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**Ukraine and the Balkans Before the Neolithic:
Culture Network or Convergent Development**

On the eve of the beginning of the Neolithic in the Mediterranean basin and on the Northern coast of the Black Sea, we observe several archaeological industries with trapezes, which were made on the blades obtained by pressing detachment. These industries were: Castelnovien in Italy and the South of France, Parakastelnovien in Montenegro and Serbia, the Pre-Pottery Neolithic of Greece, Romanian Tardenuazian, Mesolithic industries in the area of Iron Gates. Agakli industry in coastal areas of the Sea of Marmara, the Odishi culture in the Eastern Black Sea coast, Murzakkobien in Crimean Mountains, Grebeniki and Matviyiv Kurgan industries in the Northern Black Sea region.

District of distribution of trapezes made on pressed blades corresponds to areas of primary Neolithization of Southern and Eastern Europe. Moreover, all of these industries continue to exist on a ceramic stage of development, and are known in the Neolithic under the names Krish, Starčevo, the Bug-Dniester culture, the Tuba culture. The list can be continued.

Taking to consideration the importance of these flint industries for the Neolithization of Europe, we are obliged to find out the reasons why most of the early Neolithic cultures arise precisely on the basis of such industries. Theoretically, there might be several solutions to the problem.

1. The area of distribution of trapezes on the pressing blades is connected by common origin, and the appearance of such a region is associated with the migration of the population from the territory of primary Neolithization (the Near and Middle East).
2. The region is associated with the spread of convergent developing industries, whose participation in the neolithization of Europe is an accident.
3. The development of industries with trapezes on pressing blades is the result of a process that is larger in content than the actual distribution of a certain type of product.

The analysis of the chronology and process of development of certain parts of the giant area of distribution of this type of trapezes shows that some industries of this region

arose at different times under the influence of completely different cultural traditions of the Near and Middle East, and also of North Africa.

The Castelnovien industry arises at the beginning of the Atlantic and is associated with the diffusion of the Cape population of North-West Africa into the territory of Sicily and the Apennine peninsula. From other industries with trapezes on the pressing blades Castelnovien is distinguished by the tradition of using microburing techniques for the production of geometric microlithes. It is possible that the formation of the Prekūkuteni – Trypillya A industry took place under the influence of Castelnovien. In the Mediterranean Castelnovien was the forerunner of the cultural area of the Impresso Neolithic.

Paracastelnovien appeared much earlier. Judging by the dates of the Odmüt Cave, it could have happened in Boreal or even in Preboreal. The carriers of this industry very early mastered the technique of manual pressing of blades and used end cores with narrow surfaces for the production of such blades. Trapezes were made without the use of microburing technique.

In Boreal Paracastelnovien complexes appear on the banks of the Danube (Zemun loess). Contacts with Paracastelnovien carriers caused the appearance of trapezes on the pressing blades in the Sheila Kladovei (Klisuryen) culture complexes. The Starchevo culture is being formed on the base of Paracastelnovien.

Romanian Tardenoise occurs at the beginning of the Atlanticum. The addition of this cultural phenomenon was a complex process. The culture, it seems, was formed as a result of the interaction of the traditions of Paracastelnovien and the Sheila Kladovei culture. Monuments of the Romanian Tardenoise extend to the east to the Prut basin, where the sites Sakarovka and Bilicheni Noi are known. In the complexes of these sites there are cores with narrow surfaces and trapezes on pressing blades, like those in the Paracastelnovien complexes. With the culture of Sheila Kladovei there are associated finds of spikes with arched backs. The Krish culture is formed on the base of Romanian Tardenoise.

On the territory of Moldova, the area of spread of the Romanian Tardenoise is in contact with the area of distribution of the Grebeniki culture, which arose in this region not later than the second half of the 7th millennium BC. The early Grebeniki complexes are distinguished by the use of prismatic and cylindrical cores for pressing plates. At the ceramic stage of the development of culture, two-platform flat cores are distributed. Grebeniki culture is the forerunner of the Bug-Dniester culture of the Neolithic.

The Murzak-Koba culture of the Mountainous Crimea arises in the second half of Boreal. In fact, now the term "Murzak-Koba culture" is understood to mean at least two different stone industries, the typology of complexes of which is very different. One of these industries is associated with the manufacture of trapezes, while other complexes are also associated with the production of asymmetric triangles and crescents. It is possible that the trapeze "Murzak-Cuban culture" is the precursor of the Grebeniki and Matviyiv Kurgan cultures. Very likely that the origin of these two cultures on the eve of the beginning of the Neolithic period was associated with the migration of a part of the Crimean population. It is also possible that on the territory of Crimea the trapeze "Murzak-Cuban culture" became the forerunner of the Neolithic culture of Tash-Ayir.

The Matviyiv Kurgan culture occurs at the turn of the Boreal-Atlantic, is a copy of the Grebeniki culture. Only tradition prevents the unification of these phenomena into one. At the ceramic stage of development, the Matviyiv Kurgan culture becomes an integral part of the Dnipro-Donets cultural and historical region of Neolithic Ukraine.

As we see, the area of distribution of industries with trapezes before and during the beginning of the Neolithic period consists of three large regions: the Castelnovienian zone, the Paracastelnovienian zone and its derivatives, the zones of the Grebeniki tradition (Crimea, Northern Black Sea Coast, Azov Sea). These zones come from completely unrelated cultural traditions, arise at different times. Thus, the development of these three zones should be considered as a convergence process. At the same time, we can determine the cause of such a process. The reason is the spread of the pressing technique of blades production among the population associated with the production of geometric microlithes. It was the spread of the squeezing technique that was the feature, which connects Pre-Neolithic industries with trapezes with the Near and Middle East. Initial contacts in the area where Neolithic originated, led to the spread of innovative technologies. The first of these technologies was the pressing technique. In the future, established cultural ties will have allowed to assimilate and innovate more complex, including ceramic production, and elements of farming.

At the beginning of the Neolithic the zone of spreading of the pressing technique retained elements of unity, which led to some unification of the material culture. In particular, the microburing technique, which developed in the area of Castelnovien penetrates to the East. At the same time, the decay processes of the region determine the divergent development of individual parts of the region. In the Danube basin, the Krish and Starchevo ceramics are distributed, in the basin of the Dniester and the

Southern Bug - ceramics of the Pechersk and Samchintsy type, in the Dnieper and Seversky Donets basins – Dnepro-Donets ceramics.

Thus, on the eve of the Neolithic we see the spread of the first innovation package in the regions associated with the sea coasts or in regions close to the sea coasts. The development of the Neolithic is connected to the assimilation of the second innovation package and the distribution of its carriers in the valleys of large rivers.

Thus, the Neolithization is a complex process which is not connected with the instantaneous distribution of the "Neolithic package". A similar scenario could also take place, but it is connected not with the very beginning of the Neolithic period. In the case with the region of use of trapezes made on the pressing blades, we observe several stages.

1. Creation of an information space within the framework of which individual innovations are disseminated.
2. Expansion of such information space, creation of information continuity.
3. Establishment of broad ties with the regions associated with the primary Neolithization.
4. Resumption of the discreteness of the information space associated with the spread of the population along the major river arteries.