



# INTERACTIONS, **CHANGES** AND **MEANINGS.**

Essays in honour of Igor Manzura  
on the occasion of his 60<sup>th</sup> birthday

*Edited by*  
*Stanislav Terna and Blagoje Govedarica*

KISHINEV  
2016



# КУЛЬТУРНЫЕ ВЗАИМОДЕЙСТВИЯ. **ДИНАМИКА** **И СМЫСЛЫ.**

Сборник статей в честь 60-летия И. В. Манзуры

*Под редакцией  
Станислава Церны и Благое Говедарицы*

КИШИНЕВ  
2016

60-летию  
**Игоря Васильевича Манзуры**  
посвящается

*Dedicated to 60<sup>th</sup> anniversary of Igor V. Manzura*



*Manz*

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P. Biagi, E. Starnini

# The Origin and Spread of the Late Mesolithic Blade and Trapeze Industries in Europe: Reconsidering J. G. D. Clark's Hypothesis Fifty Years After

**Keywords:** Europe, North Africa, Near East, Late Mesolithic, Blade and Trapeze Industries, "Castelnovization", Late Boreal/Early Atlantic period, Radiocarbon dating

**Ключевые слова:** Европа, Северная Африка, Ближний Восток, поздний мезолит, индустрии пластин и трапеций, «кастельновизация», поздний бореал/ранний атлантик, радиоуглеродные датирования

P. Biagi, E. Starnini

**The Origin and Spread of the Late Mesolithic Blade and Trapeze Industries in Europe: Reconsidering J. G. D. Clark's Hypothesis Fifty Years After**

Already in the late 1950s J. G. D. Clark outlined the important changes that took place at the end of the Mesolithic period in many regions of Europe, North Africa and the Near East, which led to the production of chipped stone assemblages characterized by parallel-sided blades and different types of trapezoidal arrowheads. This paper discusses the origin, chronology, eventual spread, and distribution of the new assemblages that suddenly, almost contemporaneously made their appearance in many different territories of the Old World in the light of the discoveries made during the last fifty years.

П. Бьяджи, Э. Старнини

**Происхождение и распространение позднемезолитических индустрий пластин и трапеций в Европе: пересмотр гипотезы Гр. Кларка 50 лет спустя**

В конце 1950-х гг. Гр. Кларк обратил внимание на важные изменения, произошедшие в конце мезолита во многих регионах Европы, Северной Африки и Ближнего Востока. Они привели к появлению каменных коллекций, в которых преобладали пластины с параллельными краями и различные трапецевидные наконечники стрел. В данной работе, основываясь на результатах изысканий последних пятидесяти лет, авторы обсуждают происхождение, хронологию, вероятные пути распространения новых видов орудий, появившихся почти одновременно на многих территориях Старого Света.

One of the most important issues in the study of the Late Mesolithic of Europe regards the origin of the Blade and Trapeze Industries (Clark 1958). This event is supposed to have taken place around the beginning of the Atlantic, i.e. at the onset of the Late Mesolithic, following the dramatic environmental changes that characterised the early stages of the period, which led to the development of new knapping technologies, hunting techniques and weapons (see Inizan 2012: 13).

This major technological change in stone tool industries in Europe involved the production of extremely regular blades manufactured by pressure-flaking that dominate assemblages (Desrosiers 2012), very often accompanied by the microburin technique for making trapezes that become the most characteristic microlithic form, used also as transverse arrow points. It has been suggested that

this technology contributed to the manufacturing of standardized and efficient composite weapons and tool technology, and was part of a wide process of diffusion, suggesting communication networks ultimately linking most of Europe (Hartz *et al.* 2010). In the Late Mesolithic the regional differences of earlier Mesolithic times seem to have disappeared, although there remains some variability in stylistic details and raw material use, a process that, for the Mediterranean and other regions, has been appealed "Castelnovization" (Kozłowski 2009).

In effect we know very little of the above topics, and the evidence for transitional Boreal-to-Atlantic Mesolithic sites in south-eastern Europe is very poor. Consequently our knowledge of the events that took place at the turn of the ninth millennium BP, and the changes that affected the life



of the last hunter-gatherers, and eventually led to the introduction of new techniques for the production of chipped stone tools, is also very limited. The appearance of Blade and Trapeze Industries in some Western European countries at the beginning of the Atlantic, France for instance (Binder *et al.* 2012), is confirmed by the archaeological evidence, though its sequence is still poorly understood (Valdeyron 2008: 190).

Already in the late 1950s J.G.D. Clark pointed out the uniqueness of the chipped stone assemblages characterised by the systematic recurrence of regular, parallel-sided blades and different types of trapezoidal arrowheads. According to this author Blade and Trapeze Industries are known from many sites attributed to the final stages of the Mesolithic period. According to the aforementioned author their distribution spread over a very wide territory of Eastern and Western Europe, as well as a few regions of North Africa (Clark 1958).

The topic was widely discussed by the same author in a more recent volume published at the beginnings of the 1980s. In his work he emphasised the environmental factors that affected the life of the last European hunter-gatherers, and the problems related with their economic subsistence up to the advent of the earliest food-producing communities (Clark 1980).

J.G.D. Clark also speculated about the origin of the European Blade and Trapeze Industries, suggesting that it is to be searched either in north-west Africa or south Russia (Clark 1958: 39). The idea of south Russia was probably conceived after reading the volume of M. Gimbutas on the prehistory of Eastern Europe (Gimbutas 1956). In her book this author wrote a short, paramount view of the Late Palaeolithic to Early Neolithic assemblages retrieved from the rock-shelters of Crimea, focussing mainly on the sequences of two of the most important sites: Shan-Koba and Murzak-Koba (Fig. 1) (Телегин 1982; Бибииков *et al.* 1994).

