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SADRŽAJ / CONTENTS

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The eighteenth volume of the journal *Archaeologia Adriatica* is dedicated to professor emeritus Brunislav Marijanović, as an expression of gratitude for everything he has done for the Department of Archaeology, University of Zadar and archaeology in general.

UKRASNI PREDMETI OD ŠKOLJKI S LOKALITETA OSIJEK – HERMANOV VINOGRAD

MOLLUSC-SHELL DECORATIVE ITEMS FROM THE OSIJEK – HERMANOV VINOGRAD SITE

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Ljušture mekušaca među najranijim su sirovinama kojim se ljudska vrsta koristila za izradu ukrasa. Privlačile su pripadnike roda Homo još od srednjeg paleolitika svojim bojama, oblicima, teksturom površine, kao i podrijetlom (s obale mora, s velike udaljenosti i sl.). Tijekom neolitika i eneolitika školjke se nastavljaju upotrebljavati za izradu različitih predmeta, prije svega za dekorativne svrhe, a osobito su marinske školjke Spondylus i Glycymeris bile široko rasprostranjene u većem dijelu Europe. Njihova distribucija pokazuje živu mrežu trgovine i razmjene koja je postojala među prapovijesnim zajednicama, ali i oslikavala simboličke vrijednosti. Rasprostranjenost nakita od ljuštura mekušaca, njegovi oblici, način korištenja, simboličko značenje, stalno se dopunjuju novim nalazima i novim podatcima, i na taj način doprinose boljem razumijevanju fenomena nakita od ovih sirovina. U ovom radu bit će predstavljeni ukrasni predmeti od školjki otkriveni tijekom arheoloških istraživanja na lokalitetu Hermanov vinograd u Osijeku, iz cjelina koje pripadaju sopotskoj kulturi.

Key words:
Neolithic, Sopot culture, Hermanov Vinograd, decorative objects, shells, recycling

Mollusc shells are among the earliest raw materials used by humans for production of ornaments. They attracted the members of the Homo genus since the Middle Palaeolithic with their colours, shapes, surface texture, as well as their origin (from sea shores, from large distances, etc.). During the Neolithic and Eneolithic period, shells continued to be used for production of diverse objects, especially decorative, and marine shells Spondylus and Glycymeris were particularly widespread in most of Europe. Their distribution shows a vivid trade and exchange network that existed

among the prehistoric communities, but also reflects symbolic values. The distribution of the mollusc shell jewellery, their shapes, modes of use, symbolic values, are constantly being enlarged by new findings and new data, thus contributing to a better understanding of the mollusc shell ornament phenomenon. In this paper, decorative objects made from shells will be presented that were discovered during the archaeological research activities at the site of Hermanov Vinograd in Osijek, from contexts attributed to the Sopot culture.

NAKIT OD LJUŠTURA MEKUŠACA U PRAPOVIJESTI

Tijekom prapovijesti ukrasni predmeti izrađivani su od različitih materijala – od kamena, kostiju, rogova, zubi različitih životinja, ljuštura mekušaca, gline, metala, kao i od različitih organskih sirovina koje se nisu očuvale.[1] Među najstarije ukrasne predmete spadaju oni izrađeni od tvrdih sirovina životinjskog podrijetla, osobito oni izrađeni od ljuštura mekušaca. Određeni podatci sugeriraju da su ljušture mekušaca privlačile pozornost još pripadnika vrste *Homo neanderthalensis*, koji su katkad prikupljali školjke i nosili ih sa sobom do udaljenih mjesta, premda se pouzdani nalazi korištenja školjki u neutilitarne svrhe povezuju s modernim čovjekom.[2] Među najstarijim nalazima mogućih ukrasa od ljuštura mekušaca mogu se izdvojiti *Glycymeris* školjke s perforacijama koje su nastale prirodnim putem, a koje su nađene na lokalitetu Qafzeh Cave u današnjem Izraelu. Njihova je starost procijenjena na oko 120 000 godina. Tragovi na perforacijama pokazuju da su ove školjke bile nanizane na neku vrpcu, odnosno, da je odabir školjki s već postojećim perforacijama bio svjestan i namjeran.[3] S još jednog lokaliteta u Izraelu, Mugharet es-Skhul, potječu nalazi perforiranih mekušaca *Nassarius gibbosulus*, procijenjene starosti više od 100 000 godina, a takvi su ukrasi poznati i s nalazišta u sjevernoj Africi, poput Oued Djebbana u današnjem Alžiru.[4]

U gornjem paleolitiku u Europi ukrasi su izrađivani od perforiranih zuba, kostiju, kamena, a osobito su ukrasi od ljuštura mekušaca bili raznovrsni i široko rasprostranjeni.[5] Zastupljene su brojne vrste, uključujući *Dentalium* sp., *Conus* sp., *Glycymeris* sp., *Littorina*

1 TABORIN 1974; 1993; CATTELAIN 2012; BAYSAL 2019.
2 BAR-YOSEF MAYER 2020 s bilješkama.
3 BAR-YOSEF MAYER et al. 2020.
4 VANHAEREN et al. 2006; CATTELAIN 2012: 7.
5 TABORIN 1993; ÁLVAREZ-FERNÁNDEZ 2005; ÁLVAREZ-FERNÁNDEZ, JÖRIS 2007; CVITKUŠIĆ et al. 2024.

MOLLUSC-SHELL JEWELLERY IN PREHISTORY

In the prehistoric period, ornamental objects were made from various materials – stone, bone, horn/antler, animal teeth, mollusc shells, clay, metal, as well as different organic materials that have not been preserved.[1] Among the oldest ornamental objects are those made from hard materials of animal origin, especially mollusc shells. Certain data suggest that mollusc shells also attracted the attention of members of the *Homo neanderthalensis* species, who sometimes collected shells and transported them to distant places, although reliable confirmation of shell use for non-utilitarian purposes is linked to modern humans.[2] Among the oldest finds of what are presumed to be ornaments made from mollusc shells are *Glycymeris* shells with naturally created perforations, recovered at the Qafzeh Cave site in present-day Israel. Their age is estimated at about 120,000 years. Traces on the perforations demonstrate that the shells were beaded on some sort of ribbon and that the selection of naturally perforated shells was conscious and deliberate.[3] Finds of perforated *Nassarius gibbosulus* molluscs originate Mugharet-es-Skhul, another site in Israel; their age is estimated to be over 100,000 years. Such ornaments are also known from sites in North Africa, such as Oued Djebban in present-day Algeria.[4]

In the Upper Palaeolithic in Europe, decorations were made of perforated teeth, bones and stones, but those of mollusc shells were particularly diverse and widespread.[5] Many species are represented, among which are *Dentalium* sp., *Conus* sp., *Glycymeris* sp., *Littorina obtusata*, *Nassarius gibbosulus*, *Nassarius reticulatus*, *Cyclope neritea*, *Columbella rustica* and many more; both specimens with

1 TABORIN 1974; 1993; CATTELAIN 2012; BAYSAL 2019.
2 BAR-YOSEF MAYER 2020, with references.
3 BAR-YOSEF MAYER et al. 2020.
4 VANHAEREN et al. 2006; CATTELAIN 2012: 7.
5 TABORIN 1993; ÁLVAREZ-FERNÁNDEZ 2005; ÁLVAREZ-FERNÁNDEZ, JÖRIS 2007; CVITKUŠIĆ et al. 2024.

obtusata, *Nassarius gibosulus*, *Nassarius reticulatus*, *Cyclope neritea*, *Columbella rustica* i mnoge druge, te obuhvaćaju i iskorištene primjerke s prirodnim rupama i one s antropogenim modifikacijama.[6] Ovi su predmeti bez dvojbe bili osobni ukras, samostalan ili dio odjeće, o čemu svjedoče nalazi poput onog s lokaliteta Arene Candide u Italiji, gdje je otkriven skelet iz vremena *gravettiena* s iznimno bogatim nalazima, uključujući i ukrase od mekušaca *Cypraea*, *Nassarius*, *Trivia* i *Mitrella*, kao i nekoliko stotina perforiranih ljuštura vrste *Cyclope*, koji su bili pričvršćeni na pokrivalo za glavu.[7] Korištenje ljuštura mekušaca nastavlja se i u holocenu.[8] Tijekom neolitika u Europi najčešći ukrasni predmeti jesu oni izrađeni od tvrdih sirovina životinjskog podrijetla (kosti, rogovi, zubi, ljušture mekušaca), potom od kamena i u manjoj mjeri od keramike,[9] dok se početkom eneolitika počinje javljati i nakit od zlata i bakra.[10]

Osim estetske, odnosno dekorativne funkcije, ovi su predmeti mogli imati apotropejsku, profilaktičku, iscjeliteljsku ulogu, mogli su oslikavati status, prestiž, biti oznaka grupnog ili individualnog identiteta itd.;[11] međutim, o ovim se simboličkim značenjima i vrijednostima ne mogu donijeti bliži zaključci. Izbor određene sirovine bio je najvećim dijelom uvjetovan kulturnim razlozima – osobito su mogle biti cijenjene rijetke, teško dostupne sirovine pristigle s velikih udaljenosti, sirovine od životinjske vrste kojoj je pripisana određena simbolička vrijednost,[12] i slično; osim toga, tražene su i specifične fizičko-kemijske karakteristike, kao što su tvrdoća, izgled površine, poput sjajnih, glatkih površina, i drugo, a osonatural perforations and others with anthropogenic modifications were used.[6] The items undoubtedly served as personal embellishment, worn as an independent ornament or as part of apparel, as evidenced by finds from the Arene Candide site in Italy, where a Gravettian-period skeleton with extraordinarily opulent finds was uncovered, including ornaments made from *Cypraea*, *Nassarius*, *Trivia* and *Mitrella* molluscs, along with several hundred perforated *Cyclope* shells affixed to a headdress.[7] The use of mollusc shells then continued into the Holocene.[8] During the Neolithic period in Europe, the most common ornamental objects were made from hard raw materials of animal origin (bones, horns/antlers, teeth, mollusc shells), then of stone, and (to a lesser extent) ceramics,[9] while at the beginning of the Aeneolithic, gold and copper jewellery began to appear.[10]

