. XL-2.

29) GOTTLICHER und WERNER, *op. cit.*, Tf. XL-2 ; GLANVILLE, *op. cit.*, Fig. 11-b.

30) In the profile, this model shows a striking similarity to the boat from Meir. GOTTLICHER und WERNER, *op. cit.*, Tf. XI-2, XXII., cf. Tf. XII-2, XIII-3, XVI-3, XXVI, XXV, XXVII ; REISNER, M. G. A., *Catalogue General des Antiquités du Caire., Nos. 4798-4976, 5034-5200., Models of Ships and Boats* (Caire, 1913) ; GLANVILLE, *op. cit.*, Nos. 9524, 9525, 25360, 25361, 34273, 35204 ; VANDIER, *op. cit.*, Ch. VI, pp. 886-925 ; WINLOCK, *op. cit.*, ch. IV, V ; HAYES, *op. cit.*, pp. 267-274 ; LANDSTROM, B., *Ships of the Pharaohs* (London, 1970).

31) GOTTLICHER und WERNER, *op. cit.*, Tf. XXIX, XXXIII, XXXIV ; REISNER, *op. cit.*, p. iii (Type V).

32) WINLOCK, *op. cit.*, p. 61.

33) WINLOCK, *op. cit.*, pp. 45-57 ; HAYES, *op. cit.*, p. 268.

34) GARSTANG, *BCAE*, p. 102, Fig, 91. In addition, a model from the tomb of Wakh·hotep at Meir in the Metropolitan Museum has Funerary equipment in spite of being a type of boat for travel. HAYES, *op. cit.*, p. 272.

35) About the scale of this model and a actual barque, see below, note 40.

36) HAYES, *op. cit.*, p. 268.

37) See, p. 375.

38) A pair of funerary barques of equal proportion have been found at Beni Hasan Tomb 500. Presently they are in the Ashmolean Museum and Egyptian Museum (Cairo). GARSTANG, *op. cit.*, p. 102, Fig. 91 ; HAYES, *op. cit.*, p. 268.

39) WINLOCK, *op. cit.*, p. 76. Winlock assumes that the ancient Egyptian man was 164～170cm in height.

40) WINLOCK, *op. cit.*, p. 77. Winlock assumes that the space required for each oarsman was from 80 to 100cm. On an actual barque, if the space requires for each oarsman would be a minimum 80cm, the interval 4.7cm between stools on one side on this model (Tabs. 38a and 39a) equals *ca.* 1/17. Using this 1/17 scale, the maximum 22.4cm width of the model hull would be 380.8cm on an actual barque, and its assumable length 190cm would be 3230cm. If the actual barque was this size, the oarsmen undoubtedly could row well in their positions, so that, the scale 1/17 would seem to be reasonable for the hull of the model. If such a space required for each oarsman would be a maximum 100cm, the interval 4.7cm on this model is equal to *ca.* 1/21. Using this 1/21 scale, the maximum width of an actual barque would be 470cm, the assumable length 3990cm, and the 2.5cm wide foot space would be 52.5cm. If so, the width of the space might have been exactly one "mefu" on the ancient Egyptian scale on an actual barque. GARDINER, A, *Egyptian Grammar* (3rd ed., Oxford, 1982), p. 199. Gardiner has given 52.3cm to one "mefu" (cubit).

41) WINLOCK, *op. cit.*, pp. 76-77.

42) WINLOCK, *op. cit.*, p. 74.

43) WINLOCK, *op. cit.*, p. 76.

44) HAYES, W. C., *The Middle Kingdom in Egypt*, vol. 1 (3rd ed., Cambridge, 1971), pt. 2, ch. XX, §§. II, XI ; KEMP, B. J., *Ancient Egypt, A Social History* vol. 1 (Cambridge, 1983), pp. 96-112 ; GLIMAL, N., *A History of Ancient Egypt* (Oxford, 1992), ch. 7.

45) REISNER, *op. cit.*, Nos. 4798, 4799, 4801, 4805, 4808, 4818～29, 4844, 4857, 4869, 4872, 4918, 4932. GLANVILLE, *op. cit.*, Nos. 9524, 9525, 25360, 25361, 34273, 35204) ; GOTTLICHER und WERNER, *op. cit.*, Tf. XI-2, XII-2, XIII-3, XVI-3, XXII, XXVI, XXV, XXVII ; VANDIER, *op. cit.*, pp. 886-925 ; WINLOCK, *op. cit.*, ch. IV, V ; HAYES, *SE*, pp. 267-274.

46) *Pre. Re. X*, pp. 16-17, Figs. 14-16.

47) *ibid.*

(MIYAMOTO, J.)

2 SYMMETRICAL ANIMAL DESIGN IN COPTIC TEXTILE

—— In reference to a example from Akoris ——

INTRODUCTION : Among the Coptic textiles found in Akoris, such designs as human figures, animals, plants and geometrical forms were depicted in variety. The study concerning these designs is very interesting, however, in this report the symmetrical animal design has been selected for intensive investigation, because it is foreign to Egypt. The origin of these animal designs is deemed to be Mesopotamian, however, they gradually spread to the east and to the west including Egypt, and so they are thus important in showing the process of diffusion and the historical relationships throughout the whole area in the Byzantine Period.

ANIMAL DESIGNS IN COPTIC TEXTILE : Surveying the preserved examples of representative animal designs appearing in Coptic textiles, the first one to mention is found in the Louvre Museum (Fig. 288). In this design each botanical and lion motif is surrounded by a ring and each lion, with tail up and legs bent, is in a running position. According to Pierre du Bourguet this dates to the 7th century A. D.[1] However, a very similar example found in the Lietz Collection, has been dated from the latter half of the 4th to the 5th century A. D. by Diane Lee Carroll,[2] so it can be seen that these two estimates show a chronological gap. Also found in the Louvre Museum is a hunting scene (Fig. 289) depicting the instant when a hunter spears an attacking leopard. Marie-Hélène Rutschowscaya dates this example to the 6th century A. D.[3] There are some differences in animal style between these two examples, one being realistic, the other not, however, they have a common characteristic, that is, a single animal is represented in profile.

On the other hand, the symmetrical animal designs also appeared in Coptic Textiles. The sole symmetrical animal design found in Akoris (Pls. VI no. 8 and 106 no. 77), though damaged, is surrounded by a angular pearl medallion. Two four-footed beasts, probably lions, are positioned sideways, back to back with heads looking toward each other. Between the beasts' heads, a pattern is observed, but it is unidentifiable due to the damage, however depending on an iconographical comparison to a similar instance, it probably is such a pattern as the sacred tree or the cross, which beasts attend upon. Each



Fig. 288 Lion and plant designs, tapestry weave (Louvre Museum). DU BOURGUET, P., *Les Étoffes Coptes du Musée du Louvre.*

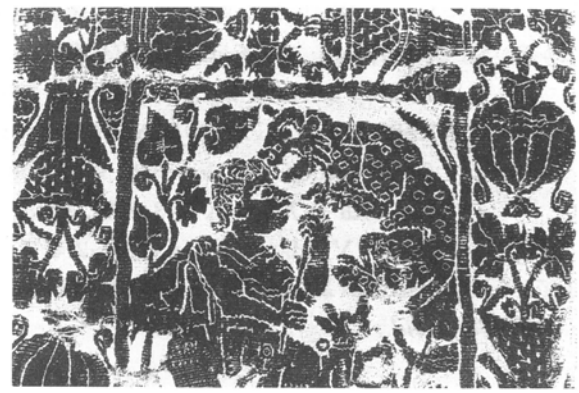

Fig. 289 Leopard attacking hunter, tapestry weave (Louvre Museum) RUTSHOWSCAYA M. H., *Coptic Fabrics.*



Fig. 290 Symmetrical animal design, tapestry weave (Louvre Museum). DU BOURQUET, P., *Les Étoffes Coptes du Musée du Louvre.*

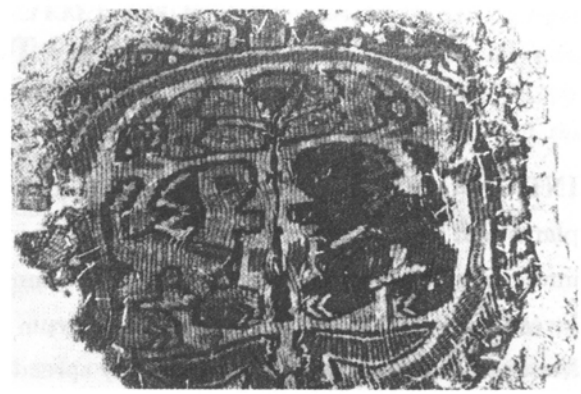

Fig. 291 Symmetrical animal design, tapestry weave (Louvre Museum). DU BOURQUET, P., *Les Étoffes Coptes du Musée du Louvre.*

beast's body is so small in contrast to its head that the total proportion is unbalanced. The legs are lacking due to the damage, while the tails are dangling unnaturally. In short, the bodies lack the active motion of a beast.

According to the du Bourguet's dating of the Louvre collection of Coptic textiles, symmetrical animal designs first appeared in the 9th century A. D. The one found in the Louvre shows two animals arranged back to back with the sacred tree between them, and is surrounded by a decorative medallion.[4] Another shows two animals in a rhomboid facing each other but with head turned back (Fig. 290). Subsequently, a transformation of design proceeded as time elapsed, and so by the 10th or 11th century A. D. the animal bodies became too abstract to identify (Fig. 291).

Generally speaking, all Coptic art style followed this transformation from naturalism to abstractionism, where human and animal designs proceeded to lose reality. Even though the example found in Akoris should be positioned somewhere in the trend toward abstraction, a technical inevitability must be also considered, because a swivel weave (see p. 285. Fig. 185) is used in the Akoris example, while the other examples mentioned above are based on a tapestry weave.

Symmetrical animal designs in a swivel weave akin to the Akoris example, are found in the Louvre (X4827), the Metropolitan Museums (31. 48, Rogers Fund, Fig. 292) and Dumbarton Oaks Research Library (no. 53. 2. 13). In three of these, two horses or asses are paired face to face looking backwards,

and the sacred tree is between them. Comparing with the Akoris example, the animal pose is reversed, but there is also a similarity, that is, the outline of each animal is determined by angular lines which are ascribed not merely to an artistic style but also to a weaving technique.

Concerning these three examples, du Bourguet dated to the 9th century A.D., while, Deborah Thompson to the first quarter of the 11th century A.D.,[5] thus offering a difference, which means there is room for debate concerning the dating of symmetrical animal design in the Coptic textile.

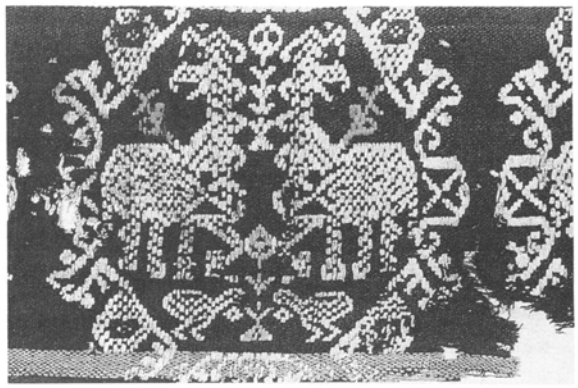

Fig. 292 Symmetrical animal design, swivel weave (Metropolitan Museum). KAJITANI, N., *Coptic Textiles.*

SILK FABRICS UNEARTHED FROM ANTINOË: The silk fabrics, which were found in Antinoë (el-Sheikh Ibada) by Albert Gayet's exploration carried out in 1896～1906, are now shared among the Musée Historique du Tissus in Lyon, the Victoria & Albert Museum, the Louvre Museum and others. Deliberating on the warp thread count,[6] the design and its minuteness, the opinion that these silk fabrics were made in the Persian district is now recongnized.

These silk brocades are thought to have originally trimmed coats discovered in tombs of Antinoë. The coats of this style were for common use by Persian and Central Asian horsemen.[7] Agnes Geijer considered that the red-colored coats had been imported directly from Persia or some other foreign country strongly influenced by Persian culture because of material, dye-stuff and twist direction. Since the silk fabrics bear stitching traces and the description of the coats with silk fabrics in the catalogue of the first exhibition held in the Musée Guimet, it is thought that perhaps they trimmed such imported coats as the above-mentioned.

There can be found several examples related to the Akoris motif among these from Antinoë. In the case of the Lyon brocade (Fig. 293),[8] the main motif is a figure akin to a Byzantine emperor wearing a cross decorated with three pearls on his head. Below the emperor are two lions, with haloes, sitting back to back and looking up at him. It is possible that the emperor substitutes for the sacred tree and if so, what is depicted here is the composite motif of the Sasanian and Byzantine styles.

One example in the Victoria & Albert Museum (No. 2182-1900),[9] another in the Victoria Museum in Uppsala (Fig. 294)[10] and a third in the Dumbarton Oaks Research Library[11] are of close resemblance. Complicated palmettes and medallions containing paired animals, ibexes and leopards are ranged alternately, and in the medallions these paired leopards are standing back

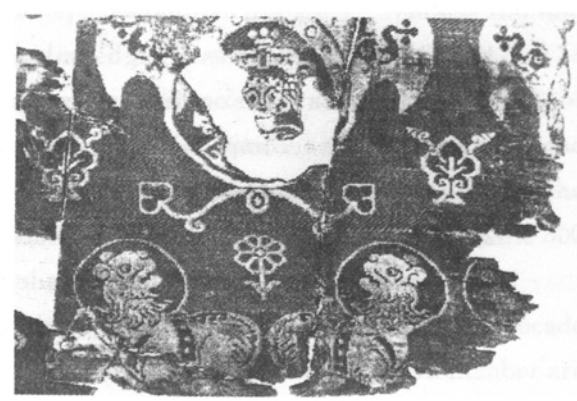

Fig. 293 Silk brocade found in Antinoë (Lyon Textile Historical Museum). MARTINIANI-REBER, M., *Lyon, Musée Historique des Tissus, Soieries Sassanides, Coptes et Byzantines V^e-XIe Siècles.*



Fig. 294 Silk brocade found in Antinoë (Victoria Museum in the Uppsala University) GEIJER, A., *A Silk from Antinoé and Sasanian Textile Art* (*Orientalia Suecana XII*, Uppsala, 1963).

to back but looking at each other. This animal disposition is similar to the lions in the above-mentioned Lyon brocade.