### **The Mesolithic sequence of the Crimean Mountains**

The absolute chronology of the Late Mesolithic Blade and Trapeze Industries of Europe was badly known to J.G.D. Clark and M. Gimbutas, because of the limited number of radiocarbon dates available at their times. Already in the 1950s the importance of the Crimean sequences had attracted the attention of western archaeologists. Interestingly during the same period the Soviet archaeological tradition utilised the classic French terminology to frame the local Mesolithic cultures into a period or another. Terms like

Azilian (Malvesin-Fabre 1954) and Tardenosian (Mortillet 1896; Daniel, Vignard 1954; Rozoy 1971) were systematically employed in Russia at least since the 1930s. Thus they were utilised also to describe the characteristics of the lithic assemblages of the two main Mesolithic periods established for the long Crimean sequences (Бонч-Осмоловский 1934).

Both terms were commonly used in the Anglo-Saxon literature at least since the 1920s. In some regions they were united into one, Azilio-Tardenoisian. It was in turn subdivided into two aspects distributed over different, partly complementary territories (Burkitt 1926: 18), though the presence of trapezes was considered to characterise only the “later” Tardenoisian culture (Burkitt 1925: 22). It is even more interesting to outline that already in the 1920s the same author had pointed out the presence of “the Tardenoisian culture” in Crimea and south Russia, following excavation reports published as early as 1880 (Мережковский 1880).

In the last 10 years the AMS dating of a few important Mesolithic sites excavated in the Crimean Peninsula, and the north-western coast of the Black Sea, greatly contributed to the definition of the time-span during which the Crimean rock-shelters were settled, and to suggest the period of the first appearance of Blade and Trapeze Industries in the region (Benecke 2006; Biagi, Kiosak 2010; Biagi *et al.* 2014; Biagi 2016) (Fig. 2).

Thanks to the reinterpretation of the Shan-Koba sequence, the AMS dating of the rock-shelter Laspi 7, along the southern shores of the Crimea (Телегин 1982: 91), and Mirmoe, slightly in the interior of the present north-western Black Sea coast (Станко 1982; Biagi, Kiosak 2010), as well as the radiocarbon dating of the pollen sequences of Balka Bermala and Balka Yukarina in south-western Crimea (Cordova, Lehman 2003; 2005), it began to be clear that in this territory of south-eastern Europe, Blade and Trapeze Industries started to be produced already during the second half of the Boreal period, around the middle of the 9<sup>th</sup> millennium BP, ca. 500 years before the beginning of the Atlantic (Biagi 2016) (Fig. 3).

The technological changes that took place in that period in the Crimea and the south steppe zone in general, have been clearly described by D. Nuzhnyi. According to this author the “typological differentiation and specialisation of the Late Mesolithic microliths are due to their use in different composite arrowheads: transverse, oblique or piercing types with or without various barbs and edges. The widespread type of Late Mesolithic microliths were various trapezes with a highly reduced role of retouch in their morphology. This was possible thanks to the high level of



**Fig. 1.** The rock-shelter of Murzak-Koba in south-eastern Crimea and characteristic trapezoidal geometrics from the same site (photo: <http://bike-crimea.com/blog/2013/murzak-koba>; drawings after Телегин 1982b).

**Рис. 1.** Скальный навес Мурзак-Коба в Юго-Восточном Крыму и характерные трапециевидные геометрические орудия с этого памятника (фото: <http://bike-crimea.com/blog/2013/murzak-koba>; рисунки по Телегин 1982b).

perfection of blade processing and manufacturing of straight, standard and geometrically shaped blades” (Nuzhnyi 2000: 100). The above observations regarding the function of the trapezoidal arrowheads can be extended also to other regions of western Europe (see Domingo Martínez 2005: 100—104).

The aforementioned data contrast with the picture currently available not only from south-eastern France (Jaccottey 1999: Fig. 1), where the Castelnovian Blade and Trapeze Industries make their appearance at the end of the 9<sup>th</sup> millennium BP in an open vegetation environment dominated by broad leaf species (Thiébaud 1999), but also from other parts of southern Europe (Binder *et al.* 2012), and north-west Africa (Belhouchet *et al.* 2014; Mulazzani *et al.* 2015).

