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SULLECTHUM AND NEAPOLIS: COMPARISONS BETWEEN TWO ROMAN AFRICAN PORT CITIES

MONCEF BEN MOUSSA*, MICHEL BONIFAY**, JIHEN NACEF†***, CLAUDIO CAPELLI****

Summary:

Archaeological excavations and surveys at Sullecthum (Salakta) and Neapolis (Nabeul), have enabled a comparative inventory of the resources, amphora production and commercial outlets of these two port cities of Africa proconsularis, revealing two different economic models: a port-warehouse (Sullecthum) dedicated to the redistribution of oil produced mainly outside its territory; and a port-city (Neapolis) for the export of its own productions, mainly salsamenta. The critical examination of the archaeological data, without completely challenging this model, nevertheless demonstrates a much greater complexity of links between these port cities and their hinterland and their evolution over time.

Keywords :

Africa proconsularis, port, territory, oil, salsamenta, wine, amphorae, trade

The port cities of Sullecthum (Salakta) and Neapolis (Nabeul) (FIG. 1), located on the eastern coast of Africa proconsularis,¹ have been the subject, for several decades, of archaeological surveys carried out in their urban periphery and hinterland, with a view to identifying amphora production sites.

Indeed, since the end of the 1980s, the renewed interest in Tunisia for the study of potters' workshops focused first of all on the Salakta region, where several hitherto unpublished amphora production sites were studied.² Over the last ten years, the issue has been taken up again in a more systematic way,³ always with a significant archaeometric component.⁴

The state of knowledge on ceramic production in the Neapolis territory has also undergone a decisive step since the beginning of the first decade of this century. The first analyses⁵ carried out in concomitance with the Tunisian-French excavations in the salting factories of

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¹ Then, from the 4th century onwards, located in Byzacena (Sullecthum) and Zeugitana (Neapolis) respectively.

² PEACOCK *et alii* 1989; LAVOIE 1989; PEACOCK, TOMBER 1991; BONIFAY *et alii* 2002-2003, p. 165.

³ NACEF 2007a, 2007b, 2010a, 2010b, 2015.

⁴ CAPELLI *et alii* 2006; C. Capelli in NACEF 2007a, 2010a and 2015.

⁵ BONIFAY 2004, 35-39; GHALIA *et alii* 2005.

Neapolis⁶ made it possible to study some of the amphora workshops already reported by S. Aounallah.⁷ More recently a new series of workshops have been added to the archaeological and archaeometric study.⁸

The state of research on these two settlements and their territories⁹ now seems to us to justify an attempt to compare their respective economic models during the Roman, Vandal and Byzantine periods. We will deal with the question of foodstuffs produced in these two cities; the production of amphorae; and the main outlets for these products in the Mediterranean.

1. The territories and their resources, the ports

1.1 Status and territories

Sullecthum

Because of the lack of literary sources on the subject, the legal status of ancient Sullecthum is unknown. It should be noted that the *Bellum Africum* does not mention the name of this town,¹⁰ whereas it mentions that of Aggar, an agglomeration that has sometimes been identified with the site of El Makloubia, six kilometres north-west of Salakta.¹¹ Sullecthum is mentioned in the texts for the first time in 394, connected with the participation of its bishop Martianus sullectinus in the Council of Bagai, reported by Augustine.¹² Finally, Procopius of Caesarea tells us that Sullecthum was the first African city reconquered during Belisarius' campaign in 533.¹³

Sullecthum in Roman times appears to be an autonomous city¹⁴ and not a secondary settlement, and its boundaries are well defined. Aerial photographs taken by the French army during the colonial period revealed the interest of the Roman surveyors in this region. Traces of centuriations still mark the ground in the hinterland of Salakta, encompassing part of the ancient pottery workshops.¹⁵ The Roman road from Thysdrus to Sullecthum runs along these to the north (FIG. 4, a).

Neapolis

The sources are a little more loquacious about the legal status of Neapolis. The city, 'destroyed' by the Romans in 148 BC,¹⁶ is mentioned by Pliny the Elder as an oppidum

⁶ SLIM *et alii* 1999, p. 173.

⁷ AOUNALLAH 2001, pp. 55-64 and 74.

⁸ MRABET, BEN MOUSSA 2007; BONIFAY *et alii* 2010a and b.

⁹ Another well-studied port city in terms of its resources and amphora production is Leptiminus: see most recently STONE, MATTINGLY 2011.

¹⁰ *Bellum Africum* LXVII, 1; LXXVI, 2; LXXIX, 1.

¹¹ FOUCHER 1960, p.12. According to Ch. Tissot, the ancient Aggar would rather be sought at the location of the town of Beni Hassan, 15 km south-west of Leptiminus (TISSOT 1888, p. 744).

¹² CARON 1989, p. 7.

¹³ Procopius, *De Bello Vandalico* I, XVI, 9-10.

¹⁴ GHADDHAB 2018, p. 100-103. The name of the city is mentioned in an inscription from Ostia (CIL, VIII, 924; CIL, XIV, 477; see below), which mentions a *civis sullecthinus*.

¹⁵ NACEF 2010a. GHADDHAB, NACEF 2019: This centuriation covers an area located between the east of Thysdrus (where we have from north to south: Oued-el-Hallouf, the hills of Sidi Abdelhay, Oued Rougga and Sebkheth El Jem to the south-west); Oued el-Hallouf and Oued Glate to the north-west, Oued Glate to the north and the cadastral area of the city of Acholla to the south.

