

POTTERY AND FLINT FINDS FROM THE UPPER LAYERS OF THE LOKIETKA CAVE

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Introduction

The archaeological assemblage presented here consists in total of 1184 fragments of clay vessels, 91 flint artefacts, and a bone awl (whose chronology, however, is impossible to determine). All of them are a result of investigation carried out in 1998, and come exclusively from two excavation units located in the antechamber (T2) and in the cave itself (T3). They were found mostly in the humic layer reaching down to around 60/65 cm and in the modern diggings (202 pottery fragments) reaching down to around 140 cm. The material was thoroughly mixed; e.g. modern sherds were found in the layer 130-145 cm. Therefore, it was necessary to treat them all as a whole, without separation of any vertical or horizontal units. The sherds were well preserved; it was even possible to draw some conclusions with regard to the original colour and surface character. Some of the sherds, mostly in lower parts of diggings, had a (calciferous?) coating on their surface. Of course, the ceramic material is ground to pieces, which makes impossible satisfactory reconstruction of the vessel shapes.

The Neolithic and the Early Bronze Age

Pottery

Around 700 fragments of clay vessels have been classified as Neolithic and Early Bronze. The predominant majority of them were found in excavation unit T3 (around 600 pcs). Taking into account the technology according to which they were manufactured, the following technological groups can be enumerated (parentheses contain the percentage that a given group constitutes within a total number of 699 analysed pieces of clay vessels).

A1 (64%)

Temper: fine-grained and seldom middle-grained broken sherds, sometimes also sand, seldom fine-grained broken stone; medium amount.

Surface: even both on the outside and inside, smooth as a rule, carefully polished, sometimes surface on the outside burnished; black or greyish-black in colour.

Break: black, homogenous

A2 (4%)

Temper: fine-grained broken sherds, sometimes also sand; medium amount.

Surface: even both on the outside and inside, smooth, carefully polished, quite hard; surface on the outside cream or light-brown in colour, black - as a rule - on the inside but there also occur sherds being light inside, just like on the outside (subgroup A2a).

Break: two layers, black and cream/light-brown (thin outer layer). In the case of subgroup A2a three-layer break consisting of two thin, outer and inner layers, cream/light-brown in colour and the middle part between them black in colour.

A3 (20%)

Temper: fine-grained and seldom middle-grained broken sherds, sometimes also sand; medium amount.

Surface: even both on the outside and inside, smooth as a rule, carefully polished (conspicuous traces in the form of bands), quite hard; most frequently the outer surface slightly burnished; both inner and outer surfaces dark-brown in colour (with the presence of black spots) or the outer surface like before but inner surface black.

Break: black, almost homogenous.

B (7%)

Temper: fine-grained and seldom middle-grained broken sherds, sometimes also sand; medium amount.

Surface: uneven both on the outside and inside, slightly rough, wiped, soft; cream or orange in colour; optionally black inner surface.

Break: three layers, the two of them on the outside and inside cream/orange in colour and the middle part between them - black. Sometimes the in-between layer has got light-brown tinge, which makes it difficult to distinguish from the inner and outer part. Two-layer option is also possible here; the inner part being black and the outer cream.

C (1%)

Temper: fine-grained and middle-grained broken sherds; small or medium amount.

Surface: uneven both on the outside and inside, very soft; both inner and outer surfaces cream or light-brown in

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colour or the surface on the outside like before, but black on the inside; optionally both surfaces grey.

Break: two layers, cream and light-brown/black (the inner part), sometimes homogenous, grey, of bubbly structure.

D1 (3%)

Temper: middle-grained broken stones and seldom middle-grained broken sherds; small or medium amount.

Surface: even both on the outside and inside, smooth as a rule, polished, quite hard; both inner and outer surfaces brown (the so called "leather tanning colour"), however the inner one usually a bit darker.

Break: three layers, dark-brown, black, and brown (the outer part), of bubbly structure.

D2 (1%)

Temper: middle-grained and coarse-grained broken stones; small or medium amount.

Surface: uneven both on the outside and inside, slightly coarse, quite hard; both inner and outer surfaces brown (the so called "leather tanning colour"), however the inner one usually a bit darker.

Break: three layers, dark-brown, black, and brown (the outer part), of bubbly structure.

The majority (approximately 87%) of all sherds that constitute the above-mentioned technological groups is medium-walled (6-12 mm). Thin-walled sherds occur only within groups A1 and A3. Thick-walled pieces are exclusively fragments of the bottoms.

Based on the analysis of so-called characteristic fragments with distinctive elements; the technological groups can be chronologically linked with particular cultural units. Approximately 60% of group A1 sherds seem to be evidence of the Lengyel-Polgar cycle (hereinafter to as L-PC), most probably the Pleszów group. The remaining 40% of A1 group sherds undoubtedly originates from the Baden culture (hereinafter to as BdC) and the Mierzanowice culture (hereinafter to as MC), approximately half-and-half in number. It cannot be excluded that a few sherds of the Trzciniec culture (hereinafter to as TC) might have occurred in this group. Group A2 contains mostly BdC material, but some contribution of TC is possible too. Group A3 is surely connected with both BdC and MC. Most probably BdC is also the source of all the sherds within groups B and C. On the other hand, almost all the pottery fragments counted in D1 group are linked with TC whereas group D2 is the remnant of MC. Of course, it has to be stressed that relating archaeological units to technological groups, which has been done here, is in large measure of tentative character only. On the whole, one can have an absolute certainty in this respect only in the case of fragments bearing evident cultural traces (as far as shapes and ornamentation of the vessels are concerned).

So, as has been already hinted above, the foundation for cultural classification of the pottery was the analysis of morphology and ornamentation made on the grounds of rim fragments, ornamented fragments, bottom or near-bottom fragments. There were 164 pieces of that kind.

The analysis showed that the oldest Neolithic

horizon is represented here by L-PC, the Pleszów group to be more specific. Due to high level of crumbling as well as a small amount of the material, reservations must be made that counting in this group all the fragments of L-PC (even characteristic ones) is - to some extent - presumable. Many elements (e.g. plastic knobs, some forms of rims) are common throughout the whole L-PC, right from the beginning to the end (around 4700 - 3500 cal BC).

Rim fragments with quite tall neck opening out in a funnel-like way seem to be a characteristic indication here (fig. 1:1-6; fig. 2: 1-3). Precise reconstruction of the shape of vessels the fragments originate from is impossible because of their small dimensions. Employing E. Rook's classification (1980: 20-22), we maintain they can be included into a group of vessels as slender oval pots, large-bellied vases, oval goblets, or sometimes sharply profiled or spherical bowls with a funnel-like neck. Probably these forms are the major source of fragments with preserved knobs being flatly cut off, tall, cylindrical, or short (fig. 2: 4-7). There are also knobs with split ends (fig. 2: 8-9), but that they belong to the horizon under discussion is not an absolute certainty. Those types of vessels are also responsible for typically Lengyel handles, vertically pierced, linking the lip with the upper part of the belly (fig. 3: 1), as well as for small handles located in the transition between the neck and the belly. There are also rim fragments of the vessels characterised by the neck opening up in a funnel-like way with small, vertically pierced handles located just at the lip (fig. 3: 2-3). There are a few such handles not being pierced (fig. 3: 4). A fragment of bowl with sharp bend can be also found as a characteristic representative of the Pleszów group (fig. 3: 5). The fragment belongs to the previously mentioned group of sharply profiled bowls with a collar. Perhaps there might be also representatives of hemispherical bowls characterised by a slightly broadened lip (fig. 3: 6-7). An element very characteristic of L-PC is small, thin-walled amphorae represented by neck fragments (fig. 4: 1-4). This form might include several thin-walled rounded fragments of small bellies. Slightly horny handles, vertically pierced, located at the utmost bulge of the belly (fig. 4: 5) in turn represent large amphorae. And two large belly fragments bearing traces of such handles. A form of small trough-shaped vessel typical of the cultural circle under consideration is also worth-mentioned here (fig. 4: 6).