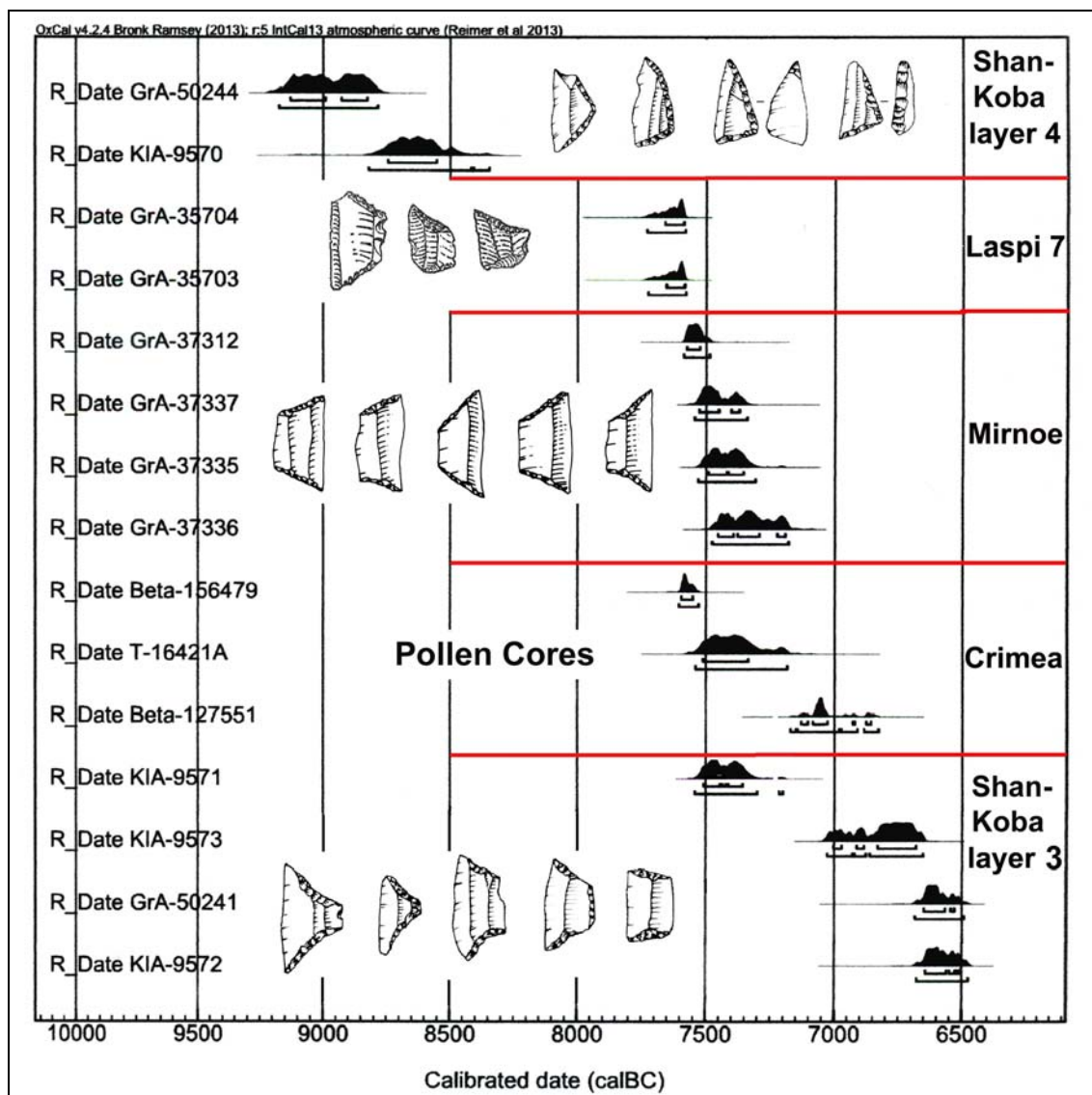
The complexity of the Mesolithic in the southern regions of the Ukraine and Crimea in their east European context has been discussed by several authors, sometimes with controversial results (Формозов 1954; Nuzhnyi 1998; Telegin 1998; Yanevich 1998; Zaliznyak 1998). The most important problems still to be solved regard the great variability of the chipped stone assemblages with geometric microliths of different type and

size (Нужный 1992; Burov 1999; Nuzhnyi 2000; Залізняк 2005; Galimova 2006), the absence of a systematic programme of AMS radiocarbon dating (Telegin 1981; Dolukhanov 2008: 289), the precise definition of the territories occupied by each single cultural group (Telegin 1981: Fig. 59; Stanko, Kiosak 2008—2009), and the too many interpretations of the internal development of the controversial Kukrek assemblages (Яневич 1987).

Finally, last but not least, the absence of technological analyses regarding knapping methods that prevents the recognition of technical traditions in this area. However, the morphology of the cores suggests a widespread use of pressure-knapping technique as pointed out also by the manufacture of regular, parallel-sided blades (Nuzhnyi 2000).

### Where and when the new tradition originated?

According to J.G.D. Clark (1958) “the adoption of cutting arrow-heads, spread rather rapidly over extensive tracts of continental Europe during its later Mesolithic phase” (Clark 1980:



**Fig. 2.** Radiocarbon chronology of the Late Boreal/Early Atlantic period in Crimea and the north-western part of the Black Sea, showing the variability of the trapezoidal geometrics according to the evidence from some of the sites (drawing by P. Biagi).

**Рис. 2.** Радиоуглеродная хронология позднего бореала/раннего атлантика в Крыму и Северо-Западном Причерноморье, с указанием вариабельности трапециевидных геометрических орудий на разных памятниках (рисунок П. Бьяджи).

