

MARINE GOODS IN EUROPEAN PREHISTORY: A NEW SHELL IN OLD COLLECTION*

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Abstract

The exchange of marine goods in the interior of the European continent is traditionally equated with the exchange of *Spondylus* shell items. In this long-lasting exchange network, significant role of any other mollusks has not been identified so far. Contrary to this evidence, in the Neolithic settlements of the Aegean and the Adriatic regions, where, it is believed, *Spondylus* had been imported from, many other shells were used for manufacturing adornment. Is it possible that shell diversity in the Balkan coastal area is somehow reflected on the interior of the continent? In this paper, credibility of this question is assessed through a study of shell-made items from the site of Vinča in the vicinity of Belgrade, Serbia.

Introduction

The exchange of marine goods in the interior of the European continent is traditionally equated with the exchange of *Spondylus* shell items. *Spondylus* bracelets, beads, buttons, pendants and belt buckles were items of exchange for the Neolithic and Copper Age communities for more than 2000 years (Clark J.G.D., 1952; Vencl S., 1959; Willms C., 1985; Müller J., 1997; Todorova H., 1995; Todorova H., 1995; Séfériadès M., L., 1995a; Séfériadès M., L., 1995b; Séfériadès M., L., 1995b). In this long-lasting exchange network, significant role of any other mollusks has not been identified so far. Contrary to this evidence, in the Neolithic settlements of the Aegean and the Adriatic regions, where, it is believed, *Spondylus* had been imported from, many other shells were used for manufacturing adornment (Karali L., 1999; Reese D. S. 1987; Nikolaidou M., 2003; Shackleton N., J., 2003; Miller M., 1996). Then, why did *Spondylus* items only had

such continental significance during the Neolithic and Copper Age? Is it possible that shell diversity in the Balkan coastal area is somehow reflected on the interior of the continent? In this paper, credibility of this question is assessed through a study of shell-made items from the site of Vinča in the vicinity of Belgrade, Serbia. Moreover, it is demonstrated that a re-study of existing shell collections and especially *Spondylus* assemblages represents an essential analytical route for understanding Prehistoric trade and routes of exotic goods.

Marine collection at the settlement of Vinča

Vinča is a tell site, situated on the right coast of the Danube, 14 km downstream from Belgrade. In its cultural deposit, over 9 m thick, layers dating from the Neolithic to the Late Middle Age were discovered (Srejšović *et al.*, 1984). Neolithic settlement lasted from about 5,500 to 4,400 cal BC (Gläser R., 1996), covering an area of 6 to 10 ha. Vinča has been excavated in the course of three research phases (1908-1934; 1978-1986; 1998-2006); it remains the most extensively investigated Late Neolithic settlement in the central Balkans to date (Srejšović D., 1988; Tasić N., N., 2005). The settlement testifies to the presence of sedentary community with stable architecture, elaborate material and symbolic practice and well-organized exchange activities (Vasić M., 1932; Vasić M., 1936a; Vasić M., 1936b; Vasić M., 1936c; Stalio B., 1968, 84-86; Chapman J., 1981). A significant quantity of raw materials and objects foreign to the region, including obsidian, marine shells as well as ceramic inventory belonging to the surrounding cultures, suggest intercultural contacts of the Vinča community thus indicating the existence of organized and socially stimulated exchange networks (Glišić J., 1968, 33; Garašanin M., 1979; Radovanović I., *et al.*, 1984; Kaczanowska M., Kozłowski J.K., Pawlikowski M., 1984; Chapman J., 1981; Tripković B., 2004; Dimitrijević V., Tripković B., 2003; Dimitrijević V., Tripković B., 2006).

