

CHIPPED FLINT TECHNOLOGIES IN SWIDERIAN COMPLEXES OF THE UKRAINIAN POLISSYA REGION

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Abstract

The Swiders of Ukrainian Polissya used mainly local raw materials. The final preparation of pre-core for usage was forming the platform and the working surface. The main Swiderian type of core of Ukrainian Polissya is double opposite platform cores with one working surface. A typical form of Swiderian pressure cores of Ukrainian Polissya is cone-shaped and pencil-shaped. Microblades were made to be inserts into arrowheads of organic material. The joining of organic and stone elements for producing narrow-slot points is not traditional for Swiderian technology in Ukrainian Polissya. The technology, which fuses organic materials with stone elements for producing narrow-slot points, is typical of Steppe cultures. This tradition is from Kukrek Culture.

Key words: Final Palaeolithic, Polissya, Swiderian Culture, flint processing, pressure technique.

The first findings of objects that refer to Swiderian Culture in Ukrainian Polissya date from the end of the 19th century. Since then a great number of material has been collected. More than ten sites have been researched by excavation, by L. Zaliznyak, and much more has been gathered from the ground (Fig. 1) (Zaliznyak 1995: 212; Зализняк 1989: 176; 1999: 284).

This work uses mainly materials from the sites which have been excavated: Tutovichi 3, 4, Berezhno 6, 14, 15, Prybir 13A, 13B, 13C, 13D, 13E, and also material gathered from the ground.

The Swiders of Ukrainian Polissya used mainly local raw materials. In western Volynia, local chalk flint was used. For many sites in the Nobel-lake region, the usage of huge concretions is common. In these sites most cores are ones made on big flakes. For the sites of the Sluch and Gorin basins, flint of a smaller size is common. This kind of flint is typical of Korost, Berzhno, Tutovichi and Krichelsk. Cores made on flat raw materials are very rare.

In eastern Volynian sites, the usage of grey and pink Zhitomir flint is common. This raw material is more common than in western Volynia. This explains the presence of imported flint in eastern Volynian sites. The main imported material was the flint from west Volynia (Zaliznyak 1995: 20–23; Зализняк 1989: 42, 43, Table 3; 1999: 225).

The process of the preparation of cores began from the choice of raw material parts ready for forming pre-cores.

Some sites of Swiderian Culture in Ukrainian Polissya present parts of raw materials defected at the beginning

of production. On some the traces of forming pre-cores can be seen. Most were found at Tutovichi 3.

Pre-cores were prepared on parts of raw materials which were ready for exploitation. We can judge their form and methods of preparation by the pre-cores themselves and many examples of cores. Most Swiderian pre-cores of Ukrainian Polissya are of lengthened proportions, thoroughly prepared. Some pre-cores are bigger than others, some are the same size.

The thoroughness of forming pre-core surfaces depended on the form of the chosen raw material. If its form was very close to the one needed, the preparation was minimal. The preparation of the pre-core corpus was then just to form the future frontal surface, or if more thorough, to include the side surfaces and the back. As a rule, the forming of pre-cores was made firstly by big knaps, then by smaller ones. Most cores save the traces of pre-core preparation to the end of usage.

Several pre-cores can be distinguished: lens-shaped and triple-edged types. These types are well known from Poland (Ginter 1974: 5–122).

On lance-like pre-cores, a ridge in one or two sides was made by the perimeter. The forming of a one or two-side ridge depended on the situation, on some pre-cores it can be partly formed on one side, and partly on two sides. Pre-cores of such a type are known in Tutovichi 1, 4, Prybir 13E and Danilove.

Pre-cores, triangle-like in crossing, have a frontal surface as a ridge, formed on one or two sides, and a wide back. The side surfaces of these pre-cores were formed by knaps on the frontal ridge or by knaps from the back. The back was formed by knaps from one side,