¹⁶ Strabo, Geography 17, 3, 16.

liberum¹⁷ although it probably already had the status of a colony at that time;¹⁸ the colony is attested by later epigraphic documents where Neapolis is said to be *colonia Iulia*. For example there is a dedication to Carus from the years 282-283,¹⁹ and then an amphora stamp with the initials C.I.N, which undoubtedly comes from the workshops located in the territory of Neapolis.²⁰ Finally, a number of names of Neapolitan bishops from 255 to 646 are known.²¹

If one takes into account the natural conditions of the Neapolis region and the small distances separating it from the other urban centres on the south-eastern coast of Cape Bon, the territory of this city cannot have been very large. However no concrete data allows us to fix its precise boundaries and we are reduced to hypotheses. Thus, S. Aounallah estimates that the territory of Neapolis could have had as its natural limits the Oued Abides to the north and the Oued el Manka to the south; barred to the west by the line of ridges, this space could not have exceeded 200 km² (FIG. 4, b).²² Like the rest of the former territory of Carthage, the territory of Neapolis was subject to cadastral surveys from the day after the Roman conquest (?). Two groups clearly appear in the immediate vicinity of the city, then to the north-east, at the boundary of the territory of Curubis.²³

1.2. Production

Wheat

We have no direct indication on the production of cereals in Sullectum. However, Pliny reports that Byzacium was famous for the production of cereals because of the fertility of its land.²⁴ For the territory of Neapolis, the production of cereals is likely, but no archaeological data allows us to verify this hypothesis.²⁵

Oil and wine

Evidence for oil (and wine?) production is scarce at Sullectum.²⁶ Few remains of presses have been recorded in the vicinity of the town²⁷ and the traces of fossil olive groves found in aerial photographs,²⁸ which could temper this observation a little,²⁹ are difficult to date. On the other hand, in the territory of Neapolis, traces of ancient wine presses are not lacking,³⁰ though it is not always possible to determine whether they refer to olive or wine production.³¹

¹⁷ Pliny, *Natural History* V, 24.

¹⁸ GASCOU 1982, p. 141.

¹⁹ CIL, VIII, 968.

²⁰ PANELLA 1972, pp. 97-98, fig. 64; MRABET, BEN MOUSSA 2007, p. 34.

²¹ Cf. DARMON 1980, p. 3.

²² AOUNALLAH 2001, p. 50.

²³ AOUNALLAH 2001, pp. 50-54.

²⁴ Pliny, *Natural History* V, 24.

²⁵ AOUNALLAH 2001, p. 69.

²⁶ HOBSON 2015, p. 84. GHADDHAB, NACEF 2019, p. 100. Same situation at Leptiminus: STONE, MATTINGLY 2011, p. 42.

²⁷ BEN YOUNES 1998, site no. 074.062 and site no. 074.078 and 074.080.

²⁸ SAUMAGNE 1952, p. 300.

²⁹ SLIM 1985, p. 68.

³⁰ AOUNALLAH 2001, pp. 73-74.

³¹ It should be noted that 4 sites out of 13 yielded elements of *trapetum*, proof of olive oil production, alongside counterweight stones and *pedicini*, which may have been used for both oil and wine. See on this subject: BRUN 2003.

Recent studies on the content of African amphorae tend to prove that, besides oil, wine was one of the productions of the Neapolis area (see below).

Salsamenta

Surveys of the Tunisian coastline (1987-1997) have revealed more than 40 salsamenta production sites,³² but the only two excavated to date are those of Sullectum and Neapolis.

The Salakta salt factories, partially excavated in the early 1960s,³³ are apparently located in a city block, albeit outside the reduced Byzantine enclosure, a section of which is still visible nearby. The plan shows at least two, if not three, parallel production units; baths have been uncovered on the site of one of them (the western one), but it is not known whether these baths were integrated into the structure of the factory, as is often asserted, or whether they came after it. Also, the dating of the installations is uncertain: 2nd - 3rd century AD? The total capacity of the basins of these factories is estimated at 80 m³.³⁴ Archaeological traces of other fishery facilities are reported in the vicinity of Salakta.³⁵ Attention should also be drawn to the role that Sebkhet Njila could have played as a fish farm; it is connected to the sea by a partially underground drain that crosses the entire coastline of the Rejiche formation.³⁶

Discovered in 1965 by J.-P. Darmon,³⁷ the salt factories of Nabeul were the subject of an extensive excavation between 1996 and 2006 that revealed the existence of three production units inserted into an urban housing block, bordering a secondary decumanus (FIG. 3). Active from the second half of the 1st century to the middle of the 3rd century and, for some of them, until the 4th century,³⁸ these factories had very different production capacities: 183 m³ for the largest, 33 m³ for the smallest.³⁹ Another processing centre for fishery products was located 7 km north-east of Neapolis, on the site of Maamoura,⁴⁰ a probable secondary agglomeration in the territory of Nabeul, occupied mainly in the 5th-7th centuries.⁴¹ This difference in chronology between the two production sites is perhaps an indication of a shift in fishing activities from the town of Neapolis to this secondary settlement in Late Antiquity.

1.3 Port capacity

Sullectum

Mentioned by the Stadiasm of the Great Sea and the Peutinger Table, the port of Sullectum still had important remains of moles at the end of the 19th century, well described by Ch. Tissot⁴² and of which a section is still visible today.⁴³ In addition to the above, there are a few

³² SLIM *et alii* 2004.

³³ FOUCHER 1970.

³⁴ SLIM *et alii* 1999, p. 172.

