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THE LATE MAGDALENIAN IN POLAND — NEW DATA, NEW ISSUES

New research on the settlement of the Magdalenian culture in the Polish lands has made it possible to discover new sites. These new sites come mainly from two regions: Sandomierska Upland, at the confluence of the two rivers Vistula and San, and in south-eastern Poland. In the latter region, the sites are associated with the valley of the San and its tributary, the Wisłok. The two regions are linked by a network of raw material links and also by their distribution along the San and at its confluence with the Vistula. The new discoveries in eastern Poland raise questions about both the boundaries of the Magdalenian and the relationship between Magdalenian and Epigravettian settlements.

Keywords: *Magdalenian, Epigravettian, south-east Poland, Magdalenian-Epigravettian border.*

Introduction. The issue of re-settlement of Europe after the peak of the LGM attracts attention from many scholars specialising in the Upper and Late Palaeolithic. This interest is driven by the various important and fascinating processes occurring at that time in both eastern and western parts of the continent. Central Europe, including lands constituting today's Poland, positioned between the two great «culture forming» centres was a peripheral area for both the western and eastern cultural complexes.

The area which is now Poland, located to the north of the arcs of the Carpathian and Sudeten Mountains, for several thousand years was almost completely devoid of human presence (Połtowicz-Bobak, Bobak 2020). No indisputable traces of human settlement are attested to the period of maximum cold at the II Pleniglacial maximum. The oldest datings from the Kraków-Spadzista C2 site, for a long time regarded as proof of very late presence of Epigravettian hunter-gatherers, today are regarded as questionable. This is due to

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most datings pointing to a very limited time horizon — chiefly from between 29000 and 27000 cal BP — of human settlement preceding the peak of the LGM (Terberger 2013; Wilczyński et al. 2015; Wojtal, Sobczyk, Wilczyński 2015). Similar doubts exist as to other vestiges of human habitation previously associated with the period of maximum cold (Wilczyński 2015; Połtowicz-Bobak, Bobak 2020). Hence the outlook today is that — if there even was some sort of human presence in Polish lands — then these were sporadic forays with the objective of gathering flint. Such activity is reflected in the record from workshops at Piekary and at Spadzista B (Wilczyński 2006; 2007a; 2007b; 2015).

There are traces of Epigravettian settlement from immediately after the peak of the LGM (fig. 1) at sites such as Targowisko (Wilczyński 2009; 2014), the Zawalona Cave (Alexandrowicz et al. 1992), and possibly at Ujazd (Pawłowska, Petrykowaki, Valde-Nowak 2003) in Little Poland, as well as from — this site being younger than those mentioned above — Sowin in Silesia (Wiśniewski et al. 2017) plus the even younger (and probably the youngest) at Święte in south-eastern Poland (Łanczont et al. 2021). The current state of research suggests that these are records of short visits to southern Poland made by various groups and widely separated in both spatial and chronological terms. The most important, the best preserved and most studied post LGM peak Epigravettian site is that at Targowisko, dated to 18500—18000 cal BP. The most recent — Święte, has an age set to about 15300 cal BP (Łanczont et al. 2021).

Materials and methods. The first episode of Magdalenian settlement in Poland is dated to more or less the same period as the occupation of

the Targowisko site — such record being left by representatives of the facies «a navettes» at the Maszycka Cave. A series of datings places this camp at about 18500—17800 cal BP (Kozłowski et al. 2012; Bobak, Połtowicz-Bobak 2013).

Nevertheless Magdalenian hunter-gatherers unquestionably spread across Central Europe — Poland included — in an uninterrupted manner only after GS-2a, i. e. over 16000 calendar years ago (fig. 1). The onset of this process may be moved to the younger stages of the Middle Magdalenian, as attested in Polish lands by facies with triangles (Sécher 2017; Maier 2020), and its conclusion to GI-1c, corroborated by the well documented site at Wierzawice on the Kolbuszowski Plateau (Bobak et al. 2010; 2017).

The extent and character of Magdalenian settlement in Poland is quite well known. Over the previous few years this topic had been covered in several papers, including a monograph, published by one of the authors of this document (MPB) in 2013. Almost ten years have passed since that time, with discoveries of new sites and the analysis of available data. This paper aims to present the new image of Magdalenian settlement in Poland emerging from this new data.

Areas of settlement. Magdalenian populations are recorded over almost the entire band of uplands of southern Poland, exempting some of its western fringes i. e. Lower Silesia, the Kłodzko Valley and Polish Lusatia. In the remaining area — from Upper Silesia to the south-eastern border — several regional habitation clusters of varying sizes may be discerned (Połtowicz-Bobak 2013; Bobak, Połtowicz-Bobak 2015). Four such groupings may be defined: Silesia, the Kraków-Częstochowa Upland, the northern segment of the Sandomierz Basin and SE Poland. There is evidence of some isolated sites in the Carpathians (Valde-Nowak 1991; Valde-Nowak, Kraszewska, Nadachowski 2018).