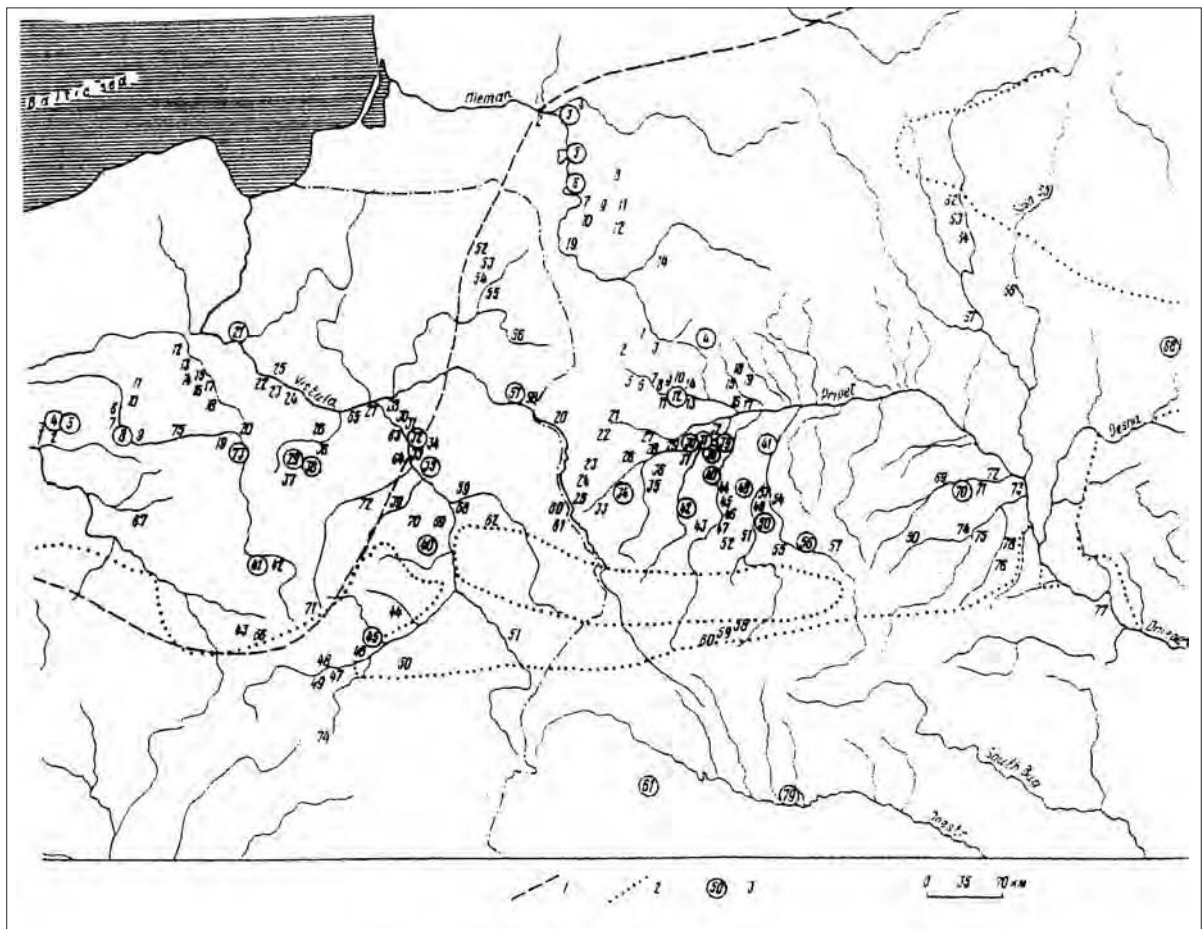


Fig. 1. Swiderian Culture sites (Zaliznyak 1995: 159; Fig. 7).

1 northern boundary of the forest zone; 2 boundary of the loess deposits; 3 group of sites.

Polesse lowland: 1 Dobrynevo; 2 Grevda; 3 Chemely; 4 Bobrovichy; 5 Boroviky; 6 Nosky; 7 Zarechye; 8 Belozersk; 9 Hrisa; 10 Gordov; 11 Upirovo; 12 Opol; 13 Motol; 14 Tyshkovichy; 15 Vyaz II; 16 Zaozerye; 17 Sushyca; 18 Podost; 19 Kamen; 20 Kolotlno; 21 Baranee; 22 Rykovychy; 23 Orechovo; 24 Pulm; 25 Svytyaz; 26 Kut; 27 Samary; 28 Nevyr; 29 Barshcyna; 30 Lubyaz; 31 Perevoloky; 32 Omyt; 33 Golovno; 34 Lyutka; 35 Nugno; 36 Darshcyn; 37 Kot-era; 38 Nobel; 39 Senchyey; 40 Mulchytsy; 41 Rudnya; 42 Grushvytsa; 43 Roznychy; 44 Kuznetsovsk; 45 Balachovy- chy; 46 Mayunichy; 47 Malaya Osnytsa; 48 Krasnoselye; 49 Tutovichy; 50 Krychelsk; 51 Korost; 52 Bolshoy Midsk; 53 Lyubikovychy; 54 Maryanovka; 55 Tishitsa; 56 Berezno; 57 Hotin; 58 Shepetin; 59 Sapanov; 60 Gay Levyatinsky; 61 Delyatin; 62 Dalne Lyado; 63 Borkolabovo; 64 Yanovo; 65 Gorky; 66 Grensk; 67 Gorodok; 68 Smyachka; 69 Narodiehy; 70 Pribor; 71 Kobyla Gora; 72 Martynovichy; 73 Teterovsky; 74 Teterov 3; 75 Raska; 76 Borodyanka 4; 77 Kanev; 78 Rudnya; 79 Vrublevtsy; 80 Ustye Zlobicha.

Nieman: 1 Raudondvaris; 2 Pypliai; 3 Eiguliai; 4 Skaruliai; 5 Puvočiai; 6 Ežerynas; 7 Merkinė; 8 Akmuo; 9 Maskauka; 10 Glūkas; 11 Rudnia; 12 Kašėtos; 13 Druskininkai; 14 Nieman XVII.

Polish lowland: 1 Pomorsko; 2 Voynovo; 3 Smolno Velke; 4 Kargova; 5 Babimost; 6 Lasek; 7 Nivka; 8 Mosina; 9 Zvola; 10 Długavish; 11 Skoky; 12 Yanushkovo; 13 Chvalovo; 14 Ozero Velke; 15 Budy; 16 Serakovo; 17 Serakovo 2; 18 Nozhichin; 19 Konin; 20 Cihmyana; 21 Bobrovuiky; 22 Vistka; Slyahetska; 23 Dobignyeyo; 24 Tokary Rombez; 25 Chekanovo; 26 Paulinka; 27 Grochaly Gorny; 28 Velishev; 29 Vituv; 30 Pludy A; 31 Martselin; 32 Swidry Velky; 33 Karchev; 34 Maryanka; 35 Tsalovana; 36 Neborovo; 37 Kvilno; 38 Osiny; 39 Gulin; 40 Ridno; 41 Vapinek; 42 Trzebcha; 43 Dzerzno; 44 Osovka; 45 Hvalibogovitsy; 46 Otatovich; 47 Yastrebet; 48 Chizhov; 49 Shievitsa; 50 Budy; 51 Rudka; 52 Elk; 53 Grayevo; 54;55 Sosnya; 56 Surash; 57 Stankovichy; 58 Nemirov; 59 Kkslwhovka; 60 Luta; 61 Neborova; 62 Noviny; 63; 64?; 65 Zalasik; 66 Glivitsa; 67 Vanzash; 68 Gora Nyva; 69 Ticha. 70 Barasli; 71 Volbrom; 72 Gapinin; 73 Kolo; 74 Veliky Slavkov; 75 Petrikov

seldom from two sides. Such pre-cores are known from Prybir 13C and Tutovichi 1, 3.

