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Enquiries concerning membership should be addressed to
The Treasurer, Dr. Archer Martin, Via di Porta Labicana 19/B2, I–00185 Roma
treasurer@fautores.org

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VORWORT DER REDAKTION

Der 27. RCRF-Kongress fand vom 19. bis zum 26. September 2010 im Nationalmuseum in Belgrad statt.
Thema des Kongresses war: „Late Roman and Early Byzantine Pottery: the end or continuity of Roman production?“.

Von den anlässlich des Kongresses präsentierten Postern und Vorträgen wurden folgende nicht publiziert:

M. Bergamini, P. Comodi & I. Faga	Scoppieto: La produzione di vasi a pareti sottili
D. Bernal Casasola, M. Lara Medina & J. Vargas Girón	Roman clay fishing weights in Hispania. Recent research on typology and chronology
A. Biernacki & E. Klenina	Red slip ware from *Novae (Moesia Secunda):* 4th–5th local production and imports
M. Casalini	Circolazione ceramica a Roma tra l eta delle invasione e la riconquista bizantina. Nuovi dati dai contesti delle pendici nord orientali del Palatino
Sv. Conrad	Pottery of the second half of the 3rd century from *Romuliana*
T. Cvjetićanin	Late Roman pottery in Diocese Dacia: overview, problems and phenomena
M. Daszkiewicz & H. Hamel	Roman pottery from Baalbek (Lebanon): provenance studies by laboratory analysis
J. Davidović	Late Roman burnished pottery from Srem
E. Doksanalti	The late Roman pottery from “the Late Roman House” in Knidos and the Knidian late Roman pottery
D. Dobreva	Late Roman amphorae on the Lower Danube: trade and continuity of the Roman production
D. Dobreva & G. Furlan	Progetto Aquileia: *Fondi ex Cossar*. Commercio e consume ad Aquileia. Analisi delle anfore tardoantiche alla luce di alcuni contesti
Kr. Domzalski	Late Roman light-coloured ware: tradition and innovation
P. Dyczek	Remarks on the so called legionary pottery
A. Jankowiak & F. Teichner	A household inventory of a *Mirobrigensis celticus*
G. Kabakchieva	Spätrömische Keramik in den Provinzen *Dacia Ripensis* und *Moesia Secunda*
T. Kowal & J. Reclaw	Scientific Investigations – Program EU – Central Europe: The Danube Limes project
J. Krajsek	Late Roman pottery from *Municipium Claudium Celeia*
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T. Leleković	Pottery from the necropoleis of *Mursa* (1st–4th centuries)
B. Liesen	First century fine ware production at Xanten (Germany)
R. Palma	La ceramica dipinta di Schedia (Egitto)
D. Paraschiv, G. Nutu & M. Iacob	La ceramique romaine d’*Argamum (Moesia Inferior)*
S. Petković	Late Roman pottery from tower 19 of the the later fortification of *Romuliana*
P. Puppo	Ceramiche comuni di VI–VII sec. d.C. nella Sicilia occidentale: produzioni regionali ed importazioni dall Africa settentrionale
D. Radicević	Early Byzantine pottery from Liška Ćava, near Guča (Western Serbia)
D. Ratković	The territory of Serbia in Roman times
Chr. Schauer	Pottery of the late Roman and early Byzantine periods in Olympia

G. Schneider & M. Daszkiewicz In-situ chemical analysis of pottery using a portable X-ray spectrometer
A. Starović & R. Arsić Cherniakhovo-type ceramic vessels from NW Serbia and the question of inhabitants of the central Balkans in the late 4th century AD
M. Tekocak Roman pottery in the Aksehir Museum
P. Vamos Some remarks about military pottery in *Aquincum*
M. Vujović & E. Cvijetić *Mortaria* from Komini-*Municipium S*. (Montenegro)
Y. Waksman "Byzantine White Ware I": from Late Roman to Early Byzantine Pottery in Istanbul/ Constantinople
I. Žižek Late Roman pottery in Roman graves in *Poetovio*

Bei der Korrektur und Durchsicht der Artikel stand mir das *editorial committee* zur Seite. Ganz besonders danke ich Philip Kenrick für die zuverlässige Unterstützung und Dieter Imhäuser (ars) für die gute und freundschaftliche Zusammenarbeit bei Satz und Layout.

Die Zitierweise wurde den Richtlinien der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts angeglichen (Ber. RGK 71, 1990, 973–998 und Ber. RGK 73, 1992, 478–540).

Susanne Biegert

Meike Weber & Sebastian Schmid

SUPPLYING A DESERT GARRISON
POTTERY FROM THE ROMAN FORT AT GHERIAT EL-GARBIA (LIBYA)

The Roman fort at Gheriat el-Garbia

The Roman fort at Gheriat el-Garbia, approx. 280 km south of modern Tripoli, was established under Septimius Severus as part of the Roman frontier in Libya, the *Limes Tripolitanus* **(fig. 1)**[1]. It represents the largest Severan military site along this desert frontier. A vexillation of *legio III Augusta* from *Lambaesis* was stationed at the fort until AD 238. Henceforward Gheriat el-Garbia was supposedly the headquarters of the *praepositus limitis (regionis) Tripolitanae* until the last quarter of the 3rd century AD when the garrison finally abandoned the fort[2].

The site was first excavated in 2009 by a team of archaeologists led by M. Mackensen (Institute of Prehistory and Archaeology of the Roman Provinces, University of Munich)[3]. The main aim of this project, funded by the University of Munich's LMUexcellent Initiative, was to excavate and document the archaeological remains of the fortifications and interior structures. Further emphasis lay on the immediate surroundings of the fort to establish its relations to the nearby temple precinct and the location of the vicus[4].

However, before excavations began, a pottery survey **(fig. 2)** was carried out to increase our understanding of the general (pottery) supply to the fort and to gain a more detailed insight into the chronological sequences of the site's phases of occupation.

