Bronze Age amber in Western and Central Balkans

Bronastodobni jantar na zahodnem in srednjem Balkanu

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Izvleček

V članku se avtor ukvarja s problematiko dotoka jantarja na zahodni in srednji Balkan v času bronaste dobe (natančneje okoli 1600–900 pr. n. št.) ter njegovim kroženjem med regijami tega območja. Razpoložljivi podatki, povezani s to temo, so bili analizirani z uporabo različnih računskih metod. Predhodno tipološko opredeljene jantarne jagode kažejo kronološke razlike, kar omogoča delitev na dva glavna sklopa, ki ju je mogoče pripisati srednji in mlajši oz. pozni bronasti dobi. Nekatere oblike so v uporabi v obeh obdobjih. Za številne tipe je značilen omejen obseg razprostranjenosti, ki verjetno govori za lokalno proizvodnjo. Tipe jantarnih jagod avtor primerja tudi z jantarnimi izdelki s sosednjih območij z jantarjem. Izbrani predmeti, ki se pojavljajo skupaj z jantarjem, dodatno osvetljujejo notranjo dinamiko kroženja jantarja in kažejo na potencialne udeležence izmenjave.

Ključne besede: Balkan; bronasta doba; jantar; nakit; menjava; trgovina; analiza stikov; analiza mrež

Abstract

The paper touches upon the issue of amber inflow to Western and Central Balkans, and its circulation between individual regions situated in this zone, during the Bronze Age (more specifically around 1600–900 BC). By using several computational methods, currently available data related to this topic is re-analysed. Previously distinguished types of amber beads show chronological differentiation that allows separating them into two major assemblages assignable to the Middle and Late Bronze Age respectively, with some forms having a prolonged use, overlapping both periods. Many types are also characterized by specific patterns of distribution, potentially revealing local styles of amber processing. The types are further compared with amber artefacts from neighbouring zones of amber acquisition. Supplementing the considerations with selected artefacts co-occurring with amber sheds a light on internal dynamics of amber circulation, and points the potential exchange participants.

Keywords: Balkans; Bronze Age; amber; jewellery; exchange; trade; correspondence analysis; network analysis

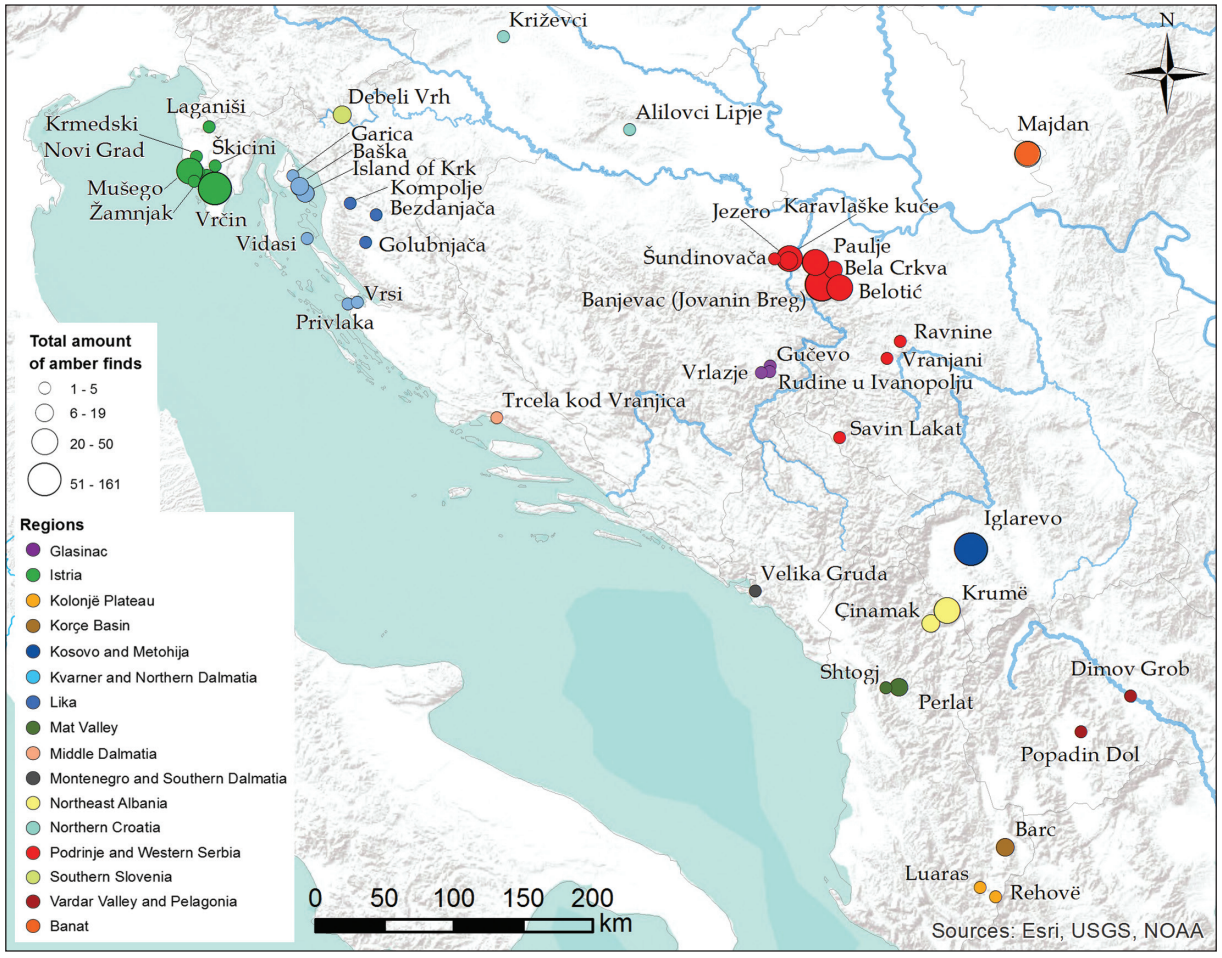

Fig. 1: Spatial location of the sites with amber dated to the Bronze Age in Western and Central Balkans, divided into regions (provinces of amber reception). Sizes of the symbols approximately represent quantities of amber artefacts per site.
Sl. 1: Bronastodobna najdišča z jantarjem na zahodnem in srednjem Balkanu, razvrščena v regije (province z jantarjem). Velikost simbola predstavlja približno količino jantarnih predmetov na najdišču.

INTRODUCTION

The Bronze Age (broadly speaking the 2nd millennium BC) marks the first appearance of amber, used as an adornment – element of jewellery, in the area of Western and Central Balkans. In comparison with later periods, Bronze Age amber finds are generally less numerous, smaller and not as technologically advanced in terms of processing, i.e. they reflect simple geometric forms, sometimes decorated with grooves or carvings. Far from exemplifying the high-level of craftsmanship achieved in the 1st millennium BC, they nonetheless demonstrate certain stylistic traits which developed in time, and thus can be useful in tracing spatial-chronological circulation of this rare material.

Presented study is an attempt to reconstruct dynamics of amber circulation in Western and Central Balkans during the Bronze Age by application of statistics. For this purpose, the finds in respect to their typology were analyzed in temporal and spatial dimensions, with seriation and correspondence analysis respectively. Observations stemming from the statistics were subsequently used in the network analysis, to quantify similarities between amber finds grouped regionally. The final products of such analytical procedure – networks – illustrate the relationships between different parts of the Balkans at consecutive phases of the Bronze Age. In combination with available data reffering to amber findspots, obtained results offer better understanding of a complex process of amber exchange in this part of Europe at the given period.

PREVIOUS RESEARCH

Although not a *habitué* of archaeological studies of the Balkans, amber has nonetheless been considered by some of the authors throughout the years, mostly in the context of larger publications, e.g. conference proceedings treating about trade and exchange in prehistory.[1] More importantly, it was a primary focus in the past studies of Aleksandar Palavestra, to whom we owe comprehensive typology of prehistoric amber finds in Western and Central Balkans.[2] Apart from assessing formal variety of amber artefacts, Palavestra discussed practical problems and theoretical intricacies of applying the concept of amber routes in this territory.[3] As an author of, so far, the only monograph devoted to prehistoric amber artefacts in the area, Palavestra is responsible for summing up the data on the subject and characterizing the process of amber inflow to Western and Central Balkans, and Adriatic region in the 2nd and 1st millennia BC.

Since the publication of Palavestra's catalog, a number of new amber finds have come to light. Their inclusion in the considerations regarding typology, chronology and distribution of amber artefacts is crucial for updating the previous state of knowledge. Moreover, primarily concerned with the area of former Yugoslavia, Palavestra's publication did not encompass the Albanian amber finds. In the past, local amber discoveries were scarcely reported, never published in their entirety and virtually unknown to archaeologists outside Albania. Some publications by foreign specialists inform about the finds from the site of Barç and from the Mat valley, but rarely give any details or figures.[4]

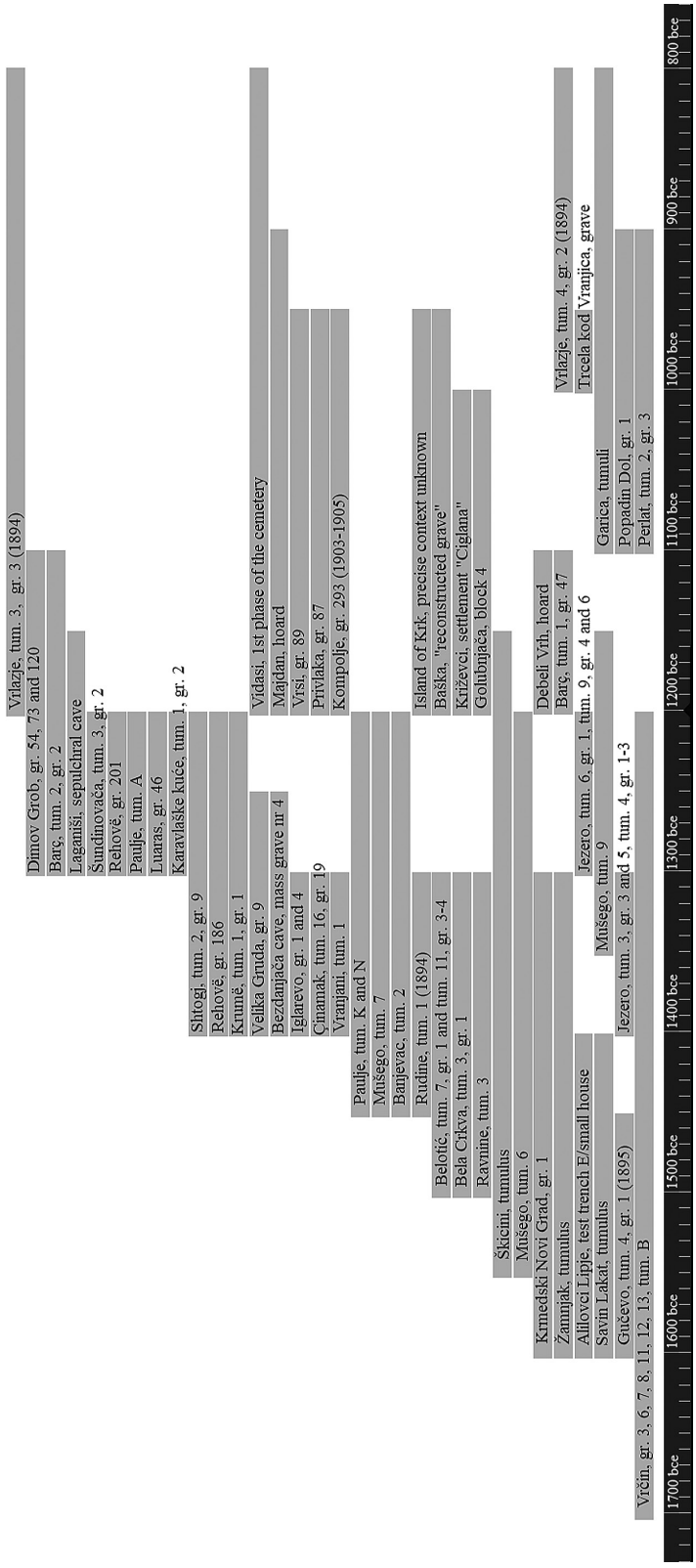

Fig. 2: Chronological sequence (range plot) of the analysed contexts with amber depicted against the timescale.
Sl. 2: Kronološko zaporedje (diagram razpona) analiziranih kontekstov z jantarjem, usklajeno s časovnim trakom.

[1] I.a. Bietti Sestieri, Lo Schiavo 1976, 175–177, 183–184; Forenbaher 1995, 275–277; Teržan 2007, 161–162; Blečić Kavur 2009; ead. 2012a, 219; ead. 2014, 56–60.

[2] Palavestra 1993.

[3] Palavestra 2006, 34–38; Palavestra 2007.

[4] E.g. Harding, Hughes-Brock 1974, 155, 167; Bietti Sestieri, Lo Schiavo 1976, 188–189, Fig. 17.

Only recently has there been a noticeable growth of interest in archaeological amber from the region that resulted in a fuller overview of hitherto collected artefacts and relevant data.[5]

Research presented in Palavestra's works has recently been supplemented by new, or otherwise previously unreported finds of amber from Western and Central Balkans, and combined with information regarding such objects from Albania.[6]

DATA OVERVIEW

At the present state of research, one can count a total of 740 amber finds (complete objects) related to the Bronze Age of Western and Central Balkans, and Adriatic coast as well, including the political territory of former Yugoslavia and Albania. These finds were discovered on 45 archaeological sites (*Fig. 1*), among them 40 cemeteries, 3 settlements and 2 hoards. On some of the sites amber occurred in several different contexts, i.e. graves belonging to a single cemetery, or buried within the same tumulus. In such cases the contexts sometimes differ in chronology. Therefore, it is necessary to consider them individually. In total, 70 contexts with amber could be distinguished (*Fig. 2*). All of them were grouped according to regions of origin, assigned to specific archeological units (e.g. *cultures*), and determined in terms of chronology.[7]

Strikingly abundant in terms of numbers of amber artefacts are the coastal parts of Croatia and its islands, i.e. Istria, Kvarner and Dalmatia, while less numerous finds collections come from the hinterland areas, e.g. Lika. Available evidence shows that amber was known and used in Croatia throughout most of the Bronze Age, beginning from the first half of the 2nd millennium BC.[8] The earliest testimonies come from Istria, where amber was found at various sites associated with the Middle Bronze Age Istrian culture (cro. *gradine*, ital. *castellieri*).[9] Evidence from the Istrian amber contexts allows dating presence of amber on the peninsula from 17th to 13th/12th century BC.[10] In the Croatian Littoral, i.e. in Kvarner and Dalmatia, amber appeared later (beginning from the 13th/12th century BC), in the context of various regional *communities* of the Late Bronze Age.[11] Most sites with amber known from this area fall into a time span from ca. 1200 to 950 BC.[12] Kvarner continued to be an important amber trade destination during the Iron Age.[13]

As for the inland Croatia, safe dating of the first amber importation is provided by 14C-dates calculated for the layer including single amber bead at the site of Alilovci Lipje in Požega, indicating the 16th–14th centuries BC.[14] Slightly younger is the amber bead from the Bezdanjača cave in Lika (ca. 1400–1250 BC),[15] while remaining contexts from that area belong to the Late Bronze Age, i.e. between the 12th and 10th centuries BC (Golubnjača cave; Kompolje, grave 293 (1903–1905); Križevci–

[5] Kurti 2013; 2017a; 2017b.

[6] M. Cwaliński, *Amber Reception in Western Balkans during the Bronze Age: State of Research and New Perspectives* (forthcoming in: Proceedings of the 4th International Conference about the Ancient Roads – The Amber Roads; Novo mesto, Dolenjski muzej, April 20–22, 2017).

[7] For a full characteristic of the contexts with amber, including chronological determination, see: Cwaliński (see *fn. 6*). In the following, dating of the contexts is given in absolute dates to avoid different regional systems of relative chronology applied in the Balkans, which can be confusing for the reader. Vast majority of the analysed contexts is dated only in terms of relative chronology, therefore the time spans given below should not be perceived as precise or definite, but rather approximate.

[8] Estimating the exact time of initial appearance of amber in the coastal parts of Croatia is problematic. It is hindered by a scarcity of absolute dates, as well as archaeological finds with well-defined chronology. Radiocarbon dates obtained from bones found in the grave A at Monkodonja, reportedly also containing three amber beads, indicate a time span between 24th and 17th centuries BC, thus could be regarded as the earliest confirmation of amber in Western Balkans (Hänsel et al. 2015, 431, 434, 448–449, Sl. 320). However, in the light of the latest chemical analyses, Monkodonja's alleged amber beads are not made of a fossil resin (M. Cwaliński, S. Kaur, E. Stout, *Provenience of Bronze Age amber finds from Istria*. Forthcoming in: B. Teržan, K. Mihovilić [eds.], Mušego. Monografije i katalozi Arheološkog muzeja Istre), hence they should be excluded from further considerations.

[9] Cf. Batović 1983, 239; Čović 1983a, 288–289, 293–294; Buršić-Matijašić, Žerić 2013; Mihovilić 2013b, 873.

[10] Cwaliński (see *fn. 6*); see also Cupitò et al. 2018, 521, Tab. 1, Fig. 9 for the new 14C dates obtained for skeletons from the Vrčin tombs.

[11] Cf. Batović 1983, 308–309, 315–316, 334, 345; Blečić Kavur 2009, 143–144.

[12] Blečić Kavur 2014, 163–165, Fig. 90; Cwaliński (see *fn. 6*).

[13] Cf. Blečić Kavur 2009, 144–149.

[14] Cwaliński (see *fn. 6*); cf. Mavrović Mokos, Pavličić 2015, 21–24.

[15] Cf. Drechsler-Bižić 1979–1980, 42.

Ciglana).[16] Similar chronology is attributed to the hoard of Debeli Vrh at Predgrad in the Kočevje region, at the southern fringes of Slovenia and in the hinterland of Kvarner.[17]

During the Bronze Age also the borderland of Bosnia and Herzegovina, and Serbia, stretching on both sides of the Drina River (sr. *Podrinje*), proved to be rich in testimonies of amber exchange. Sites containing amber in that area are exclusively tumuli, usually forming large cemeteries datable approximately to the mid-2nd millennium BC (Banjevac–Jovanin Breg; Belotić–Bela Crkva; Padine–Ročević; Paulje–Brezjak), corresponding with the Middle and initial Late Bronze Age in Central European chronological system (phases BrB–BrD).[18] Similarities among forms and inventories of the graves testify to a strong relationship between necropolises of Podrinje and cemeteries located further south, upstream the Drina (Ravnine; Savin Lakat; Vranjani),[19] thus allowing to include them in the same group. In the past, the tumuli from discussed area were attributed to the so-called West Serbian variant of the Vatin culture.[20] At present, though, they are increasingly regarded as a separate archaeological unit, named as the Brezjak culture or the West-Serbian group of the Middle Bronze Age.[21] Closely associated with this phenomenon are the necropolises of Glasinac, although there the tradition of burying deceased and their belongings in the tumuli continued beyond the Bronze Age.[22] First evidence of amber in this part of Bosnia is dated to the 16th–14th centuries BC (Gučevo, tumulus 4, grave 1 (1895); Rudine u Ivanopolju, tumulus 1 (1894)), however objects made of this material, unlike in Podrinje, were also used past the Middle Bronze Age (Vrlazje, tumulus 3, grave 3 (1894) and tumulus 4, grave 2 (1894)), whereas became more common in the 1st millennium BC.[23]

East and south from the Drina basin amber findspots are sparse. Yet, in some instances they yielded considerable assemblages of beads. The most outstanding is the inventory of grave 1 at Iglarevo (Kosovo) dated to the 14th century BC, which comprised 160 pieces of amber jewellery, while grave 4 in the vicinity contained only a single bead.[24] Another archaeological context opulent in amber is the hoard of Majdan near Vršac in Banat (eastern part of Vojvodina), dated to the 12th–10th centuries BC.[25] South from Serbia and Kosovo, the number of amber finds per site decreases. Nonetheless, amber retains broad distribution, overlapping littoral Montenegro, several regions in northern as well as Southern Albania, and some lowland parts of the Republic of North Macedonia. In the first two aforementioned countries amber seems to have appeared around the same time – 14th century BC. In Montenegro, however, due to a low number of finds (2 beads from Velika Gruda, grave 9[26]), its presence may be described only as incidental. The research in Albania, on the other hand, revealed multitude of finds chronologically spanning both the Late Bronze Age and the Final Bronze Age–Early Iron Age transition period (roughly between the 14th and 10th centuries BC).[27] Again, amber artefacts originate from cemeteries formed of burial mounds, concentrated in the northeast at the confluence of the White and Black Drim (Çinamak, tumulus 16, grave 19; Krumë, tumulus 1, grave 1), in the Mat Valley (Perlat, tumulus 2, grave 3; Shtogj, tumulus 2, grave 9), and in the mountainous areas of the Kolonjë Plateau (Luaras, grave 46; Rehovë, graves 186 and 201) and the Korçë Basin (Barç, tumulus 1, grave 47 and tumulus 2, grave 2) in the southeast part of the country. Each of these regions differs to a various degree in terms of material culture and an activity period when it comes to amber acquisition, therefore is considered as a separate unit in the following.[28] The North Macedonian

[16] Cf. Drechsler-Bižić 1970, 113; Bakarić 2017, 26; Homen 1982, 21; Dizdar et al. 2011, 76–79.