The above material corresponds to the inventories of the Pleszów finds from many other caves within Krakowsko-Czestochowska Upland (e.g. caves Cienna - Oborzysko Wielkie, Górna at Ogrojec, W Okopach Wielka Dolna, Borsucza at Góra Okopy - Rook 1980: 18-23; 1995: 65). It concerns mainly the forms with tall, funnel-like necks (Rook 1980, Plate IV: 9,10,12,13; V: 4,12; VI: 14,15), small amphorae (*ibidem*, Plate IV: 1), and amphorae (*ibidem*, Plate IV: 8). This group is associated with the most numerous traces of Neolithic settlement within Krakowsko-Czestochowska Upland, since it occurred in as many as 43 caves. Therefore, the presence of its specimens in the Lokietka cave cannot be astonishing at all. Technology, morphology and ornamentation of the Pleszów pottery found here fully correspond to the sit-

uation at classical sites in Little Poland, too (Kamienska, Kozłowski 1990, 35, Plates 13-15). Absolute dating of this group can be in broad outline established for 4300-4100 cal BC (*ibidem*, 42-43).

Among the fragments of clay vessels associated with BdC, the first position is of course occupied by the fragments with radial ornamentation, i.e. vertical or slightly diagonal grooves, sometimes completed by vertically oriented rows of small pits or low applied plastic bands with pits (fig. 5: 1-3). They surely originate from characteristic rounded scoops or cups, often with band handles (whose fragments are present as well). There is also a fragment of vase, most probably a biconical one (fig. 5: 4). The rim fragments with low collars just below the lip seem to be culturally distinctive too (fig. 5: 5-8). The collars were in turn adorned with finger or nail impressions. They might have their origin in the oval pots, and the sherds with wiped, rough surface (technological group B) so typical of BdC might have constituted their belly parts.

The Baden settlement within Krakowsko-Czestochowska Upland is represented in 28 caves (excluding Lokietka cave) (Rook 1980: 28-34; 1995: 66). In the predominant majority of cases it is the remnant of the middle stage; earlier stages are represented only in two caves. The character of material from the Lokietka cave allows it to be included in the middle stage as well (complex of Mogila - Chelm type and Bronocice V), first of all because there is no indication of the late stage (the so-called Zeslawice group characterised by conical cups and flat knobs on the lips), and similarly no early Boleraz features (herring bone ornamentation). The closest analogy with the scoops of radial ornamentation is present in the following caves: Ciemna-Oborzysko Wielkie, Wilczy Skok, Mamutowa, pod Slupami (Rook 1980, Plate XI: 5-10). Almost the identical fragment from biconical vase was found at shelter "Puchacze" (*ibidem*, 31). Similar fragments of roughened pottery were found in the Zdaminowa cave (*ibidem*, Plate XII: 4). An analogy with the limited set of vessels from the Lokietka cave can be of course found on sites in the region of Cracow, too (Godłowska 1979: 307-308; Kozłowski 1989: 214). Absolute dating of the analysed horizon based on C14 dates of stage V at Bronocice can be approximately determined as 2900-2700 cal BC (Kruk and Milisauskas 1991). It corresponds with phase IV of BdC in the territory of Slovakia (Nemejcová-Pavúková 1981), although it was somewhat earlier there, around 3000-2900 BC (Breuning 1987: 144).

Presumably there should be taken into consideration a possibility of presence among the ceramic material from the Lokietka cave scarce fragments representing an intermediate horizon between L-PC and BdC, the so-called Wyciaze-Ksiaznice group (courteous information of Dr. M. Kaczanowska). The group would be represented by - among other things - funnel-like necks, quite tall, with the lip being slightly broadened on the inside (fig. 5: 9). Chronologically speaking, the group should be placed around 3400 cal BC.

Finally, a considerable part of the ceramic material is connected with MC. As has been already men-

tioned, there should be included here the sherds of technological group D2 and a considerable part of A1 technology sherds. The basic criterion is the rim parts with short funnel-like neck, in one case with a band handle fixed on the edge of the lip (fig. 6: 1-7). They are most probably fragments of large-bellied vessels: amphorae or pots. This cultural phenomenon is also responsible for thin-walled fragments with slim plastic bands, originating from the upper parts of amphorae's bellies (fig. 6: 8-9). All the above elements are characteristic of the late formations of that culture. Nevertheless, a scanty amount of material as well as a considerable level of fragmentation hinders attempts of more precise classification. The following territorial groups of late MC can be considered here: the Pleszów group, the Szarbia group, or the Giebultów group (Kadrow and Machnik 1997: 103-131). Theoretically speaking, lack of textile ornamentation seems to exclude the Giebultów group. No string ornamentation seems to act in favour of the Szarbia group, but within the Pleszów group there can be also found large-bellied vessels without that kind of ornamentation (oral information of J. Górski, MA.). Anyway, the Mierzanowice material can be generally dated to around 1900 - 1600 cal. BC (Kadrow and Machnik 1997: 110, 118, 122).

The presence of TC pottery - as already mentioned - is a sure thing. It is implied first of all by characteristically cut lips (fig. 7: 1-5), rarely rounded ones (fig. 7: 6-7), wide grooves ornamentation (fig. 7: 8), and equally characteristic brown colour of the vessels' surface (the so-called "leather tanning colour"). It is quite hard to specify the accurate chronology in this case because of very small amount of the material. The only solution is to quote a global chronological span for this formation in the basin of the upper Vistula river, i.e. 1900/1800 - 1250/1200 cal. BC (Górski 1998: 61-62). Nonetheless, since TC is always later than MC, its representatives in the Lokietka cave would not be associated with the early development stage.

Flint artefacts

Within the humic layer as well as in the already mentioned modern diggings there have been found altogether 91 artefacts made exclusively of local Jurassic flint (50 pcs in excavation unit T2 and 41 in unit T3). The inventory does not include all the stages of flint processing. Generally, there are no nodules, preforms, or cores, which - as a matter of fact - should be expected in a flint-bearing region. The only exception is a polyhedral core, which was most probably, used as a hammerstone, too (fig. 8: 1). There have been also found two typical hammerstones made of small spherical nodules.

Flakes, of distinct waste character constitute a definitely dominating category (40 pcs). They are very irregular in shape, some of them very thick, barrel-like. Their length is no more than 3/4 cm, width - 2/3 cm. Similarly, two found blades were of the same waste character. There should be also separated a category of equally irregular, large and very thick flakes (15 pcs) and blades (fig. 8: 2). It is quite conspicuous that both groups of arte-

facts under investigation go back to the early stages of flint processing (the lion's share being cortical specimens), optionally to the various stages of core forming.

Within the analysed set of finds the remains of proper core exploitation are first of all blank blades (16 pcs). In the majority of cases they are regular specimens (fig. 8: 3-5). Their length ranges from 4 to 6 cm, the width is around 1.4/1.8 cm. There should be pointed out, however, that almost all the blades of that kind were intentionally shortened, so they were originally longer. There are also two partly preserved bladelets (width 1.1 cm) and six regular blank flakes.

Tools are represented by eight specimens. Two short end-scrapers (blade and flake ones), are characterised by scarcely arched ends, slightly diagonal (fig. 8: 6, fig. 9: 1). The third end-scrapers is long and has straight end (fig. 9: 2). The only burin is a truncation burin (fig. 9: 3). There is also one truncation. It is the classical, blade specimen with diagonal end (fig. 9: 4). This group includes also a fragment of retouched blade (fig. : 5) and two retouched flakes (fig. 9: 6-7).

The low number of the flint artefacts together with prevailing character of the waste fraction make impossible cultural stratification of those finds into groups corresponding to the archaeological, Neolithic and Early Bronze cultures distinguished on the grounds of the ceramic inventory. It should be noted, however, that the blank blade material and blade tools are quite typical of Neolithic cultural formations of Danubian descent, especially Lengyel-Polgar ones. Thus, we maintain that in all probability it can be associated with Pleszów group of L-PC. Apart from the already mentioned blade factor, a general character of the flint inventory might suggest preliminary treatment of nodules in the Lokietka cave. They were taken out of the cave, in already transposed forms (as preforms, cores).

Roman and Migrations Period

Among the artefacts found on the site, attention must be also paid to a small series of pottery (106 pcs) which should be dated to the younger and late Roman Period, or optionally to the early stage of the Migrations Period (in other words stages C1, C2 and C3/D). In the absolute scale it means approximately the period between 160 and 450 AD (Kaczanowski and Kozłowski 1998: 270-273).