The Kraków-Częstochowa Upland is an interesting element of the map of Magdalenian settlement. This is a karstic area, with numerous caves inhabited at various points during the Palaeolithic. However, it differs from its counterparts elsewhere in Central Europe such as e. g. the Moravian Kras, in its sparse record of human presence, regardless of these being short-lived camps or — in its central part — workshops (Połtowicz-Bobak 2013; Bobak, Połtowicz-Bobak 2015; Sudol-Procyk 2020). The association of two large workshops — at Brzozkwinia and Wołowice — with the Magdalenian is currently being questioned (non published presentation by dr. hab. Jarosław Wilczyński from I SiEZ PAN at the «Przeszłość ma przyszłość. Konferencja na 100-lecie archeologii» / «The past has a future. A hundred years of archaeology conference» at the Institute of Archaeology of the University of Warsaw in 2019).

The Kraków-Częstochowa Upland is practically the sole area in Poland where human habi-

tation in caves or *abris* is recorded. However, it does not hold any sites rich in material record, like camps in the Moravian Karst (e. g. Škrdlá 2002; Kostrhun 2006; Neruda, Valoch 2007 et al.) or Thuringia (Höck 2000; Küßner 2010). The one non open-air site from outside the Kraków-Częstochowa Upland is the recently discovered camp located under a rock overhang in front of the Oblazowa Cave in Nowa Biała in the Carpathians (Valde-Nowak, Kraszewska, Nadachowski 2018).

Another well-defined settlement centre is found in the Sandomierz Upland, at the confluence of the Vistula and San rivers. At least two large base seasonal camps existed — one at Wilczyce (Fiedorczuk, Schild 2002; Krajcarz, Krajcarz 2014; Schild 2014) and another at Ćmielów (Przeździecki, Migal 2020). Some smaller, less artefact-yielding sites plus a workshop (at Podgrodzie; Przeździecki, Migal, Pyżewicz 2011) also have been identified. Yet another workshop was discovered on the east bank of the Vistula at Stare Baraki (Wiśniewski 2020).

An area whose non insignificant settlement during the Magdalenian was confirmed by research from the last twenty years in that of south eastern Poland. To date five sites have been identified there, including four short-term seasonal or hunting camps (Bobak, Połtowicz-Bobak 2018a; Połtowicz-Bobak 2020). So far two have been reasonably well researched — a likely seasonal camp at Hłomcza (Łanczont et al. 2002) and hunting camp at Wierzawice (fig. 2; Bobak et al. 2017).

Habitation sites in Silesia are more widely distributed. There we have larger centres — such as the camps at Dzierżysław or Sowin and the workshop at Sowin, and some smaller sites of yet unidentified character (Ginter 1974; Ginter, Połtowicz 2004; Wiśniewski et al. 2012; Połtowicz-Bobak 2013). Several of the Silesian sites were explored some time ago, a fact which doubtlessly affects the quality of available data. Please note that even though the Głubczyce Plateau and the Niemodlińska Plateau bordering it from the north — an area immediately to the north of the Moravian Gate — have been subject to intensive surface surveys, these have not yielded many discoveries besides the large sites at Dzierżysław and Sowin. Nevertheless surface prospecting in 2021 carried out by the authors of this paper confirmed the location of site 16 at Bliszczycze. The character of the material record suggests the site's association with the Magdalenian.

Chronology. Magdalenian settlement Poland — besides the Maszycka Cave episode — covers the very end of the Middle and the entire Late Magdalenian. It seems that most vestiges of habitation pertain to the cold GS-2a preceding the warmer GI-1e (fig. 3; Bobak, Połtowicz-Bobak 2013). The youngest sites — at Wierzawice (Bobak et al. 2017) and — probably — that at Stare Baraki (Wiśniewski 2020) point to long term settlement of Magdalenian hunters-gather-

