

Some aspects of internal division into periods and relative and absolute chronology of the middle neolithic communities developed at the Lower Danube

Marian Neagu

1. Dudești Culture

The most important criterion for the internal division into periods is the **stratigraphy** established through archaeological research. In the present stage of research, without denying the existence of more evolution phases of the Dudești culture, there are not sufficient stratigraphical arguments proving the sequence of the three phases postulated by Eugen Comșa¹. The typological criterion of comparing the pottery from various Dudești settlements in order to establish the evolution phases proves useless as the settlement of Cernica has been researched only partially, and several surveys have been conducted at Malul Roșu and Fundeni.

Stratigraphically one can find two Dudești dwelling layers only in the eponymous settlement², at Radovanu³, and Drăghiceanu⁴.

Malul Roșu has been considered the oldest Dudești community in Wallachia following the analysis of just a few uncovered pottery fragments, that are the basis for postulating the phase by the same name⁵. It was assigned to the Cleanov-Dudești-Kadikioi-Drăghiceanu chronological horizon (the first layer)⁶. The Fundeni phase is defined following the investigation on 117 pottery fragments, being included in the Dudești-Fundeni – Drăghiceanu II-Verbicioara⁷. The results of the surveys from Dudești, Radovanu or Drăghiceanu, settlements where two Dudești layers have been uncovered, are not convincing arguments for the existence of the three phases postulated by E. Comșa. The Dudești settlement from Cernica⁸ is the only location where a human community defined by the archaeological material found in more complexes was uncovered. The incipient stage of research on the Dudești culture in Wallachia for the time being does not allow us to conduct an internal division into periods, or a correlation with the Dudești finds in Oltenia. The only community that in Wallachia could be identified by systematic researches is the Dudești-Cernica one⁹. The phases of the Dudești culture and the entire evolution of this population especially in Wallachia bring about confusions caused by the unclear dating (cultural synchronisms, chronology etc.), and defining of various characteristics of some stages or phases. Thus, future researches/finds will have to specify both the phases and their internal evolution.

2. Bolintineanu Culture

The internal evolution of the Boian culture was divided by E. Comșa into 4 phases (Bolintineanu, Giulești, Giulești, Vidra and the transition phase)¹⁰. Within the

same division into periods, the Bolintineanu communities were the beginning of the Boian culture, therefore its first evolution phase, designated by D. Berciu as Boian I, or *Proto-Boian*.¹¹

This type of division into periods is based less on clear stratigraphical arguments and more on typological and comparative considerations.

The stratigraphy was revealed through archaeological researches in the settlements of Aldeni-Gurguiul Balaurlui¹², Gălățui-Movila Berzei¹³, and Cernica¹⁴, where the Bolintineanu layer overlaps the Giulești one.

The typological and comparative method used by E. Comșa was carried out on pottery from chance finds, surveys, and less on material coming from systematic researches.

The stratigraphy of the Bolintineanu settlements researched up to the present day is made up of a single dwelling layer. This finding corroborated to the different evolution stage in certain Bolintineanu settlements allows us to state the hypothesis of some successive population penetrations from Anatolia.

Evolution

The archaeological researches conducted in 1980-2000 in the settlements of Gălățui-Movila Berzei, Lunca-La grădini, Piscul Crăsani or Grădiștea Coslogeni revealed clear differences, that cannot be explained but by a certain evolution of the Bolintineanu communities. Even E. Comșa used to remark and postulate different evolution stages for the Bolintineanu communities. The settlements of București-Floreasca or Grădiștea Ulmilor are considered to date from the beginning of the phase, unlike the settlement of Radovanu II which is subsequent to the *classical stage*¹⁵, and classified as end Bolintineanu. Also the *Căfelu stage*¹⁶ belongs the last evolution stage.

1. The settlements that were probably formed following the penetration of the first Bolintineanu communities were identified through the archaeological researches at Gălățui-Movila Berzei, București-Floreasca, Ciocănești-Grădiștea Ulmilor. Following the study of archaeological materials (pottery fragments with a lot of dust and Dudești-Cernica type decoration) uncovered in these locations, we propose as work hypothesis the founding of the first Bolintineanu settlements, by the penetration of the population wave that entailed also the last Dudești-Cernica communities.

2. Most settlements resulted from the second Bolintineanu population penetration. Of this series of settlements with *classical* Bolintineanu material, significant are the researches at Aldeni-Gurguiul Balaurlui and Lunca-La grădini.

3. The evolution of the Bolintineanu communities ends with the horizon of settlements at Piscul Crăsani, Copuzu-Deluș, Coroteni, Grădiștea Coslogeni and Radovanu II. In this last stage, the Bolintineanu communities reach Ialomița to the east (Piscul Crăsani, Copuzu-Suvița Mică), and to the north-east Siret (Coroteni). The archaeological researches at Gălățui-Movila Berzei, Lunca-La grădini, Piscul Crăsani, as well as other Bolintineanu settlements proved the existence of more evolution stages characterized also by their own features, greatly influenced by the contacts with various cultures.

