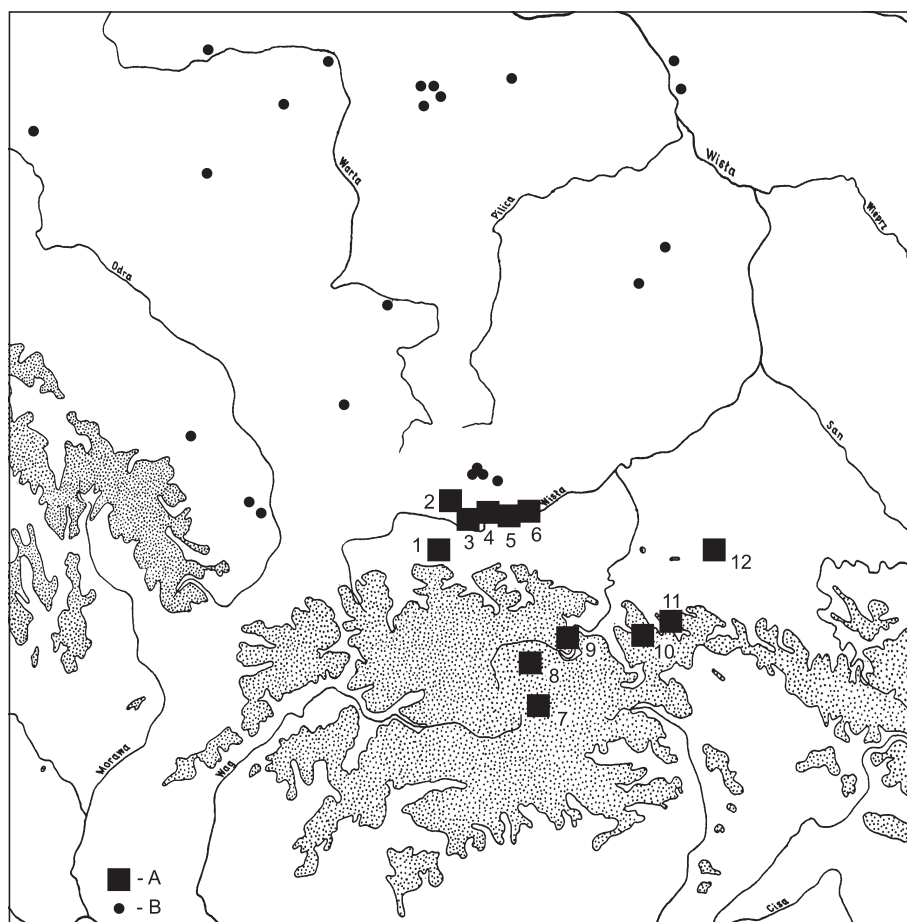
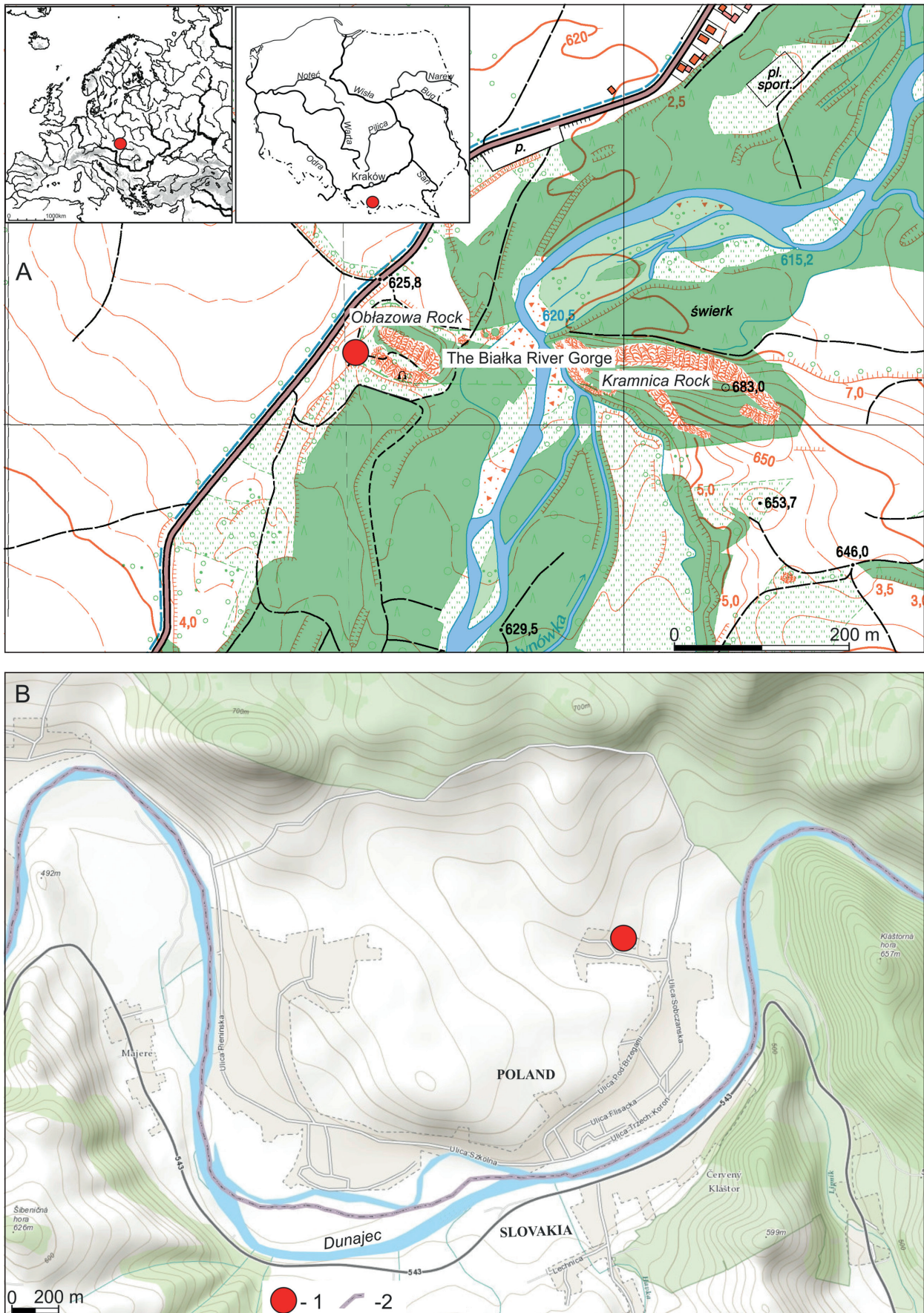


