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The West Carpathians and Sudeten at the end of the Upper Palaeolithic

ABSTRACT

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1. The aim of this article is the study of the role of west Carpathians in the prehistory of eastern central Europe in the Magdalenian time (15th-12th millennia B.P.), it follows the article of Janusz Kozłowski in this volume.

2. After the great development of Gravettian settlement around the west Carpathians (25th-17th millennia B.P.) with well established transmontana contacts, the 2nd Pleniglacial reduces this settlement and its social territories to the more eastern regions, gradually excluding Silesia, Austria, Bohemia, and Moravia, later also Little Poland, Slovakia and Hungary from the Gravettian «Koine».

3. After this dessertation, at the end of 15th millennium the «middle» Magdalenian newcomers (Maszycka Cave) appear from the west, and of course do not follow the old (Gravettian) trans-Carpathian traditional ways of contact and raw material approvisation. This is caused partly by inaccessibility of the elevated trans-Carpathian routes but mainly by the lack of knowledge of new conquered territories. The Mashicians use the raw materials coming from the west (S. Germany) and east (Ukraine) as well as from southern Poland but not the erratic baltic flint. They are completely separated by the topographic and also cultural border from the late Gravettians, still existing on the edge of Moravia and Slovakia (e.g. Brno-Konev str.), and continuing the traditional model of flint approvisation.

4. The Late Magdalenian of Poland, Bohemia and Moravia is still completely separated from Slovakian or Hungarian neighbours (complete lack of raw material «imports»), but rebuilds the old Gravettian model of territorial organization (N-S raw material and typological ties through Moravian and Klodzko Gates, exploitation of baltic flint). The Carpathians become a strong cultural barrier in this time, the trans-Carpathian routes are still inaccessible. The newly established Late Magdalenian «Koine» combine the N-S contacts with those introduced in middle Magdalenian of the region (W-E direction).

5. The 12th millennium B.P. shows the revival of the old contacts between South Poland and Slovakia, some industries of southern origin appear in Poland (Witowian), the Slovakian radiolarite comes to South Poland, Swiderian sites appear even in Slovakia.

Parole chiave: Carpazi, Gravettiano, Magdaleniano, materie prime.

Key words: Carpathians, Gravettian, Magdalenian, raw material.

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1. Introduction

The west Carpathians and the Sudeten mountains cut the southern part of eastern central Europe into at least three big regions:

1. Carpathian Basin,
2. Bohemia and Moravia,
3. Silesia and Little Poland.

All these regions have now and had in the Late Pleistocene their own character, among others local climates and environments, river nets and outcrops of raw materials of a very unequal technological value and unequally distributed.

The mountains, in the case of western Carpathians reaching on average 900 - 1,000 m above sea level, constitute a real barrier (especially the complex of Tatra, Lower Tatra, Fatra and Rudava), while the Sudeten mountains are not so elevated and were easier to cross.

Despite the communication difficulties described above there exist and existed in the past several ways crossing the chains dividing now Poland from Bohemia and Slovakia. There are the «gates» oriented mainly in the N-S axis (Kłodzko, Moravian, Orava and Poprad), and the passes (Jabłonków - 551 m, Tylicz - 686 m, Dukla - 502 m, Lupków - 584 m) which during some parts of the Late Vistulian were even inaccessible (alpine desert on the low altitudes from 500 to 700 m, during stadials, glaciers in the Karkonosze, Tatra and Charnohora chains).

The topography stimulated the characteristic net of narrow river valleys: the Vag, Nitra, Hron, Hornád, in the south, and the Skawa, Raba, Dunajec in the north, and together with the localisation of raw material outcrops, strongly influenced the size and the shape of social territories and the directions of the interregional contacts.

These contacts followed of course the river valleys, then the transmontaine gates and passes. In some cases (Moravia, Bohemia) these contacts (as well as those to the west) were forced among others by the lack of good local flint *in situ*, and a big amount of it in other regions (Saxony, Silesia, Bavaria). But in other cases (Slovakia, Moldavia, Little Poland) transmontana contacts probably had a different character; this is marked by the flow of small quantities of exotic raw materials for the long distances.

Using these sources the Author will try to show how the role of the west Carpathians and Sudeten changed during the end of the last glacial.

