

RELATIVE AND ABSOLUTE CHRONOLOGY OF THE ROMANIAN NEOLITHIC

Cornelia Magda Mantu

The archaeological researches made in the last two decades have brought important contributions regarding the elucidation of the Romanian neolithic period, but unfortunately, a big number of archaeological excavations are not published at all, or they are only partly published. The most interesting archaeological evolution areas are not satisfactory researched, and the results of the archaeological excavations are still today insufficiently exploited. It is also necessary to specify that in the mentioned period, neolithic researches were made on a larger scale in Banat, Transylvania, Crişana and Dobrogea, in opposition with Wallachia (for which in the last three years a bigger interest seems to appear) and Moldavia. Most archaeological excavations were rescue type or small sondages, in this way missing the final, large conclusions offered by an exhaustive kind of research. Because of these reasons, unfortunately, there are still some cultures, cultural groups, or cultural aspects for which we have insufficient information.

In the last years new radiocarbon data for The Romanian neolithic have been obtained¹, but in comparison with the surrounding areas, they are still in a very limited number (table 1). 61 radiocarbon data for neolithic and the beginning of the eneolithic period are distributed like this:

- Starčevo-Criş (I-uncertain; II-1 date; III-5 date; III-IV-1 date) – 8 data;
- Cârcea III/Starčevo-Criş IV – 4 data;
- Vinča (A1-1 date; B2-1 date; C1-2 data) – 4 data;
- Banat culture (I-4 data; II-10 data) – 14 data;
- Dudeşti-Vinča group (B-4 data; C-4 data) – 8 data;
- Dudeşti culture (II-III-1 date) – 1 date;
- Linear pottery culture – 2 data;
- Hamangia culture (III-2 data) – 2 data;
- Boian culture (IV-13 data) – 13 data;
- Turdaş group – 3 data;
- Foeni group – 2 data;
- Petreşti culture (A – 3 data) – 3 data;

– Precucuteni culture (II-1 date; III-4 data) – 5 data.

The small number of radiocarbon data, the way they are territorially and culturally distributed, can be seen in fig. 1-3, together with the spreading area of different cultures. Some more samples, coming from some Boian, or Dudești cultures, or belonging to Icldod group, still being analyzed in laboratories in Germany. We believe that for the completion of all kind of information, archaeological, historical and radiocarbon ones too, in the future it is necessary to establish some clear directions and a strategy in the research field.

Until now, the published archaeological researches concerning the neolithic prove the existence of about 22 cultures, cultural complexes and cultural groups. Each of these evolves after archaeological evidences, in a different number of phases and stages, some times cultural aspects or local groups are also mentioned. Archaeologists have not agreed yet on a lot of problems connected with the periodisation of each culture, and some time even regarding the name.

In the archaeological literature we meet many references concerning the natural evolution of some settlements, or retardation of others, an imbrication between old and new elements, mixture aspects, or characteristics connected with peripheral evolution.

All these situations, here in short presented, try to suggest the very dynamic and in constant movement picture from the Romanian neolithic period. From the 22 mentioned cultures, cultural groups, cultural complexes, only 11 have radiocarbon data. In very few cases, with the exception of Boian or Banat cultures, we have more radiocarbon data for a neolithic culture. It would be very important if in the future, these radiocarbon data could be connected on one hand with very clear and rich stratified sites, and on the other hand, to have the possibility to illustrate the very fine evolution of a culture with all her phases, stages and local aspects. For the moment this thing is impossible to solve. The radiocarbon data that we have now just punctuate some moments from the cultural evolution of the neolithic period. The chronological tabel from these work (table 2) is made taking into account both relative chronological information from Romania and the surroundings countries, but also the radiocarbon data from the same area.

Even if there are only few archaeological discoveries for the mesolithic period, the radiocarbon data we have, show us that its evolution ended around 6200 CAL B.C.

The earliest neolithic sites are connected with two separated groups: Cârcea I and Gura Baciului I – Ocna Sibiului I (fig. 1), but their temporal report is still subject of discussions². They were attributed to Pre-Criș³, early Criș⁴ or proto-Starčevo phase⁵. Cârcea group was divided by M. Nica in 3 evolutive phases, each one with more stages⁶. For Cârcea IA M. Nica has discovered analogies in Gura Baciului I, Donja Branjevina, Kovacevo and Hacilar VI, and for

Cârcea IB in Proto-Sesklo from Thessaly and Macedonia, as in Nea Nicomedeia, Anzabegovo, Veluška Tumba and Porodin⁷. M. Nica equalize Cârcea IIA with Starčevo-Criș IIA, and Cârcea IIC-IIIB are corresponding to Tsangli phase of Dimini culture; in Cârcea IIIA-IIIB, taking into account the motives and colours used for decoration, it is possible to establish analogies with Arapi phase of Dimini⁸.

Gura Baciului IA presents after Gh. Lazarovici connections with the earliest archaeological horizons from Macedonia, of north-west Thessaly, with "Frühkeramik", "monochrome" and also with "Early Neolithic". It was also possible to establish some connections with the Vršak I, Subotica and Proto-Sesklo discoveries⁹.

I. Paul's opinion is that the horizon of Cârcea-Gura Baciului-Ocna Sibiului group has common origin in the "thessalo-east-mediterranean area", from where, by migration, the appearance of some cultural aspects was determined; for example Anzabegovo I, Vršnik (Macedonia) – Donja Brajevina (Vojvodina), Karanovo I (Bulgaria), Cârcea I. (Oltenia), Ocna Sibiului I and Gura Baciului I (Transylvania)¹⁰. Based on identically, or very similar pottery forms, made in red argile, bloodish, brown or yellowish with painting, I. Paul has established a contemporaneous report between Gura Baciului I-Ia-IIa – Ocna Sibiului Ia-Ib – Anzabegovo – Cârcea Ia-Ic¹¹.

For these first neolithic settlements we do not have radiocarbon data. Gh. Lazarovici and Z. Maxim have appreciated their evolution between 6400-6000 B.C.¹², but taking into account the archaeological information and the absolute chronological data from Bulgaria, Greece and Anatolia, I consider that the above mentioned discoveries are marking the beginning of this horizon around 6000/5900 B.C.¹³.

For the Starčevo-Criș culture, which was spread almost all over the Romanian territory (fig. 1), from the 8 radiocarbon data that we have (table 1, positions 1-8), the first two we have to exclude (fig. 4) and the one for Soroca II "Trifăuți" is lower (fig. 4, position 7). Based on the radiocarbon data from the Trestiana, Gura Baciului and Sacarova I, we believe that Starčevo-Criș III phase evolved between ca. 5600-5250 CAL B.C. The radiocarbon data from the Starčevo-Criș III-IV level from Copăcelu-Valea Râii is situated at a comparable chronological level.

Cârcea III/Starčevo-Criș IV horizon from Oltenia, which contains Vinča type elements¹⁴, seems to evolve in the interval of ca. 5500-5250 CAL B.C., superposing with the first one, just discussed here (table 1, positions 9-12).

At the end of Starčevo-Criș III (IIIB), in the Romanian territory the Vinča (A1) communities appear which had a life together with the first ones, as the archaeological discoveries from Gornea, Căunița de Sus, Liubcova, or those from Balomir¹⁵ and Pojejena "Nucet" prove¹⁶, but in distinct areas of evolution¹⁷.

R. Gläser has recently evaluated the evolution of Vinča A phase, basing on the stratified and typological arguments combined with radiocarbon information, between 5300-5200 CAL B.C.¹⁸. In accordance with this evolution is also the radiocarbon data for the Vinča A2 level from Satchinez, Banat province (table 1, position 13 and fig. 4).

From this moment, of Vinča first penetration in this area, the archaeological situation became more complicated, especially in Banat, area that is extremely dynamic till the beginning of eneolithic period. Here, archaeologists have mentioned different evolutions on each micro-geographic area, determined both by the way of penetration of the new-comings and their intensity¹⁹. Connected with Banat evolutions are also those from Oltenia (where from the south the Dudești communities also penetrated), Transylvania and less those from Crișana (in connection more with Transylvania and east Hungarian evolutions) and Wallachia (connected more in the beginning with Moldavia and Oltenia).

In Banat, Gh. Lazarovici considers that Vinča A2 wave has ascertained the dislocation of some Starčevo-Criș communities, and meanwhile a colonisation process, after which results the Starčevo-Criș IV synthesis phenomenon (south Banat), which will influence even Vinča B1 phase²⁰. After the same author, during Vinča B1, Banat, Transylvania and Serbia are evolving in an unit, which will be kept till the collision with oriental linear pottery culture, which held up at Vinča B1-B2 level²¹. The penetration of the groups belonging to that last culture ascertain that in the next periods the difference between Banat and Transylvania will be more deep²².

In Romania, the biggest number of Vinča settlements are ascribed to Vinča B2/C level, and the archaeologists even believe in a prolongation of Vinča B2 stage²³. In the newest research from Banat area, made by Fl. Drașovean we notice two stages in the penetration of Vinča C phenomenon here. In the first stage Fl. Drașovean realizes the coexistence of some Vinča B2 settlements with the newcomers Vinča C. At this level the penetration of Vinča C in Transylvania is also noticed. In the second stage, Fl. Drașovean is the adept of two local variants of evolution, one in the north, and the other one in the east, the last one having relations with old phase Herpály, old and classical Tisza phases, which ascertain the appearance of Gorsza group in the "Tisza area" (fig. 2), which we will also find in the north-west part of the Banat province (Lipova "Hodaie" settlement)²⁴. We do not intent to give more information here but S.A. Luca is proposing another sketch for the penetration of the Vinča a C in Banat, and from here in Transylvania, and is calling our attention on the Liubcova-Ornița settlement, which contains also the oldest Vinča C elements²⁵.

Tisza culture (fig. 3), appears between Timiș, Poiana Ruscăi Mountains, Meridional Crișana and Bačka and Vinkovici regions²⁶. The researches from Hodoni, Chișoda and Parța have brought to the identification of those elements

which determine the birth of this culture, that is a local substratum, alongside with Vinča elements, in Vinča B2/C transition stage. From a chronological point of view, in Gh. Lazarovici's opinion, the birth of this culture is at Vinča C and Banat culture II C level²⁷.

Foeni/Petrești A group (fig. 3), make their appearance in Banat at the end of the Vinča C phase, and ascertain the end of some Vinča C settlements (Pața II), or influence others (Chișoda Veche). The penetration of this group in Transylvania produces the cessation of the Turdaș evolution group and indirectly, by its moving to the central Transylvania has contributed to the Iclod group genesis²⁸.

We have some radiocarbon data for Banat, which punctuate the Vinča culture evolution, or of some other cultures or cultural groups related to it. A first radiocarbon data mentioned already, is connected with level Vinča A2 from Satchinez (table 1, position 13 and fig. 4), another one is referring to Vinča B2 level from Liubcova (table 1, position 28, fig. 4), and for the level Vinča C1 from Hodoni there are also two radiocarbon data (level I, position 40-41 and fig. 4). Other two new radiocarbon data for Foeni group, (post Vinča C1) coming from Foeni excavations, have kindly been given to us by Fl. Drașovean (table 1, position 45-46 and fig. 4).

For Banat culture, radiocarbon data from Pața (table 1, positions 12-27 and fig. 4) show the interval 5500-5250 CAL B.C. for the I-st phase (Vinča A3-B1), and for the II-nd one (Vinča B1-B2 and B2), those between 5300-4950 CAL B.C.

Radiocarbon data for Hodoni (Vinča C1) to which we have referred already, show the interval 4900-4720 CAL B.C. and they precede those for Foeni group as it is shown by the archaeological evidences, which are grouping in the interval between 4750-4600 CAL B.C. It is also important to remember that pit nr. 4 which gives us the two radiocarbon data from Hodoni contains also an Herpály import, from old phase²⁹.

The mentioned evolution periods are in good relations with those established for Vinča A, B and C, by W. Schier and R. Gläser, for a contemporary period³⁰. Vinča B evolution is ascribed to evolve between 5200-4715 CAL B.C.³¹.

We will try now to present the most important relative chronological information supplied by archaeological excavations. The first contacts between Starčevo-Criș III and those of Vinča A are demonstrated by the Gornea discoveries in Banat, where in the Vinča A1 and A2 levels polychrome pottery is found, Starčevo-Criș IIIB-IVA type³², or by the newest excavations from Liubcova Ornița, made by S.A. Luca, in which are noticed the earliest Vinča A1 elements are noticed³³.

