

# CHIPPED STONE TOOLS AND WEAPONS FROM TRANSYLVANIAN NEOLITHIC AND ENEOLITHIC

## Abstract

Key Words: tools, weapons, chipped stone, neolithic, Starcevo-Cris, vincea, Turdas, eneolithic, Petresti, Transylvania.

Recent archaeological excavations in Transylvania and along the river Mures, in Neolithic sites, brought answers to some questions about the carved lithic industry. Being a near field to geologists, the industry represents the counterpart economy, other evidence is not so illustrative of the degree of preservation that stone presents. Given the non-perishable nature of these artifacts, due to the stability of the geological sources and the possibility of studying the microtraseelor and microresturilor fixed in areas with deposition of silicon, the lithic is easy and approachable, as Jacques Pelegrin stated in his PhD thesis "Lithique Technologies: Une methode a l'etude de deux applique du perigordien ancient series (Roc de Combe, couce 8 La Côte, niveau III) ", Paris, 1986. In this study we used material derived from the latest research, the opportunity to open large areas of land, offering the opportunity to enlighten the economic aspects of the prehistoric community. Participating directly in excavations in most settlements covered by this study, we have created an image of that community, thus exceeding the subjective attitude of a sterile analysis without too much information about the settlement. The simultaneous approaching of several contemporary archaeological sites illustrates the techno-typology characteristic of certain workshops and communal sources, outlining distinct typological features and elements, allowing chronology. Exhaustive analysis of lithic material on sites facilitates a general idea of the inventory and the synthesis of information independent of the author's opinion. Probably starting from this premise, it emerged the idea of illustration of the whole lot of lithic material, thereby leaving a written record of an aspect of archaeological research. We must recognize that this study covers only a small part of our intentions and will build presenting in the the same manner, the sites which are being researched, paying attention to the lithic field. Stone artifacts came to researchers' attention in the early twentieth century, Eyzies Meeting in 1964 being the first meeting whose theme was lithic industry (Perles 1991, 7). J. Fridvaldsky (Păunescu 1970 p. 14), *Iuliu Nicolaescu-Ploșor Alexandru Paunescu, Eugen Comsa* pay attention to Lithic artifact and raw material sources. Details of the lithic industry shows *Nicolae Vlassa* among others, "The Cris Culture Transylvania" in 1966, then in 1976 in "Neolithic Transylvania, studies, articles, notes" presents a breakthrough Starcevo-Cris from an archaeological site in Cluj, (Vlassa 1976, 83-84), extremely valuable information, the same information is published only after 20 years in Germany (Tillman, 1995) (Hansen 2012, p. 28) or Pakistan (Lechevalier, 1990, p. 269; Inizan, Lechevallier, 1985, pp. 114-117; Binder, Perles, 1990, p. 268).

*Marin Cârciumaru* in his paper "Human evolution in Quaternary, Part III Technology and prehistoric typology " 2000 is an authentic teaching material necessary to make part of every archaeologist knowledge, processing techniques, types of percussion, cutting products, types of cores, [retouching](#), are presented with suggestive illustration elements findings from this segment totalizing all the findings in the segment of prehistoric archeology.

*The Geomorphology of the soils.* The formation and the consolidation of the Carpathian crystal blocks, ascension and their fragmentation is due to Hercynic time (Ielenicz 1983, 77). Starting with coal and ending with Jurassic, and penetrating post-Hercynian Orogen Hercynic magmatism is manifested by such and granite deposits faulted Palaeozoic granitic masses discontinued (Ielenicz 1983, 77). In medium and higher Jurassic happens a new modeling relief, in the Eastern Carpathians, Trascăului Mountains and Metaliferi, through immersion lens and outline of the Cretaceous facies, the completion as a morphostructural unit of the Carpathian branches happening in the old stage of Cretaceous medium-Paleogene by subsequent volcanism and continuing shriveling (Ielenicz 1983, 79). The ascension of the cristalo-mesozoic region is marked by the lowering of sedimentary bases of Hațegi Boroda, Ghimbav-Rucăr, while the compartments of the Apuseni mountains are filled with acidic volcanic masses -banatite which, lithologically print sedimentary volcanic character to this massive (Gregory, 1983, 92). The crystalline schists of igneous rocks from the ancient phases (granite and Banatite) make up the Skeleton of the Meridional Massif (Gregory, 1983, 91).

Apuseni Mountains geomorphological mosaic, through neogenic explosive behavior depending on the environment in which they occur, give acidic pyroclastics rhyolites in the form of lava, rhyodacites, dacites and andesites (Schreiber 1983, 118). The last volcanic activity of small-scale, expelled andesite bazaltoide, andesite zith pyroxene and basalt in the mountains Oaș-Gutâi, Călimani-Gurghiu-Harghita, Metaliferi, Perșani, in quaternary continuing the volcanic activity through geiseriene hydrothermal manifestations.(Schreiber 1983, 119) .

Metaliferi Mountains developed in relief, on ofiolitic formations, crossed by laramic lava along the faults and eruption magma among which dacite (Banatite) must be included, andesites and rhyolites, are completed by a sedimentary pliocenic area of Lupești- Pârnești (Rusu 2007: 29-30).

In their evolution Drocea Mountains accumulate deposits of titanium and vanadium in combination with gabbro, restrictive fossils directories in analyzing the occurrence of lithic raw materials, the character of rocks causes shaping the landscape, the granite shows a high degree of fracturing, which gives "many" rock, the result of gelifraction, exploited in quarries in Bârzava Conop, Radna and Paulis, Brănișca (Cioacă et al. 1983, 100-101).

Poiana Rusca Mountains offers chalcedony- brown silex, silex of different qualities and colors, in kaolin deposits, found in prehistoric settlements in Transylvania. Gneiss borders make up the structure of Parîng and Retezat Mountains, the altitude is provided by the skeleton of strength, hard igneous rock, quality which determines the resistance to climatic factors and pressure, constituting the richest lithic potential in Transylvanian area.