In addition to their aesthetic or ornamental function, the objects could have had an apotropaic, prophylactic, healing role; they could have suggested status and ranking; they could have been a sign of group or individual identity, and much more;[11] however, it is not possible to draw more detailed conclusions as to these symbolic meanings and values. The selection of a specific raw material was largely a result of cultural preferences: particularly appreciated may have been rare, hard-to-provide raw materials from distant regions, those obtained from animal species that bore a certain symbolic value[12], and the like; in addition, specific physical-chemical characteristics, such as hardness, or surface appearances, such as glossy, smooth surfaces, were in high demand,

6 Cf. TABORIN 1993; BORRELLO 2004; ÁLVAREZ-FERNÁNDEZ, JÖRIS 2007; CVITKUŠIĆ et al. 2024.
7 BORRELLO 2004 s bilješkama.
8 TABORIN 1974; ÁLVAREZ-FERNÁNDEZ 2010; KOMŠO et al. 2019; CVITKUŠIĆ et al. 2024.
9 HAUZEUR, CAUWE 2012; IFANTIDIS 2019; VITEZOVIĆ, ANTONOVIĆ 2020; YELÖZER, CHRISTIDOU 2020; RAJKOVIĆ, ANTONOVIĆ *u tisku*.
10 TODOROVA, VAJSOV 2002; MICHELI 2020.
11 CATTELAIN 2012; BAYSAL 2019.
12 CHOYKE 2010.

6 TABORIN 1993; BORRELLO 2004; ÁLVAREZ-FERNÁNDEZ, JÖRIS 2007; CVITKUŠIĆ ET AL. 2024.
7 BORRELLO 2004, with references.
8 TABORIN 1974; ÁLVAREZ-FERNÁNDEZ 2010; KOMŠO et al. 2019; CVITKUŠIĆ ET AL. 2024.
9 HAUZEUR, CAUWE 2012; IFANTIDIS 2019; VITEZOVIĆ, ANTONOVIĆ 2020; YELÖZER, CHRISTIDOU 2020. RAJKOVIĆ, ANTONOVIĆ *in press*.
10 TODOROVA, VAJSOV 2002; MICHELI 2020.
11 CATTELAIN 2012; BAYSAL 2019.
12 CHOYKE 2010.

bito je bitna bila boja.[13]

Nakit izrađivan od morskih školjki iz razreda školjkaša (*Bivalvia*) – *Spondylus* sp., *Glycymeris* sp., *Cardidae* osobito je karakterističan za neolitik i eneolitik Europe. Ukrasni predmeti poput narukvica, privjesaka, perli i aplikacija pronalaze se na lokalitetima udaljenim i do nekoliko stotina kilometara od mjesta podrijetla ovih mekušaca,[14] i često se susreću kao nalazi u grobovima.[15] Zbog toga je i ponuđena hipoteza o gustoj, razgranatoj mreži razmjene u Europi, kao i o tome da su ti predmeti bili iznimno cijenjeni, moguće i korišteni za pokazivanje prestižnog statusa, bogatstva i drugog.[16]

S novim nalazima i ponovnim analizama starih zbirki, slika o distribuciji, tipovima i načinu korištenja nakita od ljuštura mekušaca tijekom neolitika u Europi dosta se usložnjava. Naime, J. Chapman je, na primjer, sugerirao prije nekoliko desetljeća, na osnovi tada raspoloživih nalaza, da su glavni putovi razmjene išli duž rijeke Dunava na centralnom Balkanu i u južnom Karpatskom udolinom.[17] No, s nalazima s lokaliteta Pločnik kod Prokuplja na jugu Srbije,[18] ili s lokaliteta Cerje – Govrlevo u Sjevernoj Makedoniji,[19] pokazalo se da je mreža distribucije znatno gušća.[20]

Pitanje podrijetla ukrasa od *Spondylus* školjki u Europi još uvijek se diskutira, međutim, većina autora smatra da ove školjke potječu s Mediterana, a ne iz fosilnih depozita na Crnom moru.[21] Prapovijesne zajednice na području Slavonije do *Spondylus* školjki mogle su doći putem kontakata sa zajednicama vinčanske kulture, ali i preko kontakata sa srednjo-

13 ANTONOVIĆ, VITEZOVIĆ, DIMIĆ 2018; BAR-YOSEF MAYER 2020.
14 WILLMS 1985; MÜLLER 1997; SCHUSTER 2002; SÉFÉRIADÈS 2010.
15 JOHN 2011; SIKLÓSI, CSENGERI 2011; MĂRGĂRIT, DIMACHE 2019.
16 MÜLLER 1997; SIKLÓSI 2004; SÉFÉRIADÈS 2010.
17 CHAPMAN 1981.
18 VITEZOVIĆ 2021a; 2021b; Pogledati i kod VITEZOVIĆ 2016.
19 FIDANOSKI 2012.
20 VITEZOVIĆ 2016.
21 SÉFÉRIADÈS 2010:180: Također vidjeti BAJNÓCZI et al. 2013.

and of particular importance was the colour.[13]

Jewellery made of sea shells from the shellfish class (*Bivalvia*) – *Spondylus* sp., *Glycymeris* sp. and *Cardiidae* was typical of the European Neolithic and Aeneolithic periods. Decorative objects such as bracelets, pendants, beads or appliqués are often recovered at sites up to several hundred kilometres away from the place of origin of the molluscs[14] and are frequently encountered as grave finds.[15] This is why, according to the proposed hypothesis, there existed a dense, highly branched exchange network in Europe, and these objects were highly valued and possibly used also to demonstrate prestigious ranking, wealth and the like.[16]

New finds and renewed analyses of old collections add to the complexity of the picture of distribution, types and usage of mollusc-shell jewellery during the Neolithic period in Europe. For example, on the basis of finds available at the time, J. Chapman suggested a few decades ago that the main routes of exchange went along the River Danube in the central Balkans and the southern Carpathian Basin.[17] However, new finds outside the Danube Region, for example from the Pločnik site near Prokuplje in southern Serbia[18] or from the Cerje – Govrlevo site in North Macedonia[19] suggest a significantly denser distribution network.[20] The origin of the *Spondylus* shell ornament in Europe is still being discussed; however, most authors believe that the shells originated from the Mediterranean rather than from Black Sea fossil deposits.[21] Prehistoric communities in Slavonia could obtain *Spondylus* shells through contacts with Vinča-culture communities, but also through contacts with cen-

13 ANTONOVIĆ, VITEZOVIĆ, DIMIĆ 2018; BAR-YOSEF MAYER 2020.
14 WILLMS 1985; MÜLLER 1997; SCHUSTER 2002; SÉFÉRIADÈS 2010.
15 JOHN 2011; SIKLÓSI, CSENGERI 2011; MĂRGĂRIT, DIMACHE 2019.
16 MÜLLER 1997; SIKLÓSI 2004; SÉFÉRIADÈS 2010.
17 CHAPMAN 1981.
18 VITEZOVIĆ 2021a; 2021b; cf. and VITEZOVIĆ 2016.
19 FIDANOSKI 2012.
20 VITEZOVIĆ 2016.
21 SÉFÉRIADÈS 2010: 180, also e.g., BAJNÓCZI et al. 2013.

bosanskim poveznicama s područja jadranske obale,[22] gdje su prisutni nalazi gotovog nakita i neobrađenih *Spondylus* školjki.[23]

Pored toga, brojne novije analize zbirki nakita, bilo s nedavnih iskopavanja ili iz muzejskih zbirki, pokazale su da je raznolikost vrsta mekušaca koje su korištene u jugoistočnoj Europi znatno veća, kao i da su morfološki tipovi raznovrsniji.[24]

Nakit izrađen od morskih mekušaca iz perioda neolitika na području Hrvatske poznat je od kraja 19. stoljeća.[25] Bogati nalazi ukrasa od ljuštura mekušaca na Jadranu pronađeni su već u starijem neolitiku – na lokalitetu Smilčić nađene su dvije *Cardium* i jedna *Venus* školjka s perforacijama.[26] Osim toga, bogati nalazi potječu s lokaliteta kao što je Benkovac – Barice, gdje su nađene perle od morskih pužića *Columbella rustica*, narukvice i privjesci od školjke *Spondylus*, ali i školjke s tragovima početne obrade,[27] na lokalitetu Crno vrilo nađeni su ukrasi izrađeni od *Cardiuma* i *Columbellae rusticae*,[28] dok s nalazišta Kargadur u Istri potječe nekoliko školjki *Cardium* s perforacijama.[29] Posljednjih nekoliko godina sve se više upotpunjavaju naša znanja o pojavi ove školjke na području međurječja Save, Drave i Dunava. Pojedinačni nalazi izrađeni od *Spondylusa* na području savsko-dravskog međurječja u kontekstu starčevačke kulture pronađeni su na lokalitetima Vinkovci – Tržnica[30] i Kneževi vinogradi,[31] dok je njihova pojava u kontekstu kasnog neolitika učestalija. Prve nalaze ukrasa od *Spondylusa* u sopotskoj kulturi spominje Stojan Dimitrijević.[32] On navodi kako je na lokalitetu Bapska, u jami 305, datiranoj u prijelaz od I.B stup-

22 TEŽAK GREGL 2001, 29.
23 KUKOČ 2012 s bilješkama.
24 MĂRGĂRIT, MIREA, RADU 2018; MĂRGĂRIT 2020.
25 BRUNŠMID 1902.
26 BATOVIĆ 1966: 53, T. XXIV/11–13, XXV/11–13.
27 KUKOČ 2012.
28 MARIJANOVIĆ 2009: T. XIX.
29 KOMŠO 2007.
30 DIMITRIJEVIĆ 1979: 241.
31 RAJKOVIĆ, VITEZOVIĆ 2020.
32 DIMITRIJEVIĆ 1968: 41.