In an example found in the Abegg-Stiftung collection,[12] birds and lions are depicted, and the lions which are paired, stand facing each other but looking back.

Though the symmetrical animal designs have some differences among them, all these silk fabrics have the same weaving technique, that is a weft-faced compound twill.

There can be found some differences among the researcher's chronological view of the fabrics. Kendrick stated that the Victoria & Albert Museum brocade belongs to the 6th century A.D.,[13] on the other hand, Geijer and others stated that the latter four date to the 5th century A.D. Concerning another example (26812/12) in the Musée Historique du Tissus in Lyon, whose bird design is similar to the Abegg-Stiftung brocade mentioned above, Mariell Martiniani-Reber dated it from the end of the 6th century to the beginning of the 7th century A.D.[14] Such chronological discord is deemed to be partly due to deficient archeological records, and partly to the unfortunate dispersal and even disappearance after the Musée Guimet Exhibition.

Pursuing the vicissitudes occurring in Antinoë after Hadrian's extensive rebuilding in 130 A.D., Egypt was divided into three provinces under the rule of Diocletian in 297 A.D., resulting in the city flourishing as an administrative center in Lower Thebes. Though around the middle of the 5th century A.D., the city lost its function and declined, it recovered its previous prosperity owing to the Edict of Justinian I in 538 A.D. only to lapse into insignificance again under the influence of the Muslim Conquest. It is thus known that Antinoë attained two acmes of prosperity after Hadrian, that is, from the 4th to the first half of the 5th century A.D. and from the 6th to the first half of the 7th century.

Carrying on the chronological examination of Antinoë brocades through this historical context, there are four reasons why Geijer estimated that the Victoria Museum brocade dates to the beginning of the 5th century.[15] They are as follows:

1) The dead who was a high ranking Byzantine official dressed in equestrian clothes, had brocade cuffs sewn on his sleeves. In a nearby tomb, a Roman citizen (*civis Romanus*) was found with a accompanying papyrus dated to 452 A.D. Thus, Geijer presumed the former's date by the datable latter tomb.
2) A probable Persian brocade decorated with a Pegasus design found in Antinoë[16] was compared to the boar head design on a brocade found by Aurel Stein (i.5.03),[17] discovered with a bronze imitation Justinian I (527-565 A.D.) coin. The comparison show that, while the former was more refined in weaving technique and had no deformation in the design, the latter's design is angular due to an enlarging method and thus shows a quality deterioration. Since the other smaller boar head brocade was unearthed in the i・6 tomb dated to 632 A.D., the weaving date of the i・5. tomb boar head was deemed to have been around 600 A.D. Thus as for the Pegasus

brocade, it is surmised to date to 500 A.D., considering the deterioration in design and quality of the boar head brocade.

3) Concerning the acme of prosperity in Antinoë, though the recovery due to the Justinian Edict in 538 A.D. was mentioned by Geijer, the period in which the city flourished was estimated to be confined to the 4th and first half of the 5th century A.D. And so it can be assumed that silk such as these examples were imported during this period.

4) The pattern unit in the weft direction observed on the Pegasus and the boar brocades is triple or quadruple in width, compared with the narrower Uppsala brocade. The difference was thought to have been due to technical improvement, so the Uppsala brocade was surmised to be earlier than the latter two.

Mechthied Flury-Lenberg mentioned that the Abegg-Stiftung brocade dated to the 5th century A.D. Judging from his chronological view, he seems to have the same opinion as the Geijer's.

Donald King examplified hunting design brocades in his article, and divided them into three groups based on patterning composition while taking the pattern unit width and the pulley cord number into consideration. Of these three groups, in the second group, the hunting brocade in the Keir Collection shows the disposition of a human figure and an animal each contained in a small ring, and its pattern unit in a weft direction measures 4.5cm in width, and the number of pulley cords amount to 144. In King's opinion, this second group, dates to the 4th or 5th century A.D.[18)]

In the case of the above-mentioned Uppsala brocade which bears symmetrical disposed designs, the width of the pattern unit in a weft direction measures 6.6～7.6cm, while the number of pulley cords is 85. In short, the width is larger and the number of pulley cord is smaller than the brocade in the Keir Collection. This is due to the designs having a symmetrical disposition thus reducing the width of the weaving unit by half, 6.6～7.6÷2=3.3～3.8cm.

Considering the width of the pattern unit in a weft direction, the Uppsala brocade is larger than that in the Keir Collection. In general, the pattern unit became larger gradually until the 8th～9th centuries A.D. throughout the Occident and the Orient. Such transition is thought to have been based on technical improvements. Therefore, the Uppsala brocade is assumed to postdate the Keir Collection brocade.

In addition to the technical comparison, the leopard depicted on the Uppsala brocade has a simple ring, while the Pegasus design on the Antinoë brocade is encircled with a pearl medallion. In the case of Chinese textiles, the Pegasus design seemingly was influenced by Persian designs as it also has a circle of pearl medallion. The earliest date for Pegaus designs so far found in China is 620 A.D.[19)], the end of the Sasanian dynasty. When the Chinese case is taken into consideration, it is more appropriate to date the Pegasus brocade to the first half of the 7th century A.D. as Martiniani-Reber stated, rather than the 500 A.D. which is occasionally used.

This chronological view is suggestive for the date of the Uppsala brocade. The Uppsala brocade predates the appearance of pearl medallion, and the pattern unit is smaller and pulley cord number are smaller than in the Pegasus brocade of Antinoë. Judging from these points, it is thought to predate the Pegasus brocade of Antinoë.

The Uppsala brocade, then, postdates the hunting brocade of the Keir Collection and predates the

Pegasus brocade of Antinoë, and therefore, it is proper to date it not to the 5th but to the 6th century A. D.

ADOPTION OF SYMMETRICAL ANIMAL DESIGNS IN EGYPT: The natural stability of symmetrical designs was used in the Ancient World, and particularly favored by the Sumerians, examples of which are seen on a Uruk Age cylinder seal where paired goats were depicted facing each other with the sacred tree, the Tree of Life, between them, and on a lengthy votive cistern dated to *ca.* 3000 B. C. where paired animals are positioned symmetrically on each side of a reed banner symbolizing the agricultural goddess Inanna.[20]

What was interposed between paired animals was always a sacred object though it underwent change through the ages. In ancient Mesopotamian it was occasionally represented by the lion-headed eagle Anzu (Imdugud), the messenger of the god Ningirsu, as exemplified on the relief of the large forged copper panel uncovered from the site of Ubaid.[21] This mythical bird Anzu, which was also regarded as the symbol of Ningirsu, is pictured with its feet on the head of two lions in the Vulture Stela found in the site of Tello and on the Dudu's Plaque.[22] The Assyrians showed the sacred tree with the date palm which had been considered the farmer's tree by the Symerians. In the Achaemenid Dynasty, The sacred tree was substituted by the chief deity in Zoroastrianism Ahura Mazuda. In the Christian world Daniel between lions was depicted on the wall of Via Latina catacomb.[23] Thus, the symmetrical design with a sacred object between the animals was a religious, and even a social and psychological representation.[24]

A lion-figured throne, which was emblematic of royal authority, is also one example of symmetrically aligned lion designs. Since the lion is regarded as the king of beasts, it was naturally adopted as the symbol of royal authority. For example, the sedentary statue of the goddess Narundi found in the site of Susa and now in the Louvre Museum, bears a relief of paired lions on both sides of the throne. The legs of the imperial throne depicted on the Sasanian coins were often those of lions, and paired lions appear in the Gandhara and Mathura Buddhist sculptures. The Kushan King Vima Kadphises statue now in the Mathura Museum, a lion is also represented at each side of the throne.[25]

In the votive relief dedicated to Aphlad with the inscribed date of 54 A. D., unearthed from the Adonis Temple in the site of Dura-Europos, a god supported by two sacred lion-like beasts is depicted (Fig. 295). This motif, as well as the motif of the god Anzu and the lions mentioned above, has something in common with the emperor and the paired lions with the imperial throne. Considering the attribute of the lion as the king of beasts, the motif of the Lyon brocade, depicting the probable Byzantine emperor and the paired lions (Fig. 293), is assumed to express the impregnable authority of the Byzantine emperors.

There was the tendency to deify the Roman emperors, which intensified from the time of Constantine I onward due to the spread of Christianity. Christ, as the supreme deity, began to replace the emperors on the lion figured throne, as shown in the Christ figure sitting on such a throne between St. Peter and St. Paul, which was made in Constantinople in the middle of the 6th century A. D. (Fig. 296). Thus, the West Asian composition of placing a lion at each side of the divinity was adopted by Roman and Byzantine Christianity.

The Christian subjects expressed in the arts and crafts of Constantinople continued to be imitated by Coptic artisans. For instance, some dyed cloth unearthed from Akhmim and other cities bear

imitated Christian subjects, taken from the hangings in the St. Sophia as supposed by Paulus Silentiarius's poem,[26] though a *P* was substitutied for *Λ* in Daniel's last letter,[27] Egyptian iconographical interpretation made and different clothing shown. Moreover, of the dyed fabrics there can be found a textile motif representing Daniel, and at his sides a pair of lions looking back at him (Fig. 297). It is thought that the patterning composition, a figure and a lion at each side, was introduced from Constantinople and imitated there as one of the Christian motifs.



Fig. 295 Votive relief dedicated to Aphlad *The Grand Exhibition of Silk Road Civilization*



Fig. 296 Christ enthroned between St. Peter and St. Paul BECKWITH, J., *Coptic Sculpture.*

In addition, a cross with symmetrical patterns interposing it came into vogue in the Coptic Period, and its design was often depicted in relief on stones and wooden objects. While the cross symbolizes not merely Christ but also His power to save, and the Resurrection, it also means The Tree of Life as stated in Genesis. 2-9. Under the tendency of religious representation mentioned above, the symmetrical animal design interposing the sacred object on the Antinoë silk imported from Persian lands to Egypt would appeal to the Coptic people as the image related to Christ and/or the Byzantine emperors.

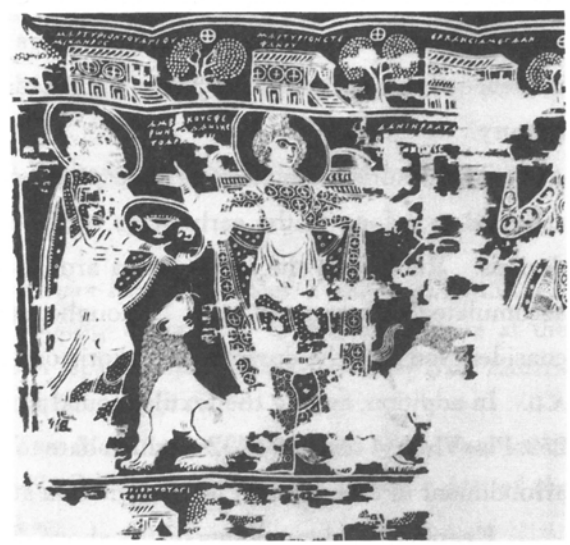

Fig. 297 Dyed fabric with Daniel
Иерусалимская, А. А., Ткани собора св. Софии в Константинополе.

CONCLUSION: The symmetrical animal design found in Akoris is a swivel weave as mentioned above. That is, the patterning wefts do not pass through from selvage to selvage but are used only in the patterning part. Nevertheless, differing from those in the tapestry weave, the wefts float on the face, and both ground and patterning heddles are used when woven. It is deemed that this weaving technique orignated in China and goes back to the Warring States Period.[28]

According to the *Periplus Maris Erythraei*, the sea trade route between Egypt and India was already functioning and Chinese silk fabrics were imported by sea in the 1st century A.D. Thus, there is the possibility that Chinese weaving techniques, and textiles, were imitated in Egypt before the Muslim

Conquest.

Since woolen weft-faced compound tabby was discovered from the 1st century site, Mons Claudianus,[29] it is surmised that a loom with plural patterning heddles had already existed at that time in the east Mediterranean coastal area. In the case of the incipient weft brocade, the length of pattern unit in a warp direction is small, so that the loom with pattern heddle rods must have served sufficiently to weave it without the use of a complicated shaft or draw loom. However, in the 4th or 5th century A.D., the draw loom, even if limited to the cities where weaving was developed, was at work so as to weave the complex patterning textile like the above-mentioned hunting brocade. Moreover, in Egypt, as the tapestry weave and flying thread techniques were already in use, the swivel weave is thought to have been easily devised or introduced.

The symmetrical animal pattern found in Akoris is parallel to the wefts. In other words, the pattern is woven sideways. It is a familiar example in the areas where the pattern heddle rod or shaft number is too small to imitate the elaborate patterns made possible only by an advanced loom. Thus, the pattern was aligned symmetrically in a surrounding circle, and an inverted repeat weave technique was used whereby half of this pattern unit was woven and then the rest was completed, so as to make shift with half the number of pattern heddle rods or shafts.

Comparing the Akoris example with the Antinoë brocades, the material is wool, the thread thick and the thread count small, so that the result was a disfigured symmetrical animal design. However, the disposition of paired animals and their poses suggest that the Akoris example was woven under the influence of the designs of the Sasanian brocades which were imported to neighboring Antinoë in the 6th century.