Finds included not only numerous fragments of African and Tripolitanian Red Slip Ware, lamps and amphorae, but also a vast amount of cooking and coarse ware sherds. A selection of mid Roman African Red Slip Ware and cooking ware fragments were also chemically analysed by G. Schneider, Berlin, and M. Daskiewicz, Warsaw, using wavelength dispersive X-Ray fluorescence and MGR analysis[5].

Based on the current state of our research this article concentrates on the chronologically important fine and cooking wares from this survey with a view to economic matters such as origin and distribution patterns.

Mid Roman African Red Slip Ware

Five different fabrics were identified within the group of mid Roman ARS ware from Gheriat el-Garbia. These include fabrics A, A/D, and the central Tunisian C ware from Djilma and Sidi Marzouk Tounsi respectively[6].

Fabric C fragments are limited to a few examples in C[2] and a body sherd of a closed vessel in fabric C[1] (the so called El-Aouja Ware). J. W. Hayes proposed a starting date for the production of the appliqué-decorated fabric C[1] sometime around AD 200/210, whilst M. Mackensen recently argued for an equally early begin of production of undecorated ARS in Fabric C at the workshops at Sidi Marzouk Tounsi in the first quarter of the 3rd century[7].

Rim sherds of forms Hayes 3C, 6B, 14B and 17A and possibly Hayes 27 were produced in the North or Northeast Tunisian fabric A[2]. The examples can all be dated to the 2nd and early 3rd century AD[8].

However, the lion's share of mid Roman ARS from Gheriat el-Garbia can be assigned to fabric A/D.

As such, it is dominated by fragments belonging to form Hayes 27 or 31, closely followed by forms Hayes 32/33 and Hayes 28/29. Hayes dated these typical representatives of fabric A/D to the early or first half of the 3rd century[9].

Moreover, chemical analyses of some of the survey material allowed a differentiation of two types within fabric A/D: the already known fabric A/D (Sabratha group) (**fig. 3,1–6**)[10]

1 D. Welsby, The Roman Fort at Gheriat el-Garbia. Libyan Stud. 14, 1983, 57–64; G. D. B. Jones, The Development of Gheriat el-Garbia. Libyan Stud. 14, 1983, 64–68.; Barker 1996, 2 fig. 1,1; D. Mattingly in: Barker 1996, 113–115 fig. 5,2.3 tab. 5,1; Mattingly 1995, 92–95; id. 1996, 98–105. – See also Mackensen 2010.

2 Mattingly 1995, 95; Ph. Kenrick, Tripolitania. Libya Archaeological Guides (Broadstairs 2009) 199. – See also Mackensen 2010.

3 A further three seasons were conducted in Autumn 2009 and 2010. See Mackensen 2010.

4 See also Mattingly 1996, 135 fig. 6,10.

5 The authors of this article are very grateful to Gerwulf Schneider (Arbeitsgruppe Archäometrie, Free University Berlin) and Małgorzata Daszkiewicz (Archea, Warsaw) for the provision and interpretation of the results of the chemical analysis as well as the opportunity to discuss these results on numerous occasions. See also Mackensen/Schneider 2006 for further chemical analysis of ARS.

6 For further details on forms and fabrics see A. Carandini (a cura di), Atlante delle Forme Ceramiche I. Ceramica Fine Romana nel Bacino Mediterraneo (Medio e Tardo Impero). EAA (Rome 1981) 19–78; Mackensen/Schneider 2006.

7 Hayes 1972, 199; M. Mackensen, Production of 3rd century sigillata A/C (C1–2) or ‚el-Aouja' ware and its transition to sigillata C3 with appliqué decoration in central Tunisia. Acta RCRF 38, 2003, 284 tab. 1; 285 tab. 2; Mackensen 2006, 117.