## TWO LATE PALAEOLITHIC ARCH-BACKED POINTS VARIETIES IN THE NORTHERN CARPATHIANS

The intensification of archeological research in the northern Carpathian Mountains has led to the discovery of two relatively large sites containing Arch-Backed Points (ABP) technocomplexes: Sromowce Niżne, site 1, and Nowa Biała, site 1 – both Nowy Targ district, southern Poland (fig. 1). Both sites are situated within small areas of radiolarite occurrence, and this raw material is seen in the two assemblages, proving that it was exploited. We will present some elements differentiating backed points as well as different ways of stone processing. In view of the proposal of a classification of the ABP complexes, it may be concluded that one of those sites represents the Witow group (Sromowce Niżne), while the other indicates a link with some north-western sites of the Federmesser-Gruppen (Nowa Biała). The stratigraphy of both open-air sites is clear with artefacts gathered in eolian sediments right below the plowing layer. The sites are comparable in terms of their topographic positions: both are situated in a prominent gorge of a big mountainous river, close to the terrace's edge. This could suggest that fishing played a big role in the everyday life and diet of the inhabitants of these campsites.

**Fig. 1** ABP sites in southern Poland (after Schild 1975, with additions): **1** Zagórze. – **2** Zalas. – **3** Dąbrowa Szlachecka. – **4** Kraków-Kobierzyn, Kraków-Borek Fałęcki. – **5** Kraków-Bieżanów. – **6** Zakrzów. – **7** Sucha Diera. – **8** Nowa Biała. – **9** Sromowce Niżne. – **10** Tylicz. – **11** Skwirtne. – **12** Glinnik Górny. – **A** Carpathian and sub-Carpathian sites; **B** other sites.





**Fig. 2** Topography of ABP sites in the upper Dunajec River Basin: **A** Nowa Biała, distr. Nowy Targ, site 1. – **B** Sromowce Niżne, distr. Nowy Targ, site 1. – 1 archaeological site; 2 state border.

**Fig. 3** General view of ABP sites in the upper Dunajec River Basin: **A** Nowa Biała, site 1 (arrow) with the Oblazowa Rock (670 m a.s.l.) and the Gorce Mountains (1,310 m a.s.l.) in the background. – **B** Sromowce Niżne, site 1 (arrow) seen from the Trzy Korony Peak (982 m a.s.l.), with the Slovakian river bank visible in the left upper corner. – (Photos P. Valde-Nowak).



The archaeological assemblage of Sromowce Niżne was first discovered in autumn of 1976 when radiolarite specimens needed for carrying out mineralogical and geochemical research were collected. Approximately a dozen radiolarite artefacts were found then in an area of about 50m<sup>2</sup>. Their location on a high Pleistocene terrace of erosion of the Dunajec River between the mouth of the Sobczański gorge and the estuary of Macelowy Potok in the gorge of the river (**figs 2B; 3B**) suggested a relationship with a Late Palaeolithic hunting and fishing settlement. After some years of excavation the inventory now consists of 2,437 artefacts. The site was used for stone processing, utilising the local beds of radiolarite. The raw material spectrum of the Sromowce assemblage indicates a predominance of the red radiolarite. Among other raw materials found are Cracow-Jurassic flint, and obsidian from the territory of contemporary Slovakia or northern Hungary. The discovery of this site changed the widely held view that the mountains to the north of the Tatras were not settled until the Late Middle Ages.

The second site – Nowa Biała – was discovered in May 1985 during a local inspection of caves in the Oblazowa Rock (670 m a.s.l.) (**figs 2A; 3A**). More than 20 flint and radiolarite artefacts were found in Andrzej Bednarczyk's farmland during these activities.

Both sites were excavated shortly after having been discovered.

## THE STRATIGRAPHY OF THE SITES

In Sromowce the artefacts lay in scattered positions in layer II, which was of a clay-dusty character and yellow-brown colour. Single artefacts were found both in arable soil and below this, in traces of root systems. The analysis of sections of the excavation trenches and geomorphological characteristics indicate a dislocation of the artefacts and change of their original arrangement, which was caused by a colluvium formation process.

The stratigraphy of the site in Nowa Biała could be identified and the following layers distinguished: I – plough soil, II – soil of a clayey-silty character, III – clay base and rock scree in the north-eastern part of the excavation. The stratigraphy of the excavations documented in 2012 partially agreed with observations made during the initial seasons of the research (1985-1986), however, layer II in the western part of the excavation area was by now completely destroyed by plowing.