In Banat culture, which includes Banat, south Crișana and east part of Tisza Plain (fig. 2), evolving in three stages, in the second phase we noticed sev-

eral local groups like Bucovăț, Szakalhát, Pischia, Chișoda, or other tissoïd groups³⁴. Imports from Banat culture are mentioned in Vinča A3 settlements in Gornea³⁵, or even in Vinča and Banica in ex Yugoslavia, together with imports from Bucovăț group³⁶.

In Gh. Lazarovici's opinions, Bucovăț group (which evolves on Starčevo-Criș basis, together with balcano-anatolian chacolitic elements)³⁷, has three main stages of development and the next chronological relations to Banat: Bucovăț I stage-Banat Ib; Bucovăț II (based on the lids forms and incisions decoration) – Banat IIb and IIc³⁸. Bucovăț IIb and IIIa imports are also mentioned in Zorlențu Mare, Chișoda Veche and Hodoni³⁹. In Bucovăț II and III stages are also present some Tisza I type painted pottery⁴⁰. Bucovăț II elements were discovered in Chitid, Turdaș and Nandru settlements, which might suggest a Bucovăț penetration in Turdaș area, or just a similar evolution on Vinča background⁴¹.

The very first linear pottery culture imports are noticed even in the first Vinča phase⁴². Alföld imports were discovered at Gornea, and Bükk ones in Zorlențu Mare and Parța⁴³. Gh. Lazarovici considers that they illustrate a cultural parallel Szatmár-Criș IVA-Vinča A2 and Bükk III horizon (from which we have the Banat discoveries) and another one, between Želīž group – linear pottery culture – Vinča B2⁴⁴. At Vinča B1 level also many relations are noticed with south Europe or Near East analysed by famous archaeologists⁴⁵. We are referring to Banat culture discoveries, from Parța (marble bitronconical dish; tube trickle pots; Spondylus and Tricnya bracelets)⁴⁶ and at those from Transylvania, from Tărtăria, Turdaș and Cluj.

For the Vinča C1 in Banat (already in the early eneolithic period), Fl. Drașovean remembers the Bucovăț IIb and IIIa imports from Zorlențu Mare, Hodoni or those belonging to early and classical Herpály culture from Hodoni⁴⁷. Taking into account this kind of imports, Fl. Drașovean has established a synchronization, Vinča C1-old and classical Tisza-early and classical Herpály-Bucovăț IIb⁴⁸. In his opinion Vinča C1 from Banat is also synchronic with Petrești A/Foeni group⁴⁹.

Tisza classical level from Hodoni is ascribed by Fl. Drașovean to Vinča C2 level, which explains the I phase Lengyel import⁵⁰.

The Tisza settlements in Banat (Cenad, Lipova-“Hodaie”, Chesint and Vinga) have as neighbours in the south-east the Foeni group communities and the last ones belonging to Bucovăț group, when in the south part of this province evolves Vinča C2⁵¹.

In Transylvania the intensive excavations from the last two decades have shown a similar evolution of the one in Banat. Starčevo-Criș communities evolve till IVA stage level, when the Vinča A2 ones are coming. In the next period, some Starčevo-Criș IVB settlements are in retardation, as those ones from Țaga, Zăuan II, Iclod “La Doroaie”⁵², but at the same time we assist to a strong development

of early Vinča communities, especially on Middle Mureş Valley⁵³.

The penetration of the Vinča A in Transylvania also determines here a very interesting archaeological evolution, which leads to the appearance of many archaeological entities. On the Starčevo-Criş, Vinča A, B1 and B2 basis, in the next lap of time appear the Cluj-Cheile Turzii-Lumea Nouă-Devent-Estâr complex, and later Turdaş (including Tăulaş too) and Iclod groups, all related between them. The origin of these archaeological entities, their areas (fig. 2-3) or their characteristics are not sufficiently clearly demonstrated or argued till now⁵⁴.

Cluj-Cheile Turzii-Lumea Nouă-Devent-Esztâr cultural complex includes Transylvanian Plain, and the north-east part of the Apuseni Mountains, evolving in more stages of development⁵⁵. His base is a Starčevo-Criş IV (A and B), beside which there are also Vinča (A1-A2) influences and others, south origin⁵⁶. The first stage Gh. Lazarovici places at a chronological level previous to Vinča B phase⁵⁷. The second stage, after the same author contains similar elements as in Paradimini and Karanovo III/IV meridional groups, but also some other, connected with Pişcolţ/Ciumeşti II/III and III group, or Bükk painted pottery. The third stage is marked by the Vinča C wave apparition and contains also some Turdaş group influences⁵⁸. In Gh. Lazarovici opinion, this cultural complex has also some regional aspects⁵⁹.

Turdaş group (fig. 2) has evolved especially in the middle Mureş area, in north a conventional border is in the area where Arieş is flowing into Mureş, in south Tara Haţegului and in the west is reaching Ilia locality, after S.A. Luca opinion⁶⁰. Defined as a culture⁶¹, cultural aspect⁶², or cultural group⁶³, this cultural group has detached itself at Vinča B2 level, evolving especially during Vinča C phase. Between the most important excavated settlements we have to mention Tărtăria and Orăştie⁶⁴. S.A. Luca considers that the archaeological excavations from Romos site contribute with new information regarding the birth of Turdaş group⁶⁵.

In Tărtăria it is a very rich Turdaş level, with interesting materials showing strong south connections: pendant-idols in anchor shape, which are related to others identically, discovered in Zorlenţu Mare, Vinča B2 level⁶⁶; alabaster idols and pottery fired tablets, with incisions, which have determined along the years a great number of analysis and discussions⁶⁷. These kind of pieces are showing south influences, but also a special local evolution, in Vinča culture, and we refer especially to pottery fired tablets. Recently Gh. Lazarovici showed that pendant-idols on anchor shape are present in Lumea Nouă settlement too⁶⁸, and N. Vlăsa plastic discoveries from Tărtăria have analogies with similar pieces from Zorlenţu Mare and Paţa (Banat culture, phase II)⁶⁹. Painted pottery from the IIB level in Tărtăria has also strong analogies with Lumea Nouă settlement discoveries⁷⁰.

In the newest researches from Turdaş settlement, belonging to Z.

Maxim-Kalmar and more recently to S.A. Luca, is mentioned a Vinča C level previous to those with Petrești materials⁷¹. Luca has led also the newest research in Orăștie “Dealul Pemilor” settlement, attributed to a late Turdaș horizon⁷². In S.A. Luca opinions, Orăștie levels are contemporary with intermediate level from Turdaș and even with the II-nd level from Tăulaș, all of these evolving in a Vinča C chronological horizon⁷³. The archaeological material coming from Orăștie show some Szakalhát, Tisza, Banat culture and Vinča C influences⁷⁴. S.A. Luca opinion is that the painted pottery, realised in a Tăulaș manner is also leading to the level mentioned above. There are also mentioned some Petrești and Gumelnița influences⁷⁵, which could be explained if they were connected to the earliest horizon of these cultures.

From Orăștie “Dealul Pemilor” there are 3 radiocarbon data, offered very kindly to us by S.A. Luca, Fl. Drașovean and E. Hertelendy (who made the samples analysis). The first 2 data (table 1, positions 42-43) are obtained by analysing human bones from the mud hut nr. 2 (belonging to two different human subjects). The higher age of one of them could be connected in S.A. Luca’s opinion with the reinterment process. The last radiocarbon date for Orăștie (table 1, position 44) was obtained from an animal bone analyses, coming from another archaeological complex. The 3 mentioned data show that the oldest level from the settlement, from where these data are coming, is situated between 4800-4500 CAL B.C. (fig. 4).

Connected with Turdaș is that one named Tăulaș, some times interpreted as well as a local aspect of evolution (met in Deva-“Tăulaș”), some times even ignored by archaeologists⁷⁶. Tăulaș group has a local neolithic origin, from lower Mureș area, together with other Vinča A3-B1 influences from Banat area. This group is detaching at a Vinča B1/B2 level and evolving in 2 stages (I-during Vinča B2 stage; II – during Vinča B2/C) and his evolution is ending at the penetration of the Vinča C communities⁷⁷. The biggest number of connections with other cultural, or cultures is present during the second stage of development. First of all, there are some common features regarding the incisions decoration between Turdaș and Tăulaș⁷⁸. Many similarities are also in the pots and anses forms, sometimes identical with those from Turdaș group. In the Tăulaș II level are also noticed Precucuteni and Bükk imports⁷⁹. H. Dumitrescu considered that there are strong connections with Lumea Nouă cultural complex and interpreted Lumea Nouă and Tăulaș groups as being part of a lonely culture⁸⁰. Gh. Lazarovici believes that at the same chronological level could be placed also the birth of Iclod group, and appreciated that Tăulaș II is contemporary with Iclod I/ II and II, and Iclod III is at the same level with post Tăulaș phenomena, with the last Turdaș retardations and with Petrești culture⁸¹. Recently, Gh. Lazarovici is reconsidering some elements connected with this group, and says that this group belongs to Vinča C level⁸², indicating as analogies the “Old Tisza” area

discoveries, Szakalhát Tisza, so could be attributed at a final Vinča B2 chronological horizon and especially to Vinča B2/C⁸³. Now he is indicating a cultural synchronism between Tăulaș-Turdaș-Szakalhát-Tisza and Tisza I-Iclod I-Petrești⁸⁴.

Iclod group involves Someșu Mic basin, Transylvanian Plain, Mezeș Mountains (fig. 3) and evolves in 3 evolution phases. This group includes after Gh. Lazarovici's opinion an incised pottery, Turdaș and Tisza type, and another one, painted⁸⁵. The already mentioned author considers that the appearance of this group is a normal evolution of Cluj-Cheile Turzii-Lumea Nouă cultural complex⁸⁶. Archaeological excavations from Cluj "Piața Libertății" (levels I and II) and "Biblioteca Academiei", are demonstrating the fact that the appearance of the very first Iclod I elements is posterior to Cluj-Cheile Turzii-Lumea Nouă cultural complex⁸⁷. In Cluj, "Bulevardul Lenin", the II-nd level, also belongs to late Turdaș, in which archaeologists gave discovered transition elements to Iclod I⁸⁸. In the last Iclod phase it is possible to observe a retardation phenomenon, determined by the diffusion process of some Petrești B elements in the Iclod group area, as in Zau de Câmpie, at the same time Iclod groups interfering the Suplacu de Barcău group area⁸⁹. At the same cultural level. Gh. Lazarovici is noticing also the penetration of some communities Oradea-Salca-Herpály in the Iclod group territory. At the same cultural level in Iclod group area some influences are observed coming from Lengyel culture. Iclod group is also containing some local evolution aspects⁹⁰.

In Crișana, the oldest neolithic horizon is Starčevo-Criș IIIB. Later, in the north-west part of Crișana and in a Maramureș area we can notice the Pișcolț/Ciumești group, born from the collision base between older mesolithic elements, Starčevo-Criș IIIB-IVA, Alföld and painted pottery group⁹¹. Gh. Lazarovici opinion is this group is evolving during 3 stages⁹². In the first one, lithic industry has strong analogies with Vinča A3 horizon from Fratelia, Banat I culture and Dudeștii Vechi-Fiera Cleanov⁹³. In the second one, pots form and decoration have analogies with Cluj-Cheile Turzii – Lumea Nouă cultural complex, and in the last one, there are similarities with pottery decoration from Bükk culture and the evaluated phases from Cluj-Cheile Turzii-Lumea Nouă⁹⁴.

Other cultural groups with painted pottery in Crișana were established by D. Ignat researchers. Their origin is connected with local Starčevo-Criș evolution, whom also some influences and different elements from the surrounding areas must be mentioned⁹⁵.

The first group, Sântandrei-Oradea-Săcuieni-Vărzari, is situated in the north-west and west part of Crișana province (fig. 2) and from a chronological point of view it is at the same cultural level as Pișcolț/Ciumești group, Vărzari material making the connection between them. In the same time, Sântandrei-Oradea-Săcuieni-Vărzari represents the connection link with the Transylvanian groups⁹⁶.

The second group, identified by D. Ignat is Defileul Crișului Repede-Peștiș-Devent, a little bit later as the first one, which involves the main area of Crișana (fig. 2) and makes the link with Cluj-Cheile Turzii-Lumea Nouă.

In the north-west part of Crișana, after this group appear those named Oradea-Salca-Herpály (fig. 3). In the first level from Oradea Salca, D. Ignat has identified older elements, Tisza I Type⁹⁷. Besides some special characteristics, D. Ignat is mentioning also some Herpály type elements and analogies with Turdaș group. In D. Ignat's opinion, this cultural complex is related to Cluj-Cheile Turzii-Lumea Nouă, too. From a chronological point of view, Oradea-Salca-Herpály is corresponding with the first stage of Suplacu de Barcău group.