³⁵ SLIM *et alii* 2004, pp. 143-144, site no. 89. BEN YOUNES 1998, site no. 074.136.

³⁶ SLIM *et alii* 2004, pp. 268-269.

³⁷ DARMON 1968, pp. 271-283.

³⁸ SLIM *et alii* 1999, 2007, 2008.

³⁹ SLIM *et alii* 2007, p. 39.

⁴⁰ SLIM *et alii* 2004, pp. 169-170.

⁴¹ On the secondary agglomeration of Maamoura (also called Guirane bou-Salâa or El Guirane), see AOUNALLAH 2001, pp. 65 and 356.

⁴² TISSOT 1888, p. 179: "Une digue inclinée vers le sud-est et reliant une chaîne de récifs au Ras Djeboura protégeait une petite anse, ouverte au sud, qui formait le port principal de Sullectum. A mille mètres environ plus au sud deux môles défendaient un second bassin dépendant du castrum dont l'enceinte rectangulaire, construite en blocage revêtu de gros blocs, mesure plus de deux cents pas sur chaque face."

epigraphic and iconographic documents that provide information about the maritime activities and the *navicularii* of Sullecthum. The latter undoubtedly took part in the major maritime transport, possibly connected to the *annona*, during the Early and Middle Empire. The epigraphic record made by a Canadian team on ancient Sullecthum,⁴⁴ indicates that the name *Caesellia*/*Caesellius* was found on two funerary inscriptions, one found in the necropolis of Salakta⁴⁵ and the second preserved at Ostia.⁴⁶ The latter mentions a man from ancient Sullecthum, who could be a *navicularius* - or one of his agents - established in Ostia.⁴⁷ Indeed, station no. 23 in Piazza dei Corporati (Becatti 1961, p. 73, no. 105 and Pl. CLXXIX) is dedicated to Sullecthum: it shows a lighthouse, below it two opposing ships, including a rare example of a three-masted ship, and two dolphins (or two tuna?) holding the tentacles of an octopus between their teeth; an inscription contains the letters NF⁴⁸ and the mention of the *navicularii* of the city: (*Navic*)*ulari* *Syllecti*(*ni*) (FIG. 2).

Neapolis

The ancient port of Neapolis is attested by sources since the end of the 5th century BC,⁴⁹ but no trace remains today of the jetty still visible at the end of the 19th century.⁵⁰ The underwater surveys carried out in 2006 by the Tunisian-French mission have however made it possible to locate the remains of submerged salt pans, testifying to the significant shift of the coast since Antiquity.⁵¹ New underwater investigations, recently carried out by a Tunisian-Italian mission, have also revealed, alongside these submerged structures, the remains of the ancient port's moles.⁵² Neapolis retained its port activity at the end of antiquity, as proven by the reference to *navicularii* on two inscriptions from the beginning of the 5th century AD.⁵³

2. Amphorae as vehicles of trade

2.1. The workshops

The situation in the two cities shows some similarities.

Sullecthum

Apart from the Punic and/or Republican kilns of Maklouba,⁵⁴ two main sets of workshops can be distinguished in the territory of this city (FIG. 4, a). The first is made up of peri-urban workshops in the immediate vicinity of the city, within a radius of one or two kilometres.⁵⁵ These workshops started production as early as the Flavian period, but the peak of their

⁴³ SLIM *et alii* 2004, p. 146 and Fig. 104. GADHOUM 2019, p. 78-79.

⁴⁴ CARON 1989.

⁴⁵ CIL, VIII, 22892.

⁴⁶ CIL, VIII, 924; CIL, XIV, 477.

⁴⁷ ROMANELLI 1960, p. 68.

⁴⁸ NF, not MF, cf. BECATTI 1960, p. 73: "Oggi è stata mal restaurata la n in M ed è stata aggiunta una I al principio della seconda riga". The interpretations of these two letters vary: *Negotiatores Feliciter* or *Naviculariis Feliciter*.

⁴⁹ State of the question in AOUNALLAH, 2001, p. 240.

⁵⁰ SLIM *et alii* 2004, p. 169. On the mural painting representing port scenes found in the House of the Nymphs at Neapolis, it is difficult to understand what might relate to the port of this city. Cf. BARBET 1999.

⁵¹ SLIM *et alii* 2007, p. 32 and fig. 29; SLIM *et alii* 2008, pp. 210-211 and fig. 17.

⁵² FANTAR *et alii* 2012.

⁵³ CIL, VIII, 969 and 970.

⁵⁴ NACEF 2010a and 2015.

⁵⁵ NACEF 2007a, p. 42; NACEF 2010a and 2015, pp. 17-28.

activity was in the second half of the 2nd century and the first two thirds of the 3rd century. Their production declines during the 4th century before ceasing completely at the beginning of the 5th century.⁵⁶ The second set of sites is located in the hinterland of Salakta, about 7-10 km from the coast.⁵⁷ These workshops, the most important of which is Henchir Ech Chekaf, do not seem to be active until the late 5th or early 6th century; production continues at least until the mid-7th century.⁵⁸

Neapolis

The workshops of Neapolis are all located at the foot of the hill massifs where the clay deposits are located, on a south-west/north-west line, parallel to the coast (FIG. 4, b). A first group of workshops can be distinguished, most of them located in front of the ancient city, north and north-west of it. Already attested in the 1st century, production at these workshops became significant in the 2nd-3rd century and increased again in the 4th century;⁵⁹ it ceased in the first half of the 5th century.⁶⁰ A second group of workshops located to the north-east of Neapolis, the most important of which is that of Sidi Zahrani,⁶¹ experienced intense productive activity in the 5th-6th c., and probably still in the 7th c.⁶² The amphora workshops thus moved towards the secondary agglomeration of Maamoura, as already observed for the salting factories.⁶³ Finally, in a third phase, perhaps not before the second half of the 7th century, some workshops seem to return to the ancient city to settle within the urban perimeter.⁶⁴

2.2. Types of amphorae

Amphorae of the Punic tradition

If we exclude the Van der Werff 2 and 3 types that may still have been produced in Maklouba during the Republican period,⁶⁵ the production of Roman amphorae of the Punic tradition, with handles on the shoulder, is very limited at Salakta, attested only by the Leptiminus II type. The same applies to Nabeul, where the Hammamet 2 and 3 (?) types seem to be produced in small quantities in the Nabeul workshops.