2. Topography and boundaries

The topographic barriers mentioned above, depending on changing climate, either did not stop the transmontana contacts, or, especially in the case of extreme glacial climate could, lead to a strong local «cultural» or «stylistic» differentiation. Many traditional interregional ties in very cold times were cut. It seems that especially Slovakia just during and after the second Vistulian maximum was almost fully separated from the west and the north, saving its southern and eastern contacts. On the other hand Moravia and to a certain degree Bohemia, even in a bad climate period, conserved their connections with southern Poland through the Moravian and Kłodzko gates.

All these separations or divisions were caused not only by the existence of the main chains separating now Poland from Bohemia and Slovakia, but also by the N-S

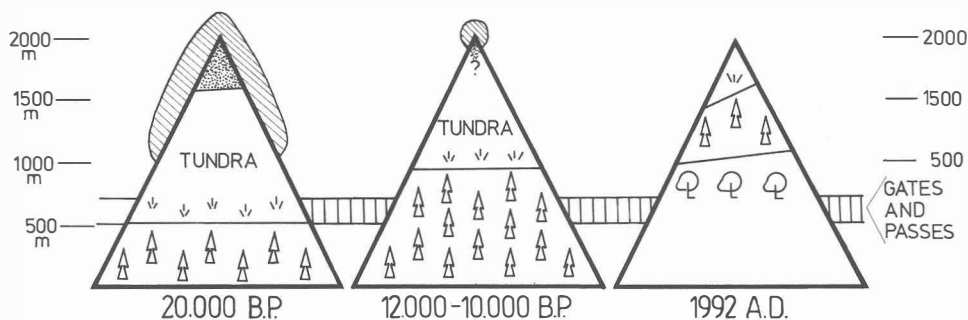


Fig. 1 - Changes of vertical zonality in Western Carpathians during the Late Vistulian.

oriented chain of western Carpathians (Little and White Carpathians) which separates Slovakia - Pannonia from Bohemia - Moravia.

This last barrier is in fact not very impressive, never-theless along this line Czechoslovakia is being divided now. It seems that this line marks an important ecological boundary.

In fact all the chains mentioned above served during the last millennium as political borders between Poland, Bohemia, Slovakia, Hungary, Russia, Austria and Germany.

Summing up, our mountains are strong stimulators of human activity: in favourable climatic conditions the West Carpathians and the Sudeten consisted in an easily penetrable «mare nostrum» (or rather «montes nostrae»), e.g. for the Gravettians or Band ceramic populations but in highly difficult climatic conditions the first chain changed into a strong barrier, separating completely different worlds.

Between these extremes the intermediate situations could be observed, fluctuating according to the environmental changes (Fig. 1).

3. The main transmontana routes

Study of topography and hydrography of the region, completed by the knowledge of localisation of the raw material outcrops and the presence of the exotic raw materials in the assemblages (cf. the list at the end of this article) give us a picture of probable transmontana routes used in these Late Upper Palaeolithic times.

1. The intensive use of the Moravian Gate is very well confirmed by many Moravian sites, basing their industries on the erratic Baltic or Cracow Jurassic flints, which came from Upper Silesia or Little Poland. Also other Polish flints were used there (Swieciechów and chocolate). These «northern» materials reached even Hungary, but in small quantities. These intensive N-S contacts are also confirmed for Bohemia, where the similar erratic flint was imported from Lower Silesia (by the Kłodzko Gate), and Saxony (by the Elbe valley), Saxony has also some Bohemian imports (quarzites).
2. Transcarpathian N-S contacts using mainly the Orava and Poprad Gates, are proved by presence of the Slovakian radiolarite in Little Poland, as well as by few obsidians in the same territory.

3. The W-E road, connecting Moravia, Slovakia, Hungary and even Moldavia, crossed the Vlára pass in the White Carpathians, then went through Liptov or south of Rudava chain, entered the Tissa valley and finally crossed the East Carpathian passes, reaching the Dniester valley. This way was never very frequented, but is confirmed by presence of Slovakian materials in Moravia (opal, obsidian) and Moldavia (obsidian and radiolarite), and Moravian rocks as well as Prut-Dniester flints in Slovakia and Hungary.
4. Finally the transmontana tracts crossed the Šumava Mountains and the Bohemian Forest through the Cheb Gates and Vseruby pass, leading from Bohemia to southern Germany. This is proved by the presence of German Platten flint and Franconian chert, as well as by alpine radiolarite in west Bohemian sites.