Suplacu de Barcău group, involving the east part of Crișana province (fig. 3) was born on a local base, with some others Lumea Nouă, Vărzari-Devent and Pișcolț/Ciumești type elements. Its evolution lasted 3 stages and its end is connected by D. Ignat with the Petrești culture movement, which determined the Tiszapolgár appearance of⁹⁸. In the first phase D. Ignat is mentioning some elements connected with Cluj-Cheile Turzii-Lumea Nouă-Devent cultural complex, Pișcolț/Ciumești group and late Turdaș (Iclod I), at the beginning of the second phase Szakalhát and Tisza imports, the last ones being very frequent during the second phase of this cultural group⁹⁹. In the last phase D. Ignat is mentioning some analogies in the form and decoration of the pots with the group Gilău/Pișcolț, Herpály, late I Tisza phase, Petrești A, AB and "Buckelkeramik"¹⁰⁰. Suplacu de Barcău cultural group is dated by D. Ignat between 4000-3700 b.c.¹⁰¹. In the south part of Crișana there are also some Tisza settlements, which represent the last neolithic manifestations in the area. None of these cultural groups in Crișana have radiocarbon data.

A similar complex cultural evolution as those already mentioned took place in Oltenia. Here, in the north part there is a Cârcea group (evolving from PreStarčevo/Cârcea I till Dudești-Vinča C/Cârcea IV), (fig. 1), but also independent Starčevo-Criș settlements or Vinča ones (at east of Jiu river, Rast). Over this evolution, from south Danube, the Dudești communities (Usoe and Samovodene type) penetrated, which determined the appearance of Dudești culture in the area and also a mixture aspect, Dudești-Vinča¹⁰².

Dudești culture includes the south east of Oltenia and south Wallachia provinces (fig. 2) being periodisated in 3 phases in Wallachia and 4 in Oltenia¹⁰³. In Dudești II levels at Fundeni, Ghinoiaica and Sudiți there are linear pottery report between the two cultures¹⁰⁴. Reported to Vinča culture, this kind of relations are situated to the B2 stage¹⁰⁵.

Dudești-Vinča cultural aspects, have included a small area, between middle Jiu and Olt rivers (fig. 2) and M. Nica has established for it 5 phases, synchronized with Vinča A3, B1, B2, C1 and C2. Linear pottery culture influences, Szatmár, Szakalhát type and afterwards Tisza ones, were discovered in all

phases¹⁰⁶. M. Nica is also noticing some Kalojanovec influences in the beginning phases of this cultural aspect, and in the last ones (III-IV), some more belonging to Vinča and Vădastra¹⁰⁷. Dudești IV and Vădastra I materials were found in a Dudești-Vinča II horizon fact that has determined M. Nica to propose a synchronism between all of them¹⁰⁸.

M. Nica is also mentioning a Dudești-Vădrasta cultural aspect, with 5 phases of evolution, synchronic with Vinča A3, B1-B2-C and Karanovo II-III¹⁰⁹.

Vădastra culture was born on "the oltenian and west wallachian aspect" of the Dudești culture including south-east Oltenia, south-west Wallachia and a small area of south Danube, in Bulgaria (fig. 3), evolved during more phases¹¹⁰. About the relation with some other contemporary culture we have the following information: in Cernica settlement, the oldest Vădastra level is superposed by another one with early Boian materials¹¹¹; typical Bolintineanu pottery is also mentioned in the lower level from Vădastra (Vădastra I) and in Slatina or Hotărâni settlements, on which base a synchronism between Vădastra I and Boian I is ascertained, Bolintineanu phase¹¹². In Vădastra settlement there are linear pottery culture material "with musical notes", which show connections between the two cultures and even a synchronism¹¹³. The archaeological material from Ipotești and Slatina settlements, belonging to a final Vădastra phase and those from Tangâru and Petru Rareș, belonging to Boian IV, also show a parallel evolution¹¹⁴. Fărcașele discoveries show that the end of Vădastra culture is connected with the penetration of Boian IV phase in the area¹¹⁵. Abundant plastic representations, as well as the anthropomorphic ones show analogies with anatolian area, in an older period, before Troia I-II¹¹⁶.

Radiocarbon data for Oltenia, illustrating this sketch evolution are more numerous as those for Transylvania, or Wallachia.

Cârcea III/Starčevo-Criș IV level with Vinča elements¹¹⁷ has more radiocarbon data (table 1, position 9-12), and these ones, together with those for Valea Răii-Copăcelu (table 1, position 8) are in a very good temporary relation grouping in the interval 5500-5250 CAL B.C. (overlapping the Starčevo-Criș IIIB interval) as we have shown before.

The Dudești-Vinča B level from Cârcea-Viaduct (table 1, positions 29-32) is situated between 5500-5000 CAL B.C. (fig. 4), and the Dudești Vinča C level from the same settlement (table 1, positions 33-36), between 4940-4700 CAL B.C. (fig. 4). Only one date, position 33, table 1, seems to get out of our discussion here. Radiocarbon data for Dudești-Vinča B and Dudești-Vinča C seem to be at the same level as those obtained for the Vinča settlement¹¹⁸, and they have an excellent agreement with those obtained for Banat culture phase I or II, or for level Vinča C1 from Hodoni.

For the Dudești II-III level from Fărcașu de Sus the radiocarbon data that we have (table 1, position 37) situates this in the interval between 5200-4900

CAL B.C. (fig. 4), being in a good relation with those obtained for the linear pottery culture from Moldavia.

For Vădastra there are no radiocarbon data.

In Moldavia, the oldest neolithic level is in connection with Starčevo-Criș III. Starčevo-Criș evolution in this province is different regarded by archaeologists, some of them believing that this culture is evolving here in 4 stages and others in 3 stages¹¹⁹. Some archaeologists have delimited two regional variants of this culture, a south one, which has for a longer period of time connections with the origin regions, and a north one, in which peripherisation process is more evident, determined also by the vicinity with linear pottery culture and the Bug-Dniester one¹²⁰. The archaeological excavations from the latest settlements from Grumăzești and Poieniști have brought into discussion some Vinča A2/B1 and linear pottery culture elements¹²¹. Some imports from linear pottery culture, Proto-Vinča and Bug-Dniester culture (phase II) influences are also mentioned in the late Starčevo-Criș settlement from Sacarovca. Linear pottery culture imports are present also in Soroca II, and influences from a later variant of Bugo-Dniester culture are in Seliște settlement, as well in Bessarabia¹²². The Starčevo-Criș culture influenced the Bug-Dniester culture evolution, fact that it is possible to observe especially in its III-rd phase, when “flat bases and decorative motifs as in the mentioned culture” are remembered¹²³. A necessary precision was made by S. Marinescu-Bîlcu, showing that Bugo-Dniester culture, or maybe groups of Dnieper-Donetz neolithic type have evolved on the east bank of Dniester, influencing the Starčevo-Criș and even linear pottery culture communities from this area¹²⁴. S. Marinescu-Bîlcu has also remembered that based on imports discoveries it was possible to establish a synchronism between Starčevo-Criș III-IV and Bugo-Dniester II phase, and then, between the III-rd and the IV-th phases of the last mentioned culture and linear pottery culture¹²⁵.

From Moldavia, the Starčevo-Criș culture communities spread to Wallachia¹²⁶.

In the same time with the evolution of the last Starčevo-Criș culture communities in Moldavia from south Poland and west Ukraine are penetrating in Moldavia linear pottery culture, last phase, with so called “musical notes”, which cover almost all the province, excepting the south-east part of it¹²⁷. There are few archaeological excavations and some archaeologists have divided the evolution of this culture in Moldavia in 2 or 3 stages¹²⁸. S. Marinescu-Bîlcu is synchronising the second stage of the linear pottery culture in Moldavia with Șarka and Żeliżowce (Traian and other settlements) but also with pottery decorated with stings and Vinča Turdaș¹²⁹. After S. Marinescu-Bîlcu, the third stage, illustrated by the Târpești and Nezvisko discoveries, demonstrates the direct impact with Boian culture, Giulești phase. the end of the linear pottery culture in

Moldavia is connected with Boian, Giulești phase, stage Greaca, when the Precucuteni genesis starts.

In Bessarabia such kind of linear pottery culture communities will be discovered till Dniester. Based on pottery characteristics, tools industry, O. Larina has delimited two groups, Dănceni and respectively Gura Camencii and an intermediate type of settlements (Lazovsc and some complexes in Dănceni I settlement)¹³⁰. Taking into account J. Pavuk studies in the field, O. Larina places the Dănceni group and intermediate group at the end of middle period and the beginning of late period of the linear pottery culture from the east areal, and the last group, Gura Camencii, at the level of "the final stage of development of linear pottery culture from Central Europe, in her classical form"¹³¹. Largely analysing the situation of the linear pottery culture settlements, between Prut and Nister, O. Larina believes that the existence of the intermediate group of settlements is connected with the penetration of some communities from the epicentrum area here, but it could also be connected with a local evolution, too¹³². In Gura Camencii group the same author mentions more Vinča-Turdaș influences, and others, Boian-Giulești, Aldeni Stage and Precucuteni I, too¹³³. Many decoration elements from Boian/Bolintineanu and Giulești phases are also common to Gura Camencii group, showing the collision of different elements of many cultures, which will add to the born of Precucuteni culture¹³⁴. O. Larina is also considering that it was a parallel evolution of the last linear pottery culture communities and the just borned Precucuteni I, fact that is also suggested by some common features of the pottery¹³⁵. In my opinion, the long life of the linear pottery culture communities here could also explain absence of the Precucuteni I settlements between Prut and Dniester.

Two radiocarbon data for linear pottery culture are coming from the Târpești settlement (table 1, position 38-39) and they are placed in the interval 5300-4950 CAL B.C. (fig. 4).

From Moldavia, the linear pottery culture communities penetrate the south-east of Transylvania and the north-east of Wallachia¹³⁶.

The Precucuteni culture which follows in Moldavia, marking here the eneolithic period, is represented by very few radiocarbon data, coming from different settlements (table 1, positions 62-69). A single radiocarbon data is representing the second phase (table 1, position 62), while the other data are connected with the last phase of evolution. I do not intend to present here a larger analyses of the Precucuteni data, because very soon this could be read in the volume *Cucuteni culture. Evolution, chronology, connections* under print in Piatra Neamț. In my opinion, Precucuteni I and II have an evolution between 5050-4750 CAL B.C.

In Wallachia, for the neolithic communities could be mentioned late Starčevo-Criș (III and IV phases, in connection more with Moldavia, but maybe

also with the Cârcea group from Oltenia)¹³⁷, which will not cover the south-east part of the province too, or latest, linear pottery culture one, installed more in the north-east of this province¹³⁸; there are not radiocarbon data. E. Comşa consider that the connection between late Starčevo-Criş settlements from Moldavia and Wallachia are also sustained by the resemblances in the pots forms¹³⁹.

From the south the Dudeşti culture penetrated, which involved Oltenia too (fig. 2), and during the Fundeni phase spread away till Siret river; in the same time from north part in Wallachia were noticed the first linear pottery communities which involved the north-east part of this province¹⁴⁰. In the fire phase, Malul Roşu, there are still signalated late Starčevo-Criş materials, which shows a chronological parallel between these ones¹⁴¹. In the Dudeşti settlement, the presence of linear pottery culture imports is noticed (which were found also and in the Cernica phase)¹⁴², suggesting a chronological relation between Dudeşti culture and the linear pottery one¹⁴³; the stratigraphy from Sudiţi (the only linear pottery culture settlement excavated), show that Boian/Bolintineanu and Boian/Vădasta phases are subsequent to linear level¹⁴⁴. In the archaeological literature is even mentioned a synthesis phenomenon, Sudiţi (Dudeşti and linear pottery culture) with role in the genesis of the I-st phase of Boian culture, Bolintineanu, which is indicated to have started at the end of last Dudeşti culture phase, Fundeni¹⁴⁵. Sudiţi cultural aspect has a limited area, in the north-east of Wallachia, close to Buzău. In this time, Dudeşti culture was evolving in Cernica phase in the other part of Wallachia¹⁴⁶. E. Comşa considers that Dudeşti culture might be contemporary with "one of Turdaş phase culture, or with Ciumeşti culture"¹⁴⁷.