The present relief is the result of the erosion processes, some of the most important factors being the glacier erosion completed by crionivale and gelivațion, products of gelived rocks that

loosens by gelifraction fragments that are deposited as blankets, detritus material, for example in Retezat and Parîng (Achim, 1983, 141-145). The landscape is shaped by climatic and lithologic factors and compact basic rocks gabbro, basalt peridotite, shale amphibolous, declines slightly, the ultrabasic-limestones, dolerits, casts give softness soil, compact acid rock granite, granodiorite dacite, gneiss and silica conglomerate being easy disaggregated (Chițu et al. 1983, 495-497).

*The process of neolithization.* In the carved lithic industry from Transylvanian Neolithic and Eneolithic underrepresented in terms of weapons, but a great number of artifacts, having the function of a too, record an economic leap during the early Neolithic, keeping remnants of the Anatolian world. Fossil raw materials, obsidian and flint, counterpart of Aceramic-PPN Neolithic (Pre Pottery Neolithic), accompany rare specimens of flint evoking the times of maximum flowering of the Anatolian aceramic with an architecture on stone foundations, a special grandeur to that time (Cauvin et al., 1999, 64-65 (Plates)). Zoomorphic and anthropomorphic representations illustrates a well-organized hierarchical system based on agriculture and livestock .

Haidar Boustani adapting Kenyon's terminology, as PPNA and PPNB for Pre-Pottery Neolithic A and Pre-Pottery Neolithic B, a reference to the oriental literature about neolithization in Lebanon (Haidar 2002, Kenyon cited). Ibáñez notes for world Anatolian in the lithic industry the processing and then the debitage through pressure of the obsidian, and in the case of flint the bipolar debitage with the appearance of long blades which denotes a specialization dictated by the need of agriculture, hunting being substituted for animal domestication, over-farming being a constant in this moment (Ibáñez, Urquijo, 2006, 361-376). Gatsov refers to the Anatolian origin of the lithic industry of early Bulgarian Neolithi (Gurov, Bonsal, 2014, 11). Laminating lithic industry in Karanovo I-Anzabegovo-Vršnik has the "Balkan" flint as raw material, characterized by macrolitism and indirect percussion (Gurov, bonsai, 2014, 11), whereas in Thessaly the early Neolithic, the " classic formal set" of the lithic industry that rely on the debitaĵ from pressure, from the same blond flint, with no documented local sources (Gurov, Bonsal, 2014 ,112 cited Kozłowski 1982, 149) that were discovered later.

After a sinuous evolution in the Balkans (Karanovo Anzabegovo-Vršnik), then Transylvania or animosity with Mesolithic locals, carriers of monochrome ceramics then painting with white (Starčevo-Cris), descendants of anatolian PPN continue the development towards north, from south by the group Alföldi, a variant, and the north-eastern family along the agro-ecological barrier "CEB-AEB" "The Central European-Balkan Agro-Ecological Barrier where were identified habitations Koros (Kaczanowski Kozłowski, 2008 9 -10 cited R. Kertesz, P. Sümegi, 2001).

The technology of preparation and cutting of the lithic machine, in the lithic industry, according to the the principles of M. Lechevallier is "*a consistent assembly for the entire Neolithic*" (Lechevallier, 1990, p. 269-271). There can be recognized types of indirect percussion, with products of laminations, which already shows a specialization for producing blades is when they started to use an intermediate tool for hitting, or a specific tool of cutting through pectoris and manual pressure, detail observed in the cores found in tombs at Mehrgahr, negatives of the cores are 7 cm shorter than those obtained by direct percussion, longer than 15 cm., the observation made by Lechevallier (Lechevalier, 1990, p. 269).

The level of the early Transylvanian Neolithic features the preparation of cornice at 90 degrees by retouching the plan of percussion with cortical lamination products, and cortical waste. The process of clearance, beetle removal (Pelegriin, 2003, Fig.43) and cornice preparation for laminar cutting is also practiced at Cristian I, the Starčevo-Cris level, this practice depicting an old tradition that arose with gloving (Fig 1).

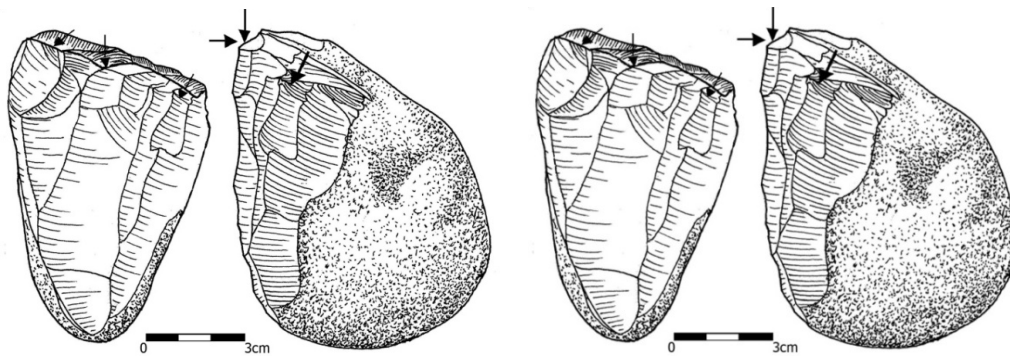


Fig. 1 Cristian I (Sibiu County), L. I, cores with cornice preparation through beetle removal.

The necessary of *raw materials* is increasing along with the sedentary (Martis et al. 2015 cited Kamiński 2-9 Kozłowski, 1990). The pendant of the villages and stables emerged in the Transylvanian Neolithic, are graves with a whole set of objects by way of grave goods, where the artifacts from carved and polished stone are always present, habit brought from the anatolic Preceramic Neolithic, where the PPN (Neolithic Preceramic) IB, in Mergarh, Pakistan (Lechevalier, 1990, 269) making thus the hierarchical distinction (Inizan, Lechevallier, 1985, 114-117), (Binder, Perles 1990, 268). The "Balkan" flint was documented in the operating centers at Nikopole and Pleven (Gurov, 2012, 19), providing the lytic raw material for prehistoric societies up to hundreds of kilometers around. Blonde flint, is sent over the Carpathians being recently discovered in the early Neolithic archaeological site of Starčevo Cris from Cristian I, III ( Sibiu county), Miercurea Sibiu II ( Sibiu county), Miercurea Sibiu Petris ( Sibiu county) then in vinciene Neolithic archaeological sites, where it is gradually replaced with the flint of Banat and silicified sandstones – psamitice rocks, from the category of silicified

sandstones or glauconitic gritstone (Paunescu, 1970, 84). The raw material frequently mentioned in Neolithic is the "Banat" flint or " from Banat" that Comşa makes known in his articles "Sharing in the Neolithic communities of our country" in 1966 in the Museums Journal and Évkönyve the "Móra Ferenc Múzeum" 1966-1967, published in 1967 in Szeged. In the Middle Neolithic, "Banat" flint becomes prevalent in the sites of Transylvanian, "Cremeniş Hill" is known as an operating center (Comsa 1971, 15-19; Luke, 2005 64, 2006 212, 2010, 212-213) .