Roman-African amphorae

Numerous early Roman-African amphora types were produced in Salakta: Uzita Pl. 52.10, Leptiminus I, Ostia XXIII, Ostia LIX, while only one is attested in Nabeul: Carthage Early Amphora IV (FIG. 6, a). The classical African amphorae of the 2nd-3rd c. are produced in great abundance in Sullethum, especially the African I type⁶⁶ and, to a lesser extent, II A and IID; in Nabeul, the later II C type dominates (FIG. 6, b). In the workshops of this city, production seems to increase in the 4th century with the late African II C and African III A (=

⁵⁶ NACEF 2010a, p. 184; NACEF 2015, p. 101.

⁵⁷ It currently covers a radius of 2-4 km around the village of Ksour Essef.

⁵⁸ NACEF 2007b, 2010b, 2015, pp. 12-16.

⁵⁹ Cf. the workshop of Sidi Frej, active only in the 4th century (BONIFAY *et alii*, p. 320).

⁶⁰ MRABET, BEN MOUSSA 2007; BONIFAY *et alii* 2010.

⁶¹ GHALIA *et alii* 2005.

⁶² MRABET, BEN MOUSSA 2007; BONIFAY *et alii* 2010.

⁶³ BONIFAY 2004, pp. 482-484.

⁶⁴ SLIM *et alii* 2002.

⁶⁵ NACEF 2010a and 2015, pp. 29-35.

⁶⁶ NACEF 2010a.

Keay 25.1) and III B (= Keay 25.3) types, whereas only the African III A (= Keay 25.1) type seems to be well attested in Sullecthum during this period (FIG. 6, c).

In the 5th century and during the first third of the 6th century, production increased significantly in Nabeul (Keay type 25.2, spatheion 1, Keay 35, 39, 55, 56, 57) (FIG. 6, d). But only the Keay 25.2 type and its small spatheion module seem to be produced, in small quantities, in Salakta. While the workshops of ancient Sullecthum ceased to function in the first half of the 5th century in the peri-urban area, it was not until the beginning of the 6th century that they resumed their activity outside the urban perimeter. At the workshop of Henchir Ech Chekaf, the major site, the Ech Chekaf types I (= Keay 62), II (= Keay 61C) and III (late variant of the Keay 62 type) are produced (FIG. 6, e). In Nabeul, a variant of the Keay 62 type was also produced, followed, from the middle of the 7th century onwards, by spatheia of the 3C type, with a white fabric.

African imitations of non-African types

African imitations of non-African types were produced in both cities in the 3rd and 4th centuries: they are mainly local variants of the Dressel 30 type,⁶⁷ the African copy of the Gallic vinous amphora (FIG. 6, b). In Salakta, in the 6th-7th c., an imitation of the Eastern wine amphora LRA 1 (= Ech Chekaf IV) was produced.⁶⁸

Amphorae in the Byzantine tradition

Finally, globular-bodied amphorae with a calcareous paste seem to have been produced at Neapolis, concurrently with spatheia of type 3C. (FIG. 6, e).

2.3. Contents

The contents of these different types of amphorae are still uncertain. The different arguments that can be used (*tituli picti*, presence or absence of pitch, shape, distribution, chemical analyses, etc.) sometimes give contradictory information.⁶⁹ We will limit ourselves here to investigating the types attached to the packaging of the three main commodities transported in the amphorae: oil, *salsamenta* and wine.

Oil: It is now accepted that African oil was transported in amphorae of the African I type in the 2nd-3rd century. They are present on Monte Testaccio alongside the Hispanic Dressel 20 amphorae: there is generally an absence of any traces of pitch detectable with the naked eye inside these amphorae⁷⁰ and traces of vegetable oil are often revealed through chemical analyses.⁷¹ An overrepresentation of this type can be observed in the workshops of Salakta,⁷² which seems to be out of proportion with the productive capacities of the city's territory alone. In Nabeul, on the other hand, the African I type is produced in apparently more modest quantities. In the 5th and 6th centuries, other types in Nabeul (Keay 35A, not pitched) as well as in Salakta (Ech Chekaf II, not pitched) could have taken over from the Africana I type.

⁶⁷ Sullecthum: NACEF 2007a, p. 45; Neapolis: BONIFAY 2004, pp. 148-151, amphora type 60.

⁶⁸ NACEF 2007b, p. 583.

⁶⁹ BONIFAY 2007 et 2021; NACEF† 2021; PECCI, CAU 2010.

⁷⁰ Even if these amphorae were probably initially pitched: cf. GARNIER *et alii* 2011.

⁷¹ GARNIER *et alii* 2011.

⁷² NACEF 2010a and 2015.