8 Mackensen/Schneider 2006, 170–173 with tab. 1.

9 Hayes 1972, 49–56.

10 Mackensen/Schneider 2006, 173–174 with tab. 2.

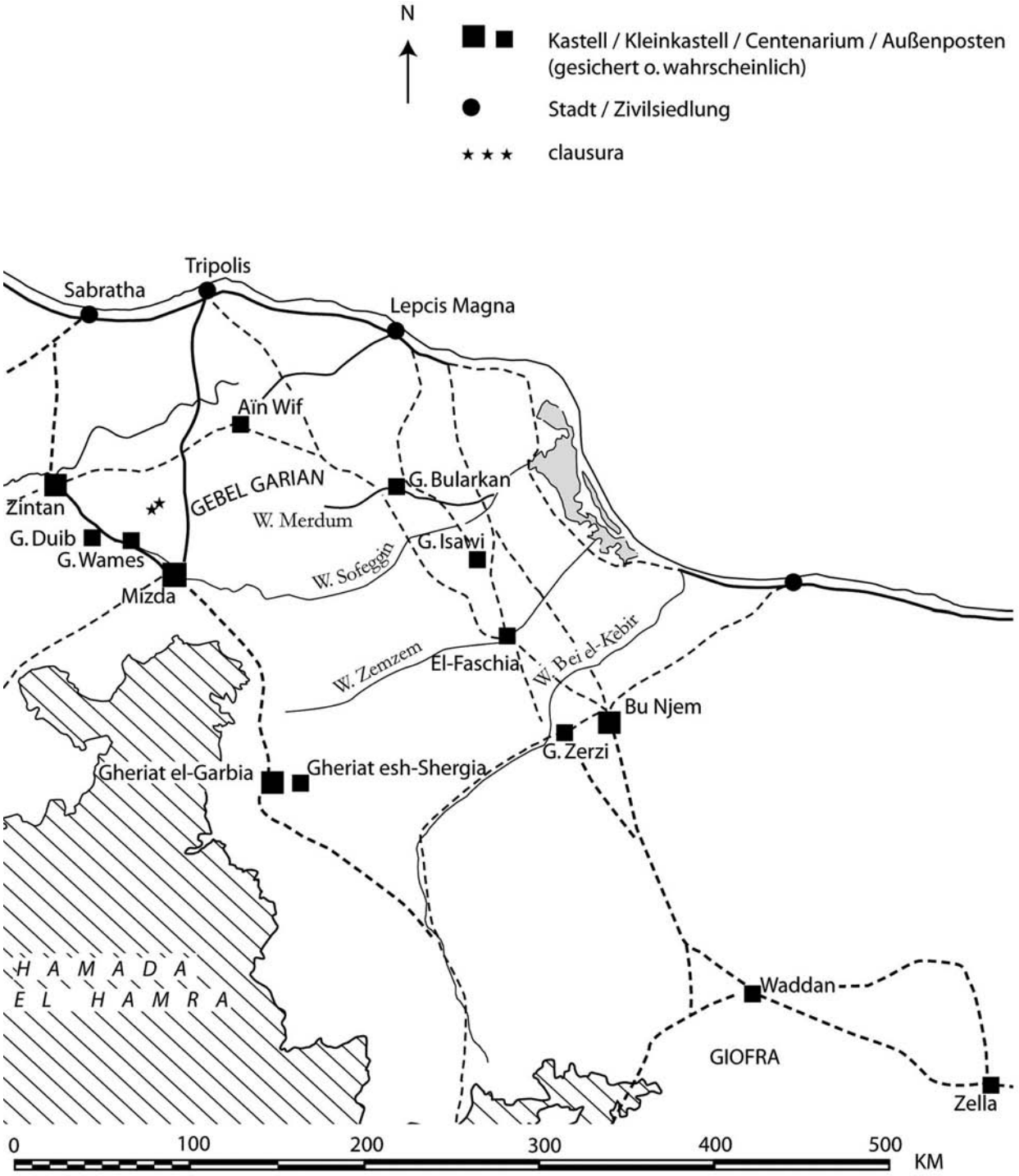

Fig. 1. The Roman fort at Gheriat el-Garbia on the *limes Tripolitanus* in Libya (after M. Mackensen, Die Grenze in Nordafrika am Beispiel der Provinzen *Africa Proconsularis* und *Numidia*. In: Grenzen des römischen Imperiums. Antike Welt Sonderbd. [Mainz 2006] 63 fig. 1).

and the newly established fabric A/D (Tripolitanian group, **fig. 3,7–14**). The decisive factors for the creation of this new group are strikingly higher levels of magnesia (MgO), calcium oxide (CaO), phosphor oxide (P_2O_5) and sulphur **(tab. 1)**.

It was deemed highly likely that the origins of both of the above mentioned fabrics A/D can be found in *Tripolitania*[11].

[11] For the origins of fabric A/D (Sabratha group) see Mackensen/Schneider 2006, 174.

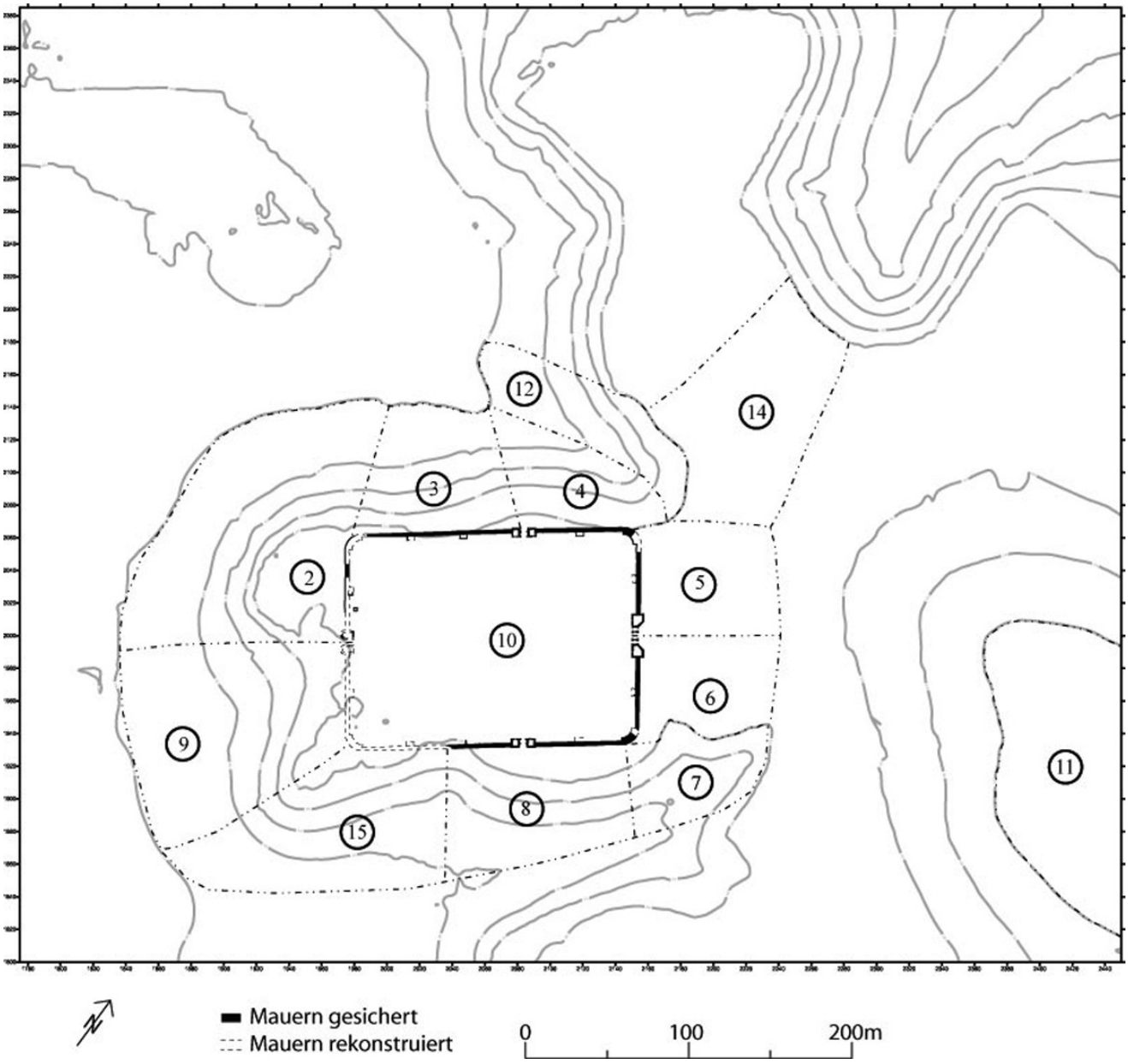

Fig. 2. Plan of the Roman fort at Gheriat el-Garbia with the individual survey areas. – Scale 1:5000.

