245–260 https://doi.org/10.18778/1506-6541.31.11 **ZESZYTY WIEJSKIE** · RURAL PERIODICALS · **31** (2025)
received: 02.07.2025 — verified: 16.07.2025 — accepted: 18.09.2025

MARCEL BARTCZAK
https://orcid.org/0000-0002-7228-700x
marcel.bartczak@uni.lodz.pl
University of Lodz
Faculty of History and Philosophy
Department of Prehistory

PAWEŁ ZAWILSKI
https://orcid.org/0000-0001-8667-6885
pawel.zawilski@uni.lodz.pl
University of Lodz
Faculty of History and Philosophy
Laboratory of Dating and Conservation of Artifacts

An Example of the Secondary Use of Flint Artefacts by the Lusatian Culture Communities Based on Recent Excavations in the Area of the Dobrzynka River Mouth

Przykład wtórnego wykorzystania zabytków krzemiennych przez społeczności kultury łużyckiej na podstawie najnowszych badań wykopaliskowych w rejonie ujścia Dobrzynki

Summary: This article discusses a small assemblage of flint artefacts recovered from Lusatian culture settlement sites in Pabianice. While the artefacts themselves do not exhibit diagnostic features typically associated with this cultural unit, their stratigraphic context suggests that they may have been produced by Lusatian communities or were intentionally collected, reused, and deposited by them. The assemblage includes Mesolithic blade cores, a reused core showing clear signs of modification and double patination, as well as a retouched flake tool made of chocolate flint. Technological traits indicate that some of the artefacts may have originated in earlier periods, such as the Final Palaeolithic, Mesolithic, or Early Bronze Age. The retouched flake tool, in particular, appears morphologically comparable to forms associated with the Mierzanowice culture. These findings may reflect practices of secondary flint use within the Lusatian cultural context, potentially encompassing both practical and symbolic dimensions.

The results contribute to broader discussions on the circulation and reuse of lithic tools in prehistoric Central Europe.

Keywords: Pabianice archaeology, Lusatian culture, flint reuse, lithic assemblages

Streszczenie: W artykule omówiono niewielki zespół zabytków krzemiennych pozyskanych ze stanowisk osadniczych kultury łużyckiej w Pabianicach. Choć same artefakty nie wykazują jednoznacznych cech diagnostycznych dla kultury łużyckiej, ich kontekst stratygraficzny sugeruje, że mogły być wytworzone przez społeczności tej kultury lub zostać przez nie celowo zebrane, ponownie wykorzystane i zdeponowane. W zbiorze znajdują się m.in. rdzenie mezolityczne, rdzeń z wyraźnymi śladami przekształceń i podwójną patyną, a także narzędzie odłupkowe z krzemienia czekoladowego. Cechy technologiczne mogą wskazywać, że część artefaktów krzemiennych została wykonana w okresach wcześniejszych, takich jak schyłkowy paleolit, mezolit czy wczesna epoka brązu. Narzędzie odłupkowe wykazuje przypuszczalne podobieństwo morfologiczne do form związanych z kulturą mierzanowicką. Otrzymane wyniki mogą świadczyć o istnieniu praktyk wtórnego użytkowania krzemienia w kontekście łużyckim, być może o charakterze zarówno użytkowym, jak i symbolicznym. Wnioski te wpisują się w szerszą dyskusję nad obiegiem i wtórnym wykorzystaniem narzędzi krzemiennych w pradziejowej Europie Środkowej.

Słowa klucze: archeologia Pabianic, kultura łużycka, ponowne wykorzystanie krzemienia, zespoły krzemienne

Introduction

In the spring of 2024, rescue excavations were conducted at two adjacent archaeological sites designated as Pabianice no. 23 and Pabianice no. 52. Site 23 in Pabianice is situated on the western slope of the Dobrzynka River valley,[1] whereas site 52 lies several dozen metres to the south, on a small circular elevation.[2] Both sites are located along Mostowa Street, within the administrative boundaries of the town (Fig. 1:1).

The primary objective of the fieldwork was the preservation of archaeological heritage threatened by a residential development project including technical infrastructure.

1 M. Biskup et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 23 (AZP 68–51/38) w miejscowości Pabianice, gm. loco, pow. loco, woj. Łódzkie*, manuscript in the archives of the Provincial Heritage Protection Office in Łódź (WUOZ), Pabianice 2025, p. 4.

2 M. Biskup et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 52 (AZP 68–51/92) w miejscowości Pabianice, gm. loco, pow. loco, woj. Łódzkie*, manuscript in the archives of the Provincial Heritage Protection Office in Łódź (WUOZ), Pabianice 2025, p. 4.