The final preparation of a pre-core for usage was forming the platform and the working surface. The platforms were usually formed by one single blow, which was made at the front surface side of the core. Among pre-cores which have formed platforms, most have one formed platform (Fig. 2. 6).

The main type of Swiderian core of Ukrainian Polissya is double opposite platform cores with one working surface (Fig. 2. 1–5). The majority of double opposite platform cores with one working surface are of lengthened proportions, about 100 millimetres in length with hilled platforms. At the beginning of the usage they were bigger, cores of much bigger sizes existed. So, from the Bitjon site a blade is known with a size of 182.5x42.517 millimetres. The work corners of the majority of double opposite platform cores with one working surface are about 60 to 80 degrees.

The sides and back surfaces of cores as a rule have negatives of the pre-core corpus (Fig. 2. 3–5). The majority of cores have a wide back. In most of them it is formed by knaps from the rib between the back and the side surface. The forming of the back from both side surfaces is rare. Many cores have a rib-looking back, formed on one or two sides (Fig. 2. 3,4). In some cores it is not formed (Fig. 2. 1,2).

Sometimes there is a situation when, while forming the platforms or its correction in the process of exploitation of the core, the back surfaces were cut by these knaps (Fig. 2. 3,5).

For the majority of double opposite platform cores with one working surface a not very wide working surface is typical. The majority of negatives on the working surface, are about a half or two thirds of the core's length (Fig. 2. 1–5). A bent working surface and the usage of two platforms provided blades with feather-like endings which need only a little preparation for transforming them into a typical Swiderian point (Ginter 1974: 74; Зализняк 1989: 74). If in the process of the exploitation of the cores the platform is not changed at the proper time, it will cause a moving of the maximum bent of the working surface to one which was not used. Blades taken from this platform would be shorter, because the platforms should have been changed periodically.

Sometimes in the process of exploitation of double opposite platform cores with one working surface, one of the platforms was corrected not from the front, but from the side. As a result of such correction, cores appeared with double opposite platforms with adjacent working surface (Fig. 3. 3–5).

Cores with double opposite platforms with adjacent working surfaces are not numerous among Swiderian cores, but present in many Swiderian complexes (Table 1).

While getting blanks from double opposite platform cores with one working surface, a blade with an overpassed distal end could partly cut the opposite platform. If this was possible, this core continued getting blanks from the platform which was preserved. Typologically, the core acquired a single platform (Fig. 3. 2,6). Single platform cores can often be met in Swiderian complexes, but are usually very few (Table 1). Some cores possibly look like fragments of negatives which were taken from the platform which was later cut and the remains of the platform taken. On some cores a negative of blades with overpassed distal end is clearly seen (Fig. 3. 2,6). Maybe some cores were single platform from the beginning of usage to the end. But taking into consideration the very small quantity of single platform cores, such cores were exceptions.

Sometimes, blades with an overpassed distal end would cut the opposite platform, or cut the double opposite platform core with one working surface in such a way that a platform which made a sharp angle with the back appeared. After correction, this platform could be used for getting blanks. In such a way, cores with double opposite platforms with alternative working surfaces appeared. Sometimes the correction was not needed. The same cores appeared in the process of reforming one of the platforms. The second platform was specially made if it was impossible to get the blanks needed from the main platform and the work surface and for the full usage of the materials (Fig. 3. 7,8).

So, there are cores with double opposite platforms with adjacent working surface, with double opposite platforms with alternative working surfaces and with single platform as a result of the utilisation of cores with double opposite platform cores with one working surface. It is possible that some examples of single platform cores were used as single platform cores from the start to the end of their utilisation (Ступак 1999: 18–22).

For the knapping process soft hammerstone or antler hammer were used (Зализняк 1995a: 9). We can judge it from the proximal parts of blades.

Another technology was based on cores which used the pressure technique. Typical forms of Swiderian pressure cores of Ukrainian Polissya are cone-shaped and pencil-shaped (Fig. 4. 2,3; 5. 2–7; 6.). Some examples have a wedge-like form (Fig. 4. 1; 6. 2,3) (Zaliznyak 1995: 33, 34; Зализняк 1989: 20–44, 50–54, 71, 78, 83; 1995b: 13; 1999: 225; Ступак 1999: 22–24).