## A POSSIBLE DWELLING STRUCTURE AT NOWA BIAŁA

In the north-eastern corner of the excavation the remains of an oval feature with a diameter of 3 m were found. The western part of the feature had been destroyed. The outline of the feature was regular, and its maximum depth was 40-45 cm below the contemporary agricultural surface. In the eastern part a root hole was visible; in its central part traces of a hearth were observed (**fig. 4**). An AMS dating of charcoals from this fireplace was performed (see below). Few stone artefacts occurred in the fill. A concentration of stone artefacts was found in the sectors adjacent to the feature to the south. A large number of anvils, hammerstones and debitage found there allow us to interpret this place as a domestic stone-processing workshop. An accumulation of charcoals discovered there, too, has been understood as the second, outdoor fireplace.

The relationship between the flint distribution and the possible hut space represented by the feature described above is uncommon, and it is hard to find something similar among the classic dwelling structures from e.g. the Rhine or Paris Basin (Gelhausen/Kegler/Wenzel 2004). The feature recognised at Nowa Biała cannot be interpreted as a windthrow structure because of a lack of characteristic elements, e.g. two clearly distinctive parts in the profiles (Langohr 1993). Therefore, the dwelling function cannot be excluded in this case.

As it is commonly known Late Palaeolithic dwelling structures differ when compared by outline, dimensions and various other details (Leesch/Bullinger 2012; Vencel 2009).

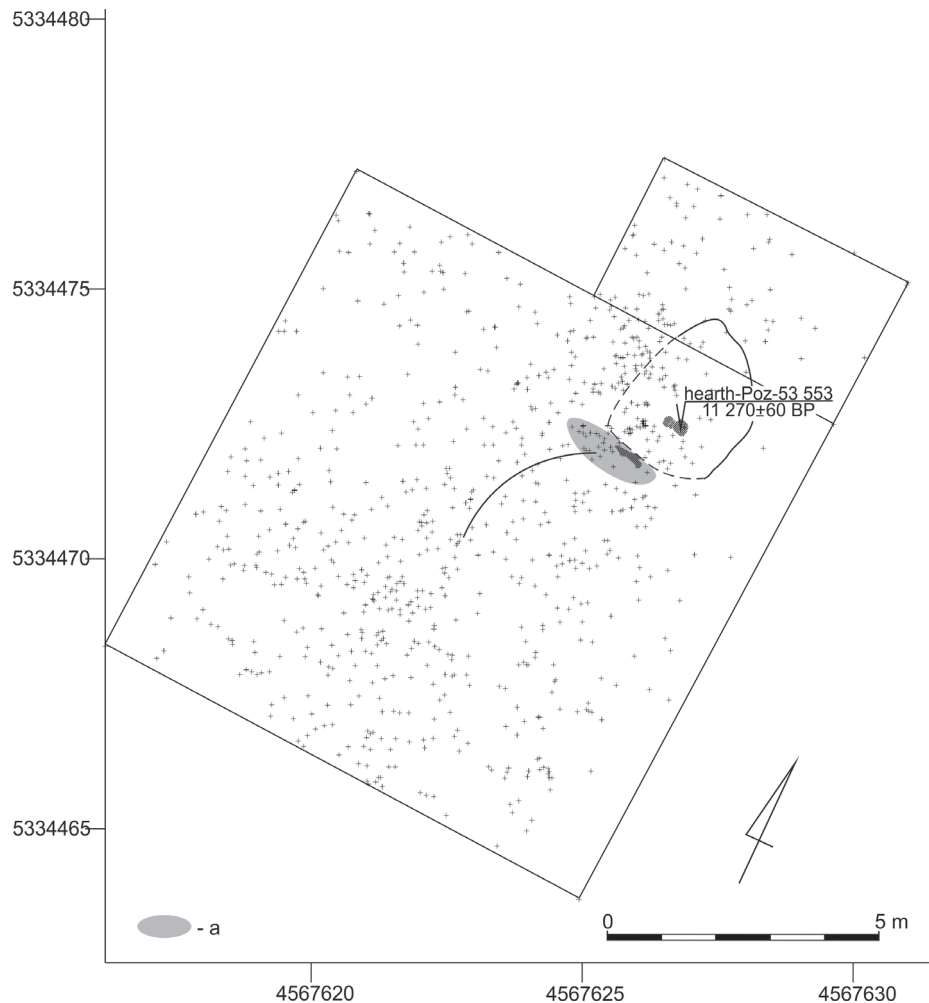
## CHRONOLOGICAL ESTIMATION OF NOWA BIAŁA

Radiocarbon dates are reported as radiocarbon years before present ( $^{14}\text{C}$ -BP) and converted to calibrated years before present (cal. BP) by the IntCal13 curve (Reimer et al. 2013) and OxCal4.2 software (Bronk Ramsey 2009). Calibrated dates are reported at their 95 % highest probability density function (pdf) unless otherwise noted.

The result of the AMS dating of charcoals from the fireplace is as follows:  $11,270 \pm 60$  years  $^{14}\text{C}$ -BP (Poz-53553), 11,368 cal. BC.

A series of OSL dates (courtesy of J. Kusiak and K. Standzikowski from the Faculty of Earth Sciences and Spatial Management, Maria Curie-Skłodowska University in Lublin [Łanczont et al. 2015]) were carried out for the above-mentioned root hole:  $8,930 \pm 540$  (Lub-5500), for the filling of the dwelling structure:  $11,030 \pm 640$  (Lub-5499), and for the geological background:  $14,730 \pm 850$  (Lub-5502). Moreover, archaeo-

**Fig. 4** Nowa Biąła, distr. Nowy Targ, site 1. Plan of the archaeological trench I/2012 with marked flint artefacts (crosses) and possible dwelling structure with charcoal concentrations. – **a** small workshop.