Findings of marine origin constitute a significant part of the "exotic collection". Bracelets and other shell-made ornaments were found in all Neolithic strata of the Vinča settlement. Besides the fragments of nine bracelets made known at the beginning of exploration (Vassits M., 1910), the large majority of these finds were published only recently (Dimitrijević V., Tripković B., 2003; Dimitrijević V., Tripković B., 2006). 307 items were recorded, mostly bracelet fragments and, to a lesser extent, beads and

pendants. Next to the ornaments made of *Spondylus* shell (169), a large part of the collection consists of the items made of *Glycymeris* shell (94), while the smallest part of the collection are three fossilized *Limnocardium* shells (Fig. 1).. For 41 items it was not possible to determine the exact shell they were made of, but most probably they were made of *Spondylus* or *Glycymeris* shells (Dimitrijević V., Tripković B., 2006).

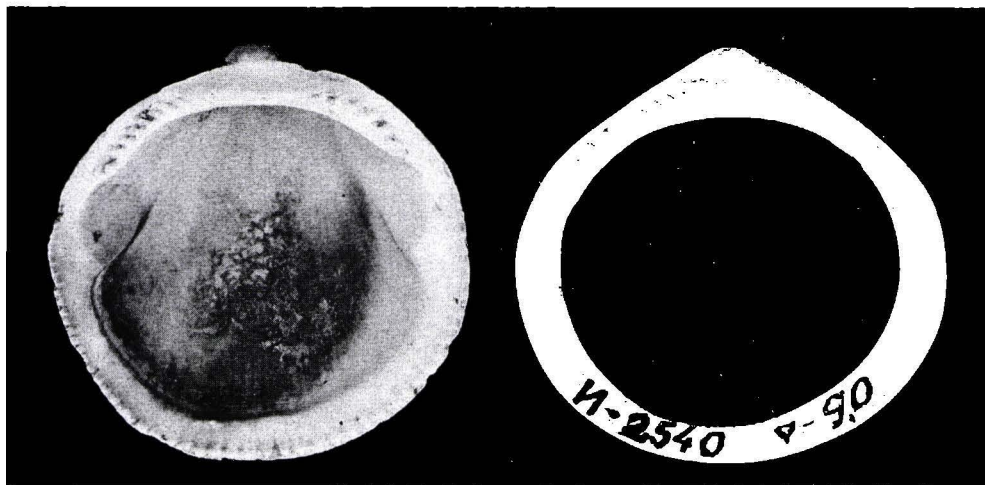


Fig. 1: *Glycymeris* shell and Vinča bracelet/annulet of the same shell

High frequency of *Glycymeris* shells in Vinča poses a surprise since so far there has been no evidence of its inclusion in the assumed extensive Neolithic exchange networks in the central Balkans. The only report of *Glycymeris* is 22 years old and refers to two bracelets from Vinča that were identified previously as *Pectunculus* shells, which is an old name for *Glycymeris* species (Babović Lj., 1984, 127, catalogue No. 235, 237). However, at the time of identification these were designated as fossil findings. Up until now, those were the only *Glycymeris* items from the central Balkans that have been published. On the other hand, during the study of the collection, it has been realized that it is sometimes difficult to distinguish *Spondylus* from *Glycymeris*. Two shells, generally very dissimilar in the untreated form, lose their characteristic, natural attributes in the process of artifact production, which makes an exact identification of shell genera difficult. It has been suggested more than once that numerous *Spondylus*

assemblages throughout the European continent probably also comprise a large number of *Glycymeris* items (Shackleton N., J., 2003, 364; Todorova H., 2002; Dimitrijević V., Tripković B., 2006).

Equally important observation is that the procurement of *Spondylus* and *Glycymeris* items at Vinča is related to diachronic changes. Finds from Miloje Vasić's excavation campaigns (1908-1934 encompassing the complete Neolithic sequence) indicate that the largest amount of *Glycymeris* items is present in the earlier settlement strata (Fig. 2). In the later part of the sequence, *Glycymeris* declines in number. In contrast, *Spondylus* is particularly numerous in the layers higher than the fourth meter, which again corresponds well with the disappearance of *Glycymeris* items. This diachronic relationship of the two shell genera has been confirmed in the course of 1978–2003 excavation campaigns, during which only later settlement strata were investigated. From the overall number of 72 uncovered items, only eight belong to *Glycymeris* shell (Dimitrijević V., Tripković B., 2006).