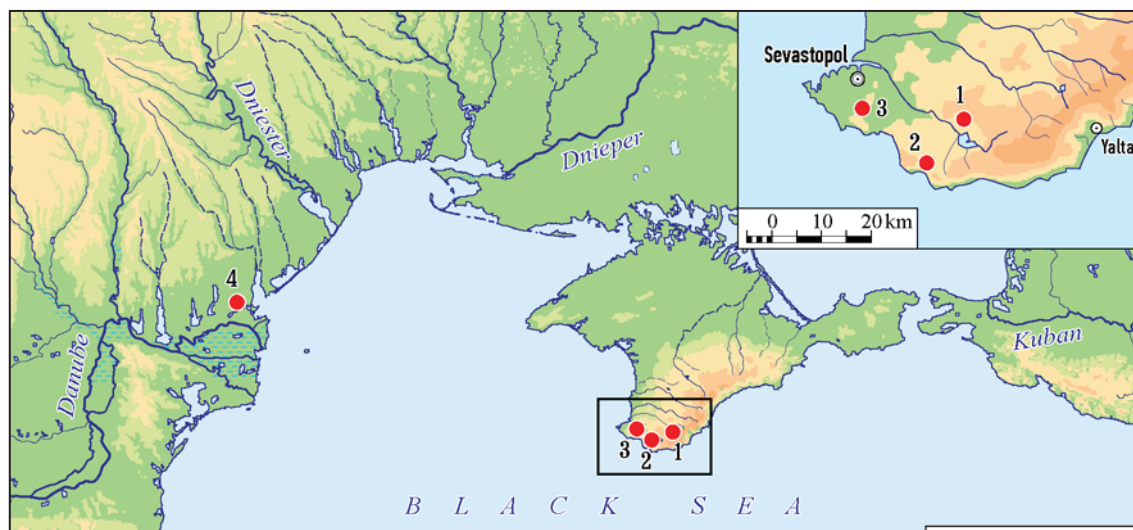
53). Spread from where? Crimea or north-western Africa (Grébénart 1976; Perrin *et al.* 2009)? Or invented locally within some well-defined regions (Binder 2000: 123)?

Let us consider one of the two hypothetical centres from which Blade and Trapeze Industries might have originated, Crimea, focussing on the few available radiocarbon-dated sites. Leaving the north-western coast of the Black Sea, where the impressive Grebeniki culture settlement of Mirnoe (Fig. 4) was AMS-dated between 8475±45 BP (GrA-37312) and 8280±45 BP (GrA-37336), we have to move farther in the interior, along the banks of the Dnestr River, and

reach Soroki II in Moldavia to find another site with similar lithic characteristics. Both the aceramic layers 3 and 2 of this multi-layered riverine settlement, yielded chipped stone assemblages with parallel-sides blades and isosceles trapezes that were radiocarbon-dated to 7515±120 BP (Bln-588) and 7420±80 BP (Bln-587) respectively (Маркевич 1974: 147).

The situation is poorly known also in Trans-Carpathian Ukraine where the presence Blade and Trapeze assemblages has been suggested. Unfortunately none of the Mesolithic sites of this region has ever been radiocarbon-dated (Мацкевий 2001).





**Fig. 3.** Distribution map of the Crimean and north-western Black Sea sites mentioned in the text: 1 — Murzak-Koba and Shan-Koba; 2 — Laspi; 3 — Balka Bermala and Balka Yukarina; 4 — Mirnoe (drawing by P. Biagi).

**Рис. 3.** Карта памятников Крыма и Северо-Западного Причерноморья, упомянутых в тексте: 1 — Мурзак-Коба и Шан-Коба; 2 — Ласпи; 3 — Балка Бермана и Балка Юкарина; 4 — Мирное (рисунок П. Бьяджи).

Moving west, along the Balkan Peninsula, a distribution map of the Mesolithic-Neolithic sequences has been published recently (Borić 2005: Fig. 7.2). Although the map is rather generic, and open to different interpretations, the number of Mesolithic sites is nevertheless very poor, and should be integrated with a few more data that were already available in the early 1980s (Kozłowski, Kozłowski 1983a). Leaving apart the Greek sites that are peripheral to the problem (Galanidou, Perlès 2003), and some of the Turkish discoveries, Ağacli for example (Gatsov, Özdoğan 1994; Kartal 2003), a huge surface site from the surface of which lithics of different cultural aspects from the Upper Palaeolithic to the Bronze Age but not Mesolithic were recovered (Binder *et al.* 2012), we can notice that most of the Mesolithic sites reported in the aforementioned map fall either within the Iron Gates, or in a few sheltered regions of the south-western part of the Balkan Peninsula, Montenegro for instance (Mihailović 1999; Mihailović, Dimitrijević 1999). Here the first Blade and Trapeze Industries make their appearance at Odmu Layer Ib, radiocarbon-dated between  $7790 \pm 70$  BP (Si-2226) and  $7030 \pm 160$  BP (Z-457) (Kozłowski *et al.* 1994; Franco 2011: 35). Very few Late Mesolithic sites are known from the islands, Vela Spila at Korčula for example (Čečuk, Radić 2005), from which we have the only radiocarbon assay of this period from entire Croatia ( $7200 \pm 30$  BP: VERA-2340) (Komšo 2006: 73). Other, though poor evidence of Mesolithic sites has been recovered all along the Dalmatian Coast as far as Istria, the Trieste and Slovene Karst (Komšo 2006).

If we move south, along the same coast, we have to reach the border between Albania and Epirus to find another stratified cave site with evidence of Late Mesolithic occupation at Cave Konispol, where a Blade and Trapeze industry has been recovered from Unit XXI, just below the Early Neolithic occupation, radiocarbon-dated between  $7630 \pm 140$  BP (Beta-67804) and  $7410 \pm 80$  BP (Beta-7999) (Harrold *et al.* 1999: 367; Pearce 2013: 87–93). Although more Mesolithic sites have been recovered from south-western Albania, Konispol so far is the only radiocarbon-dated sequence of this period (Gjipali 2006).

Many Mesolithic and Early Neolithic sites have been excavated, published and later radiocarbon-dated mainly during the last 20 years at the Iron Gates (Fig. 5), along both banks of the Danube (Bonsall 2007; 2008; Bonsall *et al.*, 2008; Boroneanţ, Bonsall 2013; Borić *et al.* 2014). Nevertheless the Iron Gates represent a unique, anomalous case from which a high concentration of sites has been discovered in the central Balkan Peninsula. It is also surprising that we know very little of the prehistory of the territory surrounding the gorge, which has never been surveyed systematically, in particular the Banat. From this latter region a few caves produced evidence of occupations radiocarbon-dated to the Late Mesolithic, although none of them ever yielded any typical trapezoidal geometric tool (Boroneanţ 2011).