tral-Bosnia links from the Adriatic coast,[22] where both finished jewellery and unworked *Spondylus* shell finds are present.[23]

In addition, numerous recent analyses of jewellery collections, whether yielded by recent excavations or found in museum collections, have shown that the diversity of mollusc species used in southeast Europe was significantly higher, and that the morphological types were more diverse.[24]

Jewellery from the Neolithic period in Croatia made from sea molluscs has been known since the end of the 19th century.[25] Abundant finds of mollusc shell ornaments in the Adriatic region have been recovered from as early as the Early Neolithic period – two *Cardium* shells and a *Venus* shell with perforations were found at the Smilčić site.[26] In addition, extensive finds are known from sites such as Benkovac – Barice, where beads made from *Columbella rustica* sea snail, bracelets and pendants made from *Spondylus* shell as well as shells with traces of initial processing[27] were unearthed; recovered from the Crno Vrilo site were ornaments made from *Cardium* and *Columbella rustica*[28], while several *Cardium* shells with perforations originated from the Kargadur site in Istria.[29] In the last couple of years, our knowledge about the appearance of this shell in the Sava, Drava and Danube interfluve has been significantly supplemented. Individual artefacts made from *Spondylus* in the Sava – Drava interfluve have been found at the Vinkovci – Tržnica[30] and the Kneževi Vinogradi[31] sites, in the context of the Starčevo culture; however, they occur more frequently in the context of the Late Neolithic. The first finds of *Spondylus* ornaments in the Sopot culture were mentioned by Stojan Dimitrije-

22 TEŽAK GREGL 2001, 29.
23 KUKOČ 2012, with references.
24 MĂRGĂRIT, MIREA, RADU 2018; MĂRGĂRIT 2020.
25 BRUNŠMID 1902.
26 BATOVIĆ 1966: 53, Pl. XXIV/11-13, XXV/11-13.
27 KUKOČ 2012.
28 MARIJANOVIĆ 2009: Pl. XIX.
29 KOMŠO 2007.
30 DIMITRIJEVIĆ 1979: 241.
31 RAJKOVIĆ, VITEZOVIĆ 2020.

nja u II. stupanj, pronađen fragmentirani ulomak narukvice od *Spondylusa*, i on ujedno predstavlja prvu registriranu pojavu ovog nakita na jednom sopotskom lokalitetu.[33] Novija istraživanja na lokalitetu Bapska potvrdila su prisutnost ovog nakita.[34] S. Dimitrijević spominje pojavu nakita od *Spondylusa* i u mlađem stupnju sopotske kulture, i to na lokalitetima Sopot i Hermanov vinograd – privjeske ovalnog i trapezastog oblika s dvjema rupicama i kanalima za provlačenje uzice.[35] Među ostalim lokalitetima na kojima su zabilježeni nalazi ovog tipa spadaju Čepin – Bare, Vukovar i Osijek – Filipovica / Hermanov vinograd. Do sada najveća količina ove vrste nalaza pronađena je na lokalitetu Čepin – Ovčara, gdje je otkrivena ostava s nekoliko privjesaka i perli od vrsta *Spondylus gaederopus* i *Antalis vulgaris*.[36]

Nedavna istraživanja lokaliteta Hermanov vinograd donijela su još nekoliko nalaza ukrasnih predmeta od školjki, koji će biti prikazani u ovom radu.

LOKALITET HERMANOV VINOGRAD: ARHEOLOŠKI OKVIRI

Lokalitet Hermanov vinograd nalazi se na Filipovici, jugozapadnom rubnom dijelu Osijeka, na niskom, gotovo pravilnom brežuljku površine 12 018 m² (sl. 1). U 19. i početkom 20. stoljeća na ovom brežuljku nalazio se vinograd, te su se pri obradi zemlje učestalo pojavljivali raznovrsni arheološki nalazi, od koji su neki dospjeli u tadašnji Muzej slobodnog i kraljevskog grada Osijeka. Na temelju tih nalaza tadašnji kustos, prof. Vjekoslav Celestin 1897. godine proveo je manje sondažno istraživanje. Ukupna veličina sonde iznosila je 794 m²,

33 DIMITRIJEVIĆ 1968: 41, sl. 11/11.
34 BURIĆ 2014: 9.
35 DIMITRIJEVIĆ 1968: 47.
36 RAJKOVIĆ 2014: 22–28; TRIPKOVIĆ, DIMITRIJEVIĆ, RAJKOVIĆ 2016: 343–362.

vić.[32] He stated that at the Bapska site, in Pit 305, dated to the transition from stage I-B to stage II, a *Spondylus* bracelet fragment was unearthed, representing the first registered occurrence of this jewellery type at a Sopot site.[33] Recent excavations at the Bapska site have confirmed the presence of this jewellery type.[34] S. Dimitrijević mentioned the occurrence, at the Sopot and Hermanov Vinograd sites, of *Spondylus* jewellery also in the late-stage Sopot culture: oval and trapezoidal pendants with two holes and cord channels.[35] Among other sites with recorded finds of this type are Čepin – Bare, Vukovar, and Osijek – Filipovica / Hermanov Vinograd. The largest number was at the Čepin – Ovčara site, where a hoard with several pendants and beads made from the *Spondylus gaederopus* and *Antalis vulgaris* species was uncovered.[36]

Recent excavations at the Hermanov Vinograd site produced several more finds of ornamental objects made from shells, which will be presented in this paper.

THE HERMANOV VINOGRAD SITE: ARCHAEOLOGICAL FRAMES

The Hermanov Vinograd site is located at Filipovica, in the southwestern outskirts of Osijek, on a low, almost regular hill with a surface area of 12,018 m² (Fig. 1). In the 19th and early 20th century, a vineyard stood on this hill; routine cultivation of the land frequently threw up various archaeological finds, some of which arrived at what was then the Museum of the Free and Royal Town of Osijek. Due to these finds, its curator, professor Vjekoslav Celestin, instigated trial trenching in 1897. The overall trial trench size was 794 m², but its exact position is unknown.[37] These excava-

32 DIMITRIJEVIĆ 1968: 41.
33 DIMITRIJEVIĆ 1968: 41, Fig. 11/11.
34 BURIĆ 2014: 9.
35 DIMITRIJEVIĆ 1968: 47.
36 RAJKOVIĆ 2014: 22-28; TRIPKOVIĆ, DIMITRIJEVIĆ, RAJKOVIĆ 2016: 343-362.
37 CELESTIN 1897: 104-109; s. also HRŠAK, LOS 2014: 38-42.

Slika 1. *Lokalitet Hermanov Vinograd* (izradio: M. Mađerić)
Figure 1 *Hermanov vinograd site* (made by M. Mađerić)

ali nam njezin položaj nije poznat.[37] S tog istraživanja potječe veliki broj nalaza, a već tada su prikupljeni i nalazi izrađeni od školjki. Prema keramičkom materijalu, S. Dimitrijević je Hermanov vinograd opredijelio u II. i III. fazu svoje podjele sopotske kulture.[38]

Sljedeće istraživanje provedeno je 1998. godine prije izgradnje kolektora gradske kanalizacije. Ukupno istražena površina iznosila je 638 m². Iskopavanje je obuhvatilo rubni dio naselja te nisu pronađeni stambeni objekti, već otpadne jame, ognjišta, te grob s pokojnikom u zgrčenom položaju. Tada je otkriven i dio opkopa koji je okruživao naselje.[39] Zaštitno arheološko istraživanje 2007. godine provedeno je prije polaganja kabelskog dalekovoda. Ovaj iskop presjekao je lokalitet od

[37] CELESTIN 1897: 104–109; Vidjeti također HRŠAK, LOS 2014, 38–42.
[38] DIMITRIJEVIĆ 1968.
[39] ŠIMIĆ 1999: 30–33.

tions yielded a large number of finds; from the start shells were among the material collected. Based on the ceramic material, S. Dimitrijević attributed Hermanov Vinograd to phases II and III of his Sopot-culture classification.[38]

The next excavation campaign was carried out in 1998, prior to the construction of the municipal sewage collector. The total area excavated was 638 m². The excavation covered the marginal part of the settlement and no residential buildings were found, but rather waste pits, fireplaces and a grave with a deceased individual in a crouched position. At the same time, a part of the moat enclosing the settlement was also discovered.[39] In 2007, archaeological rescue excavations were conducted prior to the laying of a cable transmission line. The dig cut the site from its eastern to its western margins over a length of

[38] DIMITRIJEVIĆ 1968.
[39] ŠIMIĆ 1999: 30-33.

istočnog do zapadnog ruba u dužini od 115 metara, a širina mu je varirala između 0,80 m i 1 m. Uočeno je kako je gustoća objekata mnogo veća u središnjem dijelu naselja, dok njihov broj prema rubovima naselja znatno opada, a neki od njih pokazuju i više faza izgradnje.[40] Manje sondažno istraživanje provedeno je 2011. godine na jugoistočnom rubu kružnog humka. Pronađen je niz dugačkih, uskih kanala orijentiranih u smjeru S-J i rupa od stupova. Istražen je i dio većega, dubljeg kanala ili jarka, koji je prema svojoj veličini i orijentaciji vjerojatno bio dio opkopa iz neke od faza naselja na Hermanovu vinogradu.[41]

Prije izgradnje južnog kolnika južne obilaznice grada Osijeka 2013. godine provedeno je zaštitno arheološko istraživanje ukupne površine od 2670 m². Pronađene su mnogobrojne arheološke strukture koje upućuju na prisutnost cjelina stambenog i obrambenog karaktera. Uvidom u stratigrafiju, ustvrđene su četiri građevinske faze lokaliteta, a radiokarbonsko datiranje provedeno je na kosturnim ostatcima groba 2.[42] U zaštitnome arheološkom istraživanju 2013. godine pronađeno je ukupno šest predmeta izrađenih od školjki.