For the south-east of Wallachia, the first neolithic culture is represented by the Dudeşti one, how it is showed by the last researchers in the area made by M. Neagu and S. Pandrea.

Boian culture (fig. 3), developed on the basis of the contact between linear pottery culture and the Dudeşti one, involves at the beginning all Wallachia, later, in the second stage, reaching the south-east of Transylvania, between the Carpatians Mountains and the Siret river, Moldavia, in the third phase reaching Rodopi Mountains and in the last phase we will discover it till the west-pontic shore of Black Sea. E. Comşa made the periodisation of this culture in four main phases, with more stages¹⁴⁸. Some older discoveries from Boian areas are important for the relative chronology of this culture. In Glina it was observed the previously Boian culture oposit to Gumelniţa¹⁴⁹. The archaeological excavations from Let-Varhegy have elucidated the stratigraphic report between Criş, Boian and Ariuşd¹⁵⁰. In Bessarabia, in Floreşti it was discovered a linear pottery culture horizon (with "musical notes"), previous to Boian culture level¹⁵¹. Other older discoveries are important for understanding the passage between the phases. In Aldeni ("Gurguiul Balaurului"), the Bolintineanu level is covered by a Giuleşti

one¹⁵². In Tangâru and Glina, the level with Giulești materials was superposed by the Vidra one, and on the remaining part of this phase, in Tangâru, Vidra and Glina settlements, the materials belonging to Petru Rareș phase were noticed¹⁵³.

Based on the stratigraphical reports and imports, were established contemporary relations between Vâdastra-Hamangia and Boian, it is one synchronism between Vâdastra I-II and Boian I-II, and another one between Hamangia II-Boian I-II and Hamangia III-Boian culture, Vidra and Boian transition phase to Gumelnița¹⁵⁴. More archaeologists agree that all the three cultures had a parallel evolution¹⁵⁵. These relations are also sustained by other discoveries: a closed Giulești cultural complex was mentioned in Hârșova, in a Hamangia level, and isolated Giulești pottery was found in Cernavoda ("Columbia A" and "B")¹⁵⁶. E. Comșa is also paying attention to some identical elements in the form and decoration of the pots in Boian/Giulești and Hamangia III¹⁵⁷. Boian III/Vidra phase material also appears in Hamangia settlements at Capidava and Cernavoda¹⁵⁸ and in the settlements belonging to Boian IV at Cernavodă¹⁵⁹. Boian-Vâdastra cultural relations are sustained by the Vâdastra medium discoveries. So, beside the mentioned discoveries, which demonstrate the existence of Vâdastra I-Boian I report, we have to mention some other discoveries. In some Vâdastra II complexes there are sporadically Boian II/Giulești imports, which together with the analogies suggested by the incised decoration of both cultures, denote a contemporary report between them too¹⁶⁰. E. Comșa considers that Vâdastra stops its evolution with the occasion of the Boian IV penetration in the area, which was very dynamic¹⁶¹.

During Giulești phase, Boian tribes also reached Transylvania and Moldavia, where they met the linear pottery culture. So, it is a contemporaneity report between Boian II and linear pottery culture, documented also by the Hârman, Brașov discoveries from the Bolintineanu phase level¹⁶².

The archaeological researchers made in the last decade from the south-east of Wallachia, due to M. Neagu and S. Pandrea show that it is necessary to reinterpret the older archaeological materials from the area. Both mentioned archaeologists believe that it is possible to prove a Bolintineanu culture, independent from the Boian one. The Bolintineanu area of spreading in the south Danube, or in the north part of the river, the archaeological material it self indicate a separate culture, from south origin, anatolian, which it is showed by the discoveries from Yarimbargas and Toptete¹⁶³. The mentioned archaeologists believe that Bolintineanu culture evoluated along more stages. In this sense are mentioned the linear pottery culture imports from Hârman, Sudiți, Piscul Crăsani or Coroteni¹⁶⁴. M. Neagu considers that at Hamangia II phase/Golovița, Hamangia tribes penetrated the north part of the Danube, which is also suggested by the imports founded in Cernica and Balta Borcei, at Grădiștea Coslogeni¹⁶⁵. Vinča B1-B2 influences are signalated by M. Neagu at Coroteni and Piscul Crăsani,

together with the linear pottery culture mentioned imports, demonstrating so a taking over from Dudești culture medium, or even a direct contact between Bolintineanu and Vinča B2¹⁶⁶. In Bolintineanu areal are noticed some Vădastra I influences, in the west part of the areal (Argeș and Vedea rivers), but also on the Gălățui lake bank, in "Movila Berzei" point¹⁶⁷. Relations between the two cultures are also sustained by the Bolintineanu materials discovered in Vădastra area, as it was noticed by M. Nica, in Slatina, Piatra Olt, Crușoru, Vădastra-"Măgura Fetelor"¹⁶⁸. The presence of this Bolintineanu materials in Oltenia, determined M. Neagu to consider that it is possible for this communities to have penetrated in Wallachia from South, through Oltenia, as the spreading area of this communities in the south area of the Danube suggests¹⁶⁹.

We have radiocarbon data only for Boian IV phase (stage Spanțov), (table 1, positions 49-61), from Căscioarele and Radovanu settlements, which indicate an evolution of this phase between ca. 5000/4900-4400 CAL B.C. (fig. 4).

Dobrudja neolithic starts with Hamangia culture (fig. 2), whose evolution was analysed by D. Berciu and later by P. Hașotti¹⁷⁰. P. Hașotti has brought important contributions regarding the chronology and the intern periodisation of this culture: in his opinion Hamangia evolved in three phases with more stages¹⁷¹. First of all, P. Hașotti's researchers bring new evidences and explanations about the oldest phase of this culture (Ia – Medgidia – "Cocoasă"; Ib – Durankulak), which he is placing in the big cultural complex of the middle neolithic from balcano-carpethian area, beside Dudești, Vinča A., Karanovo III, Veselinovo and Usec¹⁷².

Taking into consideration the Medgidia "Cocoasă" and Durankulak discoveries, P. Hașoti considers that the first Hamangia stage is previous to Bolintineanu phase of the Boian culture, to whose genesis it was part of. In this sense plead the plastic representations from Cernica material necropole, with strong Hamangia influences¹⁷³. Pottery analyses from medgidia "Cocoasă" show analogies in Dudești culture, phase I and II (Malul Roșiu and Fundeni), Vinča A and Karanovo III¹⁷⁴. First Hamangia phase has strong connections with Veselinovo, Yasa Tepe, Rachmani, Orchomenos, Eutresis and other settlements from Anatolia and Greece¹⁷⁵. D. Berciu has also pleaded for a contact between Hamangia Ic and linear pottery culture, contact that is possible to observe after the same author and during the second phase of Hamangia culture; linear pottery influences are also present in Hamangia last phase (being maybe in connection with an older background)¹⁷⁶. Hamangia I was maybe parallel with Vinča A, if we have in mind the fact that S. Marinescu – Bîlcu is parallelising linear pottery culture with Vinča B1-B2, culture that is at Hamangia III level¹⁷⁷.

The second phase of Hamangia culture, Golovița, could be synchronized with Boian/Bolintineanu (Hamangia II/Golovița pottery discovered in asociaation with that from Boian/Bolintineanu in Grădiștea Coslogeni, Călărași) and Giulești (Hamangia II/Golovița pottery appear in Bogata-Călărași, and Boian II/Giulești

pottery was discovered in Cernavodă settlements from Columbia A, Columbia B and Techirghiol), and for which reason it was believed that it lasted longer¹⁷⁸. If Hamangia II synchronises with Boian/Giulești, the beginning of Hamangia III could be situated after the end of linear pottery culture¹⁷⁹. The archaeological excavations from Hârșova have demonstrated the existence of a Hamangia III level (Ceamurlia de Jos phase), under a Boian transition phase level and over a Boian/Vidra level. So, Hamangia III is between the two Boian culture phases and it could be admitted a synchronism between Hamangia III/Ceamurlia de Jos and Boian/Vidra and respectively Hamangia III/Boian IV¹⁸⁰. To support the Hamangia III-Boian/Vidra synchronism, the Târgșor "Urs" discoveries, where, in the Hamangia III materials also appear a fragment with analogies in Vidra phase's of Boian culture¹⁸¹.

After P. Hașotti an eventually synchronism with transition phase Boian/Gumelnița could also be supported by the discovered pottery in the Dobrudja caves, and by the radiocarbon data¹⁸². Synchronisms between Ceamurlia de Jos and both Boian culture phases could also be confirmed by stratigraphical point of view in Cernavodă, in "Columbia C" and "Dealul Sofia" settlements and in Spanțov, level III¹⁸³. After the same author, in Ceamurlia de Jos phase are also placing the influences over Precucuteni II phase¹⁸⁴. P. Hașotti is proposing a synchronism between Precucuteni III and Hamangia IIb and IIc, taking into account and the discoveries from the necropolis of the third Hamangia phase, where there are a lot of pots with analogies in Precucuteni III¹⁸⁵. The author considers also that the fine pottery category showed other influences from Boian IV, Sava and Marica, together with the mentioned Precucuteni ones¹⁸⁶. The end of Hamangia culture was a little bit earlier as that of the Boian IV phase, and P. Hașotti even supposed that for a period of time they coexisted in Dobrudja¹⁸⁷.

There are 2 radiocarbon data for Hamangia III (table 1, positions 47-48), one of the data is coming from Baia Hamangia settlement, and both of them placed in the 4890-4720 CAL B.C. interval (fig. 4).

From the presented data, we could conclude that the neolithic period starts in Romania around 6000/5900 CAL B.C. Most part of the archaeologists believe that its evolution ends at approximately Vinča C level (opinion which I agree with too), around 4800/4700 CAL B.C. At this chronological level are placed and the radiocarbon data for Foeni group (4750-4600 CAL B.C.), beginning of the Petrești culture (A phase between 4800-4650 CAL B.C.), end of Precucuteni II (4750-CAL B.C.), Boian IV phase (5000/4900-4400 CAL B.C.) and Hamangia III (4890-4720 CAL B.C.).

During the neolithic evolution we have to mention again that the most active areas are Banat, Oltenia, Transylvania, and less Wallachia, while Moldavia and Dobrudja have a more slow, conservative evolution.

Even the radiocarbon data presented for the neolithic here are obtained

from the analyses of different materials, in more laboratories, they are viable with some exceptions (table 1, position 2, 11, 33 and fig. 4). Comparing these data with those obtained by archaeological excavations (stratigraphical evidences and typological analyse of the material) we could conclude that they are in good report, fact that is possible to follow also in the table 2.

The very short relative and absolute chronology picture from this work represents just a necessary stage, which could suffer some changes in the next period, due to the new archaeological excavations, but also to the reinterpretation of old material, or radiocarbon data.

Abbreviations

- Atlas – Atlas du néolithique européen*, vol. I, L'Europe orientale, ed. J. Kozłowski and P.L. Van Berg, ERAUL 45, Liège 1993
- Ceramica neolitică – Ceramica neolitică. Meșteșug, artă, tradiție. Trei milenii de spiritualitate presitorică. Catalog expoziție*, Piatra Neamț 1995, ed. D. Popovici, Z. Maxim
- Cultura Vinča în România – Cultura Vinča în România* (Origini, evoluție, legături, sinteze), Timișoara, 1991, ed. Gh. Lazarovici, Fl. Drașovean
- La civilisation de Cucuteni – La civilisation de Cucuteni en contexte européen. Session scientifique Iași-Piatra Neamț*, Iași, 1987, BAI I, ed. M. Petrescu-Dâmbovița, V. Chirica, D. Monah, N. Ursulescu

NOTE

¹C.M. Mantu, *Câteva considerații privind cronologia absolută a neo-eneoliticului din România*, în *SCIIVa*, 46, 1995, 3-4, p. 213-235; Fl. Drașovean, *Cultura Vinča târzie (faza C) în Banat*, Timișoara, 1996; C. M. Mantu, *Cronologia absolută a culturilor neolitice din România și relațiile cu lumea egeo-anatoliană*, în *Cercetări istorice*, SN, XVII/1, Iași, 1998, 83-100; idem, *The absolute chronology of the Romanian Neolithic and Aeneolithic/Chalcolithic periods. The stage of the research*, in *14 C and Archaeology*, Lyon 1998, under print; Gh. Lazarovici, Z. Maxim, C. M. Mantu, E. Gilot, *Nouvelles dates radiocarbon pour le néolithique roumain*, manuscript.