Obsidian is volcanic glass with different aspects depending on the source, being known as the smoky or the black of Melos, but these sources are handled in archeology only after the appearance criterion. The Obsidian Carpathian I is nearby of Vinički Mala Bara, 30 kilometers from Zemplínske Kopčany (Novak et al. 2010, 203), Streda nad Bodrogom (Kaminski 1991, 18-19; 2001, 85), Carpathian I category ( C1) is in Slovakia in the Bük Mountains, at Zbuzda, Zemplínske Kopčany, Slavcovce, Zálužie (Kaczanovska et al, 2013, 113-114). Carpathian II the obsidian of Tokaj- Prešov (C2) is in the border area between Slovakia and Hungary, at "Matra" Tokaj, Zemplin (Kalicz 1993, 291). Carpathian III (C3) has its source in Ukraine at the northern border of Romania, in the Oriental Carpathians Mountains, Vihorlat-Gutíni (Racz, 2013, pp. 132, 137, 139 cited Rosania et al. 2008) and Oaş Mountains, species that M. Cârciu studies (Cârciu et al, 2007, 13) (Racz, 2013, 132).

The Aegean Obsidian of Melos, in the Greek islands of Melos, Antiparos and Gialle being preferred the Melos one, of quality and other category" Central Mediterranean " with sources in Sardinia, Pantelleria, Palmarola, Lipari (Tripovic remembers another source in central and eastern Anatolia) (Tripovic 2004, 163). At Sta Nychia, in a rhyolites deposit is documented the obsidian (Torence 2009, 53).

### Workshops

On the hills around the village Liubcova, Orniţa point, the engineer Octavian Popescu together with the historic Ion Dragomir found workshops of local worked flint and at Lipova Hodaie was a workshop of piercing axes (Luke, 1987, 25-28. In the case of obsidian, the large number of waste, wood chips, scrap processing, cores, concrete, and a rate of 95-98% of the total obsidian artifacts from pieces of Berea, allow the assumption of an alignment workshop (Paunescu, 1970, 85). The situations where the processing workshop is in the house, is met at Starčevo-Cris and Cristian I where the majority of the artifacts discovered in this resort, in the two complexes C004 / 1 and C004 / 2 were documented. At vincian level, at Tărtăria in the vincian settlement (Research 2013) in Gr. 22 and 22A the large number of artifacts determined us to call these complex, either workshop or warehouses.

At the foot of Vătraniului ridge, near the river Bega it is possible to have a workshop in the meadow Sodol, this being argued by a large amount of scrap, where can be recognized shelling wastes, the preliminary preparation of Banat flint buckets.

## *Case Studies*

Our objective in this study is the exhaustive presentation of the lithic industry of new investigated archaeological sites in sure stratigraphic conditions so that the focus is mostly on Starčevo- Cris resorts, preventive excavations offering this opportunity, through large uncovered areas.

With origins in Anatolia, the inhabitants of early Neolithic from Cristian I (Sibiu county) surprise us with a fabulous mobile inventory - reminiscent of "Ex Oriente Lux" (Luca, 2003, 23), impressive zoomorphic and anthropomorphic representations, along with a lithic inventory of high Balkan quality and paradoxically, an inventory of local mediocre sandstone chips, illustrating a society of contrasts rare materials even on the horizon of early Starčevo Cris.

The placing arranged on two terraces, was attributed, up to the date research, to Starčevo Cris I A B (Luca et al. 2014). Lower as appearance and processing technique, the lithic industry from Cristian I seems to be a workshop to develop, adjusted to the local sources of raw material, creates a chips technology whose chips products show traces of use, the necessary of those artefacts requiring the use of the pieces, where the utility and functionality are prevalent before aesthetics. The complexity of the new technological process in Cristian I comes from the new features of siliceous rocks identified in Transylvania. The process of cutting, setup is difficult, the first products are the chips, presenting corrections and wear stigmas, being used at mowing in part as inserts, a habit brought from the Balkan world.

Following the experiments of using new blades to mowing, it has been found out that it is necessary to use them in at least one season and even more to get the polishing given by the submission of silicon (Goodale et alii, 2009, 1200). This proves that they lived in the same space at least one season, that the sickle was reused, and the wheat crop was known back then, which allows us to say that Cristian I was lived for a good period of time, the lithic artifacts alongside with the mobile inventory confirming the settling and the expression of traditions that take time to crystallize.

Of the total number of these artifacts, Balkan flint is represented by 39% artifacts, the chert is represented by 21%, various silicolites by 11%, Chaille sites by 8%, the rest in smaller proportions, of jasper, radiolarians, obsidian, silicified quartzite and sandstone (bear in mind that the pieces from the silicolite category may represent quality fragments of silicified sandstone from the rollers so that the 11% are mixed and the percentages are orientative). Lithic industry is set up mainly of Balkan flint 36% (honey yellow with white spots), local siliceous rocks 21% silicified sandstones, brown Chalcedony 10%, 10% clay.

Reduction sequences can be reconstructed after the reassembling and fittings, so we get the steps of configuration of a core or some rolling, chips or cortical supports, the blades are characterized by both dorsal and ventral faces, of percussion bulb, impact platform, of chip, of cornice configuration to improve the thickness of the proximal area and if the distal end is truncated, the negative on the support will illustrate the actual size of the blade. The latest preventive research once with the opening of sections in large areas, we could identify a part of the reduction cycle (Fig.2-3).