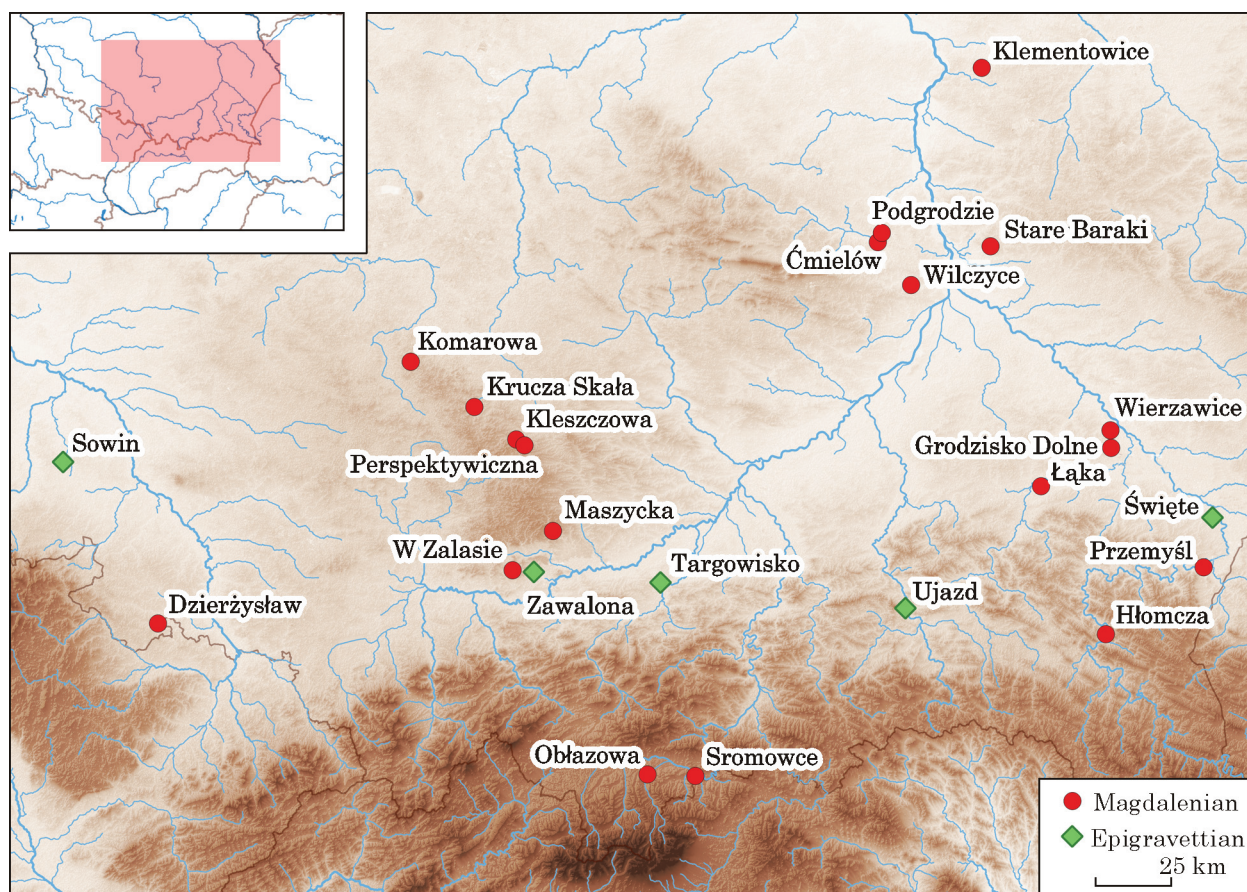


Fig. 1. Post LGM Epigravettian and Magdalenian sites in Poland



Fig. 2. View of the San River valley and the Wierzawice site 31

ers in Poland. It should be noted that both these sites are located at the easternmost reaches of the Magdalenian's range.

There exist confirmed datings preceding the warmer GI-1e from both western and eastern

Poland — respectively from Dzierżysław and Klementowice, which suggest relatively rapid post LGM re-settlement of this area (Bobak, Połtowicz-Bobak 2013; Połtowicz-Bobak 2013). Current materials hint that there is an area where the onset