UKRASI OD ŠKOLJKI S LOKALITETA HERMANOV VINOGRAD

U zbirci predmeta s lokaliteta Hermanov vinograd u Arheološkom muzeju u Osijeku danas se čuva sedamnaest ukrasa od školjki, koji su pronađeni tijekom ovih istraživanja (Tablica 1). Prisutne su importirane morske školjke, ali i lokalno dostupne riječne školjke. Jasan arheološki kontekst može se opisati tek za nalaze iz istraživanja 2013. godine, jer je to istraživanje provedeno prema suvremenim metodama bilježenja pronalaska nalaza.

[40] ŠIMIĆ 2007.
[41] RAJKOVIĆ 2011: 27–30.
[42] LOS 2020.

115 m, its width varying between 0.80 m and 1 m. It was observed that the density of structures was much higher in the central part of the settlement, while towards its margins their number significantly decreased. Some of them also indicated several construction phases.[40] A small trial trench was dug in 2011 on the southeastern margin of the circular mound. A series of long, narrow channels oriented north–south as well as pillar holes were found. A part of a larger, deeper channel or ditch was excavated, whose size and orientation suggest that it was probably a part of the moat from some of the phases of the settlement at Hermanov Vinograd.[41]

Before the construction of the eastbound carriageway of the southern Osijek by-pass in 2013, rescue archaeological excavations were conducted over an overall surface area of 2,670 m². Numerous archaeological structures were found, indicating the existence of units of a residential and defensive character. An examination of the stratigraphy revealed four construction phases of the site; skeletal remains from Grave 2 were radiocarbon dated.[42] In archaeological rescue excavations in 2013, six artefacts made of shells were found.

SHELL ORNAMENTS FROM THE HERMANOV VINOGRAD SITE

The collection of artefacts from the Hermanov Vinograd site displayed in the Archaeological Museum in Osijek currently includes seventeen ornaments made of shells, which were uncovered during this campaign (Table 1). Represented were imported sea shells, but also locally available freshwater shells. A clear archaeological context can only be described for finds from the 2013 campaign, as the excavations were then conducted using modern find-recording methods.

[40] ŠIMIĆ 2007.
[41] RAJKOVIĆ 2011: 27-30.
[42] LOS 2020.

TABLICA 1. *Nalazi od Spondylus i Unio školjki sa lokaliteta Hermanov Vinograd* (izradile: S. Vitezović i D. Rajković)
TABLE 1 *Finds made of Spondylus and Unio shells from Hermanov Vinograd site* (made by S. Vitezović and D. Rajković)

Inv. broj. / Inv. No.	Godina / Year	Arheološki kontekst / Archaeological context	Dimenzije / Dimensions	Vrsta / Species	Tip nalaza / Type of object
AP-1455	1897	/	35 x 36 x 4 mm	Spondylus sp.	aplikacija
AP-1464	1897	/	28 x 32 x 3 mm	Spondylus sp.	aplikacija
AP-P-1987	1998	/	21 x 32 x 3 mm	Spondylus sp.	aplikacija
inv. 156397	2007	Sj 13	18 x 38 x 3 mm	Spondylus sp.	aplikacija
AP-1467	1897		26 x 16 x 3 mm	Unio sp.	aplikacija
AP-1465	1897		25 x 11 x 3 mm	Unio sp.	aplikacija
AP-1454	1897	/	29 x 32 x 3 mm	Spondylus sp.	aplikacija
PN-20	2013	Sj 27 - kanala	24 x 32 x 4 mm	Spondylus sp.	aplikacija
PN-22	2013	Sj 43 - kulturni sloj -I. faza	25 x 32 x 4 mm	Spondylus sp.	aplikacija
PN-353	2013	Sj195-kulturni sloj II. faza	30 x 38 x 5 mm	Spondylus sp.	aplikacija
AP-1452	1897		65 x 3 mm	Unio sp.	aplikacija ili nedovršeni predmet
PN-518	2013	Sj 340-zid objekta 10	29 x 32 x 3 mm	Unio sp.	moguće fragmentirani ili nedovršeni predmet
Ap-1457	1897	/	70 x 33 x 5 mm	Spondylus sp.	narukvica
inv. 156132	2007	Sj 92	47 x 32 x 6 mm	Spondylus sp.	narukvica
PN-196	2013	Sj 103-kulturni sloj-hodna površina II. faza	60 x 31 x 4 mm	Spondylus sp.	narukvica
PN-409	2013	Sj 623-kulturni sloj	64 x 31 x 5 mm	Spondylus sp.	narukvica
Ap-1476	1897	/	19 x 12 mm	Spondylus sp.	perlica
AP-1453	1897	/	80 x 20 x 5 mm	Spondylus sp.	privjesak
AP-1456	1897	/	33 x 36 x 4 mm	Spondylus sp.	privjesak
inv. 156377	2007	Sj 71	44 x 36 x 5 mm	Spondylus sp.	privjesak

Ukrasi od Spondylus *školjki*

Zastupljeno je nekoliko tipova ukrasa: 1) fragmentirane narukvice, odnosno predmeti u obliku obruča, 2) privjesci, s perforacijom na jednom kraju, načinjeni od fragmenata narukvica, 3) aplikacije, odnosno ukrasi ovalnoga ili nepravilnoga četverokutnog oblika, obično s dvjema perforacijama i 4) perlica, odnosno cilindrični ukras s vertikalnom perforacijom (Tablica 1).[43]

Narukvice, odnosno ukrasi u obliku zatvorenog obruča izrađivali su se od valve školjke tako što bi se uklonio centralni dio dok se ne

[43] Za tipološku klasifikciju kod CAMPS-FABRER (ed.) 1991; IFANTIDIS 2019; VITEZOVIĆ, ANTONOVIĆ 2020.

Decorations made from Spondylus *shells*

Represented are several types of ornament: 1) fragmented bracelets, or hoop-shaped objects; 2) pendants with a perforation at one end, made of bracelet fragments; 3) appliqués or ornaments of oval or irregular rectangular shape, usually with two perforations; and 4) beads or cylindrical ornaments with a vertical perforation (Table 1).[43]

The bracelets, or ornaments in the form of a closed hoop, were made from shell valves by removing the central part until the desired bracelet shape was obtained. Usually, the ven-

[43] For a typological classification, cf. CAMPS-FABRER (ed). 1991; IFANTIDIS 2019; VITEZOVIĆ, ANTONOVIĆ 2020.

dobije željena forma narukvice. Obično bi se prvo ostrugali ventralni rubovi školjke, potom bi se struganjem vanjske površine stanjila debljina školjke, nakon čega bi se formirala rupa, struganjem ili bušenjem, koja bi se dalje proširila perkusijom, sve dok se ne dobiju željeni oblik i dimenzije narukvice. Finalni se oblik dobivao struganjem i glačanjem pomoću nekog abrazivnog kamenog alata, ili pomoću pijeska i tkanine.[44]

Ukupno je pronađeno četiri fragmenta narukvica, a svi su oštećenih krajeva (AP-1457, inv. 156132, PN-196, PN-409, sl. 2/5, 6; 3/2). Uglavnom su mliječno bijele boje, s manjim tragovima crvene. Tragovi obrade nisu očuvani, dok se može uočiti izvjesna ispoliranost i uglačanost od korištenja. Ovi su predmeti vrlo vjerojatno korišteni zaista kao narukvice, o čemu svjedoče njihove dimenzije, primjerene za nošenje na zglobu ruke. Također, poznati su nalazi cijelih narukvica u grobnim cjelinama – takve su narukvice nađene u grobovima istraženim krajem 19. stoljeća u Vukovaru,[45] a također su poznate s lokaliteta Botoš – Živanića Dolja u Banatu,[46] Cernica[47] i Chirnogi-Şuviţa[48] u Rumunjskoj, Kisköre-Gát[49] u Mađarskoj, između ostalih.

Nekoliko fragmenata narukvica je naknadno modificirano dodavanjem perforacije; odnosno, nakon loma su reciklirane u novi oblik ukrasa (AP-1453, AP-1456, inv. 156377, sl. 3/1, 3-4). Tako predmet inv. AP-1453 ima perforaciju na jednom kraju, R = 5 mm, koja je dobivena bušenjem kremenim svrdlom i dijelom istrošena od uporabe (sl. 3/1). Na sredini predmeta primjećuje se plitak žlijeb – možda trag uporabe, a možda i početak rezanja da se od ovog fragmenta načine dva. Predmet inv. AP-1456 je manjih dimenzija, s perforacijom koja također ima tragove istrošenosti (sl. 3/4).

tral edges of the shell were scraped first; then the shell was thinned by scraping the outer surface; after that, a hole was formed by scraping or drilling; it was then further expanded by percussion until the desired shape and size of the bracelet were obtained. The final shape was obtained by scraping and smoothing using an abrasive stone tool or sand and cloth.[44]

In total, four bracelet fragments were found, all of which had damaged ends (AP-1457, inv. 156132, PN-196, PN-409, Fig. 2/5, 6; 3/2). They were mostly milky-white, with minor traces of red. Traces of workmanship have not been preserved, although polishing and smoothing as a result of use can be observed. These items were probably indeed used as bracelets, as evidenced by their size, suitable for wearing on the wrist. What is more, finds of whole bracelets are known in collective burials: such bracelets were found in graves excavated in the late 19th century in Vukovar[45] and are also known from the sites of Botoš – Živanića Dolja in Banat,[46] Cernica[47] and Chirnogi – Şuviţa[48] in Romania, and Kisköre – Gát in Hungary,[49]among others.