Salsamenta: most probably the African II C type (in Nabeul) and perhaps the African II D type (in Salakta) contained, in the 3rd century, the salted fish produced in these two cities. These hypotheses are based on the presence, inside these amphorae, of significant traces of pitch and sometimes ichthyological remains. The content of the African II A type (produced in Nabeul and in particular in Salakta) is less certain. In Nabeul, in the 4th century, the African III B amphorae (=Keay 25.3) could be attributed to the transport of salsamenta, where chemical analyses have recently revealed traces of animal fat.⁷³ In the 5th century, still in Nabeul, the Keay 35B type seems to succeed the previous type, with the same content (pitch lining, ichthyological remains, etc.). Very recently, painted inscriptions from Antinoopolis have revealed that the small 7th-century spatheia may have carried garum,⁷⁴ but a reuse cannot be excluded. On the other hand, the 5th-century spatheia may have had interchangeable contents, and their arrangement within the cargo of the Dramont E wreck at Saint-Raphaël⁷⁵ shows that they were primarily used as space fillers.⁷⁶

Wine: this was probably transported in the 3rd century in Dressel 30 amphorae produced in Nabeul and Salakta, but not widely distributed in the Mediterranean. In the 4th century, it is not impossible that a significant quantity (especially in Nabeul?) was exported in amphorae of the African III A type. The interiors of these amphorae are usually pitched, and chemical analyses have revealed probable traces of wine in examples from Sullethum found on the Heliopolis I wreck⁷⁷ and another possibly from Nabeul found at Arles.⁷⁸ In the 6th-7th c., Salakta was still able to export its wine in globular amphorae of the Ech Chekaf IV type and Nabeul in amphorae of Byzantine tradition.

3. The distribution

The study of the diffusion of the Salakta and Nabeul amphorae is based on typology and on the presence of the SVLL(ecthum) and C(olonia) I(ulia) N(eapolis) stamps. However, it is mainly petrographic analyses that now allow the two productions to be well characterised (FIG. 7).⁷⁹

3.1. The wrecks

Amphorae from Sullethum and Neapolis have been found in wrecks of merchant ships. Depending on the origin of the amphorae composing the whole cargo, a distinction is made between so-called heterogeneous cargoes, with a composition that is only partly African, and so-called homogeneous cargoes, with an entirely or predominantly African composition.⁸⁰

In the first category, a typical example is the Cabrera III wreck, whose cargo not only shows the association between Hispanic and African amphorae, but also the heterogeneity of the latter's origin. On this wreck, containers from Sullethum and Neapolis are associated with those from Leptiminus and a fourth unknown city.⁸¹ This is why it has been hypothesised that the products of Salakta and Nabeul were first transported to a warehouse port in Betica

⁷³ WOODWORTH *et alii* 2015, samples n° 054 and 059.

⁷⁴ FOURNET, PIERI 2008, p. 180.

⁷⁵ SANTAMARIA 1995, fig. 9.

⁷⁶ BONIFAY 2016.

⁷⁷ FORMENTI, JONCHERAY 1995; WOODWORTH *et alii* 2015, sample nos. 044 and 045.

⁷⁸ WOODWORTH *et alii* 2015, sample no. 080.

⁷⁹ CAPELLI *et alii* 2006; CAPELLI, BONIFAY 2007, 2014 and 2016.

⁸⁰ BONIFAY, TCHERNIA 2012.

⁸¹ BOST *et alii* 1992.

(Cadiz?), and then a second transport associated with Betic commodities to Rome (?).⁸² Other heterogeneous shipments, usually combining Neapolis amphorae with Hispanic amphorae and generally dating from the late 3rd or early 4th century, are attested on wrecks on the southern coasts of Sardinia and Sicily.⁸³

A number of wrecks with a homogeneous load are also known: two for Salakta, four for Nabeul (FIG. 8). The most reliable example is the Plemmirio B wreck,⁸⁴ dated to the early 3rd century and loaded with African I B and II A con gradino amphorae, all of which have been confirmed by physico-chemical analyses to have come from Sullecthum. Petrographic analyses⁸⁵ also allow us to attribute to Sullecthum the load of a wreck from the Provençal coast, Heliopolis I, composed of Keay 25.1 amphorae and dated to the beginning of the 4th century.⁸⁶ Probably contemporary to Heliopolis, two other wrecks with a cargo of late African II C and Keay 25.1 amphorae were discovered in Saint-Tropez and in Trapani.⁸⁷ Petrographic analyses have confirmed their Neapolitan origin (Bonifay, Capelli, Long 2002). Finally, two later wrecks present a load entirely or mainly originating from Nabeul: that of Dramont E at Saint-Raphaël,⁸⁸ dated to the second quarter of the 5th century, and that of La Palud,⁸⁹ dated to the second quarter of the 6th century.⁹⁰

Maritime archaeology thus illustrates the transport of goods from Sullecthum and Neapolis to the northern coasts of the Mediterranean, in a direct or indirect line, from the beginning of the 3rd century to the middle of the 6th century.

3.2. The consumption sites

The distribution of amphorae from the two cities at consumption sites has not yet been precisely studied and would require new archaeometrical analyses. A quick overview of the documentation, however, reveals some differences.

Salakta amphorae are attested from the end of the 1st century, notably in Rome,⁹¹ Pompeii⁹² and Arles (type Uzita Pl. 52.10 and Ostia LIX).⁹³ From the mid 2nd to the end of the 3rd century, stamps attributable to Sullecthum dominate the assemblages in Rome and Ostia.⁹⁴ It is indeed during this period that Salakta amphorae (African types I, II A and II D) are most widely distributed in the north-western Mediterranean,⁹⁵ as far as Lyon,⁹⁶ but appear perhaps

⁸² BOST *et alii* 1992, p. 201.