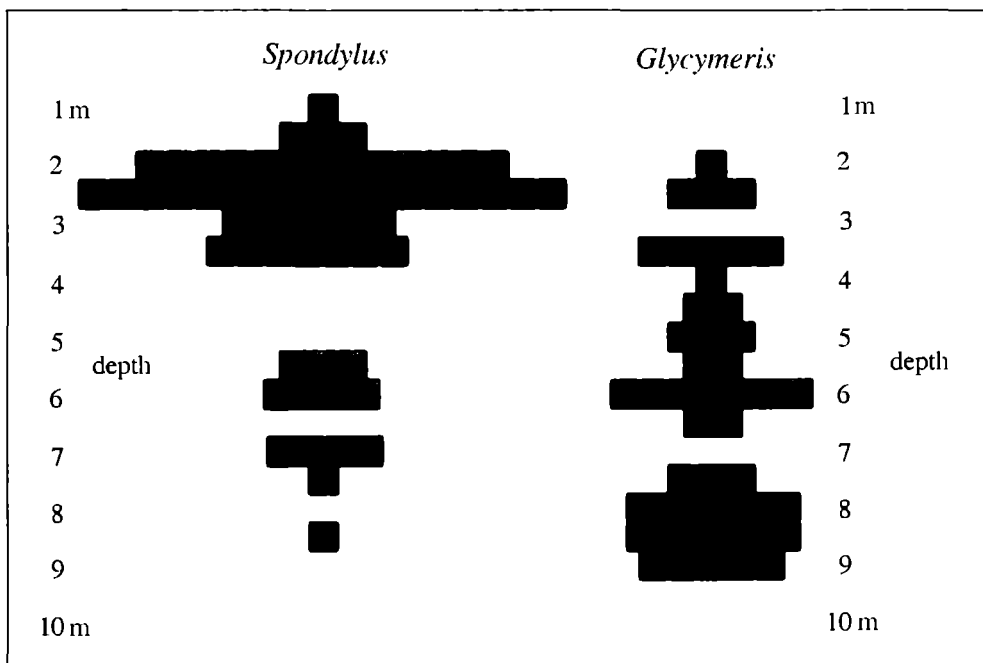


Fig. 2: *Spondylus* and *Glycymeris* items from 1908-1934 Vinča excavations distributed by depth (re-drawn by B. Tripković after Dimitrijević V., Tripković B., 2006, Fig. 5)

The third important observation concerns the type and nature of the manufactured items. Only bracelets were made of *Glycymeris* shell (with the exclusion of a pendant/button made of small valve), while beads and pendants in addition to bracelets were manufactured from *Spondylus* shell. The items were imported most probably in their finished form, but there are rare finds of shell valves, which indicate the import of untreated shells as well. A large number of items in the bracelet category could be relate to the taphonomy of their breakage as only one bracelet is complete, and several separate fragments originally might have come from the same item. There are secondary made perforations on many fragments, which clearly suggests that simple pendants and composite ornaments were locally produced from broken parts (Dimitrijević V., Tripković B., 2006). The fragmentation of bracelets at Vinča seems to relate to the settlement context of their deposition, whereas complete shell-made bracelets in the central Balkans are most frequently found in burial contexts such as the necropolis in Botoš (Milleker F., 1938, 113; Chapman J., 1981, 456, Table 19), as well as in the well-known ritual context in Tărtăria (Vlassa N., 1963; Vlassa N., 1976). The only complete bracelet from Vinča (made from *Glycymeris* shell) originates from the depth of 9.0 m and can not be related to a burial context (see Fig. 1).. However, it could be significant that the only Late Neolithic burial at Vinča was discovered at the depth of 8.75 m (Garašanin M., 1979, 159).