The inventory under discussion consists almost entirely of pottery manufactured on the pottery-wheel. The finds can be divided into three technological groups. The first one (I - 35 pcs) is even surface pottery made of loamy clay, generally deprived of intentionally added temper. Only in some cases there can be noticed single grains of sand or broken sherds. In the second, most numerous group (II - 70 pcs) there should be included rough-surface fragments, made of loamy clay as well, but containing a considerable amount of temper (sand, gravel, sometimes also broken sherds). Vessels made of the above mentioned clay types (technological groups I and II) are usually thin- or medium-walled and

have grey surfaces. The third group (III) is represented by only one fragment of thick-walled pottery, with rough surfaces, brick-red in colour, made of clay tempered by sand and broken stone. All the sherds are quite hard, which is a proof of solid firing process.

As far as technological features are concerned, the pottery under consideration complies with the standards typical of the Przeworsk culture in the younger and late Roman Period or in early Migrations Period (Godłowski 1977; Dobrzańska 1990a; 1990b). Similar material groups can be distinguished among the vessels produced in the above-mentioned chronological span in settlements constituting the so-called Cracow pottery manufacture centre, which was located on the left terrace of the upper Vistula, east of Cracow (Dobrzańska 1990b; 1998).

Condition of the analysed material does not allow an accurate specification of all vessel forms. The pottery made of group I clay (the smooth, grey pottery) might originate from small goblets or beakers, which can be deduced from the rim fragments. Their bottoms were equipped with characteristic ring-shaped feet (fig. 10: 1-2). The walls bore glossed ornamentation (diagonal chequered pattern or hanging triangles - fig. 10: 3-6). There also appeared relief adornment: single or multiplied plastic bands. One large, thick-walled specimen has been registered too, originating most probably from a type of deep bowl (fig. 7:5).

All the pieces made of group II clay (the so-called rough grey pottery) come from pot-like vessels (fig. 11: 1-5). The only sherd counted in III technological group is a fragment of vessel of Krausengefäß type (fig. 11: 6).

Special attention should be paid to a big hand-made near-bottom fragment of the vessel, whose bottom has an impressed pattern of wickerwork on it (fig. 11: 7). It means that the vessel was resting on a plaited stand while being moulded.

Taking into account these remarks, it has to be pointed out that also in terms of morphological features, the investigated pottery seems to be typical of the Przeworsk culture. It is also true as far as ornamental motifs present in the material under consideration are concerned. Results of the research which has been carried out in the Lokietka cave so far have not provided any finds that could allow more precise determination of chronology of traces of its penetration by the Przeworsk culture population in the younger and late Roman Period or in early Migrations Period. The only non-ceramic artefact is a glass, segmented bead that was found at "Boczne" shelter in the cave's neighbourhood (Godłowski 1995: 131).

Caves and rock shelters of Krakowsko-Częstochowska Upland have already supplied a variety of materials being evidence of human groups staying in them in the late Roman Period. They might have been used as storerooms or provide short-term shelter while performing duties concerning animal husbandry or hunting, or in an emergency situation (Godłowski 1995: 130-132).

The Middle Ages and Modern Period

A set of medieval and modern artefacts obtained during the exploration of the Lokietka cave consists of about 350 fragments of strongly fragmented clay vessels. The majority of them have been found within excavation unit T2 (nearly 300 pcs). Some several dozen of them are early-medieval fragments. The vessels were originally hand-moulded and afterwards finished on the high-speed pottery-wheel (the traces of the latter technique are visible on the outside surfaces, whereas on the inside ones predominantly at the upper parts and near the bottom). The vessels were made of clay tempered by fine-grained sand, which fits the so-called VI material group established, by K. Radwanski (1975) for the purpose of classification of the early-medieval pottery from Cracow. High degree of crumbling of the pottery makes impossible determination of original vessel forms. Anyway, a simple form of the pot dominates here, with the utmost bulge of the belly placed relatively high. Rims of the vessels are strongly profiled. Almost whole surface of the belly is ornamented predominantly with horizontal, shallow grooves made by means of a single- or multi-tooth tool (the latter being less frequent). On one fragment there has remained a vertical plastic band indicating the transition between neck and belly, adorned with tiny diagonal stabs.

So, to recapitulate, it can be said that all the technological, technical, and raw material features of the analysed artefacts allow a parallel to the pottery originating from the early-medieval Cracow (XI - XII centuries). So the early-medieval pottery from the Lokietka cave should be dated to the same period as well.

It has to be stressed that the same layers also contained numerous fragments of vessels from XII - XIV centuries as well as later ones. There are two possible ways of explanation for that. The first assumption is that the layers were formed over a very long time (at least 300-400 years), which would explain the presence of artefacts from different periods in them. The second possibility is the layers were created as early as in the modern period, whereas the older material, including early-medieval artefacts, found its way there as a result of secondary deposition. It can be said - regardless of which solution is true - that the Lokietka cave was penetrated in the Middle Ages as early as the XI-XII centuries.

Conclusion

The information and analyses contained in this paper prove that the Lokietka cave was frequently a place of human activity beginning in the Neolithic up to the Middle Ages, not to mention the Modern Age. In spite of the preliminary character of analyses, the authors argue that the cave was not a place of permanent habitation. People stayed there rather out of specific reasons concerning temporary activity outside a permanent settlement. The claim is supported by a specific set of pottery (from all the epochs) deprived of the cooking component typical of permanent settlements. Clay vessels used by temporary inhabitants of the cave were always of very

good quality and generally table character. Perhaps during not a very long stay in the cave human groups of different epochs needed only that kind of vessels.

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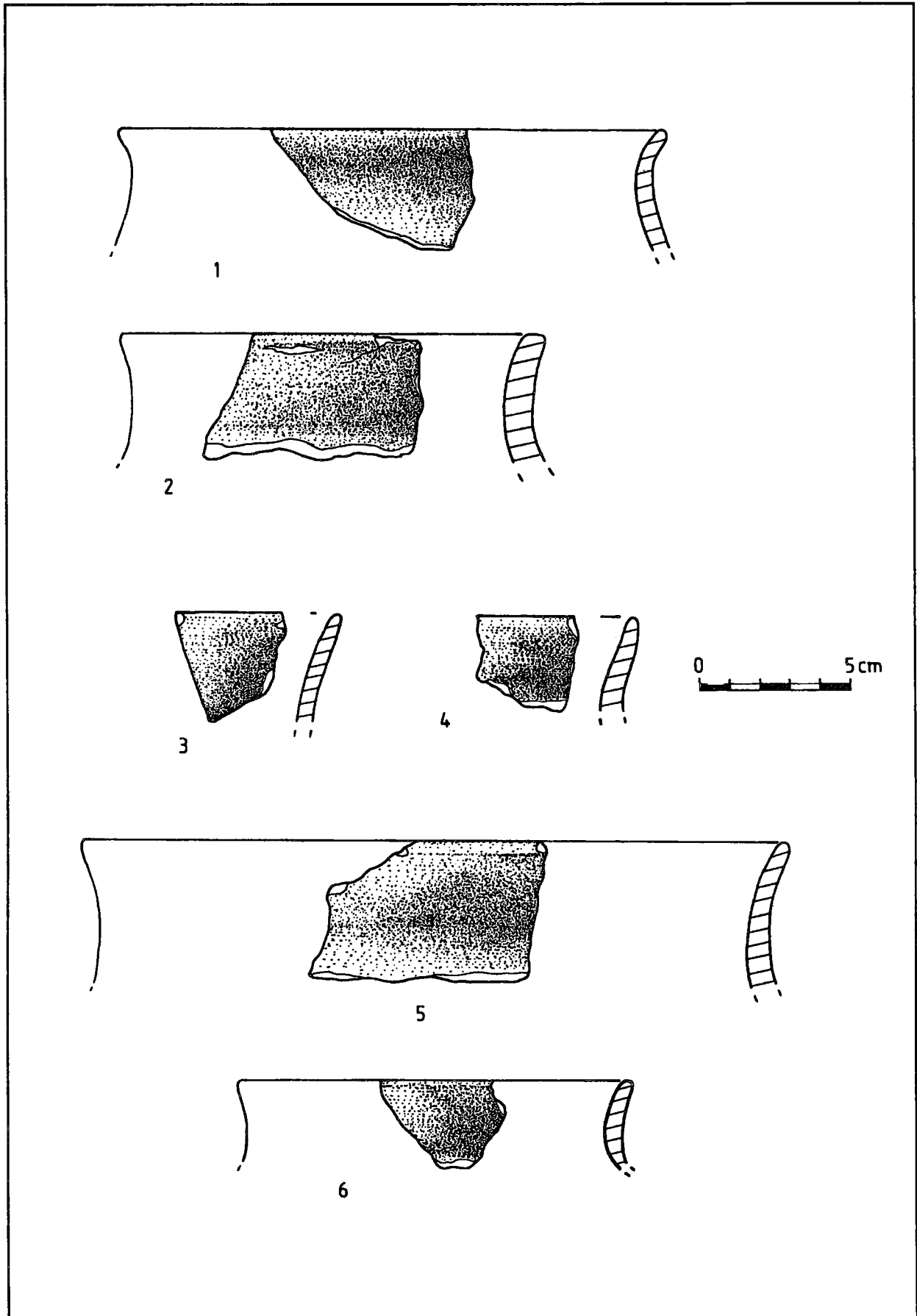