²I. Paul, *Unele probleme ale neoliticului timpuriu din zona carpato-dunăreană*, în *SCIIVa*, 40, 1989, 1, p. 5. Idem, *Vorgeschichtliche untersuchungen in Siebenbürgen*, Alba Iulia 1995, p. 68, table 1; Gh. Lazarovici, Z. Maxim, *Ceramica pictată din epoca neolitică pe teritoriul României. Transilvania*, în *Ceramica neolitică*, 1995, p. 5.

³I. Paul, *op. cit.*, p. 3-28.

⁴Gh. Lazarovici, *Les Carpates meridionales et la Transylvanie*, în *Atlas*, p. 243-284.

⁵M. Nica, *Ceramica pictată din epoca neolitică pe teritoriul României, Oltenia*, în *Ceramica neolitică*, 1995, p. 19-24.

⁶Ibidem, p. 19-22.

⁷Ibidem.

⁸Ibidem.

⁹Gh. Lazarovici, Z. Maxim, *op. cit.*

¹⁰I. Paul, *Unele probleme ale neoliticului timpuriu*, p. 20-24.

¹¹Ibidem, p. 20.

¹²Gh. Lazarovici, Z. Maxim, *op. cit.*

¹³C. M. Mantu, *Cronologia absolută a culturilor neolitice...*, p. 88-89 and the notes 21-30.

¹⁴M. Nica, *op. cit.*

¹⁵Gh. Lazarovici, *Tipologia și cronologia culturii Vinča în Banat*, în *Banatica* 2, 1973, p. 35; S.A. Luca, *Stratigraphie et chronologie. Le plus ancien rapport stratigraphique d'entre les cultures Starčevo-Criș et Vinča. Correlation entre le niveau V-e et IV-e de Liubcova Ornița*, în *Banatica* 11, 1991, p. 152-154.

¹⁶S.A. Luca, *Așezarea aparținând culturii Starčevo-Criș de la Pojejena "Nucet" (jud. Caraș-Severin). Campania 1986*, în *Banatica* 13, 1995, p. 9.

¹⁷Idem, *Liubcova-Ornița. Monografie arheologică*, Târgoviște, 1998, p. 99.

¹⁸R. Gläser, *Zur absoluten Datierungen der Vinča kultur anhand von 14 C Daten*, în *The Vinča culture*, p. 177.

¹⁹S.A. Luca, *Așezarea aparținând culturii Starčevo-Criș de la Pojejena "Nucet"*, p. 181.

²⁰Gh. Lazarovici, *Neoliticul Banatului*, Cluj-Napoca, 1979, p. 181; S.A. Luca, *Stratigrafie și cronologie. Cel mai timpuriu raport stratigrafic dintre culturile Starčevo-Criș și Vinča. Corelații dintre nivelurile V și IV de la Liubcova-Ornița*, în *Sargeția* 22-24, 1988-1991, p. 6, presents the results from the archaeological excavations in Liubcova-Ornița, through which he has discovered the earliest Vinča A1 manifestation in Banat province, fact that determines him to consider the Vinča A2 stronger than Vinča A1 and in fact the last one determine the Banat "colonization".

²¹Gh. Lazarovici, *op. cit.*, p. 163.

²²Gh. Lazarovici, Z. Maxim, *Ceramica pictată din epoca neolitică pe teritoriul României. Transilvania*, în *Ceramica neolitică*, p. 9-10.

²³Gh. Lazarovici, *Les Carpates meridionales et la Transylvanie*, în *Atlas*, p. 255.

²⁴Fl. Drașoveanu, *op. cit.*, p. 107.

²⁵S.A. Luca, *Liubcova-Ornița*, p. 101.

²⁶Gh. Lazarovici, *op. cit.*, p. 258.

²⁷Idem.

²⁸Fl. Drașoveanu, *op. cit.*

²⁹Idem, *Locurile neolitice de la Hodoni*, în *Banatica* 13, 1995, p. 53; kindly informations offered by Fl. Drașoveanu.

³⁰W. Schier, *The Relative and Absolute Chronology of Vinča: New Evidence from the Type site*, în *The Vinča culture*, p. 150; R. Gläser, *op. cit.*, p. 177, believes that the beginning of the Vinča A2 stage, for the Belo-Brdo settlement is around 5400 CAL B.C., and the evolution of the Vinča A phase generally, is between 5300-5200 CAL B.C.

³¹R. Gläser, *op. cit.*

³²Gh. Lazarovici, *Neoliticul Banatului*, p. 19.

³³S.A. Luca, *Stratigrafie și cronologie...*, p. 6.

³⁴Gh. Lazarovici, *Migration et diffusion dans les cultures du Banat et de l'Alföld*, în *Rubane&Cardial, Actes du Colloque de Liège*, nov. 1988, edit. D. Cahen and M. Otte, Liège, 1990, p. 21.

³⁵Idem, *Sincronismele etno-culturale în neoliticul timpuriu din Sălaj și din vestul României*, în *Acta MP*, 9, 1977, p. 71; Idem, *Les Carpates meridionales...*, p. 21.

³⁶Idem, *Les Carpates meridionales...*, p. 23.

³⁷Idem, *Sincronismele etno-culturale...*, p. 75.

³⁸Idem, *Les Carpates meridionales...*, p. 225.

³⁹Fl. Drașoveanu, *op. cit.*

⁴⁰N. Kalicz, P. Raczki, *Das Spätneolithikum im Theissgebiet. Ein Übersicht zum heutigen Forschungsstand aufgrund der neuesten Ausgrabungen*, în *Alltag und Religion. Jüngsteinzeit in Ost-Ungarn*, Frankfurt am Main, 1990, p. 29.

⁴¹Fl. Drașoveanu, M. Rotea, *Cercetări de suprafață pe teritoriul așezării neolitice de la Chitid, jud. Hunedoara*, în *Sargeția* 18-19, 1984-1985, p. 87.

⁴²Gh. Lazarovici, *Neoliticul Banatului*, p. 181.

⁴³Idem.

⁴⁴Idem.

⁴⁵Vl. Milojević, *Chronologie der jüngeren Steinzeit Mittel-und Südosteuropas*, Berlin 1949; M. Garašanin, *Contribution à la connaissance des origines et de la chronologie du néolithique balcanic*, in *Starinar*, 7-8 (1956-1957), 1958, p. 34; Vl. Dumitrescu, *Quelques aspects des synchronismes entre les cultures néo-énéolithiques et la période de transitions vers l'âge du bronze de l'Europe sud-orientale, d'une part et le monde égéeanatolien, d'autre part*, in *Actes du II CISSE*, Athens, II, 1972, p. 25-71.

⁴⁶N. Vlassa, *Chronology of the neolithic in Transylvania in the light of the Tărtăria settlement stratigraphie*, in *Dacia NS*, VII, 1963, p. 491-492; Gh. Lazarovici, *Tipologia și cronologia culturii Vinča în Banat*, in *Banatica*, 2, 1973, p. 37; J. Makkay, *The late Neolithic Tordoș sign Group*, in *Alba Regia* 10, 1970, p. 10; S. M.M. Winn, *Pre-writing in Southeastern Europe: The Sign System of the Vinča culture, ca. 4000 BC*, Canada, Alberta, 1981, p. 1; E. Masson, *L'écriture dans les civilisations danubiennes néolithiques*, in *Kadmos* 23, 1984, 2; St. Chokadziev, *On Early Social Differentiation in the Struma River Basin: The evidence from the Slatino Settlement*, in *Pre-historic Bulgaria*, ed. D.W. Bailey and J. Panayotov, Monographs in World Archaeology, No. 22, Prehistory Press, Madison Wisconsin, p. 141-147; Gh. Lazarovici, Z. Maxim-Kalmar, *Tărtăria*, Cluj-Napoca, 1991, p. 10-16.

⁴⁷Fl. Drașovean, *Cultura Vinča târzie*, p. 86-87; Gh. Lazarovici, *Neoliticul Banatului*, p. 145; Gh. Lazarovici, *Cultura Banatului*, in *Cultura Vinča în România*, p. 39.

⁴⁸Fl. Drașoveanu, *Locurile neolitice de la Hodoni*, p. 69.

⁴⁹Ibidem.

⁵⁰Ibidem.

⁵¹Ibidem.

⁵²Z. Kalmar, *Neoliticul timpuriu din bazinul someșan și legăturile sale*, in *Acta MP*, 11, 1987, p. 61.

⁵³S.A. Luca, *Liubcova-Ornița*, p. 99.

⁵⁴Gh. Lazarovici, *Complexul Cluj-Cheile Turzii-Lumea Nouă-Iclod*, in *Cultura Vinča în România*, p. 100.

⁵⁵Idem, *Les Carpates meridionales...*, p. 257.

⁵⁶Ibidem, p. 256.

⁵⁷Ibidem.

⁵⁸Ibidem.

⁵⁹Ibidem.

⁶⁰S.A. Luca, *Așezări neolitice pe Valea Mureșului (I). Habitatul turdășean de la Orăștie-Dealul Pemilor punct X2*, Alba Iulia, 1997, p. 76.

⁶¹Ibidem, p. 72.

⁶²Vl. Dumitrescu, Al. Vulpe, *Dacia înainte de Dromihete*, București, 1988, p. 32.

⁶³Gh. Lazarovici, *Vinča în Transilvania*, in *Cultura Vinča în România*, p. 99.

⁶⁴Idem, *Ceramica pictată din epoca neolitică pe teritoriul României. Transilvania*, in *Ceramica neolitică*, p. 15.

⁶⁵S.A. Luca, *Liubcova-Ornița*, p. 103.

⁶⁶Gh. Lazarovici, *Vinča în Transilvania*, in *Cultura Vinča în România*, p. 98.

⁶⁷Vl. Milojević, *op. cit.*; Vl. Dumitrescu, *op. cit.*

⁶⁸Gh. Lazarovici, *op. cit.*, p. 98.

⁶⁹Ibidem.

⁷⁰Ibidem.

⁷¹Z. Maxim-Kalmar, *Turdaș*, Cluj-Napoca, 1991, p. 5; S.A. Luca, *Relațiile culturale de la sfârșitul neoliticului dezvoltat dintre Transilvania și ținuturile înconjurătoare*, in *Prehistoire du Bas Danube*, Călărași, 1997, p. 73.

⁷²S.A. Luca, *Așezări neolitice pe Valea Mureșului...*, p. 75.

⁷³Ibidem, p. 75-77.

⁷⁴Ibidem, p. 77 și notele 381-383.

⁷⁵Ibidem, p. 77.