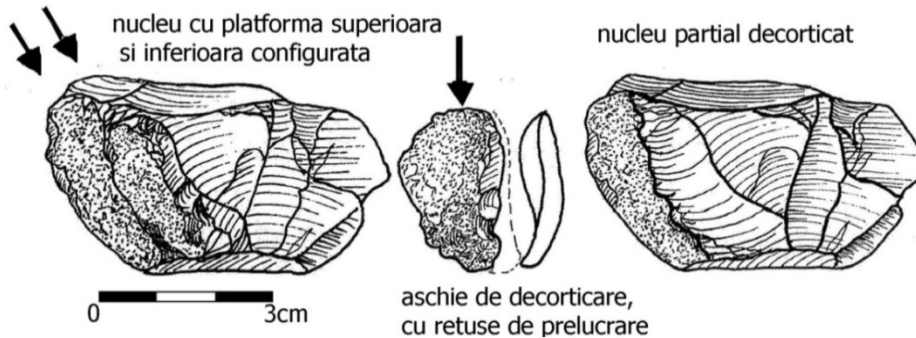


Fig. 2 Cristian I (Sibiu county), establishment L 1, core with two percussion platform. Reassembling, shelling stage of reduction core.

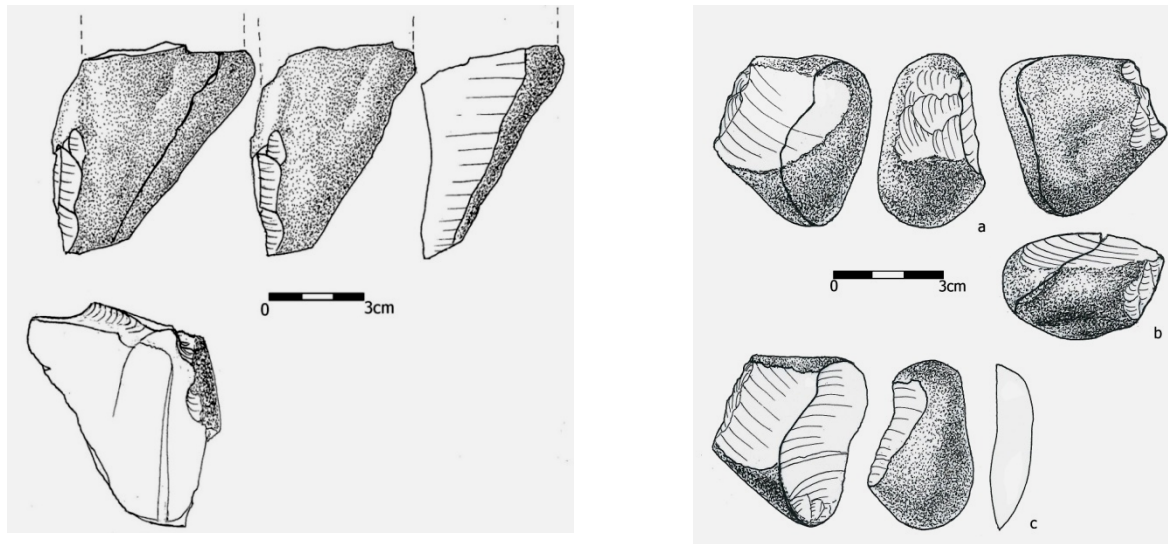


Fig. 3 Cristian I (Sibiu county) C. 040.2;a) silicified sandstones -reassembling shelling chips; b)reassembling shelling chip –...development of the cutting surface of core.

The archaeological site from Cristian III ( Sibiu county) is located on section 4 of Oraştie- Sibiu highway about 1,65-2,1km west of village Cristian (Sibiu, Romania), is engaged in the cultural level Starcevo-Cris Phase III in the composition of it entering the establishments

located within a defensive system with ellipsoidal form (Luca et al. 2014, 7-18), (Lazarov Maxim, 1995, 97-100; Drasovean 1981, 33-44; Luke 1998 Luke et al. 2012, 15, 146; Luke et al. 2014c, 15).

Lithic tool consists of techno-typological range typical to early Neolithic, where "Balkan" flint abounds, seconded by silicified sandstones, jasper, obsidian and a small number of other categories of rocks. Typology, most artifacts are retouched blades, followed by cores, this denoting a source nearby. Balkan silex, of tradition, which requires a call to the primary source, located at the south of the Danube, subtract numbers, the microlithization can define a propensity for this type of raw material and a shortage at the same time.

