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## HISPANIC PRODUCTS IN DALMATIA AND THE CROATIAN PART OF ROMAN PANNONIA

*In this paper we present the state of knowledge of Hispanic products in the wider area of the eastern Adriatic Sea (Dalmatia and Histria) and in the Croatian part of Roman Pannonia. In the 1<sup>st</sup> century CE and during the late Empire, the rhythm of Hispanic imports is characterized mostly by fish products. In the 2<sup>nd</sup> and 3<sup>rd</sup> century olive oil prevails in the study area, which is identical to the surrounding areas like Italy, Noricum and the remaining part of Pannonia. The number of more than 40 sites with Hispanic material in the study area is significant and very representative, but there is no doubt that it must be regarded as minimal. Some sites presented here are strong military and civilian centres, but most of them are underwater sites on previously established routes along the eastern Adriatic coast to the transit ports at the north that supplied the Central European mainland.*

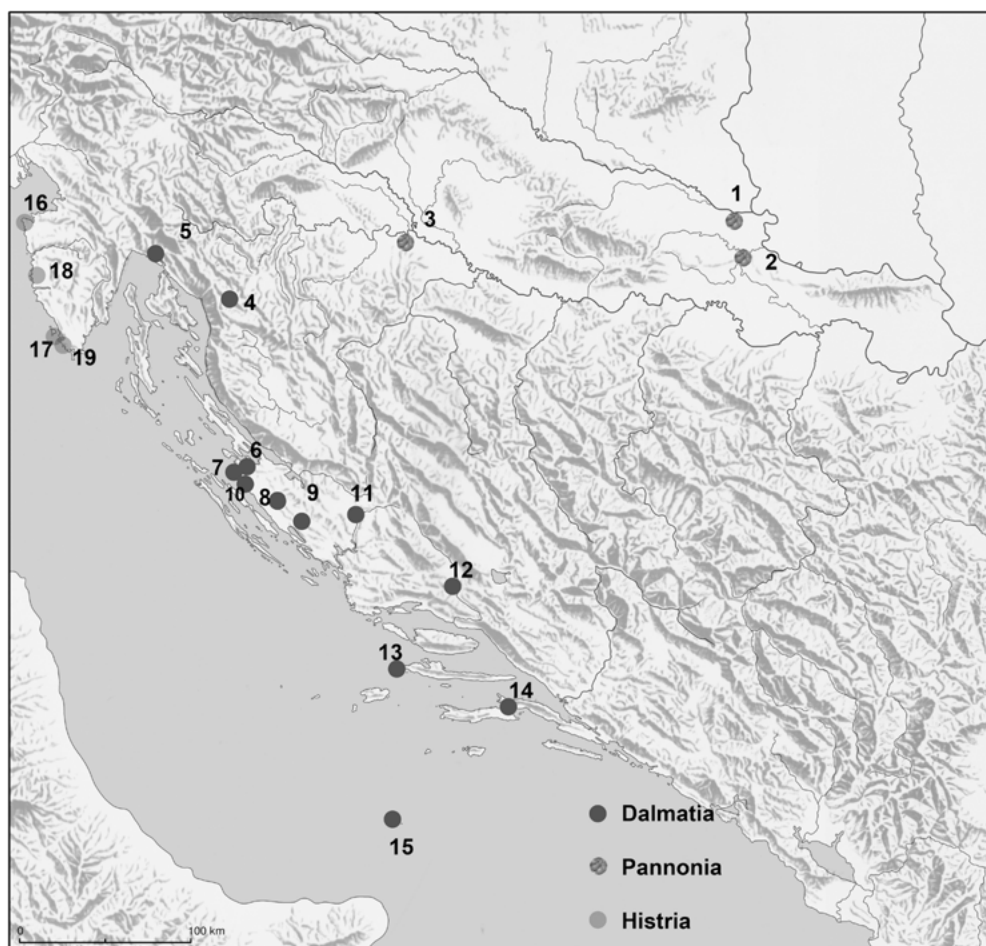
There are many ways to define production, economic power and potential of individual regions during antiquity. Monitoring the scale and intensity of imports and exports over time is certainly the way to acquire information about the offerings of the individual regions, that is what was sought from other regions present on the open Roman market. *Hispania*, in this article, is presented as an exporting region and it was like that throughout antiquity. Agricultural and fish processing products were extremely well represented in the far-reaching trade (CURTIS 1988, 205–210; CURTIS 2005, 31–46; HALEY 2003; MAYET/ÉTIENNE 1998: 147–165; MOLINA VIDAL 1997). Through this evidence, the production and the high-quality potential of *Hispania* has been confirmed. On the other hand, there is *Dalmatia* and *Histria*, whose economy was the same as that of *Hispania*, similarly determined by geographical position and resources inherent to the Mediterranean environment. However, when you exclude the obviously high-quality agricultural products acclaimed in ancient written sources,<sup>1</sup> the archaeological indicators in these regions have not confirmed such an intensity of production that in a stronger and a longer-term measure could compete on a wider spatial plain (ŠKEGRO 1999; MATIJAŠIĆ 1998). The steady stream of numerous products arriving from near and far regions that complemented the various needs of the local population confirms this conclusion (GLICKSMAN 2005, 189–230). One of these regions, whose imports into these areas is characterized by diversity and consistency is *Hispania*. *Pannonia* is different; due to its climate Mediterranean crops were imported to satisfy the needs of the Romans, and *Hispania* was one of the suppliers.

Hispanic products found in the study area have already been the subject of interest in a number of scientific papers. Among the most important are amphora of Hispanic origin from the eastern Adriatic seabed which have been used in discussions of ancient maritime transport (CAMBI 1989, 311–337; VRŠALOVIĆ 1979, 2012; JURIŠIĆ 1998, 143–158; JURIŠIĆ 2000; AURIEMMA/PESAVENTO MATTIOLI 2016, 419–427) or their architectural re-usage observed at several coastal sites (CAMBI 1976, 115–124; CAMBI 1980, 115–124; CAMBI 1983, 363–389; RADIĆ ROSSI 2008, 489–506;). In the area of *Pannonia* Hispanic material has been published on several occasions in several syntheses about pottery in the context of wider production and trends in trade (BRUKNER 1981; KELEMEN 1990; BEZECKY 1994).