A/D (Tripolitanien)	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	S	V	Cr	Ni	(Cu)	Zn	Rb	Sr	Y	Zr	Nb	Ba	(La)	Ce	(Pb)	Summe
6B	64.09	0.949	15.28	4.44	0.0292	5.62	5.94	0.14	3.36	0.157	0.4	100	78	27	3	23	95	350	28	279	23	411	18	68	14	94.03
32	67.67	0.888	15.42	4.99	0.0521	3.70	3.58	0.20	3.34	0.168	0.0	99	78	30	6	62	86	350	23	252	18	376	33	76	16	93.89
33	68.38	0.893	14.11	4.79	0.0413	3.80	4.60	0.31	2.96	0.122	1.1	101	72	26	12	62	88	666	24	311	19	455	24	75	25	98.68
31	65.56	1.028	16.72	5.42	0.0378	4.00	3.58	0.19	3.24	0.232	0.8	129	95	35	12	84	102	576	26	274	20	471	38	85	22	99.63
27	64.02	0.880	15.29	6.33	0.0439	5.52	3.26	0.56	3.96	0.137	0.6	112	84	34	23	62	107	310	28	222	15	334	33	67	10	99.84
27/31	64.99	0.995	16.80	5.69	0.0418	4.14	3.53	0.27	3.41	0.147	0.4	116	97	32	14	76	99	756	24	275	23	405	37	97	21	99.90
6B Var.	66.14	0.905	14.64	4.96	0.0470	4.04	5.71	0.17	3.26	0.126	0.8	100	84	29	10	62	89	718	26	261	19	378	39	84	18	99.58

Tab. 1 Results of chemical analysis of fragments in fabric A/D, so called Tripolitanian group

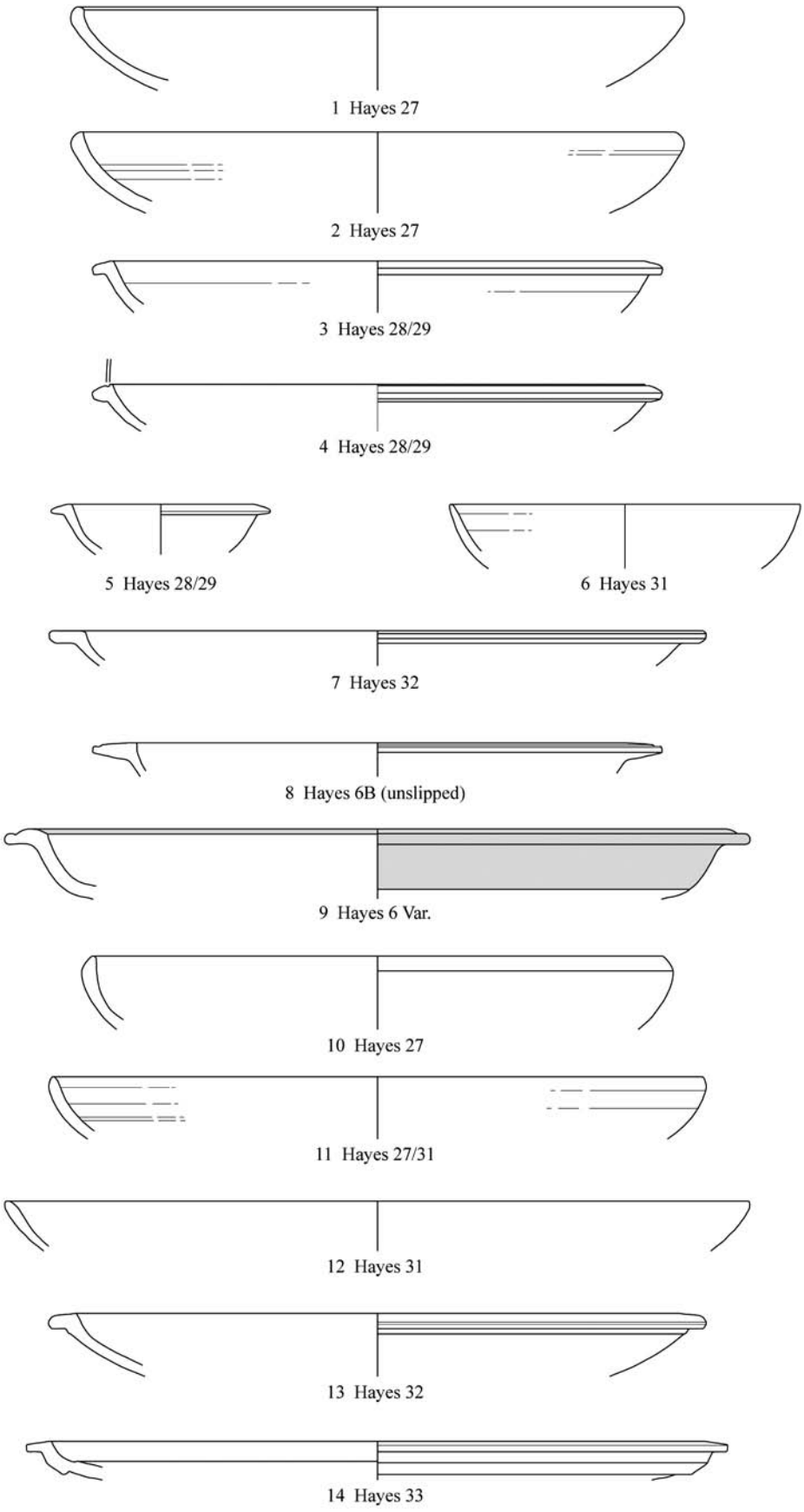

Fig. 3. Gheriat el-Garbia. African Red Slip Ware A/D (Sabratha) and A/D (Tripolitanian). – Scale 1:3.