The described routes, depending also on changing raw material requirement and different cultural ties, were used unequally, some of them intensively and all the time, others only during rather short periods.

4. Two models of raw material acquisition

- A. The N-S tracks, described under No. 2, reflect the well known model described by G. Weniger, and based mostly on the use of local raw materials, completed by few «exotic» rocks, «imported» even from distances of more than 200 km!
The same model was realized in Hungary and Slovakia (eastern and central part of connection described under No. 3).
- B. But the situation in Bohemia and Moravia, which have no good rocks for chipping, is different. Here, the people introduced another model of raw material acquisition, based mainly on the long-distance import of the rocks (cf. Nos 1 and 4) supported, as in the model A, by some long-distance imports of «gadgets». Model B resembles those from the Paris Basin in the Magdalenian time.

5. Prehistory

5.1. The 2nd Pleniglacial

The period between 21-22th and 19th millennia is characterized by the maximum transgression of the Scandinavian ice-sheet, which occupied the northern part of Poland (about 40% of its territory), and approached only 350 km to Carpathians. It is also the time of maximal development of alpine and carpathian glaciers (Tatra and Charnohora), the snow border descends to about 500-600 m above sea level. In front of Scandinavian ice-sheet existed an 80-100 km wide arctic desert. The same landscape appears in the western Carpathians. Slovakia and Hungary loose their direct ties with Little Poland, the only accessible N-S ways in this part of continent are the Moravian and Klodzko Gates. The settlement in the region was more scant than it was before, especially in the west. Nevertheless Gravettian settlement still existed on both sides of the mountains, and the N-S contacts were continued (Slovakian radiolarite in Polish Mamutowa and Cracow Spadzista C sites).

The west Carpathians were still, but for the last time, «montes nostrae» for the «Gravettian koine».

5.2. 15th millennium B.P. (Fig. 2)

As we said above, the countries immediately south of the Sudeten and Carpathians are gradually deserted or almost deserted after the events of the 2nd Vistulian maximum. Nevertheless the last Gravettians still penetrate Moravia (Brno-Konev Street), Slovakia (Nitra III) and Hungary (Pilismarot, Arka). More western sites and regions (Moravia) use big amounts of Baltic flint, the same (but the amount is small) concerns Hungary.

Nothing changed in the Gravettian mind! But in the same time the middle Magdalenian newcomers appear from the west (Schussenquelle in Germany, Maszycka in Poland).

The inhabitants of the Maszycka Cave came to Little Poland probably through Bohemia/Silesia, starting from eastern France (Magdalenian á navettes) and travelling through southern Germany (three south German materials present). They fully ignore the traditional sources of local raw materials (Baltic) and traditional ways of acquisition, they probably have no Gravettian contacts, and they do not follow traditional (N-S oriented) organization of social territory in this part of Europe. The Mashitsians use mainly local Cracow flint, but also other raw materials and some imported fossil molluscs. Some of these materials come from the west (upper Silesian flint, haematite), others