The Akoris example bears the pearl medallion and its weaving technique is primitive, so it is assumed to belong to the early stage of the Egyptian imitations of the Sasanian symmetrical animal designs. Room 4 in the eastern area around the South Court (see p. 55), contained many textiles in accumulated, disarranged soil. Though their date is undetermined by stratigraphy, taking into consideration that the downfall of Akoris occurred around 700 A.D., it seems to predate the 8th century A.D. In addition, among the textiles found in Room 4 there were no designs with the human figure (p. 252. Pls. VI no. 4 and 100 no. 26) which date to the 7th or 8th century A.D., judging from the technique of arrondiment in tapestry and its presentation style.[30]

Keeping the three points of the above discussion, the symmetrical animal design textile fragment found in Akoris is thought to date from the latter half of the 6th century to no later than the 7th century A.D. As stated in this report (see pp. 183 ff), Coptic weaving tools such as combs, spindles and needles were found around the South Court, and so, this textile was woven in Akoris, though its low level of technique shows that weaving was not so well developed here.

Notes

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2) CARROLL, D. L., *Looms and Textiles of the Copts* (California, 1988), p. 99.
3) RUTSHWSCAYA, M. H., *Coptic Fabrics* (Paris, 1990), p. 45.
4) DU BOURGUET *op. cit.*, F123.

5) THOMPSON, D., *The Evolution of Two Traditional Coptic Tape Patterns : Further Observations on the Classification of Coptic Textiles* (*Journal of the American Research Center in Egypt*, vol. 23, Boston, 1986), p. 155.
6) GEIJER, A., *A Silk from Antinoé Sasanian Textile Art* (*Orientalia Suecana*, XII, Uppsalla, 1964), p. 16.
7) GEIJER, A., *An Iranian Riding Coat Reconstructed* (*Bulletin de Liason du CIETA*, no. 27, Lyon, 1968), pp. 22-25.
8) MARTINIANI-REBER, M., *Lyon, Musée Historique des Tissus, Soieries Sassanides, Coptes et Byzantines V^e-XIe Siècles* (Paris, 1986), p. 49.
9) KENDRICK, A. F., *Catalogue of Textiles from Burying-Grounds in Egypt V.III* (London, 1922), p. 85, Pl. XXXI, 829. Miss Linda Wooley, Victoria & Albert Museum, gave me information about this textile, in reply to my request. I wish to express my sincere thanks for her kindness.
10) GEIJER, *op. cit.*, 1964.
11) *ibid.*, p. 20, Fig. 9
12) FLURY-LENBERG, M., *Reconstruction of a Persian Silk from Antinoé* in *Ancient and Medieval Textiles, Textile History*, 20-2 (London, 1989).
13) KENDRICK, *op. cit.*, p. 85.
14) MARTINIANI-REBER, *op. cit.*, p. 47, No. 12.
15) GEIJER, 1964, *op. cit.*, pp. 21-34.
16) MARTINIANI-REBER, *op. cit.*, p. 45, No. 11.
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20) *L'art de la Mésopotamie* (Paris, 1935), p. 126.
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22) *ibid.*, Pls. 165, 167., pp. 136, 137.
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25) TANABE, K., *Origin of Royal Equestrian Hunt of Two Male Lions* (*The Memoirs of the Institute of Oriental Culture*, no. 120, Tokyo, 1993), pp. 1～47 ; ROSENFIELD, J. M., *The Dynastic Arts of the Kushans* (Berkeley and Los Angeles, 1967), Fig. 1.
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27) KENDRICK, *op. cit.*, p. 63.
28) Jingzhou Museum, Hubei Province (ed.), *Chu Tomb No. 1 at Mashan in Jiangling* (in Chinese, Beijing, 1985), pp. 45, 46, Fig. 37 ; *Лубо-Лесничеко, Е. И. Древние китайские шёлковые Ткани п Вышивки V в. д н. э.-III в. н. э.,* (Ленинград, 1961), стр. 31, таб. I 3-4, таб. XII 2.
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(SAKAMOTO, K.)

3 ROADS IN AKORIS

Though the city of Akoris covered a wide area extending even beyond the south gate (see pp. 143 ff), our survey of the existing building walls, carried out in 1991 was restricted to the area between the Western and Central Temple Areas, and to the north end of the city from the Central and Western Temples, that is, the northern half of the whole city area covering an area 350m north-south × 150m east-west (Fig. 298).

In a vertical section, the eastern city wall is shaped like a trapezoid, and most of the bricks used for it are a large thick type brick which is the same as those in the western city wall facing the Nile River. However, other wall remains found adjacent to and perhaps included in the wall used a small thin type brick estimated to be older than these large thick ones. Although the scale and extent of the latter walls cannot be clarified at this time, there is a strong possibility that construction of the city walls began in the Third Intermediate Period.

The brick used for the existing building walls in the city area includes all of the eight types detected by our survey in the Western Temple Area (see pp. 265 ff), so that walls older than the city wall and using the thin type bricks exist there also.

Judging from all the brick found, the 24cm type, presumed to be from the latest period, the 7th century A.D. are found in the largest quantity. The north end of the city area and its neighborhood abound with the thin type however, whether it is large or small, while the 24cm type is very rare. However, the above mentioned fact does not prove that the center of the city area moved from the north toward south or temple areas, because the northern area is about 20m lower than the southern where the Western Temple is located, a fact which is presumably due to flooding of the wadi and resulting erosion, and also to the removal of much soil to the farms *sebakh* around Akoris. As for the temple area which suffered hardly any damage, and where soil and walls are found in many layers, structures constructed with thin type brick have been found in the lowest. Accordingly, it is can be assumed that the whole city area within the city wall had been urbanized by the time its construction was completed.

As for the final days of Akoris, because of the large number of 7th century buildings, there is much possibility that the city was suddenly abandoned rather than gradually running to ruin. This may have occurred when Islam overran the area, and whether it was this new force or a natural disaster like a earthquake, its function as a city disappeared when the population dispersed.[1)]

Now, considering the city construction, there are two possibilities, the city was built with a plan or was built at random. A typical type of city planning is a grid called Hippodamus Style, but which as is known, existed long before he was born as is evidenced at Kafun or Deir el-Medina in Egypt.

As for Akoris, the direction of the walls of the city buildings is uncertain so far as can be seen by those visible. It seems that even if the brick walls are separated by size, no true grid can be determined, and therefore it seems that urban building and planning based on the true grid had not been attempted in any period.

However, though there is an apparent lack of a grid plan, the brick walls cannot be said to be

without any regularity. At a point 175m on an extension of the axis of the Serapeum, brick walls running parallel on each side of a 3m wide road, stretch for about 65m (Pl. 59). The brick used for the road is of small, thick 29cm and 24cm type. In the area between here and the temple, the road is not bounded by parallel walls as far as can be determined, but the absence of walls, in an area as wide as Serapeum, continues with the single exception of two adjacent walls of 24cm type brick. Therefore, there is much possibility that the road from Serapeum to the north had existed for at least 240m in length. (referred to as Road A, Axis α). At the extreme north end, some large stones estimated to have been part of either a city gate or the piers of a bridge over the wadi[2] (Pl. 58 lower) exist giving further indication of a long road.

On the other hand, based on an absence of obstructing walls an extension of the Sacred Road can be drawn to the north of the Western Temple. Such a road would then be parallel to the presumed road leading from Serapeum. A series of walls running parallel along the extension, outlining roads between them could not be detected, however, the walls in the area meet at a right angle to or are parallel with the extension, so that, the existence of the above straight road can be presumed here (referred to as Road B, Axis α).

Between these two parallel roads, there is a another area where a straight road is deemed to have existed

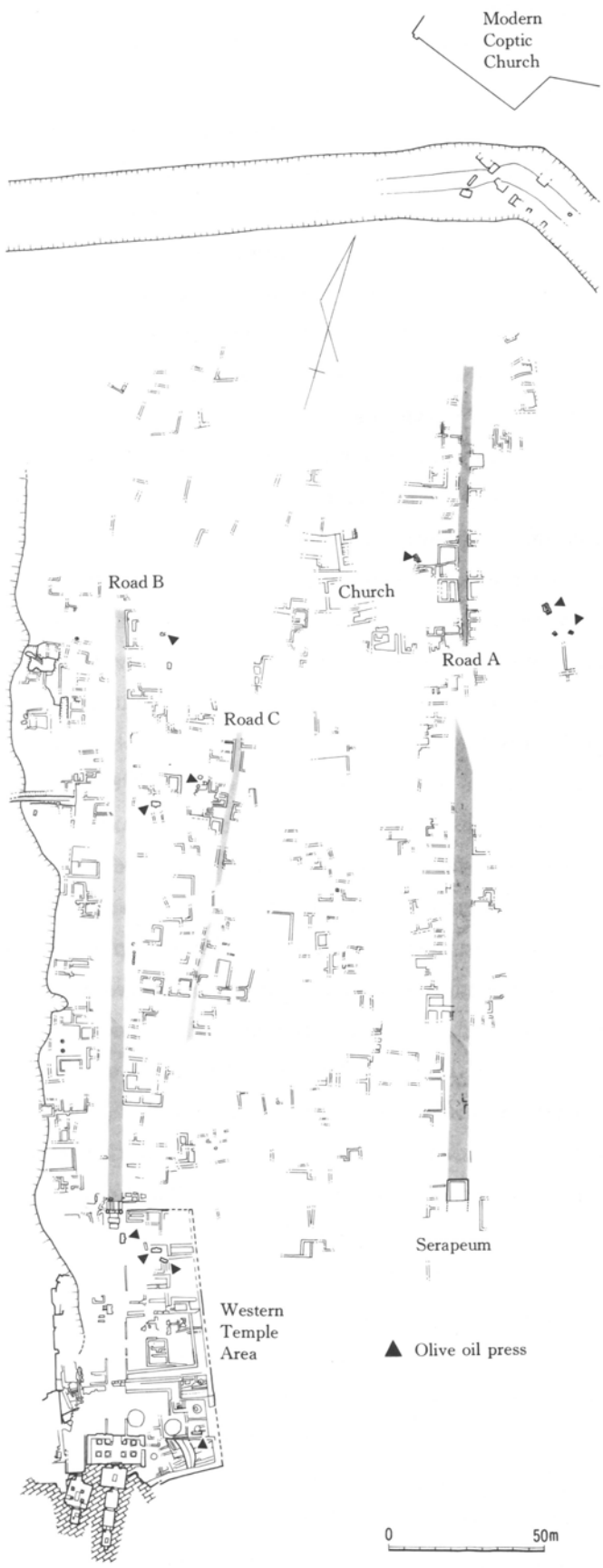

Fig. 298 Roads and olive oil presses in the site

(referred to as Road C, Axis β). At a point 60m northeast of the North Gate of the Western Temple, brick walls running parallel extend 65m. In the northern half, the space between walls is 1.5m, but in the southern half, it becomes narrower by 1/2 due to a protrusion of the west side walls.

Assuming the space between the walls to be the road width, east and west side walls in the northern half are both constructed with the 29cm, 26cm and 24cm types as opposed to the southern half where 29cm type brick is used for east side wall and 24cm type for the west, which, reveals that a 1.5m road existed in the 29cm type brick period, but was narrowed to a path later when the 24cm type brick walls were constructed. Though the 24cm type brick walls were constructed in the south half, thus altering the road width, it is deemed that the character of a straight road was maintained to the last. The direction of this road almost corresponds with the present-day magnetic north and a prolongation to the south joins the axis line of the four rock-cut rooms of Chapel A. Many walls with this directional character are found around this road and they are not limited to only the area between Roads A and B. It is noteworthy that almost all of the walls made of thin brick remaining particularly near the north prolongation of this road follow roughly the same axis.

A road cannot be supposed at this point, but another directional characteristic can be observed in the brick walls. Referred to as Axis γ we see this direction corresponds with the east enclosure line encircling the Western Temple Area and several walls on this axis lie scattered over a wide range.

As mentioned above, I have pointed out the appearance of three directional characteristics in the brick walls, but a corresponding relationship between each axis and brick type can not be observed. One reason for this is that there were found many cases where the remaining lower parts of old walls on one axis were utilized in construction on a new axis thus creating rooms of irregular shape. Such reused walls have so far been found in thirty-one places. These examples in all respects ratify the chronology of the brick examined inside of the Western Temple Area (Tab. 24).

As a result of examining the relationship between the three directions and the brick type, using the lowest brick type in multi-layered walls, it became clear that in the early history of the city, it had been built on at least three different axes, and it cannot be decided which axis was principle. However, by the time of small, thick type brick was used, from among the above three axes, the straight streets extending north from the Western Temple Area and Serapeum on Axis α took root as the principal thoroughfares. However, in areas away from these principal roads it is a fact that with the exception of walls along Road C walls on several different axes were being constructed continuously. Though in the Coptic Period houses on this axis increased in number overwhelmingly, it is assumed these two streets lost some of their function through invasive construction.