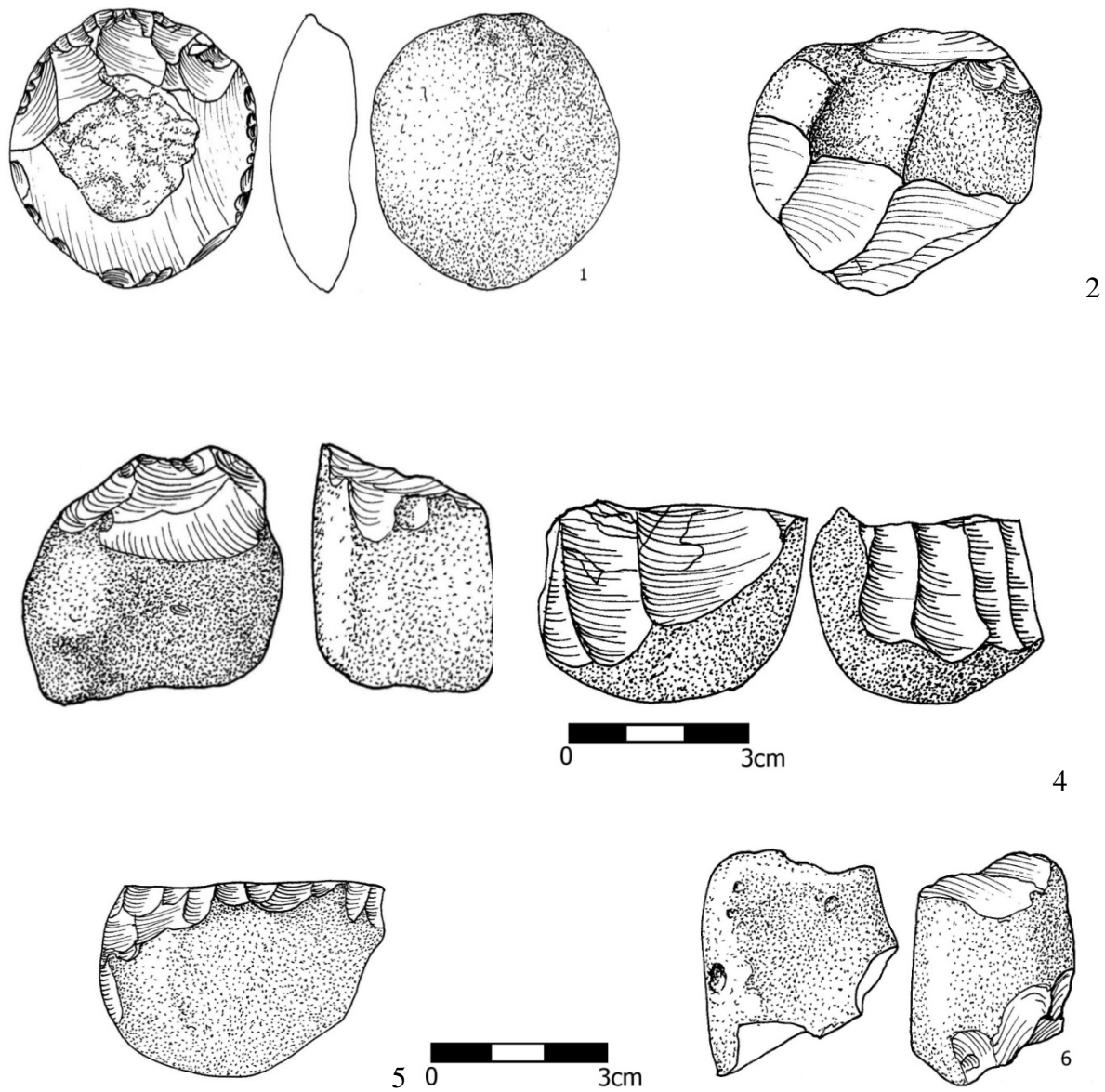
Miercurea Sibiu II ( Sibiu county) is an early Neolithic settlement Starčevo-Cris, located on the current valley of Gârbovei, represented by two housing nests like those from Cristian I, C.012 and C.025, both characterized by painted pottery with small and medium white dots in triangular registers in strips, which, by analogies in the Iron Gates area, Lazarovici places them in Starčevo Cris IIB (Lazarova, 1983, 1).

Carved lithic industry represented in abundance in that site, some parts having a worship sense, special artifacts deposited as grave goods, and remark made by Vlassa for Romania, too (Vlassa 1976, 83-84). From a technical point of view, the mediocre quality of the cutting products shows either testing or a social aspect of the community, learning the techniques of carving, like the Cristian I community.

In this site, "Banat" flint artifacts appear, but very underrepresented although the source of raw material for this type of material is much closer than the one for the "Balkan" flint. Artifacts of Balkan origin finished and laminar supports illustrates the existence of exchange network, barter and fair, but equally the amount of processing waste and microlite chip suggest local workshops that have been brought concretions or cores for the purpose of processing on the spot.

The neolithic site at Miercurea Sibiului "Petris" ( Sibiu county) on a terrace of Secas River tributary of the river Mures on the left bank, is inhabited since the early Neolithic - culture Starčevo- Cris followed by Vinca culture then in Eneolithic, cultural range Petrești (Suciu, 2009, 84). The level Ia is framed in Starcevo-Cris IB culture, level Ib Starčevo- Cris IC - IIA and level Ic in Starčevo-Cris IB-III A (Suciu, 2009, 87-88) (Suciu, 2009, 87-88). The level II / a / 1 in Miercurea Sibiu Petris is placed according to C<sub>14</sub> analyzes in the Vinca culture A1-A2 at 6475±40BP and 6200±60BP (Suciu, 2009, p.151, cited 165-167 Reimer et al, 2004 ). Meanwhile the research was resumed and lithic artifacts were represented more generous than in the older excavations. Concretions, cores and categories of artifacts from local raw materials exceed the imports from the Balkans, maintaining that robustness that I met in starceviene sites from Cristian I.

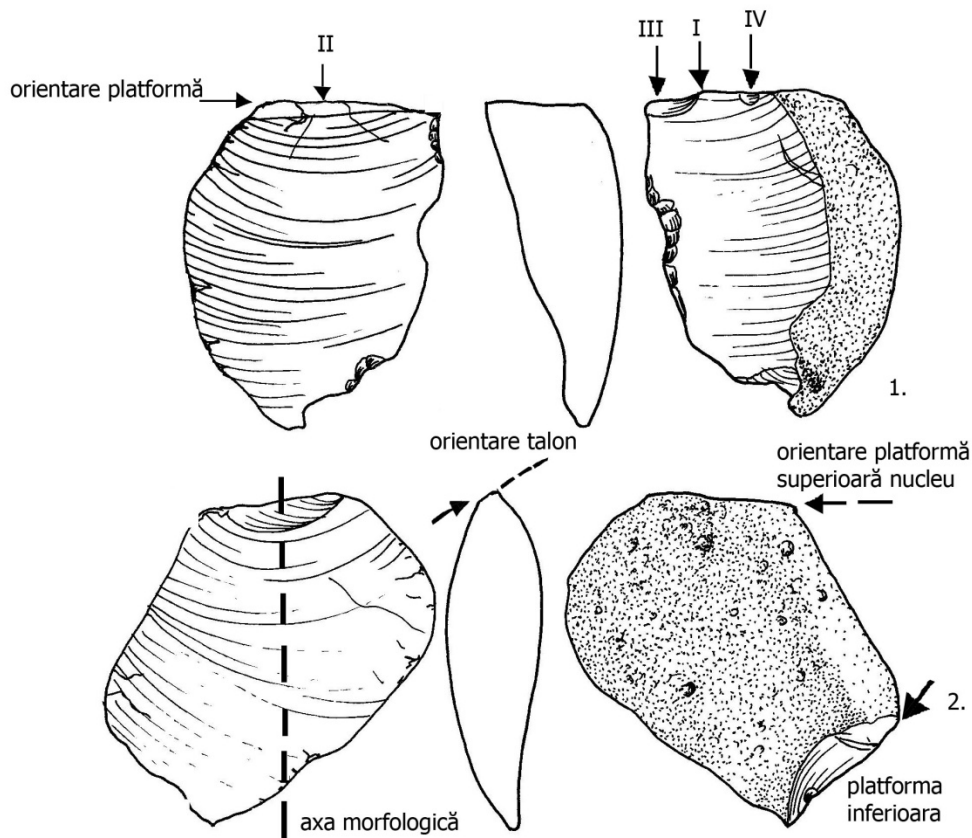




*Fig. 4 Miercurea Sibiului Petriș 2006, S.III, (depth 0,80-1,30 m), Vinca B level, 1 core in different chips of configuration from silicified stones 1-4, 6; argilit 5.*