Besides the published work, which is the basis of our topic, in this paper we will give information about material that has been recently found by chance or by systematic research. This has led to the number of 41 land or underwater sites from which the material of Hispanic origin has been found, and which are represented by only two pottery groups: the minor group is thin-walled pottery, and present in a greater quantity are different types of amphorae. The analysis of amphorae will greatly complement the picture of the intensity of importation, its chronological and spatial precision/sensitivity; focus on specific products, archaeological contexts, and finally the reasons and ways of their delivery.

The basis for the presentation of findings will be a chronological phasing, which will be further discussed according to the representation of products. A total of three phases can be assigned: 1<sup>st</sup> phase – 1<sup>st</sup> century; 2<sup>nd</sup> phase – 2<sup>nd</sup> to 3<sup>rd</sup> century; 3<sup>rd</sup> phase – late imperial–late antiquity. Some phases have narrower, and some wider time ranges, but the reason for this artificial phasing is that each of the phases in the study area shows certain trends that are worthy of special consideration by broader topics.

<sup>1</sup> Wine: AGATHARCH., fr. 13; Olive oil: APICIUS I,5; PALLAD. XII,18; TEOPOMP. IX,27; GALEN XII; PAUSAN. X,32,19; Fish processing products: PLIN., nat. XXXI,94; CASSIODOR, Var. 12,22. (for full information ŠKEGRO 2010).



**Fig. 1.** Map of sites, Phase 1 (numbers correspond with **figs. 3–5**).

### Phase 1

During this phase the Hispanic imports into the area of the eastern Adriatic and its hinterland are characterized by diversity in the products and in the context of their findings (**fig. 1–5**). This is the only period during which Hispanic tableware or thin-walled pottery appears. The vessels belong to the Baetican egg-shell products, and these were found on only three sites. Three sherds of cups were found in *Siscia* and they belong to the context dated to the late Tiberian–Claudian period (MILETIĆ ČAKŠIRAN 2015, 114–115). A cup found in *Tilurium* also dates to this period (ŠIMIĆ-KANAET 2010, 33). The cup found in the stone urn in the *Iader* (Zadar) necropolis is dated, according to glass items, to the second half of the 1<sup>st</sup> century (**fig. 2**). The current state of the occurrence of these products is not surprising and we cannot expect a significant increase in the statistics. During the 1<sup>st</sup> century AD, especially in its first half and in the middle of the century, northern Italic products dominate as tableware. In the second half of the 1<sup>st</sup> century, a production of thin walled pottery is known in both provinces (RICCI 1985, 231–356; OŽANIĆ ROGULJIĆ 2011, 31–39; MILETIĆ ČAKŠIRAN 2015, 116). The way Hispanic tableware came to this region must be found in other features of this phase.

The available information testifies to the dominance of fish processing products that were carried in different variants of the Baetican amphora type Dressel 7–11, Dressel 12

and Beltran IIA (**fig. 3**). In a lesser amount, or as individual specimens, were the *amphora vinaria* Baetican Haltern 70 (**fig. 4**) and Tarraconensis type Dressel 2–4, and the Baetican *amphora olearia* Dressel 20 were also found (**fig. 5**). Considering the strength of the Hispanic economy and the products that dominate in exports during the 1<sup>st</sup> century, such a statistical sample corresponds to a known state. The century of which we speak witnessed exceptional progress/the peak of the fish processing industry on the shores of southern Hispania, the products of which were found all over the Roman Empire, particularly the western half (CURTIS 1988, 205–210; TRAKADAS 2005, 47–82). The Adriatic and areas connected to it are no exception; beside the finds and sites listed in **figure 3**, such a situation is witnessed throughout northern Italy, *Noricum* and the parts of *Pannonia* that are exempted from this work (TONIOLO 1997, 799–814; PESAVENTO MATTIOLI 2000, 733–755; BEZECZKY 2000, 1359–1369). Those regions were also supplied through the Adriatic navigable route. When we concentrate only on the study area it should be noted that during the 1<sup>st</sup> century it goes through a significant phase of Romanization and urbanization (MATIJAŠIĆ 2009). In that process *Dalmatia* and *Pannonia* became a market where one can expect a significant demand for products of this type. However, as mentioned above, we must not lose sight of the local orientation of the sea as a food resource. The evidence of this is recorded in written sources (PLINIUS, nat. XXXI,

94; CASSIODORO, Var. 12, 22). An increasing number of archaeological indicators point to a strong local fish farming/fish processing activity that provided a competition to Hispanic imports (BUONAPANE 2009, 31–32; BUSAN/D'INCA/FORTI 2009, 53–69; MATIJAŠIĆ 1998, 337; SUIĆ 1976, 214).

In the same way, we can look back at other Hispanic products of this phase, amphorae type Haltern 70 and Dressel 2–4 and Dressel 20, which appear to be in even smaller representation, and can be interpreted as accompanying merchandise.

The entire Adriatic area during the Late Republic period greatly advanced in terms of viticulture, and the Eastern Adriatic had its needs satisfied from local sources (Lamboglia 2 and Dressel 2–4 type of amphora) or from imports from much closer wine-growing areas like northern and southern Italy (Dressel 6A and Dressel 2–4 type of amphora) and the Aegean (Dressel 2–4 and late Rhodian type of amphora) (MATIJAŠIĆ 1998; ŠKEGRO 1999; JURIŠIĆ 2000).

It is quite clear that the quantity, quality and distribution of olive products from the Histrian region used to cover much of the Pannonian market (BRUKNER 1981; BEZECZKY 1987; OŽANIĆ ROGULJIĆ 2016), and in the case of *Dalmatia* it supplemented local needs for products of this type (JADRIĆ 2007, 353–361). Nevertheless, the commercial networking of the Roman world and the global popularity of Hispanic products resulted in their delivery to those customers who simply followed trends in cuisine.