Interesting seem the stratigraphic observations pointing to the Dudești-Cernica dwelling layers as overlapped by dwelling layers belonging to the Bolintineanu communities, found in a final evolution stage, as proved by the finds in the settlements of Radovanu II¹⁷, Ipotești¹⁸, Coroteni¹⁹, and Căscioarele²⁰. At the same time we remark the author's account on the archaeological researches at Cernica²¹ or Grădiștea Ulmilor²² regarding the identical perimeter of the early Bolintineanu settlements and Dudești-Cernica (!). Even E. Comșa maintains in a study that the Dudești-Cernica communities might be contemporary, in various zones, with the *beginnings of the Bolintineanu phase*²³.

For the whole period of the developed Neolithic at the Lower Danube we find a *slow and progressive colonisation*, as J. Lichardus remarked.

Intercultural Relations.

Relationships between the Bolintineanu and Boian-Giulești Communities

The archaeological finds from the settlements of Piscul Crăsani, Coroteni, Vadu Sorești, Sudiți revealed linear pottery influences of the early *Zeliezovce* type, but above all the presence of the *Greaca* type Boian-Giulești communities in the late Bolintineanu settlements on Ialomița, Buzău or Siret.

As regards the chronological relations between the late Bolintineanu and Giulești-*Greaca* communities, the finds in the complexes at Piscul Crăsani, Coroteni and Căscioarele confirm the partial contemporaneity of these two communities. Benefiting from common roots, these two communities coexisted in certain enclaves in the eastern zone of the Bolintineanu area, an archaeological reality proved by the pottery finds in the settlements of Coroteni²⁵, Sudiți²⁶, Vadu Sorești²⁷, and Piscul Crăsani²⁸. We remark the discovery in all the Bolintineanu settlements with Boian-Giulești elements of the linear pottery culture with musical note ends.

This Bolintineanu-Giulești-“Greaca”-Zeliezovce cultural synchronism has important consequences on the formation process of some communities on the brink of the developed Neolithic in the Lower Danube area.

Linear Pottery Influences

Not by chance, the settlements on Ialomița (Piscul Crăsani, Copuzu-Suvița Mică) are the only ones fitted with defence ditches, which must mark the eastern border of the Bolintineanu communities. The linear pottery influences have been identified also on the pottery in the settlements of Coroteni (on Siret), Sudiți, Cernica, Aldeni-Gurguiul Balaurlui, Piscul Crăsani.

The archaeological researches and studies conducted lately have brought new arguments in favour of the importance of the linear factor in the evolution of the Bolintineanu communities. Thus, the occurrence of fortification elements in the defence ditches of

the settlements in the eastern area (Piscul Crăsani and Copuzu), as well as the uncovering of obsidian tools (Aldeni and Piscul Crăsani), characteristic of the linear pottery bearers, can be assigned to the penetration of these tribes from northern Moldavia, but also south-eastern Transylvania. The influence of the late linear pottery with musical note ends is more important in the east of the spread area of the Bolintineanu communities, by the finds from Coroteni, Aldeni-Gurguiul Balaurlui and Piscul Crăsani. On certain pottery fragments, the corners of the meanders or angles incised with grooves or even isosceles triangles with the tips downwards, stylisation of musical note ends.

Vladimir Dumitrescu noticed the synchronism of the Bolintineanu communities evolution with a late stage of the linear culture with musical notes, *but not with its end*²⁹.

The influences of the Vinca culture, phase B1 – B2 are found in the eastern zone of the Bolintineanu spread area (Coroteni, Piscul Crăsani), where they coincide, not by chance, with the occurrence of the linear pottery, but also on Mostiștea (Lunca-La grădini). Next to the “influences” of the Dudești-Cernica culture, we do not exclude a direct contact on the Danube line between the Bolintineanu communities and the Vinca B2 ones. Paradoxically, the Vinca ornaments in the Bolintineanu pottery occur more often in the eastern part of the spread area. The Vinca elements (the pottery decoration under the form of dotted bands, the small clay plate and the triangular mask of the Piscul Crăsani statuette, the vessel bottoms with groups of incised signs from Lunca-La grădini, etc.) were probably “carried” to the east of the Bolintineanu spread area by the late linear pottery tribes. The Bolintineanu pottery fragments uncovered in the settlements of Vădastra I, hypothetically should be chronologically paralleled with Vinca B1. On the basis of the archaeological researches in Transylvania, Gh. Lazarovici synchronises the “notenkopf” phenomenon with Dudești II (Fundeni), Bolintineanu, Vădastra I and Vinca B2. The latest researches in the field of relative and absolute chronology determined F. Drașoveanu to draw a parallel between the evolution of the Vinca C phase and the Bolintineanu, Vădastra I, Hamangia I phases taken into account the existence of some “regional differences”³⁰. Without denying the importance of the Vinca C communities in the Danubian developed Neolithic, we consider that the archaeological finds in Wallachia, even corroborated with those in Transylvania for the time being do not allow us to date the Bolintineanu communities but *after the beginning of the Vinca B1 phase*³¹.