In order to prepare the core, at vincian level detaches a chip – with the negative of percussion platform, or both ends of concretion concerned, either by shelling in "the scales" by repeated parallel blows, centripetal or centrifugal the entire cortex emerges through direct tough shots. In the latter case, the semicortical products are being preferred as carriers of grator on blade or chip end. The angle between the plane of percussion and cutting plan determines the length of chip, or blade, so that the cornice is reduced by intentionally short retouches. Shelled

core presents negative laminar cutting (Fig. 4), but also laminar combined and chips depending on the morphology of the roller or the concretion. Shelling chips keep on the bead the rest of the percussion platform, in this case, also a small portion of the lower core platform, the convex form of the reverse providing information about the type of percussion. At the core configuration from concretions with amorphous form, first the projections are leveled, then the platform of the core sets, these being stages of shelling (Fig. 5).



*Fig. 5 Miercurea Sibiului Petriș, 2009, S.(depth 0,90-1,30 m), 1) semicortical chip with the negative of the preceding detachment;2) cortical chip with the heel on the superior and inferior platform of percussion of the core.*

## Conclusions

The inhabitants of Early Neolithic at the Iron Gates are characterized by the remnants of wildlife 75.5% as a society of hunters and fishermen, at the same chronological level in the Balkans the domestic animals are represented in 75% (Kaczanowski Kozłowski, 2008 p.11). In the same train of ideas, the lithic industry in the early Neolithic at Gura Baciului (Transylvania), or at Donja Branjevina consists mainly of blades and components, although they source the raw material from over 700km, the Balkan flint having a major share but unequally distributed in early Neolithic sites (Kaczanowski Kozłowski, 2008 p.12). It was found that in the Starčevo-

Cris-Koros culture, the cores and processing waste are not very common but they have blades and components as the site Galabnik from Bulgaria, in the west, in Serbia at Goloka, and Starčevo or in Hungary in the Pannonian plain (Kaczanowski Kozłowski, 2008 p.13 cited Gatsov 1993). Compared with the preliminary preparation by shelling technology, the platform preparation, planning increases in Transylvania sites a number of concretions with an incipient degree of preparation firstly present the platform then the first shelling chips are dislocated. Superior Tisza Basin shows a deterioration of technological standards in the production of blades, this fact owes to the low quality of the limnocyrtitelor and a decline of specialization, the responsibility of production being transferred only to a specific social category and thus the access to these artifacts is restrictive (Kaczanowski Kozłowski, 2008, p.14). Looking from the starting point in the Middle East to the central and northern Europe, Kozłowski and Kaczanowski propose instead of a linear evolution of lithic technology, an oscillating pattern. The moments of maximum development as the one in Anatolia or Orient is followed by a phase of stagnation or a range of deterioration as it is the early Neolithic in Transylvania, followed then by sequences of resuscitation of lithic technology, as it is contained in the accommodation period with local raw material. This phenomenon is characteristic of the earliest populations Starčevo criticism from Miercurea Sibiu II and Cristian I, Miercurea Sibiu Petriș or the Iron Gates. A parallel between the architecture of Anatolia, economic characteristics, specific occupations of sedentary and lithic industry (Cauvin et alii, 1999, pp. 64-65), and Transylvanian resorts, we will see in case of Cristian I, Miercurea Sibiului and Miercurea Sibiu Petriș II, that cluster housing is far from being a primitive habitat or in the process of deterioration of standards in most fields.

Housing Cluster with a ceramic inventory as the one at Cristian, with plastics made at the highest standards, relief with anthropomorphic representation, zoomorphic representations and polished artifacts, some with high degree of polishing, identical with the mobile inventory from Hallan Cemi, Turkey (Rosenberg 1999 16 Figure 12), confirms the oriental Anatolian origin. The lithic industry lost an element from the strength of the Anatolian area, the local raw material involves types of circumstances, from approximate chips that were retouched to configure the necessary inventory in the household.

The theme of thermal treatment of rock has been approached since 1964 at Eyzies (Inizan, Tixier 2000, 26). The exposure of siliceous rocks to 300 degrees, leads to deshydration, which facilitates cutting by pressure and retouching, a common practice in Central Asia for 20,000 years, being found at siberio-mongol societies, paleoindiens (practice identified through paramagnetic resonance RPE) (Inizan, Tixier 2000, 24). Heat treatment of cores whose reduction is done by initially thermal preparing practiced since the end of the Pleistocene and early Holocene, being made determinations on material from archaeological sites in Afghanistan, Mergarh in the VII th millennium, in Iraq near Mosso, Nemrik settlement, at Aq Kupruk are just a few examples where laminar cutting is associated to thermal treatment, the conical core is the

counterpart of this procedure (Tixier, Inizan, 2000, 26-29, Figure 1). Due to the heat treatment solely, the production of luxury artifacts is done and prestige of cornelian and agate, from chalcedony family, that peaked in the IV millennium BC. (Inizan, Tixier 2000, 24) prior to these being present in the site polished artifacts and perforated with the title of scepter or mace since Neolithic pottery (M. Rosenberg 1999, p. 16), the refinement of the processing frames these artifacts into the luxury objects category.

"Banat" flint artifacts, of "Banat", of top quality with conchoidal breach, are configured by direct percussion and pressure, and are documented in middle and late Neolithic sites, dominating dimensional and quantitative the other petrographic categories.