This was based on the strong predominance of fabric A/D in the range of mid Roman ARS from forts along the *limes Tripolitanus* and similarly the Tripolitanian coastal towns and "pre-desert" zone, whilst being underrepresented in pottery assemblages from northern Tunisia.

A Tripolitanian production of mid Roman ARS, however, has not yet been located on the ground. One of the few known pottery workshops, producing late Roman TRS, has been located in Wadi Ca'am-Taraghlat to the southeast of *Lepcis Magna*[12]. Hence, it seems likely that earlier pottery workshops were also located close to the three major cities of *Sabratha*, *Oea* and *Lepcis Magna*.

However, the availability of raw material (deposits), such as clay, fuel, and water dominated the choice of location of pottery workshops. On that account Mackensen specifically stressed the importance of olive tree cultivation and oil production for the ARS production centre at El Mahrine in northern Tunisia[13]. The same may account for *Tripolitania* where Mattingly emphasized the importance of olive tree cultivation for the prosperity and wealth of the region[14]. Olive oil production cannot only be found in the coastal areas of *Tripolitania*, but also along the Gebel Garian and in certain Wadis in the "pre-desert." It therefore only seems logical to suggest that workshops producing mid Roman ARS in fabric A/D could also have been located at a reasonable distance from the major cities in the above mentioned hinterland regions.

Cooking ware

Only few pieces of cooking ware type A have been found at Gheriat el-Garbia. Typical forms belonging to this ware are casseroles Hayes 23A and B, only the latter one being present in the survey material **(fig. 4,1–2)**. Hayes proposed a production period for this specific form from the mid 2nd until the early 3rd century AD[15]. A North Tunisian provenance has been proposed for cooking ware type A due to its distribution and marked similarities with ARS fabric A[16].

Most of the kitchen ware fragments could be identified as cooking ware type B, which is characterized by a burnished slip on one face only. The lion's share is made up by dishes Hayes 181 and lids Hayes 182. Both types have been dated to the 2nd half of the 2nd and first half of the 3rd century AD[17]. M. Bonifay was able to distinguish chronologically differing variants of form Hayes 181[18].

Most of the pieces from Gheriat belong to his types B and C which are typically of 2nd and 3rd century date **(fig. 4,3–4)**[19]. However, some examples show typological similarities with Bonifay's type 181D which can be dated to the second half of the 4th and 5th century **(fig. 4,5–6)**[20].

Comparable to the dishes, there are also some lid fragments of form Hayes 182 **(fig. 4,7–8)** that could be assigned to Bonifay's 4th century type D **(fig. 4,9–10)**[21]**.**

Only few pieces of the 3rd century casserole Hayes 184 **(fig. 4,11)** and lids Hayes 185 have been collected. A central Tunisian origin has been proposed for the production centres of cooking ware type B[22].

Last but not least, cooking ware type C is characterised by its mainly ash-coloured, unslipped surface. Bonifay distinguishes between type C/A and C/B[23]. The former type is closely tied to cooking ware type A, based on its similar distribution in Tunisia as well as certain morphological characteristics. The casserole and lid forms Hayes 197 **(fig. 4,12–13)** and 196 **(fig. 4,14–15)** are the most common examples of ware C/A, dating to the late 2nd and first half of the 3rd century.[24]

Cooking ware C/B on the other hand was presumably produced in Central Tunisia[25]. Typical vessels produced in this fabric are dishes form Hayes 183. All in all 85 fragments of Hayes 183 were collected during the survey, offering a wide basis for differentiation of the chronologically significant sub-types.

Most of the pieces were identified as the Hayes 183 subtype Sabratha 59, dating from the 2nd half of the 2nd century well into the 3rd or possibly 4th century AD **(fig. 5,1–2)** [26]. The closely related variant Sabratha 64 **(fig. 5,3–4)** is known from an early 3rd century deposit in *Sabratha*, but has also been found in a 5th century deposit at Ghirza[27]. J. Dore suggested that this type was produced in *Tripolitania* due to its complete absence at *Leptiminus* in Tunisia[28]. The same provenance has been proposed for a further variant of type Hayes 183 which is well-represented at Gheriat el-Garbia **(fig. 5,5–7)**[29]. This type is characterised by its coarse clay matrix and has been dated to the 3rd century AD. These casseroles were probably used in combination with lids Hayes 195 **(fig. 5,8–9)**.

The survey material also includes large quantities of the platter type Benghazi B675 **(fig. 5,10–12)**. Kenrick interpreted similar finds from Sidi Khrebish Benghazi as a local

12 F. Felici/M. Pentiricci, Per una definizione delle dinamiche economiche e commerciali del territorio di Leptis Magna. In: M. Khanoussi/P. Ruggeri/C. Vismara (eds.), L'Africa romana. Atti del XIV convegno di studio, Sassari, 7–10 dicembre 2000 (Rom 2002) 1875–1900 esp. 1883–1886 fig. 7.

13 M. Mackensen, Die spätantiken Sigillata- und Lampentöpfereien von El Mahrine (Nordtunesien). Münchner Beitr. Vor- u. Frühgesch. 50 (Munich 1993) 54–56.

14 Mattingly 1995, 12–16; Barker 1996, 281–285.

15 Hayes 1972, 48. For a slightly earlier production start of form Hayes 23B see Bonifay 2004, 211.

16 Bonifay 2004, 211.

17 Hayes 1972, 200–203.

18 Bonifay 2004, 213–215 with fig. 114.

19 Ibid. 214.

20 Ibid. 214.

21 Ibid. 216–217 with fig. 115, 12.13.14.

22 Ibid. 213.

23 Ibid. 221.

24 Ibid. 224–225 with fig. 120.

25 Ibid. 221; 227.

26 Dore/Keay 1989, 128; Bonifay 2004, 229.

27 J. W. Hayes in: O. Brogan/D. J. Smith, Ghirza. A Libyan Settlement in the Roman Period (Tripoli 1984) 240 fig. 72,19; Dore/Keay 1989, 130.