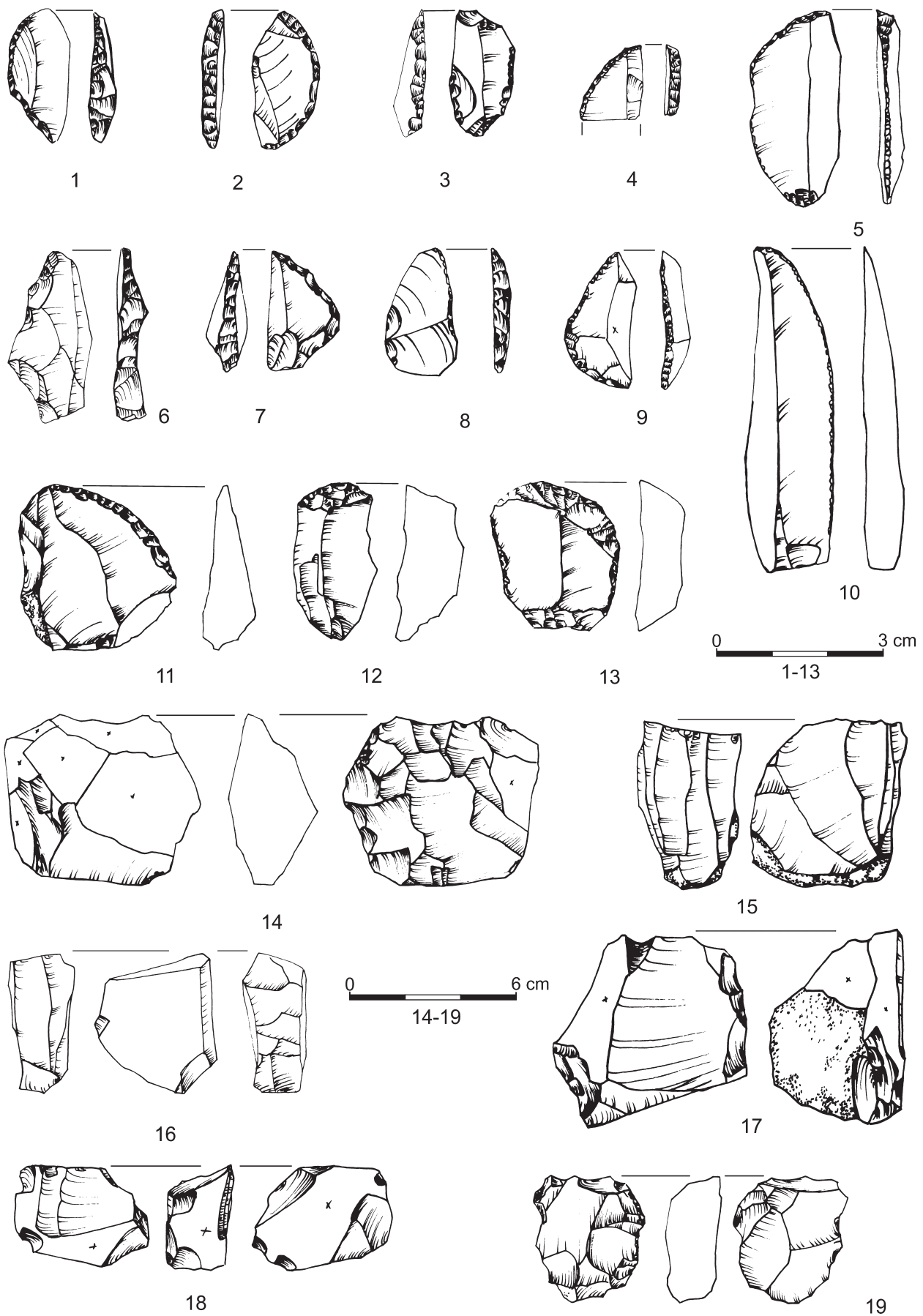
botanical samples were taken from those sections. They confirm the presence of coniferous forests with an admixture of deciduous trees such as *alnus*, *salix*, and *betula* (Komar/Łanczont/Madeyska 2015, 503-504).

## DESCRIPTION OF THE ARTEFACT INVENTORIES

The assemblage from the site Sromowce Niżne consists of 2,437 artefacts, with 1,016 items found in the years 1977-1978 (Valde-Nowak 1979), and the next 1,421 items in 1980 (Rytlewski/Valde-Nowak 1978; 1979; 1981a; 1981b; Valde-Nowak/Kraszewska 2015).

The raw materials structure can be presented as follows: Pieniny radiolarite predominates (96%), only a few artefacts are made of other kinds of stone material (Cracow-Jurassic flint: 36 pieces; obsidian: two pieces; undetermined: six pieces).

The group of precores and cores is represented by 70 items (2.9%), 33 of which were comprehensively analysed. The artefacts found in the years 1977-1978 were thoroughly studied. The original intention of the knappers is represented by single-platform flake cores. Among 29 complete cores found in the first two research seasons, as many as 15 are single-platform cores (fig. 5, 14-19), eleven show traces of orientation change, three are in double-platform stage. Most common are either small or microlithic irregular items or not well-used ones. The variability of shape and proportion is clear; different characteristics were somehow



**Fig. 5** Sromowce Niżne, distr. Nowy Targ, site 1. Selected stone artefacts: **1-10** backed forms. – **11-13** end-scrapers. – **14-19** cores. – **4-5** Cracow-Jurassic flint. – **1-3, 6-19** radiolarite.

caused by the specification of the raw material and the processing technique that was used. Concretions in the raw material with strong cracking and traces of a hard hammer used in many cases resulted in some unintended effects. Nine pieces show no core preparation. The uneconomical treatment of raw materials puts the studied artefact inventory closer to assemblages occurring in areas rich in raw materials.