Several bracelet fragments were subsequently modified by the adding of perforations; that is, after being fractured they were recycled into a new form of ornament (AP-1453, AP-1456, inv. 156377, Fig. 3/1, 3-4). Thus, the artefact numbered AP-1453 in the inventory has a five-millimetre perforation at one end, drilled with a flint drill, and partly worn from use (Fig. 3/1). In the middle of the artefacts is a shallow groove – perhaps a trace of use, or possibly the beginning of a cut made to split the fragment in two pieces. The artefact numbered AP-1456 is somewhat smaller, with a perforation that also has use-wear traces (Fig. 3/4).

44 TSUNEKI 1989.
45 CHAPMAN, GAYDARSKA, BALEN 2012.
46 MARINKOVIĆ 2010.
47 SCHUSTER 2002.
48 MĂRGĂRIT, DIMACHE 2019.
49 TÓTH 2020.

44 TSUNEKI 1989.
45 CHAPMAN, GAYDARSKA, BALEN 2012.
46 MARINKOVIĆ 2010.
47 SCHUSTER 2002.
48 MĂRGĂRIT, DIMACHE 2019.
49 TÓTH 2020.

Ovi reciklirani ukrasi imaju intenzivne tragove uporabe,[50] i mogli su biti samostalno nošeni kao dio nakita (ogrlice, narukvice), kombinirani s drugim privjescima ili biti prišiveni na odjeću.

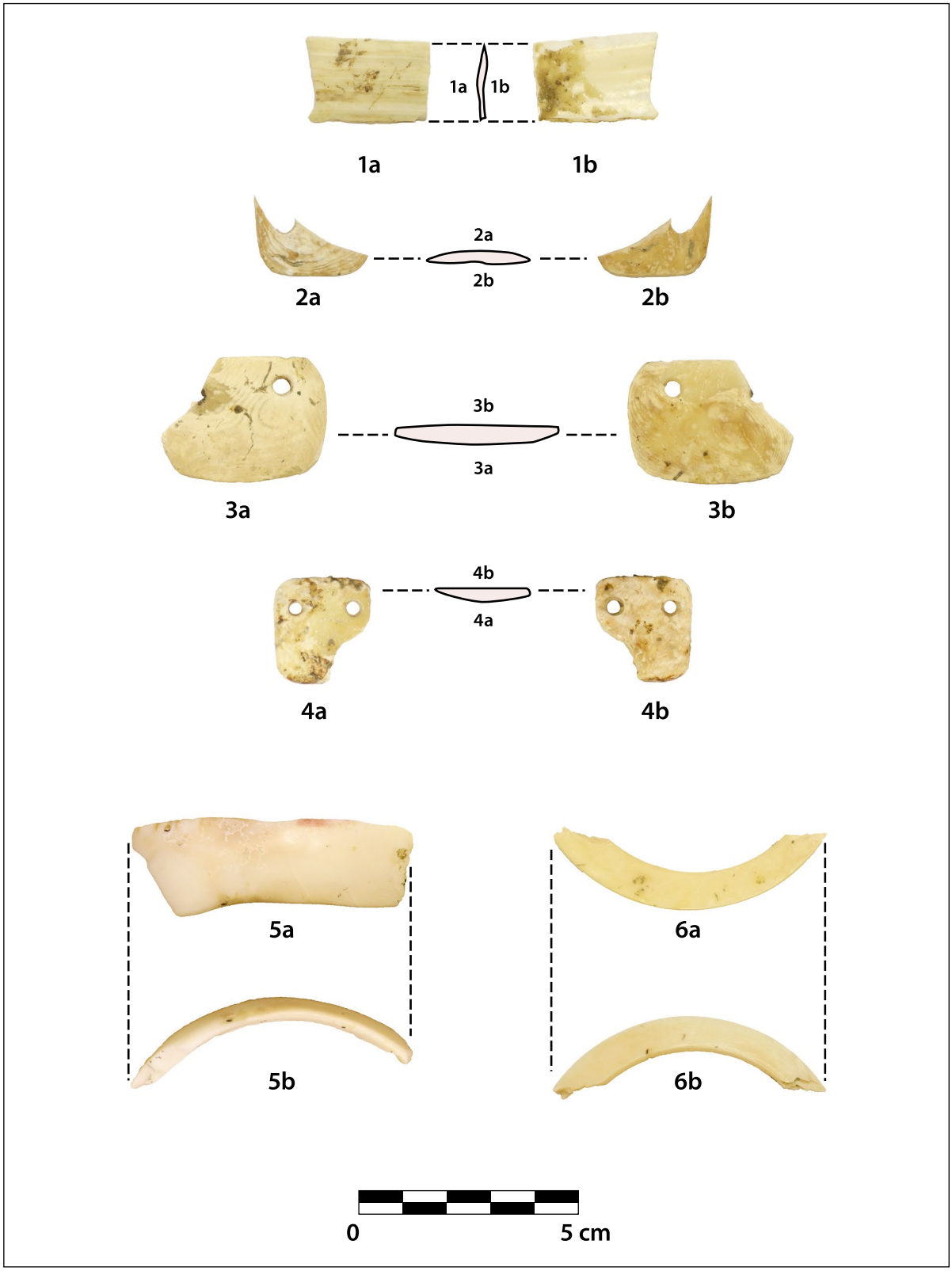
Kao što je već napomenuto, narukvice izrađivane od segmenata valvi školjki *Spondylus* i *Glycymeris* sp. bile su među najrasprostranjenijim ukrasnim predmetima tijekom neolitika i eneolitka u većem dijelu Europe. Sreću se na lokalitetima u Grčkoj, kao što su Dikili Tash,[51] Dispilio,[52] ili Sitagroi,[53] na jadranskoj obali, na lokalitetima kao što je Benkovac – Barice,[54] potom u Bugarskoj, na lokalitetima poput Karanova,[55] Yabalkova,[56] Nove Nadezhde,[57] zatim, na lokalitetima Vinča – Belo Brdo,[58] Vitkovo,[59] Selevac,[60] Potporanj[61] u Srbiji, Cerje –Govrlevo[62] u Sjevernoj Makedoniji, Alba Iulia – Lumea Nouă,[63] Cernica,[64] Chirnogi-Şuviţa,[65] Cernavodă – Columbia D,[66] Parţa[67] u Rumunjskoj, na lokalitetima Kisköre-Gát[68] i Alsónyék[69] u Mađarskoj, i mnogim drugim (također v. gore). U Slavoniji narukvice od *Spondylusa* dosad su otkrivene na lokalitetima Čepin – Ovčara[70] i Kneževi vinogradi[71]. Ove se narukvice često nalaze fragmentirane kada je riječ o nalazima iz naselja, dok se cijele narukvice mogu naći u grobnim cjelinama, koje svjedoče da su u pitanju zaista bili osobni

These recycled ornaments have traces suggesting their frequent use[50]; they could have been worn independently as part of jewellery pieces (necklaces and bracelets) or combined with other pendants, or sewn onto clothes.

As already mentioned, bracelets made from valve segments of the *Spondylus* and *Glycymeris* sp. shells were among the most widespread ornamental objects during the Neolithic and Aeneolithic in most of Europe. They are found at sites such as Dikili Tash,[51] Dispilio,[52] and Sitagroi[53] in Greece; at sites such as Benkovac – Barice[54] on the Adriatic coast; at sites such as Karanova,[55] Yabalkova and[56] Nove Nadezhde[57] in Bulgaria; at the sites of Vinča – Belo Brdo,[58] Vitkovo,[59] Selevac and[60] Potporanj[61] in Serbia; at Cerje – Govrlevo[62] in Northern Macedonia; Alba Iulia – Lumea Nouă,[63] Cernica,[64] Chirnogi – Şuviţa,[65] Cernavodă – Columbia D and[66] Parţa[67] in Romania; at sites of Kisköre – Gát[68] and Alsónyék[69] in Hungary; and many more (see also above). In Slavonia, *Spondylus* bracelets have been discovered at the sites of Čepin – Ovčara[70] and Kneževi Vinogradi[71]. The bracelet finds are often fragmented when recovered from settlements, while in collective burials whole bracelets are unearthed, suggesting that they were indeed personal ornaments

50 Analiza prema d'ERRICO 1993: BONARDIN 2009.
51 KARALI YANNACOPOULOS 1992: 163f, Pl. 207/g, h.
52 IFANTIDIS 2019: 350–358.
53 NIKOLAIDOU 2003: 338, Pl. 9/2–6.
54 KUKOČ 2012.
55 BĂČVAROV, 2002: Taf. VII.2/11.
56 VASILEVA, HADZHIPETKOV 2014: Fig. 3d, k.
57 VITEZOVIĆ et al. 2017.
58 DIMITRIJEVIĆ, TRIPKOVIĆ 2002; 2006.
59 VITEZOVIĆ 2016.
60 RUSSELL 1990.
61 MILLEKER 1938: 47–48.
62 FIDANOSKI 2012.
63 MĂRGĂRIT et al. 2020.
64 SCHUSTER 2002.
65 MĂRGĂRIT, DIMACHE 2019.
66 MĂRGĂRIT 2012.
67 SCHUSTER 2002.
68 TÓTH 2020.
69 OROSS et al. 2014: 154, 156.
70 RAJKOVIĆ 2014: 27, Cat. 65.
71 RAJKOVIĆ, VITEZOVIĆ 2020: 162, Fig. 7.