Vădastra Links

In the Bolintineanu area we found also Vădastra I influences, both in the western zone (the Argeș and Vedea rivers) and as regards the oldest Bolintineanu settlement situated on the west bank of Gălățui Lake, close to the Danube. The Vădastra influences on the Bolintineanu communities were identified also on the pottery in the settlement at Cernica.

The Bolintineanu finds in the Vădastra I environment (the settlements of Slatina, Piatra Olt, Crușovu, Vădastra-Măgura Fetelor, Măgura Cișmelei) prove the existing links between the two communities. These relationships continued to the end of the

evolution of the Bolintineanu communities. Then close contacts with the Vădastra population were found by the finds in the final Bolintineanu settlement at Radovanu II³².

The penetration from the south must have taken place through Oltenia and Wallachia. These southern waves are marked also by the Bolintineanu settlements uncovered in Bulgaria at Malak Preslaveț, Dobrici and Durankulak, or in the basin of Rusenski Lom.

Cultural Links and Syntheses with Hamangia-Golovița.

Along the Lower Danube, the archaeological researches between Călărași and the Pontic seaside revealed a cultural aspect made up of a mixture between the late Bolintineanu communities and the Hamangia-Golovița ones. The archaeological excavations conducted at Grădiștea Coslogeni³³ led to the identification of three Neolithic dwelling layers. Another Bolintineanu-Hamangia synthesis settlement was researched by Bulgarian archaeologists to the south of the Danube, in a lagoon close to the Black Sea at Durankulak (Blatnica phase)³⁴.

An important component, not so much of the genesis, but especially of the evolution of the Bolintineanu communities was the Hamangia culture. During the Golovița phase, the Hamangia population must have passed to the north of the Danube. There it founded a few settlements along the Borcea arm. The most representative of them is the settlement of Grădiștea Coslogeni, an original synthesis between the Hamangia-Golovița majority and the Bolintineanu minority. We remark also a certain part of the inventory of the graves in the cemetery of Cernica with sure Hamangia influences³⁵. In Dobrudja the Bolintineanu pottery finds in the Hamangia settlements at Hinova, Cernavodă, Baia Hamangia and Golovița are known.

The importance of the Hamangia elements for the origin and evolution of the Bolintineanu communities was proved also by the results of the anthropological analyses in the Cernica cemetery, which shed light on the main southern component of the east-Mediterranean type.

Taking into account these reevaluations and considerations we think that the further use of the concept of *Bolintineanu phase, as the first stage of the Boian culture* is not advisable. The present stage of the archaeological research of the Bolintineanu communities allows us to put forward a new hypothesis that defines it as a linking culture, a natural consequence of the characteristic of its formation, spread and evolution area.

The archaeological finds in southern Romania and north-eastern Bulgaria prove the existence of culturally related communities that had close links. Thus, along the Danube, Bulgarian archaeologists found a chronological synchronism between Bolintineanu, Dudești-Cernica and Vădastra I, considering that the settlements in north-eastern Bulgaria are older than those in south-eastern Wallachia. This hypothesis is supported by the systematic researches conducted at Hotnica³⁶, but especially the archaeological excavations conducted by V. Popov in the Rusenski Lom basin³⁷.

Considering the researches of later years conducted in western Anatolia, these observations on the communities in north-eastern Bulgaria dated to the developed Neolithic deserve the entire attention. Thus, at Illipinar (layer V), Toptepe (V), Yarimbürgaz ("O") the archaeological researches identified in the same layer Dudeşti-Cernica, (?) Hamangia and Bolintineanu, Karanovo III and Vinca B pottery³⁸.

3. Boian-Giuleşti Communities

The Boian culture was first divided into periods internally by D. Berciu in 1935, when on the basis of the archaeological excavations at Tangâr, who postulated the Boian I phase which he subdivided into three sub-phases: Ia, Ib and Ic³⁹. After E. Comşa has divided the Boian-Giuleşti evolution into two stages (Greaca and Aldeni)⁴⁰, D. Berciu resumes the issue of the division into periods, synchronising the Giuleşti phase with the Boian II⁴¹.