28 Dore 1996, 373. Dore's thoughts on the origin of the casserole Sabratha 64 still have to await the full publication of the material from *Leptiminus* to verify his hypothesis. – See also K. E. Carr, Strong local production in Tunisia: supplementing Bonifay from the case of Leptiminus. In: J. H. Humphrey (ed.), Studies on Roman Pottery of the Provinces of *Africa Proconsularis* and *Byzacena* (Tunisia). Hommage à Michel Bonifay. Journal Roman Arch. Suppl. 76 (Portsmouth/Rhode Island 2009) 105–126.

29 Bonifay 2004, 228–229 with fig. 122a, Culinaire Type 17,1.3.4.

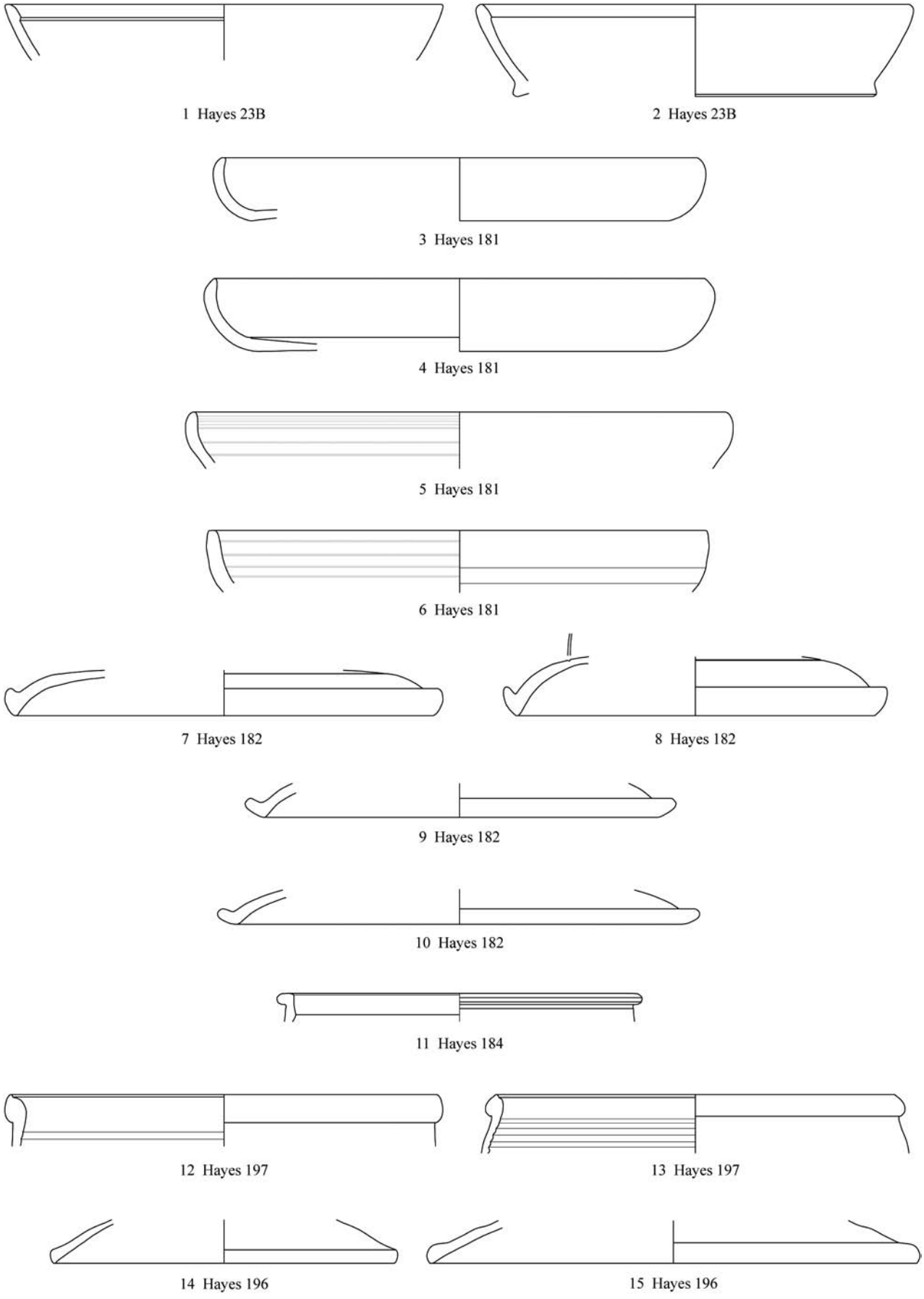

Fig. 4. Gheriat el-Garbia. North African Cooking Ware type A, B, and C. – Scale 1:3.