Three observed traits that characterize marine goods at Vinča (frequency of *Glycymeris* items, diachronic nature of changes related to *Spondylus* and *Glycymeris* finds and the typological differences among imported items) could represent a regional pattern due to few reasons. Firstly, the marine collection from Vinča is the largest one of that kind in the mid-Danube region. Other Vinča culture sites yielded much smaller number of items: 44 from Vršac-Potporanjska granica, 28 from Potporanj-Kremenjak, 14 from Vršac-At (Milleker F., 1938, 148) and 24 items from the Botoš necropolis (Milleker F., 1938, 113, 148; Chapman J., 1981, 455-456, Table 19). Besides these finds, only a few other shell-made items were published (Dimitrijević V., Tripković B., 2003; Chapman J., 1981; Willms C., 1985), including those from Tărtăria (Vlassa N., 1963), Mostonga (Karmanski S., 1977) and Parța (Resch F., 1995). Secondly, the Neolithic settlement at Vinča falls at the time when exchange of exotic goods, and especially *Spondylus*, was at its peak in the Danube basin (Tripković B., 2004; Chapman J., 1981, 77-83; Müller J., 1997; Todorova H., 2000). And, thirdly, the settlement is located

on the borderline between the Southeastern and Central European cultural zones. Existence of these zones, along with the differences in architecture and settlement layout, was also corroborated with the differences in type and appearance of shell-made items (Müller J., 1997).

Considering that it is the most representative site in the mid-Danube region, Vinča undoubtedly offers a regional perspective on the exchange of *Glycymeris* items. However, the real importance of this shell can be assessed only by re-studying of existing marine assemblages from Vinča culture sites (Fig. 4). The presence of *Glycymeris* shells throughout the region could tentatively be suggested on the basis of photographs of shell bracelets from the necropolis at Botoš (Petrović J., 1997, 33) and the settlement site of Kremenjak by Potporanj (Rašajski J., 2002, 29). It is interesting that both of these sites, the necropolis and the settlement, belong to early Vinča sequences and fall within the observed diachronic trends of *Spondylus* and *Glycymeris* shells at Vinča.

***Glycymeris* in European Prehistory: A perspective for comprehending shell exchange**

Utilization of items made of *Glycymeris* shell in the European Prehistory was identified mostly in the Mediterranean region (Reese D.S., 1987; Nikolaidou M., 2003; Light I., 2003). Bracelets were extensively exchanged in the Neolithic of the Iberian peninsula, especially in northeastern Spain (Harrison R. J., Orozco Köhler T., 2001, 108). These bracelets, however, were manufactured from fossilized shells which is not the case in other European regions. Items made of non-fossil *Glycymeris* shell have been reported mostly from the Aegean region (Karali L., 1999; Shackleton N., J., 2003; Nikolaidou M., 2003; Reese D.S., 1987, 121-124), and only recently from sites around the Black Sea (Todorova H., 2002; Avramova M., 2002). In the Aegean and mainland Greece, *Glycymeris* bracelets were discovered in Sitagroi, Servia, Nea Nikomedeia and Vasilika C-II (Nikolaidou M., 2003, 337-338; Karali L., 1999, 39, 58-59, Table 3; Reese D.S., 1987, 122). More frequent are simple pendants made of perforated valve; in larger number they were found in Sitagroi III, Dikili Tash, Dhimitra, Paradeisos, Knosos, Phaestos, Myrtos, while they also sporadically appear in Kitsos Cave, Saliagos, Ayio Gala, Anza and Troy (Nikolaidou M., 2003, 348; Reese D.S., 1987, 121-124; Karali

L., 1999, 39, 58-59, Table 3). The abundance of finds makes it possible to observe the relationship between items made of *Spondylus* and *Glycymeris*. Phases II and III of the Sitagroi settlement display dramatic change in the number of *Spondylus* and *Glycymeris* bracelets (Shackleton N., J., 2003, 361-362; Nikolaidou M., 2003, 338). Their ratio in phase II is 22:9, while in phase III that ratio is 117:5 for *Spondylus* (Nikolaidou M., 2003, 338). Important for understanding the dynamic of artifacts distribution in the interior of the continent is the fact that Sitagroi II is dated between 5200-4600 cal BC (Renfrew C., 2002, xxvii), which is the time of the most frequent *Glycymeris* occurrence at Vinča, and Sitagroi III between 4600-3500 cal BC (Renfrew C., 2002, xxvii), spanning the time of most frequent *Spondylus* occurrence at Vinča. It is therefore probable that diachronic trends in the utilization of *Spondylus* and *Glycymeris* bracelets in the Aegean and the central Balkans have the same cause.