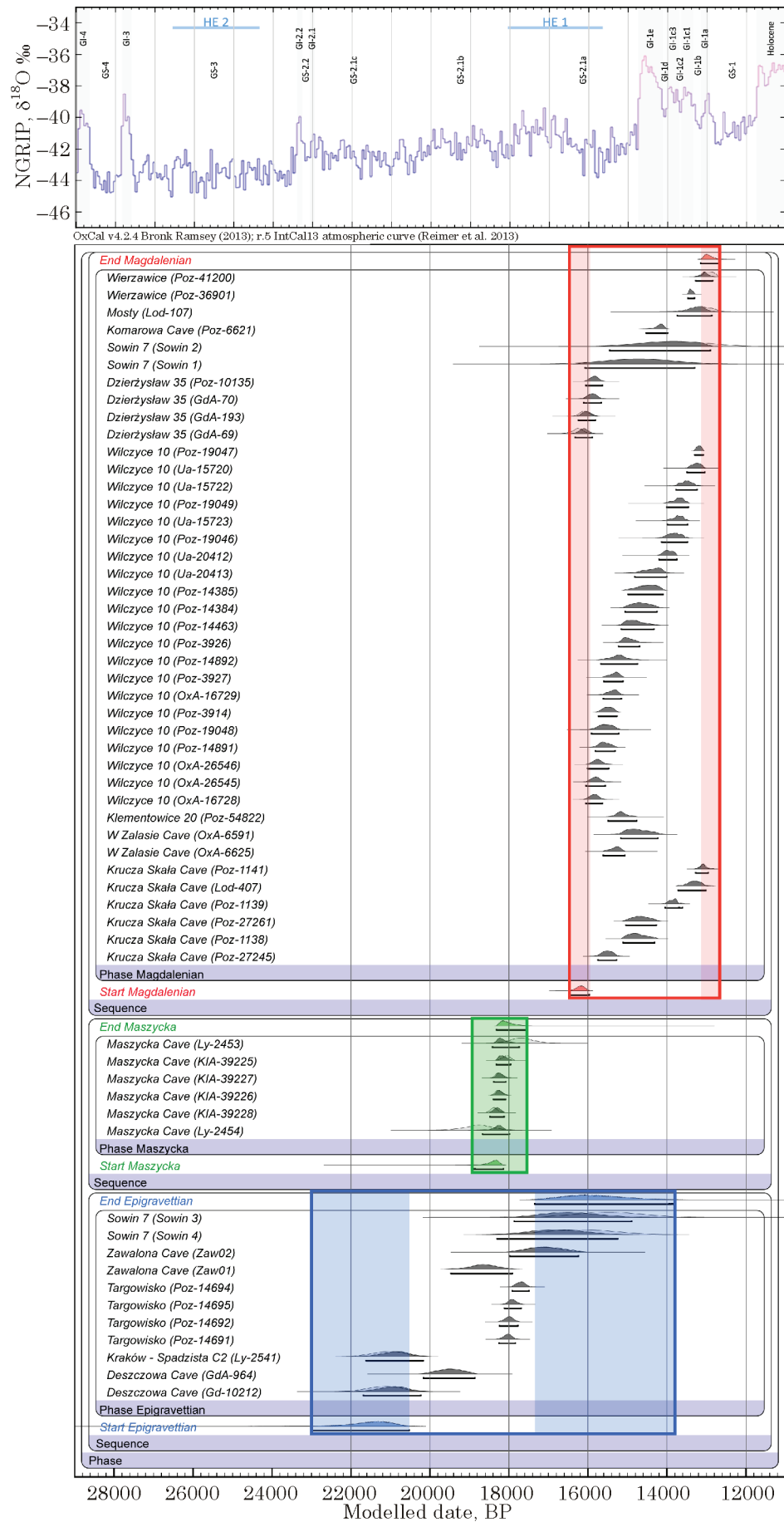


Fig. 3. Chronology of Magdalenian and Epigravettian sites

of Magdalenian settlement may have occurred at a later date — i. e. SE Poland, the few sites found there very markedly concentrated in the San River valley or, in the case of Łąka, in the valley of a San tributary — the Wisłok River (Połtowicz-Bobak 2020).

Functional diversity of the sites. If one examines Magdalenian sites in the four areas of Poland with attested concentrations, i. e. Silesia, Kraków-Częstochowa Upland, the northern part of the Sandomierz Basin or finally in SE Poland, then it becomes apparent that three of those contain a trio of basic settlement types: large seasonal camps, small hunting camps and workshops. That last type is present in Silesia (Sowin), in the Kraków-Częstochowa Upland (Kleszczowa) and in the Sandomierz Upland (Podgrodzie, Stare Baraki).

The workshop at Sowin, being a part of the different functional areas of the site, is located in an area with erratic flint. Its outcrops are located nearby, in MIS 6 related glacial till formations (Wiśniewski et al. 2012; 2020).

The central part of the Kraków-Częstochowa Upland, the Udorka River valley and the Ryczowska Upland are of particular interest when analysing the procurement and use of raw materials by Magdalenian communities. This area contains outcrops of various types of flint; besides the several varieties of Jurassic flint there also exist outcrops of Chocolate flint — a stone type previously associated with the Świętokrzyskie Mountains area (Sudoł-Procyk et al. 2017; Sudoł-Procyk 2020). This discovery of new sources of Chocolate flint is of fundamental relevance for studies of the distribution of this flint type inside Stone Age communities, including Magdalenian ones. A noteworthy fact is the lack of workshops unequivocally associated with the Magdalenian in the southern part of the Kraków-Częstochowa Upland, this being in spite of the presence of high quality flint (Kraków Jurassic flint). The lack of sites of such type correlates well with the sparse settlement of this area by Magdalenian hunter-gatherers.