Most of the sites are underwater, but as most of them were random and isolated findings of amphorae they have little interpretive value, except for monitoring general routes and dynamics of navigation. In this light two shipwrecks are important, one near the island of Paržanj in the waters of the Pakleni islands with a cargo of south Hispanian Dressel 7–11 and *Tarraconensis* Cadiz type Dressel 2–4 and the mortar of probable origin in southern Italy (JURIŠIĆ 2000, 70), and the other by the islet of Galijula (Pupak) in the waters of Palagruža, with an established cargo of Hispanic amphorae types Beltran IIA, Haltern 70 and Dressel 2–4, Campanian cooking ware and Richborough 527 amphorae (JURIŠIĆ 2000, 71). Both wrecks, the first dated in the 1<sup>st</sup> century and the other in the second half of the 1<sup>st</sup> century, are witnesses of the continuous delivery of Hispanic products to the Adriatic Sea using the same route through the ports of southern Italy.

Further analysis of contexts in this phase inevitably draws attention to the three legionary camps with findings of Hispanic products, the Dalmatian *Burnum* and *Tilurium* and the Pannonian *Siscia* (ROMEĆ 2014). Among these fish processing products again prevail, and given that the military camps date to the beginning of the 1<sup>st</sup> century it is not a surprise that the different variants of amphorae from the group Dressel 7–11 are mostly present, with a very small proportion of those for wine (Halter 70) and for oil (Dressel 20) (BORZIĆ 2011, 65–88; ŠIMIĆ-KANAET 2010, 45; PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016).

Although we must take into consideration the lack of publications about pottery findings from civil settlements in the Dalmatian-Pannonian area, the legionary camps at this time appear to be very attractive markets for Hispanic fish products. Among the processed material from *Burnum*, amphorae account for almost 10 % (BORZIĆ/JADRIĆ 2013, 523–533), and



**Fig. 2.** Thin walled cup (unpublished), Zadar, d (rim) 8,6 cm; d (bottom) 3,4 cm; height 6,4 cm.

from *Siscia* almost 5 % (PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016). Such statistical data are not so inadequate if we take into account the primary military nutritional needs which are not represented by these products of such high quality and price (DAVIES 1971, 122–142; ROTH 1999). However, given the fact that the Hispanic products of this high class found a clientele among military personnel, the only thing one can question is whether these products were a free procurement offered to all military classes or, as is more likely, arrived through private or official channels of military procurement of food for soldiers of higher ranks. Such data are indicated by the *tituli picti* of some amphorae of the same type as evidence of highly organized trafficking of foodstuff from the source to the consumers (BEZECZKY 1996, 329–336; EHMIG 1997, 9; EHMIG 2000, 1156; BORZIĆ 2011, PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016) (**fig. 12**).

All other contexts in which Hispanic products from this phase were found in civilian, urban, rural or rich environments are located on the main commercial roads (*Tarsatica*, *Aenona*, *Asseria*, *Nedinum* in Dalmatia, *Loron* and *Umag* in Histria and *Siscia*, *Mursa* and *Cibalae* in Pannonia) where there were obviously clientele eager for Hispanic fish sauce and wine by-products. Regarding its concentration we will be able to speak only after the systematic processing of pottery finds.

## Phase 2

Continuity in the delivery of Hispanic fish processing products to *Dalmatia* and *Pannonia* at the turn of the 2<sup>nd</sup> century is testified by several findings of Beltran IIA and IIB amphorae, again mainly recorded on underwater sites like Gušteranski bay near the island of Žirje (JURIŠIĆ 1998, 153; JURIŠIĆ 2000, 64) (**fig. 7–8**). This, as well as earlier shipwrecks, confirms the contact between the southern Italian ports and the arrival of Hispanic products into the Adriatic.

Garum, fish/ phase 1						
No.	site	type of site	provincia/regio	form	dating	stamp/titulus pictus bibliography
1	Mursa	colonia	Pannonia	Dressel 7–11	1 <sup>st</sup> CE	BRUKNER 1981; KELEMEN 1987
2	Cibale	settlement	Pannonia	Beltran 1	1 <sup>st</sup> CE	BRUKNER 1981; KELEMEN 1990; BEZECKY 1994; 1988; OŽANIĆ 2005; OŽANIĆ ROGULJIĆ 2016
3	Siscia	military camp	Pannonia	Dressel 7–11	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
3	Siscia	military camp	Pannonia	Dressel 8	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
3	Siscia	colonia	Pannonia	Beltran IIA	1 <sup>st</sup> CE	PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
5	Tarsatica	settlement	Dalmatia	Pompeii VII	1 <sup>st</sup> –2 <sup>nd</sup> CE	VŠINIĆ 2009
6	Aenona	municipium	Dalmatia	Dressel 7–11	1 <sup>st</sup> CE	unpublished
8	Asseria	municipium	Dalmatia	Dressel 7–11	1 <sup>st</sup> CE	unpublished
9	Nedinum	municipium	Dalmatia	Dressel 7–11	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	unpublished
11	Burnum	military camp	Dalmatia	Dressel 8	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	BORZIĆ 2012
11	Burnum	military camp	Dalmatia	Dressel 9	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	BORZIĆ 2011
11	Burnum	military camp	Dalmatia	Dressel 12	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	BORZIĆ 2011
12	Tilurium	military camp	Dalmatia	Dressel 7–11	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	ŠIMIĆ KANAET 2010
13	Paržanj near Pakleni islands	shipwreck	Dalmatia	Dressel 10	1 <sup>st</sup> CE	unpublished
13	Paržanj near Pakleni islands	shipwreck	Dalmatia	Dressel 8	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	JURIŠIĆ 1998
14	Peļeski channel; Orebić	underwater	Dalmatia	Dressel 9	1 <sup>st</sup> half of the 1 <sup>st</sup> CE	unpublished
15	Palagruža/Galijsula	shipwreck	Dalmatia	Beltran IIA	2 <sup>nd</sup> half of the 1 <sup>st</sup> CE	JURIŠIĆ 1998
17	surrounding of Pula/Pola	underwater	Istria	Beltran IIA	1 <sup>st</sup> CE	VRŠALOVIĆ 1979
18	Rovinj (reef Piruzi)	underwater	Istria	Dressel 7–11	1 <sup>st</sup> CE	VRŠALOVIĆ 1979; STARAC 2006
19	surrounding of Pula/Pola	underwater	Istria	Beltran IIA	1 <sup>st</sup> CE	VRŠALOVIĆ 1979

Fig. 3. List of sites, amphorae for *garum* and fish products, Phase 1.