Shell-made bracelets from the western coast of the Black Sea were mostly classified as *Spondylus* or *Spondylus/Glycymeris* category. The number of *Glycymeris* bracelets at the Durankulak necropolis appears to be considerable; 1505 *Spondylus/Glycymeris* items were discovered (Todorova H., 2002, 179), dating between 5250/5200(?)–4250/4150 cal BC (Bojadžiev J., 2002, 67). As for other sites in Bulgaria, a cache of 12 *Glycymeris* bracelets was discovered in Mirkovo settlement from the time of around 4200 BC (Krivodol-Salkuța III context), and another cache of 20 bracelets from an unknown location (Todorova H., 2002, 178-179). Considering the overall number of shell items in the Black Sea region (Willms C., 1985; Todorova H., 2000; Séfériadès M.L., 1995; Müller J., 1997), the quantity of *Glycymeris* bracelets cannot be compared with Vinča. It is worth noticing, however, that at the Durankulak necropolis, which spans almost the entire Vinča sequence, most of the identified *Glycymeris* bracelets come from the phases Hamangia III and Hamangia IV (Todorova H., 2002, 178), which date to the period between 4950/4900–4550/4500 BC (Bojadžiev J., 2002, 69); it means that the frequency of *Glycymeris* bracelets in the necropolis still corresponds with their appearance at the site of Vinča.

The area with the least identified *Glycymeris* shell is the eastern Adriatic coast. The most likely reason for this can be the fact that archaeomalacological analyses were generally lacking from the region until recently. In the hinterland of the Adriatic coast, in horizon X of Crvena Stijena site, a perforated *Pectunculus* sp. shell was discovered, as well as a

larger number of perforated valves of *Pectunculus Glycymeris* in horizon IX, and both belong to the Late Upper Paleolithic. These finds can be dated between 14,500 and 13,500 BP (Mihailović D., 1999).

So, where should one search for the origin of the Vinča *Glycymeris* finds? Out of the three mentioned regions, *Spondylus* and *Glycymeris* shells today are absent from the Black Sea only. Therefore, the traditional interpretations for the origin of numerous *Spondylus* artifacts most often suggest the Aegean and the Adriatic regions as the likely place of origin (Séfériadès M.L., 1995; Müller J., 1997); this is probably true for most of the *Glycymeris* bracelets too. *Glycymeris* bracelets and perforated valves of the same shell indeed appear on many sites in Greece from the Neolithic time, and the trends of their utilization match those in the central Balkans. Also, *Glycymeris* bracelets have been abundantly found at the archaeological sites on the west coast of the Black Sea, but they were not separately studied from *Spondylus* shell and the trends of their utilization are not known. Fragments of *Glycymeris* shell as half-finished products were found at Big Island next to the necropolis of Durankulak; it was suggested that they were collected and treated at this location (Todorova H., 2002, 178). Sandy sea bottoms in this area are also favorable for *Glycymeris* life cycle (Todorova H., 2002, 181), and these two facts are, for now, the only clues that the Black Sea region served as an alternative source of supply.

On the other hand, biotope of *Spondylus* and *Glycymeris* shells is irrelevant for understanding the nature of Vinča collection. They certainly did not reach the Danube basin through direct exchange with the Aegean and Black Sea communities. Alongside Vinča, shell items in the Vinča culture are largely found in the southeast Pannonia (Fig. 3). So far, there are only few finds distributed south of the Danube (Dimitrijević V., Tripković B., 2003, 58). Not only that southern settlements of the Vinča culture were not involved in the extensive network of *Spondylus* (and *Glycymeris*) exchange, they also yielded very small quantities of other exotic goods (Tripković B., 2004; Dimitrijević V., Tripković B., 2006, 12). Considering that the number of excavated sites is not small, it is unlikely that further excavations would significantly alter this pattern.