As mentioned above, because walls previously made were reused in conjunction with walls on a different axis, some buildings do not form a rectangular. For instance, let's take up the problem of two buildings remaining on the northeast side of Road C (Pl. 60 upper). The one on the north side measures 10m north-south $\times$ 5m east-west and the south side measures only 9m north-south, however, due to the lack of a wall, the east to west dimension is unknown. Considering the scale and structure, which differs from the general houses, there is a possibility that these buildings were of a public character, especially, the latter which is assumed to have been a church, according to Yoshiki Hori, with a coved vault and an ambulatory on the south side (Pl. 60 lower. Fig. 299). Although the large, thick and the small, thick

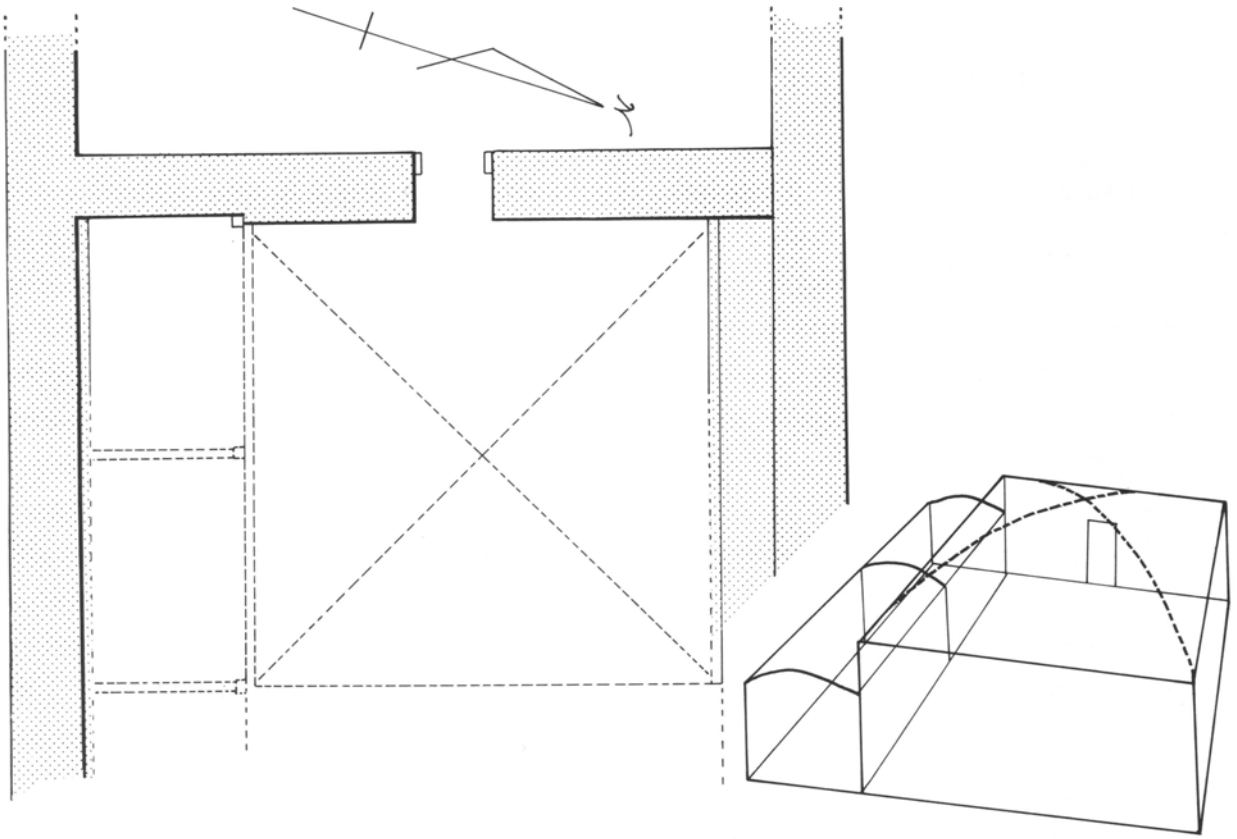

Fig. 299 Reconstruction of the church

type brick was used in the north building, walls using the small, thin type brick was detected under it. The upper walls were controlled by the wall direction in the lower walls that is, Axis γ. In the case of the south building made of a 29cm type brick, no old walls were detailed and the building was constructed on Axis α, roughly parallel to Road A. So as is seen elsewhere, these two buildings on different axes but neighboring each other, one or more walls are not at right angles in order to accomodate a road of constant width.

By following the directional characteristic of the previous walls, a complex arrangement of buildings formed, which seems to suggest that the city at no time suffered complete destruction but rather was constantly being rebuilt following a previous arrangement of roads and walls from the Third Intermediate Period up to the Coptic Period.

Notes

1) D. M. Bailey attributes the collapse of the Roman temple in Hermopolis to severe earthquakes that occurred in the 8th century. Bailey, *EA IV*, p. 43.
2) The possibility of piers was suggested by the eminent architectural historian, Yoshiki Hori, Kyoto University.

(Tsujimura, S.)

4 OLIVE OIL PRODUCTION IN AKORIS

OLIVE PRESSES IN AKORIS: There was a large stone in Akoris which K. Lepsius introduced as an offering table,[1] however, recent opinions concerning this type of stone classify them as being olive oil presses. Ten identical limestone blocks of the same shape have now been uncovered in Akoris, and they are also estimated to be olive oil presses according to their several features. Among these oil presses, four were unearthed in the Western Temple Area (Fig. 300), while the others were scattered around the site, and not concentrated in any specific area (Fig. 298). Judging from the number of oil presses seen even in the still largerly unexcavated part of the site, it is supposed that at one time olive oil production flourished there.

The oil presses in Akoris are parallelepiped monoliths measuring 2.0～2.5 × 1.2～1.3 × 0.6～0.7m, and have projecting lips of 20～40cm. Two holes measuring 35～40cm square are perforated at each end of the top surface, and between them a circle (*Area*) measuring 55～60cm in diameter surrounded by a channel or drain which leads to the lip. There is seen near the North Trench one exception. This press has a square drain rather than the usual circular one.

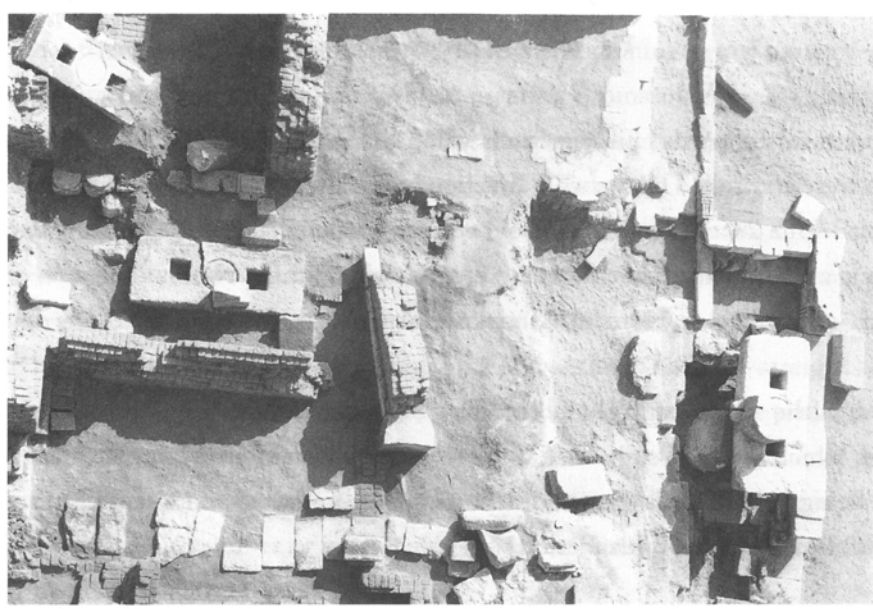

Fig. 300 Olive oil presses in and around Building 10

OLIVE OIL PRODUCTION INSTALLATIONS: There are three processes involved in olive oil production, that is, crushing, pressing and separation. Olive oil production in the Mediterranean began with the use of a large pestle and dates back to the Chalcolithic Age, as mentioned on clay tablets belonging to the first period of the Bronze Age which were unearthed at Ebla in north Syria. A stone roller used to crush olives was unearthed from the layer belonging to the Iron Age in the site of Tell Mastuma.[2]

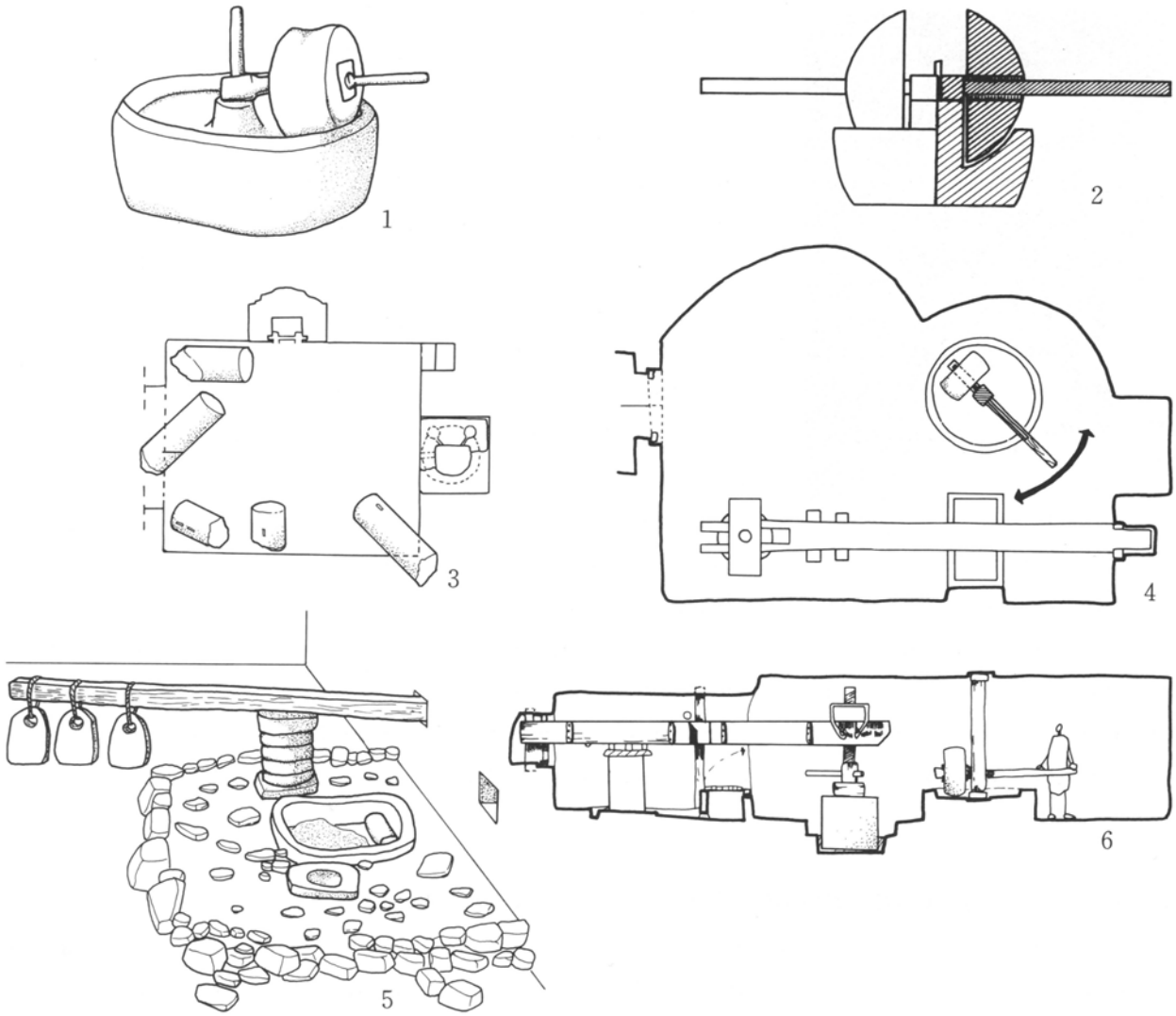

Fig. 301 Olive oil production installations

1 : author's sketch. 2 : Robinson, D. M. and J. W. Graham, *Excavation at Olynthus* (*Johns Hopkins University Studies in Archaeology*, no. 25, Baltimore, 1938) part 8. 3, 4, 6 : Callot, O., *Huileries Antiques de Syria du Nord* (*Bibliothèque Archéologie et Historique*, Paris, 1984). 5 : Kelm, L. and A. Mazar, *Excavating in Samson Country* (*BAR*, 15-1, 1989).

According to O. Callot who introduced various installations used for oil extraction in northwest Syria from the 7th century B.C. to the 1st century A.D., installations for crushing were either classfied a roller type (Fig. 301 no. 3) or a mortar type (Fig. 301 no. 1), while, installations for pressing, a windlass type (Fig. 301 no. 4) or a lever-screw type (Fig. 301 no. 6).[3] The mortar crushing type was used in conjunction with a lever-screw press, while the roller crushing type was utilized in both kinds of press in that district.

Both types of installation have been unearthed in the Palestine district, however, the period and the combination of use is clearer there than in Syria. Namely, the roller type was used exclusively with the lever-weight press (Fig. 301 no. 5) in the 7th century B.C.,[4] and the mortar crushing type with the lever-screw in the 2nd century A.D.[5]

On Cyprus, the mortar and a lever-weight combination were used exclusively before the Roman Period, and it was not until the Late Roman Period that the windlass mechanism and the lever-screw

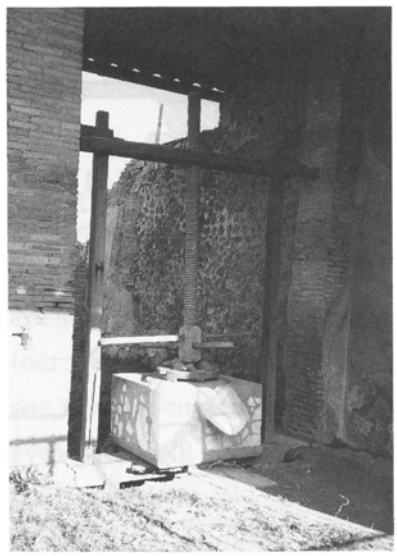

Fig. 302 Olive oil press in Pompeii

press type were introduced to the island.[6]

Furthermore, the type using two semi-hemispheric stones on or *Trapetum* (Fig. 301 no. 2) in a mortar and a single screw direct press were found in Pompeii (Fig. 302). Though the screw mechanism and *Trapetum* were Greek innovations according to Pliny, it is not clear whether the direct press with only a single screw also used by the Greeks or not.

The olive oil presses in Akoris are of the single screw direct press type, but they are different from those found in Pompeii which were not perforated with holes for the vertical wooden supports which hold the wooden bar holding the screw. By a reconstruction of a oil press in Pompeii, a monolith with *Area* is smaller due to the lack of these holes, and the wooden supports were set between the monolith and side walls.