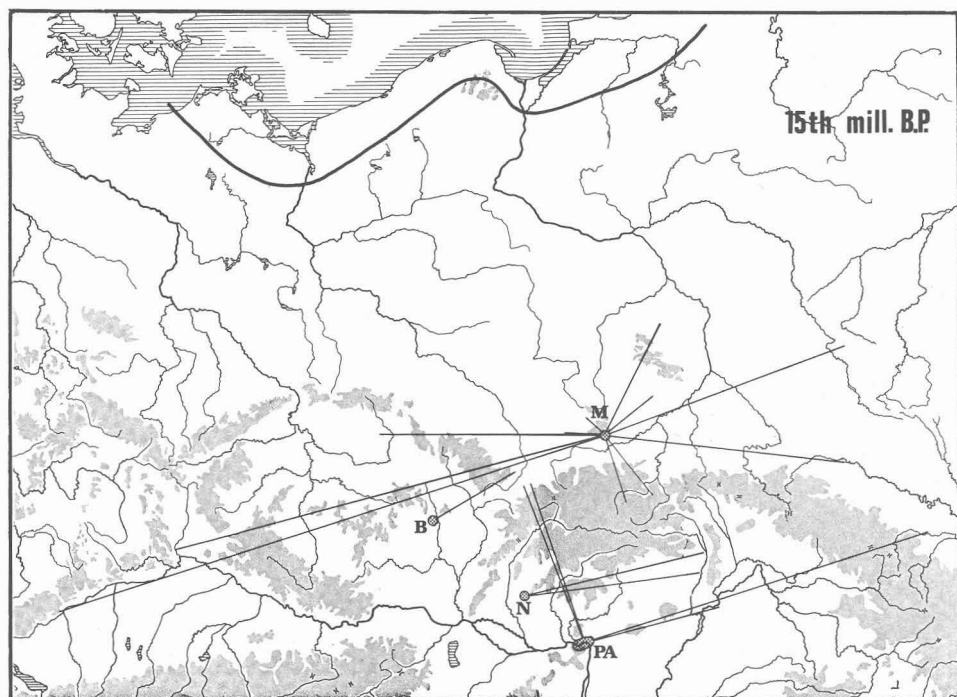


Fig. 2 - Raw material connections in 15th millennium B.P.

from the north (chocolate flint, Tertiary molluscs), south (Pieniny radiolarite and Tatras rocks) and even east (Volynian and Dniester flints).

The social territory, according to the data mentioned above, has mainly a W-E orientation, its western part is inhabited in winter, and the eastern in summer. It is totally separated from the south by the chain of western Carpathians which is fully impermeable in those times.

South of the mountains (Sagvarian in Hungary, Brno-Konev street in Moravia) Gravettian settlement still persists. It has some contacts with Moldavia (Prut and Dniester flints in Hungarian sites) as well as few with southern Poland (Baltic flint).

The Bohemia/Moravia territory is gradually deserted by the Gravettians, replaced by the advancing Magdalenians.

In fact it is a time of the creation of a very important new cultural border between east (Gravettian) and west (Magdalenian); Magdalenian koine reaches eastern central Europe. This border follows the chain of western and western-most (=White) Carpathians, and in fact is a starting point of the great political/cultural subdivision into western and eastern Europe.

The N-S way crossing the Carpathians, will be not used during all Magdalenian time (13th/12th millennia B.P.). Polish raw materials do not reach Slovakia in this time.

5.3. 13th - 12th millennia B.P. (Fig. 3)

This time shows (after a short Maszycka interval) the reintroduction of the traditional model of raw material acquisition for Bohemia and Moravia. The Late Magdalenians of these regions rebuild strong northern connections, using the Kłodzko and Moravian Gates, as well as the Elbe valley for the import of big masses of northern flint (Saxonian, Lower and Upper Silesian erratic and Cracow Jurassic respectively). The most frequented is of course the Moravian Gate, which is in fact the 5th Avenue for these Late Magdalenians, who perhaps seasonally move from Moravia to Upper Silesia/Little Poland (summer?) and back (winter). This hypothesis is supported by the taxonomic N-S ties (Brzostkwinia - Ochoz/Byči Skala, Grzybowa Góra-Pekarna, Sromowce Wyżne Katy - Żitneho).

But the repetition of the old structures is not exact. The W-E connections of these «Moravians/Bohemians», in opposition to an old Gravettian tradition, are very limited. They use incidentally very small quantities of exotic materials (obsidian, Slovakian radiolarite, south German Platten silex).

There appear also in Poland a Late Magdalenian settlement, which does not have many Moravian ties and looks rather to the west, with its Oelknitz and Nebra industries (Klementowice, Mały Antoniów). There exist even few German raw material in Klementowice, and from Oelknitz we know the south Polish Świeciechów flint.

The Late Magdalenian model is in fact a combination of traditionally N-S oriented settlement structure and newly introduced (e.g. by the Mashitsians), on the northern foothills of Carpathians and Sudeten, W-E oriented settlement patterns.

It is also a time of full Magdalenian domination north and west of Carpathians and of complete isolation of the Magdalenian territory from the Carpathian Basin, still occupied by the Gravettians, fully satisfied by their local raw materials. The Western and White Carpathians play in this time a role of an important cultural border just between west and east, almost «impermeable» for the exotic raw materials (see above).