⁸³ Fontanamare A : DELL'AMICO *et alii* 2001-2002; Marzamemi D et F : cf. PARKER 1992, pp. 267-268. Femmina Morta : PARKER 1976-77; BONIFAY, TCHERNIA 2012.

⁸⁴ GIBBINS, PARKER 1986; GIBBINS 2001.

⁸⁵ BONIFAY *et alii* 2002.

⁸⁶ JONCHERAY 1997.

⁸⁷ Pampelonne wreck: LEQUÉMENT 1976; Marausa wreck: TUSA *et alii* 2004.

⁸⁸ SANTAMARIA 1995; BONIFAY *et alii* 2002.

⁸⁹ LONG, VOLPE 1998.

⁹⁰ BONIFAY *et alii* 2002.

⁹¹ Type Uzita Pl. 52.10: RIZZO 2003, Pl. XXXVIII, no. 198, no fabric description). Type Ostia LIX: Nuovo Mercato Testaccio (BONIFAY *et alii* 2015, p. 196 and Tabl. 1, group A2).

⁹² Type Uzita Pl. 52.10 (Insula I 8: information E. Botte and M.-B. Carre, fabric consistent with Sullecthum productions).

⁹³ Type Ostia LIX: wreck Arles-Rhône 3 (BONIFAY *et alii* 2015, p. 196 and Tabl. 1, group A1).

⁹⁴ STONE 2009, p. 136 and Table 2.

⁹⁵ STONE 2009, fig. 2.

⁹⁶ LEMAÎTRE *et alii* 2011, p. 206.

in smaller quantities in Spain;⁹⁷ they are present in the Adriatic⁹⁸ and even in the eastern Mediterranean.⁹⁹ The production of *Sullectum* is more difficult to record from the 4th century onwards because of the disappearance of epigraphic stamps, but when they can be identified by their fabric, they are still well attested until the beginning of the 5th century by the type *Africana III* (Keay 25), which is present in Lyon,¹⁰⁰ Marseille¹⁰¹ and Rome.¹⁰² In contrast, from the 5th to the early 6th century, *Sullectum* amphorae seem completely absent from Mediterranean consumer sites. It was not until the middle of the 6th century that they reappeared, with a renewed typology (Keay 62A), resulting from the new workshops (Henchir Chekaf) mentioned above. The *Sullectum* amphorae (Henchir Chekaf II, III and IV types) remain present on the consumer sites of the western Mediterranean until at least the middle of the 7th century.¹⁰³

Amphorae from Nabeul are not numerous on Mediterranean consumer sites before the middle of the 3rd century. This is the time when the African II C type, probably mostly from Neapolis, appears on the Mediterranean markets and is present in Rome/Ostia and in the whole of the north-western Mediterranean.¹⁰⁴ This evidence increases considerably in the 4th century (late variants of the African II C type and the African III type) in the western¹⁰⁵ but also in the eastern Mediterranean (Athens, Caesarea of Palestine, Beirut).¹⁰⁶ In the 5th century, the amphorae of Nabeul are extremely widespread in the West¹⁰⁷ as well as in the East,¹⁰⁸ where large amphorae of types Keay 35A and B, 39, 55-57, 64, as well as *spatheia* of type 1 abound.¹⁰⁹ The products of Nabeul, rarer on consumer sites from the middle of the 6th century onwards, appear again in the second half of the 7th century (*spatheia* 3C to 4C). (*spatheia* 3C with white fabric).¹¹⁰

3.3. Products consumed

Oil

If we compare the proportion of African I type amphorae of each of the two origins recorded on these consumer sites, *Salakta* comes out on top. This is also the case at Monte Testaccio as well as Lyon, Arles and Alexandria. In Late Antiquity, whether at the time of the Vandal domination of Africa or of its attachment to the Byzantine Empire, the share of the two cities seems more balanced. While the amphorae of Nabeul dominate in the 5th century (Keay 35A

⁹⁷ Amphorae with the characteristic fabric of *Sullectum* are few in number in Tarragona (information A. Remolà). The fabric group A3 of S. Keay (KEAY 1984, pp. 450-451), attributed to central Tunisia, probably only partially covers the productions of *Salakta*, judging by the repertoire of forms associated with it.

⁹⁸ E.g.: Aquileia (information C. Rousse). Brioni : BONIFAY, CAPELLI 2019.

⁹⁹ Ex: Alexandria (BONIFAY *et alii* 2017, p. 852). Athens (MANACORDA 1977, p. 200, no. 78a). Knossos: HAYES 1983, fig. 24, no. 72. Beirut: REYNOLDS 1997-98, p. 82.

¹⁰⁰ LEMAÎTRE *et alii* 2011, p. 210.

¹⁰¹ MOLINER *et alii* 2007, p. 276.

¹⁰² From the description of the fabric of some of the Ostian examples: MANACORDA 1977, p. 184.

¹⁰³ Cf. GANDOLFI *et alii* 2010; REYNOLDS 2010, note 472.

¹⁰⁴ PANELLA 1973, pp. 582-583; MANACORDA 1977, pp. 164-165.

¹⁰⁵ KEAY 1984, pp. 119-121; BONIFAY 2004, pp. 114-115.

¹⁰⁶ Athènes : GRACE 1961, fig. 37 (Africaine II C.2). Césarée de Palestine : PELEG, REICH 1992, fig. 15, n° 17-18. Beyrouth : REYNOLDS 2010.