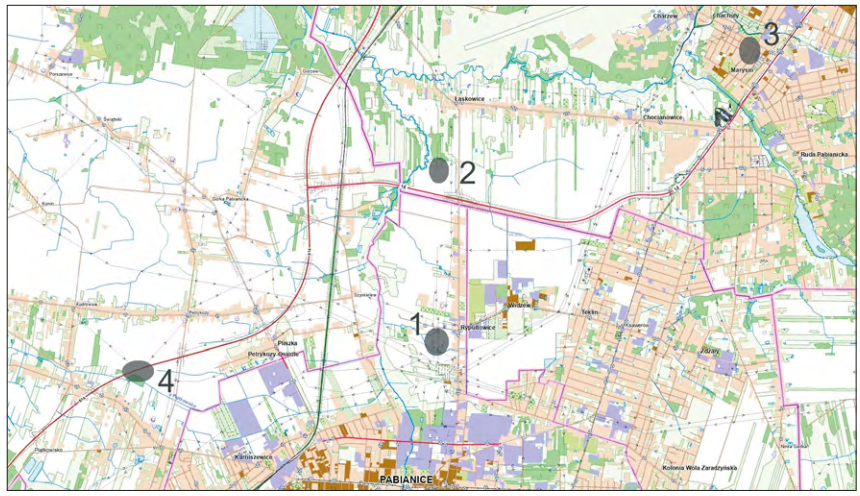

FIG. 1 Map of archaeological sites in the study area: 1 – Pabianice 23 and 52; 2 – Łaskowice 273; 3 – Ruda Pabianicka 1; 4 – Petrykozy 12. (Source: Geoportal.gov.pl; modified by the authors)

In the course of the excavations, nearly 0.7 hectares of area were investigated. Archaeological features were found directly beneath the humus layer, and a significant number of them yielded cultural material allowing for chronological and cultural attribution.

The results provided important insights into prehistoric and early historic settlement in the region, with the most intensively represented phase of occupation associated with the Lusatian culture. In total, 128 features were attributed to this cultural unit: 46 at site Pabianice 23[3] and 82 at site Pabianice 52.[4] From these features, more than 2,000 fragments of ceramic vessels were recovered, alongside several hundred fragments of daub, as well as flint and stone artefacts, and a small number of animal bone remains. These finds originated both from feature fills and from the surface level.

In addition to the main settlement phase related to the Lusatian culture, the sites also yielded evidence of later land use. At site Pabianice 23, these were isolated features from the modern period, while at site Pabianice 52, traces of early medieval settlement were also identified.

Nevertheless, the most compelling features were those associated with the Lusatian culture occupation.

3 M. Biskup et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 23…*, p. 7.

4 M. Biskup et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 52…*, p. 7.

Ceramics and the chronology of lusatian culture settlement

Over 2,000 fragments of ceramic vessels unequivocally attributable to the Lusatian culture were recovered from both of the investigated sites. Among the identified forms were fragments of pots with S-shaped profiles, vase-like vessels (including jugs and amphorae), bowls, plates, and a single fragment of a vessel with sieves. The preserved elements include body sherds, rims (most commonly rounded or flat-cut), undifferentiated bases, and strap handles (Fig. 2).

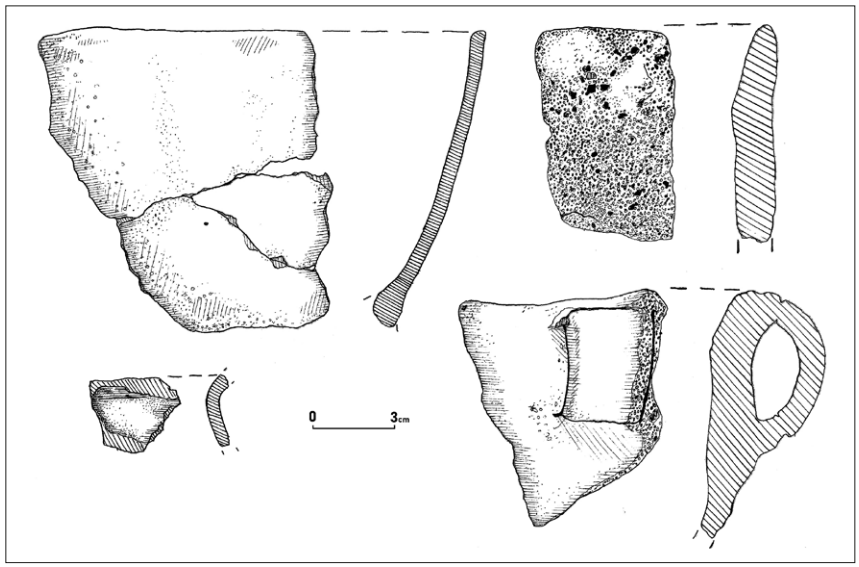

FIG. 2 Selected ceramic vessel fragments from the Pabianice sites. Drawn by M. Świderek

The vessels were handmade from clay tempered primarily with medium-grained mineral inclusions. Fine- and coarse-grained tempers were also present, distributed evenly throughout the ceramic matrix. The vessel walls are generally of medium to substantial thickness. The exterior surfaces frequently exhibit roughening, sometimes limited to the basal zone, while smoothing is less commonly observed. The ceramics most often display monochromatic breaks, in shades of brown or black.

Decoration is relatively rare and includes primarily obliquely faceted vessel bodies, individual incised grooves, crosshatched motifs, fingernail impressions, and perforations. Traces of tools used in surface treatment, as well as secondary impressions left by metal or bone objects, were also noted.