Figure 1 : Neolithic period. Pottery of Lengyel-Polgar circle, most probably of Pleszów group.

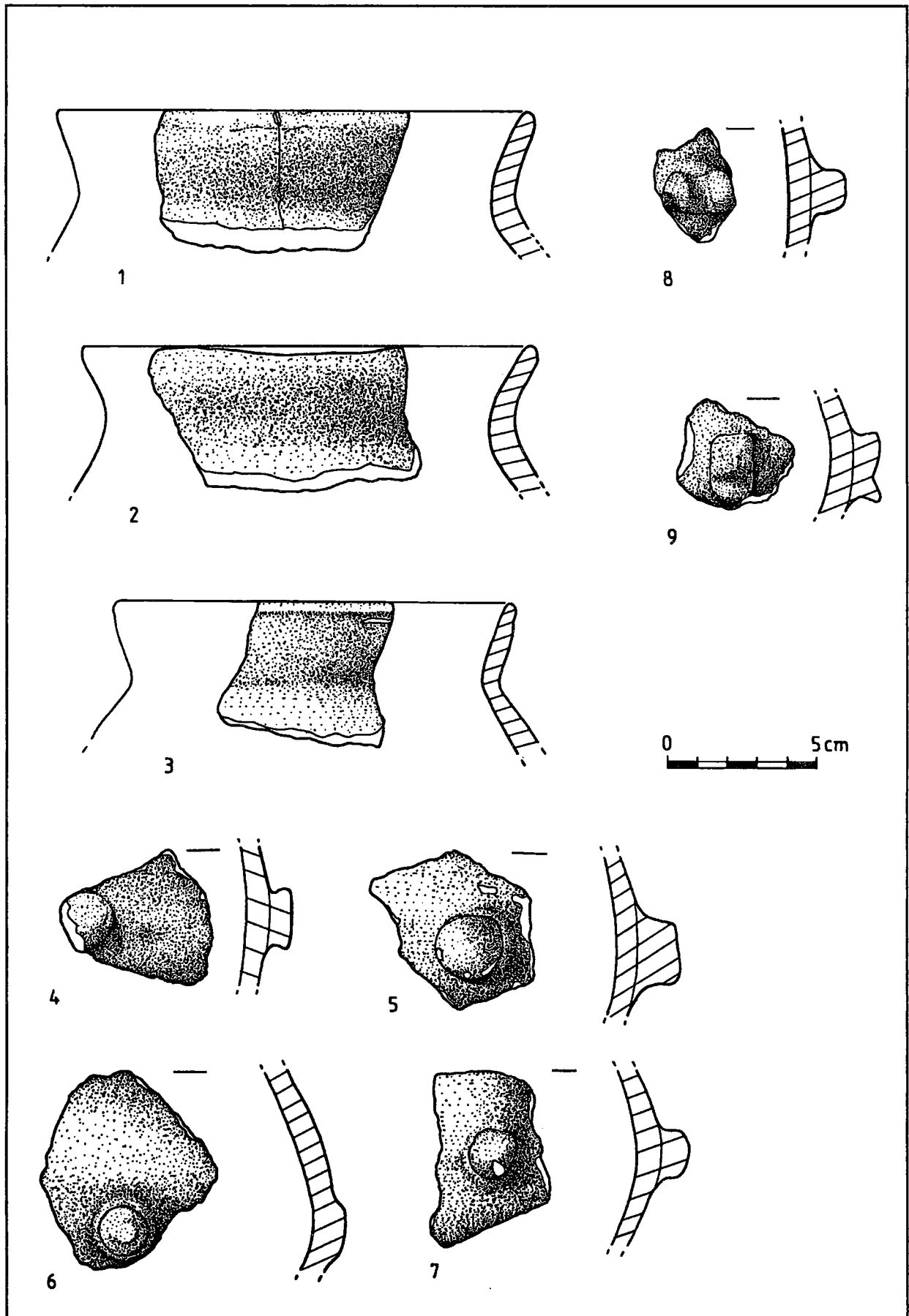


Figure 2 : Neolithic period. Pottery of Lengyel-Polar circle, most probably of Pleszów group.

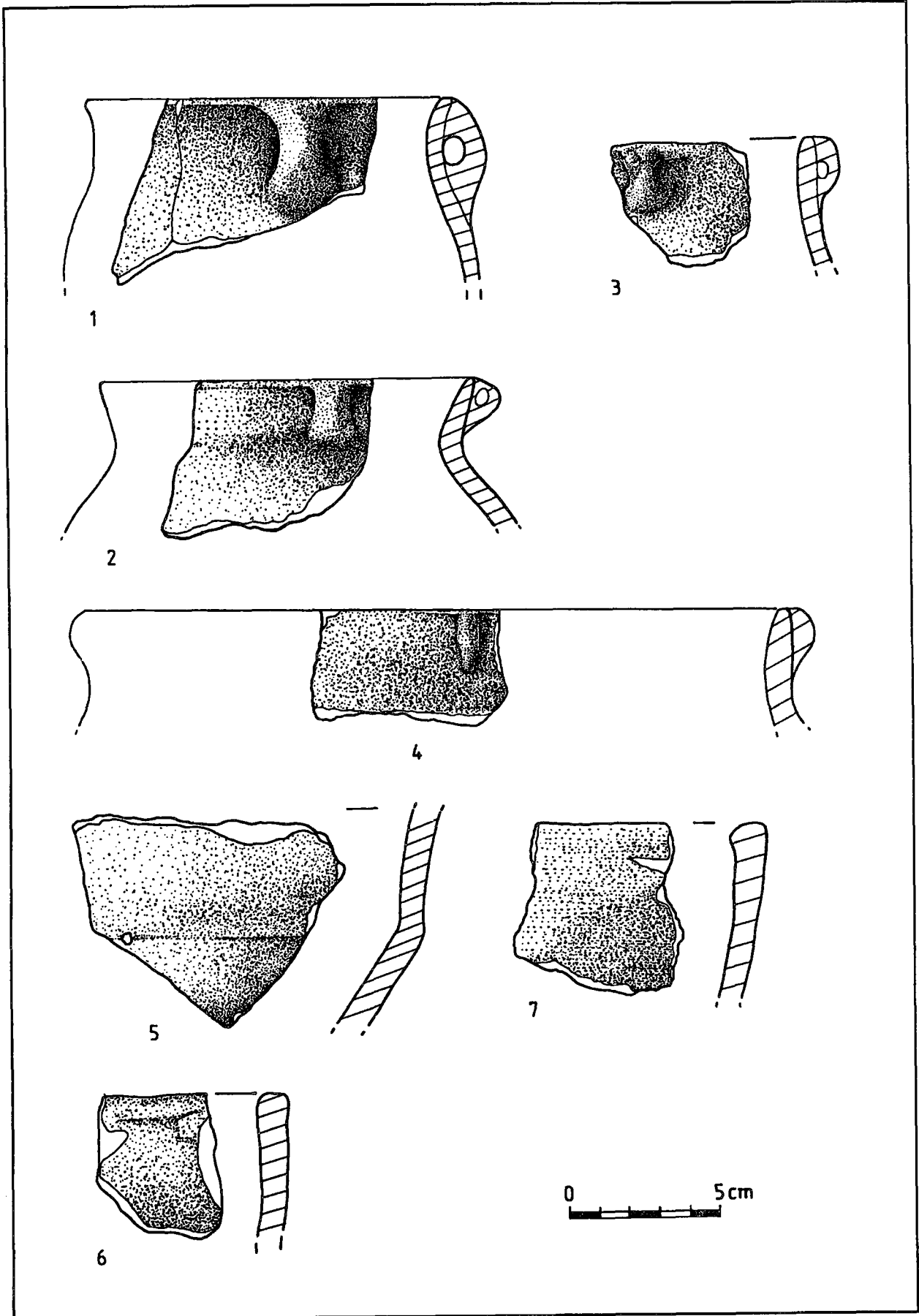


Figure 3 : Neolithic period. Pottery of Lengyel-Polar circle, most probably of Pleszów group.