Flakes predominate significantly in the whole assemblage (63.8%), among which there are no cortical flakes resulting from the primary phase of the knapping. It seems that only already pre-prepared items were brought to the site. A large number of blades (total amount of blades in the whole inventory: 10.7%, 261 items) bear some traces of intentional fragmentation, however, many breaks seem to be random.

Tools represent 8.9% of the whole inventory. The structure of the group of tools is as follows: 64 end-scrapers (30%), 24 arch-backed points (11%), 29 burins (13%), 19 truncations (9%), eight perforators (4%), four macro-tools (2%), 46 retouched blades and flakes (21%), five combined tools (5%), two other items (1%).

The most numerous group is composed of end-scrapers. Within this group thumbnail end-scrapers of Tarnowa type, made on flakes, predominate (fig. 5, 11-13).

Among the 24 backed pieces there are small and microlithic forms with arched or fully arched backs. Most of the items are complete (nine pieces). Forms with an angled back and oblique reduced base, a double angled back (fig. 5, 3, 6), and a semi-arched back (fig. 5, 1) were also recorded. Particularly interesting is one item considered as a blade with a tyn backed-like retouch on its right side (fig. 5, 10).

A collection of 1,702 stone artefacts were excavated from the site in Nowa Biała, and 1,321 of them lay *in situ* in layer II.

The raw materials structure for this site may be outlined as follows: Pieniny radiolarite predominates (77.44%), some artefacts are made of other kinds of stone materials, e. g. Cracow-Jurassic flint (12.79%), chocolate flint (6.28%), obsidian (0.68%), Świeciechów flint (0.08%), and undetermined flint (0.68%).

All in all, there are 19 cores in the whole inventory (2%). Red radiolarite finds predominate (nine pieces), other cores are made of Cracow-Jurassic flint.

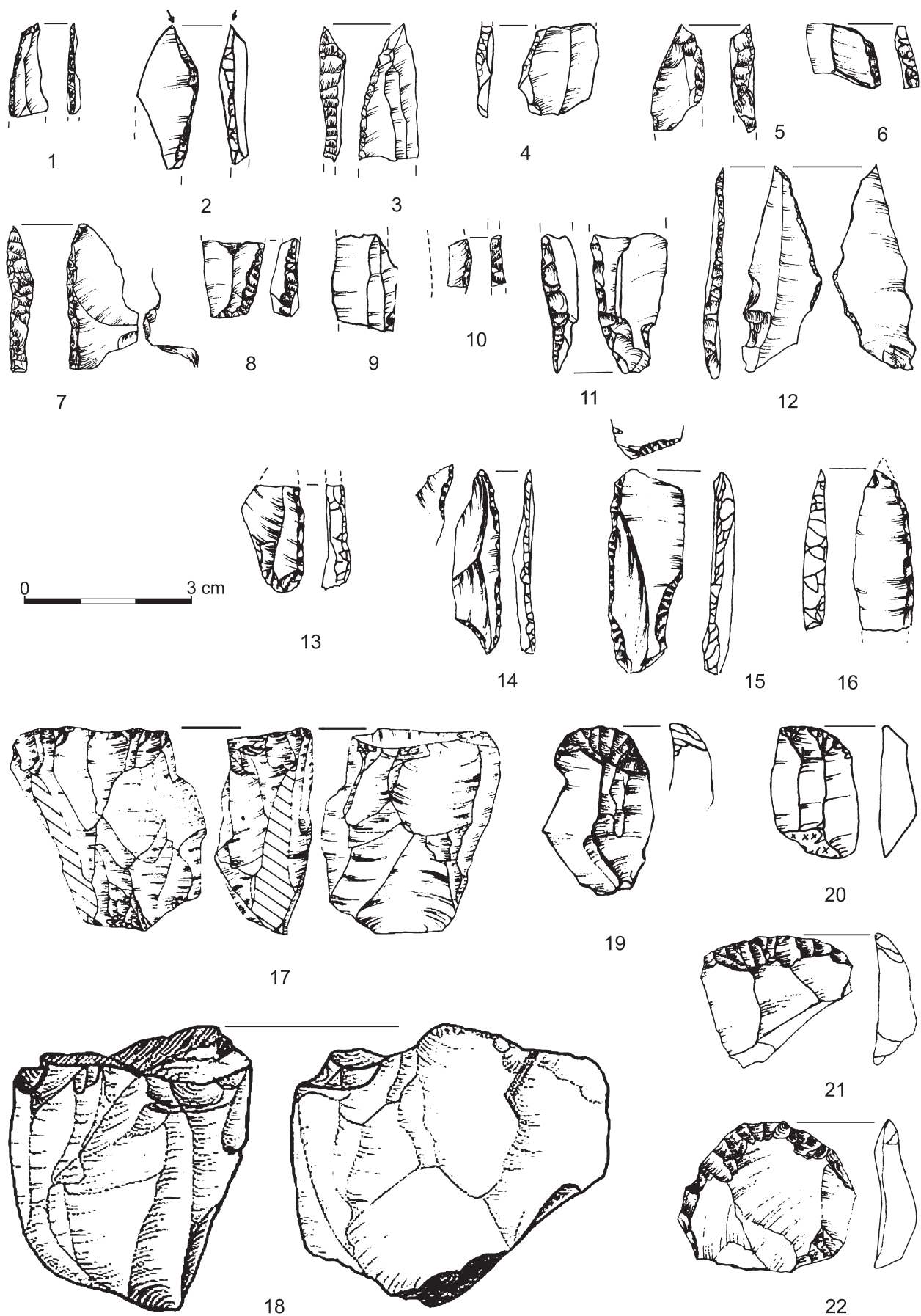
Single-platform cores, the core trimming of which was related to the preparation of striking surfaces, predominate. One of them is tablet-shaped with no traces of core preparation on the platform, another one is conical (fig. 6, 18).