The typological and technological characteristics of the ceramic assemblage allow the settlement to be dated to the late phase of the Central Polish group of the Lusatian culture. The predominant decorative motifs, particularly oblique profiling on vase-like

vessels, point to Period IV of the Bronze Age. The presence of wide grooves and incised ornamentation may further suggest continuity of site use into the early stages of Period V of the Bronze Age. At site Pabianice 52, certain fragments such as a sharply profiled bowl with a blackened surface or roughening that extends to the very base may indicate episodic occupation extending into the initial phase of the Hallstatt period.

The absence of domestic structures and the moderate density of artefacts suggest that the investigated areas likely constituted peripheral zones of larger settlement units. The discoveries from Pabianice contribute to the broader picture of intensive Lusatian culture settlement development in the Dobrzynka River valley during the Late Bronze Age, confirming the presence of the cultural unit in Period IV and, to some extent, also in Period V of the Bronze Age.

Flint artefacts

The archaeological investigations conducted in Pabianice yielded a small yet nonetheless significant assemblage of flint artefacts. These materials were recovered from both examined sites, although they did not form any discernible concentrations. The entire collection comprises only 20 specimens, evenly distributed between the two sites. At least a portion of the flint artefacts found within Lusatian cultural features may be directly associated with settlement activity from that particular cultural horizon. Additionally, three flint artefacts from site Pabianice 52 were recovered from a feature attributed to the early medieval period[5].

For the identification of raw material types, typological classification, and technological analysis of the flint tools, reference was made to the works of B. Balcer,[6] B. Ginter and J.K. Kozłowski,[7] L. Domańska,[8] J. Lech,[9] J. Kabaciński,[10] and Schild, Marczak, and Królik.[11]

5 Ibidem, p. 14.

6 B. Balcer, *Wytwórczość narzędzi krzemiennych w neolicie ziem Polski*, Wrocław 1983.

7 B. Ginter, J.K. Kozłowski, *Technika obróbki i typologia wyrobów kamiennych paleolitu, mezolitu i neolitu*, Warszawa 1990.

8 L. Domańska, *Geneza krzemieniarstwa kultury pucharów lejkowatych na Kujawach*, Łódź 1995; eadem, *Change and continuity, Traditions of the flint processing from the perspective of Tążyna river valley*, Łódź 2016.

9 J. Lech, *Górnictwo krzemienia społeczności wczesnorolniczych na Wyżynie Krakowskiej koniec VI tysiąclecia – 1 połowa IV tysiąclecia p.n.e.*, Wrocław 1981.

10 J. Kabaciński, *Przemiany wytwórczości krzemieniarskiej społeczności kultur wstęgowych strefy wielkodolinnej Niżu Polskiego*, Poznań 2010.

11 R. Schild, M. Marczak, H. Królik, *Późny mezolit. Próba wieloaspektowej analizy otwartych stanowisk piaskowych*, Wrocław 1975.

Due to the limited size of the assemblage, a deliberate decision was made not to apply dynamic technological classification rules, and no quantitative or statistical characterization of the material was provided. Instead, the analysis focused on a descriptive and qualitative evaluation of the artefacts. The non-diagnostic flint objects, which are presumed to be Lusatian or to have been secondarily deposited within a Lusatian context, were treated in a synthetic manner without attribution to a specific cultural horizon or chronological phase.

Greater analytical attention was devoted to artefacts that, in the opinion of the authors, were likely produced in earlier periods, primarily by communities of the Stone Age and the Early Bronze Age. These artefacts were subsequently collected and, in some cases, possibly modified or redeposited by representatives of the Lusatian culture at the Pabianice sites.

Flint raw material

The majority of specimens were manufactured from dark-coloured Cretaceous erratic flint, most likely locally sourced or obtained from nearby deposits. These artefacts typically exhibit surface patina and, in some cases, a characteristic aeolian gloss. The remaining artefacts include two pieces made from chocolate flint and a single flake produced from an unidentified siliceous rock, possibly siliceous marl.

Flint artefacts of indeterminate cultural horizon

This category comprises all flint artefacts that lack distinctive technological or typological features. They consist primarily of flakes, splintered piece flakes, and chunks with negative scars:

- A flake with markedly smoothed edges and surfaces, bearing faint and indeterminate traces of retouch, likely partially obliterated by post-depositional processes;
- A flake measuring 31 × 22 × 4 mm, with an indeterminate butt, exhibiting extensive surface smoothing which may indicate water transport;
- A flake made of unidentified siliceous rock, measuring 33 × 21 × 9 mm. The butt is eroded, and the piece contains residual cortex (Fig. 3:1);
- A flake 32 mm in length, exhibiting multidirectional negative scars and a white, "sandy" patina on the dorsal face;
- Three small flakes lacking diagnostic features that would enable precise classification; their dimensions range from 15 to 22 mm in both length and width;
- A heavily altered chunk with negative scars of Cretaceous erratic flint. Although the surface is poorly preserved, it clearly bears intentional flake scars, suggesting it may once have served as an atypical tool subjected to multiple episodes of reworking. However, the extent of alteration precludes definitive identification;