50 Analyses after d'ERRICO 1993: BONARDIN 2009.
51 KARALI YANNACOPOULOS 1992: 163f, Pl. 207/g, h.
52 IFANTIDIS 2019: 350-358.
53 NIKOLAIDOU 2003: 338, Pl. 9.2-6.
54 KUKOČ 2012.
55 BĂČVAROV, 2002: Taf. VII.2/11.
56 VASILEVA, HADZHIPETKOV 2014: Fig. 3d, k.
57 VITEZOVIĆ et al. 2017.
58 DIMITRIJEVIĆ, TRIPKOVIĆ 2002; 2006.
59 VITEZOVIĆ 2016.
60 RUSSELL 1990.
61 MILLEKER 1938: 47-48.
62 FIDANOSKI 2012.
63 MĂRGĂRIT et al. 2020.
64 SCHUSTER 2002.
65 MĂRGĂRIT, DIMACHE 2019.
66 MĂRGĂRIT 2012.
67 SCHUSTER 2002.
68 TÓTH 2020.
69 OROSS et al. 2014: 154, 156.
70 RAJKOVIĆ 2014: 27, Cat. 65.
71 RAJKOVIĆ, VITEZOVIĆ 2020: 162, Fig. 7.



Slika 2. *Ukrasi od Spondylus i Unio školjki pronađeni 2007. godine: 1) mogući poluproizvod od Unio školjke PN 518; 2) aplikacija PN 20; 3) aplikacija PN 353; 4) aplikacija PN 22; 5) narukvica PN 409 i 6) narukvica PN 196* (izradio: A. Lovrinčević)

Figure 2 *Ornament made of Spondylus and Unio shells found in 2007. 1) possible semi-finished product made of Unio shell; 2) appliqué PN 518; 3) appliqué PN 20; 4) appliqué PN 353; 5) bracelet PN 409; 6) bracelet PN 196* (made by A. Lovrinčević)

ukrasi i da su korištene kao narukvice.[72]

Narukvice od *Spondylus* školjki katkad su nakon loma reciklirane, odnosno, pretvorene u neki drugi oblik ukrasnih predmeta, najčešće dodavanjem perforacije. Na primjer, na lokalitetu Vinča – Belo Brdo,[73] gdje je nađen iznimno veliki broj ukrasnih predmeta od školjki, uočava se i nemali broj primjeraka fragmentiranih narukvica s perforacijom.

Drugi tip predmeta jesu aplikacije, ukupno osam primjeraka, uglavnom četverokutnog ili ovalnog oblika, različitog stupnja očuvanosti. Predmeti PN 20/2007 (sl. 2/2) i AP 156397 najviše su oštećeni; kod PN 20 samo je donji rub očuvan, dok je od AP 156397 očuvana otprilike polovica. Bolje su očuvani predmeti PN 22/2007 (sl. 2/4) i PN 353/2007 (sl. 2/3), AP-1454 i AP-1464, kojima su samo minimalno oštećeni krajevi, dok su AP-1455 i AP-P-1987 očuvani u cijelosti. PN 22 je četverokutna, s dvjema perforacijama smještenim na jednom (gornjem) kraju, dok je drugi kraj oštećen. PN 353 je četverokutne forme s blago zaobljenim krajevima, s dvjema perforacijama smještenim na jednom (gornjem) kraju – jedna je slomljena, dok je druga očuvana u cijelosti. Gotovo su identični AP-1454 i AP-1464, četverokutnog oblika, s po dvjema perforacijama na jednom (gornjem) kraju. AP-1455 je ovalne forme, a AP-P-1987 polukružne, ove aplikacije također imaju na jednom kraju dvije perforacije. Ove su pločice dobivene iz valve školjke; točan proces izrade nije moguće rekonstruirati, ali je finalna forma dobivena struganjem i glačanjem abrazivnim kamenim alatom.

Promjeri ovih perforacija su 3 – 4 mm, i dobivene su bušenjem kremenim svrdlom uz dodavanje pijeska.[74] Na svim se perforacijama mogu uočiti intenzivni tragovi korištenja; koncentrične linije koje nastaju tijekom bušenja su naglašeno uglačane, i sa zadnje strane

used as bracelets.[72]

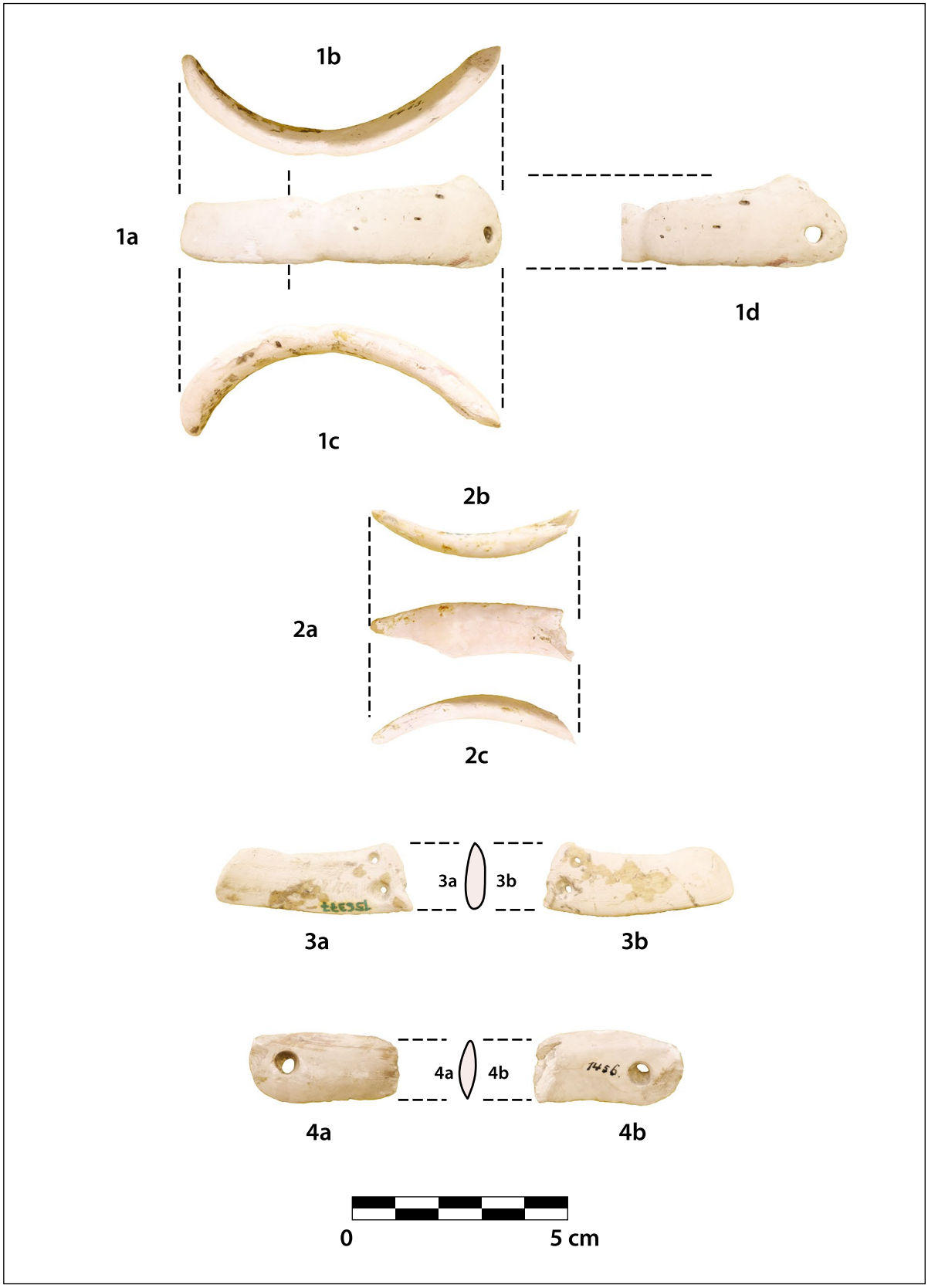
Spondylus shell bracelets were sometimes recycled after breaking, meaning that they were converted into another form of ornamental object, most often by the addition of a perforation. For example, at the Vinča – Belo Brdo site,[73] where an extremely large number of ornamental objects made from shells were found, a small number of specimens of fragmented bracelets with perforations were also recovered.

The second type of objects are appliqués, in total eight specimens, mostly rectangular or oval, in varying degrees of preservation. Artefacts PN 20/2007 (Fig. 2/2) and AP 156397 are the most damaged; PN 20 only has a preserved bottom edge, while approximately half of AP 156397 has been preserved. Better preserved are artefacts PN 22/2007 (Fig. 2/4) and PN 353/2007, AP-1454 and AP-1464, with only minimal damage at the ends, while AP-1455 and AP-P-1987 have been entirely preserved. PN 22 is rectangular, with two perforations located on one (the upper) end, while the other end is damaged. PN 353 is rectangular with slightly rounded ends and two perforations located on one (the upper) end; one of them is broken, while the other has been entirely preserved. Almost identical are AP-1454 and AP-1464: rectangular, each with two perforations at one (the upper) end. AP-1455 is oval, and AP-P-1987 semi-circular; these appliqués also have two perforations at one end. The plates were obtained from the shell valve; it was not possible to reconstruct their exact manufacture process, but the final form was obtained by scraping and smoothing with an abrasive stone tool.

The diameters of the perforations are 3–4 mm, and were obtained by drilling with a flint drill, adding sand.[74] Intensive use-wear traces can be observed on all perforations; concentric lines formed by drilling were obviously smoothed,

[72] Vidi gore.
[73] DIMITRIJEVIĆ, TRIPKOVIĆ 2006.
[74] SÉNÉPART, CHOI, GIOMI 2004.

[72] S. above.
[73] DIMITRIJEVIĆ, TRIPKOVIĆ 2006.
[74] SÉNÉPART, CHOI, GIOMI 2004.