An equally important source of flint and a centre of its distribution are the lands at the confluence of the San and Vistula rivers. Research over the last decade or so led to the discovery of a series of new sites in that area, including two Magdalenian workshops: at Podgrodzie, to the west of the Vistula, and at Stare Baraki, to the east, near the mouth of the San (Przeździecki, Migal, Pyżewicz 2011; Wiśniewski 2020). Both locations were used for the working of Świeciechowski flint.

The one cluster of Magdalenian settlement where no workshops had been found is that in SE Poland; the workshop at Stare Baraki, although located to the east of the Vistula seems to be connected with the Sandomierz Upland population centre. This might be explained by SE Poland being bereft of better quality raw materials yet

this region *does* possess sources of both erratic and Bircza Flint. The latter variety was not used on a larger scale during the Magdalenian, with a single exception known from Hłomcza (Łanczont et al. 2002). The Magdalenian population of SE Poland predominantly used imported material, mostly chocolate and Świeciechowski flint, plus some locally acquired erratics. Interestingly, that last type constitutes a minority of finds.

Seasonal camps, repeatedly used over long periods are attested for two areas — Silesia (Dzierżysław) (Ginter et al. 2002) and the Sandomierz Upland (Ćmielów, Wilczyce) (Schild 2014; Przeździecki and Migal 2020); yet another such camp, at Klementowice, was found in the north-eastern periphery of Magdalenian settlement, in the Nałęczów Plateau on the eastern bank of the Vistula (Wiśniewski 2015). No artefact-rich, repeatedly used sites have been encountered in neither the Kraków-Częstochowa Upland nor in SE Poland.

Discussion and conclusions. Fieldwork from the last few years, particularly the discoveries of new sites, lead us to re-examine the map of Magdalenian settlement. While previous general conclusions in regard to this culture continue to be pertinent, those newly found sites add nuance to the broader picture and also raise new, yet to be answered questions.

Several Magdalenian sites were discovered over the last dozen years or so. Most are located near the place where the San empties into the Vistula, in the San River valley or on the Wisłok, a San tributary. One can note with growing clarity that Poland — which, as we know, was the easternmost area of Magdalenian settlement — contained two of four settlement centres: one on the Sandomierz Upland, at the confluence of the Vistula and San rivers, and another in SE Poland. The two communities appear to be connected, this being strongly evidenced by their resources related relations (Bobak, Połtowicz-Bobak 2018b; 2018c; Połtowicz-Bobak 2020), as well as by their evident connection with the San River and the area around its mouth. It is possible that SE Poland was a sort of «hunting preserve» for hunter-gatherer communities inhabiting base camps in the Vistula-San triangle (Połtowicz-Bobak 2020). Such use of the SE corner of today's Poland could explain the lack of large camps and the importance of imported flint. In all sites from SE Poland — the camp at Hłomcza exempting — the share of imports is higher than that of local material (Łanczont et al. 2002). The San River serves as the axis of alignment of those two centres and a route between them.

The spatial arrangement of the sites along the San and around its mouth points to the importance of this river in the spread of Magdalenian settlement in Poland. To date this river's role is more evident than that of the Oder on the northern end of the Moravian Gate. An important fact

is that Magdalenian sites are located upon both upper and lower reaches of the San, thus highly suggestive of the river's role as communication route and to a possibly close relationship between those two regions. The connection of the large, relatively isolated camp at Klementowice to this area is still unclear. Nevertheless its location on the Vistula, to the north of the «Sandomierz cluster», lends itself to such a hypothesis seeing that it is located at an extension of the San-to-Vistula route.

The dating of Magdalenian sites associated with the San River points to expansion probably having been made «upstream». The Sandomierz Basin contains traces of settlement dated to a period preceding the GI-1e warming, i. e. the oldest datings from Wilczyce (Schild 2014) and those from Klementowice (Wiśniewski 2015). The chronology of Ćmielów places it in the GI-1e warming (Przeździecki, Migal 2020). Sites from SE Poland do not provide evidence, particularly those related with resources, pointing to links with the southern Jura i. e. to an expansion route along the Carpathian foothills. If one were to venture a reconstruction of routes of expansion of Magdalenian communities in the Vistula and San basins, then these should be drawn as running along these two watercourses — down the Vistula and up the San. The focal point would be part of the Sandomierz Upland where those two rivers meet. The importance of this area is substantiated by the presence of two major sites, particularly that of Wilczyce — an artefact-rich, frequently reused camp, accompanied by smaller population sites and workshops. It is possible that this population centre spread onto terrains on both banks of the Vistula, this being suggested by the sites at Stare Baraki and possibly by that at Klementowice. The lands of SE Poland possess close links to the Sandomierz area, even though the present state of research is that Magdalenian communities reached the SE corner of Poland at a quite late date. The southernmost point of Magdalenian settlement is Hłomcza in the Carpathians.