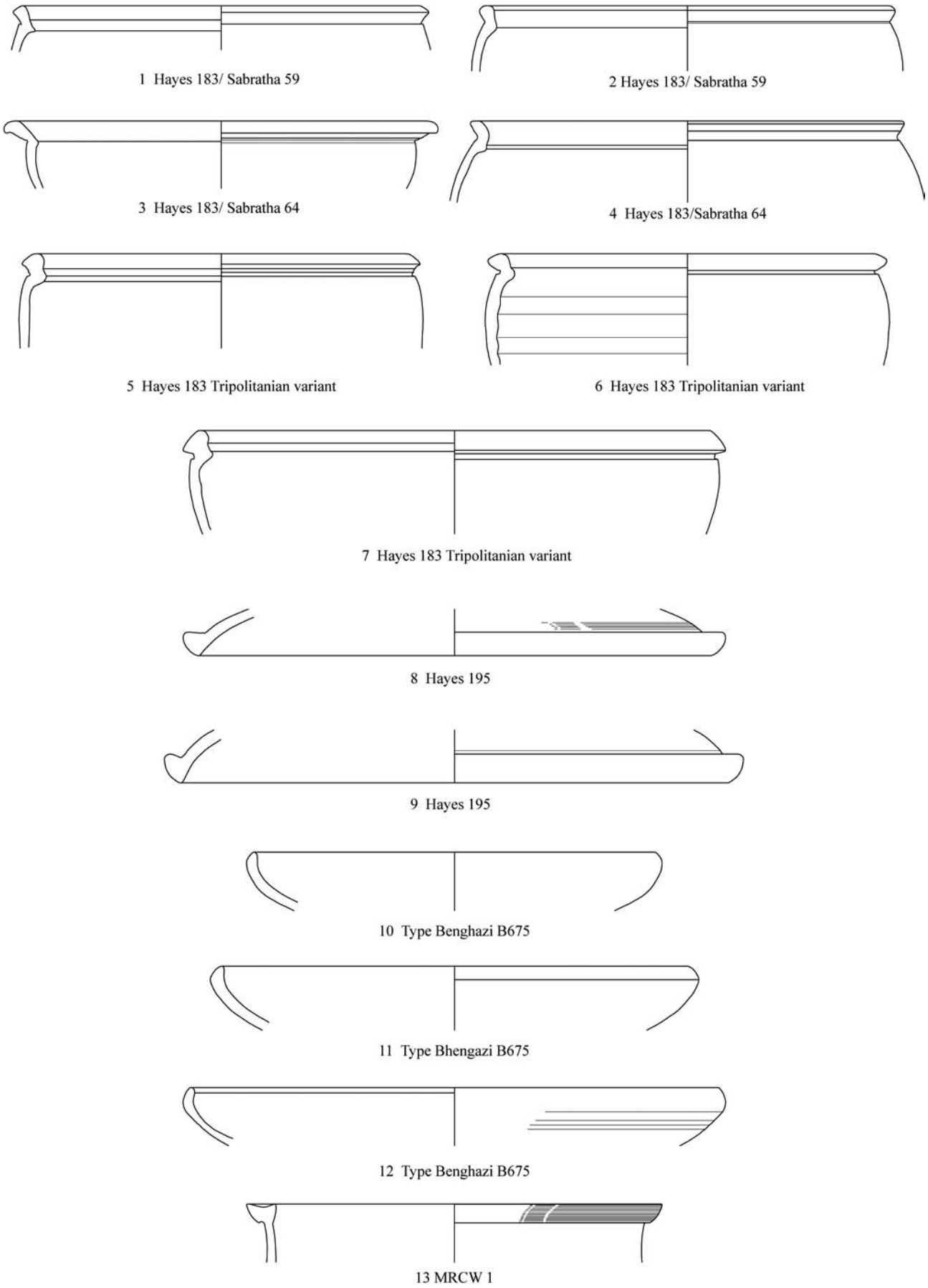

Fig. 5. Gheriat el-Garbia. North African Cooking Ware type B and C. – Scale 1:3.

Testgruppe	Form	MGR-gruppe	SiO_2 Gewicht%	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P2O5	(S)	V ppm	Cr	Ni	(Cu)	Zn	Rb	Sr	Y	Zr	(Nb)	Ba	(La	Ce	Pb)	GV %	Summe %
1	Hayes 181	1.01	71.00	0.749	13.03	5.42	0.048	1.90	5.64	0.29	1.74	0.190	0.3	101	92	27	5	78	63	305	25	317	20	302	40	58	14	1.07	99.82
1	Hayes 181	1.02	72.96	0.669	12.57	5.35	0.035	1.66	4.44	0.30	1.84	0.185	0.3	98	84	24	<5	68	69	282	22	247	16	246	28	62	17	1.47	99.77
1	Hayes 183	1.01	70.59	0.719	12.52	5.19	0.050	1.82	6.84	0.31	1.77	0.192	0.3	91	84	23	10	74	67	479	25	303	19	450	28	67	16	1.52	99.58
1	Hayes 183	1.01	69.80	0.763	13.47	5.60	0.053	1.86	6.14	0.32	1.79	0.212	0.1	100	90	25	<5	84	69	348	24	298	19	393	28	77	18	0.77	100.03
1	Hayes 183	1.01	67.37	0.782	13.98	5.82	0.056	2.07	7.42	0.39	1.86	0.251	0.1	110	97	30	<5	87	71	435	26	291	22	410	45	78	12	1.51	99.67
1	Hayes 182	1.01	69.00	0.772	13.72	5.76	0.053	2.06	6.27	0.36	1.82	0.195	0.0	103	93	27	<5	80	69	286	23	285	21	330	26	72	11	1.51	100.06
1	Hayes 182	1.01	66.79	0.810	14.47	6.03	0.049	2.61	6.77	0.41	1.84	0.237	0.6	120	99	28	<5	88	70	492	24	284	22	302	35	77	16	2.18	99.18
1	Hayes 182	1.01	68.84	0.764	13.24	5.53	0.048	2.70	6.34	0.46	1.85	0.225	0.9	111	92	26	<5	81	69	400	22	307	20	289	51	71	43	2.80	99.45
5	Hayes 23B	5.01	72.98	0.953	16.81	4.92	0.025	1.09	1.02	0.04	2.10	0.070	0.0	111	102	24	<5	62	77	149	27	413	18	237	19	84	18	0.94	100.40
5	Hayes 23B	5.01	70.60	1.017	18.41	5.45	0.023	1.22	0.93	0.03	2.24	0.078	0.0	134	111	25	<5	67	84	180	29	393	19	244	45	86	20	1.09	100.38
5	Hayes 197	5.01	70.82	1.010	18.19	4.91	0.021	1.26	1.50	0.07	2.15	0.072	0.1	115	109	26	<5	63	80	278	26	367	20	249	52	101	21	1.87	99.61
5	Hayes 197	5.01	69.43	1.025	18.86	5.35	0.027	1.20	1.51	0.26	2.23	0.113	0.1	119	111	28	11	73	83	416	26	357	21	229	55	94	19	2.57	100.12
5	Hayes 197	5.01	73.24	0.982	16.98	4.68	0.017	1.10	0.72	0.08	2.12	0.083	0.0	112	103	25	<5	64	78	230	28	425	20	250	47	75	18	1.06	99.65

Tab. 2. Chemical analysis of cooking ware vessels from Gheriat el-Garbia.

imitation of dishes Hayes 181[30]. Dore, however, saw them as a rough imitation of the late Roman Tripolitanian Red Slip ware form Hayes 3 and consequently dated them from the late 3rd century AD onwards[31]. Only one piece of the casserole type Bhengazi MRCW 1 is known from Gheriat el-Garbia **(fig. 5,13)**. These were mainly produced in *Cyrenaica* and a pottery workshop at Tocra producing this form has been archaeologically identified[32]. Although production might have started in the late 1st or early 2nd century AD, this form was probably most common during the late 2nd and 3rd century. Its distribution seems to decline moving westwards, which explains why this form is the predominate casserole type in the more easterly fort *Gholaia*/Bu Njem[33] but is hardly present at Gheriat el-Garbia.