Other cores, planned generally for blade exploitation, are characterised by one striking platform. The cores never transited into the flake stage. Two such cores were of Cracow-Jurassic flint (fig. 6, 17). Soft hammer knapping is documented in general.

Flakes prevail in the inventory (48%), however, the representation of blades is also significant (22%), especially when compared to the inventory of Sromowce Niżne 1.

Among the artefacts 144 items have been classified as tools (24%). End-scrapers dominate the inventory (48 pieces). These items are of Tarnowa-type, small and short, made out of flakes or blade-fragments. Forms with rounded, oblique or straight working edges occur numerous (fig. 6, 19-22). Nine tools were classified as burins.

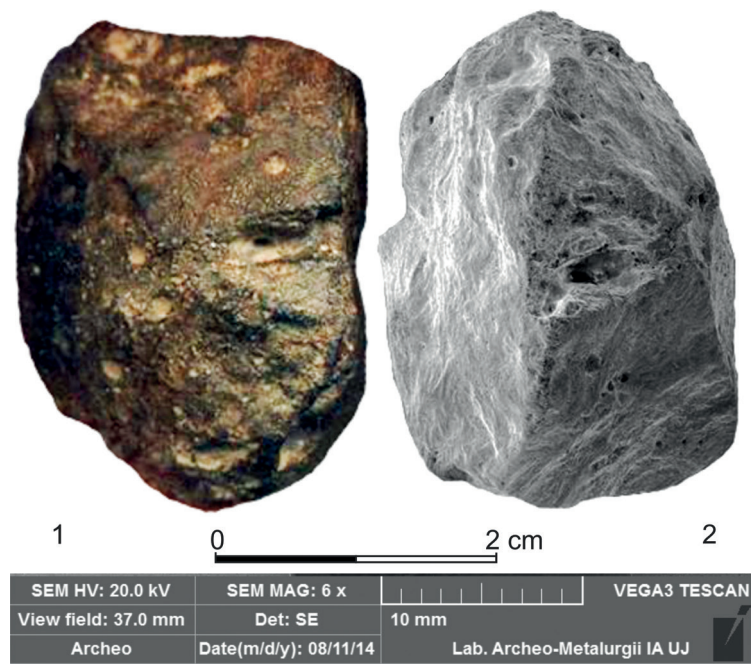
Backed pieces are represented by 14 items and are mostly preserved fragmentarily. During the excavations carried out in 2012 a complete arch-backed piece made of Cracow-Jurassic flint, with refracted back and oblique reduced base, was found (fig. 6, 12). A fragment of a massive backed piece made of Volhynian flint (fig. 6, 3) as well as a proximal fragment of a backed piece with notched retouch on its base, made of red radiolarite (fig. 6, 11), were recognised as slender forms. All these items correspond to classical forms of the Federmesser-Gruppen found in different variants of the »Penknife civilization« (Taute 1963; Schwabedissen 1954; 1973, 253). Among them there is a distinctive backed form with a straight back and notched retouch in the proximal left part formed on a blade of chocolate flint (fig. 6, 15).



**Fig. 6** Nowa Biała, distr. Nowy Targ, site 1. Selected stone artefacts: **1-16** backed forms. – **17-18** cores. – **19-22** end-scrapers. – **1-2. 5. 9-11. 14. 18. 20. 22** radiolarite; **3** Volhynian flint; **4. 6-7. 12. 17** Cracow-Jurassic flint; **13** limnoquarzite; **8. 15. 21** chocolate flint; **16. 19** obsidian.



**Fig. 7** Nowa Biąła, distr. Nowy Targ, site 1: **1** general view. – **2** Scanning Electron Microscop (SEM) view of iron concretion found in layer II in trench II/2012. – (Photos P. Valde-Nowak [1] / M. Biborski [2]).



No thickset, ogival forms – as known from Witów and Katarzynów (Chmielewska 1978), and characteristic for Sromowce Niżne 1 – have been reported from the inventory from Nowa Biąła.

Numerous hammerstones of quartz and sandstone come from the workshop situated in front of the feature (the possible hut structure) discussed above. A flat, broken retoucher, now in three pieces, comes from the first season of excavation.

A ferruginous concretion with characteristics similar to limonite was found in layer II at a distance of 3.5 m from the dwelling structure to the south-west. It bears traces of percussion working (fig. 7). A function of this tool as a fire striker has been confirmed (Skłucki et al. 2018). The edges of the concretion show some traces of crushing. This creates the possibility of regarding the item as an element of a tinder-box kit.

## TWO CARPATHIAN ABP SITES IN A WIDER PERSPECTIVE

The regional context of both sites is particularly interesting as they are 20 km away from each other, but located within the same river basin. Moreover, it is difficult to find other assemblages in the Carpathian range that provide a context for either of the variants represented by the inventories discussed here. Very few finds of arch-backed points have been made within a radius of several tens of kilometers around the sites. Furthermore, the connection of these finds with the ABP is certain only in varying degrees.