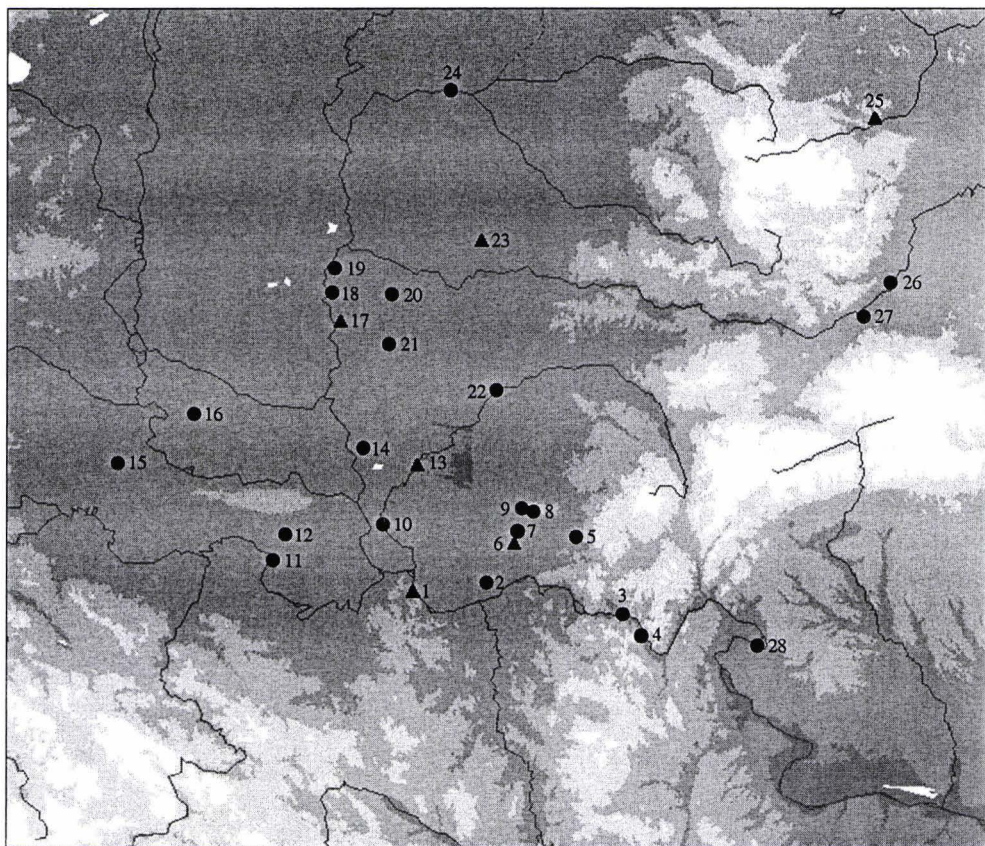


Fig. 3: *Spondylus* and *Glycymeris* distribution in the Neolithic of the Central Balkans and Southern Pannonia (after Dimitrijević V., Tripković B., 2003, 54, Fig. 3; Chapman J., 1981, 318-319, Fig. 105; Willms, 1985): ● - *Spondylus*, ▲ - *Glycymeris* items in *Spondylus* assemblages. *Starčevo* sites: 5 - Gura Baciului; 4 - Lepenski Vir; 12 - Ruma, Zlatara; 15 - Vinkovci, Tržnica; 19 - Srpski Krstur; 20 - Besenova Veche; 24 - Endröd 119. *Vinča* sites: 1 - Vinča; 2 - Gaj, Čolak; 3 - Ljubcova; 5 - Racasdia; 6 - Potporanj, Kremenjak; 7 - Vršac, Potporanjska Granica; 8 - Vršac, Kozluk; 9 - Vršac, At; 10 - Opovo; 11 - Gomolava; 13 - Botoš; 14 - Aradac; 16 - Odžaci, Mostonga; 18 - Novi Kneževac; 21 - Kikinda; 22 - Parta; 26 - Alba Iulia; 27 - Tartaria; 28 - Ostrovul Corbului. *Tisza/Vinča* sites: 17 - Čoka, Kremenjak. *Tisza* sites: 23 - Battonya-Parázstanya