Among the single screw direct presses, perforated monoliths like the oil pressses in Akoris were also found at Archangelos monastery and Spilia village in Cyprus.[7] In Middle Egypt, the same type was found at Zawiat al-Maietin to the south of Akoris and at a village near the site of Ashmunein.[8] However, neither of the two presses can be dated because they were not excavated or if so not scientifically. Then, we would like to observe how the oil presses were unearthed in Akoris to estimate in which period they were used.

PERIOD OF OLIVE OIL PRODUCITON IN AKORIS: Among the four olive oil presses in the Western Temple Area, three were found in situation of reuse. One was unearthed just under the floor of Room 4 used for a workshop or storeroom in the eastern area around the South Court (see pp. 55, 56). This room was made with 24cm mud brick estimated to be from the 7th century A.D. In Room 4 of Building 10 made of 24cm type brick another one was found whose top level was almost the same as the floor of the other rooms in the building. Apparently, these oil presses were reused for the floor foundation of each building. Therefore, it is suspected that olive oil production was discontinued in the era of the 24cm type brick, the 7th century A.D. at the latest. The other one was laid horizontally where pavement had once been, and enclosed with stones on the south and west sides and on the east side by the Sacred Road (Figs. 67 and 68). Supposing a level of pavement there, the bottom of the press is 50cm above it. The stones enclosing the oil press were reused, of irregular shape and size, and of those with dovetail holes, none made a pair (see p. 94). As such use of building material is typical of the Coptic Period, the press is thought to have been used as such after a large-scale restoration of the Western Temple Area which was executed at the end of the 3rd century or the beginning of the 4th century A.D., and that the stone work was an integral part of the press.

A oil press which was not *in situ* was found near that in Building 10. It was unearthed from the disturbed soil accumulated on the floor of Room 2 in the building.

Judging from the various positions that the oil presses were found when unearthed as mentioned above, it is assumed they were all used originally after the restoration of the Western Temple Area

before the era of a 24cm brick type, that is, the 4th～6th centuries A.D., and then when olive oil was no longer made, reused in other ways.

OLIVE OIL PRODUCTION IN EGYPT PRIOR TO THE ROMAN PERIOD: According to a note left behind by Pliny, oil seems to have been taken in small amounts from a fleshy olive grown in Egypt (XV-15). It is also pointed out that in the Ptolemaic Period there was no description referring to olive oil and its production in the laws and ordinances.[9)]

Referential data on olive oil in the Dynastic Period is completely lacking. However, so far as olive trees are concerned, in the Pyramid Text of the Old Kingdom there can be seen the description of a holy olive tree at El-Matalia near Memphis. In addition, there is a relief drawing of the scene of Aknaten offering an olive branch at Amarna while an olive twig with olive leaves was found in Luxor in the coffin of Tutankhamen. Though the example of the Old Kingdom must be carefully judged since it seems that there are cases where the names of other trees have been identified as olive due to mistranslation, olive trees undoubtedly were grown in the New Kingdom. And these olives are said to have been brought into Egypt from Syria or Greece. Nevertheless, though olive oil had already been produced in both of these areas from old, there has been found no data on the oil in the Pharaonic Period. Therefore, we must unavoidably consider that olive trees were only carried into Egypt for planting but that oil extraction technique was not introduced. Indeed, there was no trouble in obtaining oil producing plants other than olives in Egypt. That is, oil could be obtained from the seeds of balsam, ben (horseradish), lettuce and radish, in addition to castor and linseed which were the principal products. Oil production from these and other plants continued through the Pharaonic Period, for example, the dedication of oil called Neheh (Sesami oil ?) to the god Amon-Re' is described on the stele of Osorkon III unearthed in Akoris (see pp. 301 ff).

In the Roman Period, Strabo as opposed to Pliny testified that olive oil was produced in Egypt and claimed that much oil could be obtained in Faiyum (XVII-1, 35). However, he added that careless operation in the oil squeezing caused an unpleasant smell. He probably was pointing out carelessness in the process of oil separation after pressing, as the bitter element, amulca, is contained in the flesh of olives which would make a bad flavor and smell if left in the oil.

Between the Pharaonic Period, in which the olive as a holy tree was apparently not used for food, and the Roman Period, in which production of olive oil was performed, that is, in the Ptolemaic Period, there is no archeological evidence showing how the olive had been used. However, in those days, olive oil was, like wine, an important export item. On the other hand, papyrus, linen and grain were the principal exports from Egypt, and the Greeks were said to be particularly eager to obtain olive oil from Athens and Samos to be exchanged for Egyptian grain. Accordingly, although olives gathered in Egypt were probably eaten pickled, it is considered that olive oil was imported in the Ptolemaic Period.

OLIVE OIL PRODUCTION IN FAIYUM DISTRICT: A number of sites belonging to the Roman Period were located in the Faiyum district where, like Akoris, the Sobek belief thrived (Fig. 303). Karanis, one of these, was presumed to be a large prosperous farming village where four or five thousand people lived in the 2nd century.[10)] Compared with the 1st century, there were signs of inflation as shown

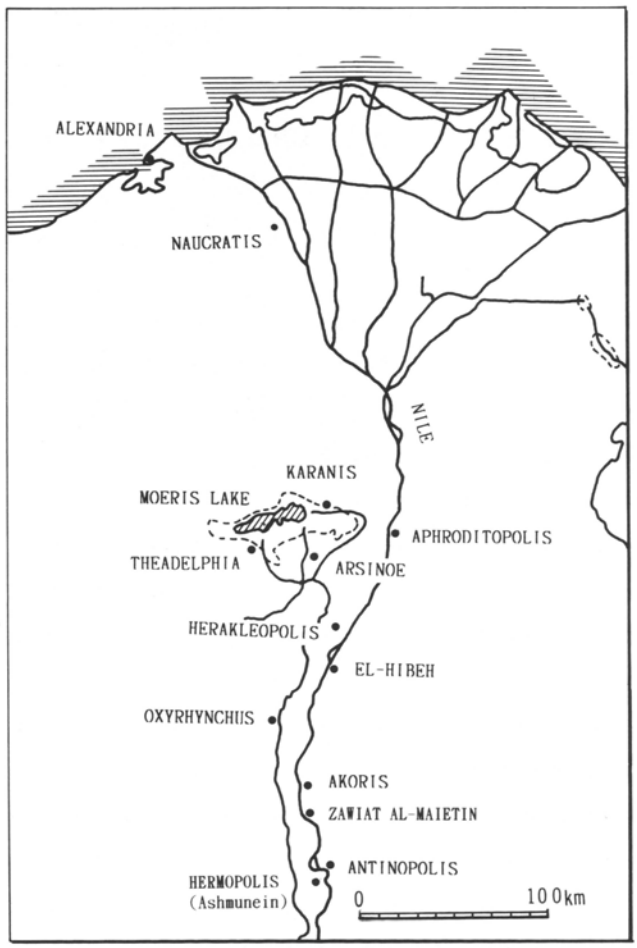

Fig. 303 Distribution of the Roman sites in Middle Egypt

by the price of flour which rose 25 % in this period. However, it can be said that the power of the Roman Empire had not diminished and that government control functioned smoothly.[11]

According to the description of Heroninos, the manager of Appianus estate for olive oil production in the Faiyum district in the 3rd century, the olive was not cultivated in all farm villages.[12] Grapes or olives seemed to have been cultivated selectively on respective farms. In any case, olive and the oil obtained were carried to the Arsinoe market as a commercial crop to be consumed in cities, so as in the case of the barefoot shoemaker's children, edible oil for daily use in the farm village was radish oil, not olive oil. According to Pliny, the best olive oil was used for medical purposes, the worst for lamp oil and the rest for cooking (XV-5, 7).

Papyrus in 221 B.C. found in Oxyrhynchus, a city located about 100 km south of Faiyum, reports that olive oil loaded on board a ship with wine and meat, etc. was carried out to the city of Tebennothis by way of the Nile.[13] In those days, olive oil produced in Egypt was scarcely recognized since superior olive oil produced in Syria and Greece had appeared on the international market. However, we can learn from this document that olive oil produced in Faiyum had gained a market covering a wide area as far as home consumption was concerned.

Signs of decline in this district began from the end of the 3rd century A.D. In the 4th century the population of Karanis had decreased to 420 persons and even in Theadelphia with a population in the 2nd century of 2, 600 suffered a big drop to 100 persons in this period.[14] Forty percent of the houses there were abandoned not only in the farm villages but also in such cities as Karanis and Oxyrhynchus, where the floor level in the houses had become higher as they were repeatly rebuilt due to drifting sand.[15] Soknopaiou Neos was abandoned in the middle of 3rd century A.D., Bacchias, Qasr Qarun and Theadelphia in the 4th century, and Karanis in the middle of 5th century respectively. Such desolation of towns might have been caused by the extension of the desert due to the impact of a continuing cold and dry climatic change around the 3rd century.[16] However, though the decline in population had already begun in the 2nd century, according to the investigation of Karanis, many houses previously abandoned were rebuilt and the town flourished again for a short period in the second half of the 3rd century, before its final demise. Meanwhile, there is the theory that inflation became very serious at the end of the 3rd

century and this is regarded as the immediate cause of the final decline of at least Karanis.[17] The inflation provoked by the Diocletian fiscal legislation, according to this theory, involved people in radical irreparable economic change and confusion. Regardless of whether the decline of Karanis was due to climate or economics, a noteworthy fact is that all the towns in middle Egypt did not decline in the 4～5th century like those in the Faiyum district. For example, in this period Akoris regained its prosperity which continued through the 7th century A.D.

Returning to olive production, its beginning in Akoris coincides with the period of decline in the Faiyum district which had been the principal center of olive oil production in Egypt up to that time. The places where olive oil production could be carried out in the 4th～6th centuries in Middle Egypt were not limited to Akoris, but it is supposed that Akoris was the center of oil production judging from the number of presses discovered there so far.

OLIVE OIL PRODUCTION IN AKORIS: In the 4th～6th centuries Coptic monks set up communities in every corner of Egypt. At one of them, Kellia, a number of amphorae containing wine and olive oil was excavated. In addition, a monastry with an oil extraction installation was also found there. Of course, the monks cannot be accused of living in luxury, but olive oil enjoyed a sacred role in Christianity where, it appears frequently in the Bible as the oil used in the story of Christ, and in prayer. And as a luxury, its sale probably provided funds to support the Coptic communities.

It is possible that the nucleus of olive oil production in Akoris was a monastery or a church, but to date nothing has been identified as such. Among the many fragments of Coptic papyri unearthed in Building 4 and the Middle Court East, and ostraca from Building 9, three papyri and two ostraca have reference to olive tree or oil (see pp. 330～373. Pls. 128 no. 16, 129 nos. 23 and 26, 148 no. 5, and 150 no. 10). In addition to these, an amphora stopper impressed with a standing figure of a saint and words expressing olive galore was found in Building 5. These buildings used the 24cm type brick, and therefore, it is known that olive oil had not disappeared from the market place even after oil production in Akoris had apparently stopped in the 7th century. The question remains, why was production discontinued and what enabled the town's continued prosperity? Whether there were changes which created difficulty in planting and maintaining the tree, difficulty in the transportation of olives to Akoris or some other reason cannot be determined at this point. In fact we cannot help but say that in the Coptic Period, except in the Faiyum district the flow of economic goods including olive oil in the Coptic Period which is known in detail by many papyri is practically unkown.

Notes

1) Lepsius, K., *Denkmäler aus Ägypten und Äthiopien Texte*, Bd. II (Leipzig, 1904), S. 54.
2) Egami, N., Wakita, S. and K. Ishida, *Tell Mastuma-A Preliminary Report of the Excavations in Idlib, Syria, 1986-1988* (*Bulletin of the Ancient Orient Museum*, vol. 10, Tokyo, 1989), pp. 47-75.
3) Callot, O., *Huileries Archéologie et Historique* (Paris, 1984), T. CXVIII.
4) Kelm, G. and A. Mazar, *Excavation in Samson Country* (*BAR*, 15-1, 1989), pp. 37-49; Giton, S., *Olive-oil Suppliers to the World* (*BAR*, 16-2, 1990), pp. 33-42.
5) Yeivin, Z., *Ancient Chorazin Comes Back to Life* (*BAR*, 15-3, 1988), pp. 22-36.
Magin, M., *Recovering Roman Jerusalem* (*BAR*, 15-3, 1988), pp. 48-56.

6) HADJISAVVAS, S., *Olive Oil Processing in Cyprus* (Nicosia, 1992).
7) *ibid.*, p. 122.
8) The latter one was reported in BAILEY, *EA*, Pl. 115c.
D. Rothbone provided information concerning the double screw direct press and a built-in installation, *lenos* found in Faiyum, however, only the single screw type has been seen in and around Akoris.
9) LUCAS, *AEMI*, p. 334.
10) BOWMAN, A. K., *Egypt after the Pharaohs* (London, 1986), p. 142.
11) GREENE, K., *The Archaeology of the Roman Economy* (London. 1989), p. 59.
12) ROTHBONE, D., *Economic Rationalism and Rural Society in Third-Century* A. D. *Egypt* (New York, 1991), pp. 244-247.
13) LEWIS, N., *Life in Egypt under Roman Rule* (New York, 1983), p. 143.
14) BOWMAN, *op. cit.*, pp. 142-147.
15) ELLIS, S., *Greco-Roman Egypt* (Buckinghamshire, 1992).
16) According to Fairbridge's data concerning the fluctuation of tide level in the Mediterranean Sea, there was a rapid decline in level from the 3rd century. FAIRBRIDGE, W. W., *Eiszeitklima in Nordafrika* (*Geologische Rundschau*, 54, Stuttgart, 1964). Additionally, flooding of the Nile occurred over 20 years from 284 A. D. through 305 and was welcomed amidst general happiness and rejoicing according to the graffiti found in Akoris (see p. 22). Thus, there is evidence of dryness at that time.
17) LEWIS, *op. cit.*.