The first site we would like to highlight in this context is the cave Sucha Diera in Slovakia. During rescue excavations a fireplace was found there and few silica artefacts; among these was one thick backed point (Soják/Harničár 1999; Soják/Suchý 2001; Soják/Hunka 2003). Two  $^{14}\text{C}$  dates were obtained from a mountain chamois (*Rupicapra rupicapra*) bone:  $11,620 \pm 390$  years  $^{14}\text{C}$ -BP (Gd-300123),  $11,230 \pm 280$  years  $^{14}\text{C}$ -BP (Gd-18146). Although the dates were made on bone their relation to the settlement is not certain; however, the ranges of both dates fit well the early stage of the Allerød.

The second West Carpathian site which we believe to be important is Zagórze 2, which was examined as part of a rescue excavation connected with the construction of a reservoir dam on the Skawa River in the Western Beskidy Mountains. Amid numerous flint artefacts a fragment of a big and slender backed point was found.

It is particularly noticeable for its massive back (unpublished results of A. Kraszewska's excavations). This specimen is similar to the obsidian backed point from the Nowa Biała site, which has been shown above.

Returning to the sites Sromowce Niżne and Nowa Biała it has to be mentioned that both sites have features of base camps, most probably with a dwelling space. This is particularly important as no traces of settlements on a big river in the Central Western Carpathians have been reported prior to this discovery. In both cases the assemblage inventories may be regarded as household stone-processing workshops, because of their structure and the high number of finished tools, often with traces of intensive use.

A comparison of the lithic assemblages suggests clear differences in the case of cores and arch-backed points. Most cores from Sromowce lack any traces of preparation, except for platforms. They represent a concept of flake-blade, or just flake cores. In the case of the inventory of Nowa Biała, unlike the Sromowce lithics, the blade- and blade-flake cores prevail, often in the double platform stage.

At Sromowce the majority of backed pieces have dimensions less than 3 cm and are stout and segment-like. Thick-backed and triangular forms attract attention. It is meaningful for the reconstruction of the technological phase of the end-scraper group that the majority of these items was made of flakes and not of intentionally fractured blades.

In the case of the Nowa Biała inventory the tool index reaches 24%. Backed points are most characteristic in the tool group. These can be further differentiated: big (over 4 cm), lancet-like specimens, and backed pieces with reduced base are present. Extremely short flake end-scrapers are typical, however, there are also numerous scrapers made of blades. The technical and typological contrast between the two inventories is very clear. It is difficult to indicate inventories in the Carpathian range as well as in the site's neighbourhoods providing a context for the technological variants represented by the two sites described above. Only few finds of arch-backed points were made within a radius of several tens of kilometers; furthermore, their connection with the technocomplex that we focus on – the ABP – is certain only by varying degrees. In addition to these Carpathian sites as Sucha Diera in Slovakia and Zagórze in the Skawa River Basin as well as site 1 in Skwirtne, distr. Gorlice, in the Lower Beskidy Mountains (Valde-Nowak 1991; 1996), the relatively large inventories from Potoczek, site 5, in the sub-Carpathian Sandomierz Basin (Libera 2002; 2005), the complex of flint workshops at Pawłów (Libera/Wąs/Zakościelna 2008) and – discovered recently in Upper Silesia – Sowin, site 9, and Kozłówki, site 36 (Bobak/Połtowicz-Bobak 2010; Wiśniewski/Połtowicz-Bobak 2013) as well as Lubrza, site 42, and other sites in the Odra River Basin (Sobkowiak-Tabaka 2011) should be mentioned.

It is relatively easy to find analogies to the Nowa Biała 1 assemblage among the Polish sites such as the Rydno-Sahara trench II and Całowanie III sites (Schild et al. 1999; 2011; 2014). Similarities between them apply to the raw materials (radiolarite is reported in Rydno, whereas chocolate flint appears in the Nowa Biała inventory), technology and tool kits. Dwelling structures were discovered in Rydno and Nowa Biała. Sizes, shapes, profiles and southern exposure of the huts are similar. In both cases, a fireplace was situated inside the hut, and the workshop was outside.

A radiocarbon date obtained from Nowa Biała, site 1 ( $11,270 \pm 60$  years  $^{14}\text{C}$ -BP [Poz-53553]) is close to the results known from the Całownie Level III:  $11,380 \pm 95$  years  $^{14}\text{C}$ -BP (GrN-5967),  $11,280 \pm 60$  years  $^{14}\text{C}$ -BP (Poz-5093),  $11,170 \pm 60$  years (Poz-49027)  $^{14}\text{C}$ -BP, or  $11,020 \pm 50$  years  $^{14}\text{C}$ -BP (Poz-4670) (Schild 2014, 99-100) as well as to other dates obtained from other Polish sites (Kabaciński/Sobkowiak-Tabaka 2010, 153 fig. 17). They fit the dating of GI-1c, or, in other words, they generally date just after the mid-Lateglacial Interstadial period (Weber/Grimm/Baales 2011, 278-279).

The situation is different concerning the assemblage from the Sromowce Niżne site. It corresponds rather with the materials from Witów and Katarzynów (Chmielewska 1978). The technology of flakes, forms of arch-backed points, and hard hammer processing are similar. Possible relations between this assemblage and the southern zone require further research.

There is a possibility for the observed technological differentiations to be of chronological significance. A succession from regular blade technology to flake core procedure through the time of the Allerød is well documented either from the Azilian range (Bodu/Valentin 1997), the Federmesser-Gruppen from the Rhine Basin (Baales/Street 1997, 376-377; Grimm 2014, 16) or, according to the last publication by R. Schild (Schild et al. 2011, 129-130), from the Kamienna River Basin in Poland. It may be significant because there is no absolute chronometric determination for the Sromowce Niżne inventory which could be younger than the one from the occupation layer at Nowa Biała.