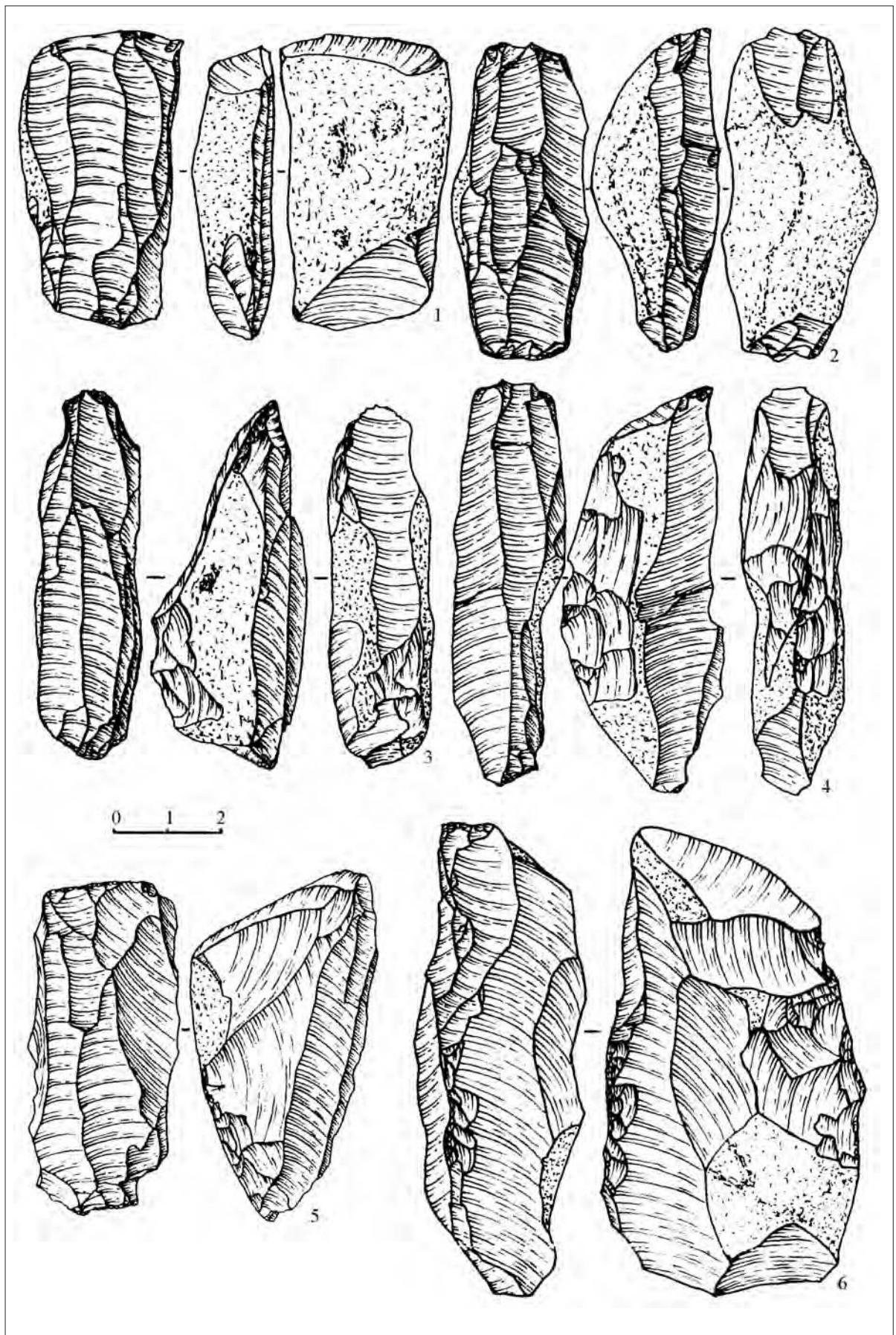


Fig. 2. Tutovychy 4: 1-5 double opposite platform cores with one working surface; 6 a pre-core

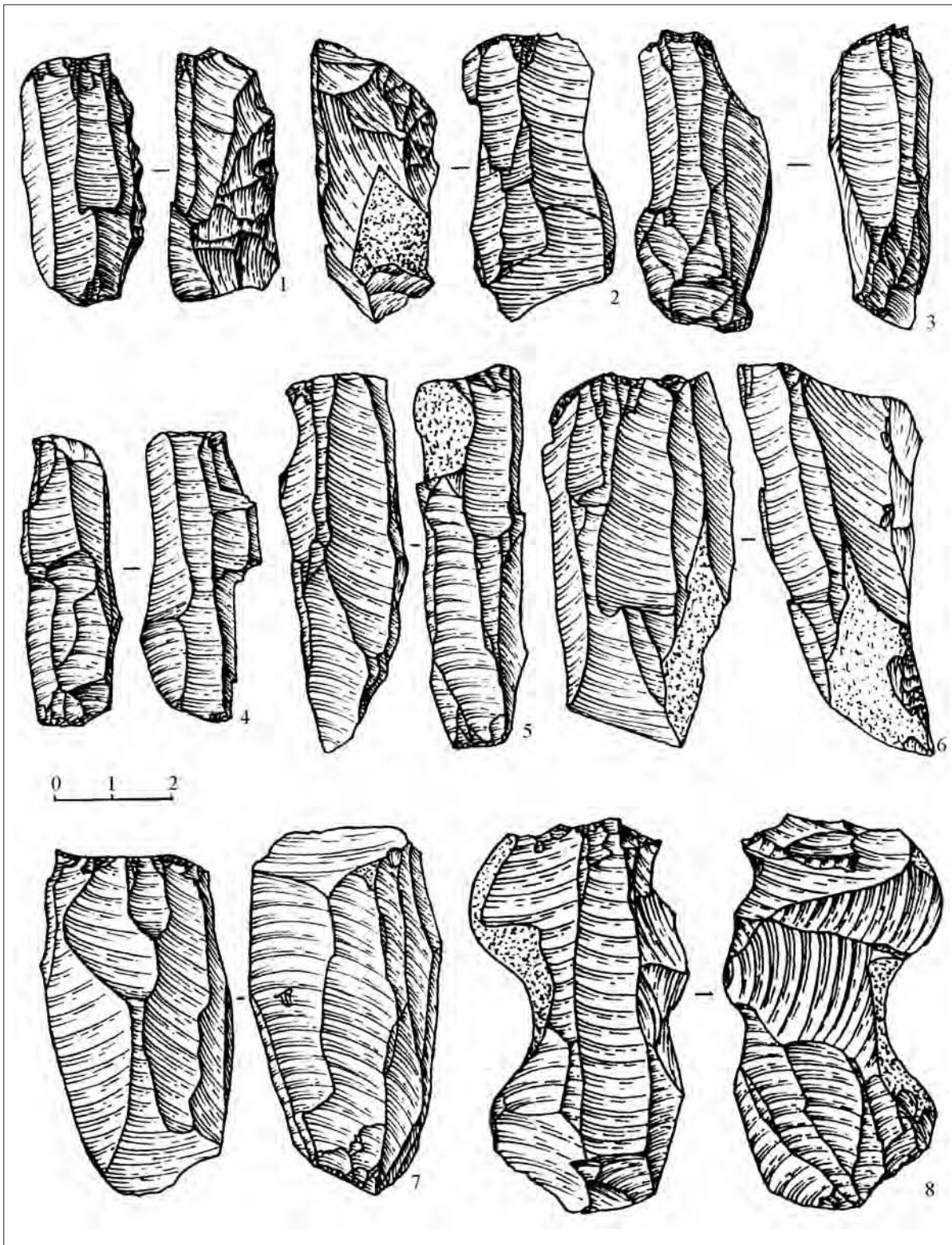


Fig. 3. Tutovichy 4: 1 double opposite platform core with one working surface; 5 double opposite platform core with adjacent working surfaces; 2, 6 single-platform cores; 7, 8 double opposite platform cores with alternative working surfaces. Prybir 13A: 3, 4 double opposite platform cores with adjacent working surfaces