[17] Cf. Hirschbäck-Merhar 1984; Teržan 1984; Turk 1996, 110.

[18] Cf. Garašanin, Garašanin 1958, 24, 40, 45; Garašanin, Garašanin 1962, 51, 59; Kosorić, Krstić 1970, 24, 26, 28–29; Kosorić, Krstić 1972, 14–16, 18, 20–23; Kosorić 1978, 24–26; Bulatović et al. 2017, 60, 108, 114, 122, 125, 129.

[19] Cf. Zotović 1985, 40; Nikitović, Vasić 2002, 26; Lazić 2007, 119–120.

[20] Cf. Garašanin 1983.

[21] Cf. Filipović 2008, 99–100; id. 2013, 76; Dmitrović 2016, 248–252; Ljuština, Dmitrović 2016, 45.

[22] Cf. Benac, Čović 1956; Čović 1983b.

[23] Cwaliński, Pravidur 2020; Cwaliński (see *fn. 6*).

[24] Palavestra 1997, 16–18, Pl. 1.

[25] Rašajski 1988, 26–27; cf. Cwaliński (see *fn. 6*).

[26] Della Casa 1996, 39.

[27] All information regarding Bronze Age amber finds in Albania were summed up, together with references to the literature and sources on particular sites, in Kurti 2013 and 2017b.

[28] Cf. Prendi 1982; Bodinaku 1995; Jubani 1995; Kurti 2017a; 2017b.

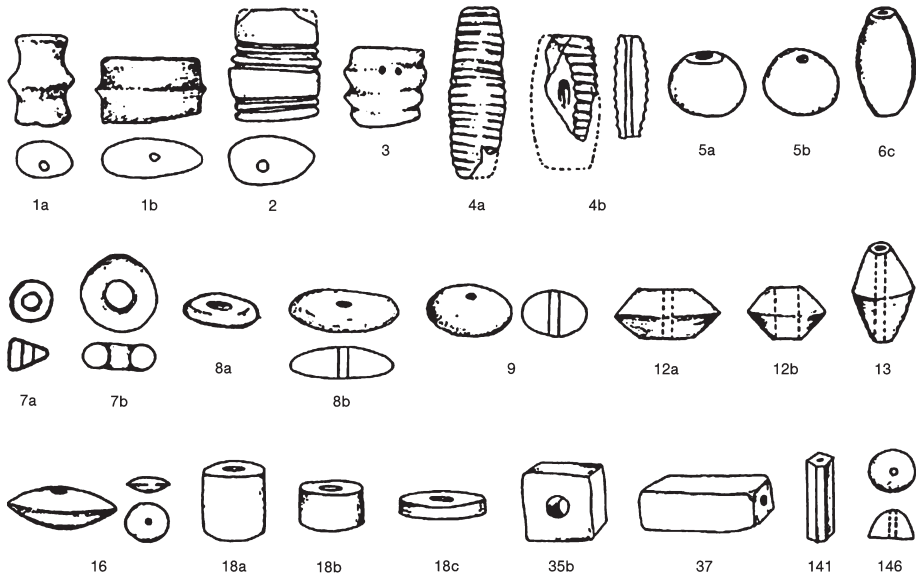

Fig. 3: Types of amber artefacts represented in the analyzed Bronze Age contexts according to the typology of Palavestra (1993).
Sl. 3: Tipi jantarnih predmetov, predstavljenih v analiziranih kontekstih bronaste dobe, po tipologiji Palavestre (1993).

amber finds, known from the Vardar Valley (Dimov Grob[29]) and Pelagonia (Popadin Dol, grave 1[30]), are less numerous and slightly younger than those from the neighboring areas of Albania and Kosovo, as they appear in the Late Bronze Age and in the subsequent transition period to the Early Iron Age (13th–10th centuries BC).

TYPOLOGICAL FRAMEWORK

All amber objects discussed are processed elements of jewellery, resembling beads and pendants intended to be strung e.g. on a necklace or bracelet. They can be considered finished products, or perhaps semi-finished in respect to some amorphous beads. All of them are characterized by the presence of a hole, drilled centrically (usual eligibility criterion for beads), rarely non-centrically (usual eligibility criterion for pendants), along the vertical axis of an object. As the vast majority of the beads has a form based on a sphere or ellipsoid with a circular or oval cross-section, the perforation usually corresponds with the axis of rotation. The finds differ in dimensions ratio (they vary from elongated to flattened forms), shaping of the lateral surfaces, and presence of decorations performed with grooves or carvings. Even though no traces of amber working such as raw lumps, processing waste or tools have been found on analyzed sites so far, the possibility was suggested in reference to certain areas.[31]

The gathered material enabled to distinguish beads representing 17 different types proposed by Palavestra, some broken into several variants described with letters of alphabet following the number (*Fig. 3*). Majority of remaining finds were described as amorphous (category also used by Palavestra), or as objects requiring new classification unless they fit any of the previously determined types. Certain group of finds could not be determined typologically because either the artefacts are considered lost or their state of preservation does not allow for it (i.e. broken fragments that cannot be recomposed).

The first type covers beads with circular to oval cross-sections, concave or rectilinear profiles, decorated with a horizontal ledge/rib, split into elongated (1a) and flattened (1b) variants. These forms are commonly associated with the so-called Tiryns type, occurring in certain parts of the Mediterranean in the Late Bronze Age.[32] Type 2 is a peculiar form, characterized as a cylinder with an

[29] Mitrevski 2003, 46–52; id. 2007, 444–445; Videski 2007, 212.

[30] Kitanovski 1960, 211.

[31] Cf. Blečić Kavur 2014, 160, note 815.

[32] Palavestra 1993, 251; cf. Negroni Catacchio 1999; 2014; Cultraro 2006; Teržan 2007, 161–162; Czebreszuk 2011, 88–92; Blečić Kavur 2014, 56–60.

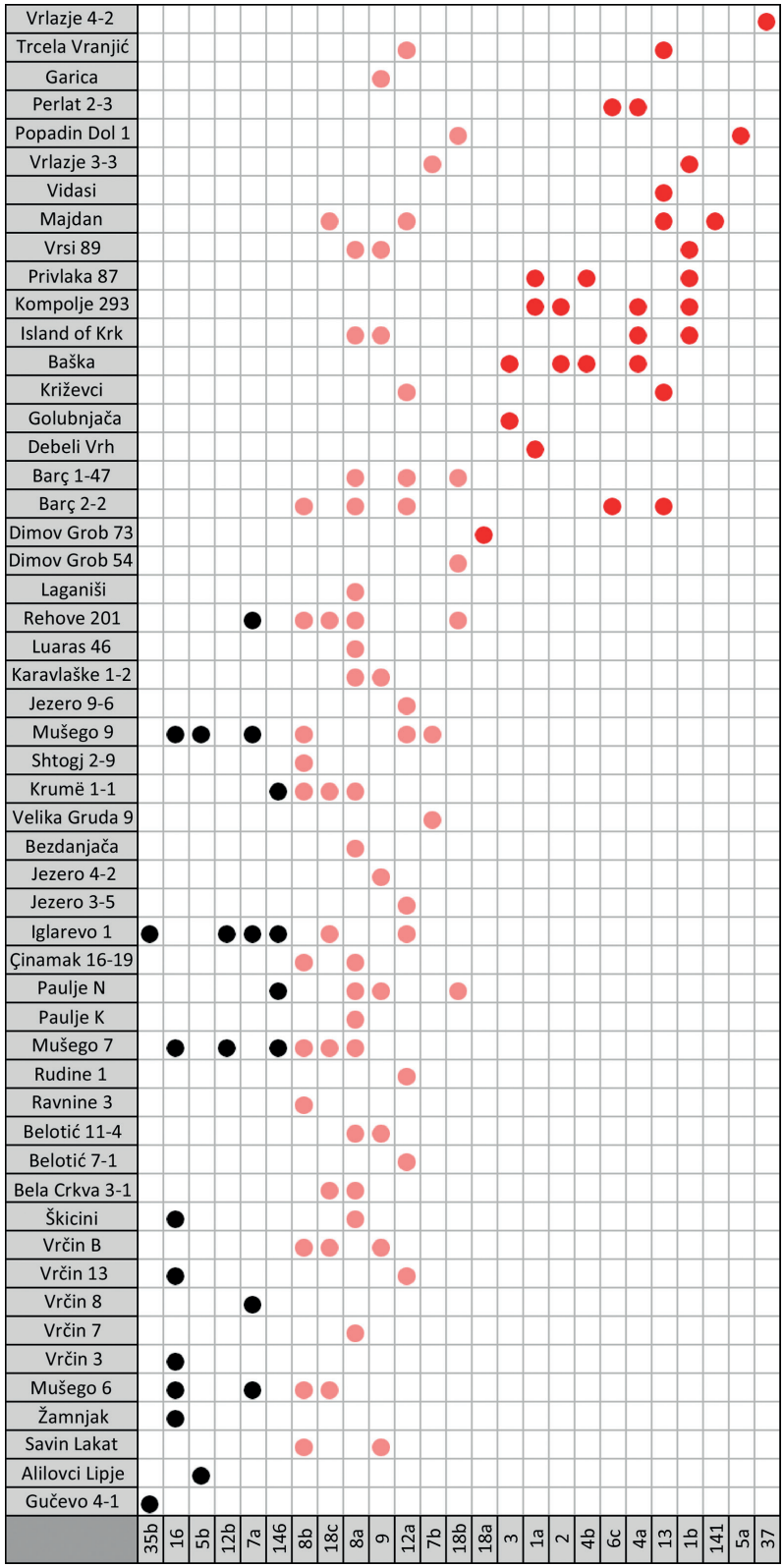

Fig. 4: Seriation of the types of amber artefacts (columns) in analyzed contexts (rows). Black dots: amber beads attested only in the MBA. Pink dots: intermediate types of amber beads occurring both in the MBA and the LBA. Red dots: amber beads attested only in the LBA.

Sl. 4: Razvrščanje tipov jantarnih predmetov (stolpci) v analiziranih kontekstih (vrstice). Črne pike: jantarne jagode v srednji bronasti dobi. Rožnate pike: vmesne vrste jantarnih jagod, ki se pojavljajo tako v srednji kot v mlajši in pozni bronasti dobi. Rdeče pike: jantarne jagode v mlajši in pozni bronasti dobi.

oval cross-section, on the surface decorated with sparse, transverse grooves, and is known barely from two sites: Baška, reconstructed grave,[33] and Kompolje, grave 293 (1903–1905).[34] Similarly limited occurrence has been noted in the case of type 3: cylindrical beads decorated with two parallel ribs, observed at Baška, reconstructed grave,[35] and Golubnjača cave.[36] Type 4, comprising elongated cylindrical or barrel-shaped ("fusiform") beads decorated with narrow (4a) or wide (4b) parallel grooves, covering the entire surface, is generally corresponding to the so-called Allumiere type. The name, as in the case of the Tiryns type, refers to the specific decorative manner predominantly known from Late Bronze Age Italian amber finds.[37]

Remaining types of amber beads considered in this study are devoid of decorative features. Type 5 encompasses spheroidal beads, with (5a) or without (5b) flattening at the top, near the perforation's outlet. Previously not recognized among Bronze Age materials from Western and Central Balkans, type 6c has lately been detected among Albanian amber finds, namely from the sites of Barç, tumulus 2, grave 2[38] and Perlat, tumulus 2, grave 3.[39] Type 7 is recognizable for a rather large hole in relation to the overall diameter of a bead, hence can be referred to as annular. It is divided into two distinct variants: 7a comprising usually small pieces with skewed/inclined bases, and 7b covering bigger elements with widened outlets of the perforations.

Following types – 8 and 9 – include discoid beads with a circular or oval cross-section, and an ellipsoid profile with varying degree of flattening. Sub-type 8a has rectilinear-flat bases, whereas 8b is generally larger and has convex bases. Type 9, on the other hand, has a more of a flattened ovoid profile. In reality, a clear-cut distinction of the finds into abovementioned types is not always feasible, as the discoid-ellipsoid form is very common among the beads and varies greatly. Next two types – 12 and 13 – are characterized by biconical ("carinated") profile and flat-rectilinear bases. Variant 12a refers to flattened biconical beads (with diameter exceeding height), 12b comprises examples with more or less even ratio of dimensions, while type 13 covers elongated biconical beads. Type 16 reflects beads with circular or oval cross-sections and lenticular profiles (the upper and lower surfaces are biconvex).

Like biconical ones, cylindrical beads (type 18) can be divided into three variants: elongated (18a), average or medium (18b) and flattened (18c) ones. Then, there are rarely encountered types derived from cuboids: 35b which comprises beads perforated along the shorter side, and 37 which covers beads perforated along longer axis. Up to recent both types were represented by only a single example each (35b: Gučevo, tumulus IV, grave 1 (1895); 37: Vrlazje, tumulus IV, grave 2 (1894)),[40] however examination of the materials from Iglarevo, grave 1 allowed to add a further bead to the former type.[41] Penultimate among considered types (141) covers oblong polyhedral beads which, so far, have only been noted in the case of Majdan hoard.[42] Finally, type 146 which includes conical beads has not been applied by Palavestra to any Bronze Age amber finds, however it could be discerned among newly reported artefacts from following contexts: Iglarevo, grave 1,[43] Krumë, tumulus 1, grave 1,[44] Mušego, tumulus 7[45] and Paulje, tumulus N.[46]

CHRONOLOGICAL DIFFERENTIATION OF THE TYPES

Chronological differentiation of the types of amber beads was determined by seriation, using PAST 3.0 software. In the analysis, there were included only the contexts with beads representing at least one of the types discussed in the previous section. Hence, the categories of amorphous, unspecified and new (unclassified) finds were omitted. These are only collective categories that do not differentiate artefacts in terms of form. In the figure depicting a contingency table resulting from seriation, the types are listed at the base of

[33] Lo Schiavo 1970, Tav. XXIII: 13a; Palavestra 1993, 62; Blečić Kavur 2014, Fig. 20: 11.

[34] Bakarić 2017, 26–27; Cwaliński (see *fn. 6*).

[35] Lo Schiavo 1970, Tav. XXIII: 15–16; Palavestra 1993, 62; Blečić Kavur 2014, Fig. 20: 10.

[36] Drechsler-Bižić 1970, Pl. V: 1; Palavestra 1993, 68.

[37] Cf. Negroni Catacchio 1999; 2014; Blečić Kavur 2014, 56–60.

[38] Kurti 2017b, Pl. XCVIII: e.

[39] Kurti 2013, Tab. I: 8.

[40] Benac, Čović 1956, Pl. IV: 6; V: 33; Palavestra 1993, 112–113.

[41] Palavestra 1997, Pl. 1: 5.

[42] Rašajski 1988, Figs. 58–60; Palavestra 1993, 140–141.

[43] Palavestra 1997, Pl. 1: 15.

[44] Jubani 1982, Tab. III: 3.

[45] Mihovilić et al. 2009, 55.

[46] Bulatović et al. 2017, Pl. XIX: 46.

the columns, while the contexts are placed on the far-left (*Fig. 4*). Dots at the intersections of columns and rows signify the presence of amber objects representing individual types in a given context. Array of the rows is constrained by chronology of the contexts (as illustrated on *Fig. 2*). It begins with the oldest contexts in the lower left, and ends with the youngest ones in the upper right. During computations, the software changed the columns order to find an optimally fitted range plot, while array of the rows remained unaltered.

Approximately diagonal distribution of the dots, starting from the lower left corner of the table and finishing in the upper right corner, indicates a chronological sequence of the types. Three groups of the types can be distinguished from the sequence (*Fig. 4*). The types 5b, 7a, 12b, 16, 35b and 146 appear only in the contexts dated to the period before ca. 1200/1150 BC.[47] The types 7b, 8a, 8b, 9, 12a, 18b and 18c occur throughout the Bronze Age up to Early Iron Age and beyond. The types 1a, 1b, 2, 3, 4a, 4b, 5a, 6c, 13, 18a, 37 and 141 appear exclusively in the context not older than ca. 1300 BC, but predominantly dated between 1200 and 950 BC.

Critical factor for this division is a change in the forms of amber beads observable around 1300–1100 BC. On the plot, between the rows corresponding with Jezero, tumulus 9, grave 6 on the one side, and Barç, tumulus 1, grave 47 on the other (all classified to abovementioned time span), one can discern vanishing of the types from the upper six rows of the table, and first appearance of the types unregistered in any of the chronologically earlier contexts (*Fig. 4*). The final caesura for grave 201 at Rehovë, and most of the contexts which yielded types of amber artefacts colored black on the figure, falls around 1200 BC. Nonetheless some of the contexts from Istria containing the older kinds of beads, i.e. tombs from Vrčin, Škicini tumulus, or Mušego, tumulus 9, were potentially used until ca. 1150 BC. On the other hand, few contexts containing the earliest manifestations of the types are dated roughly between 1300 and 1100 BC (Dimov grob, Grave 73; Barç, Tumulus 2, grave 2). Majority of these new forms of amber adornments, however, occurred only after 1200 BC (columns to the right from Debeli Vrh).

Consequently, one can interpret the data described above as the evidence of a change in amber jewellery shaping in Western and Central Balkans perhaps gradual rather than abrupt, that took place sometime in the 13th–12th century BC. Hence, it is possible to divide all analyzed contexts in respect to the formal development of amber beads into two chronological sub-sets: first one, tentatively named the Middle Bronze Age group (MBA), comprising contexts dated before 1200 (or 1150 BC in the case of some Istrian sites), and the second one labelled the Late Bronze Age group (LBA) including younger contexts, with addition of the graves from Dimov grob and Barç (dated to the 13th–11th century BC), heralding the new style in amber processing.[48]

The range plot resulting from seriation (*Fig. 4*) offers an insight into evolution of amber beads in Western and Central Balkans during the Bronze Age. Most of the oldest artefacts are simply shaped into roughly spheroidal (type 5b) or discoid (8a, 8b, 9) beads. However, there are also more conspicuous forms, most of which are attested only in the MBA contexts (group marked with black dots): lenticular (type 16), cubic (35b) or conical (146). Biconical beads (12a and 12b) are presumably slightly younger, occurring from the 15th century BC.

The group comprising the intermediate types of amber beads (pink dots), apart from the most common elements with a round or oval cross-section, and avarying degree of flattening of the profile (types 8–9), also includes more elaborate designs (7b, 12a, 18b and 18c). Interestingly, among the groups marked with black and pink dots, elongated variants of biconical (type 13) and cylindrical (18a) beads are not present; the latter are attested only in the LBA contexts.

The general prevalence of elongated forms in the later phases of the Bronze Age is further evidenced by occurrence of other previously unknown types 1–4, 6c, 37 and 141, many of them characterised by height/length exceeding diameter/width. Increase in the size of amber beads during the Bronze Age is presented on the scatterplot, charting relationship between diameter (X axis) and height (Y axis) of amber

[47] It should be noted that listed types are also known from Iron Age sites in Western and Central Balkans (cf. Palavestra 1993). The observations regarding their chronology, stemming from the analysis, can be considered relevant only within the scope of analysed dataset.

[48] The abbreviations MBA and LBA are working titles, created to facilitate denomination of related finds and contexts in the paper (as phases of amber import and circulation in the Balkans). They can be correlated with timespans of the Middle and Late Bronze Age only approximately, as the latter differ from region to region.