- A chunk with negative scars measuring 52 × 22 × 13 mm, roughly cuboid in shape, with edges bearing traces of retouch now largely effaced by post-depositional processes. The surface is notably glossy;
- A chunk of erratic flint measuring 42 × 23 × 21 mm, with pronounced aeolian gloss on one face and irregular, possibly incidental retouch;
- A chunk of erratic flint measuring 42 × 24 × 20 mm, possessing one naturally sharp edge, suggesting the piece may have been discarded immediately after production;
- A small splintered piece flake of erratic flint, with significant damage to what was most likely the ventral face, making it impossible to determine the production technology with certainty;
- Three flint artefacts made of Cretaceous erratic flint were recovered from an early medieval feature. Two of these are negative fragments measuring 47 × 35 × 34 mm and 36 × 27 × 15 mm, respectively. The third is a debitage flake measuring 31 × 23 × 7 mm, displaying multidirectional negative scars on its surface. All three specimens retain relatively sharp edges, which may indicate that they were discarded shortly after knapping. Their provenance, therefore, should not be overinterpreted.

Flint artefacts from earlier prehistoric periods: secondary use and deposition at sites Pabianice 23 and 52

This group comprises flint artefacts displaying technological and typological traits that allow, with a reasonable degree of certainty, attribution to earlier prehistoric periods or cultures:

- A flake measuring 19 × 18 × 11 mm, bearing clear microblade removal scars on its surface. This may indicate that it originated as a minor product of flaking face rejuvenation on a Mesolithic core.
- A fragment of a blade core made of chocolate flint, measuring 42 × 21 × 10 mm, with a flat, partially preserved platform (Fig. 3:2). The presence of the specific cortex and the waxy texture of the flint mass suggest that the raw material likely derives from the Polany area (Radom County), consistent with the known provenance of chocolate flint.[12] The core was ultimately split using the splintering technique, as evidenced by rough flake scars with distinct ripple marks. The specimen also shows signs of light heat treatment;

12 Cf.: J. Budziszewski, "Stan badań nad występowaniem i pradziejową eksploatacją krzemieni czekoladowych," [in:] *Krzemień czekoladowy w pradziejach. Materiały z konferencji w Orońsku 8–10 x 2003*, eds. W. Borkowski, J. Libera, B. Sałacińska and S. Sałaciński, Warszawa–Lublin 2008, pp. 33–106.

- A heavily exploited Mesolithic blade core made of Cretaceous glacial flint, measuring 47 × 25 × 17 mm (Fig.3:3). The striking platforms are destroyed, likely due to secondary use as a splintered piece or fire-striking tool, possibly by later communities including Lusatian culture groups;
- A multiplatform core made of Cretaceous erratic flint, measuring 66 × 56 × 20 mm (Fig. 3:4). The specimen was likely initially used as a flake core, as indicated by multidirectional flake scars. Its later reuse, possibly by Lusatian culture groups, is suggested by the presence of sharp opposing striking ends typical of bipolar reduction, possibly indicating its secondary use as a splintered piece. The artefact shows evidence of multiple episodes of use and redeposition, reflected in the presence of double patination.[13] One surface is covered with a thick white patina characteristic of dry, sandy conditions, while another displays localized rusty-red staining within the flint matrix, corresponding to prolonged exposure in wet, moraine-derived soils at the Pabianice site;
- A flake tool made of chocolate flint, measuring 72 × 39 × 12 mm, distinguished within the entire assemblage (Fig. 3:5; Fig. 4). It was recovered from a pit containing charcoal fragments and inclusions of ferruginous clay. The specimen is fully patinated, but the surface shows no disruption to the siliceous texture of the flint, indicating natural aging *in situ* rather than exposure to heat. The dorsal face is predominantly light brown, while the ventral surface exhibits a semicircular band of light beige colouration, possibly reflecting patination in a moisture-retentive pit environment. The tool is retouched on the dorsal face along two converging edges forming a sharp tip. The first edge displays semi-abrupt stepped retouch, while the second was shaped using low-angle retouch, which served to sharpen the flake edge. The scars on the dorsal face indicate the flake was detached from a single-platform core. The ventral side shows a bulb of percussion with a bulb scar and a damaged, indeterminate butt. These features likely resulted from direct percussion using a hard hammer technique. Microscopic analysis confirmed that the tool was never used post-production, as no edge wear or use traces were observed.

The flint assemblage from sites Pabianice 23 and 52 is limited in quantity and lacks tool forms that can be diagnostically linked to the Lusatian cultural unit or its regional variants. Most of the typological characteristics observed within the collection correspond to generalized traits found across a wide range of prehistoric cultures in Poland that made use of flint as a raw material.

Although cultural attribution based solely on the lithic material remains inconclusive, the stratigraphic association of several flint artefacts with Lusatian ceramic-bearing features strongly indicates that these items were at least collected or repurposed

13 Cf.: J. Kamińska, K. Szymczak, "Patyna powierzchni zabytków krzemiennych jako wyznacznik chronologiczny," *Światowit* 1994, no. 39, pp. 215–233.

by Lusatian culture communities, regardless of whether they were originally produced by them. The only clear exceptions are a few artefacts described above, whose technological attributes allow their production to be assigned, with high probability, to groups from earlier prehistoric periods.