In contrast with the many broad scale excavations carried out in the region, and the important sites discovered there, at present we still know very little of the chipped stone assemblages of the



**Fig. 4.** The area where the large open-air site Mirnoe was excavated by V.N. Stanko in the 1970s and some of the characteristic Grebeniki culture trapezoidal geometrics from the site (photo and drawings by P. Biagi).

**Рис. 4.** Место исследований крупного поселения у с. Мирное (раскопки В.Н. Станко, 1970-е гг.) и некоторые характерные гребениковские трапециевидные геометрические орудия с памятника (фото и рисунок П. Бьяджи).

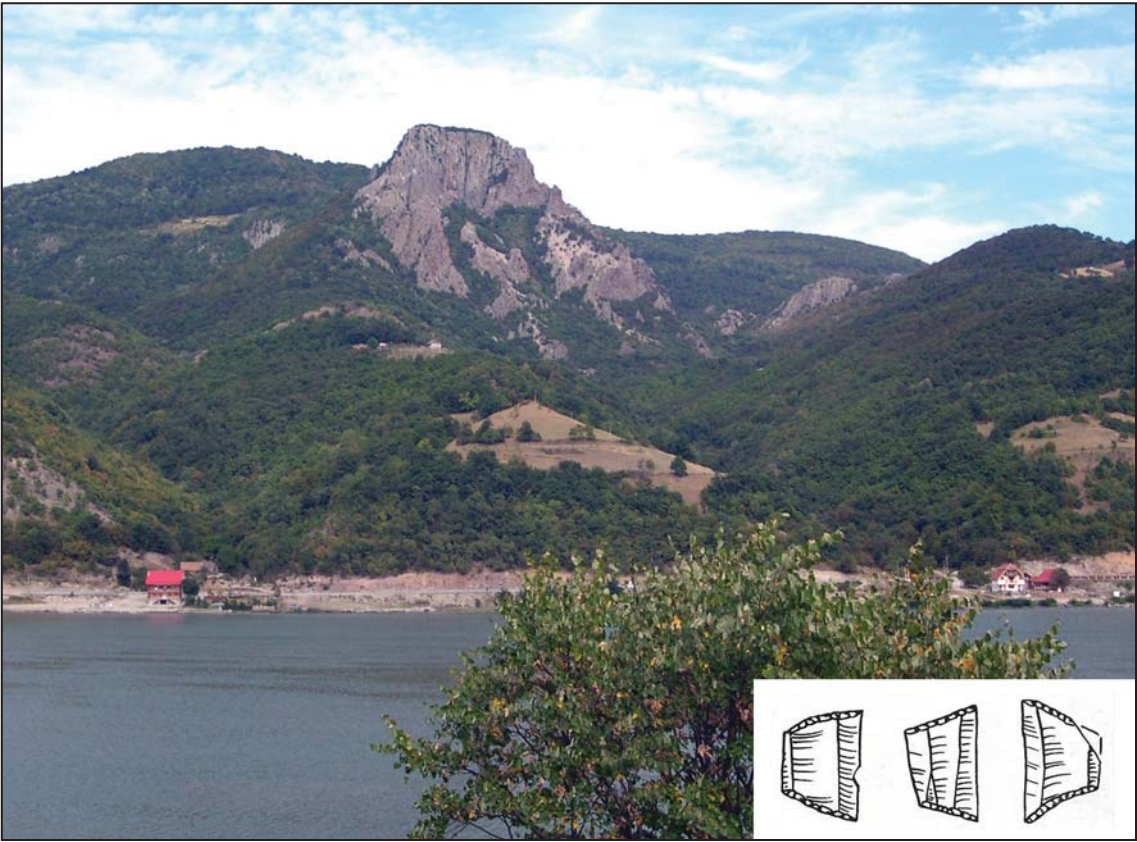
last hunter-fisher-gatherers of the Gates, their typological characteristics according to the different periods of occupation, the sources of raw material exploited for making tools, and their function. Indeed the only papers on the chipped stone industries from Lepenski Vir were published in the 1980s (Srejšović *et al.* 1980; Kozłowski, Kozłowski 1983b; Kozłowski 2009: 289–304) as well as those from Vlasac (Kozłowski, Kozłowski 1982). The same assemblages were re-discussed a few years later together with other Mesolithic complexes from the same region (Radovanović 1996). To sum up the Iron Gates are a very interesting spot within the empty quarters of the Mesolithic in Central Balkans. The problem is that at present we know too little of the material culture of the sites, lithics in particular, and nothing about the precise period when Blade and Trapeze Industries began to be adopted despite the very long lists of radiocarbon dates available from the sites in this region.