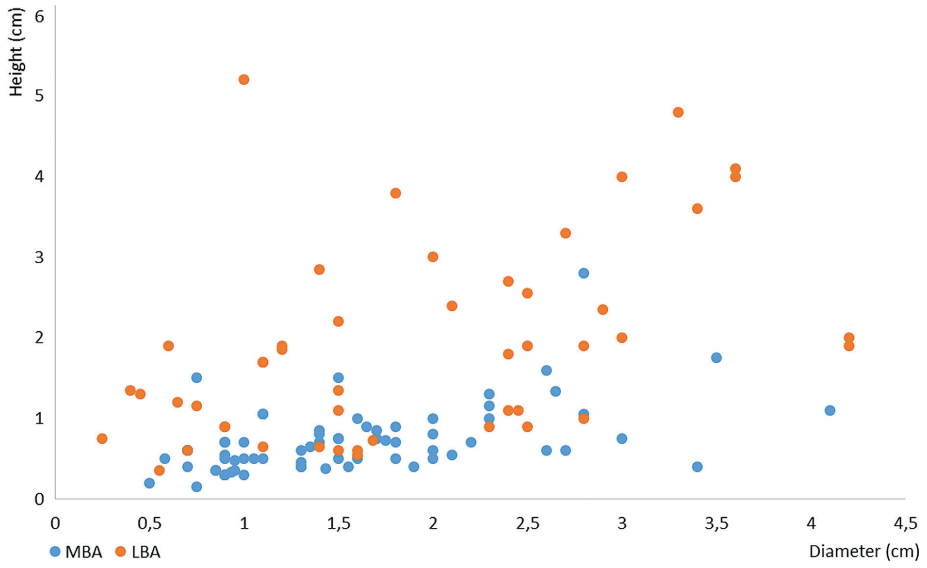

Fig. 5: Scatterplot charting the amber beads from analysed contexts in respect to their dimensions: height and diameter. The contexts are divided according to the results of seriation, into MBA group (blue dots) and LBA group (orange dots).
Sl. 5: Jantarne jagode iz analiziranih kontekstov. Diagram razmestitve jagod po dimenzijah: višini in premeru. Konteksti so s seriacijo razvrščeni v srednjebronastodobno skupino (modre pike) in mlajše- oz. poznobronastodobno skupino (oranžne pike).

beads in individual contexts, the latter classified in respect to the applied chronological division (*Fig. 5*).[49] The chart shows that the LBA amber beads have similar diameter (or width in the case of few artefacts with the cross-section other than circular/oval) to the MBA ones, however surpasses them considerably in height. Thus, if the measurements taken into account are multiplied, the LBA beads occur bigger than the MBA amber artefacts.

Apart from generally larger dimensions, the LBA types of amber beads are sometimes decorated on the surface – a feature that has not been yet observed in the case of the MBA amber finds. One pattern of decoration includes narrowly carved ribs/ledges, circumscribing the bead's cross-section around the half of its height (Types 1 and 3). The other manner of decoration comprises parallel grooves, carved out transversely to the bead's axis of rotation (types 2 and 4).

Important observations are revealed by quantitative comparison of the types of amber beads and the remaining categories (amorphous, undefined and new/unclassified), between the MBA and LBA assemblages (*Fig. 6*). Considering the part of collection that can be classified typologically, the most numerous ones tend to be discoid elements with a varying profile shape: flattened (8a), ellipsoid (8b), globular (9) and lenticular (16). Numerically similar are also biconical and cylindrical beads in a flattened variant (respectively 12a and 18c). Abovementioned types of amber beads are only surpassed by annular beads with skewed/inclined bases (7a). Still, what should be noted in this case is that vast majority of such finds comes from a single context: Iglarevo, grave 1. All the types, excluding 7a and 16, are recurrent, albeit in varying proportions, in the MBA and the LBA. However, a general impression stemming from the *Fig. 6* is that the intermediate forms of amber beads are preponderant in the MBA, while drop in numbers during the LBA. The exceptions are types 12a and 18b, the latter significantly less numerous, which are characterized by more even quantities in both periods.

Remaining types of amber beads are assignable to only one of the periods under discussion. Types 5b, 7a, 12b, 16, 35b were all classified to the MBA, with their quantities varying from over 30 (16) to 2 (5b and 35b). Numerosity of the LBA types, spanning more forms than the MBA beads, is more balanced, ranging from 1 (5a and

[49] The chart was created using the measurements of 507 out of the total 743 amber finds dated to the Bronze Age from Western and Central Balkans (measurements for the remaining part are unavailable). The beads from individual cowntexts representing each type (e.g. 1a), or category (e.g. amorphous) were grouped into objects of the analysis. The chart is based on mean values of the dimensions (height and diameter), calculated for every such group of similar finds in each context.

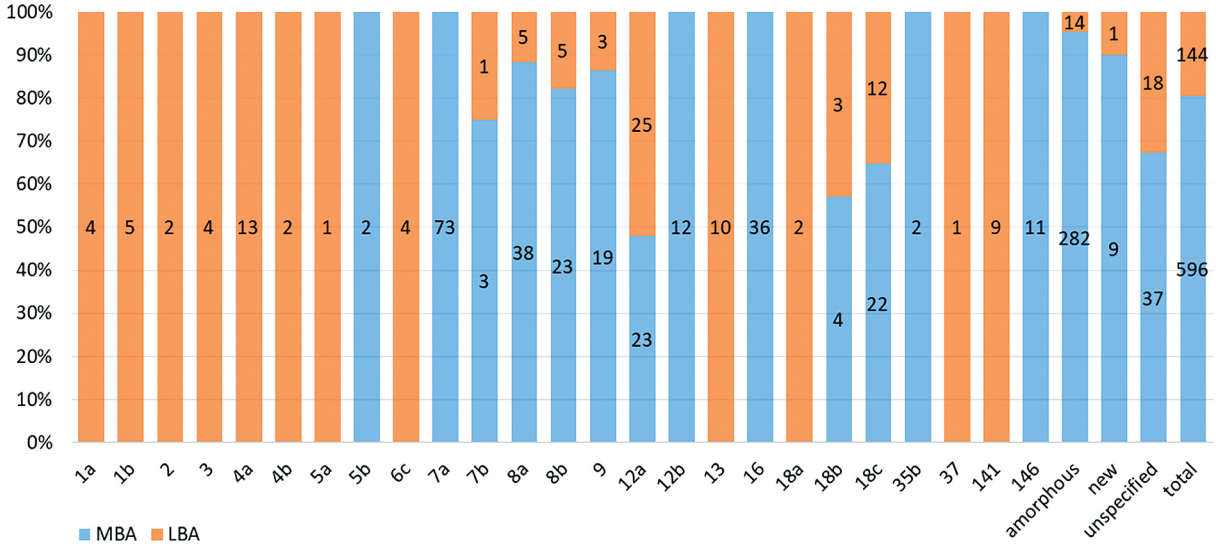

Fig. 6: Number of amber artefacts representing selected types (cf. *Fig. 3*), and remaining categories, in MBA and LBA groups of contexts according to the results of seriation.
Sl. 6: Število jantarnih jagod izbranih tipvov (prim. *sl. 3*) in število preostalih vrst jantarnih izdelkov v srednjebronastodobnih in mlajše- oz. poznobronastodobnih kontekstih (določenih s seriacijo).

37) to 13 beads (4a). Still, the total number of amber finds dated to the MBA exceeds considerably the group of the LBA artefacts (596 to 144 respectively). One of the reasons for such high disproportion is inclusion of the amorphous beads, which in case of the MBA count as many as 282, while during the LBA their number decreases to mere 14 elements. This quantitative comparison shows how varied and rarely formed the amber used by Western and Central Balkan communities was in the early phases of the amber trade. However, even if one subtracts the amorphous beads from the total number of the MBA amber finds, it leaves 314 other artefacts of which only 37 cannot be specified typologically. It is still much more than the overall assemblage of the LBA finds. Does the discrepancy necessarily mean that there was less amber available to the LBA communities of Western and Central Balkans than to their predecessors? A plausible answer to this problem can be found if dimensions of the finds are considered again.

The amorphous beads are often small, if not tiny, and do not reveal any careful processing traces apart from a hole. Instead they exhibit sharp edges, rough surfaces, and varying shapes of profiles and cross-sections. One can imagine that in order to obtain additional adornments, raw lumps or perhaps also larger ready-made amber objects were purposefully fragmented and by simple perforation turned into beads.[50] Such approach must have spared little material to work with. Therefore, the beads were left in a crude state. Perhaps also the absence of skilled craftsmen, or a poor technological development in amber processing are to be blamed. Regardless of the exact processing place, the dimensions of amorphous beads and finished beads with clear form dated to the MBA are similarly small. It stands in clear contrast to the LBA, when amber beads were not only larger, but also more elaborate. To sum up, the number of beads is greater for the MBA than the LBA. However, if we take into account smaller dimensions and possible partitioning of the MBA beads on one hand, and larger dimension of the LBA beads and significant percentage of amber waste created by their processing on the other, it can be argued that the overall difference in amount of amber between both periods under consideration was not as big.

TYPES IN SPATIAL DIMENSION

Differentiation in occurrence of the types of amber beads in geographical dimension was analyzed with the help of **correspondence analysis (CA)** and visualized on two charts. First of them (*Fig. 7*)

[50] Cf. Palavestra 2009.

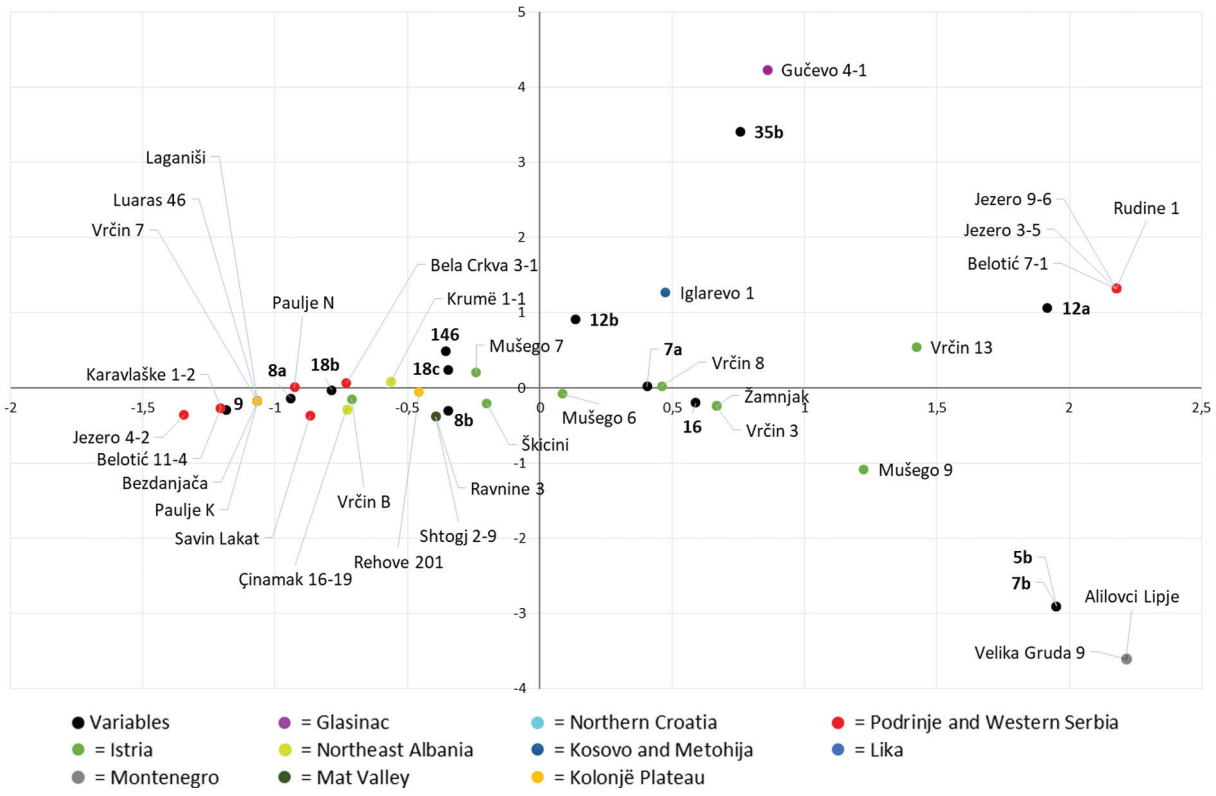

Fig. 7: Results of correspondence analysis of variables symbolising types of amber beads according to the typology of Palavestra (v1993), and objects symbolising MBA contexts classified by regions (1st and 2nd eigenvectors).
Sl. 7: Korespondenčna analiza spremenljivk, ki predstavljajo tipe jantarnih jagod (po: Palavestra 1993) in drugih predmetov, ki opredeljujejo kontekste z jantarjem v srednjo bronasto dobo. Konteksti so z barvami označeni po regijah (1. in 2. lastni vektor).

depicts relationship between the types (variables in statistical terminology), and regionally divided contexts (in other words objects of the analysis) falling into the MBA group. Second chart (*Fig. 8*) includes the types and contexts which, according to seriation results, were assigned to the LBA group. Both plots were created using CAPCA 2.1 software, basing on the results for 1st and 2nd eigenvectors, accounting for the highest percentage of the total decomposition of chi-square statistic.[51]

The first chart (*Fig. 7*) does not allow for an easy attribution of individual amber beads types to the specific regions. Although both the variables and objects appear to align along principal (horizontal) axis and form clusters, thus depicting some trend, it is not exclusively dependent upon the sites regionalization. Consequently, it can be stated that majority of the types that occurred during the MBA (ca. 1700–1200/1150 BC) were known and used to a certain degree in most regions. There is no evidence of regionally scoped styles of amber jewellery, comprising clearly circumscribed sets of the types in this period. Nevertheless, the types are not equally distributed in all the regions, therefore some regional predilections towards specific forms of amber adornments can be discerned. Strength of association between a type and a region (represented by a group of contexts) is expressed by varying distances between their symbols. The contexts distinctiveness and individual amber beads types uniqueness can be measured by distances of their symbols from centroid of the chart (in other words by their degree of inertia).

In terms of numbers, the most abundant areas of amber reception are Istria (marked with light blue) and Podrinje–Western Serbia (marked with yellow). Both regions boasted the greatest numbers of contexts in discussed period, thus seem to occupy most of the chart. Dispersion of the contexts representing these regions along the principal (horizontal) axis reflects the variety of types of amber beads which they yielded. In comparison, other areas, mostly represented by one or two

[51] Madsen 2007, 18.

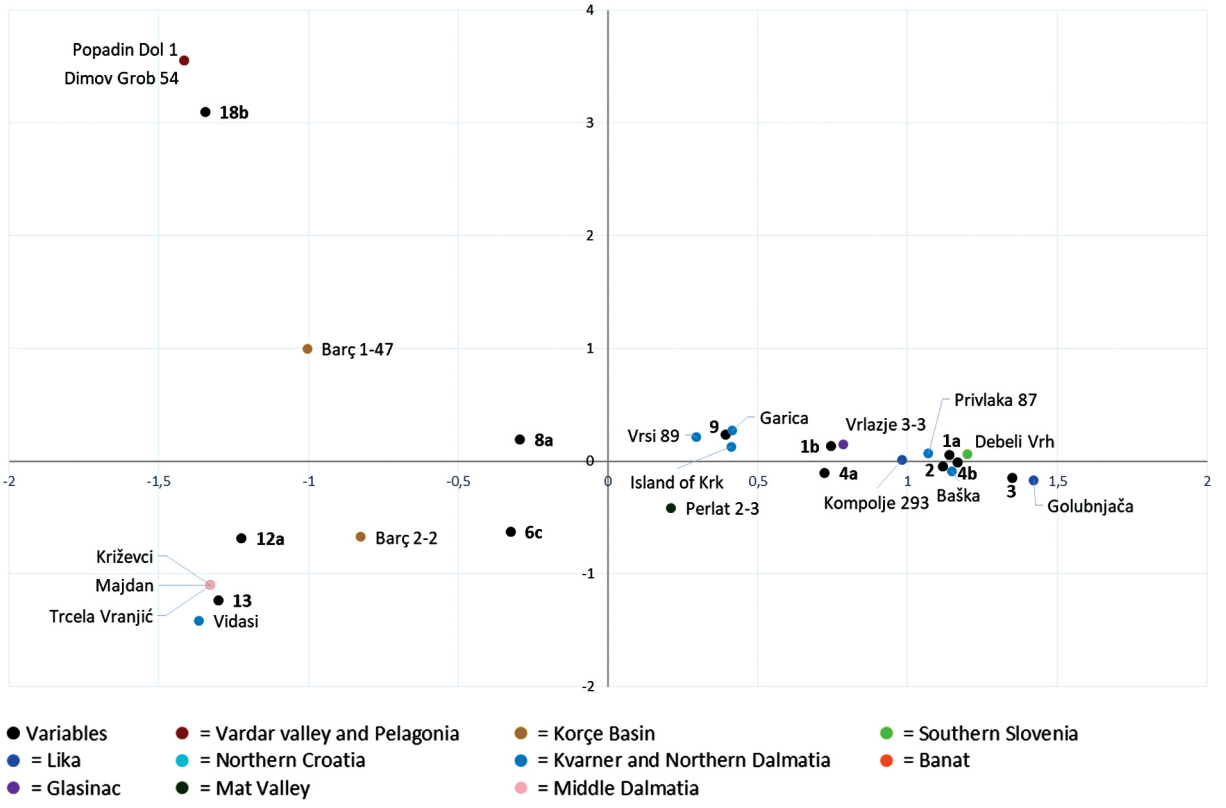

Fig. 8: Results of correspondence analysis of variables symbolising types of amber beads according to the typology of Palavestra (1993), and objects symbolising LBA contexts classified by regions (1st and 2rd eigenvectors).
Sl. 8: Korespondenčna analiza spremenljivk, ki predstavljajo tipe jantarnih jagod (po: Palavestra 1993) in drugih predmetov, ki opredelijo kontekste z jantarjem v mlajšo- oz. pozno bronasto dobo. Konteksti so z barvami označeni po regijah (1. in 2. lastni vektor).

contexts, are connected with much more limited sets of variables, hence their distribution on the chart is confined to certain spots.

The Istrian contexts, with their symbols scattered around the centtroid of the chart, seem to encompass most of the types and do not reveal any particular associations at the first glance. Furthermore, grave 1 from Iglarevo is characterized by close-to-center position, thus revealing abundance and typological variety of amber artefacts in this single context. Also the Albanian contexts (Kolonjë Plateau, Mat Valley and Northeast Albania) do not show much of inertia, and mainly correspond with simple types of amber beads (discoid: 8a, 8b, 9; cylindrical: 18b and 18c; conical: 146), concentrated on the left side of the secondary (vertical) axis. Podrinje and Western Serbia, whose contexts are situated on extreme ends of the sequence, seems to manifest preference for types 8a, 9 and 18b, as seen on the chart's far left, and more explicitly for flattened biconical beads (12a), shown on the upper right side of the plot.

When the association between objects and variables are concerned, there are some regional peculiarities. Most importantly type 16 has been recorded exclusively among the Istrian contexts. This form of bead disappeared for several centuries, after the Istrian center of amber acquisition ceased to function in the 12th century BC. Concentric position of the symbols of types 5b and 7b shows a similar incidence among the objects – they are represented by two contexts each (5b: Alilovci Lipje; 7b: Velika Gruda, grave 9), with the other one in each case belonging to the Istrian group of sites (Mušego, tumulus 9). It explains the proximity (correspondence) between Istrian, Montenegrian and Northern Croatian context on the plot, although uniqueness of type 5b and 7b sets them somewhat apart from the bulk of variables. Similar is the case of type 35b; it was recorded only in two contexts: Gučevo, tumulus 4, grave 1, and Iglarevo, grave 1, thus accounting for some correspondence between Glasinac and Metohija. Summing up, the sequence of variables on the *Fig. 7* seems to depict a trend progressing from the least unique amber beads

forms (left side of the plot; negative values of the principal axis), to the most distinctive types with confined spatial scope of occurrence (right side of the plot; positive values of the principal axis).

Results of CA obtained for the LBA contexts stand in contrast to those revealed for preceding period (*Fig. 8*). One can observe disappearance of regions abundant in amber in the previous period (Istria, Kosovo, Montenegro, Northeast Albania, Podrinje and Western Serbia), while several new provinces of amber reception emerge (Southern Slovenia, Kvarner, Northern Dalmatia, Middle Dalmatia, Banat, Vardar Valley, Korçe Basin and Pelagonia). Overlapping or tightly clustered symbols of objects and variables appear in three concentrations, with just a handful left in an intermediate position. Considerable distances separating these clusters, each of them placed in a different part of the plot, testify to a stark regionalization in the types distribution. The three main clusters of regionally grouped contexts are characterized by clearly defined assemblages of amber beads, potentially reflecting different styles of amber processing.