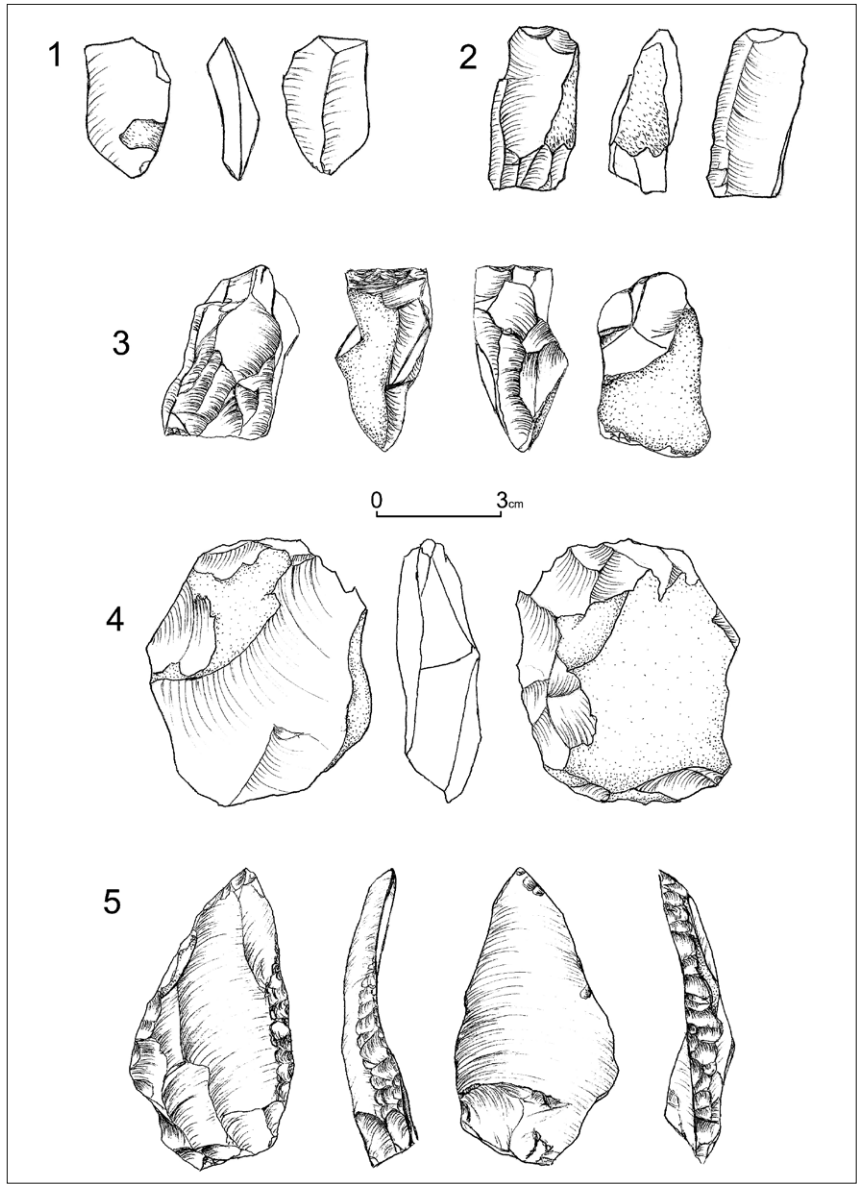

FIG. 3 Flint artefacts from the Pabianice sites. Drawn by K. Górka

FIG. 4 Photograph of the retouched flake tool from site Pabianice 23
Photograph by M. Bartczak

Secondary use and provenance of the flint material

The deposition of lithic artefacts originating from earlier prehistoric periods within Lusatian cultural contexts is by no means an exceptional phenomenon. The secondary use of older flint tools and debitage by Lusatian communities is a well-documented practice. Notable examples include the reuse of prehistoric flint implements at fortified settlements in Komorowo,[14] Szamotuły County, Góra Świętej Doroty in Będzin-Grodziec,[15] Silesia as well as the cemetery at Kietrz,[16] located in the Opole Voivodeship, among numerous other fortified sites and burial grounds.

At the sites of Pabianice 23 and 52, the situation presents some distinct characteristics. The investigated areas were not subjected to comprehensive excavation, and no immovable structural remains (e.g., domestic architecture) confirming permanent habitation were documented. The redeposited flint artefacts were found within pit features in direct association with Lusatian ceramics.

The most compelling examples, whose secondary use and deposition within the Lusatian cultural context are beyond reasonable doubt, include two Mesolithic blade cores: a fragmentary core made of chocolate flint (Fig. 3:2) and a core of Cretaceous erratic flint later transformed into a splintered piece or fire-striking tool (Fig. 3:3); along with a repurposed core exhibiting double patination (Fig. 3:4) and a retouched flake tool made of chocolate flint (Fig. 3:5; Fig. 4).

Evidence of settlement activity dating to the Final Palaeolithic and Mesolithic periods is documented in the vicinity of the Pabianice sites. A few kilometres to the north, near the locality of Łaskowice, a Final Palaeolithic site interpreted as a short-term camp was identified, yielding two artefacts made of chocolate flint.[17] These finds were discovered in close proximity to the Dobrzynka River valley, near its confluence with the Ner River and in direct geographical relation to the Pabianice area (Fig. 1:2).