Slika 3. *Ukrasi od Spondylus školjki: 1) privjesak AP-1453; 2) narukvica MSO-156132; 3) privjesak 156377; 4) privjesak AP-1456* (izradio: A. Lovrinčević)
Figure 3 *Ornament made of Spondylus shells: 1) pendant AP-1453; 2) bracelet MSO-156132; 3) pendant 156377; 4) pendant AP-1456* (made by A. Lovrinčević)

se može uočiti i izvjesna lateralna deformacija perforacija, koja pokazuje da ove aplikacije nisu bile obješene, već pričvršćene (prišivene) sa strane. Najbliže analogije ovim aplikacijama, po formi i po uočenim tragovima korištenja, nalazimo na lokalitetu Čepin – Ovčara, gdje je čak bilo moguće rekonstruirati položaj svake od nađenih aplikacija u odjevnom predmetu (pojasu) za koji su bile prišivene.[75] Razlika se uočava i na primjercima s Hermanova vinograda, međutim, kako nisu nađeni zajedno, za razliku od čepinskih ukrasa, nije moguće ustvrditi jesu li dio istoga, ili različitih ukrasnih predmeta.

Slične aplikacije poznate su i s lokaliteta Dispilio u Grčkoj,[76] a dosta su bliski i nalazi s lokaliteta Cernavodă – Columbia D[77] u Rumunjskoj, kao i nalazi s lokaliteta Obre[78] u Bosni i Hercegovini.

Pronađena je samo jedna fragmentirana perla, cilindrične forme, AP-1476. Očuvani su gornji i donji rub, odnosno puna duljina, s tim da je moguće da je u nekom trenutku bila i većih dimenzija, pa je poslije reciklirana. Perle od *Spondylus* školjki manje su učestale od drugih tipova nakita, ali su poznate s lokaliteta u Rumunjskoj,[79] dok je na lokalitetu Pločnik nađena jedna perla dosta velikih dimenzija.[80]

Ukrasi od Unio školjki

Predmeti inv. AP-1452, 1467 i 1465 izrađeni su od rječnih *Unio* školjki.

Predmet inv. AP-1452 izrađen je od gotovo cijele valve *Unio* školjke; na centralnom dijelu ima veću perforaciju, R = 18 mm. Vanjska je površina školjke strugana dok se nije formirala perforacija, blago nepravilnoga kružnog oblika. Tragovi uporabe nisu

[75] TRIPKOVIĆ, DIMITRIJEVIĆ, RAJKOVIĆ 2016: 349, sl. 7.
[76] IFANTIDIS 2019: 386.
[77] MĂRGĂRIT 2012: Fig. 12.
[78] MARIJANOVIĆ 1979.
[79] MĂRGĂRIT 2020.
[80] VITEZOVIĆ 2021b.

and on the back side, distinct lateral deformation of the perforations can be observed, suggesting that the appliqués were not hanging, but rather attached (sewn) to the side. The closest analogies to these appliqués, both in terms of form and the observed use-wear traces, were found at the Čepin – Ovčara site, where it was even possible to reconstruct the position of each of the recovered appliqués in the apparel item (a belt) to which they had been sewn.[75] The difference can be seen also on the specimens from Hermanov Vinograd; however, since they were not found together it was not possible to determine whether they were part of the same ornamental object, or of different ones, as could be demonstrated with the Čepin ornaments.

Similar appliqués are also known from the Dispilio[76] site in Greece, and quite similar are also finds from the Cernavodă – Columbia D[77] site in Romania, as well as the Obre site in Bosnia and Herzegovina.[78]

Only one fragmented bead of cylindrical form – AP-1476 – was found. The upper and lower edges have been preserved to their full length; possibly, at some point it had been larger and subsequently recycled. Beads from *Spondylus* shells are less common than other types of jewellery, but they are known from sites in Romania,[79] while at the Pločnik site, a single, comparatively large bead was found.[80]

Unio shell ornaments

The artefacts numbered AP-1452, 1467 and 1465 were made from *Unio* freshwater shells.

The artefact numbered AP-1452 was made from an almost entire *Unio* shell valve; in its central part it has a comparatively large 18-millimetre perforation. The outside shell surface was scraped until the perforation, of a

[75] TRIPKOVIĆ, DIMITRIJEVIĆ, RAJKOVIĆ 2016: 349, Fig. 7.
[76] IFANTIDIS 2019: 386.
[77] MĂRGĂRIT 2012: Fig. 12.
[78] MARIJANOVIĆ 1979.
[79] MĂRGĂRIT 2020.
[80] VITEZOVIĆ 2021b.

vidljivi. Moguće je da su lokalni majstori pokušali od *Unio* školjke napraviti ukrasni predmet koji bi nalikovao na *Spondylus* narukvice (premda bi bio znatno manjih dimenzija, odnosno ne bi bio primjeren za nošenje kao narukvica), ali nisu ga dovršili, te je ovaj ukras ostao neiskorišten ili je bio slabo korišten kao neka vrsta aplikacije. Slični nalazi poznati su iz Grčke, s lokaliteta Dispilio,[81] kao i iz Rumunjske, s lokaliteta Măgura Buduiasca.[82]

Ukras inv. AP-1452 dobiven je izrezivanjem valve *Unio* školjke; gotovo je pravokutnog oblika i ima na sredini manju perforaciju, R = 3 mm, dobivenu nepravilnim probijanjem i bušenjem. Tragovi korištenja su umjereni. Ukras inv. AP-1467 dosta je sličan, u obliku nepravilne polovice kruga, s manjom perforacijom u centralnom dijelu. Ova dva predmeta mogla su biti neka vrsta aplikacije na odjeći, sudeći po položaju i malim dimenzijama perforacija. Tragovi korištenja nisu naglašeni, premda je moguće i da nisu očuvani. Predmet PN 518 ima pravilnu četverokutnu formu i moguće je da predstavlja poluproizvod, odnosno nedovršeni predmet (sl. 2/1).

Ukrasni predmeti od *Unio* školjki manje su privlačili pozornost istraživača od predmeta od *Spondylusa*, tako da su i u manjoj mjeri publicirani. Također, s obzirom na to da su ove školjke nešto tanjih stijenki, te su zbog toga češće fragmentirane u depozitu, moguće je i da su manje primjećivane tijekom istraživanja. Međutim, u novije vrijeme sve su učestalije publikacije ukrasa od *Unio* školjki, na primjer s nekoliko lokaliteta u Rumunjskoj,[83] što pokazuje da su u prošlosti bile češće korištene nego što se čini na osnovi trenutačnog stanja istraživanja.

slightly irregular round shape, was formed. No use-wear traces are visible. Possibly the local craftsmen had tried to turn the *Unio* shell into an ornamental object resembling a *Spondylus* bracelet (although it would have been significantly smaller, or unsuitable for wearing as a bracelet), but did not complete it, leaving the ornament unused or poorly used as a sort of an appliqué. Similar finds are known from the Dispilio,[81] site in Greece, as well as Romania, from the Măgura Buduiasca site.[82]

The ornament numbered AP 1467 was obtained by cutting the *Unio* shell valve; it has an almost rectangular shape and a smaller, three-millimetre perforation in the middle, obtained by irregular punching and drilling. Use-wear traces are moderate. The ornament numbered AP-1465 is quite similar, in the form of an irregular semicircle, with a smaller perforation in the central part. The position and smallness of the perforations suggest that these two artefacts might have been some kind of appliqué on clothes. Traces of use are not particularly marked, although it is possible that they have not been preserved. Artefact PN 518, with a regular rectangular shape, possibly represents a semi-product or an unfinished object (Fig. 2/1).

Decorative objects made from *Unio* shells seem to have been less appealing to researchers than these of *Spondylus*, so they have tended to be less frequently published. In addition, these shells have somewhat thinner walls and are therefore more often found fragmented in the deposits; it is possible that they were less noticeable during excavations. Nevertheless, publications of ornaments made from *Unio* shells have recently become more frequent, for example, from several sites in Romania,[83] indicating that in the past they were used more often than research to date has suggested.

[81] IFANTIDIS 2019: 390–391.
[82] MĂRGĂRIT, MIREA, RADU 2018: Fig. 6/6.
[83] MĂRGĂRIT, MIREA, RADU 2018: MĂRGĂRIT 2020.

[81] IFANTIDIS 2019: 390–391.
[82] MĂRGĂRIT, MIREA, RADU 2018: Fig. 6/6.
[83] MĂRGĂRIT, MIREA, RADU 2018: MĂRGĂRIT 2020.

DISKUSIJA I ZAKLJUČNA RAZMATRANJA

Nalazi ukrasnih predmeta od ljuštura mekušaca s lokaliteta Hermanov vinograd donijeli su nove spoznaje o ovom tipu dekorativnih predmeta tijekom neolitika na teritoriju Hrvatske. Naime, mapa distribucije nalaza od *Spondylus* školjki proširena je ovim nalazima, a otkriveni su i ukrasi od *Unio* školjki. Izbor sirovina pokazuje dva modela nabave sirovina – dok su *Spondylusi* egzotičnog podrijetla, nabavljeni putem razmjene s veće udaljenosti, *Unio* školjke su, po svemu sudeći, nabavljene lokalno.

Pitanje podrijetla, odnosno putova razmjene preko kojih su *Spondylus* i druge morske školjke stigle do sopotskih zajednica u Slavoniji za sada mora ostati otvoreno, u nedostatku pouzdanijih podataka, prije svega kemijskih analiza. Jedna je mogućnost da su *Spondylus* nabavljali putem kontakata sa zajednicama vinčanske kulture sa centralnog Balkana, odnosno da je riječ o podunavskom i vardarsko-moravskom putu razmjene, s mogućim podrijetlom iz Egejskog mora. Nalazi *Spondylusa* su, kao što je već spomenuto, iznimno bogati na teritoriju današnje Grčke,[84] gdje su otkrivene i radionice,[85] kao i na teritoriju današnje Sjeverne Makedonije[86] i Srbije[87]. Druga mogućnost jest nabava ovih školjki preko kontakata sa srednjobosanskim poveznicama s područja jadranske obale,[88] gdje su prisutni nalazi i gotovog nakita i neobrađenih *Spondylus* školjki.[89] Na moguće jadransko podrijetlo upućivale bi veze Jadrana s balkanskim zaleđem iz vremena mezolitika, o čemu najbolje svjedoče nalazi iz pećine Zale

[84] NIKOLAIDOU 2003; IFANTIDIS 2019.
[85] TSUNEKI 1989.
[86] FIDANOSKI 2012.
[87] DIMITRIJEVIĆ, TRIPKOVIĆ 2002; 2006; VITEZOVIĆ 2016.
[88] TEŽAK GREGL 2001: 29; Također vidjeti KOMŠO et al. 2019. i VUKOSAVLJEVIĆ, KARAVANIĆ 2012 za razmjenu u ranijim razdobljima.
[89] KUKOČ 2012 s bilješkama.