Thus we have to move farther north, and reach Istria, the Trieste and Slovene Karst to find important Mesolithic sequences. Also in this region Preboreal and Boreal sites are better represented than those of the Atlantic. The rock-shelter Mala Triglavca, in the Slovene Karst, yielded evidence of several Late Mesolithic over-imposed occupation layers (Turk 2004), the earliest of which was dated  $7950 \pm 50$  BP (Poz-16341), and the most recent  $6602 \pm 37$  BP (OxA-15134). Unfortunately the radiocarbon chronology of the Late Mesolithic horizons and the archaeological sequence do not match, thus its interpreta-

tion is problematic (Mlekuž *et al.* 2008a; 2008b). The assay Poz-16341 is a few centuries older than those obtained from the earliest Late Mesolithic layer 4 from Grotta Benussi in the Trieste Karst ( $7620 \pm 150$  BP: R-1044). The radiocarbon dates from the fireplace uncovered from layer 3a at Grotta dell'Edera, are to be referred to a brief episode that took place the end on the Late Mesolithic (Biagi 2003a), although a few specimens had already made their appearance in the Late Boreal context of Layer 3b dated to  $8110 \pm 90$  BP (GrN-25138) (Biagi *et al.* 2008: 252) (Fig. 6).

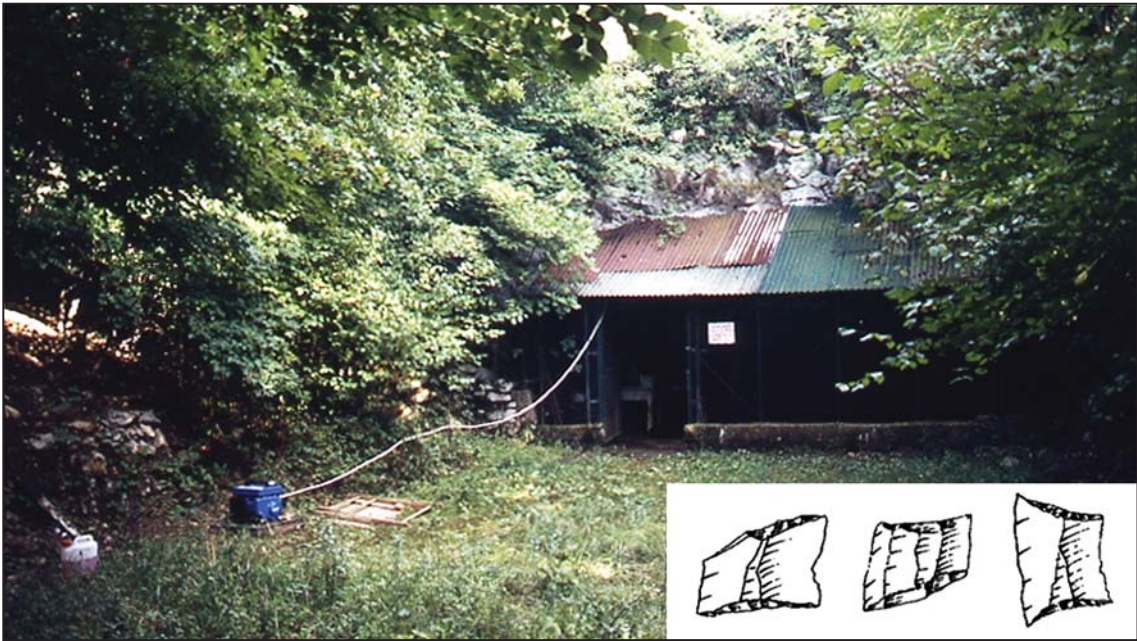
A summary of the problems related to the beginning of the Late Mesolithic or “Castelnovization” (Kozłowski 2009) in southern Europe has been published recently (Franco 2011: 39–43). According to the aforementioned author the Late Mesolithic assemblages, characterised by parallel-sided bladelets and trapezoidal geometrics, made their appearance in Italy at the very end of the ninth, beginning of the eighth millennium BP, a chronology that is supported by the radiocarbon chronology (Franco 2011, Tabella 1). Nevertheless our knowledge of the events that took place in that period of important climatic and cultural changes is limited by the archaeological evidence. All the series from which the earliest dates have been obtained are of problematic interpretation, most probably because of sedimentary problems. The sequences are badly stratified, and probably cut by later erosional episodes (Romagnano III: Clark 2000), or insufficiently dated (Riparo Gaban: Kozłowski, Dalmeri 2000), or the radiocarbon





**Fig. 5.** A view of the Iron Gates from the Serbian bank of the Danube where the site of Lepenski Vir is located, and trapezoidal geometrics from Vlasac (photo by P. Biagi; drawings after Kozłowski, Kozłowski 1983a).