Wine, defrutum, phase 1								
No.	site	type of site	provincia/regio	form	product	dating	stamp	bibliography
3	Siscia	military camp	Pannonia	Haltern 70	defrutum	1 <sup>st</sup> CE		PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
3	Siscia	military camp	Pannonia	Pascqual 1	wine	First half 1 <sup>st</sup> CE		PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
7	IslandVir; Pedinka bay	underwater	Dalmatia	Haltern 70	defrutum	1 <sup>st</sup> CE		GLUŠČEVIĆ/ZGLAV-MARTINAC 2016
11	Burnum	military camp	Dalmatia	Dressel 2–4	wine	First half 1 <sup>st</sup> CE		BORZIĆ 2011
11	Burnum	military camp	Dalmatia	Haltern 70	defrutum	First half 1 <sup>st</sup> CE		BORZIĆ 2011
13	Paržanj near Pakleni islands	shipwreck	Dalmatia	Dressel 2–4	wine	First half 1 <sup>st</sup> CE		JURIŠIĆ 1998
15	Palagruža,Galijula	shipwreck	Dalmatia	Dressel 2–4	wine	First half 1 <sup>st</sup> CE	HISPA	JURIŠIĆ 1998
15	Palagruža,Galijula	shipwreck	Dalmatia	Haltern 70	defrutum	First half 1 <sup>st</sup> CE		JURIŠIĆ 1998
16	Savudrija	port	Histria	Haltern 70	defrutum	1 <sup>st</sup> CE		unpublished

Fig. 4. List of sites, amphorae for wine, Phase 1.

Olive oil, phase 1						
No.	site	type of site	provincia/regio	form	dating	bibliography
4	Žuta lokva	station	Dalmatia	Dressel 20	1 <sup>st</sup> CE	unpublished
11	Burnum	military camp	Dalmatia	Dressel 20	First half 1 <sup>st</sup> CE	BORZIĆ 2011

Fig. 5. List of sites, amphorae for olive oil, Phase 1.

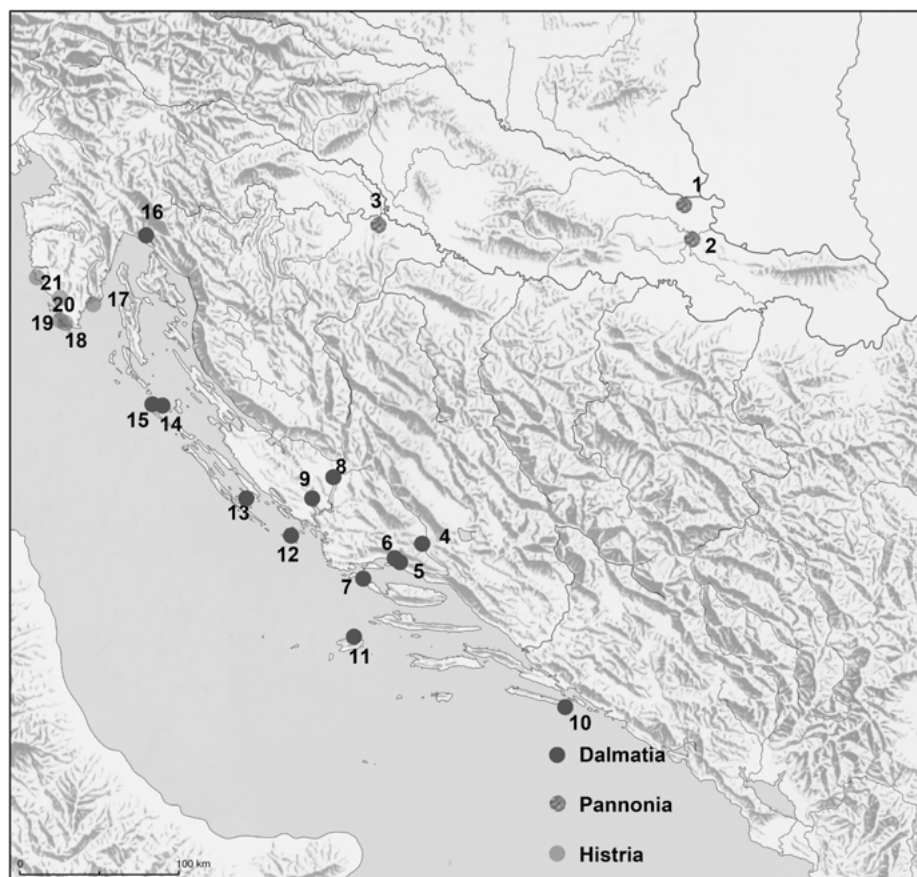


Fig. 6. Map of sites, Phase 2 (numbers correspond with figs.7–8).

<i>Garum</i> , phase 2						
No.	site	type of site	provincia/regio	form	Dating	bibliography
1	Mursa	colonia	Pannonia	Beltran Ia or Ila	2 <sup>nd</sup> CE	BRUKNER 1981: 121–122, T 156, 6–7; KELEMEN 1987: 156
13	Gušteranski near island Žirje	shipwreck	Dalmatia	Keay XVI	2 <sup>nd</sup> –3 <sup>rd</sup> CE	JURIŠIĆ 1998
13	Gušteranski near island Žirje	shipwreck	Dalmatia	Beltran IIB	2 <sup>nd</sup> CE	JURIŠIĆ 1998
10	Veliki Škoj SE of island Mljet	underwater	Dalmatia	Beltran IIA	2 <sup>nd</sup> CE	VRŠALOVIĆ 1979
11	rt Stenjalo island Vis	underwater	Dalmatia	Beltran IIA	2 <sup>nd</sup> CE	VRŠALOVIĆ 1979

Fig. 7. List of sites, amphorae for *garum* and fish products, Phase 2.