The first cluster (right side of the chart) encompasses the north-eastern Adriatic coast and immediate hinterland, and comprises the contexts form Southern Slovenia, Kvarner, Northern Dalmatia and Lika, with addition of a single grave from Glasinac (Vrlazje, tumulus 3, grave 3) and another one from the Mat Valley (Perlat, tumulus 2, grave 3). The two latter contexts can be interpreted as remote manifestations of this evidently regional style of amber adornments, focused around decorated beads evoking the types Tiryns (1a, 1b) and Allumiere (4a, 4b), supplemented with indigenous forms (2, 3) and more common beads reminiscent of the previous period (8a, 9). Due to location of the majority of sites belonging to this cluster near the Adriatic coastal area, they can be overall defined as belonging to the "coastal" style or zone.

The second, much smaller cluster in the lower left of the chart is grouping far-flung sites of Northern Croatia (Križevci), Banat (Majdan) and Middle Dalmatia (Trcela-Vranjić), all closely resembling each other in terms of composition of amber assemblages, which chiefly include flattened (12a) or elongated (13) biconical beads. The latter type is also shared in common with the site of Vidasi – the only context from the Croatian Littoral that happens to be outside the first cluster. All sites listed can be tentatively grouped together under the name "northern hinterland" style or zone, although some of them are located on the coast. This tight concentration of contexts and related amber beads types indicates some similarities with tumulus 2, grave 2 at Barç in Korçe Basin, which includes beads of aforementioned types 12a and 13. However, the latter also contained in its inventory amber beads matching types 8a and 6c, both trepresented by contexts of the first cluster, thus it cannot be fully integrated with neither style/zone.

The third cluster (tentatively labeled "southern hinterland" style or zone) is the smallest as it covers contexts only from two sites (Dimov Grob, grave 54, and Popadin Dol, grave 1). Correspondence between them stems from the presence of cylindrical beads (types 18b and 18c), known from the preceding period, however in the LBA limited to the present area of Northern Macedonia. The only analogies come from tumulus 1, grave 47 at Barç, hence its proximity to the sites from the Vardar Valley and Pelagonia on the chart. However, this context additionally yielded beads akin to types 8a and 12b so can be considered solely as intermediate.

To conclude, it appears that around the 13th–12th centuries BC some of the provinces of amber reception active during the MBA, e.g. Istria and Podrinje-Western Serbia, ceased to function and new ones emerged, bringing in unprecedented forms of amber beads. In the first period of amber circulation in Western and Central Balkans (ca. 17th–13th century BC), there is little unification of amber adornments on a regional scale, and many contexts manifest typologically similar sets of beads. This similarity potentially indicates that all the Balkan provinces were receiving ready-made amber beads from the same sources, with regional preferences for certain forms barely having any importance. Perhaps some processing of amber took place in the Balkans, but it was thwarted by the lack of necessary skills and technology, as shown by a large number of amorphous beads.

After 1200 BC amber in different regions became more standardized in terms of morphology and stylistics. Even though it seems a gradual process, it did not happen within a single center of amber acquisition/processing; there is hardly any genetic link between all the LBA forms suggesting evolution from one model, and none of the regions exhibits a full range of the types. On the contrary, it potentially indicates different sources of supply, or workshops simultaneously operating in the neighboring parts of Europe. Western Balkan communities may have also started to exert some influence on amber processing, as illustrated by

types 2 and 3. Regardless of the reasons for the growing regionalization we can see that there is a relationship between the form of amber bead and a place of its deposition.

AMBER CIRCULATION IN WESTERN AND CENTRAL BALKANS: INTEGRATION OF THE RESULTS AND DISCUSSION

Analysis of the typological differentiation of amber beads in time and space, achieved with seriation and CA respectively, proved helpful in assessing the tempo of morphological-stylistic changes and the level of the types regionalization in the MBA and the LBA. However, a number of unsolved questions still remains. These are mainly connected to the directions and dynamics with which amber was circulating between the regions in consecutive phases of the Bronze Age. A varying level of similarity between assemblages of amber beads represented by individual regions allows us to suspect that the latter were involved in an exchange of some sort. Knowing that sources of amber have limited occurrence and the material needed to be imported from afar, one can imagine this process as a dependency chain leading from a supplier, through redistributor, to a final recipient.[52] If such model is true, then which of the provinces played leading roles in arranging the exchange, and were responsible for shaping amber adornments? To shed a light on the process of acquisition and circulation of this rare material in Western and Central Balkans and Adriatic coastal area, it was decided to perform **network analysis (NA)**.

For the analysis the contexts were grouped into regions and divided into two periods same as before: MBA and LBA. The analysis was carried out using UCINET 6 software. Creation of the networks was based on the measurement of similarity between the regions with Jaccard coefficient, calculated on the basis of co-occurring types of amber beads. The level of similarity on the graphs (*Figs. 9* and *10*) is expressed through the width of links joining the nodes (regions) – the more two regions have in common, the wider the link is. For each network the *density* – one of cohesion coefficients deriving from the total number of ties divided by the total number of possible ties – was calculated. Next the *betweenness centrality* was calculated for the nodes, to assess importance of individual regions for the network existence. Index of *betweenness* denotes how many geodesic paths in a network pass through a given node, thus indicating how important the latter is for connecting remaining nodes.[53] Size of a node denotes percentage of the maximum possible *betweenness* in a network – the larger the node is, the greater its *centrality*. Finally, the nodes were divided into two classes on the basis of *core-periphery* analysis. First class – cores – groups the nodes characterized by high *degree* (number) of ties with remaining nodes that stems from sharing many variables (types of amber beads) in common. The second class – peripheries – comprises nodes with low *degree* (number) of ties, thus having few variables in common with the others. The networks were subsequently transposed over a map of the Balkans (shaded relief with coastlines and watercourses) using ArcGIS 4.0 software. In the next step, results of NA are confronted with archaeological data stemming from the sites with amber, to discuss the plausibility of using degrees of similarity between assemblages of amber beads and derived coefficients as proxies for interregional relationships in Western and Central Balkans during the Bronze Age.

Middle Bronze Age – First phase

Results of NA for the MBA contexts with amber (*Fig. 9*) form a reasonably well interconnected graph (average density index of 0.51) which confirms primary observation attained from CA for the same dataset: most types of amber beads occur relatively evenly among the regions, thus there is a weak evidence for regionalization of the styles of amber jewellery in the MBA. The highest level of similarity in terms of morphology of amber artefacts (the widest links) is discernible between Istria, Podrinje-Western Serbia and Kosovo, where amber collections are most abundant and varied typologically. However, only slightly narrower are the links connecting these three nodes to Northeast Albania and Kolonjë Plateau. Abovementioned five regions altogether represent majority of amber bead forms used in the MBA. Furthermore, nodes

[52] This assumption is based on the results of provenience studies, showing that succinite (Baltic amber) was the main, if not the only fossil resin supplied to and used by the Balkan communities in the Bronze Age (cf. Todd et al. 1976; Teržan 1984, 110; Rašajski 1988, 27; Beck 1996; Cwaliński (see *fn. 6*); Cwaliński, Kaur, Stout (see *fn. 8*).

[53] Cf. Hanneman, Riddle 2005.

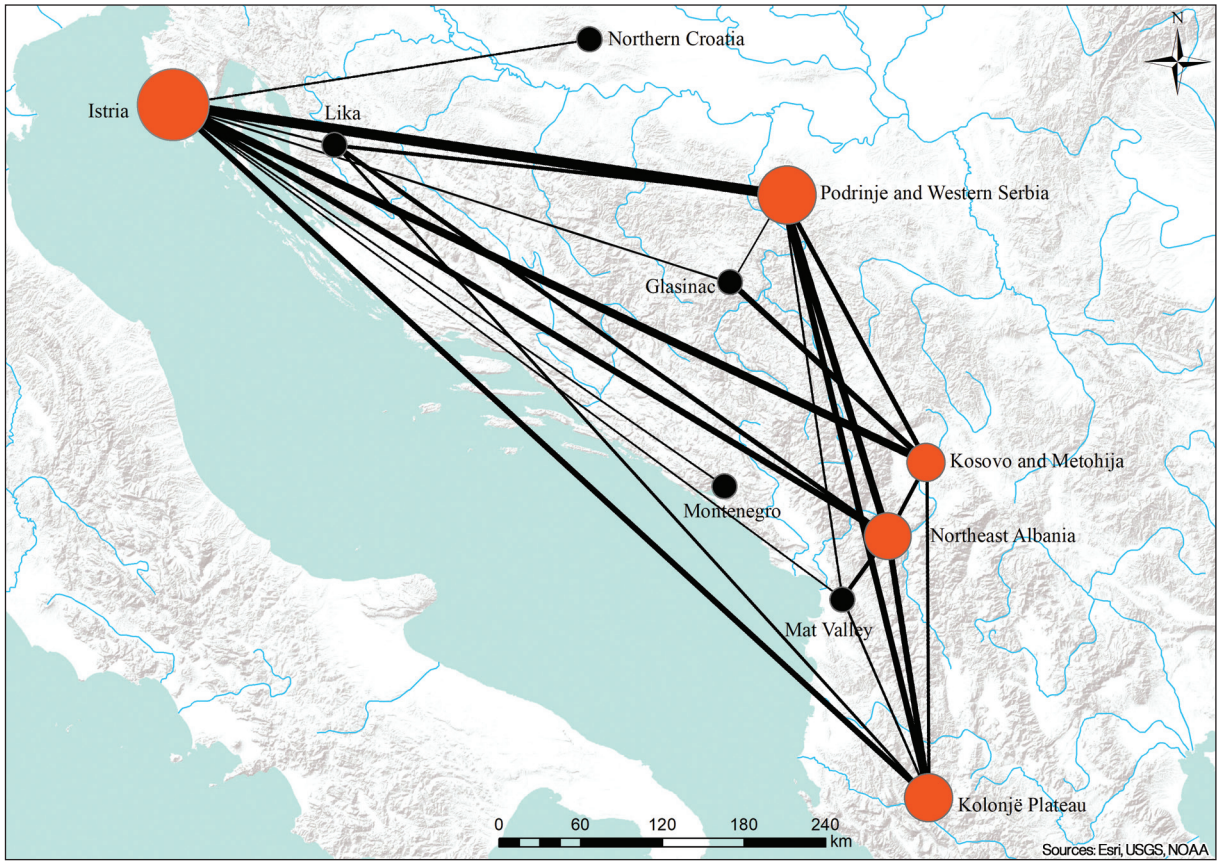

Fig. 9: Network analysis of MBA contexts with amber grouped into regions.
Sl. 9: Mrežna analiza srednjebronastodobnih kontekstov z jantarjem, razvrščenih po regijah.

signifying those regions are characterized by the highest level of *betweenness* in the entire network, and were classified as cores, in opposition to remaining areas generally indicating a much lower *degree* (number of links going in and out a node).

The remaining nodes (peripheries) show no morphological similarity between amber artefacts, therefore are not interconnected. Collections of amber finds from peripheral regions are restricted to several forms, hence the links connecting them with the cores are narrow. This might indicate that communities inhabiting the peripheral regions in the MBA had little influence on what was being imported, and participated in amber exchange to a lesser extent.

Thanks to these observations it seems plausible to describe Istria, Podrinje–Western Serbia, Kosovo, Northeast Albania and Kolonjë Plateau as the key regions for managing amber circulation during the MBA. They can be regarded as primary centers of its acquisition, most probably in a finished form (question remains, if amber could be locally processed at the time), and its redistribution to the other parts of Western and Central Balkans. Their geographic location is not accidental, as they correspond with contact areas, where influences from culturally different communities met. The core provinces of amber acquisition sometimes occupy places rich in natural resources, such as copper in the case of Southern Bosnia[54] and Southeast Albania,[55] sea-salt along the shores of northern Adriatic[56] and tin in Western Serbia.[57] Thus, one can argue that these core areas on their own had some valuable resources for trade to offer.

Formal similarity of amber assemblages coming from the core regions, as well as relatively high total amount of amber in this period, seems to confirm the existence of a developed network of relationships. At the present stage it is difficult to assess if any of the regions played the role of a chief amber supplier – the one the remainder was dependent from. On the other hand, a high similarity level may suggest that the bulk of amber was acquired

[54] Gavranović 2011, 6–13; Gavranović, Mehofer 2016.
[55] Aliu 2007, 239; Kurti 2017b, 294.
[56] Montagnari Kokelj 2007.
[57] Huska et al. 2014; Mason et al. 2016.

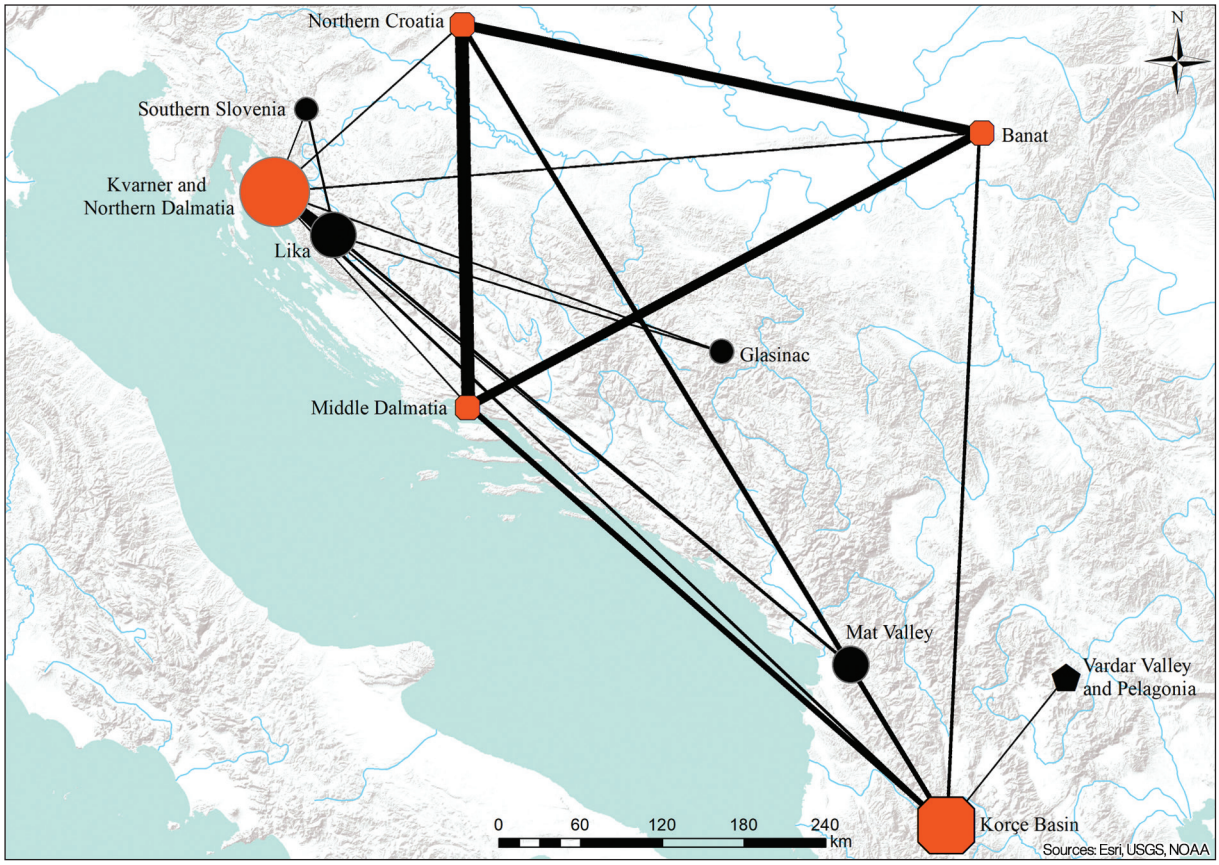

Fig. 10: Network analysis of LBA contexts with amber grouped into regions.
Sl. 10: Mrežna analiza mlajše- oz. poznobronastodobnih kontekstov z jantarjem, razvrščenih po regijah.

in a finished form from a single neighboring region or community, where the processing was taking place. Afterwards amber adornments could have been redistributed through a process of exchange between the cores themselves, and then the peripheral regions.

It is not an easy task to determine the suppliers of amber jewellery for Western and Central Balkans and the Adriatic coastal area at the early phase of its circulation. Majority of the beads used in that period have a simple form derived from a sphere/disc (corresponding with types 8–9), or a cylinder (type 18), common in the areas neighboring the Balkans. Nonetheless, hypothesis that most of amber reaching the Balkans was obtained and processed in the north of Europe can be justified by the biconical beads (type 12): few of such beads are known from Early Bronze Age contexts in northern Germany, however this form became widespread in Central Europe only with the emergence of the Tumulus culture around the 16th century BC.[58] This novelty could have been transferred further south through the Bohemia, where presence of biconical beads is not attested in the otherwise plentiful amber collections of the Únětice culture, but has been detected in barrows of the Bohemian-Upper Palatine Tumulus culture.[59] Afterwards, it could have been passed on to the Carpathian Basin, where biconical amber beads are observable starting from the period following the Koszider horizon (after ca. 1600/1500 BC), and reach climax at the time of the Kurd horizon, so around 1200–1100 BC.[60] This notion fits well in relation to northernmost Central Balkan regions

[58] Czebreszuk 2011, 51, Fig. 13: 1–3; Woltermann 2016, 386; cf. Woltermann 2014.

[59] Chvojka 2016, Fig. 2: 6; 3: 13–14; 4: 3–4; cf. Ernée 2012.

[60] Sprincz, Beck 1981, 482–483, Fig. 5: 4–15,22–42, Tab. 2. A single find akin to flattened biconical bead is known from grave 68 of the Battonya cemetery (Békés County, Hungary) attributed to the Szőreg-Periam culture (BrA2–BrB1; ca. 1800–1500 BC). However, by the authors own admission, it "is rather rudely made and suggests minimal working to take advantage of the natural form of the raw amber", and judging by its images is not resembling the type 12a considered here (Sprincz, Beck 1981, 482; cf. Gogâltan 2016, 149, Fig. 4).

(Podrinje–Western Serbia; Glasinac), where flattened and average biconical beads are considerably represented in this time span, along with bronzes and pottery bearing evidence of influences of the Tumulus culture and Carpatho–Danubian cultural milieu.[61] Moreover, truncated conical beads (type 146), characteristic for the MBA Balkan contexts with amber, are known from the same period in Hungary and Romania adding to the evidence of mutual contacts between these zones.[62]

Even though the two core regions under discussion: Istria and Podrinje–Western Serbia, shared similar assemblages of amber beads, their mutual relations seen through other categories of finds appear vague. Bronze objects co-occurring with amber in West Serbian and East Bosnian contexts (including Glasinac), such as pins with stamp-, spindle- and nail-heads,[63] open bracelets with expanded ends,[64] or heart-shape pendants,[65] by their form and decoration are related to similar objects from the Carpathian Basin. The pins were assigned to phases BrC–BrD of the Central European periodisation, and despite certain regional features, their form generally indicates the Tumulus culture influences.[66] The open bracelets made from a bronze bar of semi-circular (D-shaped) or a flattened triangular cross-section, with tapered and later widened (stamp-shaped) ends and various engraved decorative motifs, occurred in Glasinac, Podrinje and Western Serbia in various phases of advanced and late MBA (BrB2/C1–BrD). Although considered as products of local metallurgy,[67] they bear striking similarity to the contemporaneous bracelets from the Carpathian Basin and the Central Europe.[68] The heart-shape pendants can be fitted into variants 6 and 7 by Hänsel, dated to phases MDII–III of the Bronze Age in the Danubian Basin (BrB1–BrC1)[69] and widespread in Central Europe during the Tumulus culture period.[70]

No such items were discovered in Istrian amber contexts. Some similarities in material culture between Istria and the Central Europe, or the Carpathian Basin can be traced on the basis of simple, wire-made elements of jewellery: bracelets with spiral discs at the ends[71] and spectacle pendants.[72] However, these are quite generic forms, therefore cannot serve as good cultural influence indicators. What is more indicative is the flanged axe of the Feudenberg type from Laganiši cave; this type occurred in the eastern pre-Alpine zone and the Carpathian Basin around BrD–HaA1,[73] hence potentially reflects contacts which brought amber to Istria.