Acknowledgement

I wish to express my sincere thanks to Prof. Rothbone of the King's College who kindly sent me a copy of BILLIARD, R., *La Vigne dans l'Antiquité* (Lyon, 1913) and photographs which described the double screw press.

(TSUJIMURA, S.)

5 PRIMITIVE BELIEFS IN TEHNEH VILLAGE

ISLAMITES AND COPTS : The beginning of a day in Tehneh village is early. At the five o'clock, Azzan carried in a resonant voice travels over the village under the star-studded sky. At eight o'clock the bell of the Coptic church rings.

In Tehneh village, Islamic and Coptic peoples live together according to their own traditions and customs. The area of the village is almost the same as that of the site of Akoris, and it is said that the population is about 6000. Coptic people account for 30 % of all villagers, a ratio which is very high comparing to the Christian 18.7 % in Middle Egypt and 7.3 % in Egypt as a whole, according to the statistics of 1960.

Taking up the nine villages along the road from Abu Philiou on the bank opposite Minya to Tehneh, we find that they are divided into four Islamic, two Coptic and three mixed villages. Though the Coptic village, Nazlet-Tabut has the largest population among them, its establishment came after the building of the Aswan High Dam. Many people in surrounding villages including Tehneh moved there as the danger of floods no longer existed, so except for the holy place for Copts, Deir el-Adlar, 15km to

the north of Tehneh, it cannot always be said that the Coptic villages are older than the others. On the contrary, judging from the mixed village Shurafa in the vicinity of the river terrace on which, like Tehneh, a Roman site was found, it is possible that the mixed villages are rather older than the others.

However, observing both groups in the mixed villages, we find the Moslems centered around two mosques, while the Christians gather around a church. In each case, some influential families occupy the central area, and poor families in the border area between them. Differences of religion in Tehneh appear not only where they dwell but also in their occupations. For example, most butchers are Moslems while most wood workers and tailors are Copts. In general, it is said the Coptic people can survive in spite of their minority status because they have secured an economic base through craftmanship. This is attested in Tehneh. Furthermore, it is generally known that there are some large differences in marriage and divorce.

On the other hand, common customs like circumcision for boys and girls are not a few and they both share some beliefs which are related to the site of Akoris, as described below.

PRAYER FOR PREGNANCY : Though common people are forbidden to enter the site of Akoris when we our mission is there, the rule is relaxed when young couples accompanied by a mother or sister come not only from Tehneh but also from neighboring villages and even Minya every Friday, the Islamic holiday, to pray for pregnancy if after two or three years they have no children. That many young wives of twenty or so who need not feel anxiety about the lack of pregnancy come to pray nevertheless, shows how important and earnest having a child is for an Egyptian woman.

The wife goes straight up the Sacred Road of the Western Temple Area, turns right at the Hypostyle Hall and approaches Chapel F fronting the Nile via the terrace of Chapels C, D and E. Her companions wait for her below the chapel while she climbs a narrow rock, the surface of which has been worn smooth under treading feet. She enters Chapel F with its relief of gods and goddesses on the inside walls. One of the reasons why this chapel was chosen to offer prayer for pregnancy might be the relief of Isis suckling the child Horus. However, the wife's most important rite here is passing through a 45cm hole in the rock wall at a 2m distance from the entrance of the Chapel, an act which symbolizes the act of delivery. She then goes back to where her husband and others are waiting, and on the terrace of Chapels on their way back, the couple walks around some conical holes for storage carved out in the rock floor in the Coptic Period. That is all they do here for pregnancy.

I have seen a prayer for pregnancy at the Roman site beside Shurafa village, too. There, wives rolled down an easy slope holding their long skirts with their hands, and then getting up circle round and round a pole.

PRAYER FOR CHILDREN'S RECOVERY FROM ILLNESS : On the way up to the Western Temple, there is an olive oil press which lies upside down. Parents are often seen taking a handicapped infant there, for it is said that if the child cannot walk by the time he is three years old, the parents must make him pass through a square hole cut in the oil press. That is, as the hole is likened to the passage of a baby in childbirth, going through it symbolizes rebirth. Some say that a blind infant can also receive divine favor by doing this.

PRAYER FOR COW MILK PRODUCTION: Some people take their cow to the site, where they are driven away at the front of the North Gate by the guardians. They then helplessly turn to the left, and go eastward with the cow. Though guardians explained that people take a cow who does not milk well to the site, they are not allowed to enter the Western Temple Area. We can surmise, however that they would like to take their cows into Chapel A or B with its Hathor capitals who has the face of cow.

TRADITIONS BURIED IN OBLIVION: It is pointed out that the beliefs mentioned above are based on the idea of either birth or rebirth which originated in the religion of the Pharaonic Period. Passing through the Coptic and Islamic Periods, the Pharaonic religion which on the surface seems to have been forgotten leaves its trace in the village beliefs still now. They are, however, rapidly disappearing today.

A wave of modernization in the 1980's extended to villages in Middle Egypt. Electricity had not been installed in most of the houses in Tehneh until 1983, and the villagers thus lived under the dim light of kerosene and butane lamps. With the advent of electricity, appliances especially black and white television, spread rapidly during the next several years. TV in particular has changed the people's traditional consciousness with the many kinds of scientific information which it sends. Concerning marriage and pregnancy, the government states via television that girls of seventeen years and under are too young for marriage and that having many children injures a woman's health, and such health guidance has begun to filter into people's mind. Simultaneously, scientific knowledge turns people away from the primitive beliefs mentioned above. Actually, a young man said, "It is nonsense to go to the site for pregnancy. A wife should go to a hospital in the case of infertility, and a blind child should also." What he says is correct, of course, however, if the primitive beliefs appeased even in a minor way the antagonism between the Islamic and Coptic religions which are strict, and if they are helpful in keeping the identity of the village, we should not dismiss them as stupid beliefs but put them on record and revaluate them, I think.

(TSUJIMURA, S.)

VIII

SUMMARY

MIDDLE KINGDOM : Four rock-cut shaft tombs in the Western Temple Area were confirmed to date to the Middle Kingdom by the chisel marks found within. One of these, referred to as Chapel B, retained many funerary remains due to the relatively early collapse of the ceiling, though they had been greatly disturbed. What deserves special mention of the many and various wooden objects uncovered is firstly a funeral barque model with crew and equipment. In respect to the fact that the barque has quite a realistic representation in comparison with those found at other sites, it is of considerable value in the history of water-borne vessel. Secondly, a royal figure is listed. It is akin to that of Senwosret I discovered at Lisht in size and style. This fact suggests not only the date of the tomb but also the social position of the dead.

At Beni Hasan, the most well-known necropolis near Akoris, an inscription mentions that the father of the nomarch Khnum-hetep built a Ka chapel at Mr-nfr, or Akoris.[1] The inscription left on the coffin found in Chapel B cannot be diciphered because of too much damage, so whether the dead buried in this tomb was a relative of Khnum-hetep or not is awaiting future inquiry.

THIRD INTERMEDIATE PERIOD : Two donation stelae, one by Pinudjem I of the 21st Dynasty and the other by Osorkon III of the 23rd Dynasty, were found in the Western Temple Area. They tell us that the god Amon enshrined in Akoris by the end of the New Kingdom was given importance by the Pharaohs of both Upper and Lower Egypt, a fact which reflects the complicated situation in the struggle for supremacy between the two political districts.

According to the Pi('ankh)y stele found in Napatae,[2] his army in the course of advancing to the Delta, assailed Akoris with siege mallets and slaughtered the northern garrison within. What this document proudly mentions is suggestive, because, it is thus known that Akoris, when assailed, was surrounded by a thick outer wall, and under the rule of the northern government.

Our archeological results show that mud brick walls dating to the Third Intermediate Period were extant not only in the Western Temple Area but also in various other places. Judging from the distribution of the walls found, the extent of the city seems to have not been so different from that of the Roman Akoris. Among these Third Intermediate Period walls, the most important are the outer wall and a large arc-shaped wall enclosing the rock-cut chapels.

It is interesting to note here that the tomb chapel area was again used for tombs in this period. Considering that tombs, especially for the high-ranking, were situated separately from a temple-residential complex from the Old Kingdom onward,[3] the complex plus tombs that was Akoris seems to be against Pharaonic tradition and is similar to West Asian cities, for example Ur and Ebla. Thus vicissitudes which occurred in Akoris, that is, the construction of the wall around the temple-residential complex and the placement of major tombs inside in juxtaposition to the Temple of Amon must reflect the historical changes whereby the unrest found in the Third Intermediate Period resulted in the cities

becoming more autonomous.

Major constructions from the Late Dynastic Period have not been found and so the function of the city at that time is thought to have decreased. This is attributable to the assault by Pi('ankh)y's army and political declination caused by the rule of Assyria and Persia in Egypt.

When the centralized and centralizing government was lost, Egypt was in general divided into two political powers, Thebes in Upper Egypt and the Delta in Lower Egypt. The Theban administration, basically more unifiable and stronger due to geographical factors, more than once controlled the Delta as well. However, events at times dictated a temporary political separation of these two areas. This losing and regaining of political power by Upper Egypt was an equation for unification and division in the Pharaonic Period until after the New Kingdom when the whole system shattered.

EARLY ROMAN PERIOD: The Western Temple Area was improved on a large scale to change its appearance completely, that is, the two rock-cut chapels referred as to Chapels A and B respectively were enlarged and the Hypostyle Hall was newly provided in front of Chapel A. On both sides of the Sacred Road leading to the chapels, two courts, upper and lower, with colonnades were constructed, and the precincts of the temple were completely surrounded by a large wall. This remodeled temple followed the Egyptian tradition in its plan, but in constrast, accepted the Greco-Roman style in its columns, etc. In the center of the city, Serapeum made of ashlar was constructed in Greco-Roman style. From both Serapeum and the Western Temple, a straight road extended north and the streets of different directions were attempted to be converted into a gridiron layout. In addition, the outer wall surrounding the city was greatly enlarged to prevent, in part, damage to the city by floods. With all of these changes Akoris came to show the appearance of a Roman city.

According to the dedicated inscriptions found in the Western Temple Area, it is known that the chief deities of this temple were Amon and Sobek, and that most of the inscriptions with the names of Roman emperors date from the 1st to 2nd century A.D. In addition, it is known that among the devotees, trierarchs are included. As the *Periplus Maris Erythraei* mentions and the site of Quseir Al-Qadim indicates, in the 1st and 2nd centuries A.D. the sea lane from Egypt to India flourished as much as the overland Silk Road. The Nile and the Eastern Desert routes in Egypt no doubt served as the main artery connecting the Mediterranean and Red Seas. Thus, it is thought Akoris became a transit point along the Nile, and the Western Temple, a temple at which navigators worshipped. Numerous crocodile and several sheep mummies which were left in the Western Temple Area must have been the votive offerings of these navigators.

The Central Temple, probably deifying Serapis, left two stelae each dedicated by a member of the staff of the Roman Legio XXII. Bernand discussed their historical significance and guessed that the Roman army engaged in quarrying limestone near Akoris for use in Alexandria[4] (Fig. 168). Taking into consideration that many quarry ruins, though undateable, are left in the crags south and east of Akoris, indicating that this was true, limestone quarrying can be added to one of the economic activities supporting Akoris.

On the contrary, the dedication of stelae stopped and large-scale construction diminished especially toward the beginning of the 3rd century A.D. which was an era of serious disorder in the Roman Empire,

with the riots in Alexandria and Coptos following the Conquest by Palmyra occurring then.[5] The decline in importance of Akoris at this time is thought to have reflected this unrest, and in addition, there can be found some indication that the Nilotic seasonal flooding was insufficient in the 3rd century,[6] and if so, there is no doubt that agricultural production in the area was depressed and disorder accelerated. In that sense, the fact that graffiti which appeared at the end of the 3rd century after a long absence of inscriptions are hymns celebrating Nilotic flooding gives further indication of a dry spell.

COPTIC PERIOD: It is testified by the relics found in our investigation that Akoris regained its prosperity in the 4th century A.D., at which time the Western Temple was repaired and many dwellings on the streets were rebuilt. In addition, a church was constructed in the north area of the city and the Sacred Road of Serapeum was restored.

However, while the city maintained its renewed prosperity, the Western Temple Area proceeded to suffer from disfiguration after the 5th century A.D., and by the 7th century A.D., secular mud brick buildings came to occupy the Courts. Thus, the Western Temple Area lost its primary function as it was converted to a workshop area for olive oil, flour, textile and pottery production.

This vicissitude in the Western Temple Area awakens our interest in two points. One, the traditional Pharaonic faith in such gods as Amon and Sobek, which had been tolerated even under Roman rule, was gradually weakened due to the dissemination of Christianity. Particularly after the Chalcedon Conference, the Pharaonic gods were purged mercilessly by the Coptic monks as typified by St. Shenute. It is deemed that the extinction of the Western Temple as a place of worship resulted from this religious change. The second was that the international trade network through the Nile faced great difficulties due to the decline of the Roman Empire, and Akoris as a transit point was thus deprived of its main economic basis, and so to make up for this deprivation, commodity production and trade in the local market were established. When the Western Temple was thriving in the early Roman Period, various workshops must have been located nearby in order to maintain the Temple and to serve visitors. Therefore, once the Temple Area lost its inviolability, the workshops could have easily entered its precincts.

In parallel with the secularization in the Western Temple, there are found some indications of a population increase, that is, bricks covering the surface of the site show that the 7th century dwellings embraced the overall city and even partially occupied the central road. The Roman regularity found particularly in the public areas of the city was abandoned so that they took on the character of great disorder. Though what caused the population increase has not been archeologically determined yet, a population influx from the neighboring rural communities under the pressure of the Muslim Conquest must be considered.