In this context, the site of Cristian I ( Sibiu county) or Miercurea Sibiu II ( Sibiu county), are technologically distinct to the Balkan world, the local development of a reductional "operational cycle" ("chaînes opératoires"), having as a final product the artifact with the same functionality. We called them in turn "technology in retardation", "degenerative technology", "archaic" having in the typology elements that stand in support of this idea, but as we have seen, the artifacts presented polishing or using stigmas, resisting in the settlement until leaving it. Following the diacritic scheme of the cutting system on cores and the peculiarities of retouching artifacts, we observe the evolution and the formation of the artifact profile in the middle neolithic after a setback during the habituation with the local petrographic product. Seeing the details of retouchings, we can summarize a conclusion regarding the profiling of the artifact, revealing peaceful preoccupations, related to farming rather than hunting or offensive practices, defensive systems from Cristian III ( Sibiu county), Turdaş (Hunedoara county) are an argument of the communities character within those premises.

The level Starčevo Cris from Miercurea Sibiului "Petris" (Sibiu county), has a special feature in the laminar cutting field, along with artifacts of Balkan provenance, products of south –danubian workshop, are presented blades produced by soft percussion and pressure from local raw materials and imported raw materials -obsidian.

Thrasher primitive machine (specific to Syria) was still functioning in the III millennium (Anderson, Chabot, 2004, p. 49), called "Tribulum" with flint components, could explain the functionality of large artifacts and using stigmas of another kind, both discovered in the sites belonging to the Starčevo-Cris culture (Miercurea Sibiului) and Turdaş and Tărtăria.

The category of distinct weapons is discrete represented, the spears or arrowheads being absent. We could fit a few chips with a close figure, but without the retouching and the typological profile of the class known as arrowheads.

Identifying the scheme of operational cutting facilitates the recognition of the group behavior by analyzing the diacritics scheme (Gareau 2000, 16). But there are circumstances beyond the

intended changes, gelifraction effects that can be spent before improving by retouching, and what happened after abandoning a location, exposure to climate effects (Gareau 2000, 16).

The fixing of the blades or of the inserts components regardless the functionality of the artifact is made with an adhesive, identified as bitumen. In Mergarh, in the aceramic Neolithic at 7500 BC, there were identified several cases of sickle blades, the bitumen continuing to be used here in the Chalcolithic, too (Lechevallier, 1980, p.260; Pl.1 Figures 1, 3 Neolithic, Chalcolithic Figure 2.7). Like those geometric pieces, they are fixed at the arrowhead with bitumen (Cârciumaru, 2000, p. 100). The sickle is documented in the Balkan area (fig.6) (Gurova, Bonsal, 2014,107) justifying insertions from a certain typological category which can also be found in early Neolithic resorts in Transylvania. The absence of sickle supports from horn does not eliminate the reaping hook from the classic tools used in the resort, the other attributes characterizing the insertions for complex tools.



*Fig. 6 The sickle from horn in Tell Karanovo Bulgaria ( after Gurova, Bonsal, 2014, 103, fig.8)*

Large domesticated animal bones, with cut marks left by blades, complete the picture of a society of farmers and livestock breeders, habit that require a long residence in the same area.

Profiled artifacts are used for a particular process, for us, the process of persoire but works just as well to incision, cutting, their functionality being that of the knife. Traces of cutting-incision on the bone shows this utility-functionality (Fig. 7).



Fi

g. 7 Cristian I (Sibiu County), detachment incisions tendon –muscle from the bone, namely bone section.

For Cristian I, silicified sandstones, bioclastite, jasper and chalcedonies will be on the first places, their share exceeding the category of import and we refer to "Balkan" flint -honey with white spots, or the obsidian, often underrepresented and in general the microlit. The technology of lithic industry of Starčevo Cris requires a preparing step by shelling nucleus, the cortical products being covered in 50% of the cortex, the next semicorticals have dorsal surface covered at a rate lower than 30%. The angle of percussion platform and the cutting surface is approximately 90° called "angle de chasse" is agreed upon by Inizan as the technique of "fitting" of impactor plan and obtaining some artifacts through one shot "single blow ", " Burin blow "(Inizan, p.129, 132).

The lamination products occur in the Middle Neolithic, in the final the quality products too, pressure as a processing method having poor results compared with the sedimentary material from the Balkan Platform, being a final product of the preliminary stages, of kernel configuration (Fig. 8)

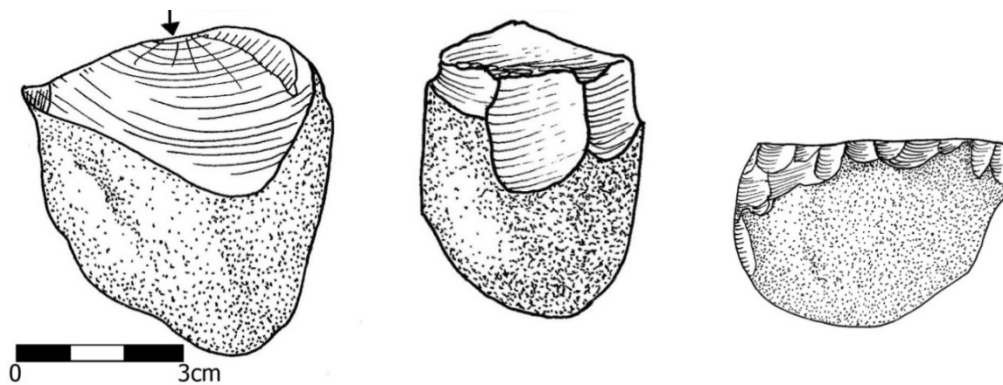


Fig. 8 Stages of configuration of a core at level Starcevo-Criş in Miercurea Sibiului Petriş (Sibiu county)

Semicortical blades present at both ends truncation but only apparently because they kept hammering the footprint of the support plan for cutting.

Erroneously equates between the Balkan flint with different names "Bflint", "Balkan flint" "flint from the Pre-Balkan Platform ", " blond flint", "honey", etc and flint of "Banat" ( Kozłowski Kozłowski 1982, 18; Kacszanowska Kozłowski, 2008, 12) Biagi, Starnini, 2010, 124; Biagi, Starnini 2011, 69), considered a marker of the Neolithic.

After a stagnation of the lamination techniques in early starcevan Neolithic, in the Middle Neolithic reappear macrolaminar products cutted through pressure over 5-6cm in size from local raw materials, jaspers, "Banat"flint, chalcedony and artifacts of silicified sandstone surprising by the quality and size of blades.