Such a strong connection of Magdalenian sites with the San and their presence on both banks leads to the next, key question as to the limits of the Magdalenian. Is the valley of the San truly the border of this cultural complex? And if «yes» — what are the reasons for such a state of affairs? Is the border's location due to environmental or cultural reasons?

The lands of SE Poland, here understood as the Eastern Sub-Carpathian Region, constitute a geographic whole with the neighbouring areas of western Ukraine (Łanczont et al. 2015). This entire area was once included in the same tundra-steppe zone (Stepanchuk et al. 2009). In the past these two regions also constituted a single hydrological unit, this producing convenient communication routes (Łanczont et al. 2015). Not so long ago SE Poland was considered to have been

an area almost devoid of signs of human habitation. However, surface surveying efforts regularly add new locations to an increasingly dense map of settlement; this is particularly true for human presence in the Late Palaeolithic. A similar situation — that of a perceived settlement hiatus — also exists on the Ukrainian side of the border. The LGM and post-LGM sites discovered to date in western Ukraine are associated with Epigravettian settlement, this being explained by the continuity of human presence in the Dniester Basin and — to the east — along the Dnepr. The Barmaki and Lipa sties (Nuzhnyi, Pjassetzky 2003; Stepanchuk et al. 2009) in Volhynia are also associated with the Epigravettian; other Epigravettian or Late Gravettian sites are known from the middle section of the Dniester River. To date no convincing evidence of Magdalenian settlement to the east of the San, nor for any sort of closer cultural contact between the two taxonomic entities had been found. The issue as to there being any sort of contact between them — and such contacts' scale — is a different matter. In Magdalenian sites we encounter single finds of Volhynian flint. In the San River valley the explored Epigravettian site at Święte was dated to have existed in parallel to Magdalenian communities in the area; furthermore, at Święte the entire inventory had been crafted from eastern, Volhynian Flint (Łanczont et al. 2021). These findings point to the possibility of there indeed being a contact zone — running roughly along today's Polish-Ukrainian border — between the populations of the two cultural complexes. The use of Volhynian flint at Święte suggests that the rare Volhynian flint imports at Magdalenian sites did not require the physical presence of a Magdalenian population in today's Ukraine, but could have found their way there through some manner of exchange; one possibility is that these items were gifts (Whallon 2006). There is no unquestionable proof for any cultural cross-fertilisation visible in stylistic, technological or typological borrowings; here one must add that such potential influences might be difficult to identify in a beyond dispute manner.

The state of knowledge today is that the currently accepted eastern border of the Magdalenian could indeed be the limit of this taxonomic entity's territorial expansion (Połtowicz-Bobak 2013; 2020). Nevertheless it is possible that at its furthest reaches to the east of the San, there could have existed a contact zone between the Magdalenian and Epigravettian, in that area the two Cultures existing side by side. The chronological overlap of complexes from those two cultural milieus was identified by previous research (Wiśniewski et al. 2017).

The principal problem we face today when seeking answers to the above question — and other issues — is the lack of adequate exploration of areas on both sides of the border. The

finding of new data is of key importance for further progress of scholarship. The continuing discoveries of new Late Pleistocene sites in eastern Poland gives hope that future research might change our perceptions concerning the eastern limits of the Magdalenian and about relations between Magdalenian and Epigravettian populations.

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M. Połtowicz-Bobak, D. Bobak

THE LATE MAGDALENIAN IN POLAND — NEW DATA, NEW QUESTIONS

The issues of European settlement after the end of the maximum part of the LGM are among those that attract a lot of researchers dealing with the Old Stone Age. This is because extremely important and interesting processes took place during this time, both in the east and west of the continent. The areas of Central Europe, which lie between the two great «culture-forming» areas, constitute a region that is in a certain sense peripheral to the both West and Est. The areas of present-day Poland also belong to this circle.

The territories of the today's Poland, located on the northern side of the Carpathian and Sudeten arch, were almost completely devoid of settlement for several thousand years. Today it seems that if there is any mention of the presence of human groups on Polish

lands, it could only be a case of sporadic penetration of these areas for the purpose of supplying flint raw material.