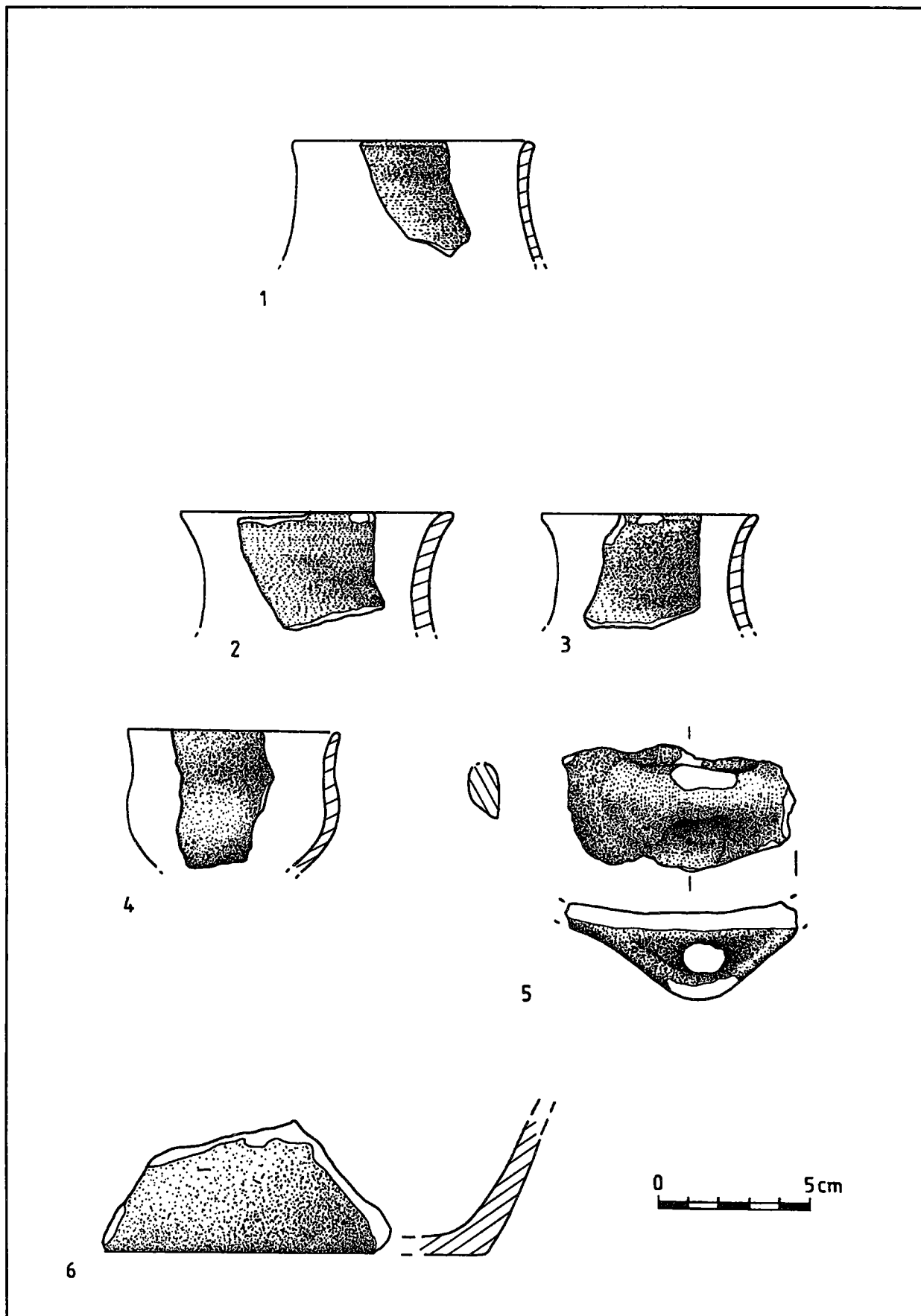


Figure 4 : Neolithic period. Pottery of Lengyel-Polar circle, most probably of Pleszów group.

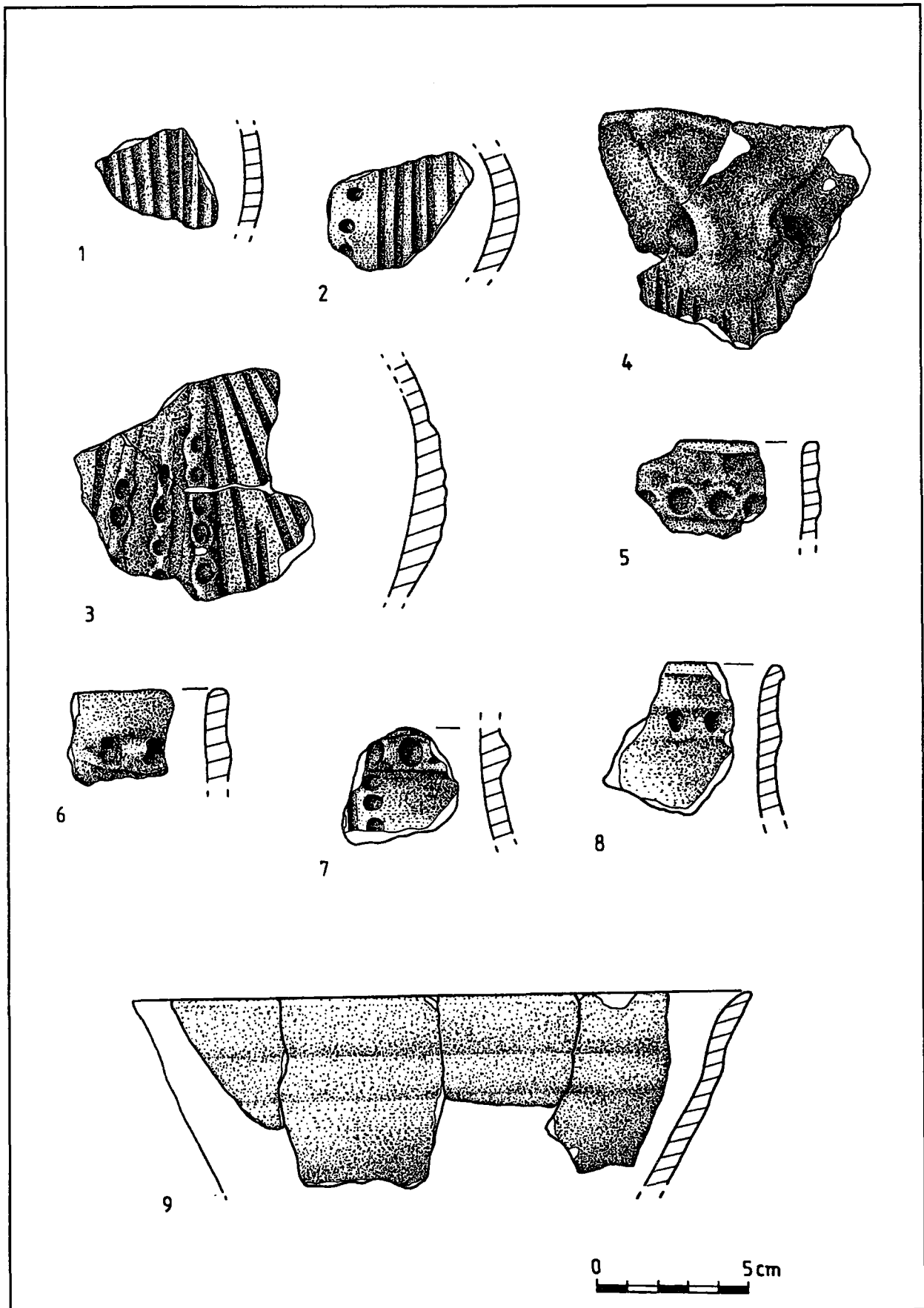


Figure 5 : Neolithic period. Pottery of Baden culture (1-8) and of Wyciaze-Ksiaznice group; transitional between Lengyel-Polgar circle and Baden culture (9).