On the other hand, most of the forms of amber beads appearing on Istria in the MBA were concurrently used also on the closely located Po Valley, at that time a domain of the Terramare culture.[74] Among them one can list such specific forms of beads as annular (7),[75] flattened biconical (12),[76] or

[61] Cf. Filipović 2008, 99; id. 2013, 61–64; Dmitrović 2016, 256–258.

[62] Sprincz, Beck 1981, 483, Fig. 5: 19, Tab. 2; Boroffka 2001, Abb. 3: 9.

[63] E.g. Garašanin, Garašanin 1962, Fig. 6a–b; Kosorić, Krstić 1970, Tab. IV: 2; VII: 1; Kosorić, Krstić 1972, Tab. V: 6; VII: 1; Kosorić 1978, Tab. VI: 1; Vasić 2003, Tab. 12: 182; 17: 254; Bulatović et al. 2017, T. XVIII: 49.

[64] E.g. Benac, Ćović 1956, Tab. V: 1; XIV: 6; Kosorić, Krstić 1972, Tab. V: 6; VI: 2–4; Zotović 1985, Tab. IX: 1,3; Nikitović, Vasić 2002, Tab. II: 5; Dmitrović 2016, 166–168, Fig. 113: 1–4.

[65] E.g. Garašanin, Garašanin 1958, 40, Fig. 15g; Nikitović, Vasić 2002, Tab. II: 3; Dmitrović 2016, 182–184, Fig. 118: 1–3.

[66] Vasić 2003, 38–39, 48, Tab. 12, 17, 70; cf. Filipović 2013, 59, 66–68, Tab. 1.

[67] Kosorić, Krstić 1970, 31; Nikitović, Vasić 2002, 29; Dmitrović 2016, 166–168.

[68] Cf. Willvonseder 1937, Fig. 7: 7; 8: 18; Mozsolics 1967, Abb. 21: 1–2; Taf. 60: 7; 63: 3–6; 69: 5; 53: 5a–b; ead. 1973, Taf. 4: 3a; 134: 6–8; Hänsel 1968, 92–94, Beil. 4: 18; Gedl 1975, Tab. XI: 11; XII: 1–3; XIII: 15; XLII–XLIII; Čujanová-Jílková 1978, Fig. 106: 37; Hochstetter 1980, Beil. 1: 42–45,48–52; Stuchlík 1993, Fig. 172: 18–21; 177: 11,13; 179: 4–7.

[69] Hänsel 1968, 117–118; Beil. 4: 55; 5: 45.

[70] Cf. Čujanová-Jílková 1978, Fig. 106: 38; 129: 18; Wels-Weyrauch 1978, 63–65, Tab. 16; Hochstetter 1980, Tab. 80: 5; 83: 16; Stuchlík 1993, Fig. 177: 2–3.

[71] Batović 1983, 290, Sl. 19: 11, Tab. XLII: 6; cf. Hochstetter 1980, Beil. 1: 40; Gedl 1975, Tab. XIX: 1–2,7–9,15; XX: 8–10; XXI: 5–6; Tab. Chron.; Čujanová-Jílková 1978, Fig. 129: 10–11.

[72] Buršić-Matijašić 1989, Fig. 3: 1; cf. Wels-Weyrauch 1978, 77–86, Tab. 20; Batović 1983, 292, Sl. 19: 9.

[73] Mihovilić 2008, 45, Fig. 36; cf. Pászthory, Mayer 1998, 93–98; Hänsel et al. 2010, 21–23, Fig. 3, 7.

[74] For more information on amber in the Terramare culture see: Bergonzi 1997; Miari 2007.

[75] E.g. Negroni Catacchio 1971, Fig. 11; Aspes 1973, Fig. 1: 2; Rageth 1974, Taf. 92: 6,23; Salzani 1997, Tav. 56: 39; id. 2004, Fig. 4: G; id. 2011, Fig. 4: A3; Miari 2007, Fig. 2: 5.

[76] E.g. Rossi 1988, Fig. 81: 6–7; Salzani 1994, Tav. 5: 7–8; id. 2004, Fig. 3: B; 5: B,D; id. 2005, Tav. IV: D; IX: E–F; XVIII: E; XXXV: C; Aspes 1997, Fig. 420: 6; Negroni Catacchio et al. 1999, Fig. 12: 19–21.

lenticular (16).[77] Presence of the latter form is of particular importance: within Western and Central Balkans its occurrence was limited to Istria, thus northern Italian specimens seem to be the closest counterparts. For the record: some analogies for the lenticular beads are also known from Hungary, but their number is scarce.[78] Relation with Italy is further strengthened by presence in Laganiši cave of the Tenno-type dagger, belonging to the so-called Peschiera group of bronzes and dated to *Bronzo Recente* (ca. 1350/1300–1150 BC).[79] There is not enough evidence to assume that the amber beads from Istria were manufactured in Italy, as no traces of amber processing before the LBA have been detected there. For the MBA direct testimonies of amber processing are known only from the Northern Europe.[80] Nonetheless Northern Italy under the Terramare culture could have played the role of amber redistribution center – a plausible hypothesis given that local forms of amber jewellery correspond morphologically with the artefacts from the northern side of the Alps.[81]

In relation to above discussed problems, it is worthwhile to consider the role of Northern Croatia, Lika and Montenegro in the circulation of amber. In the light of amber scarcity, these three regions should be considered not as much as intermediaries in the circulation of discussed material but rather as far-flung vestiges of amber trade.

From the first region comes a single spherical bead (type 5b), discovered on the settlement of Alilovci Lipje in Požega Valley and dated to ca. 1600–1400 BC.[82] Within analyzed zone its analogies are limited to Istria, however spherical beads have also been documented in Hungary.[83] This evidence goes hand in hand with an abundant ceramic material from Alilovci Lipje that strongly manifests influences of Carpathian Basin cultures, including a bread-loaf idol (ger. *Brotlaibidol*) and the Litzen-type pottery.[84] Summing up, the amber bead seems likely to have turned up in Požega as a consequence of contacts of local communities with their neighbors living to the north.

The bead from Bezdanjača cave in Lika, which represents rather recurrent form (type 8a),[85] was associated with pottery bearing testimony to influences of the late Tumulus culture and the Virovitica group on one hand, and Bosnian hillforts of Pod and Varvara on the other.[86] Pottery can be further supplemented with some of the bronzes belonging to the first horizon of Bezdanjača cave, e.g. an open bracelet with expanded ends, decorated by parallel ribs which has analogies in the Tumulus culture of the Central Europe (BrB2/C1) and the Carpathian Basin (BrB2/C1–BrC2/BrD).[87] These observations contribute to the general picture of Northern Croatia and Lika as a transitional zone between the Adriatic coast, Pannonian plain and Danube basin, not only in terms of geography, but also due to a mixture of various cultural traditions.[88]

In the case of amber finds from Montenegro's Velika Gruda, grave 9, the links point solely to Istria as the source of analogies in the Balkans. Further to the north annular beads have been recorded also in Danube and Tisa basins[89] and Lower Mureş Valley,[90] but are mostly earlier than the finds from Istria and Montenegro. Lack of demonstrative imports from the Carpathian Basin in Velika Gruda tumulus apparently rule out direct contacts between these regions.[91] Some elements of bronze jewellery from horizon D of Velika

[77] E.g. Negroni Catacchio 1975, Fig. 2; Rossi 1988, Fig. 81: 1–3; Negroni Catacchio et al. 1999, Fig. 11: 11–12; Bellintani et al. 2004, Fig. 274: 2; Salzani 2005, Tav. X: D–E; XII: C,E; XVI: D,G; XVII: D; XXI: C; XXXI: E–F; XXXIV: G–H; Miari 2007, Fig. 3: 2–3,20.

[78] Sprincz, Beck 1981, 481, Fig. 4: 27–28; Tab. 2.

[79] Mihovilić 2008, 45, Fig. 36.

[80] Cf. Woltermann 2014; see also Gogâltan 2016, 148 for evidence of amber processing around 1900–1850 BC at the site of Pecica in south-west Romania (Arad county).

[81] Cf. Woltermann 2014; 2016.

[82] Mavrović Mokos, Pavličić 2015, 21, Fig. 16; cf. Cwaliński (see *fn. 6*).

[83] Sprincz, Beck 1981, 481, Fig. 3: 31; Tab. 2.

[84] Mavrović Mokos, Pavličić 2015, 16–21, 23–24, Figs. 12–13, 18.

[85] Drechsler-Bižić 1979–1980, Tab. XXV: 6.

[86] Drechsler-Bižić 1979–1980, 33–36.

[87] Drechsler-Bižić 1979–1980, Tab. XXVI: 2; cf. Hänsel 1968, 102, Taf. 42: 7; Gedl 1975, Pl. XIX: 12; XXVI: 8; Čujanová-Jílková 1978, Fig. 106: 13; Hochstetter 1980, Beil. 1: 46; Stuchlík 1993, Fig. 172: 3.

[88] Cf. Karavanić 2007; Ložnjak Dizdar 2007; ead. 2011.

[89] Sprincz, Beck 1981, 479, Fig. 2: 37–40; 3: 1; Tab. 2; Guba, Bácsmegi 2009, Taf. 2: 4.

[90] Gogâltan 2016, Fig. 3: 4.

[91] There are certain sites which, due to presence of specific bronze objects, link the area of Montenegro with Istria, and further with the Danubian Basin and the Central Europe in the course of the Middle Bronze Age and subsequent transition to the Late Bronze Age. E.g. from the Spič hoard in the coastal part of Montenegro comes a large assemblage of bronze axes exemplifying a transitional form from axes with pronounced heel (ger. Absatzbeile) to axes with median wings/fins (ger. Lappenbeile) (Žeravica 1993, 69–70, Taf. 19: 236–239; cf. Hänsel et al. 2010, 17–18).

Gruda (to which grave 9 belongs), i.e. spectacle pendants, saltaleone and domed buttons,[92] show affinity with the Balkan interior, where they are known from roughly contemporaneous Glasinac barrows of the periods IIa–IIIa,[93] and the Ist horizon of Bezdanjača cave.[94] However, amber bead of the type 7b has no analogies in either area.

If one looks in the other direction – towards southern Apennine Peninsula, a closer and more complete evidence for contacts is emerging. Analogies for the annular bead from Velika Gruda, grave 9 are known from graves dated to *Bronzo Medio 2–3* (ca. 1500–1300 BC) in Apulia[95] and Basilicata.[96] Moreover, bronze jewellery morphologically corresponding with the adornments described in the previous paragraph have even more attestations in Apulia, where it can be found along amber among several contemporaneous graves.[97] Therefore, a possibility of amber occasionally reaching Montenegro from Southern Italy should not be ruled out.

An interesting role in the process of amber region to region transfer could have been played by Kosovo. Although a predominant part of amber collection from that area originates from a single site – Iglarevo, grave 1 – it is the most abundant and typologically varied among all analyzed contexts.[98] In relation to the northern regions, it includes forms of amber adornments typical both for Istria on one hand, and Podrinje–Western Serbia and Glasinac on the other. However, if one takes into consideration other elements of inventory found in that grave, for instance the Juhor-type anklets or open bracelets with expanded endings decorated by garland and fish-bladder motifs,[99] it will become apparent that affinity with Serbia is stronger. Also, high quantity of amorphous beads composed into a necklace from Iglarevo, grave 1 should not be overlooked, as by their rough form and number they resemble adornments from Podrinje, e.g. the assemblages of beads from Banjevac-Jovanin Breg, tumulus 2, or Belotić, tumulus VII, grave 1.[100] Thus presence of amber in Kosovo should be explained rather through a mediation of Podrinje and Western Serbia – a region also geographically much closer, than Istria. It is worth mentioning that in the adjacent grave 8 at the Iglarevo cemetery were found two Mycenaean rapiers of the A-type dated to LH IIB–IIIA (ca. 15th–14th centuries BC).[101] These are not pristine specimens, as they bear traces of repairs or modifications. It brings us to Albania where spatially and formally closest analogies for such swords have been recorded among some of the graves also containing amber.

All three Albanian regions of amber reception in the MBA indicate a considerable level of similarity in terms of morphology of amber beads with core areas to the north. In this regard especially prominent are Northeast Albania and Kolonjë Plateau. First of the aforementioned regions, although lacking some of the more specific forms of amber jewellery (e.g. type 12), yielded a number of bronze artefacts which point to a relationship with the provinces located immediately to the north (Podrinje and Western Serbia) and northeast (Kosovo). One of the pins found in Çinamak, tumulus 16, grave 19 draws similarities between the spindle-head pins known from MBA barrows in Podrinje: it has length of 30.5 cm and three perpendicular discs placed on the thickened upper part of the stalk, with the top one extending into a conical thorn.[102] Also, a peculiar trait of the pin is the incised grooves on the stalk featured on pins with profiled necks and conical or thorn-like heads from the necropolis of Iglarevo.[103] Same grave yielded bronze belt hook for which analogies are also known from Kosovo, but its decoration style points to cultural influences originating from an area situated even further north, in Western Serbia and East Bosnia.[104] Furthermore, both context containing amber in Northeast Albania (Çinamak, tumulus 16, grave 19 and Krumë, tumulus 1, grave

[92] Della Casa 1996, Abb. 44: 14–17; 50: 30–33; 55: 43–45; 72: 66–67.

[93] E.g. Benac, Čović 1956, Tab. V: 2–24; XIV: 9–10; XXVII: 4–7; Čović 1983b, Sl. 28: 7; Tab. LXII: 2–3.

[94] Drechsler-Bižić 1979–1980, Tab. XXIII: 7,10,12; XXV: 5,4; XXVI: 1,5.

[95] Cataldo 1995, Fig. XXXVII: 8.

[96] Cipolloni Sampò 1986, Fig. 9: 5; Bergonzi 1997, Fig. 349: 11; Matarese 2018, Tav. IV: T1C/17.

[97] Recchia 1993, 383, Fig. 27: R; Tunzi Sisto (ed.) 1999, 261–263, 268–271, 273, Tav. X, XV, IXX; cf. Vanzetti 1999, 225–226.

[98] Palavestra 1997, Pl. 1.

[99] Bunguri et al. 2006, Fig. 4.70: C–D; cf. Garašanin 1983, Tab. CI: 1–2; Dmitrović 2016, 166–168, Fig. 113: 1–4.

[100] Palavestra, Krstić 2006, 290–291, Figs. 26, 447, 450.

[101] Prolonged use or slightly later chronology for discussed sword is also plausible (cf. Harding 1995, 21–22, Taf. 4: 24–25).

[102] Kurti 2017a, 95, Fig. 3: 8; cf. Vasić 2003, 47–48, Taf. 17–18: 254–257.

[103] Kurti 2017a, 95; cf. Vasić 2003, p. 65–67, see note 2, Taf. 24–25: 383–385.

[104] Kurti 2017a, 96, Fig. 4: 8.

1) comprised open bracelets made of bronze bar with D-shaped cross-section and stamp-shaped ends, decorated with geometric motifs.[105] This kind of bracelets has not been attested so far in other parts of Albania, however finds numerous counterparts in Kosovo, Glasinac, Podrinje and Western Serbia, including several contexts with amber.[106] It should be added that the both graves, by that virtue of comprising many amorphous beads composed into necklaces, match amber assemblages from Podrinje and Kosovo.

Already mentioned analogy for the Mycenaean rapier type A from Iglarevo, comes from Shtogj, tumulus 2, grave 9 in the Mat Valley.[107] This single context with amber situated in that region, through its eclectic inventory symbolizes transitional character of Bronze Age culture of the Mat Valley[108]. Considered an elite burial, it contained i.a. a leaf-shape spearhead of northern origin[109] and a sword of Aegean provenience (or inspired by Aegean sword-making) dated circa LH IIIA/early IIIB, being a local variant of the type-C swords, or a hybrid of the types A and C.[110] Even though Kosovo and the Mat Valley share no similarities in amber jewellery, the presence of discussed swords in both regions creates a link between them. Perhaps swords of the Aegean/Epirote provenience were transferred through the Mat Valley, and across the White Drim and Black Drim confluence, to Kosovo in an exchange for amber?[111] Whether the weapons of Aegean provenience were imported from Southern Albania can be proven by presence of other bronze items, among them the pin with a disc-head and biconical, perforated swelling of the stalk found in Shtogj, tumulus 2, grave 9.[112] Identical pins were found in the coeval tumuli of the Kolonjë Plateau, e.g. Rehovë, graves 81 and 192, and were classified by S. Aliu as the type IIa.[113]

Pins with disc- and cone-shaped heads (type V according to S. Aliu) are regarded as a confirmation of northern origins of the fashion which around 15th–14th century BC introduced pins to a costume worn in Southern Albania.[114] The latter type is represented i.a. by two specimens discovered together with amber beads in Rehovë, grave 186 in Kolonjë Plateau.[115] Pins with cone-shaped heads and thickened, pierced necks, akin to the type Paarstadl, occurred between the 16th and 14th centuries BC in a vast area mainly encompassing Danube Basin, but significant concentrations have also been noted in southeast Albania and western Macedonia.[116] A related form of pin with spherical swelling of the neck (sometimes pierced) appeared in considerable numbers in Kosovo, i.e. in grave 4 at Iglarevo, where it has been associated with the Iglarevo and Brnjica groups.[117] This evidence supplements well the similarities in amber jewellery between Kolonjë Plateau and the other provinces of amber acquisition to the north.

Nonetheless, it has been suggested that the southeast part of Albania (Kolonjë Plateau) could have acquired amber, along with carnelian which co-occurs with amber in the graves, from Aegean.[118] Carnelian is a commodity which certainly can be linked to an activity of Mycenaean merchants around Southern Albania – a region by the 15th–14th century BC (LH II–LH IIIA) entering a zone of Mycenaean influences.[119] However, while some of the tombs with carnelian frequently occur in graves furnished with imported or imitated Aegean goods, e.g. Rehovë, grave 145,[120] the graves with amber barely have any attestation of such artefacts. One can mention a hemispherical cup with two

[105] Kurti 2017a, 100, Fig. 4: 6–7.

[106] Kurti 2017a, 102; cf. Benac, Čović 1956, Tab. V: 1; XIV: 6; Kosorić, Krstić 1972, Tab. V: 6; VI: 2–4; Zotović 1985, T. IX: 1,3; Nikitović, Vasić 2002, Tab. II: 5; Bunguri et al. 2006, Fig. 4.70: C–D.

[107] Bodinaku 1995, Fig. 2: 8; Kurti 2017a, Fig. 7: 4.

[108] Cf. Cwaliński (see *fn. 6*).

[109] Kurti 2017a, Fig. 7: 7; id. 2017b, 289; cf. Harding 1972, 218–220.

[110] I. Kilian-Dirlmeier considers it as an imported blade provided with a handle made in local workshop, similar to the A-type sword from Iglarevo – opinion shared by A. Harding (Kilian-Dirlmeier 1985, 253; Harding 1995, 22). In the opinion of N. Bodinaku, the sword should be regarded as a special link in the evolution of Aegean swords towards the type C: while the form and the technology of the blade resembles the type A, the handle is more akin to the type C. The author excludes the possibility of a local production, and supposes it is an import from highly specialised Aegean workshops (Bodinaku 1995, 261). R. Kurti describes it as a distinct and probably a local variant of an Aegean type C sword (Kurti 2017a, 108).

[111] Cf. Bodinaku 1995, 263; Kurti 2017b, 288–289.

[112] Kurti 2017a, Fig. 3: 10; 7: 3.

[113] Aliu 2012, 300, Tab. II: 42,44; XVI: 205; cf. Kurti 2017a, 107–107.

[114] Kurti 2017a, 86; id. 2017b, 289.

[115] Aliu 2012, Tab. XV: 200–201; Kurti 2017b, Pl. XCIX: f.

[116] Pabst 2013, 156–158, Abb. 1.

[117] Vasić 2003, 65–67, Taf. 24: 378–383; Bunguri et al. 2006, Fig. 4.69: B.

[118] Kurti 2017b, 296.

[119] Cf. Prendi 1982; Bodinaku 1995; Kurti 2017b.

[120] Aliu 2012, 80, Tab. VII: 103–107; Kurti 2017b, Pl. XCIX: b.

lugs from Rehovë, grave 201, seemingly inspired by the *kantharos* form, but most probably of a local origin (defined as "pseudo-Mycenaean").[121] Although redistribution of amber across the southern fringes of Aegean by the Mycenaeans was possible, it should not be ruled out that some of it came to southeast Albania from the north and was used to trade with the Mycenaeans to obtain other goods, e.g. carnelian.