Finally, it is important to mention that the Neolithic communities of the mid-Danube basin maintained long term contacts only with communities in the Carpathian basin and, occasionally, with the western Balkan communities. Those contacts were created and maintained in this

region since the Early Neolithic thus creating a cultural sphere with a specific cultural content. In the Early Neolithic, this cultural sphere includes the Starčevo-Kőrös-Criș in the northern Balkans and the Carpathian basin as well as the Starčevo-Impresso in the western Balkans (Garašanin M., 1979). In the Late Neolithic, there were contacts with the Szakálhát and the Tisza communities in the Pannonia and, occasionally, with Sopot-Lengyel communities in Croatia (Garašanin M., 1979, 198; Garašanin M., Garašanin D., 1957; Chapman J., 1981; Dimitrijević S., 1979, 298, 301). Circulation of exotic goods is a common feature of all mentioned cultures (Dimitrijević S., 1968; Dimitrijević S., 1969; Dimitrijević S., 1979, 291-292; Willms C., 1985; Biró K., 1988; Korek J., 1989; Greif T., 1995), and they are located precisely where numerous *Glycymeris* items should be expected in the future: next to the Aegean, the eastern Balkans and the Danube basin sites. Only one *Pectunculus* (*Glycymeris*) bracelet has been published so far from this vast area; it comes from Gura Bacului, dating to the Early Neolithic (Vlassa N., 1976, Fig. 14, 11; Lazarovici G., Maxim Z., 1995, 154, Fig. 26, 1). Another *Glycymeris* bracelet from Kremenjak by Čoka (Kalicz N., Raczky P., 1987, 26, Fig. 13) and a round pendant from Battonya-Parázstanya (Kalicz N., Szénászký J., 2001, 32, Abb.4.1, Abb.8.1, Abb.9.1), both dated in the Late Neolithic, can be recognized from photos.

Conclusion

A detailed study of the Late Neolithic shell collections from Vinča showed that along with the *Spondylus* ornaments, there is a large number of bracelets made of *Glycymeris* shell. To date, that shell has been reported in European Prehistory mostly for the Aegean. On the other hand, it was noticed that *Glycymeris* items are very similar to those made of *Spondylus* and that in most of the collections these different shell genera were mixed together and published as *Spondylus* items. It is therefore to be expected that the existent *Spondylus* assemblages conceal a large number of *Glycymeris* artifacts. At the moment, Vinča settlement offers guidelines for further research of shell items in the region. General observations are that: a) along with *Spondylus*, *Glycymeris* shells are represented in large numbers; b) only bracelets were made of *Glycymeris* and; c) there are diachronic trends in the frequency of *Spondylus* and *Glycymeris* artifacts; these conclusions should serve as a future analytical framework. Considering the

regional character of Vinča, more *Glycymeris* bracelets should be expected at those sites that were contemporaneous with the earlier part of the Vinča sequence.

So far, a large number of *Glycymeris* valves have been discovered only in the Aegean region, indicating the primary origin of most of the European artifacts, and most probably the origin of bracelets from Vinča. Therefore, the reason for the cessation of *Glycymeris* delivery to the interior of the continent should most probably be sought in the orientation of the Aegean communities towards other kinds of ornaments (Nikolaidou 2003). After the disappearance of *Glycymeris* bracelets from the exchange network, which probably happened towards the end of the 5th millennium BC, the utilization of *Glycymeris* shell in the middle Danube basin is detected again only 2500 years later. In the Middle Bronze Age necropolis Ostojićevo by Kikinda, pendants of perforated *Glycymeris* valve are a part of some grave inventories (National Museum of Kikinda, unpublished material, inv. A 3159). This time, however, a dilemma of their origin is nonexistent. These pendants do not have the Black Sea or the Aegean origin – they were made from fossil shell.

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NOTE

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