14 T. Malinowski, "O roli krzemienia u niektórych społeczności epok metali," *Przegląd Archeologiczny* 2000, no. 48, p. 133.

15 Cf.: M. Przybyła, D. Stefański, "Materiały krzemienne z osady kultury łużyckiej na Górze Św. Doroty w Będzinie – Grodźcu," *Sprawozdania Archeologiczne* 2004, no. 56, pp. 399–413.

16 Cf.: M. Gedl, "Krzemienne grociki strzał na cmentarzysku kultury łużyckiej w Kietrzu," [in:] *Z badań nad krzemieniarstwem epoki brązu i wczesnej epoki żelaza*, eds. J. Lech, D. Piotrowska, Warszawa 1997, pp. 215–224.

17 L. Domańska, *Epoka kamienia na terenie Łodzi*, manuscript in the archives of the Institute of Archaeology, University of Łódź, Łódź 2001.

The nearest Mesolithic site is Ruda Pabianicka 1,[18] located several kilometres northeast of the investigated Pabianice sites (Fig. 1:3). Additionally, a cluster of Mesolithic sites is situated in the southwestern part of the modern city of Łódź, within the Ner River basin. These have been associated with the Chojnice-Pieńki and Janisławice cultural groups.[19]

This broader settlement context corresponds well with the presence of Mesolithic provenance cores identified at Pabianice 23 and 52, as well as with the discovery of a double-patinated specimen attributed in general terms to the Stone Age.

Arguably the most significant find from the Lusatian sites under discussion is the retouched flake tool made of chocolate flint. It is likely to be associated with the Early Bronze Age, possibly with the Mierzanowice culture. This interpretation is supported by formal similarities to flint tools recovered from Mierzanowice culture sites located at a relatively short distance from the Pabianice area.

One such site is Sięganów 3,[20] situated approximately 23 kilometres southeast of the Pabianice sites. The lithic inventory uncovered there represents an exemplary assemblage of Early Bronze Age flint production. In the area surrounding Sięganów, additional sites including Łopatki 11 and 12 have yielded similarly rich flint assemblages, composed almost exclusively of non-local raw materials such as chocolate flint, Świeciechów flint, and striped flint.[21]

These sites are interpreted as traces of short-term occupation by groups of the Mierzanowice culture, who during the Early Bronze Age migrated from the loess-covered areas of the Sandomierz Upland toward the Central Polish Lowlands.[22] As they moved, these groups carried high-quality lithic raw materials with them, notably chocolate flint sourced from the Łysogóry region of the Świętokrzyskie Mountains.[23]

An important line of evidence linking the flake tool from Pabianice to mobile groups of the Mierzanowice culture includes both the use of chocolate flint and

18 Ibidem.

19 Ibidem.

20 Cf.: A. Pelisiak, "Osada z początków epoki brązu w Sięganowie (stan. 3), woj. Sieradz," *Sprawozdania Archeologiczne* 1991, no. 43, pp. 153–165.

21 A. Pelisiak, "Początki epoki brązu na terenie województwa sieradzkiego," *Sieradzki Rocznik Muzealny* 1992, no. 8 p. 26.

22 Cf.: A. Pelisiak, "Czy grupy ludności kultury mierzanowickiej migrowały z Małopolski na Niż? Krzemień czekoladowy w badaniach obozu kulturowego wczesnego okresu epoki brązu," [in:] *Krzemień czekoladowy w pradziejach. Materiały z konferencji w Orońsku 8–10 x 2003*, eds. W. Borkowski, J. Libera, B. Sałacińska and S. Sałaciński, Warszawa–Lublin 2008, pp. 305–316.

23 Ibidem.

morphological similarity to backed flake forms recorded at Sięganów (Fig. 5:1,2).[24] The specimen from Pabianice shows one edge shaped with semi-abrupt to steep retouch, while the opposite edge was formed using low-angle retouch. The character and placement of the retouched edges appear to correspond to knife-like flake forms from the assemblage at Sięganów.[25]

A morphologically similar tool was discovered at site no. 3 in Zabrzezie, Pajęczno County, located approximately 50 kilometres south of Pabianice, in the area of the lignite mining region of the Szczerców Basin.[26] At this site, within the context of Mierzanowice culture materials, a flint artefact comparable to the flake tool from Pabianice 23 was found and described as a perforator made from Świeciechów flint (Fig. 5:3).[27]

Further evidence of Mierzanowice settlement has been documented within the Szczerców Basin region, including at site no. 5 in the nearby locality of Zielęcin.[28] At both Zabrzezie and Zielęcin, Early Bronze Age flint production was based primarily on locally available raw materials,[29] with occasional exceptions such as the aforementioned Świeciechów flint perforator.

The nearest short-term camp site containing ceramic material attributed to the Mierzanowice culture is site Petrykozy 12,[30] located approximately 4 kilometres east of the Pabianice sites (Fig. 1:4). The ceramic assemblage from this site has been linked to materials from the Sandomierz–Opatów region, specifically to the Samborzec group.[31]

What is most surprising, however, is that during the excavations at sites Pabianice 23 and 52, not a single fragment of Mierzanowice culture pottery was recovered.