Late Bronze Age – Second phase

Moving on to the LBA, the network has a visibly different structure (*Fig. 10*). There are fewer links (average density of the network is 0.42), and most of them indicate a relatively low level of similarity. Again, there are five core regions (areas with more than four links attached), but only two of them manifest considerable level of *betweenness*: Kvarner–Northern Dalmatia, and Korçe Basin. They owe this property to a wide range of amber bead forms, including even the rare types that link them to otherwise detached peripheral regions: Glasinac, Vardar Valley and Pelagonia. Remaining core areas (Middle Dalmatia, Northern Croatia and Banat) create a tightly connected clique (equally thick links adjoining them), but with a low similarity to the other regions.

As mentioned before, from ca. 1200 BC there is observable regionalization of stylistics of amber processing, resulting in grouping of the sites belonging roughly to the same geographic zones on the chart illustrating CA for the LBA contexts with amber (*Fig. 8*). Previously proposed division of the LBA contexts into three zones of amber acquisition, each manifesting a distinctive style ("coastal", "northern hinterland" and "southern hinterland"), was confirmed by the *factions* analysis – an algorithm that seeks the optimal arrangement of objects in adjacency matrix into a predefined number of sub-groups (*factions*), each of them as much coherent as possible.[122] On the resulting graph affiliation of a region to a given faction, representing one of the zones/styles, is discernible through a symbol – shape of a node. Thus the "coastal" faction comprises circular nodes, the "northern hinterland" comprises octagonal nodes, while the "southern hinterland" was marked with a pentagonal node.

Compositions of the factions are largely the same as the clusters delimited on the basis of CA, with an exception that the Korçe Basin in NA falls into the "northern hinterland" zone/style. Still, its intermediary character is depicted by high *betweenness* and multiple links, which spread out towards the regions belonging to two other zones. It is the only node which shares amber beads similar to those from the Vardar Valley and Pelagonia – the single region representing the "southern hinterland" style on the plot. Interestingly, repeating the *factions* analysis with the desirable division set to two subgroups, led to the latter node being included in the same faction with contexts belonging to the "northern hinterland" zone. Thus, it reflects division of the LBA contexts into two groups already marked by the vertical axis on *Fig. 8*.

However, sites from the Korçe Basin and the Vardar Valley, are slightly earlier than the remaining LBA contexts, and as such should be considered separately from the rest. As shown on *Fig. 2*, graves from Barç and Dimov Grob are dated roughly to the 13th–12th century BC, and basing on seriation results (*Fig. 4*) can be interpreted as the early signs of changes in amber working, introducing new forms to the repertoire of amber adornments (types 6c, 13 and 18a).

Both regions manifest an attachment to cylindrical beads in average and elongated variants, the former used already in the MBA and found again in Pelagonia's Popadin Dol, grave 1 that can be regarded as a sign of continuation of this style in the final Bronze Age. Similar beads were already used in the nearby Kolonjë Plateau: they are attested in Rehovë, grave 201 – context only slightly older than the graves of Barç and Dimov Grob. Still, the time, the aforementioned contexts are dated back to, brought profound changes in the spatial organization of amber's circulation: around the 12th century BC all core areas of amber acquisition and redistribution in Central Balkans from Podrinje to Northeast Albania ceased to function. No amber was to appear there before the advanced Iron Age.[123] Both graves of Barç contained flattened biconical beads (type 12a) which evoke the MBA style that endured during the final phases of the Bronze Age in the areas to the north, and probably developed into elongated biconical beads (13). Adherence to this "northern hinterland" tradition is depicted by the links connecting Korçe Basin with Middle Dalmatia, Northern Croatia and Banat,

[121] Aliu 2012, 99, 285, Tab. XVII: 212.

[122] Cf. Hanneman, Riddle 2005.

[123] Cf. Palavestra 1993, 263–280.

where similar sets of beads occurred, albeit with a slight delay.[124] So, perhaps these southernmost regions of amber acquisition should be considered as nexuses between the MBA and LBA networks?

However, there are certain clues that the presence of amber in the Korçe Basin and the Vardar Valley-Pelagonia might have stemmed from intensified interaction of aforementioned regions with the late-palatial and post-palatial Mycenaean culture (LH IIIB–IIIC, ca. 13th–12th century BC). These relationships are, first and foremost, documented by weapons and vessels imported from Greece, or inspired by Aegean craft, which at the end of the LBA were introduced over the area of Southern Albania. An example of the Aegean weaponry is the bronze dagger from grave 162 tumulus 1 in Barç, defined as the type C or G.[125] As for the pottery, the most important innovation was introducing matt-painting of geometric motifs in red and brown colours, on vessels inspired by the Aegean forms: stirrup jars, amphorae, cups etc.[126] One of such stirrup jars was found together with amber beads in Barç, tumulus 1, grave 47; it has been described as a typical product of the LH IIIC, with good parallels on Cephalonia and Campania, although close analogies dated to the Submycenaean period can be adduced.[127]

Traces of Aegean influences have also been recorded in the amber-containing graves from Dimov Grob cemetery in the Vardar Valley. Both the graves 54 and 73 were richly furnished with offerings which include i.a. locally made, but Mycenaean-inspired, matt-painted *alabastra*, while the former yielded additionally a labrys belt of Aegean origin, comprising axe-shaped applications/pendants.[128] The relationship between the Vardar Valley-Pelagonia and Greece seems to have continued during the Bronze Age-Iron Age transition period (1100–900 BC), as evidenced by similarities among arched fibulae with two discs on the bow from Popadin Dol, grave 1 on the one hand, and from Vergina and Pateli on the other.[129]

Finally, it can be argued that the forms of amber beads revealed in the Korçe Basin and the Vardar Valley-Pelagonia were not foreign to the Mycenaeans. The flattened biconical beads, although definitely more common in LH IIIA–B, sparsely occurred also in LH IIIC.[130] Beads similar to elongated biconical (type 13) and barrel-shape (6c) forms present in Barç, tumulus 2, grave 2 have been attested in several LH IIIB–IIIC contexts from the Greek mainland (Argolis, Attica and Phocis), as well as the islands (Cephalonia and Thasos).[131] There are only few documented cylindrical beads (18a) in the Mycenaean culture, but several of them come from LH III graves on Rhodes.[132] Thus occurrence of amber in Korçe Basin and in the Vardar Valley can be perceived as an effect of its redistribution from the Mycenaean centers along with other goods, although northern provenience cannot be fully excluded.

As it has already been shown by CA, Kvarner, Dalmatia, Lika and, to a lesser extent, the Kočevje region (Southern Slovenia), Glasinac and the Mat Valley, all form a cluster characterized by a distinctive/uniform set of types, tentatively named a "coastal" style/zone. Regions grouped within the "coastal" zone include typologically most diverse collections of amber artefacts, among which types 1–4 are the paramount examples of a new fashion. While types 2 and 3 are distinctly local forms, types 1 and 4 are related to the Tiryns- and Allumiere-type beads respectively.

Due to their co-occurrence with other kinds of archaeological material typical for the Adriatic zone at the end of the 2nd millennium BC,

[124] Potentially "northern" provenience of biconical beads from Barç, tumulus 2, grave 2 can be justified to a certain degree by co-occurrence of two "headless" bronze pins with rounded upper terminals similar to awls – a type attested in the Urnfield culture, but due to a lack of characteristic features difficult to use as a safe indicator of chronology and cultural affiliation (Andrea 1985, 85).

[125] Andrea 1985, 64, 65, Tab. XLIII: 3; Bodinaku 1995, 265, Fig. 3: 4.

[126] Prendi 1982, 215–218, Figs. 8–9; Bodinaku 1995, 265, Fig. 1: 3–8; 6: 1–9.

[127] Andrea 1985, 73, Tab. VI: 7; cf. Bejko 1994.

[128] Mitrevski 2003, 49, T. V: 7; Mitrevski 2007, Fig. 4; Videski 2007, 213, Pl. LIV: b; LV: e.

[129] Kitanovski 1960, Figs. 2–4, 7–12; Vasić 2003, 45–46, Tab. 24: 274,278–281; cf. Pare 1998, Abb. 21: 1.

[130] Czebreszuk 2011, 79, Tab. 4, Pl. VII: 7.

[131] Czebreszuk 2011, 79, 88, Tabs. 5, 8; Pl. III: 5–7,12–17, 26,30–32; VII: 6,10. The elongated biconical beads are much less numerous than barrel-shaped, or flattened biconical in the Mycenaean culture. J. Czebreszuk in his typology classifies the former to the group of amygdaloid beads – type 106, counting in total 10 specimens (Czebreszuk 2011, 79). However, it is not a uniform group, as it also comprises beads with bi-convex profile and polyhedral cross-section, sometimes decorated, and thus interpreted as seals. The only genuine example of elongated biconical bead in the Mycenaean Greece, comparable with the Balkan specimens, comes from the LHIIIB horizon of the lower citadel of Tiryns (Czebreszuk 2011, Tab. 5: 7; Pl. VII: 6).

[132] Czebreszuk 2011, 79, Tab. 6; Pl. II: 13.

mainly new elements of bronze jewellery such as arched fibulae with two knobs on the bow, the Tiryns- and Allumiere-type beads were included in the so-called Mediterranean *koiné*.[133] In the case of these specific types of amber beads their origins to the Apennine Peninsula are possible to be traced back, specifically to the regions in the sphere of the post-Terramare/Protovillanovian culture. The sites of Frattesina di Fratta Polesine and Campestrin di Grigano Polesine in the Po Valley yielded traces of amber processing in the form of semi-finished beads, and production waste consisting of splinters and broken pieces.[134] In the case of the latter site, material evidence allows reconstructing *chaîne opératoire* of the Tiryns-type beads.[135] Both the types Tiryns and Allumiere are predominantly distributed in the Central and East Mediterranean, while must have been almost completely unknown in Central Europe.[136] In the light of those findings, we can consider Northern Italy as a potential supplier of ready-made amber products to eastern Adriatic coast.

Besides, there are other categories of archaeological material which tend to favor a tight cultural relationship between the two opposite shores of the Adriatic in the LBA. For the sake of brevity, only one pre-selected category from a wide spectrum of "interregional" finds will be discussed here in detail, namely the fibulae. Among the latter should be listed the arched fibulae with two knobs on the bow that appear in the coastal part of Croatia between the 12th and 10th centuries BC (HaA1–HaB1), but have wide distribution reaching the Apennine Peninsula and Sicily on the one side, and the East Mediterranean, including Greece, Cyprus, Western Anatolia and Levant, on the other.[137] In Kvarner and Dalmatia fibulae like these were discovered i.a. at the cemetery of Vidasi on the island Pag, and in grave 89 at Vrsi on the island Dugi otok.[138] A similar combination of amber and bronze adornments is known from some of the contemporaneous Italian sites in Veneto, Emilia-Romagna, Lazio and Apulia.[139] There are other characteristic types of fibulae represented among the contexts with amber from Kvarner. Recently it has been suggested that the large decorated bow fibula from Garica could be an import from the western side of the Adriatic, basing on analogies from Picenum and the Tyrrhenian coast dated to *Bronzo Finale 2–3* (ca. 11th–10th century BC).[140] Furthermore, Garica yielded examples of two other types of fibulae found among contemporaneous Italian sites containing amber: the two-part serpentine fibula with a saddle-shaped bow is comparable with Apulian examples dated to *Bronzo Finale 3*,[141] while the fragment of a bronze fibula with a spirally coiled up bow resembles the specimens from Veneto dated to *Bronzo Finale 2–3*.[142] Whether all these

[133] Teržan 2007, 162; Blečić Kavur 2012a; ead. 2012b; ead. 2014, 56–60.

[134] Cf. Negroni Catacchio 1972; Bellintani 2014; Bellintani et al. 2015; Bietti Sestieri et al. 2015.

[135] Bellintani et al. 2015, 420–424, Fig. 1: D.

[136] To the north of Danube there are few isolated sites on which amber beads representing one of the discussed types were discovered. Conspicuous assemblage of the Tiryns- and Allumiere-type beads was found at the cemetery of Hordeevka (barrows 31 and 38) in Ukraine, dated to ca. 12th century BC (Ślusarska 2007; cf. Harding 2007, 50). Single specimen of the Allumiere type comes from Late Bronze Age (HaA1) hoard recovered at the locality Dridu in Romania (Boroffka 2001, 404, Abb. 3: 21; Negroni Catacchio 2014, 8, Fig. 15). Recently, a group of previously unknown Tiryns- and Allumiere-type beads from middle Bohemia (cemeteries of Drahelčice and Únětice) has been published (Ernée 2017, 126, Abb. 12).

[137] Glogović 2003, 8–11, Taf. 60: B; 71; Teržan 2007, 160–162, Fig. XXXVI: b; Blečić Kavur 2014, 45–50, Figs. 18, 87; Teržan 2016, 233–254, Figs.76, 77. Although generic form of the fibulae allows to classify them to one group, they are nonetheless divided into several regional variants, depending on size, shape of the nodules on the bow, and ornamentation pattern.

[138] Batović 1983, T. XLIV: 7–9; Glogović 1991, T. 3: 1; 4; Blečić Kavur 2014, 172–173, Figs. 23, 26.

[139] E.g. Catarsi, Dall'Aglio 1978, Fig. XXI; Delpino 1987, 35, Figs. 16, 18; Salzani 1990–1991, Fig. 14: 13; Nava, Preite 1995, Tav. XIII.

[140] Blečić Kavur 2014, 56, T. 1: 160 with citations of the Italian analogies.

[141] Blečić Kavur 2014, T. 1: 162; cf. Nava, Preite 1995, Tav. XIV: 8. Fibulae of this type are regarded as a part of the so-called *Adriatic koiné* bronzes, dated to the turn of the Bronze and Iron Age (HaB1–HaB2/3; late 10th–early 9th c. BC). Although the specimen from Monte Saraceno has different form of the bow in the middle section, both given examples can be classified to the variant I, for the onion-shaped ending of the pin. The specimen from Garica has recently been defined as a late variant, most probably, a product of local, east Adriatic workshop, succeeding earlier variants interpreted as Italic imports, under inspiration of which it could have developed (cf. Glogović 2003, 47–49, 72–73, Taf. 71; Blečić Kavur 2014, 129–133, Fig. 87).

[142] Blečić Kavur 2014, T. 1: 161; cf. Salzani 1990–1991, Fig. 23: 7. The fibula from Garica, although being unique on the east Adriatic coast, can be related to the Italian examples from the Po valley, among which the specimen from grave 39 at the Narde necropolis is listed as a close analogy. Thus it can be dated in accordance with the speci-

objects should be regarded as imports or products of local workshops inspired by Italian metallurgy is up for a debate; however their presence on the both sides of the Adriatic apparently strengthens the relationship already indicated by amber.

The influx of external influences to the Croatian Littoral was not unidirectional; the Kvarner area has recently been defined as "crossroads" where the Final Bronze Age metallurgy of the Apennine Peninsula was converging with elements of the Urnfield culture, the latter firmly seated in Slovenia and Northern Croatia. The region's specific cultural character can explain the presence of seemingly mismatched artefacts, i.a. elongated biconical bead (type 13) from Vidasi. The bead resembles numerous amber finds originating from the Urnfield culture contexts in Central Europe, while its closest Balkan analogies were recorded at the Križevci-Ciglana site in Northern Croatia along with other elements related to aforementioned culture.[143] At Vidasi the bead was found together with a bronze pin with a spherical head and twisted neck akin to the type Šula (dated HaA1–HaA2), recorded on numerous sites in the Kvarner area, including Garica, as well as on some sites in Slovenia and Posavina, thus considered as a part of the so-called continental *koiné*.[144] To complement evidence from Vidasi testifying to contacts with the Apennine Penninsula given earlier, it should be added that elongated biconical beads have been detected also in several Italian contexts dated from *Bronzo Recente* to *Bronzo Finale* (ca. 1350–900 BC).[145] The possibility that beads of that form were imported to Italy from the north, or inspired by contemporaneous amber jewellery of the Urnfield culture can be supported with the deposit of such beads at Maso Finale in Trentino-Alto Adige.[146] To conclude, significant concentration of equivalents of the Tiryns- and Allumiere-type beads in Kvarner and Northern Dalmatia, along with certain elements of bronze jewellery, apparently confirms the notion of amber exchange between western and eastern shores of the Adriatic. Nonetheless, geographically broad distribution of the elongated biconical beads (type 13) urges to leave the question of the provenience of the bead from Vidasi open to further discussion.

Kvarner can be described as the most important core region in Western Balkans and Adriatic coastal area during the LBA, functioning as the main recipient, transmitter and, possibly, also processing amber centre. The remaining areas belonging to the "coastal" zone, except Lika, comprise far-flung findspots most probably resulting from singular acts of exchange. The finds from Lika, despite not being directly associated with other imports, bear striking resemblance to the beads from neighbouring Kvarner, and as the only other province share the very local types 2 and 3. The latter observation presumably speaks for an affiliation of the beads from both regions with the same amber workshop.

The hoard of Debeli Vrh in Kočevje region represents an intriguing case of the Tiryns-type bead which may have travelled a long and complex route before it was eventually deposited. The rich and varied collection of bronze items associated with the beads includes multitude of objects characteristically appearing in hoards of the II–III horizons (ca. 1200–1050 BC), in parts of the Balkans under the impact of the Urnfield culture.[147] Still, one can find among this assemblage several objects that could have been collected on the Apennine Peninsula: full-handle dagger with ring-ending of the type Miradolo, sickles of the type Uioara 7 and 8, and handles of daggers probably representing the types Baierdorf or Scoglio del Tonno.[148] Similar combinations of above listed bronze items with the Tiryns-type beads were found on several sites in Italy, thus lending itself as further proofs of presumed Apennine provenience of the amber finds from Debeli Vrh.[149]

To explain how another Tiryns-type bead (1b) found its way to Glasinac-Vrlazje, tumulus III,

mens from the Narde necropolis dated to Bronzo Finale 3, corresponding chronologically with the beginning of the early 10th century BC (Blečić Kavur 2014, 123–124, Fig. 87; cf. Salzani 1990–1991).

[143] Glogović 1991, T. 1: 2; cf. Homen 1982, Tab. II: 7; Chvojka 2016, Fig. 6; Stuchlík 2016, Abb. 7–8.

[144] Blečić Kavur 2011, 56–57, Figs. 7–8; ead. 2014, 78–79, Figs. 39–40, 88.

[145] E.g. Negroni Catacchio 1972, Fig. 6; Catarsi, Dall'Aglio 1978, Fig. XXI: 1; Aspes 1987: Fig. 1: 1; 2: 1; Salzani 1990–1991, Fig. 21: 13; Salzani 2011: Fig. 3: B5.

[146] Putzer 2012, Abb. 10: 34–35.

[147] Cf. Turk 1996, 110–115.

[148] Hirschbäck-Merhar 1984, T. 4: 6; 5: 5,9; 7: 3–4,6.

[149] Finds belonging to above listed types occurred on following sites in Italy: Fondo Paviani in Veneto (Fasani, Salzani 1976, Fig. 2: 3–4; Vincenzutto et al. 2015, Fig. 1: 2), Borgo Panigale in Emilia-Romagna (Catarsi Dall'Aglio 1976, Fig. 6: 5–6,16) and Coppa Nevigata in Apulia (Belardelli 2004, Fig. 31: 219; 34: 14; 35: 19). Even though chronologically they belong to the same phases, they were not found in the same layers or section of the sites, hence can be linked only indirectly.

grave 3 (1894) is a much more difficult task, as no other finds, except for an annular bead (type 7b), were found beside it in the context. One can only resort to the close morphological similarity of the bead with the finds from the Croatian Littoral as a testimony to exchange between these areas.[150] The second LBA context with amber from Glasinac–Vrlazje, tumulus IV, grave 2 (1894) – yielded much more informative materials, i.a. late variant of the Golinjevo-type fibula dated to the phase IIIc2.[151] Still the bead from the grave (type 37) represents quite a unique form, so far unknown in other regions in the Bronze Age, and at best can be interpreted as a peculiar product created as a result of processing/modifying another bead or a raw lump of amber, in order to adapt it to personal needs.[152]

Fibulae of the Golinjevo-type are significant for further considerations, as apart from Vrlazje, tumulus IV, grave 2 (1894), they appeared in two other amber contexts. One of them is Perlat, tumulus 2, grave 3 in the Mat Valley, where the fibula was found associated with amber beads related to types 4a (Allumiere) and 6c (barrel-shaped).[153] Presence of the listed materials proves that the Mat Valley, as a reflection of the general re-orientation of Northern Albania in terms of cultural contact to the north and north-west in the final phase of the Bronze Age (11th–10th century BC),[154] was involved in exchange with Dalmatia and possibly even the Apennine Peninsula. The amber beads alone might not be enough to decide which one of the two aforementioned regions was the main trading partner of the communities from Perlat area. Geographically the closest counterparts of the Allumiere type, from the perspective of the Mat Valley, would be the beads from Apulia and Cephalonia; however they apparently represent different variants.[155] More similar specimens, i.e. those with conical profile defined as type 7 by N. Negroni Catacchio, are represented in Lazio and Emilia-Romagna, where additionally barrel-shaped beads are present.[156] Still, one should not ignore the fact that analogical Allumiere-type bead has been found at the Kompolje cemetery in Lika.[157]

A strong argument for eastern Adriatic origin of the amber finds from Perlat could be provided by comparison of the Golinjevo-type fibula from the site which, interestingly, bears resemblance to the examples from Trcela-Vranjic.[158] There are slight differences between the given examples, mainly in distribution of decorative motifs on the bow, however the fibulae from Trcela-Vranjic still offer a very good comparison. Thus, perhaps, it is plausible to suspect that the amber beads came to the Mat Valley from the northern Adriatic area via Middle Dalmatia?