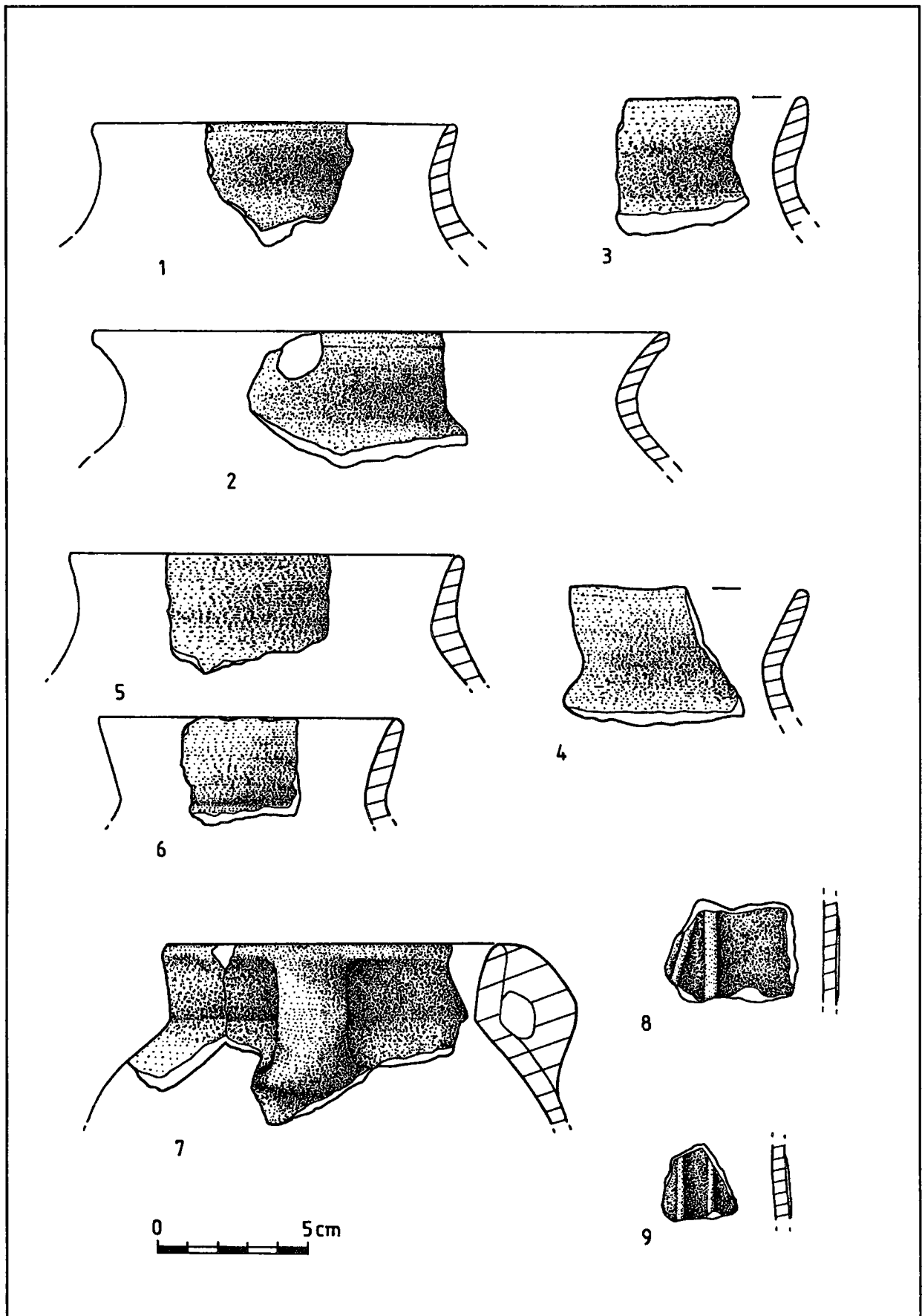


Figure 6 : Early Bronze period. Pottery of Mierzanowice culture.

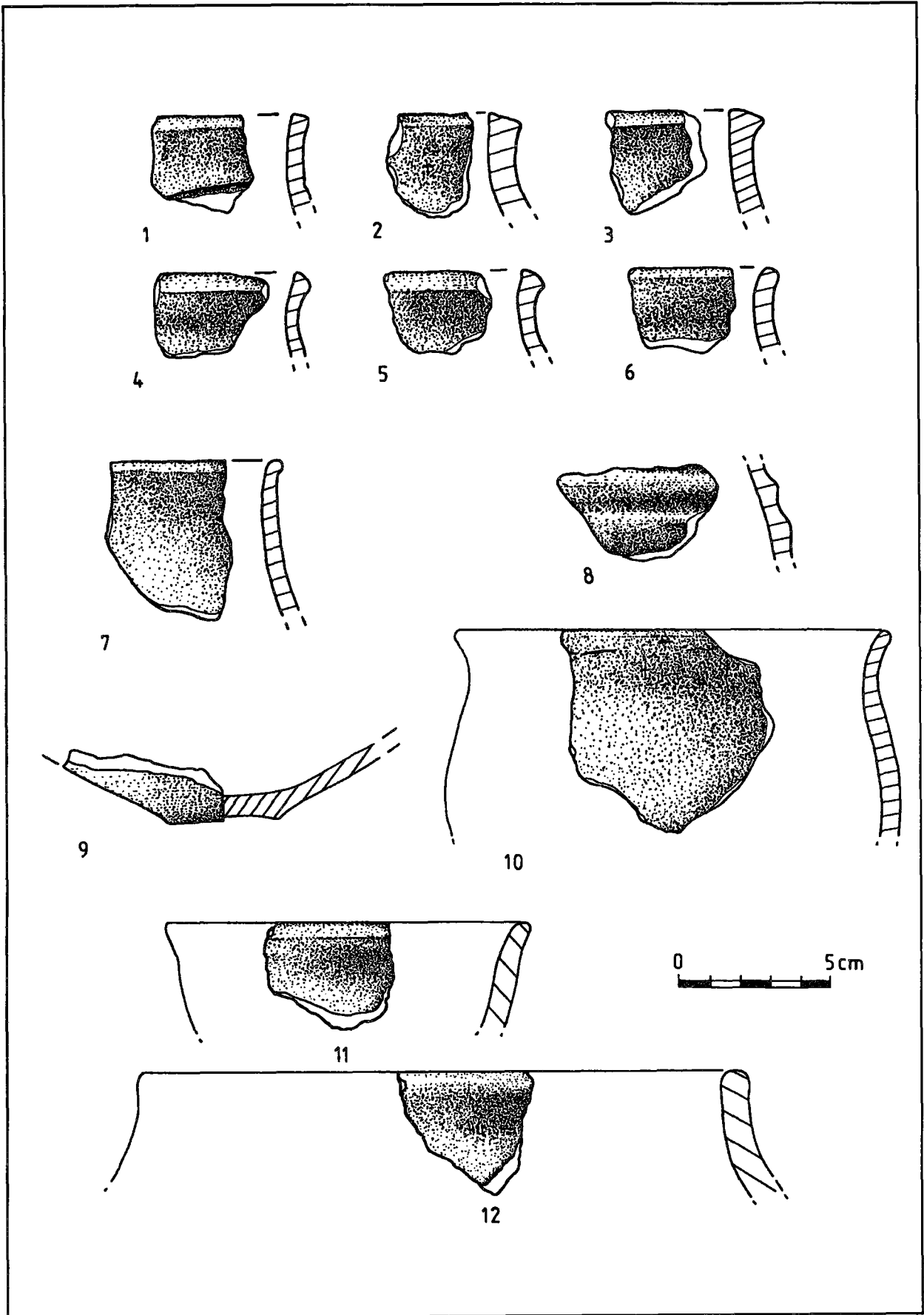


Figure 7 : Early Bronze period. Pottery of Trzciniec culture (1-8).
Pottery defined generally as Neolithic or early Bronze (9-12) Mierzanowice culture.