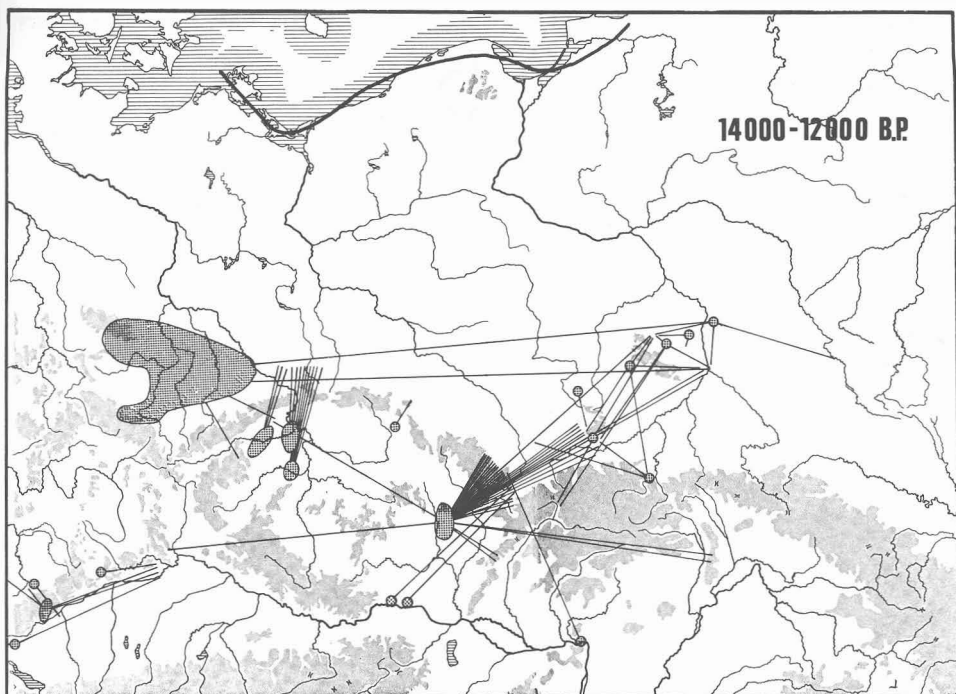


Fig. 3 - Raw material connections in 14th - 13th millennia B.P.

All this is only in part the result of bad conditions still reigning in the mountains, the transcarpathian routes are probably cut by the «cultural» (= political) border between the Magdalenians and the Gravettians.

5.4. 12th - 11th millennia B.P. (Fig. 4)

This is a time of visible amelioration of climate (Allerød), and a new introduction of the forest to Poland. This forest in southern Poland persisted even in cold Dryas III time. The west Carpathians with their previously closed gates (Orava, Poprad) are open now after a long break.

There still function the N-S connections through the Elbe, Klodzko and Moravian Gates. They provide big amount of erratic material to Epimagdalenians and Federmesser-Ostromeř people of Bohemia and Moravia. But new ways are open and used:

- the west Bohemian Epimagdalenians use big quantities of Franconian chert and some Bavarian flint crossing the Šumava mountains, Bohemian Forest and Krušné mountains through the Cheb Gate and Vřeruby pass. These Epimagdalenians have no connections with Slovakia, just like their ancestors;
- the long time blocked transcarpathian track from Slovakia to Little Poland is finally opened (see above). Epigravettian, existing earlier only south of the middle Danube,