The stratigraphy of the settlements researched by systematic archaeological excavations and the spread area of the Giuleşti communities prove more the *successive population penetrations* than a proper evolution within the same Boian-Giuleşti settlements. All the Boian-Giuleşti settlements from the first penetration stage (Greaca) in northern Danube have a single layer. The only Boian-Giuleşti settlements with more than one dwelling are Ciulniţa⁴² and Gălăţui "Movila Berzei"⁴³, for Wallachia Isaccea "Suhata"⁴⁴, for the eastern border and Piatra-Sat "Vadul Codrii"⁴⁵, for the western border of the spread area.

Evolution

The settlements from the beginning of the first penetration stage of the Boian-Giuleşti communities were researched at Greaca, Budeşti, Bogata I and II, Gălăţui "Movila Berzei" (layer III/1), Rasa, Siliştea "Conac", Baldoveşti, Brăiliţa, Lişcoteanca "Movila din Baltă", Călăraşi "Măgureni", Grădiştea Roseţi, Ulmu "La Caraman", Bora.

From the second evolution stage were researched by systematic excavations the settlements of Alexandria, Aldeni, Giuleşti "Sârbi", Ciulniţa, Gălăţui "Movila Berzei" (III/2), Lişcoteanca, Isaccea "Suhata". The end of this period is marked by the settlements of Gălăţui (III/2), Ciulniţa, Lişcoteanca or Isaccea.

The systematic researches in the last dwelling layer revealed a proper evolution of these settlements, due to a profound change of the habitat type. The previous layer of half-sunken dwellings and huts was replaced with surface dwellings, some of them with platforms, as certain concerns with land planning have been remarked.

Following the archaeological researches in north-eastern Romanian Plain, the Galaţi and Brăila specialists noticed a continuation in the evolution of the Boian-Giuleşti communities up to the chronological layer of the Boian-Vidra⁴⁶.

During this developed Neolithic period, the researches revealed a dynamics of the links between various human communities. Thus, in the settlements from the first Boian-Giulești stage in the Romanian Plain uncovered at Chitila, Sudiți, Greaca, Baldovinești, Brăilița and Siliștea "Conac" influences of the Zeliezovce type linear pottery culture were found. These finds are not confined to the territory of the Romanian Plain, as they were found also at Vadu Sorești, Coroteni-Cetățuia.

The southern elements of the Karanovo III – IV type were identified in the settlement of Siliștea "Conac"⁴⁷, and other material with Dudești type decoration in the Boian-Giulești settlements of Greaca, Rasa, Gălățui "Movila Berzei" (III/1)⁴⁸.

The Hamangia Influences were detected in the settlements of Bogata⁴⁹, Ciulnița (Hamangia lib)⁵⁰ and Isaccea (Hamangia III)⁵¹. In Dobrudja the Boian-Giulești imports in the Hamangia settlements of Hârșova, Cernavodă or Hinog⁵² are known.

Links with Precucuteni

The cultural links with this population were found in all the evolution stages, from the active role of the Boian-Giulești communities in the Precucuteni formation until the end of this civilization⁵³. In the Romanian Plain, the first Precucuteni II imports in a Giulești settlement were uncovered at Tangâru. At Gălățui-Movila Berzei (III/2) they uncovered a few tens of pottery fragments in the "shrine-dwelling" in the final Boian-Giulești layer, decorated with *shields* of the Precucuteni II type. Links between the Boian-Giulești and Precucuteni II communities were proved in Bărăgan, by the finds in the Boian-Giulești of Ciulnița⁵⁵.

On the Precucuteni I and II imports uncovered at Iclod I-II the evolution of the Boian culture (including the Boian-Giulești communities) was parallel to the Vinca C phase⁵⁶.

A few pottery fragments in the Boian-Giulești settlement of Coroteni-Cetățuia and Giulești-Sârbi are decorated with dotted bands of Vinca tradition.

4. Relative Chronology

The relative chronology of the developed Neolithic populations confirms J. Lichardus' theory of *slow propagation and progressive spreading* of Anatolian elements towards south-eastern Europe⁵⁷.

The cultural synchronism between the Balkan Peninsula population and the Anatolia ones were analysed and established by R. W. Ehrich⁵⁸, K. Gallis⁵⁹, and H. Parzinger⁶⁰. The researches conducted by M. Ozdogan⁶¹, who knows well the west-Anatolian archaeological realities gives to H. Parzinger's chronology a solid archaeological foundation. Thus, the linear pottery culture settlements, Dudești, Vinca, Precucuteni, Bolintineanu, Hamangia or Boian-Giulești are ordered and included in the chronological horizons 4-5 a/b together with

the settlements of some culturally contemporary populations in Bulgaria (Karanovo, Durankulak, Sboryanovo-Ginina Mogila, Usoe, Kalojanovec, Nova Zagora, Hotnica, Samovodene, Brenica, Ezero), Greece (Sitagroi, Dikili Tash), Anatolia (Hoca Çeşme, Can Hasan, Kumtepe, Ilipinar, Yarimburgaz, Toptepe)⁶².