The fact that neither type 4b nor 6c were detected among amber finds from the latter region may be problematic. The grave of Trcela-Vranjic has been classified to the "northern hinterland" style along with the sites from Northern Croatia and Banat. Together they form a 3-node clique, connected by wide links indicating a high level of similarity between them (*Fig. 8*). By large the amber assemblages from above listed regions reveal continuation of an older MBA form (flattened biconical; 12a), supplemented with elongated biconical beads (13) – one of the LBA novelties in amber processing. Each of the regions has been classified as the core area due to having multiple links, however the ones connected to the outer regions are rather narrow. Despite yielding matching sets of amber jewellery, these regions differ in terms of cultural background.

Going back to Trcela-Vranjic, it is necessary to stress that the two fibulae from the site are considered as prototypes of the Golinjevo type, hence their slightly earlier dating.[159] Regarding the cross-section of the bow and ornamentation pattern, the closest analogies from Dalmatia were found on the site of Banja,[160] however both sites are peripheral in respect to the main concentration of the Golinjevo-type fibulae located in Bosnia

[150] Cf. Cwaliński (see *fn. 6*); Cwaliński, Pravidur 2020.

[151] Benac, Čović 1956, 10, Pl. IV: 5; cf. Gavranović 2011, 34, Abb. 1.

[152] Cf. Cwaliński, Pravidur 2020.

[153] Bietti-Sestieri, Lo Schiavo 1976, Fig. 17: 1–2; Kurti 2013, Tab. I: 8–9; id. 2017b, Pl. CI.

[154] Cf. Prendi 1982, 224–230; Jubani 1995.

[155] The Allumiere-type beads from abovementioned sites show different profiles and execution of the grooves (cf. Czebreszuk 2011, Pl. III: 28; Negroni Catacchio 2014, Fig. 13).

[156] E.g. Peroni 1960, Fig. 11: 17,20; Catarsi, Dall'Aglio 1978, Fig. XXI: 1.

[157] Bakarić 2017, 26, cat. No. 9.

[158] Bietti-Sestieri, Lo Schiavo 1976, Fig. 17: 1; cf. Marović 1960, Fig. 3: 1–2; Glogović 2003, Taf. 6: 33–34. Similarities include octagonal cross-sections of the bows in the middle between the nodules, decorative pattern comprising hatched triangles between two bands of incised lines and, last but not least, undecorated foot.

[159] Glogović 2003, 12–13, Taf. 71.

[160] Glogović 2003, Tab. 7: 38–39.

and Herzegovina, where further analogies can be found.[161] On the other hand, listed specimens significantly differ from those found in the Glasinac area, e.g. Vrlazje, tumulus IV, grave 2, which are perhaps slightly younger.[162]

Other finds from Trcela-Vranjic that have both specific spatial and chronological attribution are ribbed cuff bracelets, and imitated twisted torque.[163] The former objects are typical elements of jewellery encountered in contemporary sites in Dalmatia, Istria and Northern Croatia; bracelets of this kind appeared together with amber in several contexts (Garica; Privlaka, grave 87; Vidasi; Vrsi, grave 89).[164] Imitated twisted torques, on the other hand, are considered as objects rather untypical for the eastern Adriatic coast, presumably imported from the Balkan interior, where they can be found in numerous contexts.[165] The torque from Trcela-Vranjic is made of massive bronze rod with rhombic cross-section, seemingly corrugated in its middle section (form of decoration performed by engraving), with ends rolled up, therefore more akin to younger versions dated to HaA2/B1 (ca. 1100–950 BC).[166] The closest analogies in Middle Dalmatia are known from Balina glavica,[167] while further north-west in Lika they were found on the cemetery of Kompolje.[168]

The material evidence discussed above shows that Middle Dalmatia in the final phases of the Bronze Age possessed a very eclectic cultural character, built upon influences from the Croatian Littoral, as well as the Balkan interior. Perhaps it played a role of a crossroad of north-south and east-west exchange routes, bringing in and out various imports, i.a. biconical beads and the Golinjevo-type fibulae.

The region of Northern Croatia, represented by the site of Križevci-Ciglana, yielded amber beads almost identical in terms of form and number to Middle Dalmatia, however manifests different cultural connotations. Ceramic and bronze artefacts recovered from the site are related to the period of the Urnfield culture on the territory of Drava–Sava interfluve. While the pottery has affiliation with the local groups belonging to the Urnfield complex, chiefly the Virovitica II/Zagreb group (HaA1–A2; ca. 1200–1000 BC), morphology and ornamentation of the bronze pins have more of an interregional relevance. The club-head,[169] onion-head[170] and biconical-head pins with profiling[171] are all frequent in the contexts of the 1st, 2nd and 3rd phase of the Urnfield culture in Northern Croatia;[172] however also occur in significant numbers in Transdanubia, where they are typical mostly for the earlier phase of the Urnfield culture (BrD–HaA2).[173] Furthermore, above listed types of pins are thought to document east-west communication to the south of the Carpathian Basin.[174] Similar interregional status should be apparently ascribed to elongated biconical amber beads (type 13) which seem to be incorporated into amber jewellery at similar date that is after 1200 BC, in the Carpathian Basin. Within the latter area, elongated biconical beads occurred on three sites located to the south of the Lake Balaton in Transdanubia, dated to the Kurd horizon of hoards,[175] and at least on three more

[161] Cf. Marović 1960, 15; Glogović 2003, 13.

[162] Cf. Gavranović 2011, 33–34.

[163] Marović 1960, Fig. 1: 3,5; 2: 1.

[164] Batović 1983, T. XLIV: 13–15; Glogović 1991, T. 1: 1; Blečić Kavur 2014, T. 1: 164–165. Aside from Vranjic ribbed-cuff bracelets are known from eight other localities in Middle Dalmatia, e.g. Balina glavica (Batović 1983, 339, Sl. 21: 11). Ch. Pare treats these bracelets as typical indicator of a final horizon of the Bronze Age in Dalmatia, placing contexts containing them before 950 BC (Pare 1998, Abb. 15: 6). Consequently, the ribbed-cuff bracelets are chronologically comparable with the arched fibulae with two knobs on the bow and pins of the Šula type (Blečić-Kavur 2014, 84–85).

[165] Cf. Vasić 2010, 38–42.

[166] Ch. Pare places them in an even later period, that is in the first phase of the Early Iron Age in Dalmatia (after 950 BC; Pare 1998, 330, Abb. 17: 10), however it should be kept in mind that these objects have rather lengthy chronology, with first appearance on the territories of the Urnfield culture, already around BrD/HaA1 and much younger specimens from Macedonia dated to 7th cent. BC (Vasić 2010, 42–43). Example from Vranjic can be correlated with other examples of twisted torques present in large number in Glasinac mainly in younger graves of phase IIIC (HaB1; Vasić 2010, 42) or, in Pare's chronology, dated to Glasinac IA phase (Pare 1998, 334, Abb. 19: 3). On the other hand, very similar specimen from Konjuša in Western Serbia has been dated to a time circa Ha2–HaB1 (Vasić 2010, Taf. 28: 185; 44), so quite similar to discussed object from Vranjic.

[167] Batović 1983, 339, Sl. 21: 7.

[168] Drechsler-Bižić 1968, 34.

[169] Homen 1982, Tab. II: 2.

[170] Homen 1982, Tab. II: 3.

[171] Homen 1982, Tab. II: 1.

[172] Cf. Vinski-Gasparini 1983, 652–662.

[173] Cf. Říhovskỳ 1979, 26–27, 36, 44, Taf. 4: 44; 10: 191–192; 13–14; 17–21.

[174] Ložnjak Dizdar 2014, 241.

[175] Sprincz, Beck 1981, 483, Fig. 5: 12–13,26,34; 8; Tab. 2.

in Romania belonging to similar period.[176] The coevality and co-occurrence of the aforementioned pins and amber beads is potentially a sign of them being transferred along similar routes.

The Romanian contexts with amber beads from that period may have more relevance for the deposit of 45 amber beads in the hoard of Majdan near Vršac – the richest LBA amber assemblage discovered so far in the former Yugoslavia. Similarities between the beads from Majdan and those from contemporaneous sites in Romania do not concern only the biconical form, but include also oblong polyhedral beads (type 141)[177] – a specific type not recognized in any other Bronze Age context in Western and Central Balkans. A short distance separating Romanian deposits containing such beads from the hoard of Majdan in the western part of Banat proves that the latter is, in fact the most south-western extension of significant amber finds concentration in Transylvania and Banat. This hypothesis can be reinforced with some of the bronze objects included in the Majdan hoard: situla of the Hajdu-Böszörményi type,[178] spectacle fibula of the Suchdol/Suseni type,[179] or spearhead-shape pendants, often associated with fibulae of *Posamenteriefibeln* of the group C (e.g. types Sviloš and Suseni).[180]

Therefore, presence of elongated biconical beads in Vidasi (Kvarner), Trcela-Vranjić (Middle Dalmatia), Križevci (Northern Croatia) and Majdan (Banat) does not necessarily indicate the same supplier or the same exchange route. In contrast to the Tiryns- or Allumiere-type beads introduced roughly at the same time, this form does not manifest such a circumscribed distribution and its origins should be sought after among the Urnfield cultures and areas within their sphere of influence.

FINAL CONSIDERATIONS

The main conclusion stemming from observations of Bronze Age amber artefacts in Western and Central Balkans is that their previously developed typology, upon being supplemented by chrono- and chorological aspects, offers a useful tool in investigating circulation-exchange of the discussed material. Chronological types differentiation revealed by seriation allows discerning the change in form, size and quality of processing of amber beads at the turn of the MBA and LBA. Application of CA and NA enabled to determine the level of regionalization of the types in the latter periods, and showed the degree of similarity between regionally grouped contexts with amber. Networks resulting from the analysis with their nodes and links, despite having to be subjected to critical evaluation in the light of other archaeological data, potentially illustrate relationships between recipients of amber and the roles which they played in the process of amber inflow to the Balkans and its circulation within this zone.

Provenience analyses almost exclusively indicate succinate (Baltic amber) as the source material the amber jewellery used in the Balkans during the Bronze Age was created from. Therefore one has to accept that the bulk of amber was imported through the Carpathian Basin from Northern Europe, where sources of succinite are located, while Italy, and to a lesser degree also Greece, most probably were accountable for the redistribution of a portion of this material to certain areas of the Balkans. Typological comparison of amber objects from the study area with their counterparts from neighboring regions of Europe reveals many similarities, and apparently proves abovementioned hypothesis. With the help of other artefacts co-occurring with amber, it is possible to specify the connections linking individual regions of amber reception in the Balkans with outer cultures (*Figs. 11* and *12*).

In the first phase of amber inflow to Western and Central Balkans, roughly coeval with the MBA ($17/16^{th}$–$13/12^{th}$ century BC), the main regions of its reception/acquisition were, on one hand, Podrinje–Western Serbia showing evidence of interactions with the Tumulus culture and cultural milieu of the Carpathian Basin, and on the other hand Istria which, apart from the north, could have obtained amber through Northern Italy (*Fig. 11*). Considerable accumulation of similar amber artefacts in that period is notable within inland

[176] Boroffka 2001, 399, Abb. 4: 7–8,12,14,17,19–22; Gogâltan 2016, 153–156, Figs. 7–10.

[177] Rašajski 1988, Fig. 58–60; cf. Boroffka 2001, Abb. 3: 22,24,26; 4: 9,11,16; Gogâltan 2016, Fig. 11.

[178] Rašajski 1988, 25–26, Fig. 51–54.

[179] Rašajski 1988, Fig. 3. R. Vasić classified the fibula from Majdan to the type Suchdol on the basis of similarities with Bohemian spectacle fibulae (Vasić 1999, 29–30, Tab. 8: 102). More recently S. Pabst included the discussed specimen in Suseni type (Pabst 2008, 628, note 172, Abb. 12: 1, Liste 10). Regardless of the typological denominator, the fibula finds several counterparts in the present territory of Romania.

[180] Rašajski 1988, Figs. 12–13; cf. Bader 1983, 55, Taf. 9–10, 43B.

regions stretching along the Drina Basin, though the White and Black Drim catchment zone, all the way down to Southeast Albania. Moreover, regions along these watercourses (Podrinje–Western Serbia; Glasinac; Kosovo; Northeast Albania; Mat Valley; Kolonjë Plateau) are linked by presence of typologically related bronze objects, i.e. pins, bracelets, pendants and swords. These items can be regarded as imports accompanying amber in the long process of exchange during which they were changing hands from the supplier to the recipient. At the same time, apart from similarities in amber adornments, there is no direct evidence of interactions of the above listed regions with Istria. Thus, the majority of amber can be assumed to have been transported through Central Balkans, with Drina, White Drim and Black Drim marking out the main axis of amber trade in the MBA.[181] Regions situated further to the west could obtain amber from Pannonia as in the case of Northern Croatia, or, like Istria and Montenegro, had an access to amber through the communities inhabiting the Apennine Peninsula, where during *Bronzo Medio–Bronzo Recente* (ca. 17th–13th centuries BC) this material had already been widely present.

Regarding the morphology of amber jewellery used at the time in Western and Central Balkans, it has to be stressed that artefacts documented so far manifest a low level of regionalization i.e. they largely resemble simple forms commonly appearing in most of Europe. It seems that at the initial phases of amber trade (during the MBA) processing of the beads was not widespread, nor was it developed. The Balkan communities at the time undoubtedly had an access to sizable amounts of amber, however most probably in a finished form, as no direct evidence of local amber processing has been found. Similarities between the typologically classifiable beads from Western and Central Balkans, and the neighboring regions, seemingly testify to shaping of the beads in few workshops placed outside the Balkans, most probably in the Northern Europe. Moreover, it seems likely that in order to increase the numbers of beads, larger pieces of amber (either raw lumps or ready-made products) were crudely partitioned and barely perforated to make them usable as adornments. One can only suspect that this peculiar process took place already at the final destination, not along the way the material had to travel to get there.

A significant change in the assortment of amber beads came about the 13th–12th centuries BC. Some of the previously used types disappeared and the new ones, usually of bigger size with an elongated shape, sometimes decorated, were introduced. Furthermore, the number of amorphous-crudely processed beads decreased significantly in the following period (the LBA). Changes affected also the general structure of amber's circulation in the Balkans: the old routes and centers of amber acquisition were replaced with the newly emerged ones (*Fig. 12*). This transition is reflected by changes of cultural substratum in the Balkans and in the neighboring areas.The absence of amber in Western Serbia during the Late Bronze Age might be connected with disintegration of the Belegiš I culture.[182] The earlier units were replaced by the Belegiš II-Gava culture with black-channeled pottery in Vojvodina-Srem and the Paraćin II culture in the Morava Valley. Perhaps these changes put an end to the metallurgic center involving mining, smelting and casting activity in Podrinje and the Jadar Valley which could have stimulated amber import in the MBA?[183]

In the case of Istria what is worth to note is that the disappearance of amber around 1200/1150 BC corresponds with the end of the Castellieri/Gradine culture, and introduction of cremation and some elements of material culture manifesting the Urnfield culture.[184] This transition corresponds with termination, sometimes abrupt, of existence of the so-called early horizon of *gradine*, such as Monkodonja.[185] Perhaps afterwards there was no longer a social group on Istria generating demand for amber; however one has to consider the possibility that a considerable part amber artefacts was combusted due to cremation burial rite.

After 1200 BC the coastal-sea route along the eastern Adriatic shore became more important for the circulation of amber, most probably owing to the growing significance of the Po Valley in processing and redistribution of amber. The main Balkan center of amber acquisition shifted to the Croatian Littoral (Kvarner–Northern Dalmatia), from where the beads could have been sent further

[181] Central Balkans seems to be the easternmost route of amber translocation, as no amber artefacts dated to the Bronze Age has been found further to the east, on the territory of Bulgaria (cf. Ivanova, Kuleff 2009; Gergova 2016).

[182] Tasić 2004, 31; Filipović 2008, 102; Dmitrović 2014, 264–265; Bulatović, Filipović 2017, 158.

[183] Cf. Huska et al. 2014; Mason et al. 2016.

[184] Cf. Mihovilić 2013a, 115–143.

[185] Mihovilić 2013b, 874; cf. Hänsel et al. 2015.

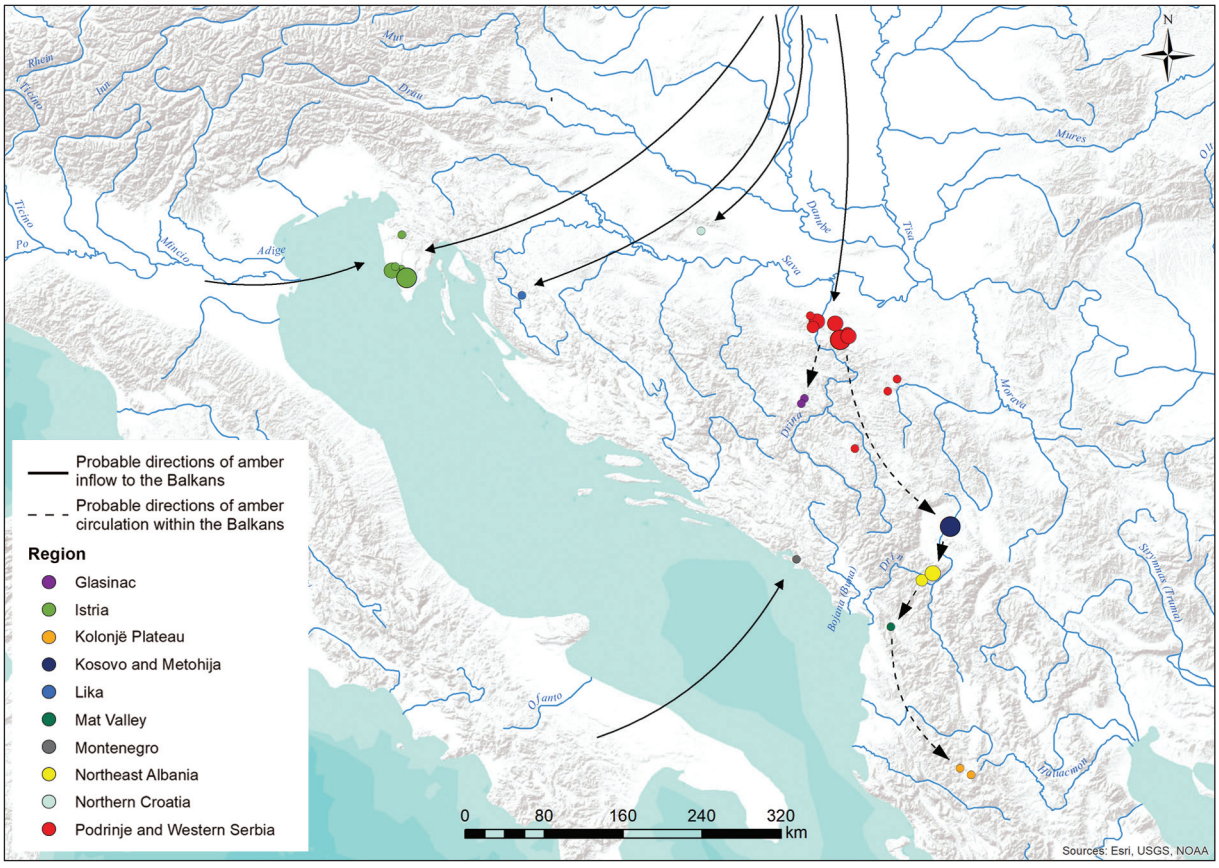

Fig. 11: MBA (16th–13/12th c. BC) regions of amber acquisition, and probable directions of amber inflow and circulation in Western and Central Balkans.
Sl. 11: Regije z jantarjem v srednji bronasti dobi (od 16. do 13./12. st. pr. n. št.) in verjetne smeri dotoka in pretoka jantarja na zahodnem in srednjem Balkanu.

south along the coast, or to the interior (*Fig. 12*). The reception and exchange of amber in inland parts of the Balkans must have been sporadic during the Late Bronze Age. Nevertheless, in this phase, due to noticeable regionalization of amber bead forms, one can observe creation of styles largely confined to specific zones, or otherwise not co-occurring at the same sites. The specific types of amber beads indicating individual styles have analogies in various areas surrounding the Balkans. Consequently it is proper to speak of several possible sources of amber inflow and, perhaps also, an increasing influence of local Balkan communities on shaping this material according to their own preferences, as revealed by some beads representing distinctly local types (2 and 3).