<i>Olive oil</i> , phase 2						
No.	site	type of site	provincia/regio	form	datation	bibliography
1	Mursa	colonia	Pannonia	Dressel 20	2 <sup>nd</sup> CE	BEZECKY 1994
2	Cibalae	colonia	Pannonia	Dressel 20	2 <sup>nd</sup> CE	VIKIĆ BELANČIĆ 1970; KELEMEN 19: 164; BEZECKY 1994;1988; OŽANIĆ 2005; OŽANIĆ ROGULJIĆ 2016
3	Siscia	colonia	Pannonia	Dressel 23	3 <sup>rd</sup> CE	PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016
4	Tilurium	settlement	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	ŠIMIĆ KANAET 2010
5	Salona- Spinut, in the Poljud bay	coastal structure	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	CAMBI 1983; RADIĆ-ROSSI 2008
6	Salona - Kaštelanski bay	coastal structure	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	BABIN 2006; RADIĆ-ROSSI 2008
7	Stipanska - island Šolta	shipwreck	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	CAMBI 1983
8	Burnum	municipium	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	unpublished
9	Varvaria	municipium	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	unpublished
	Chanel between islands Dugi otok - Žut	shipwreck	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	CAMBI 1983
14	Silbast. Ante bay	shipwreck	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	GLUŠČEVIĆ 2016
15	Silba reefs	shipwreck	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	GLUŠČEVIĆ 2016
16	Tarsatica - Principia	military site	Dalmatia	Dressel 20	2 <sup>nd</sup> CE	VIŠNJIĆ 2009
17	Krnica bay, in front of Raša bay	underwater	Histria	Dressel 20	2 <sup>nd</sup> CE	VRŠALOVIĆ 1979
18	Zonki bay kod cape Kršto north west of Pula	underwater	Histria	Dressel 20	2 <sup>nd</sup> CE	VRŠALOVIĆ 1979
19	Island Kozada, north west of Pula	underwater	Histria	Dressel 20	2 <sup>nd</sup> CE	VRŠALOVIĆ 1979
20	Fažana	underwater	Histria	Dressel 20	2 <sup>nd</sup> CE	CAMBI 1983
21	Rovinj (St John on the sea)	underwater	Histria	Dressel 20	2 <sup>nd</sup> CE	STARAC 2008

Fig. 8. List of sites, amphorae for olive oil, Phase 2.

In the second phase, fish products of *Hispania* that were the most represented goods of the previous period, were replaced with olive oil (REMESAL RODRIGUEZ 1998, 183–199). During most of the 1<sup>st</sup> century, olive oil was mainly aimed at the regional markets and at the Western European area, catering especially for the needs of British and Rhine *limes*. However, some findings indicate that a certain amount of oil, though obviously as a secondary cargo, arrived at other somewhat distant markets. In our context this corresponds to a few fragments of Dressel 20 amphorae in the legionary camp in *Burnum* dated to the first half of the 1<sup>st</sup> century AD, and also for example, amphorae from Žuta Lokva dating from the end of the 1<sup>st</sup> century fit into a progressively more significant presence of Hispanic oil in the entire Adriatic to which northern Italy, Noricum and Pannonia products gravi-

tated (fig. 8) (PEASVENTO MATTIOLI 2000, 735–741; BEZECKY 2000, 1359–1361). The reason for such a small representation has already been highlighted and confined solely to the saturation of the market with local olive oil, whose production was led by north Italian and Istrian Dressel 6B amphorae as indicators of the dynamics of production and trade (CIPRIANO 2009, 173–190). But the fact is that towards the end of the 1<sup>st</sup> century and during the first half of the 2<sup>nd</sup> century things were changing, and the north Italian and Istrian area fell into serious production problems. The best indicator for this is the production and distribution of Dressel 6B amphorae from Istrian figlinato Fažana and Loron, which in their evolution from a ‘civilian’ phase transition of ownership over to the imperial fisc of Vespasian to Hadrian were gradually becoming less common in this market (BEZECKY 1987, 6–21; STARAC 2001,

stamps	Dressel 20				
site	provincia/regio	form	product	stamp	bibliography
<i>Cibalae</i>	Pannonia	Dressel 20	olive oil	L. IUNIM //ELIS.SI; FLCCVT	VIKIĆ BELANČIĆ 1970: KELEMEN 19: 164; BEZECKY 1994;1988; OŽANIĆ 2005; OŽANIĆ ROGULJIĆ 2016
<i>Cibalae</i>	Pannonia	Dressel 20	olive oil	FLCCVT	VIKIĆ BELANČIĆ 1970: KELEMEN 19: 164; BEZECKY 1994;1988; OŽANIĆ 2005; OŽANIĆ ROGULJIĆ 2016
<i>Mursa</i>	Pannonia	Dressel 20	olive oil	DOMS	BEZECKY 1994
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	SAXO FERR	CAMBI 1983
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	FSF A QVA	CAMBI 1983
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	OC.PA	CAMBI 1983
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	SCOROBRES	CAMBI 1983
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	AI FF	CAMBI 1983
<i>Salona - Spinut, in the Poljud bay</i>	Dalmatia	Dressel 20	olive oil	L/P/.M.S.	CAMBI 1983

Fig. 9. Stamps on Dressel 20 amphorae, Phase 2.