24 A. Pelisiak, "Osada…," p. 158.

25 Ibidem, p. 159–160.

26 Cf.: J. Kabaciński, "Wytwórczość krzemienna z okresu późnego neolitu i wczesnej epoki brązu," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, ed. M. Chłodnicki, vol. 4, Poznań 2003, pp. 29–36.

27 Ibidem, p. 31.

28 Cf.: M. Ignaczak, P. Makarowicz, "Osadnictwo społeczności kultury mierzanowickiej," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, eds. J. Bednarczyk, M. Ignaczak, vol. 6, Poznań 2009, pp. 19–27.

29 Cf.: P. Dmochowski, "Wytwórczość krzemienna," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, eds. J. Bednarczyk, M. Ignaczak, vol. 6, Poznań 2009, pp. 9–17.

30 K. Błaszczyk, M. Lewandowski, P. Zawilski, *Ratownicze badania wykopaliskowe w ciągu planowanej obwodnicy Pabianic w rezerwowym korytarzu drogi 14 BIS (łącznik) i S14 na odcinku Ksawerów–Dobroń, Petrykozy, stan. 12, gm. Pabianice, woj. łódzkie (AZP 68–50/60)*, manuscript in the archives of the Provincial Heritage Protection Office in Łódź (WUOZ), Łódź 2010, p. 5.

31 Ibidem, p. 28.

Even so, Mierzanowice settlement activity is documented in the immediate vicinity and is typically associated with short-term occupations.

And although we allow for the possibility that the flake tool from Pabianice may have an earlier chronological attribution, we believe it is likely the "lost possession" of a group from the Early Bronze Age, later encountered by the Lusatian culture community. Its deposition in a pit feature together with Lusatian pottery may support this interpretation, although we are aware that its presence there could be coincidental.

Nevertheless, it appears likely that the artefact was either lost or served a symbolic, possibly ritual function, as microscopic analysis indicates no evidence of use following its production. On this basis, it may be justifiable to speak of secondary use, even if this was limited to its deposition within a Lusatian cultural feature.

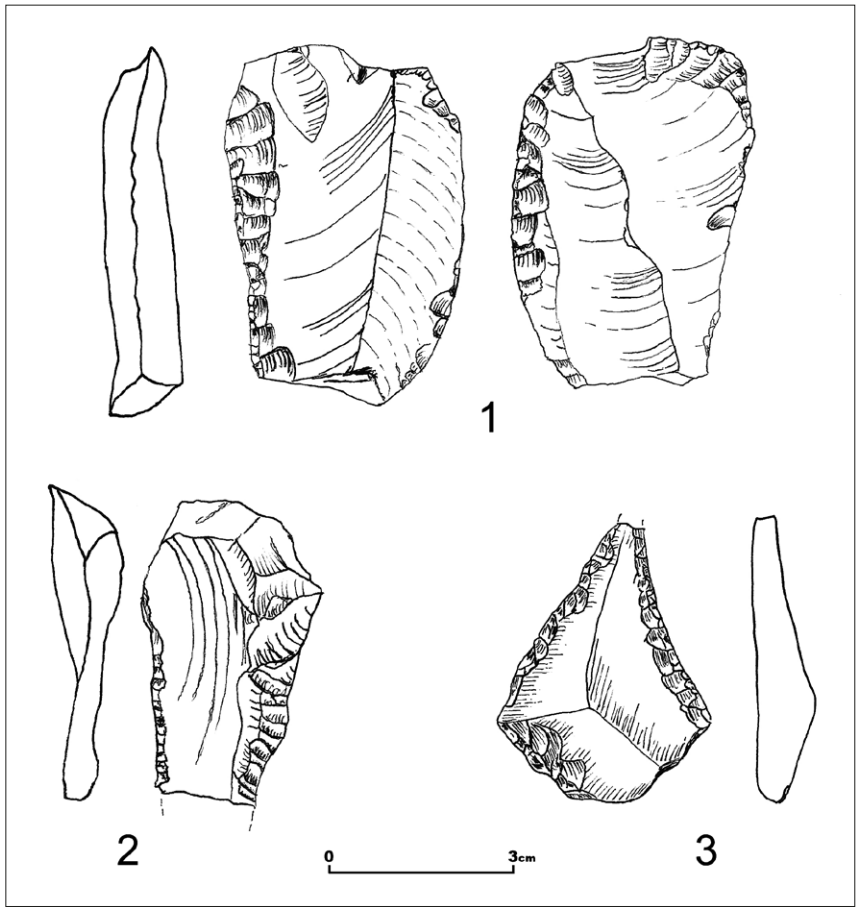

FIG. 5. Flint tools from comparative archaeological sites: 1, 2 – Sięganów 3; 3 – Zabrzezie 3
Drawn by M. Bartczak, after Pelisiak (1991), p. 159–160, and Kabaciński (2003), p. 29

Conclusions

Although the flint assemblage is quantitatively modest, it offers valuable insight into processes of cultural interaction and material reuse. Most of the flint artefacts lack typological specificity and cannot be conclusively attributed to the Lusatian cultural unit. However, their stratigraphic association with Lusatian features suggests that they were at least collected or secondarily deposited during the period of Lusatian group activity. In several cases, technological traits indicate that these tools originated in earlier periods, particularly the Mesolithic and Early Bronze Age.