The **chronological horizon 4** groups the sites of Hoca Çeşme I, Yarimburgaz "O", Ilipinar V, Can Hasan (3?), with Sitagroi I and Karanovo III. To the same horizon belongs also the linear pottery culture with the musical notes (*Notenkopf*) in the settlements of Perieni II, Glăvăneştii Vechi B, Târpeşti I together with the Dudeşti settlements of Cernica I, Dudeşti II, Drăghiceanu II and Radovanu III⁶³.

The **horizon 5a** includes for north Danube the settlements of Fărcaşele II A, Leu III, Vădastra I, Padea, Cernica II, Radovanu II2, Aldeni 1a, chronologically included in the Bulgarian sites of Usoe I, Ezero III, Nova Zagora I, Hotnica I, Samodovene I⁶⁴.

The **horizon 5b** orders the settlements of Tărtăria 2b, Pianul de Jos, Hotărani I, cruşovu I, Vădastra II, Cernica III, Tangâru II, Aldeni Ib, Lişcoteanca I, together with Usoe II, Kalojanovec I-III, Karanovo IV, Brenica I/II, Sitagroi II, Dikili Tsh I, Can Hasan I (?), Toptepe II-IV⁶⁵.

In the case of the Dudeşti culture in Wallachia, H. Parzinger does not take into account the relative chronology of internal division into periods proposed by E. Comşa, as the same chronological horizon 4 includes settlements belonging to the Dudeşti-Cernica phase (Cernica I and Radovanu) and Dudeşti-Fundeni (Drăghiceanu II and Dudeşti-Fundeni (Drăghiceanu II and Dudeşti II))⁶⁶.

The Bolintineanu settlements (Cernica II, Radovanu II2, Aldeni 1a) are synchronous with Vădastra I and the linear pottery culture settlements are grouped by Parzinger into the horizon 5a⁶⁷.

The Boian-Giuleşti settlements of Cernica III, Tangâru II, Aldeni Ib, Lişcoteanca I were rendered parallel to the Vădastra II settlements of Cruşovu I, Hotărani I, Vădastra II, contemporary with Brenica I/II and Karanovo IV (the horizon 5b)⁵⁸.

Absolute Chronology

The radiocarbon data have to be corroborated with the relative chronology data and the archaeological finds. In the case of the developed Neolithic in Wallachia there is no radiocarbon data. This unpleasant situation compels us to try an inclusion of the Dudeşti-Cernica, Bolintineanu and Boian-Giuleşti cultures in the European absolute chronology using the radiocarbon data obtained for the settlements of the cultures synchronous with the developed Neolithic communities at the Lower Danube. Thus, the chronological interval of the emergence and evolution of these populations are marked by the linear pottery cultures (Târpeşti I, Glăvăneştii Vechi B, Perieni II), Precucuteni I-II, Tisza (Hungary), Vinca B2, B/C, C (Banat, Transylvania), Karanovo III, III-IV, Hotnica, Brenica (Bulgaria), Sitagroi III, Dikili Tash I-II (Greece), Ilipinar VII-X, V, Yarimburgaz 4-5, 1-3, Hoca Çeşme I, Toptepe II-V (Anatolia).

At the same time, the radiocarbon data confirms the synchronism between the Dudești culture, phase II-III (Fărcașu de Sus = 5200-4900 Cal. B.C.)⁶⁹, and the linear pottery culture (Târpești=5300-4950 cal. B.C.)⁷⁰, proved also by the archaeological finds of pottery fragments with decoration specific of the linear pottery culture (phase IV – Glăvăneștii Vechi) from the settlement of Dudești (middle phase). The relations archaeologically proved between the Dudești-Cernica communities and the Vinca B2 ones belong to the same chronological horizon, confirmed also by the C14 dating from Liubcova (5240-5000 Cal. Bc). The radiocarbon data of the settlements of Dudești-Vinca B (5500-5000 cal. BC) and Dudești-Vinca C (4940-4700 CAL BC) from Oltenia correspond to the Vinca C layers from Banat (Hodoni=4890-4720 CAL. BC) or Yugoslavia (4980-4715 CAL BC)⁷¹.

In Bulgaria, the radiocarbon data interpreted by J. Boiadjev assigns the evolution of the Kalojanovec, Hotnica cultures as contemporary to the Karanovo III horizon, in the 5300-4990 CAL BC interval⁷². In the settlement of northern Bulgaria at Kacica, the Hotnica culture layers are dated to 5210-5000 CAL BC⁷³, which corresponds to the Dudești culture dating, the final phases of north Danube.