Pre-cores specially made for pressure cores are not found in Swiderian sites of Ukrainian Polissya. But on many cores the traces of their preparation for exploitation, which could be thorough, or just cone-like and forming a front surface, remained.

The majority of cores went through thorough preparation for the work. Some show that a ridged surface was formed, and at the same time made cone-like features forming side surfaces. The negatives of preparation can be seen even on the most worked-out cores (Fig. 5. 2–4).

The width of blade negatives on the working surface is rarely more than ten millimetres, more often narrow, often three to four millimetres. The rest of the surface is covered with negatives of flakes of pre-core forming or cortex surface.

In the process of exploitation of conical cores, the blanks were not made on the whole surface at the same time. We can see that some negatives on conical cores do not have a bulbous negative. This gives us the possibility to understand which of them were made earlier and which later. Wedge-like cores were firstly used from one side, then from the other.

At the beginning of exploitation, cores possibly received blades which had a size fitted with Swiderian points (Fig. 5. 7). But the sizes of the negatives on the surfaces of used cores show that microblades were the main blanks (Fig. 4.5.6).

Microblades are not good blanks for typical Swiderian points, but are good for making inserts in narrow-slot points. On Swiderian sites of Ukrainian Polissya an insert possibly defined only one thing from the Prybir 13D site (Fig. 5. 1). But possibly, some microblades without traces of retouch were used as inserts, using inserts without retouch known from Postswiderian sites (Гурина 1956: 432; 1977: 78; Верещагина 1977: 89–93; Ошибкина 1983: 293; Мезолит СССР 1984: 230; Сорокин 1990: 114).

It is possible to use narrow-slot points and cone-shaped cores in the pressure technique (Zaliznyak 1995: 33, 34; Зализняк 1989: 71, 78, 83; 1999: 224). Swiderian complexes present little used double platform cores with narrow negatives (Fig. 3. 1,3,4).

But the other variant is possible.

Microblades were made to be inserts into arrowheads of organic materials.

The joining of organic and stone elements for producing narrow-slot points is not traditional for Swiderian technology. Technology which fuses organic material with stone elements for producing narrow-slot points is typical for steppe cultures. In D.Y. Nuzhnyi's opinion,

the presence of bone points in Postswiderian cultures is explained by borrowing them from south steppe cultures, particularly the Kukrek Culture tradition (Nuzhnyi 1999: 199–200).

In the south of Ukraine in sites of Kukrek Culture traditions, we can find conical and pencil-shaped cores which were made by the pressure technique and oriented to supplying microblades for the upgrading of bone-slotted points. As in Postswiderian cultures, in Kukrek sites microblades for inserts could be retouched or used without (Нужный, Яневич 1987: 39).

Swiderian conical cores are very similar to Kukrek, the technology of their exploitation has many of the same traces. In both cases, the width of the negatives is very often three to four millimetres or a little more (Ступак 1999: 23).

Cone-shaped cores and inserts are present in the Crimea at the Swiderian level of the Siuren 2 site (Векилова 1961: 143–149; 1965: 145–146). In Early Holocene times the connection between Postswiderian and Kukrek is fixed by findings of Postswiderian arrowheads in sites of the Lower Dnieper (Nuzhnyi 1999: 200).

Now there is no archaeological evidence of the synchronic existence of Swider and Kukrek cultures.

Swiderian Culture is dated as Dryas III-beginning of Preboreal (Shild 1975: 190–205). The latest dates for Swiderian sites is Calowanie Layer IVb – 9935±110 (GrN-5254) years BP, 9750±80 (GrN-1662) years BP, 9700±80 (GrN-1717) years BP, Dudka I – 9710±150 (Gd-4305) years BP, 9610±70 (Gd-3310) years BP, Kabeliaj 2 – 9820±100 (Ta-2607) years BP (Shild, Pazdur, Vogel 1999: 13–15; Ostrauskas 1999: 7–17; 1999: 31–66). The earliest Kukrek site, Vishene I, the author of the excavation dated to the border of Pleistocene-Holocene (Яневич 1987: 7–18). Now we have radiocarbon dates – 9740±60 (Ki-6264) years BP, 9044–8962 years BC; 9680±70 (Ki-6304) years BP, 9024–8670 years BC (Zaitseva, Timofeev, Zagorska, Kovaluh 2000: 45). Siuren II is dated final Pleistocene (Зализняк, Яневич 1987: 14). But the complex of Vishene I has developed traces. It should be mentioned that the materials of Vishene I are rather developed. So, it is quite possible that the Swiderians received new technology from a cultural tradition which was the basis of Kukrek Culture or from the earliest stage of Kukrek Culture (Nuzhnyi 1999: 199, 200; Ступак 1999: 23, 24).