THE LAST DAY OF AKORIS: Judging from the archeological evidence that the 7th century dwellings throughout the whole city area were often abandoned after having been burned, it is known that the city lost its function rapidly.

According to the dates shown in papyrus texts and ostraca, Akoris was still alive until at least the 680's under Muslim rule. As only a few Islamic remains such as glass vessels and a coin from the latter

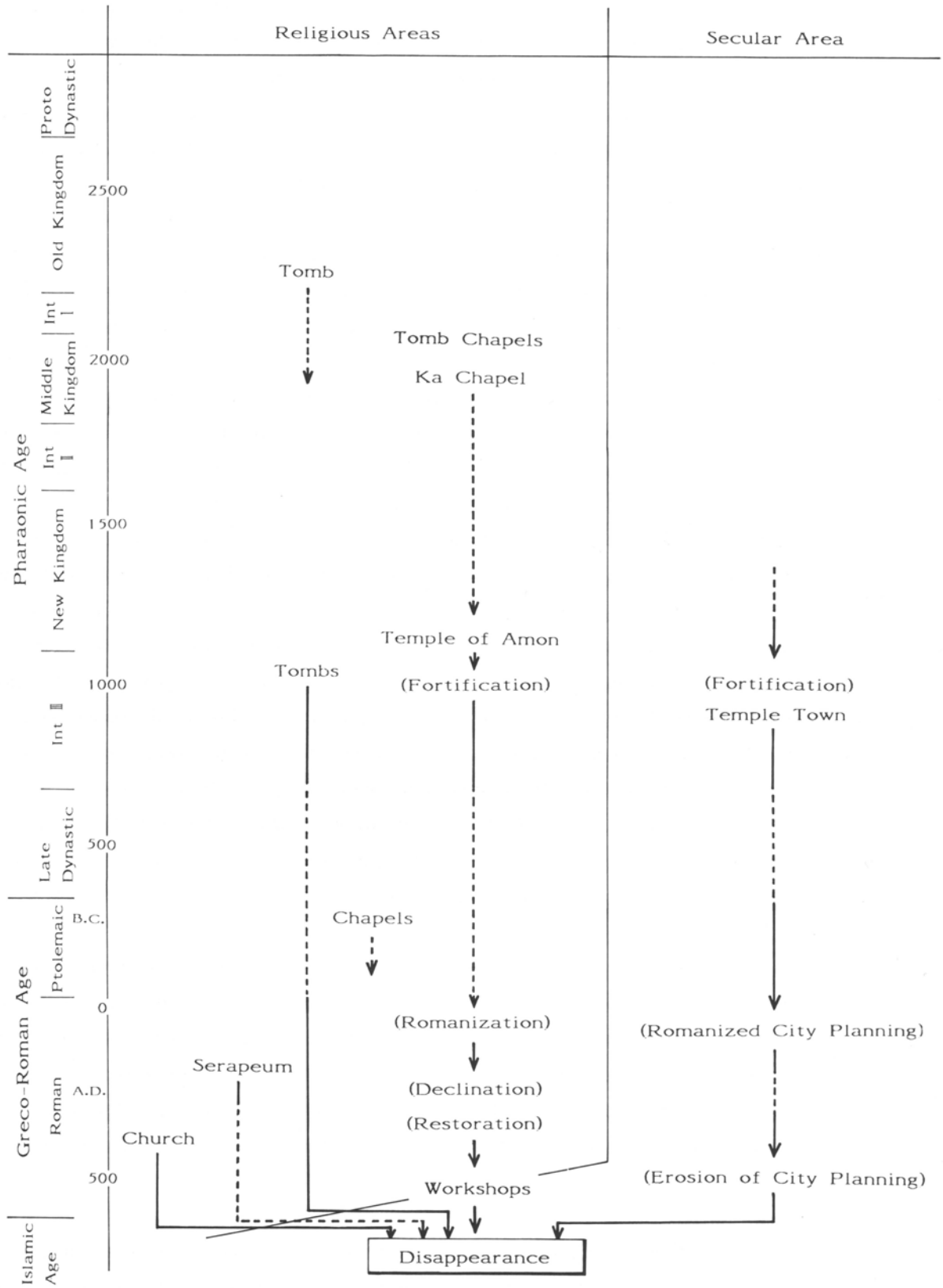

Fig. 304 Transition model of Akoris

part of the 7th century are included among our finds, Akoris seems to have gone out of existence around 700 A.D. without having been converted to an Islamic city. Some rural and ecclesiastical communities which, though small in scale, probably subsisted in the area after the demise of Akoris.

Bailey has stated that an earthquake which occurred in the 8th century was the chief cause for the decline of Ashmunein.[7] That earthquake may have also inflicted crushing damage on Akoris. Of greater likelihood, the Bedouins who promptly converted to Islam may have attacked Akoris with fire and ravaged it. However, regardless of the scenario, papyrus texts and ostraca tell us that due to excessive anti-paganism drives and high taxes, the Coptic society was too exhausted to maintain such an energetic city. Otherwise, had it been truly worthwhile and possible, the people would have returned sooner or later and rebuilt the city.

Other Coptic cities which like Akoris were abandoned without converting to Islam have been found near Akoris, including Antinoë and probably Oxrhynchus. Whether it was a tendency throughout Egypt for cities to die before their conversion to this new religion or not awaits future research, however historical inevitability, rather than natural calamity, must have been inherent in this tendency.

POSTSCRIPT : The transition of Akoris which the above-mentioned shows can be summed by schematizing as Fig. 304.

Though Akoris is a commonplace site, the above transition schema must bear some relationship with the overall changes which ancient Egypt and in particular Middle Egypt went through. If that is the case, what meaning does the schema have in the history of ancient Egypt ? Though the centuries following the Early Roman Age in Akoris seem to support the thesis[8] of Liebenschuetz concerning the Late Antiquity, this question should not be left for us to answer alone but should be considered by all historians of Egypt and Rome, because this schema of Akoris presents a model well worth studying in other sites. In this sence, we believe that the initial intention of our twelve years of archeological investigations has been achieved.

Notes

1) NEWBERRY, P. E., *Beni Hassan*, vol. 1 (London, 1893-1900).
2) GRIMAL, *SPM*.
3) There are several examples where a great temple was partially diverted to a tomb in the Third Intermediate and the Late Dynastic Periods, for instance San el-Hagar and Medinet Habu. Small-scale tombs from the Old Kingdom to the Middle Kingdom, which were built in a 'town', are found in Tell Basta, Ashmunein, Edfu and so on. Cf. SPENCER, *EA III*, pp. 69-71.
4) BERNAND, *IGLA*.
5) GIBBON, E., *The History of the Decline and Fall of the Roman Empire* (BURRY J. B. ed., NAKANO, Y. trans. vol. II, Tokyo, 1978).
6) FAIRBRIDGE, W. W., *Eiszeitklima in Nordafrika*, (*Geologische Rundschau*, 54, Stuttgart 1964).
7) SPENCER, *EA II*.
8) LIEBENSCHUETZ, W., *The End of the Ancient City* in *The City in Late Antiquity*, ed. J. Rich New York, 1992), pp. 1-36.

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Without the teamwork of the Tehneh villagers who shared joys and sorrows with us during our excavations, Vernon Spencer who devotedly checked our English writings, and Noriko Nishimura who participated in the drawing and operated the word-processor with dedication, this publication would not have been realized. We would like to here give sincere thanks to all supporting persons and organizations in our investigation and publication.

(KAWANISHI, H.)

アコリス史

首都・カイロから230 kmほど遡ったナイルの東岸に，かつてアコリスの名で呼ばれていたローマ都市の遺跡がある。東方は涸れ谷を挟んで荒涼とした残丘の連なりを仰ぎ，西方は沃野を隔ててナイルを見下ろす段丘の上に，日乾レンガの壁が至るところに頭をのぞかせ，石造建築の部材が主を失ってそこここに散在している。東西300 m，南北700 mほどの範囲に拡がるこの都市址の南西の一角に，高さ20 mほどの岩山が聳えたち，墓や葬祭に使われていた岩窟がその裾をふちどっている。

1981年にわれわれが初めて発掘の鍬を入れたのは，北裾に営まれた西方神殿である。エジプトの伝統的王朝文化と，新来のギリシア・ローマ文化との接触・変容をテーマに掲げて，この神殿の全容を露わにする調査を続け，その一方で都市の中央を占めるギリシア・ローマ様式の石造神殿や，都市を囲む外壁などにも調査の手をのばした。こうして，都市全体の構造を解明し，変遷を辿ることをめざしたのである。1992年まで連年にわたって続けた調査の過程で，所期の目的からすれば予想外のことであったが，中王国時代の墓や王朝時代末期の建物址が姿を見せ，それらを調査する機会にも恵まれた。本書は，これら12次にわたる調査研究の報告である。

中王国時代の造墓活動　B堂（Chapel B）と名付けた岩窟廟堂内の立坑墓は，出土した木棺や各種の副葬品の形式から中王国時代のものであることが判明した。エジプトの多くの例にもれず墓は後世の撹乱を蒙っていたけれども，墓室内の落盤がさいわいして棺や副葬品の一部は元の位置をとどめており，また墓を埋めた土のなかから大量に見いだされた木製品や玉類によって，埋葬当時の様子をいくぶんかは復元することができた。すなわち，中王国時代特有の箱型棺3基を納置し，枕，金箔張りの王像，杖，パピルス用伸展具，葬送船模型などの木製品をそえ，ファイアンス製の玉を連ねた飾りで死者の胸を彩り，さらに銅斧や銅鏡，スカラベなどの品々を加えていたことが知られた。

出土品のなかで，まず特筆されるのは葬送船模型である。全長2 mに達する模型としての大きさもさることながら，写実性の点で既存の類品をはるかに凌いでおり，アビュドスでの祭礼を終えて葬地につく葬送船のさまを彷彿とさせる逸品である。試みに元の船体の大きさを算出すると，全長40 m近くに達するというから，模倣の対象としたのは，ギザにある「太陽の船」に匹敵する，文字どおりの巨船であったといってさしつかえない。また，金箔張りの王像は寸法の上でも，表現法の点でも，リシュト出土の第12王朝のセン・ウスレトI世像に酷似している。この事実は，造墓年代が第12王朝前半期であったことを物語るとともに，墓主の身分が州侯ないし，その近親者にあたるような当時の有力者であったことを想像させるのである。

アコリスの地に営まれた中王国時代の墓は，この1基にとどまらなかった。隣接する3基の岩窟廟堂（Chapels A, C and E）や，ナイル河岸に面した岩窟廟堂1基の，それぞれに設けられた立坑墓もまた，同じ時代に造られていた。埋土さえ取り除かれて，いずれも今は空虚な姿をみせているが，岩盤の壁になまなましく残る鑿痕の比較研究や構造の共通性によって，帰属する時代を推定することができたのである。さらに，遺跡内の北西方に顔をのぞかせた石灰岩の露頭に穿たれた立坑墓のなかにも，1ないし2基は同時期のものが含まれていた。

中王国時代の墓域として，アコリス近在では南方30 kmにあるベニ・ハサンの墓群が著名である。数

の上でベニ・ハサンにははるかに及ばないが，しかし，州侯級の墓主を擁するしかも中王国時代にあたる墓がアコリスでも造られていたことは，われわれの調査が始まるまでは予想されていなかった。ただし，ベニ・ハサンの墓には州侯クヌム・ホテプの父が，メル・ネフェルという地にカー神殿を構えたという記録が残っている[1]。「美しい運河」を意味するメル・ネフェルがアコリスの地であることは，ローマ時代の擬似オシリス墓の棺銘などによって既に知られていたところであるから，カー神殿ならずとも中王国時代に属する何らかの遺構が見いだされる可能性はあったわけである。

中王国時代のノモス区分によると，ベニ・ハサンは第16ノモスに属してその南端近くに位置し，いっぽうアコリスは第16・18の両ノモスの境界にあたる[2]。したがって，アコリスの地に墓を営んだ州侯級の人物がはたしてベニ・ハサンで造墓活動を展開した州侯の縁者であったのか否かは断定できない。しかしいずれにもせよ，中王国時代に上下エジプトに挟まれた中エジプト南半の州侯達がみせた自律化への指向が，アコリスの地でも展開されていたのである。

第3中間期の都市形成　アコリスにおける造墓活動は，ベニ・ハサンと同様，中王国時代のなかで衰えたようである。そうして，新王国時代に入ると，ラムセスⅢ世の名を刻んだ巨大なカルトゥーシュが遺跡南方のナイルをのぞむ崖面に残され，同王がアメンラー神と手を携えてソベク神のところに赴く場面を描いたレリーフが，カルトゥーシュと並んでそこを飾っている。また，遺跡の神殿内にも同王のカルトゥーシュ入りの石材が，かつて存在していたという[3]。ラムセスⅤ世治下で実施された中エジプト北半の検地の記録（ウィルボー・パピルス）がアコリスの地にアメン神殿の営まれていたことを伝えているが[4]，ラムセスⅢ世銘入りの石材は同神殿の一部を構成していたのであろうか。ともかく，新王国時代後半のラムセス朝の時期において，このアコリスの地でアメン神やソベク神が奉祭されていたことが，これらの資料から知られるわけである。

第3中間期に入ると，この地のアメンラー神は俄かに重要性を増したらしい。西方神殿域内で発見された第21王朝ピヌジェムⅠ世，さらに第23王朝オソルコンⅢ世によって同神にそれぞれ奉献された石碑がそのことを物語っている。ピヌジェムⅠ世はテーベの神官長として抬頭した王であり，いっぽうオソルコンⅢ世は，下エジプトのタニスに拠を占めた王である。したがって，王統と本拠とを異にする両王朝の碑文がアコリスでともに出土したことは，南北両勢力が分立して覇を競った第3中間期の政治動向のなかで，中エジプト南半の帰属が揺れ，それゆえにこの地が重視されていたこと，そうして第21第23各王朝の勢威がそれぞれこの地に及んでいたことを立証する資料として重要な意義をもっている。