¹⁰⁷ Ex. : Marseille : BONIFAY *et alii* 2011, pp. 237-241. Tarragone : REMOLÀ I VALLVERDÚ 2000. Rome : PANELLA *et alii* 2010, p. 57.

¹⁰⁸ Ex. : Kerch (Crimée) : SMOKOTINA 2014, pp. 71-80. Tomis (Roumanie) : OPAIT 1997/98. Alexandrie : BONIFAY *et alii* 2017.

¹⁰⁹ Voir par exemple à Durres (Albanie) : HOTI *et alii* 2008.

¹¹⁰ BONIFAY 2004, p. 127.

type), those of Sullecthum are more important from the middle of the 6th century onwards (Henchir Chekaf types).

Salsamenta

Both cities probably exported salsamenta: Sullecthum from the end of the 1st century (type Uzita Pl. 52) and both in the 2nd-3rd c. (African type II A, C and D). But this commodity remains above all the speciality of Neapolis, especially in the 5th c. with the very large diffusion of the Keay 35B type.

Wine

The respective shares of the two cities in the wine trade remain difficult to assess, as it is not known exactly which containers were used for this trade and how important it really was.

Conclusions

This brief comparison between the archaeological data available from these two port cities - their resources, their amphora production, their outlets – suggests two parallel economic profiles:

1) As much as the status of the city of Sullecthum remains obscure until the end of the Roman period, its port infrastructure and its navigation links with Ostia are well documented by epigraphy from the 2nd-3rd century. Neapolis, on the other hand, is a city of older and higher status than Sullecthum, but its commercial activity remains curiously poorly documented in texts before Late Antiquity.

2) While its hinterland seems to produce little olive oil,¹¹¹ Sullecthum nevertheless exported a lot of it, from the middle of the 2nd century to the second half of the 3rd century, especially to Rome. It also exported salsamenta, produced locally, as proven by archaeology. On the other hand, while the production of olive oil is well attested by the surveys carried out on its territory, Neapolis seems to export little of this commodity. The distribution of amphorae, on the other hand, reveals the predominant part played by the export of salsamenta, especially from the middle of the 3rd century. In both cases, until the end of the 3rd century, the marketing of local wine production by sea seems rather marginal.

3) The continuation of exports from Sullecthum and Neapolis in the 4th century is well attested by the distribution of their amphorae of the African III type, but the nature of the goods transported is less certain: salsamenta and/or wine? The workshops producing African III amphorae are less numerous in Sullecthum than those that previously produced type I and II amphorae, whereas they are more numerous in Neapolis.

4) In both cities, the production of amphorae underwent a great change in the first half of the 5th century, marked by the cessation of production at workshops located near the settlements. In Sullecthum, these workshops moved further inland, but the resumption of production is not really attested before the beginning of the 6th century. On the other hand, in Neapolis, the workshops migrated parallel to the coast, and regrouped near a secondary settlement where salsamenta were probably produced; the distribution of amphorae from these new workshops was considerable throughout the 5th century and the first half of the 6th century.

5) In the Byzantine period, amphorae produced by the workshops of the Sullecthum hinterland became again numerous on the markets of the western Mediterranean, until the

¹¹¹ However, the surprising scarcity of traces of wine presses could also be explained by the intensive reuse of ancient materials in an area of high urban density (present-day Sahel): HOBSON 2015, p. 84.

middle of the 7th century. At the same time, exports from Neapolis suffered a certain slowdown before recovering slightly in the second half of the 7th century.

We are thus struck by the differences and, more often, the similarities or complementarities between the economic models of these two port cities. These differences/similarities can be seen first of all in the nature of the commodities exported: oil, an *annona* commodity, is preponderant in the trade of Sullectum, at least until the second half of the 3rd century, and *salsamenta*, which are not part of the *annona*, dominate the exports of Neapolis, probably during the entire period under consideration. This is also apparent in trade flows, especially at the end of Antiquity: amphorae from Neapolis are more present on Mediterranean markets during the Vandal period, whereas those from Sullectum are better attested during the Byzantine period. How can these differences be explained?

The prominent place of Sullectum in the oil supply of Rome in the 3rd century (Stone 2009, p. 146) seems to indicate that this city was involved in the collection and redistribution of olive oil far beyond its own productions.¹¹² It has thus been proposed that the well-established in Carthage for the distribution of *annona* oil at the end of the 4th century should be applied to Sullectum, involving the prior collection of oil from the inland cities, transported in leather bags.¹¹³ This centralised collection system would have favoured the establishment of amphora workshops on the outskirts of Sullectum, close to the port warehouses,¹¹⁴ but its dismantling at the beginning of the 5th century would have led to the relocation of the workshops inland, closer to the agricultural installations.¹¹⁵ The economic model of Neapolis, on the other hand, seems to be based on the commercialisation of its own productions, mainly *salsamenta*. Here, the progressive (?) transfer of the fishing facilities - and even port facilities - to the secondary agglomeration of Maamoura, helps explain the displacement, perhaps itself rather slow,¹¹⁶ of the amphora workshops during the first half of the 5th century.