269–277; MARION, STARAC 2001, 97–125). There are many reasons for such a decline but it is more realistic to look for the primary reasons in natural causes (BULIĆ/KONCANI UHAČ 2010, 112). However, the result was a vacuum in the supply of olive oil from the Adriatic. Hispanic productions with extensive experience in supply logistics acquired through private, but especially through the state systems of *annona urbis* and *annonae militaris*, quickly filled the gap on the market (REMESAL RODRIGUEZ 1998, 197). This adaptation to the new production/market circumstances was the second phase in the import of Hispanic products to the area of study and is dated roughly to the 2<sup>nd</sup> century and the first half of the 3<sup>rd</sup> century. In contrast to the first phase, the second phase is fairly homogenous and practically limited to a single product: olive oil brought into the amphora type Dressel 20. In *Pannonia* their appearance is evidenced in the major urban centers, the colonies of *Mursa* and *Cibalae*. The morphology of the amphorae and the data provided from the seals (fig. 8) allows a conclusion on the continuing of delivery from the Antonine to post Severan period, which is consistent with the distribution of Dressel 20 amphorae in the Pannonian region, where in that date range they were generally found either on the Danube limes or in the hinterland of the important centers of the Sava-Drava waterway (BEZECKY 1994, 161–166; BEZECKY 2000, 1362–1363). The delivery routes of Hispanic oil to the Pannonian markets had to touch the eastern Adriatic waterway that ended in *Aquileia*. Indeed, the number of up to fifteen Eastern Adriatic sites with finds of amphorae of type Dressel 20 quite clearly shows the gradual infiltration of Hispanic oil into the Dalmatian market at the transition

from the 1<sup>st</sup> century to the 2<sup>nd</sup> century and throughout the 2<sup>nd</sup> century (figs. 8–9). These amphorae were found in different contexts, but in a similar way to the first stage, most of them were coming from the underwater environment. Unfortunately, even now most of them are being published as isolated objects (VRŠALOVIĆ 1979, 372; CAMBI 1976, 121), and without a wider context. But even so they give information which helps us to close the circle of maritime traffic from Hispania to *Aquileia* as a point of departure on the Pannonian sites. For the time being, the only site that shows the characteristics of a shipwreck is *Silba-reefs* from the Flavian-Traianic period (GLUŠČEVIĆ 2010, 166), but it is a question of time as to when the otherwise intense survey of the eastern Adriatic seabed will determine the existence of similar locations. On the other hand, at underwater *Salona bay* were two of probably the most famous and most interesting sites with Dressel 20 amphorae on the eastern Adriatic, *Spinut* and *Trstenik* (CAMBI 1980, 73–80; 1983, 363–381; RADIĆ ROSSI 2008, 500–501). A large number of amphorae dated to the transition from the 1<sup>st</sup> to 2<sup>nd</sup> century were found in secondary usage. It has proved to be a coastal structure, for the building of which Hispanic Dressel 20 and North African cylindrical amphorae (in case of *Spinut*) were used, along with construction waste. Such construction, according to the researchers, could have served for draining the marshy land indicated by the silty sea bottom of the bay and the origin of the name *Poljud* (Lat. *palus*) (RADIĆ ROSSI 2009). The evidence of such an amount of Hispanic *amphora olearia* in the provincial capital city and port of *Salona* promises a bright future in anticipation of an increase in their findings and also on sites in the hin-

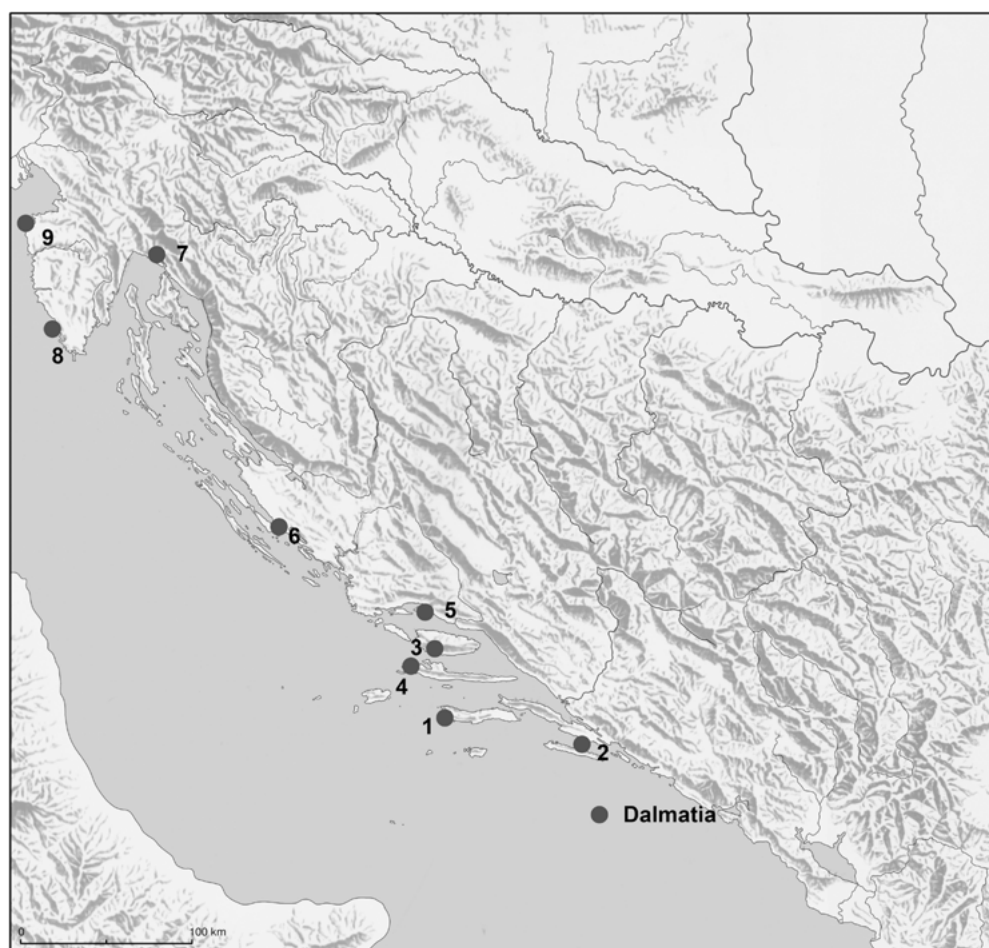


Fig. 10. Map of sites, Phase 3 (numbers correspond with fig. 11).

terland, particularly those with significant higher demand. *Tilurium*, *Varvaria* (Bribir) and *Burnum* are in the Dalmatian hinterland, but they are dependent on *Salona* and *Scardona* as their ports (CAMBI 2001).