さらに，スーダンのナパタで発見された第25王朝の創始者ピー王の碑文によれば，その軍が北上する途次にアコリスの地を攻略し，そのさい，攻城鎚をもって城壁を壊して侵入し，北方デルタの守兵を虐殺したという[5]。誇らかにその勝利をうたった碑文の内容より察すると，第24王朝治下においてアコリスの地を防御用の城壁がめぐり，北方デルタ方面の勢力がここを守っていたことが知られる。破壊された城壁を特定するには至らなかったものの，岩窟神殿域を弧状に取り囲む巨壁の存在が発掘調査によって推定され，日乾レンガの編年よりするとその造営時期は第3中間期にあたっていた。弧状壁によって画された岩窟神殿域のなかには墓も営まれていた。いっぽう，遺跡内に設けた発掘区や露出壁の調査で同時期の建物や城壁の一部と考えられる壁を確認しており，その拡がりぐあいから推測すると，第3中間期のアコリスはすでに，ローマ時代都市・アコリスに近い規模をそなえていたようである。

都市内の墓といえば，第21・22両王朝の王墓が営まれたタニスの例が想起されるが，造墓にふさわしい高燥の地に恵まれないタニスのようなデルタ地帯はさておき，上・中エジプトにおいては，神殿・住居の場から離れて墓を営むのが，有力者については古王国時代以来の根強い伝統であった。ところが，

メディネト・ハブのアメン神殿内に墓が営まれるようになったのも第3中間期のことであるというから，第3中間期には，この伝統が枉げられるばあいがあったようである。都市が囲壁をそなえ，かけがえのない墓はとくに選ばれて都市内の一画を占め，こうして防禦の体制をととのえて都市が自律化する傾向は，王権の膝下から隔たる中エジプト南半の地においては，とりわけはなはなだしかったことであろう。ちなみに，都市内造墓の伝統は，アコリスにおいてローマ時代にもなお継承され，もっぱら都市壁外に墓を営むローマ古代都市の通例とは対照的な様相をみせている。

末期王朝時代に入ると建物の造営や造墓が衰退したことを，調査の結果が伝えている。ピー軍による攻略が契機になったのであろうか。あるいは，新アッシリアやアケメネス朝ペルシアのあいつぐ侵入によって国内の混乱にいっそう拍車がかかったのであろうか。さらには，中エジプトの去就が上下に分立した政治動向に影響を与えるという中王国時代や第3中間期に見られた方程式が，もはや成立しなくなったせいであろうか。

ローマ時代の都市整備　プトレマイオス朝期には，壁面をレリーフで飾った礼拝堂2基が岩窟を穿って造られ，また，イシス・モキアス神に捧げた巨大な碑がナイルをのぞむ崖面に刻まれている。さらに，西方神殿域内から王妃ベレニケの名を有する建築石材が発見され，遺跡内に設けた発掘区の一部からは同時期の日乾レンガ造りの建物が検出された。

ラインナッハ・パピルスなどの史料は，アコリスで小麦や牛の取引が盛んにおこなわれていたことを記し，またこの地の人々がサラペイオン家から土地を貸借していたことなど，プトレマイオス朝期における商業活動の実態を生きいきと伝えている。このように文献史料からは都市の盛んな様子が知られるのであるが，しかし，われわれの発掘調査でそれを裏付けるまでには至らなかった。

さて，エジプトがローマの属州として併合された影響はアコリスにも及び，カエサル家系の帝統の下で都市の整備がただちに実行に移された。都市の最高所に位置する西方神殿域は，参道の左右に2段にわたって回廊付きの中庭を配し，岩窟内の至聖所の前面に多柱室を設けて，その全域をレンガ壁で囲む壮大な姿に造りかえられた。平面プランはエジプト王朝様式の伝統を踏襲し，しかし柱や門などは，ギリシア・ローマ様式を取り入れた折衷型が，ここで採用された。また，やや遅れて市域の中央には，ギリシア・ローマ様式に則った石造神殿も営まれた。これら両神殿の聖道は平行に配置されており，都市の街路をそれにあわせて区画しようとした形跡をこうしてみてとることができる。

神殿には数多くのギリシア・ラテン語碑が奉献されていた。われわれの手で発掘した4基を含めると総数は20基前後に達しており，エジプト国内のローマ都市のなかでもその出土数が有数であるといってよい[6]。西方神殿への奉献碑にはアモン神やスーコス神に捧げたものが多く，また奉献者のなかに複数のアレキサンドリア在の3段櫂船の船長が含まれていた。いっぽう中央神殿出土の2基は，ともにローマ第22軍団関係者によるセラピス神への奉献碑である。時を同じくして市中でそれぞれに尊崇を集めた神格の相違が，参拝者の職種の違いに反映しているかのようである。

両神殿に奉献された碑の年代は，紀元後1・2世紀にほぼ集中している。すなわち，ローマ皇帝名でいえば，ティベリウス帝からカラカラ帝の間にあたるのである。『エリュトゥラー海案内記』が伝えるように，1・2世紀には紅海からアラビア海を越えてインド亜大陸に達する交易路が活況を呈し，商線はさらに東方にものびていた。この交易は，ナイル河を動脈として，ローマ本土と結ばれており，内陸の「絹の道」と並んで東西交易上の要路であった。アコリスのアモン・ソベク神殿に盛んに碑が奉献され，そこに3段櫂船船長が含まれていた背景には，ナイル河を動脈とする交易の中継地として，また，紅海へ抜ける砂漠路の分岐点として，この地が重用されたためであろう。西方神殿域から発見された多

量のワニや羊のミイラは，航海の安穏を祈願する奉献物であったにちがいない。

コプト時代の非ローマ化　奉献碑の数が3世紀に入ると急激に減少する。柱や壁に銘文を刻むことも行われなくなり，大規模な建造物の造営も絶えてしまう。そうした状態は多柱室に記されたナイルの増水を讃えるグラフィッティの年代，すなわちヌメリアヌス・カリヌス両帝統治第2年（A.D. 284），またディオクレティアヌス・マクシミアヌス統治の第2年（A.D. 286）まで続く。このことは，アコリスの都市機能が3世紀において著しく停滞していたことを物語っている。3世紀と言えば，慢性化した物価高騰や重税反対の反乱，生産経済の周縁化，軍人皇帝の乱立などによりローマ本国が混迷と衰退の危機的状況に陥った時期であることは，よく知られている。またエジプトでは，パルミラが侵入し，アレクサンドリアやコプトスで反乱が起こった。さらに，紅海沿岸の交易都市クセール・アル・カディムが2世紀をもって衰滅することも，発掘調査の結果が示しているところである。もしそうであるとすれば，3世紀にアコリスの都市機能が低下した背景には，混迷するローマ本国の状況に加えて，東西海上交易が退潮をみせたことが指摘されるのである。

また3世紀は，農耕に欠かせないナイル河の水位の上昇がはかばかしくなかったらしい形跡が，フェアブリッジのデータに表れている[7]。ナイル流域の小麦生産の動向はローマ本土の食料事情に大きな影響をもっており，その増水の如何は，ローマ市民にとって膝下のティベレ河の水害と並ぶほどの関心事であった。したがって，フェアブリッジのデータ通りであったとすると，3世紀における小麦価格の高騰には，エジプト側の事情があったことも考慮されねばならないであろうし，小麦生産の減少はむろん生産地であるエジプト社会自体を疲弊せしめたことであろう。その意味で，3世紀末のグラフィッティがナイルの増水を讃えるうたであったことについて，これは増水不良に悩まされた人々が，文字どおり干天に慈雨の思いで書きしるしたものであったと理解したいのである。

4世紀に入ると，アコリスは再び活発な動きをみせる。西方神殿にはさかんに改修が加えられ，主要街路に沿った建物がしきりに建てかえられた。また，市内の北部には教会も造られた。ところが，5世紀を境にして西方神殿域内に一般住居が侵入し始め，6世紀に入ると神殿域は本来の機能を全く失い，生産の場に転化したことが，発掘の結果から知られる。

3世紀の混迷のなかで，エジプトでもキリスト教が，下層の人々の心をとらえ，軍人諸皇帝による弾圧に耐えディオクレティアヌス帝による最後の大迫害をも越えて，急速に広まっていった。こうしてついに，コンスタンティヌスI世による公認を受け，テオドシウスI世によって国家宗教と定められたが，これはまた，エジプトに流布したキリスト教が，後にカルケドン宗教会議において異端の認定を受ける途を開くことにつながった。そうして，カルケドン会議（A.D. 451）以降，宗教的にはエジプトは独自の道を歩むことになったのである。とりわけ中エジプトでは，聖シェヌートの活動に代表されるコプト教徒による異教攻撃が盛んに行われたといわれている。そこではローマの神々も異教として排されたのであろうが，それよりもむしろ，王朝時代からの永い伝統を引きローマ帝国下で容認されていたエジプト固有の神々が，攻撃の主たる対象となった。このことが，アコリスにおける石材の転用ぶりや出土文字史料から察せられるのである。いっぽう，ローマ帝国下における海上交易の中継地としての機能が交易の衰退に伴って失われると，それにかわって地域的な商品生産や取引がアコリスの都市経済を支えるようになった。オリーヴ油生産，製粉業，織物業，窯業生産を行った痕跡が西方神殿域内に残っており，同神殿域内は多様な業種による作業場の観さえある。1・2世紀において，神殿を維持するために，またその隆盛に与かるために多くの手工業者が神殿周辺に居を構えていたことであろうが，それらの手工業者の直接の末裔であったかどうかはともかく，神殿が本来の不可侵性を失うと域内が作業場と化する

ことは，容易であったにちがいない。

神殿域の一画で大量に出土したパピルス史料は，神学，信仰関係のものとならんで，土地・灌漑・税に関するものを含んでいた。この出土場所が教会であったのかどうか，遺構の遺存状態が劣悪であったためにこれを確認することはできなかったが，教会ないしその管理下におかれていた何らかの建物がここに存在していた可能性が高いことは，逆に，大量のパピルス史料の出土から推測されてよいであろう。いずれにせよ，神学・信仰関係のパピルスと経済関係のパピルスとが一括にした状態で見いだされたということは，当時の教会の機能が宗教の場だけにとどまらなかったことを示唆している。アンフォラの蓋に残る押印が，宗教色に彩られていることも，その意味で注目する必要がある。

アコリスの終焉　宗教と地域的経済活動を柱に，コプト社会として再建をみたアコリスの都市機能は，その後も順調な推移を辿ったらしい。日乾レンガ編年によると7世紀にあたる建物が稠密に都市の全域を覆っており，この点からすれば人口が増加した形跡さえみとめられる。そうして，町の中央路に建物が侵入し，町はスラム化の傾向さえ帯びた。ところが，それらの建物の多くは火災を蒙った痕をとどめており，それによって建物は放棄されてアコリスは無住の地に転じたことが知られる。

エジプトの総主教が，侵入したアラブ軍司令と降伏条約を結んだのは，640年のことであるが，アコリスは680年代においてなお都市としての機能を保っていたことが，われわれの調査で出土したパピルスやオストラカの文字史料から裏付けられる。そうして，680年代以降の文字史料が794年の1点を除いて見あたらないこと，イスラムのコインやガラスがほとんど出土していないところからすると，アコリスの都市の終焉は680年代から余り隔たらない700年前後であったとみられる。しかも，その終焉の日までコプト社会としての命脈を保っていたのである。

近傍の大ローマ都市として特記されるアシュムネインの場合には，衰滅に至る転機が8世紀にあり，中エジプトを見舞った地震が直接のきっかけになったと説かれている[8]。アコリスに終焉を齎せたのも，あるいは同地を襲った地震であったのかもしれない。アンティノエの場合もまた，7・8世紀で衰滅するようであるから地震の影響である可能性はある。しかし，地震の被害がかりに潰滅的であったとしても，社会の要請があれば，再建を目指す動きが起こるはずである。その意味で，アコリス近傍のローマ都市がいずれも再建を放棄しており、イスラム都市への変転をとげていないことは，都市という多消費型社会を再建する活力がコプト社会のなかに既にもう残されていなかったことを物語っている。こうしてアコリスは放棄されるに至り，かわって，近傍で生長してきた自給自足的な農村や，コプト教の事跡にまつわる教会共同体が，イスラム統治下で次代を担うことになるのである。

なお，本調査の遂行や報告書の作成にあたり，各方面の機関や関係の方々からのご厚情を賜った。また，報告書の出版については，平成6年度文部省出版助成を受けた。われわれと発掘の労苦を共にしたテヘネ村の人達，寝食を割いてまで英文校閲に携わってくださったバーナン・スペンサー先生，ワープロ入力に作図にと多方面によく力量を発揮してくださった西村典子さん，また上梓に力を尽くしてくださった晃洋書房の上田芳樹社長・同編集部工藤陽子さん，これらの方々とのチームワークがなければ，本書はおそらく成らなかったにちがいない。調査から出版に至る地道な作業を支えていただいたすべての方々に，この場をかりて，衷心より謝辞を申し述べたいと思う。

注

1) Newberry, P. E., *Beni Hassan*, vol. 1 (London, 1893-1900).

2) Kessler, *HTMS*.

3) Lefebvre, Barry, *ASAE.*

4) Gardiner, A. H., *The Wilbour Papyrus*, II (Oxford, 1984-52)

5) Grimal, *SPM.*

6) Bernand, *IGLA.*

7) Fairbridge, W. W., *Eiszeitklima in Nordafrika* (*Georogische Rundschau*, 54, Stuttgart, 1964).

8) Spencer, *EA II.*

（川 西 宏 幸）