In Greece, the developed Neolithic period in Romania corresponds to the *Middle Neolithic* (5400-4900 CAL BC), according to J. P. Demouille⁷⁴, or the *Late Neolithic I* (5350-4850 CAL BC), according to K. Gallis⁷⁵, with the layers of Paradimini III, Sitagroi I-II, Dikili Tash I, contemporary with Karanovo III-IV, Yarimbargaz 1-3.

Reservedly, given the lack of radiocarbon data for the Dudești-Cernica, Bolintineanu, Boian-Giulești settlements, and their research stage, we propose a division into periods. Thus, the penetration of the Dudești-Cernica communities in Wallachia is synchronous with the linear pottery in Moldavia (Glăvăneștii Vechi B, Târpești I), and with Vinca B2 (Liubcova, Fărcașu de Sus), probably dating from 5200-5000 CAL BC. In the context of the relative and absolute chronology, the first penetration of the Bolintineanu communities must have taken place about 5000 CAL BC, the last one, which included the first Boian-Giulești communities little before 4850 Cal. BC, when the Karanovo V-Marica horizon began⁷⁶.

Notes

1. E. Comșa, *Données sur la civilisation de Dudești*, Praehistorische Zeitschrift, 46, 1971, heft 2, p. 203.
2. Idem, *Săpăturile de la Dudești*, Materiale, V, 1959, p.95.
3. Idem, *Contribuții la cunoașterea culturii Dudești. Complexul de la Radovanu*, Omagiu lui P.Constantinescu-Iași, on the occasion of the 70th anniversary, Bucharest, 1965, pp.39-41.
4. Al. Păunescu, *A propos du neolithique ancien de Drăghiceanu et quelques survivances tardenoisennes*, in Dacia N.S., VIII, 1964, pp. 297-305.
5. E.Comșa, *Données...*, p.220, Figs.13-14.
6. *Ibidem*, pp.201-202.
7. *Ibidem*.

8. Gh. Cantacuzino, S.Morintz, *Die Jungsteinzeitlichen Funde in Cernica, Dacia*, N.S., VII, 1963, pp. 39-41.
9. E.Comşa, *Nouvelles donnees sur l' evolution de la culture Dudeşti (Phase Cernica)*, Dacia, N.S., XVIII, 1974, pp 9-18.
10. Idem, *Istoria comunităţilor culturii Boian*, Bucharest, 1974, p.27.
11. D. Berciu, *Săpăturile de la Tangîru (1934).Raport preliminar*, B.M.J.V., I, pp.7-22.
12. Gh.Stefan, *Raport asupra săpăturilor de pe dealul "Balaurul" , comuna Aldeni, judeţul Buzău*, Report on the activity of the National Museum of Antiquities in 1942-1943, Bucharest, 1944, p.31; Gh. Stefan şi E. Comşa, *Săpăturile arheologice de la Aldeni*, Materiale, 3, 1957, pp. 97-101.
13. Cercetări arheologice M.Neagu.
14. Gh.Cantacuzino, S.Morintz, *op.cit.*
15. E.Comşa, *Remarques sur l' etape finale de la phase Bolintineanu-culture Boian (à Radovanu II)*, Dacia, N.S., XXI, 1977, p.326.
16. Idem, *Istoria comunităţilor...*, p.27.
17. Idem, *Remarques...*, p.319-328.
18. Idem, *Săpăturile arheologice de la Ipoteşti*, Materiale, 8, 1962, p.213-218.
19. V. Bobi, *O nouă etapă de locuire a purtătorilor culturii Boian descoperită la Coroteni-Vrancea*, Vrancea-Studii şi Comunicări, IV, Focşani, 1987, pp.329-330.
20. Informaţie D. Serbănescu; Morintz, S., Ionescu, B., *Cercetări arheologice în împrejurimile oraşului Olteniţa*, SCIV, 19, 1, 1968, p.119 and 122.
21. E.Comşa, *Istoria comunităţilor...*, p. 224.
22. *Ibidem*.
23. E. Comşa, *Nouvelles données sur l' evolution de la culture Dudeşti (phase Cernica)*, Dacia, N.S., XVIII, 1974, p.17; Idem, *Remarques...*, p.328.
24. J.Lichardus et alii, *La protohistoire de l' Europe. La néolithique et la chalcolithique*, Paris, 1985, p.338.
25. V. Bobi, *op.cit.*, p.323.
26. V.Teodorescu, *Date preliminare privind aşezările cu ceramică liniară din teritoriu de la sud de Carpaţi al României*, SCIV,17, 1966, pp.223-235.
27. V. Drâmbocianu, *Cercetările arheologice de la Vadu Soreşti*, jud.Buzău, Materiale, Tulcea 1980.
28. M. Neagu, *Comunităţile Bolintineanu în Câmpia Dunării*, Istros, VIII, Brăila, 1997, p.11, 13.
29. Vl. Dumitrescu, *Cronologia absolută a eneoliticului românesc în lumina datelor C14*, Apulum, XIV-XV, 1974, p.28.
30. F. Draşovean, *Cultura Vinca târzie (faza C) în Banat*, Timişoara, 1996, p.92.
31. Vl. Dumitrescu, *Cronologia...*, p.28.
32. E. Comşa, *Remarques...*, pp.317-318.
33. V. Cavruc, M.Neagu, *Date noi privind stratigrafia Grădiştei Coslogeni*, Cultură şi civilizaţie la Dunărea de Jos, Călăraşi, 1995, pp.75-76; M.Neagu et alii, *Grădiştea Coslogeni. III Aşezarea neolitică*, Cronica cercetărilor arheologice. Campania 1997, Călăraşi 1998, pp.24-25.
34. H. Todorova, T. Dimov, *Neolithic of southeastern Europe and its near eastern connections. Ausgrabungen in Durankulak 1974-1987*, p. 299.
35. E. Comşa, *Necropola neolitică de la Cernica*, Bucureşti, 2001, p.198.