So, the technology of using pressure technique was more economical than the traditional Swiderian technology. This second technology, as well as the traditional Swiderian technology, was meant to produce a

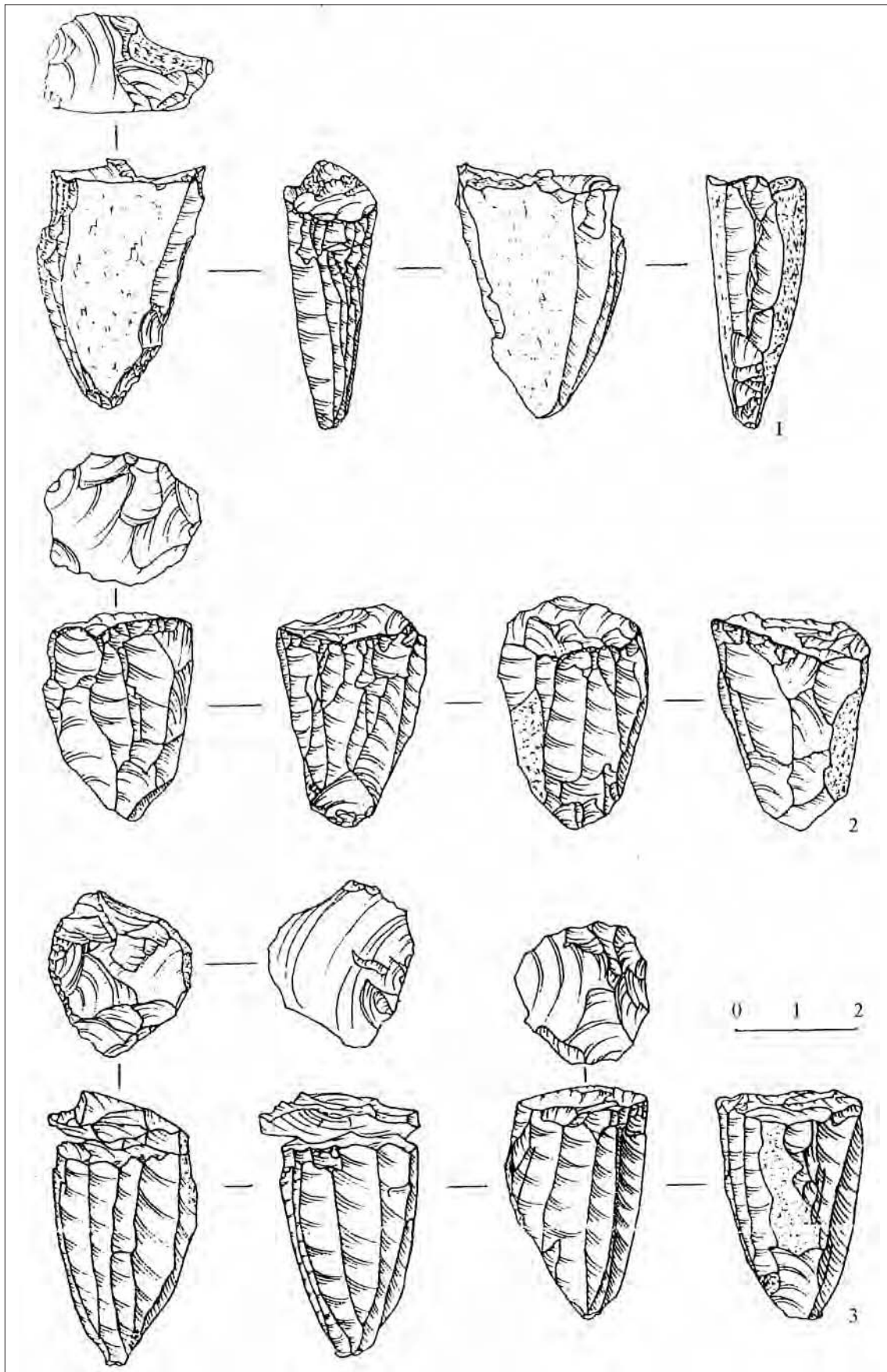


Fig. 4. Prybir 13E: 1 wedge-like single-platform core; 2, 3 cone-shaped single-platform cores