*Tarsatica* is a specific site in the corpus, where the fragment of late variants of Dressel 20 amphorae was found in the *principia* created within *Praetenture Italiae* by the end of the 2<sup>nd</sup> century AD, and then again utilized within *Claustre Iulium Alpinorum* in the 4<sup>th</sup> century (BEKIĆ/RADIĆ-ŠTIVIĆ 2009). Despite the very small sample, *Tarsatica* as military site leaves open the possibility of delivery of Hispanic olive oil to this area through a system of *annona militaris*, from where it would be relatively easy to distribute further (AURIEMMA/PESAVENTO MATTIOLI 2016, 421–422). It can be concluded that the situation in the second stage which mainly covers the period 2<sup>nd</sup> century, the provinces of *Dalmatia*, *Histria* and *Pannonia* were following global trends, in this case to prove the increased influx of Hispanic olive oil. It seems that the need and demand changed in this phase. In the 1<sup>st</sup> century we can interpret Hispanic imports as a sign of prestige and status while in the 2<sup>nd</sup> century Hispanic goods became everyday commodities.

### Phase 3

The last phase of the import of Hispanic pottery in the study area generally refers to the late imperial and late antique period. In this case the latest date is the second half of the 3<sup>rd</sup> century. In this period the commercial model was changed at the regional and global level, and started to be dictated from the north African production zone (KINGSLEY 2008, 235–248; AURIEMMA/PESAVENTO MATTIOLI 2016, 421–422). The previously mentioned relatively intense imports of Baetican olive oil slow down after the mid-3<sup>rd</sup> century. Only two sites suggest that there is still a connection with Baetican olive oil production and our area of study. Two types of amphorae Dressel 23 were found in *Tarsatica*<sup>2</sup> and one was found in *Siscia* (*Pannonia*) (fig. 11). In the same period we can date the *amphora vinaria* type Beltran 68 (BERNAL CASASOLA 1996), found again in *Tarsatica*. From the same site are Lusitanian amphorae Almagro 51 A–B, dated to the late 4<sup>th</sup> and early 5<sup>th</sup> century, that are intended for transporting fish processing products (fig. 11). Amphoras of this type were also found in the port of Savudrija, Brijuni, Biograd, Split (VRŠALOVIĆ 1974, 140; WILL 1989, 80; VIDRIH PERKO/PAVLETIĆ 2000, 265; AURIEMMA/PESAVENTO MATTIOLI 2016, 421–422). Lusitanian

<sup>2</sup> Previously published as late form of Dressel 20.

Garum/olive oil phase 3							
No.	site	type of site	provincia/regio	form	Product	datation	bibliography
1	Waters around Korčula? – private collection Hegel (Vela Luka)	underwater	Dalmatia	Almagro 50	Garum	3 <sup>rd</sup> CE	unpublished
2	Bay Sobra Island Mljet	underwater	Dalmatia	Almagro 50	Garum	4 <sup>th</sup> CE	KISIĆ 1987; PARKER 1992, 408; KINGSLEY 2008; AURIEMMA/PESAVENTO 2016
3	Bol island Brač – private collection	underwater	Dalmatia	Almagro 50	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	KISIĆ 1987; AURIEMMA/PESAVENTO 2016
4	Hvar	underwater	Dalmatia	Almagro 50	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	PETRIĆ 1989; AURIEMMA/PESAVENTO 2016
5	Split	underwater	Dalmatia	Almagro 50	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	AURIEMMA/PESAVENTO 2016
5	Split	underwater	Dalmatia	Almagro 51C	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	KISIĆ 1987; AURIEMMA/PESAVENTO 2016
6	Biograd	underwater	Dalmatia	Almagro 51C	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	VRŠALOVIĆ 1974; AURIEMMA/PESAVENTO 2016
7	<i>Tarsatica - Principia</i>	military camp	Dalmatia	Dressel 23	Oil	end of 3 <sup>rd</sup> –4 <sup>th</sup> CE	VIŠNJIĆ 2009
7	<i>Tarsatica - Principia</i>	military camp	Dalmatia	Almagro 51A-B	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	VIŠNJIĆ 2009; AURIEMMA/PESAVENTO 2016
8	Brijuni		Histria	Almagro 51A-B	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	VIDRIH PERKO/PAVLETIĆ 2000; AURIEMMA/PESAVENTO 2016
9	Savudrija	underwater	Histria	Almagro 51 A-B	Garum	4 <sup>th</sup> –5 <sup>th</sup> CE	AURIEMMA/PESAVENTO 2016

Fig. 11. List of sites, amphorae for *garum*, fish products and olive oil, Phase 3.

amphora type Almagro 50 was found in the waters near the islands of Korčula, Brač (Bol) and Hvar, and near Split (KISIĆ 1987, 21 no 33; PETRIĆ 1989, 34 fig. D; AURIEMMA/PESAVENTO MATTIOLI 2016, 421–422). The shipwreck dated to 4<sup>th</sup> century at the bay Sobra, the island of Mljet, is the best example of the percentage of Hispanic products in relation to imports from Northern Africa. Five amphorae are of Hispanic origin while almost 1000 attest to African production (KISIĆ 1987; PARKER 1992, 408; KINGSLEY 2008; AURIEMMA/PESAVENTO MATTIOLI 2016, 422).