The issue of arch-backed points from the Allerød Interstadial period is best understood in its two Western European variants: Azilian and Federmesser-Gruppen (Jöris et al. 2006). In Central Europe, in the Odra- and Vistula Basins, the issue of the ABP is not fully understood. Federmesser-Gruppen complexes in the western part of contemporary Poland were distinguished a long time ago (Wołczkowo, Tarnowa, Rydno IV, Siedlnica, site 17). They used to be called Tarnowan industries after the Tarnowa site in the lowland (Krukowski 1939-1948; Taute 1963; Burdukiewicz 1977; Schild 1975; Kobusiewicz 1999, 201; Sobkowiak-Tabaka 2011; 2014) or, according to the last publication by R. Schild (Schild et al. 2011, 129-193. 376-377), classic Tarnowan/Witowian. In the same work the Kamienna variant mentioned above was separated as an older phase of ABP development (Schild et al. 2011, 187-193). The discoveries from over half a century ago in Witów, Katarzynów and Całowanie let researchers realise the existence of some distinctive ABP complexes from the Allerød period in that region. Many factors distinguished them from the typical Federmesser-Gruppen, as emphasized by J. K. Kozłowski and S. K. Kozłowski (Kozłowski/Kozłowski 1975; Kozłowski 1978), M. Chmielewska (1978), and especially by S. K. Kozłowski (1987). The complexes highlighted previously by M. Chmielewska (1961) – those of the Witów type (Witowian) – were associated with the terminal Tardigravettian (Kozłowski 1978). The taxonomic set outlined in that manner is commonly accepted to this day (see Kabaciński/Sobkowiak-Tabaka 2010, 146-149; Sobkowiak-Tabaka 2011, 82-83; 2014).

The problem seen from a southern perspective leads to the following conclusion. The mentioned Tardigravettian is generally still not well recognised. Some Romanian sites, e. g. the Cuina Turcului Dubova rock shelter, document the long lasting development of the »romanello-azilien« Tardigravettian industries. The tendency to an enlarged distribution range of such elements up to the Carpathian Basin – sites Ságvár (Gábori/Gábori 1959), Jászfelsőszentgyörgy-Szúnyogos (Dobosi 2001), Páli-Dombok (Meszter et al. 2015) – and Lower Austria – sites Limberg, Horn, Kamegg (Gulder 1952; Brandtner 1954/1955) – is suggested (Cârciumaru 1999, 182-183). However, in the territory of the Carpathian Basin these issues have not been studied sufficiently, and regional variants of the Epigravettian are poorly understood (Eichmann 2004, 165).

## FINAL REMARKS

The two described ABP assemblages differ significantly from each other. This is even more interesting since both sites are just 20km away from each other and situated in the same river basin and homogeneous landscape formation. Moreover, it is difficult to indicate inventories in the Carpathian range providing a context for either of the variants represented by the two sites. Only few further finds of arched points were made within a radius of several tens of kilometers; furthermore, their connection with the ABP technocomplex is not certain. Both sites have features of base camps, most probably with a possible dwelling each, both are situated on a big river in the Central Western Carpathians, where no traces of such settlements have been reported so far. In both cases the assemblage inventories may be regarded as household stone-processing workshops. Aside from such remarks in our opinion the above-mentioned strong differentiations cannot be explained by special tasks, function, hunting strategies or a stylistic drift of toolmaker manufactures alone.

If we evaluate the natural conditions during the two last phases of the Pleistocene in this region, two elements contrast with the situation known from the lowland. The first is the composition of the vegetation. Both in the Allerød as well as in the Dryas III pine-spruce forests developed initially in the northern Carpathians, with an advance of hazel and elm. Only during the Dryas III period did the forest line decrease to an altitude of 600-700 m a.s.l. In the Allerød the forest line reached again its former higher position, documented at the altitude of around 1,150 m a.s.l. (Koperowa 1961; Obidowicz 1990; Hrynowiecka-Czmielewska 2009). This means that during the whole Late Palaeolithic stage dense forests developed here, which is in strong contrast to the plant cover in the lowlands.

The second element comprises of easily accessible and differentiated beds of silica rocks, which allowed a definition of Carpathian raw material provenances (Valde-Nowak 1995; 2013).

The value of the findings from Sromowce Niżne and Nowa Biała is also emphasised by their geographical location. Firstly, they prove that the ABP also embraced mountainous landscapes, in this case the Tatra and the Pieniny Mountains, with their characteristic climate and fauna. Secondly, intensive studies of the discovered inventories will allow us to better define a south-eastern boundary of the area penetrated by the population of the Federmesser-Gruppen. Thirdly, the finds provide new information for the discussion about the scale of presumed southern (Epigravettian) influences on ABP communities developing in the European Lowland in the Allerød period.

## Acknowledgements

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## Summary

The issue of arched-backed points from the Allerød Interstadial period – the Arch-Backed Point (ABP) technocomplex – is best understood in its two Western European variants, the Azilian and Federmesser-Gruppen. Intensification of archeological research in the northern Carpathian Mountains has led to the discovery of two relatively large sites of this technocomplex. Our aim is to focus on them as each one represents a different technological and typological variant. Both sites are situated within small areas of radiolarite occurrence, and this raw material is seen in the two assemblages, proving that it was exploited. Some elements differentiating backed points as well as different ways of stone processing are presented. In view of a proposal of a classification of the ABP complexes, it may be concluded that one of these sites represents the elements that were formerly classified as Witovian, while the other indicates a link with the Federmesser-Gruppen.

## Keywords

Arch-Backed Points, Late Palaeolithic, Carpathians, radiolarite