- ⁷⁶Idem, *Liubcova-Ornița...*, p. 104.
- ⁷⁷Gh. Lazarovici, H. Dumitrescu, *Cercetările arheologice de la Târnăveni-Deva (partea a II-a)*, in *Acta MN*, 22-23, 1985-1986, p. 26.
- ⁷⁸Ibidem, p. 19.
- ⁷⁹Ibidem.
- ⁸⁰Ibidem, p. 20.
- ⁸¹Ibidem, p. 25.
- ⁸²Gh. Lazarovici, *Ceramica pictată din epoca neolitică pe teritoriul României. Transilvania*, in *Ceramica neolitică*, p. 15.
- ⁸³Ibidem.
- ⁸⁴Ibidem.
- ⁸⁵Gh. Lazarovici, *Grupul și stațiunea Iclod, Cluj-Napoca*, 1991, p. 9.
- ⁸⁶Ibidem, p. 10.
- ⁸⁷Ibidem, p. 12.
- ⁸⁸Ibidem.
- ⁸⁹Idem, *Les Carpates meridionales...*, p. 260.
- ⁹⁰Ibidem.
- ⁹¹Idem, *Neoliticul dezvoltat din nord-vestul României (Sălajul, Sătmăruș și Clujul)*, in *Acta MN*, 8, 1983, p. 34-36; D. Ignat, *La céramique néolithique peinte du nord-ouest de la Roumanie*, in *La civilisation de Cucuteni*, p. 43-47.
- ⁹²Gh. Lazarovici, *Les Carpates meridionales...*, p. 247-248.
- ⁹³Ibidem.
- ⁹⁴Ibidem.
- ⁹⁵D. Ignat, *op. cit.*
- ⁹⁶Information from D. Ignat.
- ⁹⁷D. Ignat, *op. cit.*, p. 45.
- ⁹⁸Idem, *Grupul cultural Suplacu de Barcău în contextul neo-eneoliticului din nord-vestul României*, Ph. D. summary.
- ⁹⁹Ibidem.
- ¹⁰⁰Ibidem.
- ¹⁰¹Ibidem.
- ¹⁰²M. Nica, *Sur la plus ancienne céramique peinte de l'époque néolithique de la Roumanie (Les découvertes de Cârcea et Grădinile)*, in *La civilisation de Cucuteni*, p. 30-31 notes the existence of a cultural interference between Dudești and Vinča A.; Idem, *Ceramica pictată din epoca neolitică pe teritoriul României. Oltenia*, in *Ceramica neolitică*, p. 19; Idem, *Le rôle de la culture Vinča a la genèse et à l'évolution néolithique d'Oltenie*, in *The Vinča culture*, p. 105; E. Comșa, *Ceramica pictată din epoca neolitică pe teritoriul României. Muntenia*, in *Ceramica neolitică*, p. 152.
- ¹⁰³E. Comșa, *Données sur la civilisation de Dudești*, in *PZ*, 46/2, 1971, p. 194-195.
- ¹⁰⁴Idem, *Date noi cu privire la relațiile dintre cultura Dudești și cultura ceramicii liniare*, in *SCIV*, 20, 1969, 4, p. 570-572; Vl. Dumitrescu, *Quelques aspects de synchronismes entre les cultures néo-énéolithiques et...*, p. 42.
- ¹⁰⁵Gh. Lazarovici, *Difuziunea unor civilizații neolitice în regiunea Dunării de Jos*, in *Pontica*, 4, 1971, p. 36.
- ¹⁰⁶M. Nica, *La culture Vinča en Oltenie*, in *Banatica*, 11, 1991, p. 305-319; Idem, *Neoliticul timpuriu și mijlociu în zona răsăriteană a Olteniei*, Ph. D. summary.
- ¹⁰⁷Ibidem.
- ¹⁰⁸Ibidem.
- ¹⁰⁹Idem, *Cultura Vinča în Oltenia*, in *Cultura Vinča în România*, p. 89.
- ¹¹⁰Vl. Dumitrescu, Al. Vulpe, *op. cit.*, p. 34, D. Berciu, *Contribuții la problemele neoliticului în România în lumina cercetărilor arheologice*, București, 1961, p. 58; Idem, *Cronologie relative du néolithique du Bas Danube à la lumière des nouvelles fouilles faites en Roumanie*, in *Actes du symposium consacré aux problèmes du néolithique européen*, Prag, 1961, p. 109, considers that Vădastra also contain a strong Vinča component. M. Petrescu-Dâmbovița has the

same opinion and also believes that in Vădastra, together with the old Vinča elements are possible to observe some central european influences and egeo-mediterranean ones, *Scurtă istorie a Daciei preromane*, Iași, 1978, p. 53. For the periodisation of the Vădastra culture see: C. Mateescu, *Săpături arheologice la Vădastra*, in *Materiale* 5, 1959, 6 1959, 7 1961, 8 1962; D. Berciu, *Zorile istoriei în Carpați și la Dunăre*, București 1966, p. 97-98; Idem, *Chronologie relative...*, p. 111; M. Nica, *Neoliticul mijlociu...*, p. 19.

¹¹¹M. Petrescu-Dâmbovița, *op. cit.*, p. 53.

¹¹²C. Mateescu, *op. cit.*, M. Petrescu-Dâmbovița, *op. cit.*, M. Nica, *op. cit.*, Vl. Dumitrescu.

Al. Vulpe, *op. cit.*, p. 34.

¹¹³Vl. Dumitrescu, Al. Vulpe, *op. cit.*, p. 34.

¹¹⁴D. Berciu, *Contribuții...*, p. 58; E. Comșa, *Betrachtungen...*, p. 85.

¹¹⁵M. Nica, *Neoliticul mijlociu*, p. 19, E. Comșa, *Problemele privind cercetarea neo-eneoliticului de pe teritoriul României*, in *SCIVA*, 29, 1978, 1, p. 26.

¹¹⁶E. Comșa, *op. cit.*

¹¹⁷M. Nica, *Ceramica pictată din epoca neolitică pe teritoriul României. Oltenia*, in *Ceramica neolitică*, p. 22.

¹¹⁸R. Gläser, *op. cit.*, p. 177.

¹¹⁹N. Ursulescu, *Evoluția culturii Starčevo-Criș pe teritoriul Moldovei*, Suceava, 1984, p. 38, is referring to a 3 stages evolution IIIB, IVA și IVB, S. Marinescu-Bîlcu, *Sur quelques problèmes du néolithique à l'est de Carpathes Orientales*, in *Dacia NS*, 35, 1991, p. 6 is for evolution in 4 stages.

¹²⁰N. Ursulescu, *op. cit.*, p. 35.

¹²¹S. Marinescu-Bîlcu, *Les Carpathes Orientales et la Moldavie*, in *Atlas*, p. 193. Pottery from Poienеști settlement has strong analogies with those from Grumăzești and presents more Vinča influences.

¹²²V. Dergacev, A. Sherrat, O. Larina, *Recent results of neolithic research in Moldavia (USSR)*, in *Oxford Journal of Archaeology*, 10, 1991, p. 13-15.

¹²³*Ibidem*, p. 15.

¹²⁴S. Marinescu-Bîlcu, *op. cit.*, p. 192.

¹²⁵*Ibidem*.

¹²⁶Idem, *Sur quelques problèmes du néolithique et du énéolithiques...*, p. 7, E. Comșa, *La Roumanie Meridionale*, in *Atlas*, p. 152.

¹²⁷S. Marinescu-Bîlcu, *op. cit.*, p. 7.

¹²⁸Idem, *Aspects tardif de la civilisation à céramique rubanée et sa contribution à la genèse de la civilisation Precucuteni I*, in *PZ*, XLVI, 1971, p. 34-35; E. Comșa, *Quelques nouvelles données sur la culture à céramique rubanée en territoire roumain*, in *AFB*, 1972, p. 177-178; S. Marinescu-Bîlcu, *Sur quelques problèmes du néolithique et du énéolithique...*, p. 7; N. Ursulescu, *Contribuții privind evoluția culturii ceramicii liniare pe teritoriul Moldovei*, in *Arheologia Moldovei*, 13, Iași, 1990, p. 32-34.

¹²⁹S. Marinescu-Bîlcu, *Les Carpathes Orientales et la Moldavie*, in *Atlas*, p. 193.

¹³⁰O. Larina, *Neoliticul pe teritoriul Republicii Moldova*, in *Traco-Dacica*, 15, 1994, 1-2, p. 56.

¹³¹*Ibidem*.

¹³²*Ibidem*.

¹³³*Ibidem*, p. 57.

¹³⁴*Ibidem*.

¹³⁵*Ibidem*.

¹³⁶S. Marinescu-Bîlcu, *Sur quelques problèmes du néolithique et du énéolithique...*, p. 7.

¹³⁷*Ibidem*.

¹³⁸V. Teodorescu, *Cultura Criș în centrul Munteniei (Pe baza săpăturilor arheologice de la Târgșorul Vechi)*, in *SCIV*, 14, 1963, 2, p. 251-268; E. Comșa, *Betrachtungen über die Entwicklung der neolithischer kulturen auf rumänischen Gebiet*, in *Slovenska Archeologia*, 35, 1, 1987, p. 70.

¹³⁹E. Comșa, *La Roumanie Meridionale*. in *Atlas*, p. 152.

- ¹⁴⁰Ibidem, p. 154.
- ¹⁴¹Ibidem.
- ¹⁴²Ibidem, p. 153.
- ¹⁴³Ibidem.
- ¹⁴⁴N. Ursulescu, *op. cit.*, p. 139-140.
- ¹⁴⁵Idem, *Interferențe și sinteze în sud-estul României la cumpăna dintre neolitic și eneolitic*, in *Prehistoire du Bas Danube*, Călărași, 1997, p. 140.
- ¹⁴⁶E. Comșa, *Dudești*, in *Enciclopedia arheologiei și istoriei vechi a României*, București, 1994, vol. II, p. 87.
- ¹⁴⁷Ibidem.
- ¹⁴⁸Idem, *Istoria comunităților Boian*, București, 1974; Idem, *Quelques données relatives à la périodisation et à l'évolution de la civilisation de Boian*, in *Dacia*, NS I, 1957, p. 65.
- ¹⁴⁹I. Nestor, *Fouilles de GLiona*, in *Dacia* III-IV, 1933, p. 226-237; Idem, *Zur Chronologie der rumänischen Steinkupferzeit*, in *PZ*, Berlin, 1928, p. 110-143; M. Petrescu-Dîmbovița, *Raport asupra săpăturilor de la Glina, jud. Ilfov*, in *Raport asupra activității științifice a Muzeului Național de Antichități din anii 1942-1943*, București, 1944, p. 68.
- ¹⁵⁰I. Nestor, *Raport despre sondajele de la Leț-Varhegy*, in *Materiale* III, 1957, p. 59-62.
- ¹⁵¹D. Berciu, *Chronologie relative du Néolithique du Bas Danube à la lumière des nouvelles fouilles faites en Roumanie*, in *L'Europe à la fin de l'âge de la pierre. Actes du Symposium consacré aux problèmes du néolithique européen*, Praga, 1961, p. 105.
- ¹⁵²E. Comșa, *Quelques données...*, p. 65.
- ¹⁵³Idem, *La culture de Boian*, in *Le paléolithique et le néolithique de la Roumanie en contexte européen*, Iași, 1991, BAI IV, ed. V. Chirica, D. Monah, p. 420.
- ¹⁵⁴Idem, *Date cu privire la răspândirea comunităților fazei de tranziție de la cultura Boian la cultura Gumelnița pe teritoriul Dobrogei*, in *Pontica*, 5, 1972, p. 41-43.
- ¹⁵⁵Idem, *La culture de Boian*; Idem, *Betrachtungen...*, p. 84; M. Petrescu-Dîmbovița, *Scurtă istorie a Daciei preromane*, p. 35.
- ¹⁵⁶E. Comșa, *Istoria comunităților culturii Boian*, București, 1974, p. 232.
- ¹⁵⁷Ibidem.
- ¹⁵⁸D. Berciu, S. Morintz, *Săpăturile de la Cernavodă*, in *Materiale* 5, 1959, p. 105.
- ¹⁵⁹Idem, *Șantierul arheologic Cernavoda*, in *Materiale* 3, 1957, p. 83.
- ¹⁶⁰E. Comșa, *Istoria comunităților culturii Boian*, p. 239-240.
- ¹⁶¹Ibidem.
- ¹⁶²M. Petrescu-Dîmbovița, *op. cit.*
- ¹⁶³M. Neagu, *Comunitățile Bolintineanu în Câmpia Dunării*, in *Istros*, 8, Brăila, 1997, p. 15 și notele 52-53.
- ¹⁶⁴E. Comșa, *op. cit.*, p. 53; V. Teodorescu, *op. cit.*, p. 231; M. Neagu, *op. cit.*, p. 14.
- ¹⁶⁵Gh. Cantacuzino, S. Morintz, *Die jungsteinzeitlichen Funde in Cernica (Bukarest)*, in *Dacia* NS, 7, 1963, p. 50; M. Neagu, *op. cit.*
- ¹⁶⁶M. Neagu, *op. cit.*
- ¹⁶⁷Ibidem.
- ¹⁶⁸Ibidem.
- ¹⁶⁹Ibidem.
- ¹⁷⁰D. Berciu, *Cultura Hamangia*, București, 1966; P. Hașotti, *La culture Hamangia. Quelques remarques sur le stade actuel des recherches*, in *Le paléolithique et le néolithique de la Roumanie en contexte européen*, Iași, 1991; Idem, *Epoca neolitică în Dobrogea*, Constanța, 1997.
- ¹⁷¹P. Hașotti, *op. cit.*
- ¹⁷²Idem, *La culture de Hamangia*, p. 255.
- ¹⁷³Ibidem.
- ¹⁷⁴Idem, *Observații asupra ceramicii dintr-un complex al culturii Hamangia de la Medgidia, punctul Ccoașă*, in *SCIVA*, 1986, 37, p. 129-131.
- ¹⁷⁵Ibidem.

- ¹⁷⁶D. Bereciu, *Contribuții...*, p. 75; P. Hașotti, *Epoca neolitică în Dobrogea*, p. 22.
¹⁷⁷S. Marinescu-Bîlcu, *În legătură cu câteva opinii privind originea și evoluția neoliticului și eneoliticului pe teritoriul Moldovei*, în *SCIVA*, 34, 1983, 2, p. 123, P. Hașotti, *op. cit.*
¹⁷⁸P. Hașotti, *La culture Hamangia*, p. 254.
¹⁷⁹*Ibidem.*
¹⁸⁰*Ibidem*, p. 252-253.
¹⁸¹*Idem*, *Epoca neolitică în Dobrogea...*, p. 39.
¹⁸²*Idem*, *La culture Hamangia...*, p. 252-253.
¹⁸³*Ibidem.*
¹⁸⁴*Ibidem*, p. 251.
¹⁸⁵*Idem*, *Epoca neolitică...*, p. 22.
¹⁸⁶*Ibidem.*
¹⁸⁷*Ibidem*, p. 65.