The flint materials from Pabianice 23 and 52 should therefore not be viewed as residual debris, but as evidence of long-term patterns in the circulation of tools and raw materials, as well as the repeated presence of older objects within later prehistoric contexts.

Bibliography

Archival sources

Provincial Heritage Protection Office in Łódź

Biskup M. et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 23 (AZP 68–51/38) w miejscowości Pabianice, gm. loco, pow. loco, woj. Łódzkie*, Pabianice 2025.

Biskup M. et al., *Opracowanie wyników ratowniczych archeologicznych badań wykopaliskowych, przeprowadzonych na stanowisku nr 52 (AZP 68–51/92) w miejscowości Pabianice, gm. loco, pow. loco, woj. Łódzkie*, Pabianice 2025.

Błaszczyk K., Lewandowski M., Zawilski P., *Ratownicze badania wykopaliskowe w ciągu planowanej obwodnicy Pabianic w rezerwowym korytarzu drogi 14 BIS (łącznik) i S14 na odcinku Ksawerów–Dobroń, Petrykozy, stan. 12, gm. Pabianice, woj. łódzkie (AZP 68–50/60)*, Łódź 2010.

Literature

Balcer B., *Wytwórczość narzędzi krzemiennych w neolicie ziem Polski*, Wrocław 1983.

Budziszewski J., "Stan badań nad występowaniem i pradziejową eksploatacją krzemieni czekoladowych," [in:] *Krzemień czekoladowy w pradziejach. Materiały z konferencji w Orońsku 8–10 X 2003*, eds. W. Borkowski, J. Libera, B. Sałacińska and S. Sałaciński, Warszawa–Lublin 2008.

Dmochowski P., "Wytwórczość krzemienna," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, eds. J. Bednarczyk, M. Ignaczak, vol. 6, Poznań 2009.

Domańska L., *Change and continuity, Traditions of the flint processing from the perspective of Tążyna river valley*, Łódź 2016.

Domańska L., *Epoka kamienia na terenie Łodzi*, manuscript in the archives of the Institute of Archaeology, University of Łódź, Łódź 2001.

Domańska L., *Geneza krzemieniarstwa kultury pucharów lejkowatych na Kujawach*, Łódź 1995.

Gedl M., "Krzemienne grociki strzał na cmentarzysku kultury łużyckiej w Kietrzu," [in:] *Z badań nad krzemieniarstwem epoki brązu i wczesnej epoki żelaza*, eds. J. Lech, D. Piotrowska, Warszawa 1997.

Ginter B., Kozłowski J.K., *Technika obróbki i typologia wyrobów kamiennych paleolitu, mezolitu i neolitu*, Warszawa 1990.

Ignaczak M., Makarowicz P., "Osadnictwo społeczności kultury mierzanowickiej," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, eds. J. Bednarczyk, M. Ignaczak, vol. 6, Poznań 2009.

Kabaciński J., *Przemiany wytwórczości krzemieniarskiej społeczności kultur wstęgowych strefy wielkodolinnej Niżu Polskiego*, Poznań 2010.

Kabaciński J., "Wytwórczość krzemienna z okresu późnego neolitu i wczesnej epoki brązu," [in:] *Badania archeologiczne na terenie odkrywki Szczerców Kopalni Węgla Brunatnego „Bełchatów" S. A.*, ed. M. Chłodnicki, vol. 4, Poznań 2003.

Kamińska J., Szymczak K., "Patyna powierzchni zabytków krzemiennych jako wyznacznik chronologiczny," *Światowit* 1994, no. 39.

Lech J., *Górnictwo krzemienia społeczności wczesnorolniczych na Wyżynie Krakowskiej koniec VI tysiąclecia – 1 połowa IV tysiąclecia p.n.e.*, Wrocław 1981.

Malinowski T., "O roli krzemienia u niektórych społeczności epok metali," *Przegląd Archeologiczny* 2000, no. 48.

Pelisiak A., "Czy grupy ludności kultury mierzanowickiej migrowały z Małopolski na Niż? Krzemień czekoladowy w badaniach obozu kulturowego wczesnego okresu epoki brązu," [in:] *Krzemień czekoladowy w pradziejach. Materiały z konferencji w Orońsku 8–10 x 2003*, eds. W. Borkowski, J. Libera, B. Sałacińska and S. Sałaciński, Warszawa–Lublin 2008.

Pelisiak A., "Osada z początków epoki brązu w Sięganowie (stan. 3), woj. Sieradz," *Sprawozdania Archeologiczne* 1991, no. 43.

Pelisiak A., "Początki epoki brązu na terenie województwa sieradzkiego," *Sieradzki Rocznik Muzealny* 1992, no. 8.

Przybyła M., Stefański D., "Materiały krzemienne z osady kultury łużyckiej na Górze Św. Doroty w Będzinie – Grodźcu", *Sprawozdania archeologiczne* 2004, no. 56.

Schild R., Marczak M., Królik H., *Późny mezolit. Próba wieloaspektowej analizy otwartych stanowisk piaskowych*, Wrocław 1975.