Some selected pieces of the above mentioned cooking ware were additionally subjected to chemical and MGR analysis, resulting in the creation of nine different groups.

The interpretation of these groups proved rather difficult, especially as none of the known cooking ware producing workshops have as yet been chemically analysed. The sole exception is the published analysis of ceramics from the pottery workshops at Sidi Khalifa/Tunisia, conducted by C. Brun[34].

Further chemical analyses have been published by G. Olcese for *Albintimilium* in northern Italy and J. H. van der Werff for Uzita in central Tunisia[35]. Unfortunately they were only able to analyse fragments from sites of consumption and not, as would have been preferable, from production sites.

Van der Werff proposed a possible provenance for his cooking ware samples from the eastern parts of *Byzacena*, a theory he mainly based on the distribution of the respective ware[36]. G. Olcese's analysis from *Albintimilium* resulted in the formation of two groups (Group 7 and 8). Whilst the origin of group 8 remains open, she suggested a North Tunisian production centre for group 7[37].

Some possible conclusions can be drawn when comparing their respective results with the samples from Gheriat el-Garbia **(tab. 2)**.

Group 1 from Gheriat el-Garbia, consisting of fragments of Hayes 181–183, shows parallels to samples from Olcese's group 8 and van der Werff's samples (especially with regards to the high levels of calcium oxide and low levels of aluminium oxide and titanium dioxide). This could suggest our group 1 may have originated from central Tunisia if van der Werff's assumption was correct.

Group 5 on the other hand might have had a North Tunisian provenance. This argument is based mostly on typological reasons as some of the included forms such as Hayes 23B and 197 have long been said to originate from northern Tunisia due to their rather characteristic distribution pattern. Chemical analysis did not definitely confirm this hypothesis, but parallels to samples from Sidi Khalifa in Northeast Tunisia could support this theory.

However, the results of the chemical analysis of the survey material can only be seen as a preliminary interpretation that can offer a first glimpse into trade patterns within and between the North African provinces.

Conclusion

Based on the results presented above it seems quite obvious that the fort's main supply with high quality fine wares such as African Red Slip Ware was probably mostly regionally

30 Ph. M. Kenrick, Excavations at Sidi Khrebish Benghazi (Berenice) 3,1. The Fine Pottery. Libya Ant. Suppl. 5 (Tripoli 1985) 376. – See also M. Pentiricci et al., La villa suburbana di uadi er-Rsaf (Leptis Magna): il contesto ceramico di età antonina (150–180 d. C.). Libya Ant. N. S. 4, 1998, 54.

31 Dore 1996, 388–389 (Types 134–137). – See also J. Dore in: D. J. Mattingly (ed.), The Archaeology of Fazzan 2. Site Gazetteer. Pottery and other Survey finds. Soc. Libyan Stud. Monogr. 7 (Mansfield 2007) 375 (type 149).

32 G. R. H. Wright, Excavations at Tocra. Palestine Exploration Quarterly 1963, 31 fig. 3.

33 Cf. R. Rebuffat/J. Deneauve/G. Hallier, Bu Njem 1967. Libya Ant. 3/4,1966/67 (1968), 126 with fig. 129, 60.61.62.63.64.66.67; R. Rebuffat et al., Bu Njem 1968. Libya Ant. 6/7, 1969/70 (1974), 96 fig. 14.

34 C. Brun, Étude technique des productions de l'atelier de Sidi Khalifa (*Pheradi Maius*, Tunisie): céramiques culinaires, sigillées et cazettes. In: M. Bonifay/J.-Ch. Treglia, LRCW, 2. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean. Archaeology and archaeometry 2. BAR Internat. Ser. 1662 (Oxford 2007) 569–579.

35 Cf. Olcese 1993 (Albintimilium); van der Werff 1982 (Uzita).

36 Van der Werff 1982, 78–79; 126–127.

37 Olcese 1993, 138–139.

sourced and organized. Production centres could have been located in the hinterland of the coastal cities or in the Gebel Mountain range. Central and North Tunisian ARS is only present in very small amounts. These few fragments are nonetheless proof that Gheriat el-Garbia was linked (presumably indirectly via the coastal cities) with a wider supra-regional trading system.

The chronological range of cooking ware vessels from Gheriat el-Garbia also hardly pre-dates the late 2nd and early 3rd century AD. Some obviously later forms can probably be associated with numerous fragments of late Roman TRS and Amphorae from the excavations within the fort, suggesting a late Roman occupation of, as yet, unknown nature.

The results of chemical analyses of specific samples of cooking ware were hardly conclusive and will have to await the publication of reference groups from production sites for further interpretation. Nevertheless, some of the evidence points towards a Tunisian provenance for a certain amount of cooking ware vessels, which stands in slight contradiction to the fact that only a very few fragments of African Red Slip ware from Tunisia have as yet been found.

It will hence be an aim for future research to resolve questions such as possible locations of production centres, especially of the ARS fabric A/D (Sabratha group) and A/D (Tripolitanian group). As long as a Tunisian origin of these fabrics, competing with the already known production centre at Henchir el-Guellal in central Tunisia, cannot be ruled out, it will remain disputable if the supply with fine wares to the *Limes Tripolitanus* forts was indeed mostly regionally sourced as opposed to the possible wider trade of cooking wares from Tunisia.

mbweber@gmx.net

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