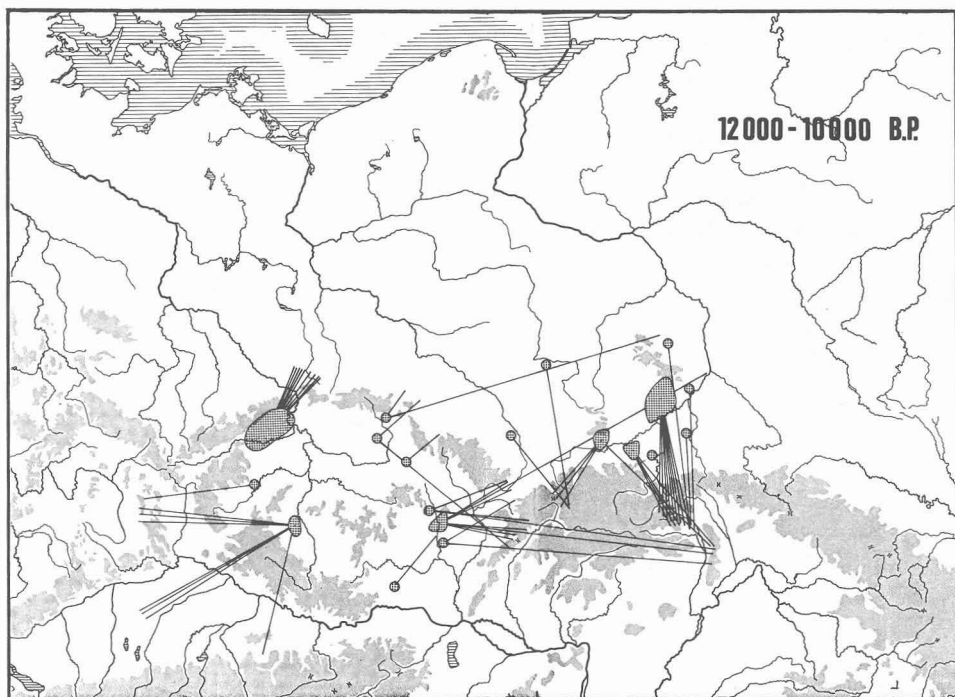


Fig. 4 - Raw material connections in 12th - 11th millennium B.P.

appear in the Carpathian basin (Horn in Austria, Szekszard in Hungary, Spisska Bela in Slovakia, Tišnov in Moravia) and also in Poland, where it is known under the name of Witowian. Parallely, Slovakian radiolarite comes to southern Poland, where it is used by Witowians (e.g. Sromowce Niżne) and especially by Swiderians (11th millennium), who cross (or at least enter) even the mountains, visiting Slovakia (Velky Slavkov).

- the W-E road between Moravia and Slovakia, crossing the White Carpathians, is more used than before. It is open to obsidian, radiolarite and Slovakian opal.

The West Carpathians come back to the state known from the time when they were «Gravettian mountains», they are fully penetrable, but on the other hand they are not «montes nostrae» for any separate people, they became an international border.

6. Concluding remarks

Everything we have said before leads to the following conclusions:

- the high mountains could stimulate very strongly the social territories of the Late Upper Palaeolithic hunters-gatherers;

- the mountain chains, especially during bad climate conditions (stadials) play a role of barriers, which could be transferable, through passes, during the interstadials, when timber line reaches higher altitudes, and these passes are accessible;
- the gates (e.g. Moravian), are fully penetrable even during maximum cold conditions;
- this finally lead in the LUP time to the disintegration of the old cultural (= political) structures, and to a formation of a strong border, located along the main chain of the western Carpathians; west and north of this line a new technocomplex was formed (Magdalenian), while east and south the old, Gravettian structures still existed;
- in the Magdalenian territory two different models of raw material approvisation were developed: the people living in Poland based traditionally on the local flints, but those from Moravia and Bohemia «imported» it from the long distance, in fact during seasonal stays in the north.

RIASSUNTO

1. Scopo del presente articolo è quello di studiare il ruolo dei Carpazi occidentali nella preistoria dell'Europa centro orientale nell'era Maddaleniana (15°- 12° millennio dal presente) e segue l'articolo di Janus Kozłowski contenuto in questo volume.
2. Dopo il grande sviluppo dello stanziamento gravettiano nei pressi dei Carpazi occidentali (25°- 17° millennio dal presente) con contatti transmontani ben consolidati, il secondo Pleniglaciale vede la restrizione di tale stanziamento e dei suoi territori sociali verso le regioni più orientali, escludendo gradualmente dalla "Koiné" gravettiana la Slesia, l'Austria, la Boemia e la Moravia e più tardi anche la Piccola Polonia, la Slovacchia e l'Ungheria.
3. Dopo tale crisi, alla fine del 15° millennio fanno la loro comparsa, provenienti da Occidente, le nuove genti del Maddaleniano "medio" (Grotta Maszycka), che ovviamente non seguono le vecchie (gravettiane) vie tradizionali trans-carpatiche di contatto e di approvvigionamento delle materie prime. Ciò è dovuto in parte alla inaccessibilità dei percorsi trans-carpatici ad alta quota, ma è imputabile innanzitutto alla mancata conoscenza dei territori appena conquistati. I Maszyciani utilizzano tutte materie prime provenienti sia da Occidente (Germania meridionale) che da Oriente (Ukraina) ed anche dalla Polonia meridionale, eccetto la selce erratica baltica: un confine topografico ed anche culturale li separa completamente dai Tardo Gravettiani, che permangono ancora nell'area situata ai margini tra Moravia e Slovacchia (ad es. lungo la via Brno-Konev) e che continuano ad utilizzare i modelli tradizionali di approvvigionamento della selce.
4. Il Tardo Maddaleniano della Polonia, della Boemia e della Moravia rimane ancora completamente separato dai propri vicini slovacchi o ungheresi (totale assenza di "importazione" di materie prime), anche se ricostruisce il vecchio modello gravettiano di organizzazione territoriale (legami tipologici e di materie prime lungo l'asse nord-sud, attraverso il valico moravo e quello di Klodzko, sfruttamento della selce baltica). I Carpazi divengono una forte barriera culturale proprio in quest'epoca, i percorsi trans-carpatici, infatti, rimangono ancora inaccessibili.
La "Koiné" del tardo Maddaleniano realizzatasi da poco, fonde i contatti nord-sud con quelli introdotti nella zona in questione durante il Maddaleniano medio (lungo la direttrice ovest-est).
5. Il 12° millennio dal presente segna il ritorno dei vecchi contatti tra la Polonia meridionale e la Slovacchia, in Polonia (Witowiano) compaiono alcune industrie di origine meridionale, la radiolarite slovacca arriva fino nella Polonia meridionale, siti Swideriani fanno la loro comparsa perfino in Slovacchia.