DISCUSSION AND FINAL CONSIDERATION

Finds of mollusc-shell ornaments from the Hermanov Vinograd site shed a new light on this type of ornamental object in the course of the Neolithic period in the territory of present-day Croatia. Specifically, these artefacts expanded the distribution map of *Spondylus* shell finds, while ornaments made from *Unio* shells were also discovered. The selection of raw materials suggests two models of raw material purchasing – while the *Spondylus* is of exotic origin and was acquired via long-distance exchange, the *Unio* shells were, to all appearances, acquired locally.

In the absence of more reliable data, primarily chemical analyses, the question of origin, and in particular of the exchange routes via which *Spondylus* and other sea shells reached the Sopot communities in Slavonia, will have to remain open for the time being. One possibility is that *Spondylus* was obtained from the central Balkans through contacts with the communities of the Vinča culture, possibly via the Danube and Vardar – Morava exchange routes, with a presumed origin in the Aegean Sea. *Spondylus* finds are, as previously mentioned, extremely abundant in the territory of present-day Greece,[84] where workshops were also discovered,[85] as well as in the territory of present-day North Macedonia[86] and Serbia.[87] Another possibility is that the shells were purchased through contacts with the central Bosnian links from the Adriatic coast,[88] where finds of both ready-made jewellery and unworked *Spondylus* shells have been confirmed.[89] The links between the Adriatic and the Balkan hinterland from the Mesolith-

[84] NIKOLAIDOU 2003; IFANTIDIS 2019.
[85] TSUNEKI 1989.
[86] FIDANOSKI 2012.
[87] DIMITRIJEVIĆ, TRIPKOVIĆ 2002; 2006; VITEZOVIĆ 2016.
[88] TEŽAK GREGL 2001: 29; cf. also KOMŠO et al. 2019. and VUKOSAVLJEVIĆ, KARAVANIĆ 2012 on exchange in the earlier periods.
[89] KUKOČ 2012, with references.

kod Ogulina, gdje je otkriven veliki broj perforiranh mekušaca *Lithoglyphus* sp., koji su slatkovodni i pripadaju podunavskom slivu, ali i morskih perforiranih mekušaca *Columbella* sp.[90] S druge strane, mekušci *Litoglyphus* sp. pronađeni su u pećini Vlaknu na Dugom otoku.[91]

Svakako, ove dvije mogućnosti nisu međusobno isključive, točnije, postoji mogućnost da su oba puta razmjene bila aktivna tijekom ovog perioda i da su prapovijesne zajednice u Slavoniji održavale žive veze trgovine i razmjene s različitim područjima.

Narukvice od *Spondylusa* su u prapovijesno naselje na Hermanovu vinogradu najvjerojatnije dospjele kao gotovi proizvodi (kao cijele narukvice), ali su tijekom korištenja fragmentirani, i moguće lokalno reciklirani, odnosno promijenjena im je forma i namjena dodavanjem perforacije na ciljanom fragmentu. J. Chapman sugerirao je hipotezu o namjernom lomljenju predmeta tijekom neolitika, gdje onda svaki fragment ima svoju simboličku vrijednost i novi život;[92] je li ovakva praksa rezultirala slomljenim nakitom od *Spondylusa* koji je nađen na Hermanovu vinogradu, ili je pak do loma došlo slučajno, zbog dugotrajnog korištenja, nije moguće odrediti sa sigurnošću. Nastavak korištenja predmeta i nakon loma (namjernog ili ne), i popravak, odnosno prenamjena fragmentirane narukvice u privjesak svakako svjedoči o tome da je riječ o jako cijenjenom predmetu. Simbolička vrijednost, opet, teško se može rekonstruirati; odnosno, ovaj je predmet mogao imati apotropejsku, profilaktičku, iscjeliteljsku, ali i ulogu pokazatelja statusa i/ili identiteta (pojedinca ili grupe).

Prisustvo većeg broja četverokutnog/ovalnog oblika aplikacija s dvjema perforacijama na Hermanovu vinogradu, zajedno s nalazi-

ic period also point to possible Adriatic origin, as best confirmed by finds from the Zala cave near Ogulin, where a large number of not only perforated *Lithoglyphus* sp. molluscs (which are freshwater and native to the Danube basin) were recovered, but also perforated *Columbella* sp. sea molluscs.[90] On the other hand, *Lithoglyphus* sp. molluscs were unearthed in Vlakno cave on Dugi Otok.[91]

Of course, these two models need not be mutually exclusive; it is possible that both exchange routes were active during this period, and that prehistoric communities in Slavonia maintained active trade and exchange links with different regions.

Spondylus bracelets most likely arrived at the prehistoric settlement at Hermanov Vinograd as finished products (whole bracelets), but were fragmented through use and possibly locally recycled, in the sense that they were reshaped and repurposed by adding perforations on the target fragments. J. Chapman proposed a hypothesis of the deliberate fracture of the objects during the Neolithic period, where each fragment was given a symbolic value and a new life;[92] it is not possible to determine with certainty whether the fragmented *Spondylus* jewellery found at Hermanov Vinograd was a result of this practice or whether the fractures occurred accidentally, with prolonged use. The continued use of objects after their (intentional or unintentional) fracturing and the repurposing of fragmented bracelets into pendants certainly confirm that these were highly valued objects. Again, it is difficult to reconstruct the symbolic value of the objects; they might have had an apotropaic, prophylactic or healing purpose, but might just as well have served as symbols of status and/or identity (of individuals or groups).

The large number of rectangular/oval forms of appliqués with two perforations at Hermanov Vinograd, along with finds from Čepin

90 VUKOSAVLJEVIĆ, KARAVANIĆ 2012; 2015.
91 CVITKUŠIĆ, RADOVIĆ, VUJEVIĆ 2018.
92 CHAPMAN 2000.

90 VUKOSAVLJEVIĆ, KARAVANIĆ 2012; 2015.
91 CVITKUŠIĆ, RADOVIĆ, VUJEVIĆ 2018.
92 CHAPMAN 2000.

ma s Čepin – Ovčare, pokazuje da je ovaj tip ukrasa (najvjerojatnije dio odjeće, točnije, pojasa) bio rasprostranjen među sopotskim zajednicama; možda je čak oslikavao lokalne grupne identitete.

Ukrasni predmeti od *Unio* školjki izrađeni su, po svemu sudeći, lokalno, od lokalnih zanatlija. Budući da je riječ o lakše dostupnim sirovinama u odnosu na *Spondylus*, može se postaviti pitanje predstavljaju li „jeftiniju", dostupniju zamjenu za skupocjeni, rijetki *Spondylus*, ili su ove školjke iskorištene jer dijele sa *Spondylus* nakitom zajedničke odlike, kao što su podrijetlo iz vodenog svijeta, tvrdoća i sjajna površina, i/ili blistava bijela boja.[93]

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Nakit je u prapovijesti nosio mnogo poruka, koje se, nažalost, teško mogu rekonstruirati iz fragmentiranih arheoloških ostataka. Sigurno je, međutim, da su ukrasni predmeti od školjki bili cijenjeni, važni predmeti tijekom cijele prapovijesti, uključujući i neolitički period. Ukrasi od *Spondylus* školjke, kojima se trgovalo u velikim dijelovima Europe, našli su svoj put i do prapovijesnih zajednica sopotske kulture u Slavoniji, gdje su intenzivno korišteni, prepravljani i imitirani u lokalnim sirovinama.

[93] O mogućem simboličkom značenju bijele boje u neolitiku vidjeti kod LUIK 2007; VITEZOVIĆ 2012; ANTONOVIĆ, VITEZOVIĆ, DIMIĆ 2018. D. BAR-YOSEF MAYER 2020 uočila je tri boje koje smatra bitnim pri izboru sirovina za izradu nakita, bijelu, crvenu i crnu.

– Ovčara, suggests that this type of ornament (most likely embellishment to apparel, mostly on belts) was widespread among the Sopot communities, perhaps even depicting local group identities.

It would appear that ornamental objects from *Unio* shells were made by local craftsmen. Since these raw materials were more easily accessible than the *Spondylus*, the question of whether they represented a "cheaper", more accessible substitute for the expensive and rare *Spondylus* arises, or whether these shells were used because they had other significant features in common with *Spondylus*, such as origins from the aquatic world, hardness and glossy surfaces, and/or a brilliant white colour.[93]

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Jewellery in prehistoric times carried multiple messages; unfortunately, these can scarcely be reconstructed from fragmented archaeological remains. It is certain, however, that ornaments made of shells were highly valued, significant objects throughout prehistory, including the Neolithic period. Ornaments made from the *Spondylus* shell, traded in large parts of Europe, found their way also to the prehistoric Sopot culture communities in Slavonia, where they were intensively used, remodelled and even imitated in local raw materials.

[93] On the possible symbolic value of the colour white in the Neolithic cf. ANTONOVIĆ, VITEZOVIĆ, DIMIĆ 2018; LUIK 2007; VITEZOVIĆ 2012. D. BAR-YOSEF MAYER , 2020 noticed three colours that she considered significant in the selection of raw materials for jewellery: white, red and black.

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