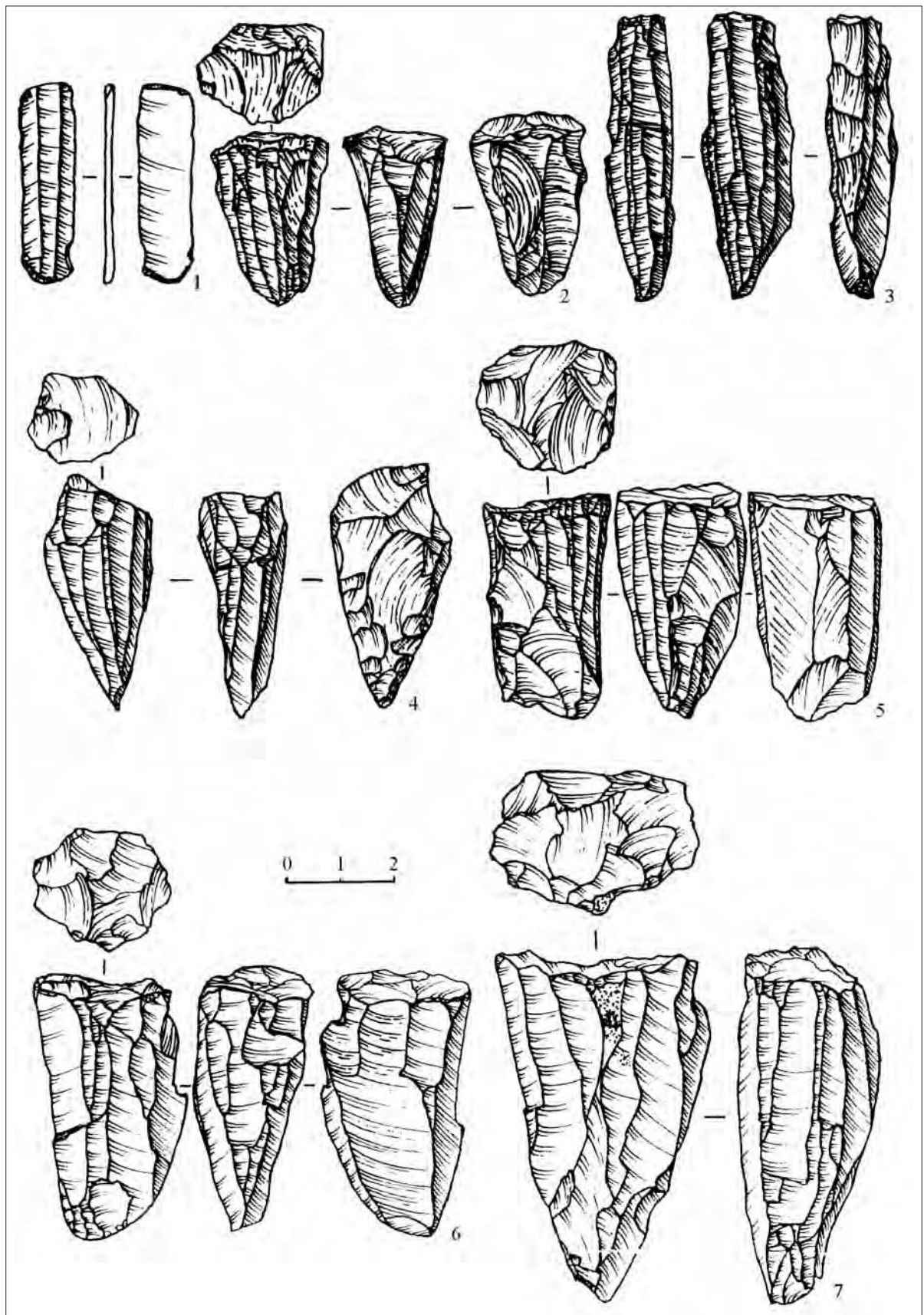


Fig. 5. Prybir 13D: 1 insert; 2, 4–7 cone-shaped single-platform cores. Berezno 6: 3 pencil-shaped single-platform core

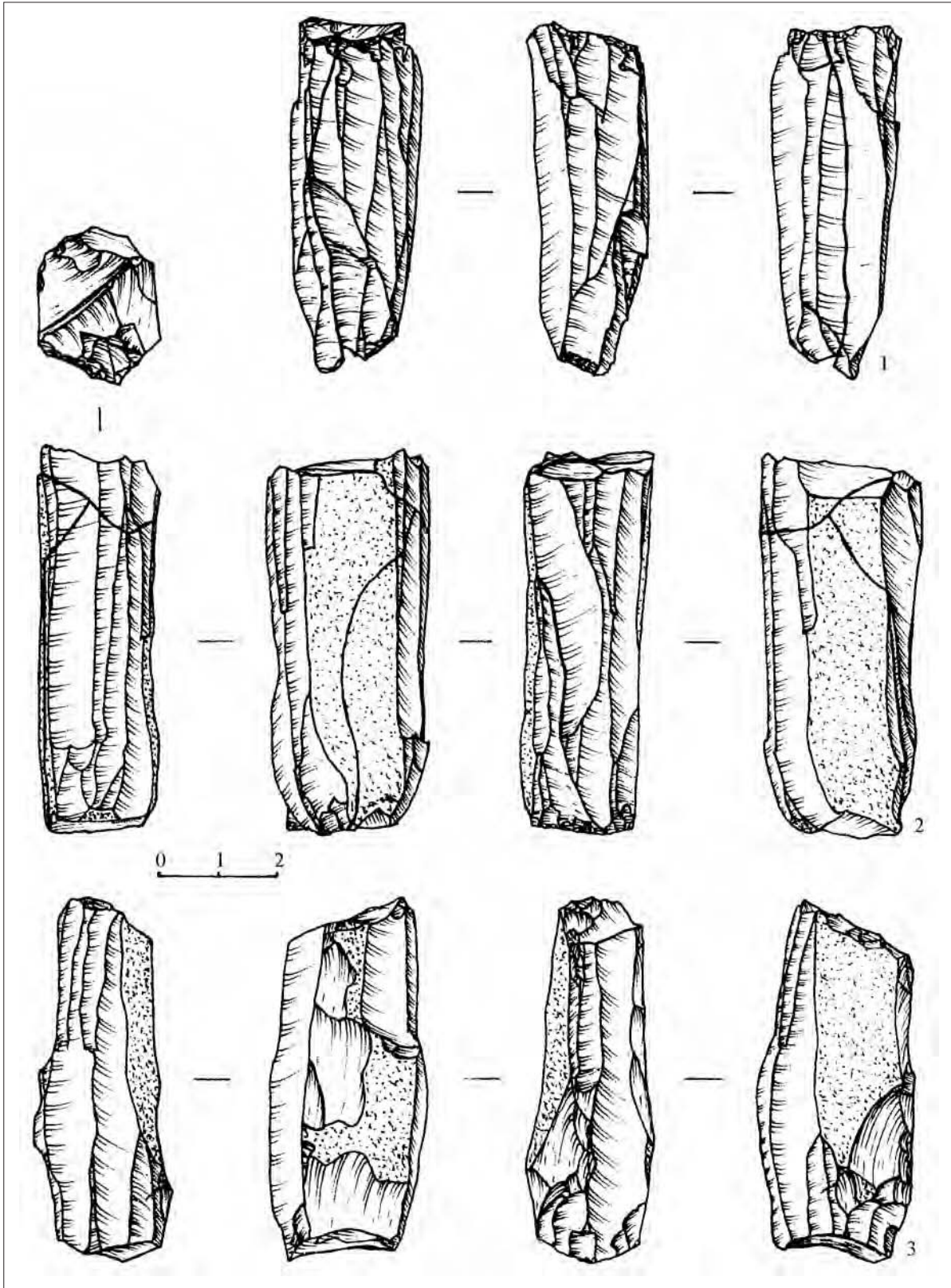


Fig. 6. Berežno 6: 1 cone-shaped single-platform core; 2–3 wedge-like single-platform cores

half-finished product that required minimal processing to be transformed into elements of points. Thus, the second technology was based on the same principle as the first one, and that is why it was adopted by the Swiderians (Zaliznyak 1995: 33, 34; Nuzhnyi 1999: 199, 200; Зализняк 1989: 78, 83; Нужний 1992: 154, 155; Ступак 1999: 24).