Already after the peak of the LGM, traces of epigravettian settlement appear (fig. 1). The 19th millennium BP falls on the first of the episodes of Magdalenian settlement in Poland, marked by traces of the stay of representatives of the facies a navettes from the the Maszycka cave. On a continuous way, Magdalenian settlement spreads in Central Europe, including Poland, only starting from the GS-2a period, more than 16000 years BP; its end falls on GI-1c. It covers almost the entire upland belt of southern Poland. In areas from Upper Silesia to south-eastern Poland, sites occur in larger or smaller regional clusters. Basically, we can distinguish four such regions: Silesia, Kraków-Częstochowa Upland, the northern part of the Sandomierz Basin and south-eastern Poland. The occurrence of single sites is confirmed in the Carpathian Mountains.

Kraków-Częstochowa Upland is practically the only area where settlement in caves or rock shelters is recorded. However, there are no rich sites comparable to camps from the Moravian Karst or Thuringia.

A distinct and quite territorially concentrated settlement centre is also drawn in the Sandomierz Upland, at the confluence of the Vistula and the San. At least two large camps of the basic seasonal camp type are present here, accompanied by smaller settlement points, as well as a workshop.

A settlement region whose importance has been confirmed by research of the last twenty years is the area of south-eastern Poland. Five sites have been identified there to date, four of which are of the type of short-lived seasonal or hunting camps.

More scattered sites are observed in Silesia, from where both large sites — camps and workshops — as well as small sites of undetermined character are known.

The only settlement region where workshops have not been recorded is south-eastern Poland; the workshop at Stare Baraki, although located on the eastern side of the Vistula River, seems to be rather linked to the settlement centre of the Sandomierz Upland. The Magdalenian population of south-eastern Poland mainly used imported raw materials, especially chocolate and Świeciechów flint and also, less frequently, local erratic raw materials.

Seasonal camps, settled for longer periods and often repeatedly, came from two regions: Silesia and the Sandomierz Upland. One more, at Klementowice, is located in the north-eastern periphery of the Magdalenian settlement, on the Nałęczowski Plateau, on the eastern side of the Vistula River.

The discoveries of the last dozen years make it increasingly clear the presence of two centres in Poland, which is after all the easternmost territory of the Magdalenian settlement: in the Sandomierz Upland, at the confluence of the Vistula and the San, and in south-eastern Poland. The two seem to be linked, as the raw material links between them show particularly well, as well as their clear connection with the San and the region of its confluence with the Vistula. It is possible that the areas of south-eastern Poland constituted a kind of hunting hinterland for hunter-gatherers groups whose primary camps were located in the forks of the San and the Vistula. This could explain the lack of large base sites and the importance of imported raw materials, whose share at the sites, with the exception of the site at Hłomcza is higher than the share of local

raw materials. The axis and route connecting the two regions is the San river.

Such a clear link between the Magdalenian sites and the San River, and the fact that the sites are located on both sides of it, also prompts us to ask another key question about the limits of the Magdalenian. Does the San valley really represent the limits of the range of the Magdalenian? And if so, can the reasons for this be demonstrated? Does it relate to environmental or cultural conditions?

Based on the current state of research, it seems that the currently known eastern limit of Magdalenian may indeed be the limit of the territorial expansion of this taxonomic unit. However, it also appears that at its boundary, east of the San, there may have been a zone of contact between Magdalenian and Epigravettian, which may have been contemporaneous with each other in this area. That assemblages belonging to these two cultural communities may have overlapped chronologically we also know from earlier studies.

The main problem we face today in seeking answers to these and subsequent questions is the lack of sufficient field reconnaissance of areas on both the Polish and Ukrainian sides of the border. The acquisition of new sources is crucial for further research. Further sites discovered in eastern Poland suggest that further research may change our views on the eastern borderlands of Magdalenian and the relationship between Magdalenian and Epigravettian.

Keywords: Magdalenian, Epigravettian, south-east Poland, Magdalenian-Epigravettian border.

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ПІЗНІЙ МАДЛЕН В ПОЛЬЩІ — НОВІ ДАНІ, НОВІ ПРОБЛЕМИ

Питання заселення європейських територій після закінчення піку LGM привертає увагу багатьох дослідників палеоліту. У той час надзвичайно важливі та цікаві процеси відбувалися як на сході, так і на заході європейської частини континенту. Території Центральної Європи, розташовані між цими двома великими «культуроутворюючими» ареалами, були в певному сенсі периферійним регіоном як для Заходу, так і для Сходу. До цього кола належать і території нинішньої Польщі.