Table 1. Radiocarbon data for the neolithic and the beginning of the eneolithic periods in Romania.

Nr.	Settlement	Culture/Phase	Laboratory nr.	Age BP	Calib 1σ	Calib 1σ
1	Ogradena. "Icoana"	Starčevo-Criș ?	Bln-1056	7445±80	6417-6173	6450-6100
2	Cuina Turcului	Starčevo-Criș II	Hd-17919	6105±51	5065-4935	5210-4860
3	Gura Baciului	Starčevo-Criș III B	Lv-2157	6400±90	5474-5240	5490-5210
4	Trestiana	Starčevo-Criș III B	GrN-17003	6665±45	5630-5494	5640-5480
5	Trestiana	Starčevo-Criș III B	Lv-2155	6390±100	5474-5240	5500-5148
6	Sacarovca I	Starčevo-Criș III	Berlin?	6650±100	5640-5480	5730-5360
7	Soroca II "Trifăuți"	Starčevo-Criș III	Bln-586	6825±150	5830-5560	5990-5480
8	Valea Râii, "Copăcelu"	Starčevo-Criș III/IV ?	KN-I. 102	6480±75	5485-5334	5550-5240
9	Cârcea "Viaduct"	Cârcea III/ Starčevo-Criș IV	Bln-1981	6540±60	5506-5413	5615-5330
10	Cârcea "Viaduct"	Cârcea III/ Starčevo-Criș IV	Bln-1982	6430±60	5474-5248	5490-5200
11	Cârcea "Viaduct"	Cârcea III/ Starčevo-Criș IV	Bln-2354	5860±60	4835-4715	4900-4586
12	Cârcea "Viaduct"	Cârcea III/ Starčevo-Criș IV	Bln-1983	6395±60	5454-5243	5480-5230
13	Satchinez	Vinča A2	Deb-2579	6270±40	5160-5145	5207
14	Pața	Banat I (Vinča A3-B1)	Lv-2145	6560±160	5630-5340	5740-5230
15	Pața	Banat I (Vinča A3-B1)	Lv-2146	6470±150	5530-5242	5640-5087
16	Pața	Banat I (Vinča A3-B1)	Lv-2142	6240±80	5310-5080	5350-4945
17	Pața	Banat I (Vinča A3-B1)	Lv-2151	6240±70	5303-5087	5340-4948
18	Pața	Banat II (Vinča B1-B2, B2)	Lv-2147	6500±130	5540-5249	5640-5230
19	Pața	Banat II (Vinča B1-B2, B2)	Lv-2139	6330±140	5466-5210	5530-4940
20	Pața	Banat II (Vinča B1-B2, B2)	Lv-2143	6340±100	5380-5230	5480-5060

21	Pața	Banat II (Vinča B1-B2, B2)	Lv-2141	6290±80	5330-5214	5460-5060
22	Pața	Banat II (Vinča B1-B2, B2)	Lv-2148	6240±70	5303-5087	5340-4948
23	Pața	Banat II (Vinča B1-B2, B2)	Lv-2138	6160±100	5230-4945	5232-4847
24	Pața	Banat II (Vinča B1-B2, B2)	Lv-2149	6160±90	5233-4947	5315-4861
25	Pața	Banat II (Vinča B1-B2, B2)	Lv-2140	6140±80	5226-4945	5240-4860
26	Pața	Banat II (Vinča B1-B2, B2)	Lv-2144	6100±80	5208-4906	5230-4807
27	Pața	Banat II (Vinča B1-B2, B2)	Lv-2150	6070±90	5203-4864	5230-4780
28	Ljubcova	Vinča B2	Bln-2133	6175±85	5235-5003	5317-4903
29	Cârcea "Viaduct"	Dudești-Vinča B	Bln-1978	6585±65	5556-5428	5630-5350
30	Cârcea "Viaduct"	Dudești-Vinča B	Bln-2292	6350±60	5338-5233	5463-5210
31	Cârcea "Viaduct"	Dudești-Vinča B	Bln-2008	6250±40	5293-5210	5325-5067
32	Cârcea "Viaduct"	Dudești-Vinča B	Bln-1980	6100±60	5204-4941	5230-4859
33	Cârcea "Viaduct"	Dudești-Vinča C	Bln-2287	6300±55	5325-5229	5370-5088
34	Cârcea "Viaduct"	Dudești-Vinča C	Bln-2291	5990±55	4943-4804	5060-4780
35	Cârcea "Viaduct"	Dudești-Vinča C	Bln-2289	5910±50	4896-4775	4937-4720
36	Cârcea "Viaduct"	Dudești-Vinča C	Bln-22904	5865±95	4896-4621	4993-4510
37	Fărcasu de Sus	Dudești II-III	Bln-2285	6080±60	5198-4906	5220-4847
38	Târpești	Linear pottery culture	Bln-801	6245±100	5319-5070	5410-4908
39	Târpești	Linear pottery culture	Bln-800	6170±100	5240-4947	5330-4853
40	Hodoni	Vinča C1	Deb-1963	5880±60	4892-4721	4935-4604
41	Hodoni	Vinča C1	Deb-2018	5870±60	4891-4781	4933-4591
42	Orăștie	Turdaș	Deb-5765	6070±70	5044-4985	5221-4805
43	Orăștie	Turdaș	Deb-5775	5790±55	4734-4549	4788-4500
44	Orăștie	Turdaș	Deb-5762	5825±60	4768-4582	4816-4517
45	Foeni	Foeni	Deb-5771	5855±85	4810-4589	4937-4504
46	Foeni	Foeni	Deb-5725	5835±40	4757-4667	4800-4573
47	?	Hamangia III	GrN-1986	5880±70	4894-4718	4939-4586
48	Baia Hamangia	Hamangia III	GrN-1980	5880±70	4894-4718	4939-4586
49	Câscioarele	Boian IV/Spantov	Bln-335	5985±120	5060-4780	5230-4590
50	Câscioarele	Boian IV/Spantov	Bln-798	5980±100	5039-4780	5210-4680
51	Câscioarele	Boian IV/Spantov	Bln-336	5895±120	4937-4627	5197-4500
52	Câscioarele	Boian IV/Spantov	Bln-598	5855±80	4891-4626	4937-4530
53	Câscioarele	Boian IV/Spantov	Bln-799	5765±100	4780-4510	4897-4368
54	Câscioarele	Boian IV/Spantov	Bln-333	5740±120	4780-4470	4900-4350

55	Căscioarele	Boian IV/Spantov	Bln-334	5750±80	4726-4509	4831-4406
56	Căscioarele	Boian IV/Spantov	KN-I. 149	5705±65	4722-4520	4780-4460
57	Căscioarele	Boian IV/Spantov	Bln-602	5705±80	4713-4466	4780-4360
58	Căscioarele	Boian IV/Spantov	Bln-599	5670±100	4675-4369	4780-4340
59	Căscioarele	Boian IV/Spantov	Bln-796	5570±100	4510-4340	4676-4240
60	Radovanu	Boian IV/Spantov	Bln-?	5850±70	4834-4670	4932-4539
61	Radovanu	Boian IV/Spantov	Bln-1233	5770±100	4780-4510	4898-4369
62	Poduri. D. Ghindaru	Precucuteni II	Bln-2804	5820±50	4780-4619	4836-4548
63	Poduri. D. Ghindaru	Precucuteni III	Bln-2803	5880±150	4940-4584	5210-4401
64	Poduri. D. Ghindaru	Precucuteni III	Bln-2782	5780±50	4726-4583	4780-4510
65	Târpești	Precucuteni III	GrN-4424	5530±85	4465-4339	4574-4230
66	Târgu Frumos	Precucuteni III	Lv-2152	5830±100	4838-4584	4940-4470
67	Rogoieni I	Precucuteni III	Bln-2426	5700±55	4668-4477	4720-4408
68	Ruseștii Noi I	Precucuteni III	Bln-590	5565±100	4510-4340	4672-4240
69	Tincova	Precucuteni III	Bln-3191	5700±70	4670-4470	4780-4360
70	Daia Română	Petresti A	Bln-1197	5900±100	4934-4720	5060-4570
71	Daia Română	Petresti A	Bln-1199	5835±100	4891-4586	4940-4470
72	Daia Română	Petresti A	Bln-1201	5710±100	4780-4460	4831-4350

Table 2. Chronological sketch for Romania.

[illegible]

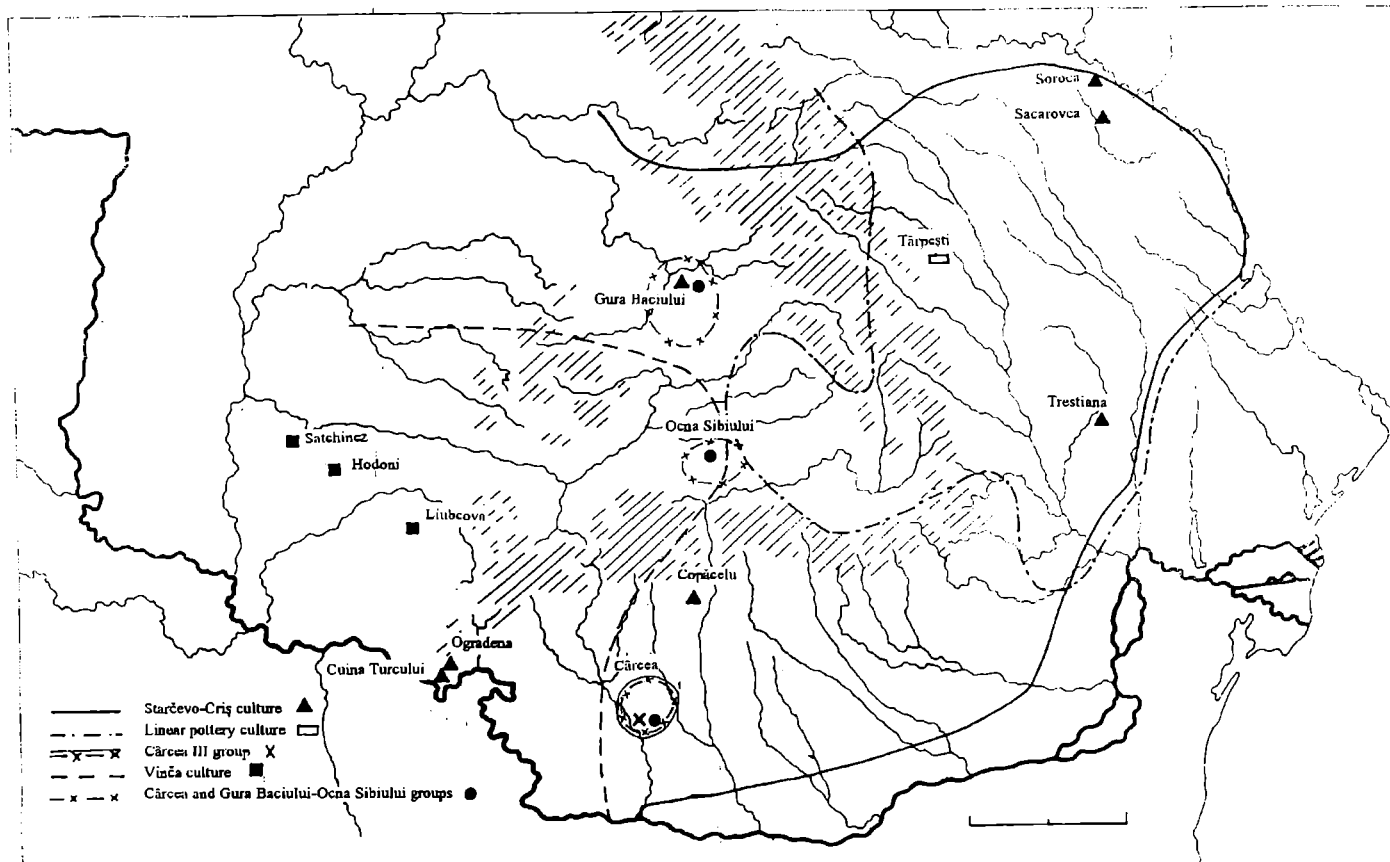


Fig. 1. Spreading area of Cârcea-Gura Baciului-Ocna Sibiului, Cârcea III cultural groups and Starčevo-Criș, Vinča and linear pottery culture. The settlements with radiocarbon data are marked.