Exotic raw materials in the Late Upper Palaeolithic of eastern central Europe (according to personal communications by J.K. Kozłowski, K. Valoch, S. Vencl, J. Svoboda and publications by J. Rydlewski, P. Walde-Nowak, S. Kowalski, B.Ginter, R. Schild, K. Cyrek, L. Sawicki, J. Libera, E. Sachse-Kozłowska, B. Klima, J. Malina, G. Weniger, J.K. Kozłowski, K. Valoch, S. Vencl and the Author).

	RAW MATERIAL																	
CULTURES / SITES	GERMANY				BALTIC	POLAND						BOHEMIA		MOLDAVIA/ UKRAINE		SLOVAKIA/ HUNGARY		
	Felstelle	Altmühl-Platten	Frankonian	Bavarian		Chocolate	Pieniny radiol.	Upper Silesia	Cracow Jurassic	Swieciechów	"Northern"	Quarzite	Moravian chert	Volhynian	Dniester/Pрут	Radiolarite	Obsidian	Limonquartzite
15 th MILLENNIUM B.P. MAGDALENIAN Maszycka	X	X				X		X						X	X			
GRAVETTIAN Brno-Konev					X													
Nitra III					X												X	X
Arka					X										X	X		
Pilismarot					X													
14 th -13 th MILLENNIUM B.P. LATE MAGDALENIAN Mosty 12						X			X	X							X	
Brzostkwinia						X			X	X							X	
Grzybowa Góra II/59						X			X	X			X	X			X	
Klementowice-Kolonie						X				X			X					
Maly Antoniów						X											X	
Sromowce W-Katy					X				X									
Pekarna					X	X				X								
Ochoz					X				X									
Byči Skala					X				X									
Žitneho					X				X									
Balcarka					X				X									
Křižova					X				X									
Alerova					X				X									
Malomeřice-Borki I					X				X		X							
Kulna 6					X											X		

Kulna 5 Pekarna - Taras Kolibky Barova Zablati Derava Oelknitz Central German sites Kamegg Gudenus Hostim Nachod other Bohemian sites		X			X X X X				X ? ?		X						X X
12 th -11 th MILLENNIUM B.P GRAVETTIAN Hont					X												
EPIMAGDALENIAN Chocen Voletiny Kulna 4 Kulna 3 Lhota Radčice Hradište Plzen					X X	X											X X X X X X
BOHEMIAN FEDERMESSE Ostromeř											X						
EPIGRAVETTIAN Sromowce Nizne Boksicka Wola Tišnov Přibice Uherske Hradiste Horn					X X X X									X			X X X X X X
SWIDERIAN Grzybowa Góra II/59 Cisek 4 Wasosz Górny Zakrzów Tyniec Kraków-Borek Falecki Kraków-Kobierzyn 3 Rytwiany Brody Chwalibogowice Opatowiec Czyżów Śladków Sroczków Beszowa Życiny Ossówka Czernichów Przegonia Narodowa Jawornik-Czarna																	X X