Table 1. Correlation of pre-cores and types of cores in Swiderian complexes of Ukrainian Polissya (%)

	Pre-cores	Double opposite platform cores with one working surface	Double opposite platform cores with adjacent working surfaces	Double opposite platform cores with alternative working surfaces	Single-platform cores	Cores used in pressure technique	Total
Berezo 6		12.5	25	12.5		50	100
Tutovichy 3	2.5	80	7.5	5	5		100
Tutovichy 4	1.5	83.6	4.5	1.5	8.9		100
Tutovichy 1	4.3	88.1		1.1	6.5		100
Danylove	1.9	83.3	1.9	5.5	7.4		100
Korost		94.7		5.3			100
Prybir 13A	6.7	73.9	3.3	6.7	3.3	6.7	100
Prybir 13C	25	50		8.3		16.7	100
Prybir 13E	9.2	59.1		4.5	4.5	22.7	100
Prybir 13D		57.2				42.8	100

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Abbreviations

PA – Przegląd archeologiczny
КСИА – Краткие сообщения Института археологии
МИА – Материалы и исследования по археологии СССР

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TITNAGO NUOSKALINĖ TECHNOLOGIJA SVIDRŲ KULTŪROS KOMPLEKSUOSE UKRAINOS POLESĖS REGIONE

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Santrauka

Straipsnyje remtasi archeologų tyrinėtų Svidrų kultūros gyvenviečių Tutovičių 3, 4, Berezo 6, 14, 15, Pribiro 13A, 13B, 13C, 13D, 13E medžiaga, taip pat atsitiktiniais radiniais, surinktais paminklų paviršiuje. Svidrų kultūros nešėjai Ukrainos Polesėje naudojo daugiausia vietinę titnago žaliavą. Vakarų Volynėje buvo naudojamas titnagas iš vietos kreidos klodų. Rytinėje Volynės dalyje naudotas pilkos ir rausvos spalvos Žitomiro titnagas. Jis prastesnės kokybės, todėl Rytų Volynėje gana gausu atvežtinės titnago žaliavos, daugiausia iš Vakarų Volynės.

Skaldytinių ruošimas prasidėdavo pasirinkus tinkamą žaliavos gabalą. Iš jo buvo formuojami skaldytinių ruošiniai. Jie buvo ilgi ir kruopščiai paruošti skelčių gamybai. Skaldytinių ruošinių apdirbimas priklausė nuo žaliavos gabalų formos. Jeigu pastarųjų forma buvo panaši į reikiamą skaldytinio formą, tai iš pradžių buvo formuojamas tik skaldymo frontas. Jeigu žaliavos gabalų forma buvo nepanaši į norimą skaldytinio formą, buvo apdirbami ir šonų bei nugarėlės paviršiai. Skaldytinių ruošiniai buvo 2 tipų – linzės formos ir tribriauniai. Vyraujantis skaldytinių tipas Svidrų kultūros gyvenvietėse Polesėje – dvigalis su vienu skaldymo frontu. Dažniausiai aptinkami skaldytiniai apie 100 mm aukščio frontu, nors buvo rasta pavienių skelčių iki 182 mm ilgio. Sprendžiant iš skelčių apatinės dalies, joms nuskelti buvo naudojami muštukai iš minkšto akmens ar rago. Skaldytinio redukcijos metu su skeltės viršutine dalimi nuskilus vienai iš aikštelių, kai kada skaldytinis būdavo ir toliau naudojamas kaip vienagalis. Tačiau vienagaliai skaldytiniai Svidrų kultūros paminkluose Polesėje sudaro tik labai nedidelę procentinę dalį. Tačiau neatmetama galimybė, kad dalis iš negausių vienagalių skaldytinių buvo naudojami kaip vienagaliai nuo pat redukcijos pradžios.

Svidrų kultūros paminkluose Polesėje aptikta ir skelčių nuspaudimo technikai pritaikyti vienagaliai ir pieštuko formos skaldytiniai. Skelčių negatyvai tokių skaldytinių skaldymo frontuose dažniausiai yra 3–4 mm pločio ir retai platesni nei 10 mm. Tai įrodo, kad pagrindinis ruošinys buvo mikroskeltė. Mikroskeltės nėra tinkamos kaip ruošiniai tipiškiems Svidrų kultūrai įkoti-

niams strėlių antgaliams. Tačiau jos idealiai tinka asmenėliams gaminti ir asmenėliniams antgaliams.

Galbūt Svidrų kultūros žmonės patys išrado asmenėlinę techniką. Tačiau tikėtina, kad ji buvo pasiskolinta iš Kukreko kultūros grupių Kryme ar Juodosios jūros pakrančių. Svidrų kultūros sluoksnyje Siurenės 2 gyvenvietėje Kryme buvo rasta tiek vienagalių skaldytinių mikroskeltėms nuspausti, tiek ir asmenėlių. Tačiau negausios Svidrų ir Kukreko kultūrų radiokarboninės datos iki šiol neleidžia patikimai tvirtinti, kad jos bent kurį laiką egzistavo greta viena kitos erdvėje ir laike.