## Conclusion

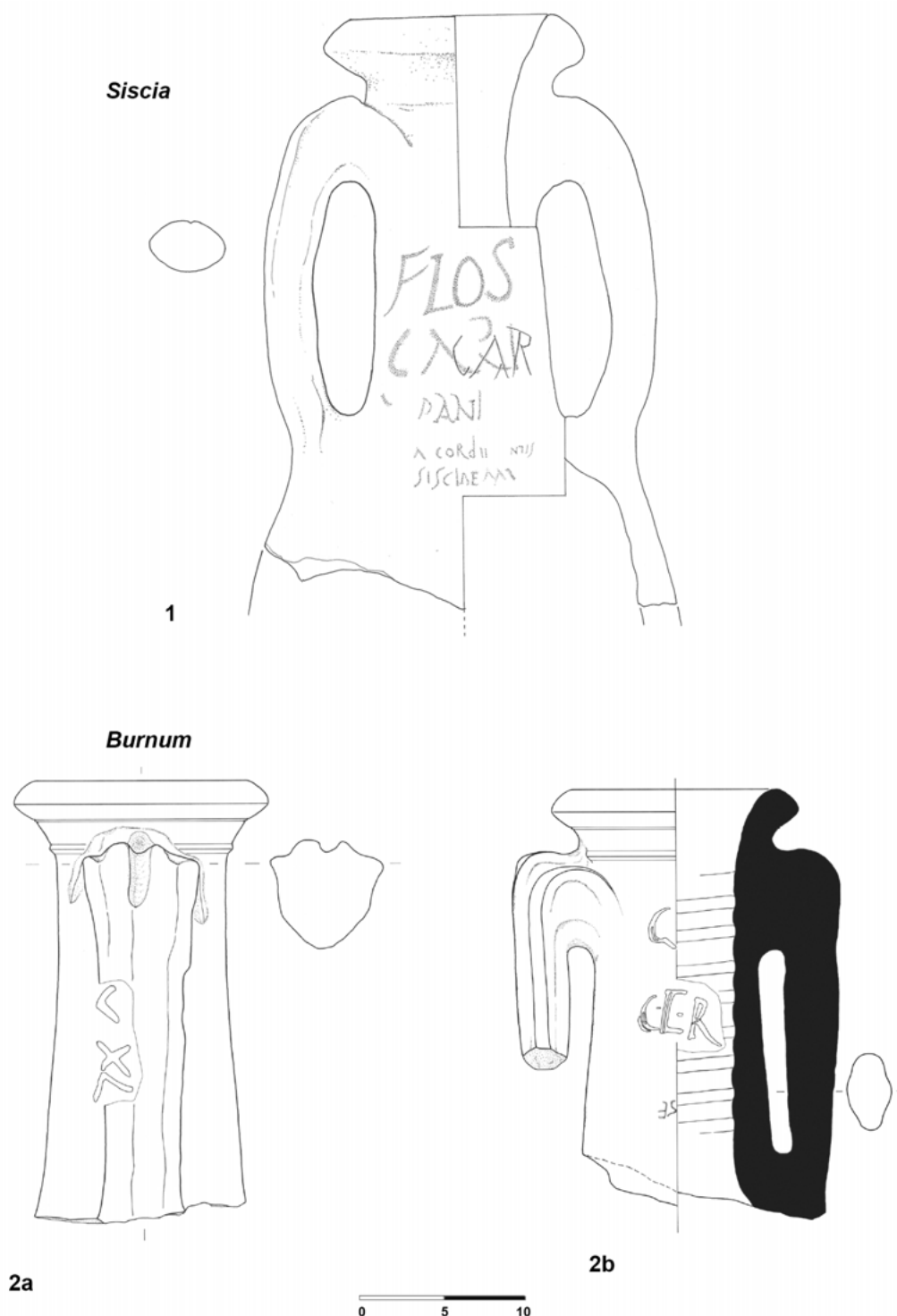
In this paper we presented the state of knowledge of Hispanic products in the wider area of the eastern Adriatic Sea (*Dalmatia* and *Histria*) and in the Croatian part of Roman *Pannonia*. The information presented indicates clear trends in the trade connections between these two regions, particular patterns of supply and demand on the Adriatic/Pannonian, local/regional market and different impulses conditioned by the need for their expansion.

In the 1<sup>st</sup> century and during the late Empire, the rhythm of Hispanic imports is characterized mostly by fish products. In the 2<sup>nd</sup> and 3<sup>rd</sup> century olive oil prevails in the study area which is identical with the surrounding areas like Italy, *Noricum* and the remaining part of *Pannonia*. Therefore, the discussion of outbreaks of import are reduced to a regional, primarily the Adriatic, economic activity that provides the very same products which at specific intervals were imported from *Hispania Baetica*, *Tarraconensis* and *Lusitania*. Written sources and archaeological finds at the Adriatic testify about the developed fishing and fish processing industry throughout antiquity. But despite this, the fact is that a wide market was focused on the Adriatic, and probably at certain

times the need of surpassing its production potential. During the 1<sup>st</sup> century *Dalmatia*, *Pannonia* and *Noricum* were under intensive urbanization, accompanied by a significant influx of population. It is also important to point out that due to the proximity of the *limes* and the latent danger those regions were often hosting a large number of the army. These facts provide additional reasons for the periodic occurrence of globally famous and trendy Hispanic products in distant markets.

The impulses of Hispanic import to the Adriatic regional level are even more visible in terms of olive oil. The production potential of the Adriatic area is not the question, but archaeological data testify to still insufficiently clarified decline in production at the turn of the first in the 2<sup>nd</sup> century, which was chronologically close to the beginning of an increase in the intensity in the importation of olive oil from Hispania. At that time the imports from Hispania satisfied gaps in supply, especially in the areas that were not olive regions, i.e. *Pannonia*. Other Hispanic products recorded in the study area, wine and thin-walled pottery, are present in a relatively small, and statistically almost negligible, amount. The trade logic here is clear and refers to the strong pottery production and wine-growing activity in the Adriatic, but also significantly more to trade openness towards the Aegean wine-growing region.

The number of more than 40 sites with the Hispanic material in the study area is significant and very representative, but there is no doubt that it must be regarded as minimal. Some sites presented here are strong military and civilian centers, but most of them are underwater sites on previously established routes along the eastern Adriatic coast to the transit ports at the north that supplied the Central European mainland. We can expect that the new archaeological research and analysis of numerous unpublished materials from the museum depots will significantly increase the data in the future.



**Fig. 12.** Amphoras with tituli picti from *Burnum* and *Siscia* (BORZIĆ 2012; PARO/NOVAKOVIĆ/RADMAN LIVAJA 2016).

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