But this binary explanatory scheme – a port-warehouse redistributing the productions of other cities; and a port-city exporting its own productions - is perhaps still too reductive. In the case of Sullectum, it is clear that the transfer of workshops was not a consequence of the Vandal conquest. Recent research tends rather to show that most of the peri-urban workshops ceased to function at the beginning of the 5th century. In the same way, for African Red Slip Ware, there is a growing reluctance to accept a purely political explanation, linked to the Vandal conquest and the end of the *annona* system, for the decline in exports to the Mediterranean.¹¹⁷ Other causes can be evoked, such as the decline in demography in Rome at the beginning of the 5th century and therefore a fall in demand. It is also not certain that all the oil collected in Sullectum in the 3rd century was used for the *annona*, nor is it certain that Sullectum exported the same quantities of oil in the 4th century as in the past, if one takes into account the decline of the peri-urban workshops from the end of the 3rd century. Finally, can we really speak of a "displacement" of workshops for Sullectum, insofar as we observe a hiatus of nearly a century between the end of the peri-urban workshops and the beginning of the

¹¹² STONE 2009, p. 146.

¹¹³ PEÑA 1998, pp. 212-213; MARLIÈRE, TORRES COSTA 2007, pp. 88-89. In fact, Sullectum was the closest port outlet to Thysdrus, only 33 km away.

¹¹⁴ Same pattern at Leptiminus: STONE, MATTINGLY 2011, p. 38.

¹¹⁵ PEACOCK *et alii* 1989, pp. 199-201; PEÑA 1998, p. 213.

¹¹⁶ Some workshops close to Neapolis continued production in the second half of the 5th century: MRABET, BEN MOUSSA 2007, figs. 3.6 and 3.7 (Keay types 35B and 57 on the workshop of El Kalaa).

¹¹⁷ BONIFAY, TCHERNIA 2012.

rural workshops?¹¹⁸ Many of these observations also apply to the port city of Leptiminus,¹¹⁹ located 30 km north of Sullethum, whose economic model seems quite similar.

In the case of Neapolis, the *navicularii* attested by epigraphy at the beginning of the 5th century are not necessarily to be interpreted as working for the *annona*, insofar as the main commodity traded appears to have been *salsamenta*. But must we necessarily conclude that these *salsamenta* were all produced on the territory of the city? It is likely that they were packaged and/or collected in the secondary settlement of Maamoura, whose amphora workshops were brought closer at the beginning of the 5th century. However, numerous fragments of Keay 35B amphorae discovered on the salting production sites of the Sebkhra ech Chergui suggest production in the territory of the neighbouring city of Curubis/Korba.¹²⁰ Thus, the use of amphorae made in Neapolis by salt factories located on the territory of other cities on the eastern side of Cape Bon (Curubis and perhaps also Clupea) cannot be excluded, at least in Late Antiquity.¹²¹ This hypothesis would explain the "abnormal" preponderance of amphorae from Neapolis on most of the consumer sites of the western Mediterranean in the 5th century and the first third of the 6th century. Finally, in addition to the flows destined for the large Mediterranean markets, there is a coastal and redistribution trade that appears in the unexpected exchanges of similar commodities (*salsamenta*, oil) between Sullethum and Neapolis.¹²²

These observations and interpretative hypotheses show the complexity of the interdependence between African ports and: a) their territory and/or their hinterland, b) the territory of other cities more or less distant from the coast and/or deprived of port infrastructures or of an equivalent amphora production. Recent research confirms that the nature and intensity of these links can vary: a) in space, according to the location and legal status of the port cities, b) in time, according to economic and political changes. In the face of such complexity, it is more critical than ever to continue investigating the economy of the African coastline.

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¹¹⁸ NACEF 2010a and 2015.

¹¹⁹ STONE, MATTINGLY 2011, p. 52.

¹²⁰ SLIM *et alii* 2004, pp. 170-174. Hypothesis taken up by PALMIERI 2012, p. 508.

¹²¹ However, the production of Keay 35B amphorae is now attested in the territory of Curubis/Korba: BEN MOUSSA 2017, fig. 2.3.

¹²² African amphora II A from Sullethum to Neapolis (BONIFAY *et alii* 2002-2003, p. 175 and fig. 20, no. 287); African amphora II C from Neapolis to Sullethum (BONIFAY 2004, p. 114).

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Captions

Fig. 1 Map of Tunisia. Location of Sullectum and Neapolis; place names quoted in the text.

Fig. 2. Ostia, Piazzale delle Corporazioni, mosaic of the *navicularii* of Sullectum (Becatti 1960, Pl. CLXXIX).

Fig. 3. Neapolis, salt factories (Tunisian-French mission in Nabeul, 1995-2006). (Cl. L. Damelet, CCJ/CNRS).

Fig. 4. Location of amphora workshops (from *Atlas des centuriations romaines de Tunisie*, Paris, 1954): a) Sullectum (Sheet LXXIV, Mahdia); b) Neapolis (Sheet XXX, Nabeul; dotted line: hypothetical outline of the city's boundaries, according to Aounallah 2001).

Fig. 5. Examples of amphora workshops: a) Sullectum, workshop of El Hri 2, 2nd-3rd c. (J. Nacef); b) Neapolis, workshop of Labayed, 5th c. (M. Bonifay).

Fig. 6. Comparative typology of amphorae from Sullecthum and Neapolis. a) 1st - early 2nd c.; b) Mid 2nd - late 3rd c.; c) 4th c.; d) 5th - early 6th c.; e) Mid 6th - 17th c.

Fig. 7. Comparative petrography of amphora fabrics: a) Sullecthum, Catacombs workshop, type Africana I (mid 2nd-3rd c.); b) Neapolis, Sidi Zahrani workshop, type Keay 35B (5th c.).

Fig. 8. Distribution maps of wrecks with homogeneous cargoes containing amphorae from Sullecthum (green stars) and Neapolis (red stars).