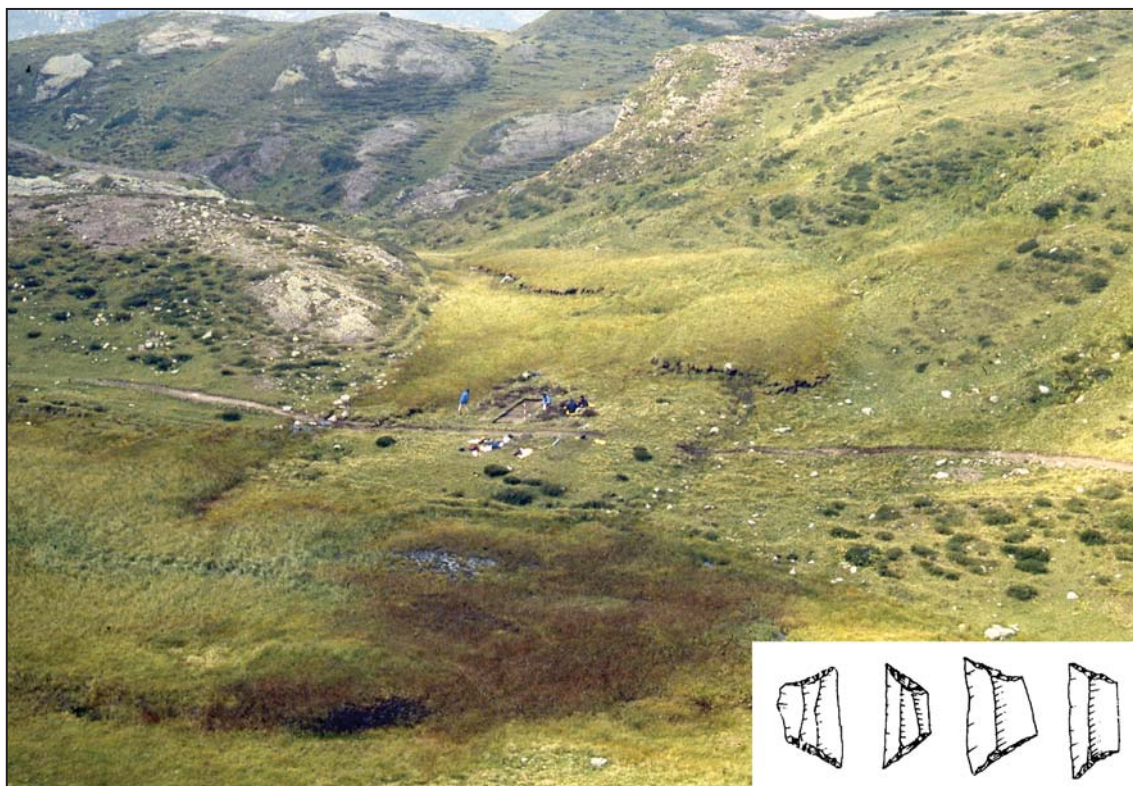
**Рис. 5.** Вид на Железные Ворота с сербского берега Дуная, с места расположения стоянки Лепенски Вир, и трапезиевидные геометрические орудия из Власац (фото П. Бьяджи; рисунки по Kozłowski, Kozłowski 1983a).



**Fig. 6.** Entrance of Grotta dell'Edera di Aurisina in the Trieste Karst and the earliest trapezoidal geometrics retrieved from layer 3b (photo by P. Biagi, drawings after Biagi et al. 2008).

**Рис. 6.** Вход в Гротта дель Эдера ди Ауризина в карстах Триеста и самые ранние трапезиевидные геометрические орудия из слоя 3b (фото П. Бьяджи; рисунки по Biagi et al. 2008).





**Fig. 7.** The high-altitude site of Laghetti del Crestoso in the south-central Italian Alps, and early Atlantic trapezoidal geometrics from the site (photo by P. Biagi; drawings after Baroni, Biagi 1997).

**Рис. 7.** Высотный памятник Лагетти дель Крестосо в южно-центральных итальянских Альпах и трапецевидные геометрические орудия раннего атлантика с памятника (фото П. Бьяджи; рисунки по Baroni, Biagi 1997).

chronology does not match with the archaeological sequence (Grotta Latronico: Dini *et al.* 2008; Franco 2011: 70). At the high-altitude site of Laghetto del Crestoso in the central Italian Alps, the earliest settlements with isosceles trapezes has been dated to  $7870 \pm 50$  BP (GrN-21889) and  $7850 \pm 80$  BP (Beta-35241) (Baroni, Biagi 1977: 17) (Fig. 7).

To sum up, our knowledge of the Late Mesolithic sequences of Italy is very poor, despite the number of sites. We know very little of the variability of between the lithic assemblages throughout the entire period during which Castelnovian assemblages were in use, their first appearance and their final disappearance. All the available evidence comes from no more than a dozen of sites distributed over very different environmental locations throughout the entire peninsula (Biagi 2003b; Franco 2011).

### Discussion

The data discussed in this paper show that our knowledge of the origin and suggested spread of Blade and Trapeze Industries has not improved very much during the last fifty years. The sites with a reliable evidence of the first use of trap-

ezoidal geometrics made from bladelets are very few. The same can be said of the number of radiocarbon dates available for the interpretation of the chronology or the earliest appearance of the new assemblages in different regions of south-eastern Europe (Fig. 8).

The AMS-dates obtained recently from a few important sites of the Crimea and the north-western Black Sea region help us define when the aforementioned industries first appeared in the region, when the climatic conditions started to change around the second half of the Boreal period (Cordova, Lehman 2005; Biagi *et al.* 2014; Biagi 2016). It is more difficult to understand whether or not these assemblages spread from the north Black Sea steppe zone toward the Balkans, because of the absence of stratified, radiocarbon-dated sites along most of the peninsula. Apart from Moldavia and north-eastern Romania (Păunescu 1970), the number of Mesolithic sites in the Balkans is very low, with the exception of a unique “spot” of settlements along the banks of the Iron Gates. We have to reach the Trieste and Slovene Karst to find stratified, radiocarbon-dated Late Mesolithic sequences.

All together our present knowledge is quite unsatisfactory, perhaps even more than it was in



**Fig. 8.** Distribution map of the Late Mesolithic sites mentioned in the text: 1 — Crimean sites; 2 — Mirnoe; 3 — Soroki II; 4 — Iron Gates; 5 — Konispol; 6 — Odmut; 7 — Vela Spilia; 8 — Latronico; 9 — Trieste and Slovene Karst; 10 — Romagnano III and Gaban; 11 — Laghetti del Crestoso (by P. Biagi).

**Рис. 8.** Распространение упомянутых в тексте позднемезолитических памятников: 1 — памятники Крыма; 2 — Мирное; 3 — Сорока II; 4 — Железные Ворота; 5 — Конисполь; 6 — Одмут; 7 — Вела Спилия; 8 — Латронино; 9 — карсты Триеста и Словении; 10 — Романьяно III и Габан; 11 — Лагетти дель Крестосо (сост. П. Бьяджи).