36. Săpături Nikola Angelov; J. Boiadjev, *Chronology of Prehistoric cultures in Bulgaria*, în *Præhistoria Bulgaria*, 1995, p. 165.
37. V. Popov, *Periodizatia i hronologhia na neolitnite i halcolitnite kulturi ot porecieto na r. Rusenski Lom*, Ruse, 1996, pp.7- 91.
38. M. Özdoğan, Al.Yutaka, *An Interim Report on Excavations at Yarimburağ and Toptepe in Eastern Thrace*,
39. *Anatolica*, 17, 1991, pp.59-121.
40. D. Berciu, *Tangîru*, pp. 144-146.
41. E. Comşa, *Istoria comunităţilor...*, pp.25,27.
42. Berciu, D. *Contribuţii la problemele neoliticului în România*, Bucureşti, 1961, p.60-63.
43. S. Marinescu-Bîlcu *et alii*, *Ciulnişa, jud. Ialomişa*, *Cronica Cercetărilor Arheologice*. Campania 1994, Cluj-Napoca, 1995, p.21; idem, *Ciulnişa, jud. Ialomişa*, *Cronica Cercetărilor Arheologice*. Campania 1995, Brăila, 1996, p.33.
44. M. Neagu, *Gălăţui-Movila Berzei*, *Civilizaţia Boian pe teritoriul României*, Călăraşi, 1999, p.22
45. C. Micu, *Cercetarea de la Isaccea-Suhat. Aşezarea Boian-Giuleşti*, *Civilizaţia Boian pe teritoriul României*, Călăraşi, 1999, p.21.
46. M.Nica, *Descoperiri Boian în vestul Câmpiei Române*, *Civilizaţia Boian pe teritoriul României*, Călăraşi, 1999, p.8.
47. I. T. Dragomir, *Consideraţii privind neoliticul şi eneoliticul din sud-estul Moldovei*, *Danubius*, 13-14, 1992, pp. 24-25; S. Pandrea, *Cultura Boian în NE Câmpiei Române*, *Istros*, IX, Brăila 1999, p. 21.
48. *Ibidem*, p. 20.
49. In the settlement of Boian Giuleşti (III/1) at Gălăţui –Movila Berzei, in the dwellings also pottery fragments with Dudeşti type decoration were uncovered.
50. E. Comşa, *Istoria comunităţilor...*, p. 231.
51. In the settlement of Boian-Giuleşti at Ciulnişa two Hamangia II/b statuettes were uncovered (information from E.Renţa).
52. C. Micu, *Cercetarea de la Isaccea – Suhat*, p. 21.
53. E. Comşa, *Istoria comunităţilor...*, p. 232.
54. S. Marinescu – Bîlcu, *Cultura Precucuteni pe teritoriul României*, Bucureşti, 1974, pp. 15-20, 138.
55. Idem, *Relaţiile între cultura Precucuteni şi Boian – Gumelniţa*, în *SCIVA* 3, 27, 1976, pp. 349 – 352.
56. S. Marinescu-Bîlcu *et alii*, *Ciulnişa, jud. Ialomişa*, *Cronica Cercetărilor Arheologice*. The Campaign 1994, Cluj-Napoca, 1995, p.21; idem, *Ciulnişa, jud. Ialomişa*, *Cronica Cercetărilor Arheologice*. Campania 1995, Brăila, 1996, p.33.
57. Fl. Draşovean, *Cultura Vinca târzie*, p. 92.
58. J. Lichardus, *La Protohistoire*, p. 338.
59. R. W. Ehrich, *Chronologies in Old World Archaeology*, Chicago and London, 1992.
60. K. Gallis, *The Neolithic World, în Neolithic cultures in Greece*, 1996, p. 30.
61. H. Parzinger, *Studien zur Chronologie und Kulturgeschichte der Jungstein- Kupfer- und Frühbronzezeit zwischen Karpaten und Mittleren Taurus*, Mainz am Rhein, 1993.
62. H. Parzinger, M. Özdoğan, *Vortrag Zur Jahressitzung 1995 der Römisch-Germanischen Kommission. Die Ausgrabungen in Kirkklareli (Türkisch-Thrakien) und ihre Bedeutung für die*