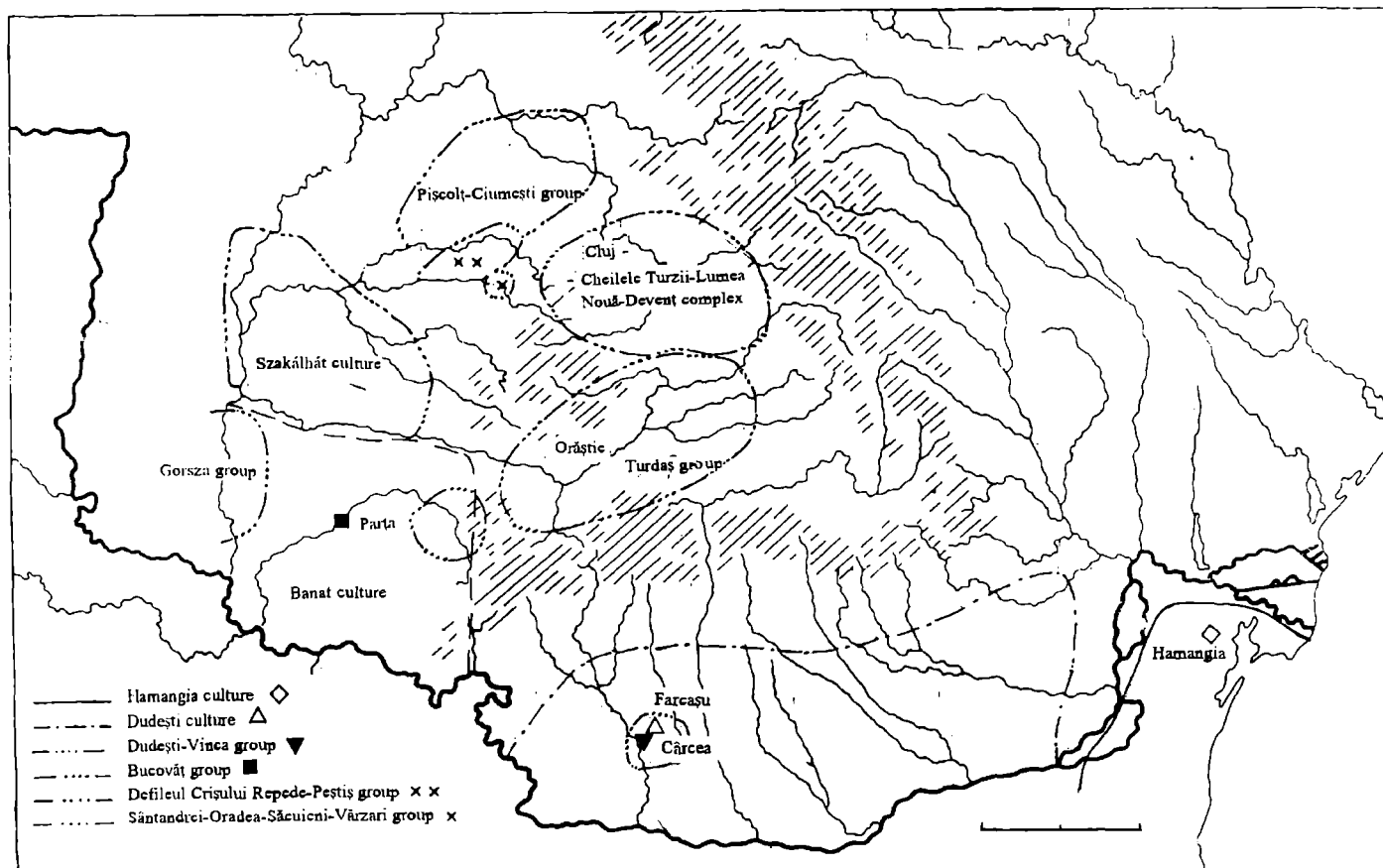


Fig. 2. Spreading area of Hamangia, Dudești, Banat, cultures and Dudești-Vinča, Bucovăț, Turdaș, Cluj-Cheile Turzii-Lumea Nouă-Devent, Defileul Crișului Repede-Peștiș, Sântandrei-Oradea-Săcuieni-Vărzari, Pișcolț/Ciujmești, Szakálhát, Gorsza cultural groups. Are marked the settlements with radiocarbon data.

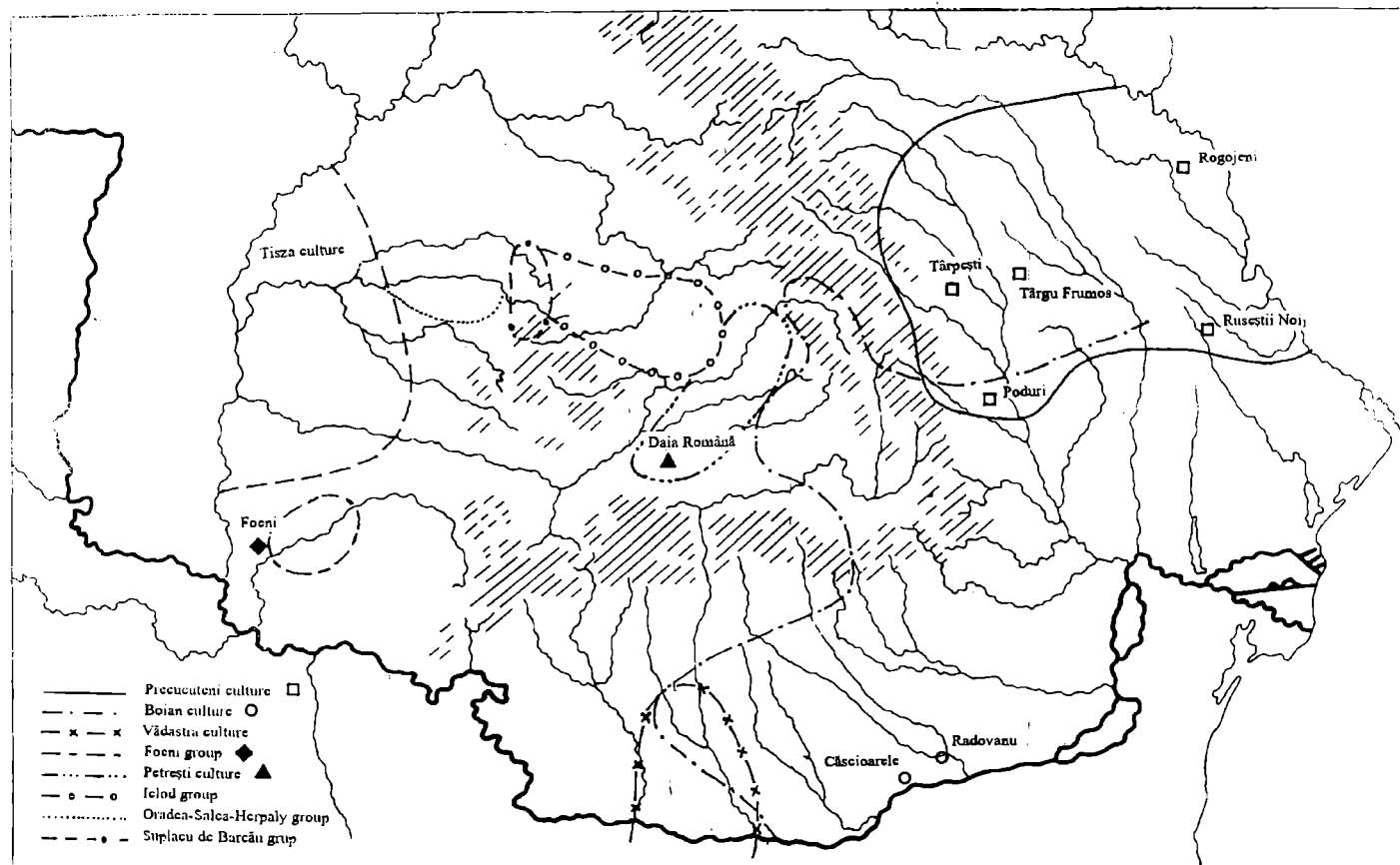


Fig. 3. Spreading area of late neolithic cultures or cultural groups and from the beginning of eneolithic period: Vădastra, Boian, Precucuteni. Petrești, Iclod, Oradea-Salca-Herpály, Suplacul de Barcău, Foeni and Tisza. The settlement with radiocarbon data are marked.

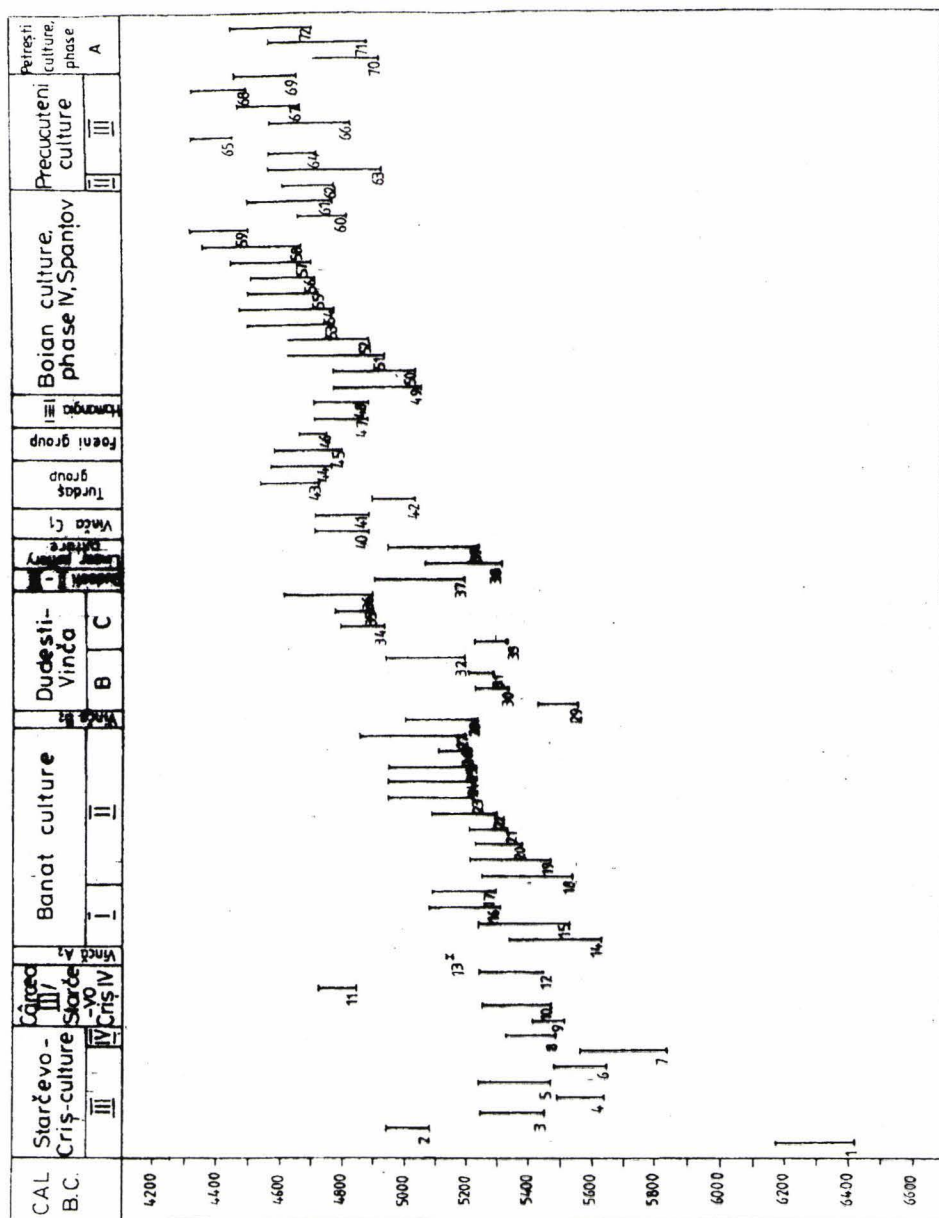


Fig. 4. Graphic representation of the calibrated radiocarbon data (1 sigma) for the neolithic and the beginning of the eneolithic periods in Romania.