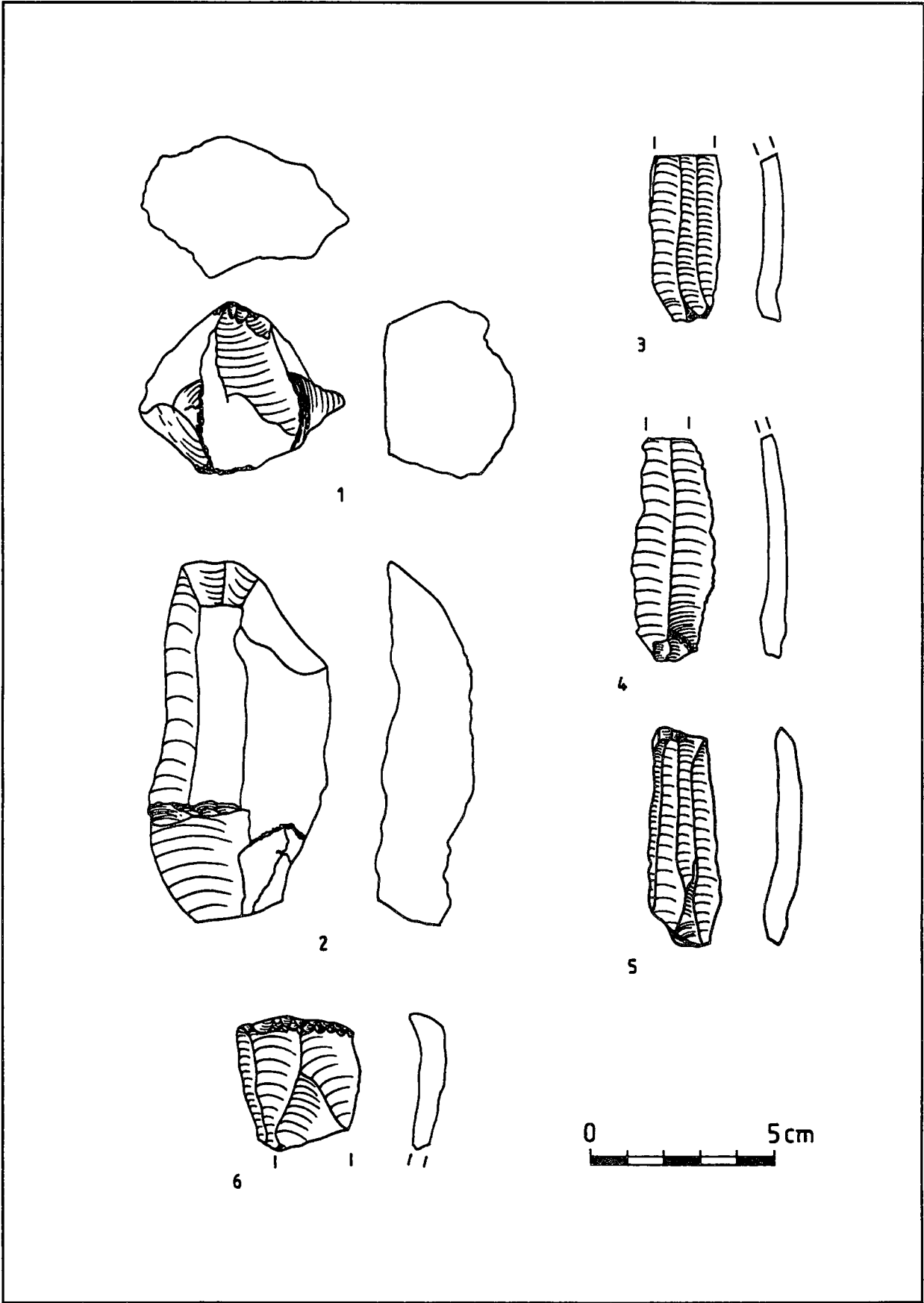


Figure 8 : Neolithic or early Bronze period. Flint artefacts.

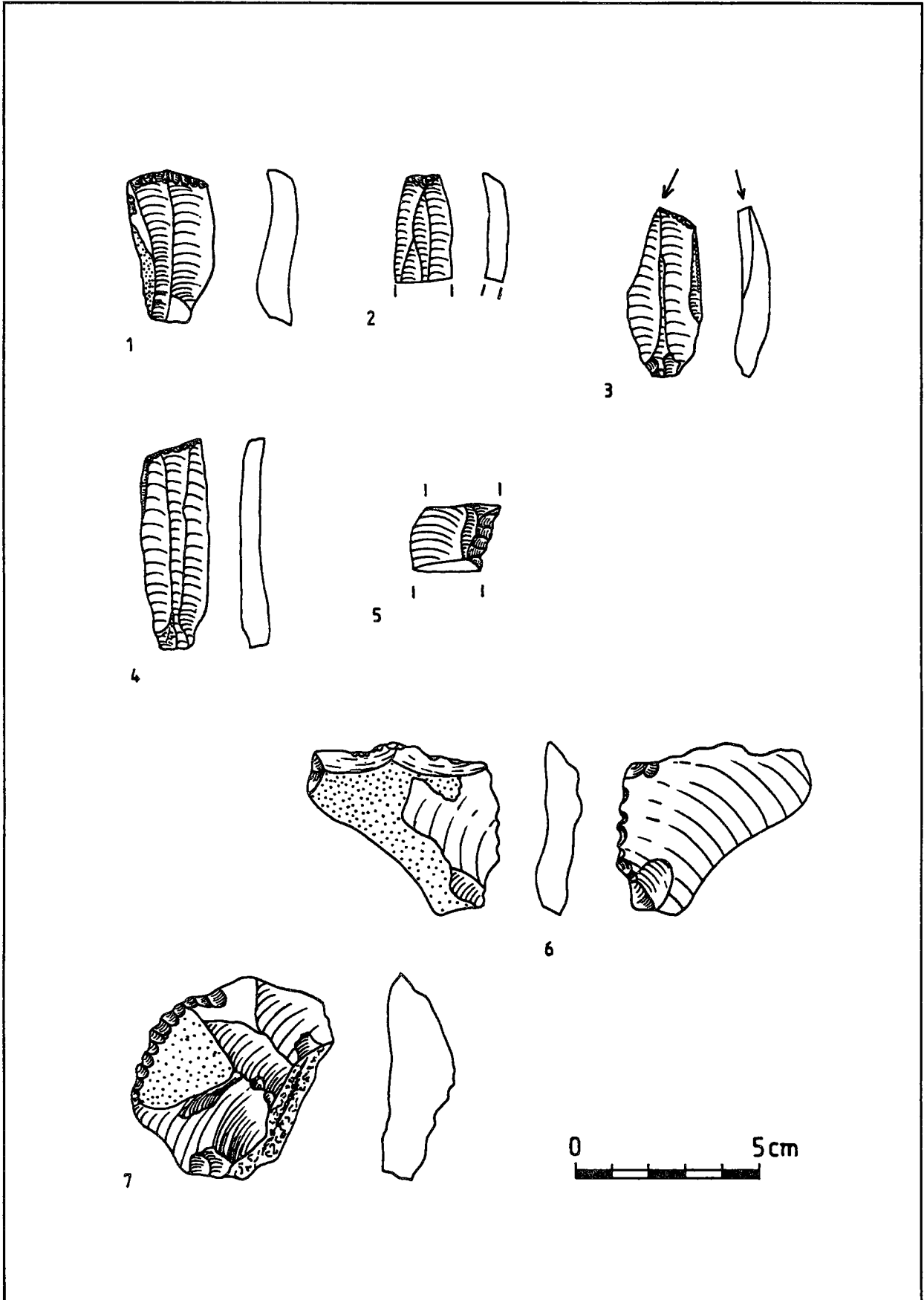


Figure 9 : Neolithic or early Bronze period. Flint artefacts.