During the Late Bronze Age one witnesses the emergence of three regional styles of amber processing. The oldest one, and arguably the least characteristic, includes amber finds from the Vardar Valley, Pelagonia, and the Korçe Basin, thus can be tentatively termed as the "southern hinterland" style or zone, depending if the spatial or morphological criterion is applied. Presence of Aegean imports, or traces of the Mycenaean culture impact on the local cultures, including the contexts with amber, potentially indicates that amber reached that zone through Greece. Also the forms of amber beads present in the Vardar Valley and the Korçe Basin have analogies among LH IIIB–IIIC contexts on Greek mainland and the islands. Moreover, discissued hypothesis is indirectly confirmed by disappearance of amber jewellery further north in the Balkan interior after 1200 BC, or in other words at the end of the Middle Bronze Age.

The second style/zone spans the areas of Kvarner and Lika, with singular finds representing it in the hinterland areas (Glasinac, Southern Slovenia and Mat Valley), thus can be defined tentatively as the "coastal". The paramount examples of this style are types 1 and 4 with their counterparts in the Central Mediterranean, especially Italy, defined as the Tiryns and Allumiere types respectively. Types 2 and 3, on the other hand, may be regarded as

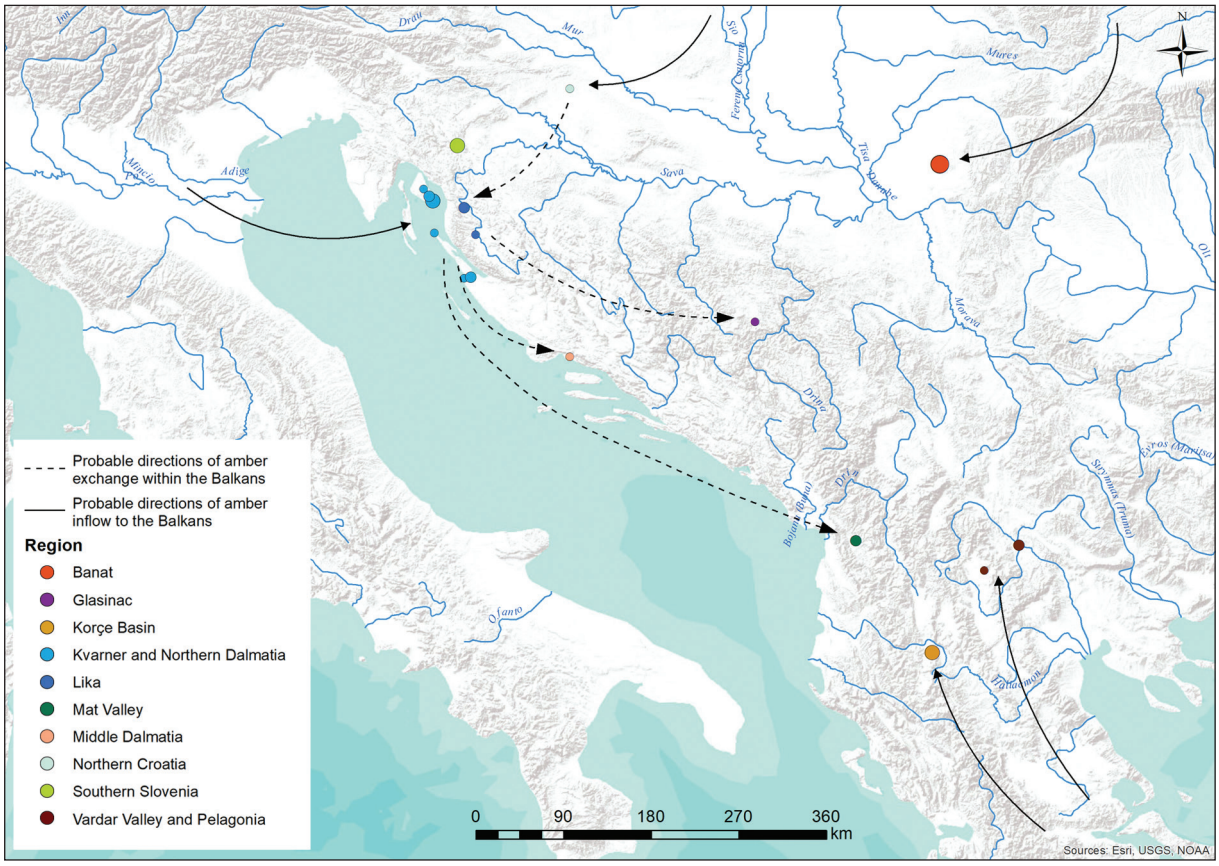

Fig. 12: LBA (13/12th–10th c. BC) regions of amber acquisition, and probable directions of amber inflow and circulation in Western and Central Balkans.
Sl. 12: Regije z jantarjem v mlajši- oz. pozni bronasti dobi (od 13./12. do 10. st. pr. n. št.) in verjetne smeri dotoka in pretoka jantarja na zahodnem in srednjem Balkanu.

local adaptations of these two forms – perhaps first indigenous products of amber-working in the Croatian Littoral. Eclectic character of the material culture, particularly metallurgy, of Kvarner and Northern Croatia, including bronze items inspired by or imported from the Apennine Peninsula, is another proof that the bulk of amber was reaching the eastern Adriatic Coast across the sea from the west. Nonetheless, there are some bronze objects evoking influences of the Urnfield cultures among the evidence from the area, which may support the idea that at least some amber, namely the elongated biconical beads (type 13) almost unknown there, were sent in from north-east, and later channeled south-east to Dalmatia.

The third style, defined as the "northern hinterland" comprises few isolated sites scattered mainly along the northern fringes of the Balkans (Northern Croatia and Banat), with some finds coming also from the coastal area (Middle Dalmatia). Finds representative of this style (biconical beads in flattened and elongated variants) incidentally occur in the regions belonging to the other styles/zones, however almost never appear intermingled at the same site with typologically foreign artefacts. The only exception is Barç, tumulus 2, grave 2, where elongated biconical beads were found together with cylindrical beads typical for the "southern hinterland" style. As the former type is scarcely attested in the Mycenaean culture, it should be considered whether these beads actually had not reached Southern Albania from the north. Remaining sites classified to the "northern hinterland" style do not form any coherent unit, but rather a group loosely connected by shared morphology of amber beads, with each member belonging to a culturally different province. These observations stem from analysis of the metal artefacts co-occurring with amber. Consequently, the presence of amber in Northern Croatia during the Late Bronze Age should be explained through contacts with Transdanubia, while amber finds from west Banat, have more to do with communities of Transylvania–eastern Carpathian Basin. Middle Dalmatia, on the other

hand, could have been supplied with amber through exchange with the Croatian Littoral, although one cannot rule out a more inland connection leading towards Sava–Drava interfluve and the Danube Basin. Which routes exactly were most likely used by travellers – merchants is up for debate, however it can be concluded that during certain periods in the 2nd mil. BC goods did move across Western and Central Balkans, and between Adriatic coastal area, and amber undoubtedly was one of them.

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Bronastodobni jantar na zahodnem in srednjem Balkanu

Povzetek

Bistveni zaključek, ki izhaja iz preučevanja bronastodobnih jantarnih predmetov zahodnega in srednjega Balkana, je ugotovitev, da veljavna tipologija, dopolnjena s krono- in horološkimi vidiki (*sl. 1; 2*), ponuja koristno orodje pri raziskovanju kroženja in izmenjave obravnavanega gradiva. Kronološke razlike, dobljene s seriacijo, omogočajo opazovanje sprememb oblike, velikosti in kakovosti obdelave jantarnih jagod na prehodu iz srednje v mlajšo bronasto dobo (*sl. 3–6*). Z analizo spremenljivk (*sl. 7; 8*) in mrežno analizo (*sl. 9; 10*) je bilo mogoče določiti stopnje regionalizacije tipov v omenjenih obdobjih in pokazati stopnjo podobnosti med regionalno omejenimi konteksti z jantarjem. Omrežja, ki so rezultat analize in njihova vozlišča ter povezave, kljub temu, da je treba kritično ovrednotiti tudi druge arheološke podatke, potencialno ponazarjajo razmerja med prejemniki jantarja in vlogami, ki so jih ti igrali v procesu dotoka jantarja na Balkan in v njegovem kroženju po njem.

Analize izvora surovine kažejo skoraj izključno na baltski jantar, kot izhodiščni material, iz katerega so izdelovali jantarni nakit, ki so ga nosili na bronastodobnem Balkanu. Večina jantarja je bila uvožena prek Karpatske kotline iz severne Evrope, kjer so ležišča, del jantarja pa je bil redistribuiran na določena območja Balkana najverjetneje iz Italije in v manjši meri iz Grčije. Tipološka primerjava jantarnih predmetov s preučevanega območja s sorodnimi izdelki iz sosednjih evropskih regij razkriva veliko podobnosti in jasno potrjuje navedeno hipotezo. S pomočjo ostalih predmetov, ki se pojavljajo poleg jantarja, je mogoče določiti povezave med posameznimi regijami z jantarjem na Balkanu in kulturami izven njega (*sl. 11* in *12*).

V prvi fazi dotoka jantarja na zahodni in srednji Balkan, ki je bila približno sočasna s srednjo bronasto dobo (17./16. do 13./12. st. pr. n. št.), sta bila dva glavna cilja: na eni strani Podrinje in zahodna Srbija, kar se kaže v povezavah s kulturo gomil in kulturnim okoljem Karpatske kotline, in na drugi strani Istra, ki bi razen severnega dela lahko dobila jantar iz severne Italije (*sl. 11*). V tem obdobju je opaziti kopičenje podobnih jantarnih predmetov znotraj celinskih območij, ki se raztezajo v porečjih Drine ter Belega in Črnega Drima vse do jugovzhodne Albanije. Poleg tega regije vzdolž omenjenih vodotokov (Podrinje – Zahodna Srbija; Glasinac; Kosovo; severovzhodna Albanija; dolina Mat; planota Kolonjë) povezujejo tipološko podobni bronasti predmeti, kot so igle, zapestnice, obeski in meči. Te predmete je mogoče šteti kot uvoz, ki spremlja jantar v dolgem procesu menjave od dobavitelja do prejemnika. Hkrati pa, razen podobnih jantarnih izdelkov, ni neposrednih dokazov o interakciji naštetih regij z Istro. Tako lahko domnevamo, da je večina jantarja prišla prek osrednjega Balkana. Drina ter Beli in Črni Drim so bili v srednji bronasti dobi glavna os trgovine z jantarjem. Regije, ki ležijo zahodneje, bi lahko dobivale jantar iz Panonije, npr. severna Hrvaška. Istra in Črna gora sta imeli dostop do jantarja prek skupnosti, ki so živele na Apeninskem polotoku, kjer je bil v času *Bronzo Medio* do *Bronzo Recente* (približno 17. do 13. st. pr. n. št.) že zelo razširjen.

Kar se tiče oblik jantarnega nakita, ki je bil v bronasti dobi v uporabi na zahodnem in srednjem Balkanu, je treba poudariti, da doslej dokumentirani predmeti kažejo nizko raven regionalizacije. V veliki meri gre za preproste oblike, ki se pojavljajo široko po Evropi. Zdi se, da v začetnih fazah trgovine z jantarjem oblikovanje jagod ni bilo razvito (in zato tudi ni bilo široko razširjeno). Takratne balkanske skupnosti so imele nedvomno dostop do velikih količin jantarja, verjetno v končni obliki, saj neposrednih dokazov o lokalni izdelavi ni. Podobnosti tipološko opredeljenih jantarnih jagod z zahodnega in srednjega Balkana ter sosednjih regij kažejo na oblikovanje jagod v nekaj delavnicah izven Balkana, najverjetneje v severni Evropi. Poleg tega se zdi, da so bili za pridobitev večjega števila jagod večji kosi jantarja (bodisi surove kepe bodisi gotovi izdelki) le grobo razkosani in že taki – komajda predrti – so lahko služili kot nakit. Lahko samo domnevamo, da se je ta postopek odvijal na končnem cilju, ne pa kje na poti, po kateri je material potoval.

Pozneje, v 13. do 12. stoletju, se je bistveno spremenil nabor oblik jantarnih jagod. Nekateri prej uveljavljeni tipi so izginili, pojavijo se novi: običajno večje, bolj podolgovate, včasih okraše-

ne. Poleg tega se je v sledečem obdobju (v pozni bronasti dobi) število amorfnih, grobo izdelanih jagod znatno zmanjšalo. Spremembe so vplivale tudi na splošno strukturo kroženja jantarja na Balkanu: stare poti in središča pridobivanja jantarja so zamenjale nove (*sl. 12*). Ta prehod odseva v spremembah kulturnega substrata na Balkanu in sosednjih območjih.

Odsotnost jantarja v zahodni Srbiji v mlajši in pozni bronasti dobi je lahko povezana s propadom kulture Belegiš I. Nadomestili sta jo kulturna skupina Belegiš II-Gava s črno kanelirano keramiko v Vojvodini-Sremu in skupina Paraćin II v dolini Morave. Morda so te spremembe vodile k propadu središč metalurgije (vključno z rudarstvom, taljenjem in ulivanjem) v Podrinju in dolini Jadra, ki so morda spodbujala uvoz jantarja v srednji bronasti dobi?

V primeru Istre je treba opozoriti, da izginotje jantarja okoli leta 1200/1150 pr. n. št. ustreza koncu kaštelirske kulture in uvajanju upepeljevanja ter nekaterih elementov žarnogrobiščne kulture. Ta prehod ustreza prenehanju obstoja – včasih nenadnemu – t. i. zgodnjega horizonta gradin, kot je Monkodonja. Potem morda v Istri ni bilo več družbene skupine, ki bi povpraševala po jantarju; vendar je treba upoštevati tudi možnost, da je velik del jantarnih izdelkov zgorel in zaradi načina pokopavanja ni ohranjen.

Po letu 1200 pr. n. št. je obalno-morska pot ob obali vzhodnega Jadrana postala pomembnejša za kroženje jantarja, najverjetneje zaradi vse večjega pomena območja Padske doline v predelavi in redistribuciji. Glavno balkansko središče uvoza jantarja se je premaknilo na hrvaško primorje (Kvarner, severna Dalmacija), od koder je bilo jagode mogoče poslati ob obali na jug ali v notranjost (*sl. 12*). Uvoz in menjava jantarja v notranjih delih Balkana sta bila v mlajši in pozni bronasti dobi najverjetneje sporadična. Kljub temu lahko v tej fazi zaradi opazne regionalizacije oblik jantarnih jagod opazimo pojav slogov, ki so večinoma omejeni na določena območja. Posebni tipi jantarnih jagod, izdelani v samosvojem slogu, imajo primerjave na različnih območjih Balkana. Zato je umestno govoriti o več možnih poteh uvoza surovine in morda tudi o vse večjem vplivu lokalnih balkanskih skupnosti na oblikovanje tega materiala v skladu z njihovimi željami. Dokaz bi lahko bili nekateri izrazito lokalni tipi jagod: tipa 2 in 3 (Palavestra 1993) (*sl. 3*).

V mlajši in pozni bronasti dobi smo priča trem regionalnim stilom obdelave jantarja.

– Najstarejši in verjetno najmanj značilen stil opažamo pri jantarnih najdbah iz doline Vardarja, Pelagonije in kotline Korçe. Odvisno od prostorskega ali morfološkega merila ga lahko pogojno imenujemo "slog ali območje južnega zaledja". Prisotnost egejskih importov oz. sledovi vplivov mikenske na lokalne kulture, vključno z jantarjevimi konteksti, verjetno kažejo, da je jantar dosegel to območje iz Grčije. Oblike jantarnih jagod iz doline Vardarja in porečja Korçze so podobne tistim v kontekstih LH IIIB–LH IIIC na grškem kopnem in otokih. Poleg tega hipotezo posredno potrjuje tudi izginotje jantarnega nakita v severnobalkanski notranjosti po letu 1200 pr. n. št. ali – z drugimi besedami – na koncu srednje bronaste dobe.

– Drugi stil/območje opazujemo v Kvarnerju in Liki. Skupaj s posebnimi najdbami iz zaledja (Glasinac, južna Slovenija in dolina Mat) ga je mogoče poskusno opredeliti kot "obalni". Najbolj značilna predstavnika tega sloga jantarnih jagod sta tipa 1 in 4 (Palavestra 1993) s primerjavami v srednjem Sredozemlju, zlasti v Italiji, kjer sta tipa definirana kot Tiryns in Allumiere. Po drugi strani pa tipa 2 in 3 (Palavestra 1993) lahko razumemo kot lokalne prilagoditve teh dveh oblik – morda predstavljata prve avtohtone jantarne izdelke v hrvaškem Primorju. Poseben značaj materialne kulture Kvarnerja in severne Hrvaške, vključno z metalurgijo – z bronastimi izdelki, navdihnjenimi ali uvoženimi z Apeninskega polotoka –, je še en dokaz, da je večina jantarja dosegla vzhodno jadransko obalo z zahoda, prek morja. Kljub temu je med predmeti s tega območja nekaj bronastih, ki kažejo na vpliv žarnogrobiščne kulture, kar bi lahko podprlo tezo, da je bilo vsaj nekaj jantarja, in sicer (izjemno maloštevilne) podolgovate bikonične jagode (tip 13; Palavestra 1993), poslanega s severovzhoda in pozneje usmerjenega na jugovzhod, proti Dalmaciji.

– Tretji stil/območje, opredeljen kot "severno zaledje", obsega nekaj izoliranih krajev, raztresenih večinoma po severnem robu Balkana (severna Hrvaška, Banat), nekaj najdb pa prihaja tudi z obalnega območja (srednja Dalmacija). Najdbe, ki so predstavniki tega sloga (bikonične jagode v sploščenih in podolgovatih različicah), se posamično pojavljajo v regijah, ki pripadajo drugim stilom/conam, vendar se skoraj nikoli na istem mestu ne mešajo s tipološko tujimi artefakti. Edina izjema je najdišče Barç (grob 2 v gomili 2), kjer so bile najdene podolgovate bikonične jagode skupaj s cilindričnimi, značilnimi za slog "južnega zaledja". Ker so slednje v mikenski kulturi redke, bi kazalo

razmisliti, ali niso te jagode dejansko prišle v južno Albanijo s severa. Preostala najdišča, pripisana slogu "severnega zaledja", ne sestavljajo skladne enote, temveč skupino, ki jo ohlapno povezujejo jantarne jagode različnih oblik in ki pripada kulturno različnim provincam. Ta opažanja izhajajo iz analize kovinskih izdelkov, ki se pojavljajo skupaj z jantarjem. Zato je treba prisotnost jantarja v severni Hrvaški v mlajši in pozni bronasti dobi razlagati kot posledico stikov s Transdanubijo, medtem ko imajo najdbe jantarja iz zahodnega Banata več skupnega s skupnostmi Transilvanije in vzhodne Karpatske kotline. Srednja Dalmacija bi se po drugi strani lahko oskrbovala z jantarjem prek menjave s hrvaškim Primorjem, čeprav ne moremo izključiti notranje povezave, ki vodi proti medrečju Save in Drave ter Podonavju. Katere poti so potniki oziroma trgovci najverjetneje uporabljali, je stvar razprave, vendar je mogoče zaključiti, da so v določenih obdobjih v drugem tisočletju pr. n. št. po zahodnem in srednjem Balkanu ter med Jadransko obalo krožile dobrine in jantar je bil nedvomno ena od njih.

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