In the case of obsidian, in the Neolithic, it developed specifically in the resorts Tărtaria, Turdaş etc, after setting the platform of a core, husking is practiced, initially by the detachment of chips then systematically through debited chips or semicortical blades, the first being covered throughout the dorsal surface, from which are configured the grace.

The level Starčevo Cris from Miercurea Sibiului "Petris' ( Sibiu county), has a special feature in laminar cutting, meaning that along with artifacts of Balkan provenance, products of the workshop from south of the Danube, there are presented blades produced by soft percussion and pressure from local raw materials and from obsidian.

Rolling chips artifacts represent the major share within the industry for vincian carved lithic and in the early Neolithic, the chips products are associated with a large number of cores, these springing from the proximity sources of bioclastic (silicified sandstones and bioclastic limestones).

In the early Neolithic (Starcevo-Cris II-III) is signaled the emergence of "Banat" flint modest at first, then in vinciene levels, it occupies a major share of over 60% depending on the distance from the source.

Lithic industry from Miercurea Sibiu II (jud. Sibiu) is represented in 40% of Balkan flint, while retaining import artifacts characteristics, local workshops giving the produced chips from local raw materials.

In the case of Miercurea Sibiului "Petris' site, along with cores or carved concretions there are artifacts which sent to the abevillian technic, identified in the palaeolithic sites from Dârjovului Valley (Paunescu, 2001, 75).

In the two sites Miercurea Sibiului "Petris' and Miercurea Sibiu II, appear similar items with the same raw material, cutting technique and typology, leading to the same workshop. The resort Cristian I (Sibiu county), presents a lithic inventory of Balkan origin (35%), and as a novelty in the cutting technique occurs soft percussion with a chasse-lame (Cârciumaru 2000, 19), with an intermediate object and pressure, rarely macrolaminar products.

Much of the grator could find a possible explanation in the timber industry, by ethnographic analogy we can attribute the diversity of steep fronts and streamlined shapes, convex, concave of grator, functionality of chisels for working the wood.

Lithic material from Brănișca ( Hunedoara county) through massive and fronts profile refers to the functionality in the field of wood, coopers, chopping, small domestic inventory, etc. Compared with the "heads" of grator from Transylvanian in the early or middle Neolithic period, tools with function of grator have been clearly defined for a specific operation of processing, a linear outline, convex, concave or stepped, etc. (Fig. 9).

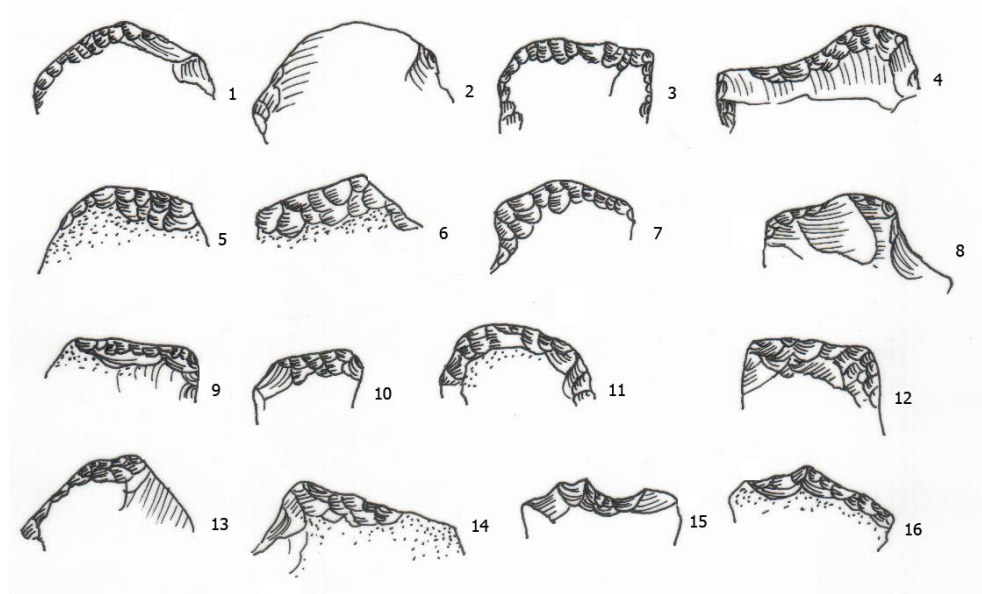


Fig. 9 Cristian I (Sibiu county) Profiles of the fronts of some grator (selective material)

It can be said that the starceviene sites investigated by us the typology of local raw materials is one of conjuncture, of the same material being documented "primitive" artifacts in early vinciene levels, too, although there is already outlined a specific typology of community.

Cris populations in Transylvania, bring from the south east, a rich lithic inventory, which denoted the emancipated character of the Neolithic society but also information reflecting the state of conflict in the area where these waves of population were initiated, probably due to population explosion or climatic factors, pollen analysis showing a dramatic decline of certain species of preceramic Balkan landscape (Gurov Bonsal, 2014 98, fig. 3). Carved lithic industry typology illustrates the economic nature of a settlement, revealing in some measure the state of society and the expansion of settlements.

We could draw a parallel between periods of drought and typological share of artifacts with offensive character, profiled on hunting, or more correctly on the subsistence economy. Bamforth presents climate oscillations and presence in sites of a certain type of artifact, for



example, between 8000-7000B, spear and arrow tips prevail and the lytic products have a survival status (Bamforth, 1990, 72). By analogy, in an arid climate environment, like Eastern or Anatolia, populations begin to move, the conflicts are more acute, and as a response to these new events, the great exodus to the northwest starts, and in the new areas occupied occur defensive systems aiming the man. In this new environment, we notice the absence or shortage of "hunting tools" (Bamforth, 1990, 73) to "gear hunting". Populations in Anatolia throughput to Balkan platform, then get in the Transylvanian stables where they sit beside rivers, where we will record, in the lithic industry, tools and less weapons, being mainly agricultural occupations.

Artifacts with the function of weapons, from transylvanian Neolithic are represented modest, being present only chips which we can hardly assign the function of spear or arrow tip, in compensation appear similar tools focused on distinct areas other than agriculture.

At this stage of our work, some observations are hypothetical, based on ethnographic analogies waiting new research.

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