Території польських земель, розташовані на північ від Карпат і Судетів, протягом кількох тисяч років були майже повністю незаселені. Сьогодні здається, що якщо взагалі можна говорити про присутність тут людських груп, то це могли бути лише спорадичні проникнення з метою постачання крем'яної сировини.

Вже після піку LGM з'являються сліди епіграветського населення (рис. 1). На XIX тис. cal. BP припадає перший з епізодів поширення мадлену в Польщі, позначений слідами періодичної присутності представників індустрії в Машицькій печері. Стале мадленське заселення Центральної Європи, включаючи Польщу, починається з періоду GS-2a, понад 16000 cal. BP, і завершується у період GI-1c. Воно охоплює майже всю смугу височин південної Польщі. На територіях від Верхньої Сілезії до південно-східної Польщі стоянки зустрічаються у вигляді більших або менших регіональних груп. В цілому можна виділити чотири таких регіони: Сілезія,

Краківсько-Ченстоховська Юра, північна частина Сandomirської улоговини та південно-східна Польща. Наявність поодиноких стоянок підтверджено в Карпатах.

Території Юри — практично єдиний район, де зафіксовано поселення в печерах або скельних укриттях. Однак тут немає багатих на знахідки пам'яток, які можна порівняти з таборами Моравського Красу або Тюрінгії.

Чіткий і досить територіально сконцентрований осередок помітний також на Сandomirській височині, при впадінні Сяну в Віслу. Тут є принаймні два великих поселення типу базових сезонних таборів, що супроводжуються біднішими пунктами і майстернею.

Осередком, значення якого підтверджено дослідженнями останніх двадцяти років, є територія південно-східної Польщі. На сьогоднішній день там виявлено п'ять стоянок, у тому числі чотири — типу короткочасних сезонних або мисливських таборів.

Більш розрізнені пам'ятки спостерігаються в Сілезії, звідки відомі як великі стоянки — табори та майстерні, так і бідні стоянки невизначеного характеру.

Південно-східна Польща є єдиним із осередків, де не зафіксовані майстерні; майстерня в Старих Бараках, хоч і розташована на східному березі Вісли, здається, скоріше пов'язана з поселеннями Сandomirської височини. Мадленське населення південно-східної Польщі використовувало в основному імпортовану сировину, головним чином, «шоколадний» і сьвєцхувський кремій, а також, рідше, місцеву моренну сировину.

Сезонні табори, заселені впродовж тривалого часу і часто неодноразово, відомі у двох регіонах: Сілезії та Сandomirської височини, ще один, у Клементовіце, розташований на північно-східній периферії мадленського ареалу, на Наленчовському плато, на схід від Вісли.

Відкриття останніх десятиліть свідчать про те, що в Польщі, яка є крайньою східною територією мадленського ареалу, дедалі виразніше проглядаються два центри: на Сandomirській височині, в місці злиття Вісли і Сяну, та у південно-східній Польщі. Обидва вони, здається, пов'язані між собою, що особливо добре помітно за використанням сировини. Можливо, території південно-східної Польщі були своєрідними мисливськими угіддями для груп мисливців-збирачів, базові табори яких розташовувалися в місці злиття річок Сян і Вісла. Цим можна пояснити відсутність великих таборів і важливість

імпортного кременю, частка якого, за винятком табору в Гломчці, вища за частку місцевої сировини. Річка Сян могла бути віссю та шляхом, що сполучує ці два регіони.

Такий чіткий зв'язок мадленських стоянок із Сяном і те, що вони знаходяться по обидві сторони від нього, також спонукає поставити ще одне, ключове питання про межі мадленського ареалу. Чи справді долина Сяну є межею поширення мадленської індустрії? Якщо так, чи було це обумовлено екологічними чи культурними причинами?

За нинішнього стану досліджень видається, що відома на сьогодні східна межа ареалу мадлену насправді може бути межею територіальної експансії цієї таксономічної одиниці. Однак також здається, що на його кордоні, на схід від Сяну, могла існувати контактна зона між мадленом та епіграветом, носії яких одночасно перебували у цьому регіоні. Те, що групи, які належали до цих двох культурних кіл, могли хронологічно збігатися, також відомо з попередніх досліджень.

Головною проблемою, з якою ми сьогодні стикаємося, шукаючи відповіді на ці та інші питання, є недостатнє польове вивчення територій як з польського, так і з українського боку кордону. Запорукою подальших досліджень є отримання нових джерел. Факт виявлення у східній Польщі нових стоянок, дозволяє припускати, що подальші дослідження зможуть змінити наші погляди щодо східної межі поширення мадлену та контактів носіїв мадленської та епіграветської індустрії.

Ключові слова: мадлен, епігравет, південно-східна Польща, мадленсько-епіграветський кордон.

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