J.D.G. Clark's times, more than fifty years ago. At present we have very limited or no evidence for the spread of Blade and Trapeze Industries, or its "idea of transmission", and far too little knowledge of the reasons why the new techno-typological tradition was adopted (or invented?) in so many areas with different environmental characteristics between the second half of the Boreal and the beginning of the Atlantic (see Franco 2011: 159—164).

It is even more surprising that a very similar phenomenon developed also in environmentally very different territories of the Indian Subcontinent (Sosnowska 2010), among which are coastal, tropical and desert zones (Fig. 9), when assemblages characterised by lunates and triangles changed into complexes with various types of trapezes and notched blades (Sharma *et al.* 1980; Biagi 2003—2004; 2008; see also Inizan 2012: 19), most probably roughly during the same period when the change took place in Europe. Interestingly this fact had already been noticed by M.C. Burkitt (1926: Plate 2).

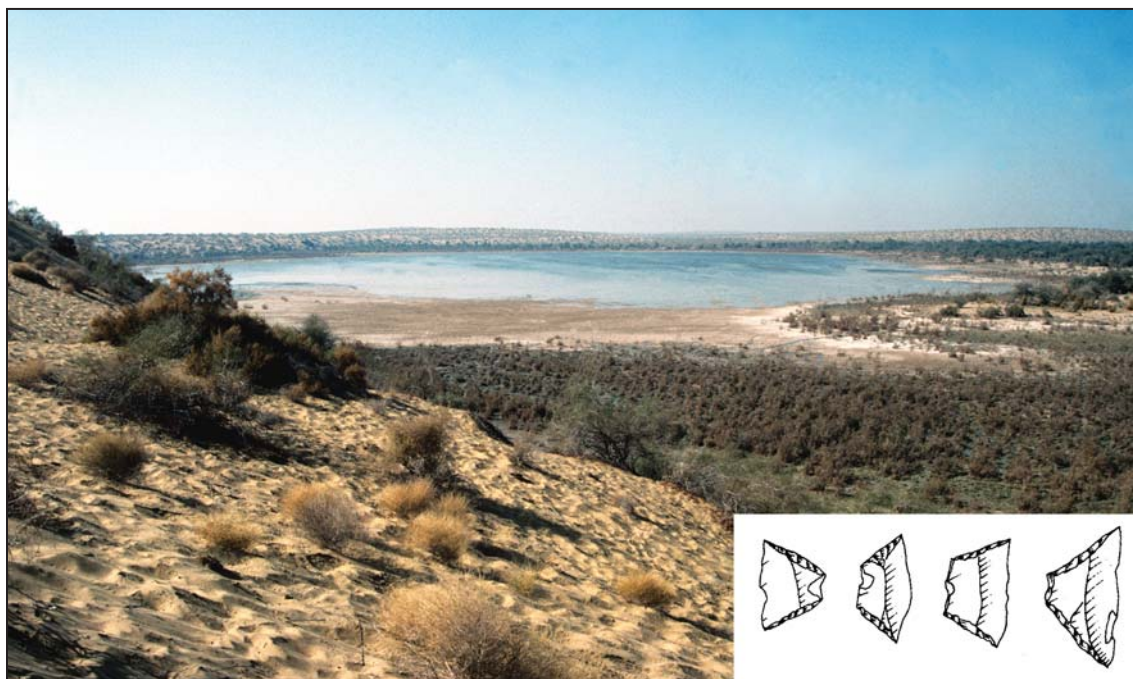
To sum up, the invention of Blade and Trapeze Industries is one of the most important techno-typological changes that took place in the Late Mesolithic of many countries of the Old Continent. Although this fact is fundamental for

the interpretation of the events that occurred between the second half of the Boreal and the beginning of the Atlantic period, archaeologists never paid much attention to the comprehension of this still rather obscure topic. This is not surprising given the scarce development of Mesolithic studies in most territories of the Balkan Peninsula, apart from the Iron Gates where the material culture assemblages have been analysed following modern approaches.

Their origin is also disputable. Even though we know that the Blade and Trapeze Industries of Murzak-Koba type antedate of at least three centuries those from the Caspian of north-western Africa (Rahmani, Lubell 2012: 142), and those from Southern Italy of at least five centuries, at present it is impossible to suggest whether they spread to Europe from south-east Europe, north Africa, or were more or less simultaneously manufactured locally. We also do not know the reason why they substituted the much longer-lasting Sauveterrian technology in most of Mediterranean Europe, from which, according to some authors, they have probably derived (Franco 2011: 152).

Although the Late Mesolithic is one of the most important periods during which the last hunter-gatherers inhabited Europe, it is also one





**Fig. 9.** The Thar Desert lake Sain Sim (Sindh, Pakistan) and Late Mesolithic trapezoidal geometrics from its surroundings (photo by P. Biagi; drawings by G. Almerigogna).

**Рис. 9.** Озеро Саин Сам в пустыне Тар (Синд, Пакистан) и позднемезолитические трапециевидные геометрические орудия из его окрестностей (фото П. Бьяджи; рисунки Дж. Альмеригона).

of the less studied topics of European prehistory as a whole. We know very little of its origin, internal development, and its end. It is also for this

reason that many problems related with the origin of the first farming cultures have often been badly misunderstood.

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Статья поступила в сборник 24 февраля 2016 г.

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