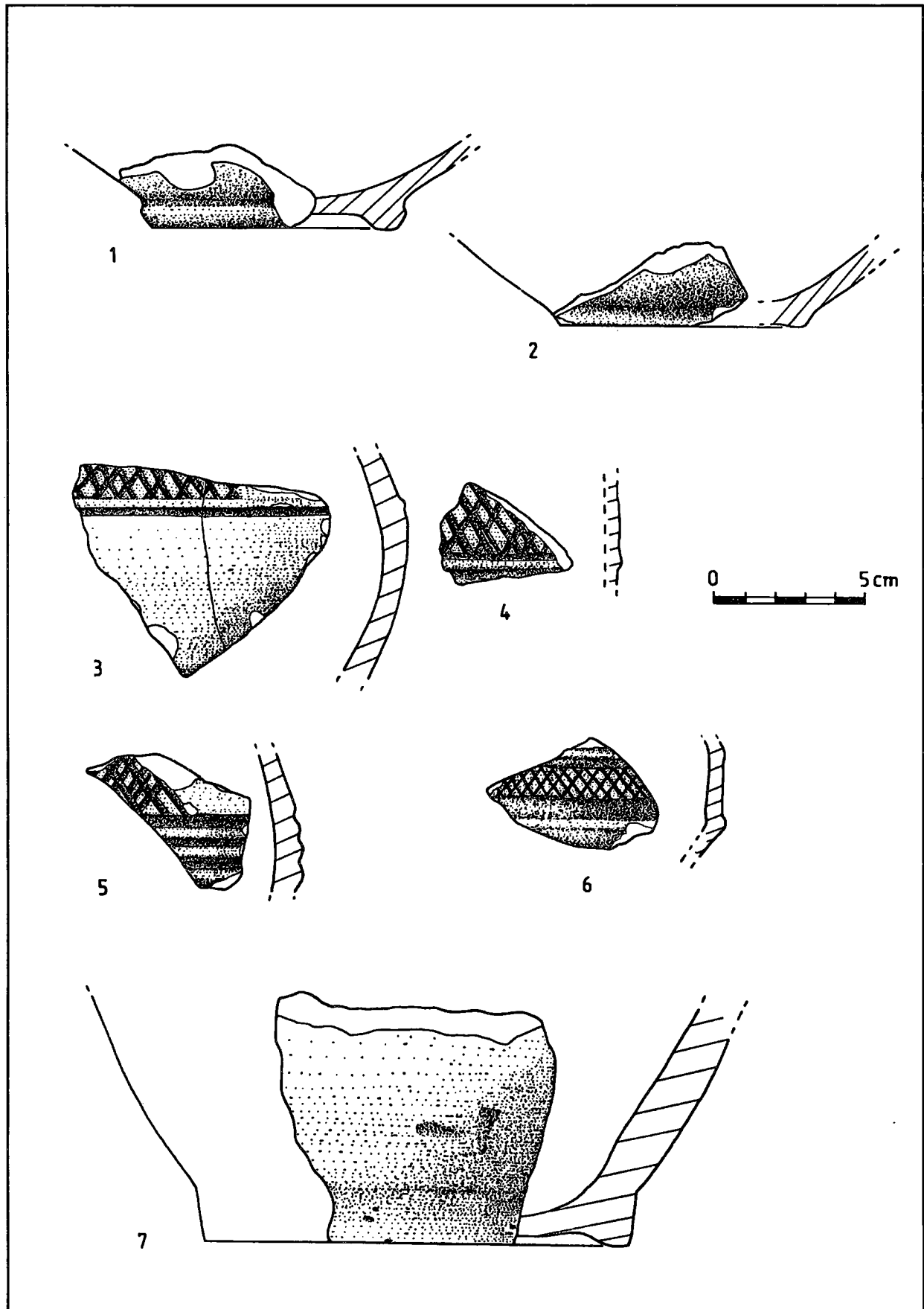


Figure 10 : Roman and early Migrations period. Pottery of Przeworsk culture.

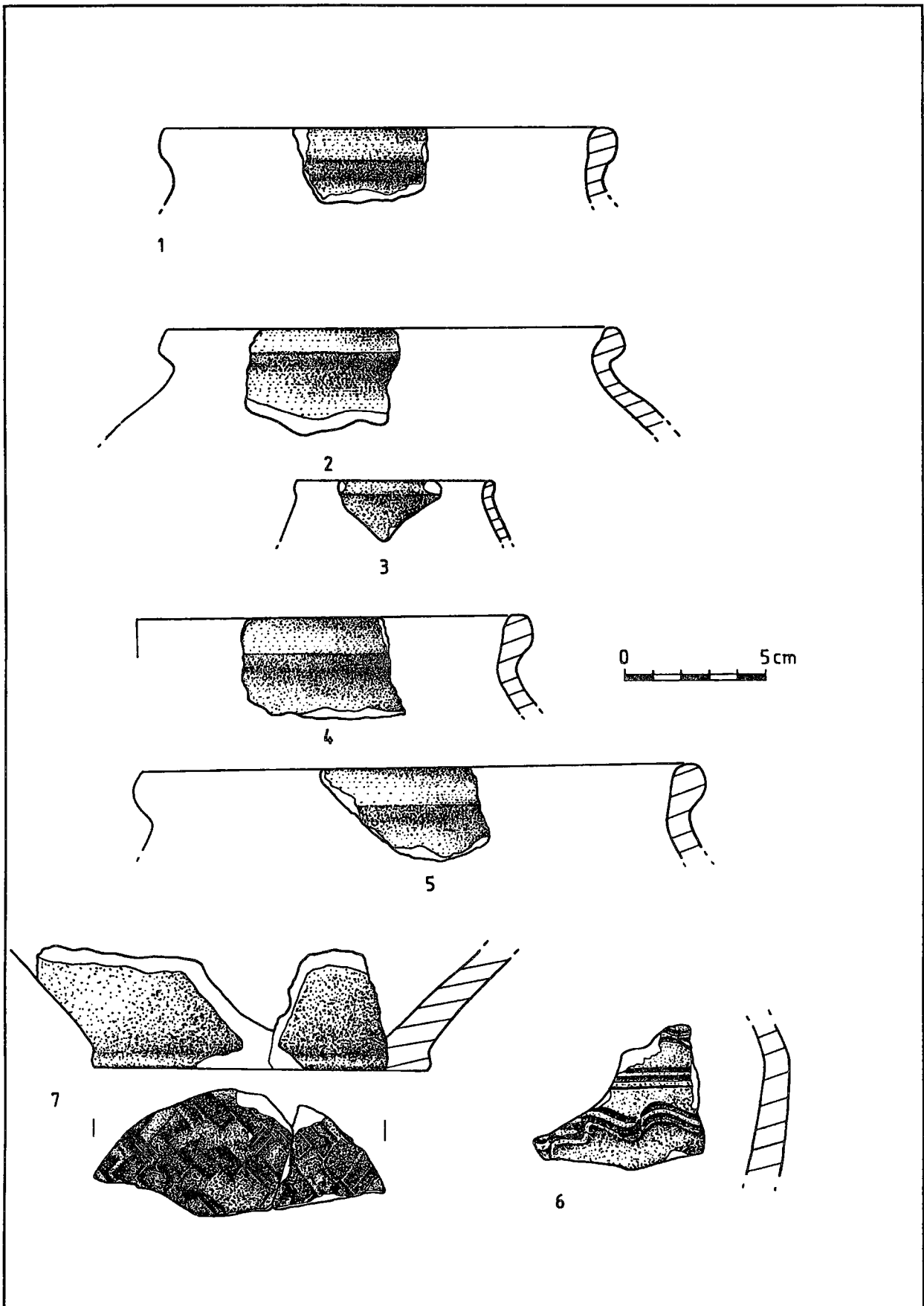


Figure 11 : Roman and early Migrations period. Pottery of Przeworsk culture.