63. H. Parzinger, *op.cit.*, pp. 86-87, 90, 259.
64. *Ibidem*, p. 259.
65. *Ibidem*, p. 260.
66. *Ibidem*.
67. *Ibidem*, p. 259.
68. *Ibidem*, p. 260.
69. *Ibidem*.
70. C.-M. Mantu, *Cronologia absolută a culturilor neolitice din România și relațiile c lumea egeo-anatoliană*, în *Cercetări istorice*, XVII/1, Iași, 1998, p. 86.
71. *Ibidem*, p. 87
72. *Ibidem*.
73. J. Boiadjiev, *Chronology of Praehistoric cultures in Bulgaria*, în *Praehistoria Bulgaria* 1995, p. 165.
74. J.Görsdorf, Y.Bojadjiev, *Zur absoluten Chronologie der bulgarischen Urgeschichte Eurasia Antiqua*, 2, 1996, p. 142.
75. C.-M.Mantu, *op.cit.*, p. 91.
76. *Ibidem.*, pp.92-93.

BIBLIOGRAFIE

- Bem, C. *Elemente de cronologie radiocarbon. Ariile culturale Boian-Gumelnița-Cernavodă I și Precucuteni-Cucuteni/Tripolie*, *Cercetări arheologice*, XI/1, p.337-359.
Berciu, D. *Tangâru*, București, 1937.
Berciu, D. *Contribuții la problemele neoliticului din România*, București, 1961.
Cantacuzino, Gh., Morintz, S. *Die Jungsteinzeitlichen Funde in Cernica, Dacia*, N.S VII, 1963, p. 39-41.
Comșa, E. *Considerații cu privire la evoluția culturii Boian*, SCIV, V, 3-4, 1954, p.360-392.
Comșa, E. *Quelques données relatives à la peridisation et à l'evolution de la civilisation de Boian*, Dacia, N.S., I, 1957, p.71.
Comșa, E. *Données sur la civilisation de Dudești*, *Praehistorische Zeitschrift*, 46, 1971, heft 2, p. 203.
Comșa, E. *Nouvelles données sur l'evolution de la culture Dudești (phase Cernica)*, Dacia N.S., XVIII, 1974, p.17
Comșa, E. *Atlas du Néolithique Européen*, Liege, 1993, p.156-158.
Comșa, E. *Raporturile dintre cultura Boian și cultura Vădastra*, *Cercetări Arheologice*, XI 1, p. 299-303.
Dumitrescu, Vl. *Cronologia absolută a eneoliticului românesc în lumina datelor C14 Apulum*, XIV-XV, 1974, p.28.
Dumitrescu, Vl. *În legătură cu o nouă sinteză despre neo-eneoliticul sud-est și central-est european*, în: *Memoria Antiquitatis*, 4-5, 1972-1973, p. 25-47.
Dumitrescu, Vl., Vulpe, Al. *Dacia înainte de Dromichaites*, Bucuresti, 1988.

- Ehrich, R.W.** *Chronologies in Old World Archaeology*, Chicago and London, 1992.
- Evin, J.** *Reflexions sur les datations radiocarbon obtenue entre le V-ème millenaire av. J.-C. En Europe de l'est: apport de la calibration des dates par la dendrochronologie*, Al II-lea Colocviu Internațional « Bazinul Dunării de Jos în mileniul V-III î.e.n. », comunicare-București, 13-15 noiembrie 1996.
- Gallis, K.** *The Neolithic World, Neolithic Cultures in Greece*, 1996, p.30.
- Hasotti, P.** *La culture neolithique Hamangia. Quelques remarques sur le stade actuel des recherches*, Le Paleolithique et le Neolithique de la Roumanie en contexte europeen, Iași, 1991, p.250-265.
- Hasotti, P.** *Epoca neolitică în Dobrogea*, Constanța, 1997.
- Lichardus, J. et alii** *La protohistoire de l'Europe. La néolithique et la chalcolithique*, Paris, 1985, p.338.
- Mantu, C.-M.** *Câteva considerații privind cronologia absolută a neo-eneoliticului din România*, SCIVA, 46, 1995, 3-4, p.214.
- C.-M.Mantu**, *Cronologia absolută a culturilor neolitice din România și relațiile cu lumea egeo-anatoliană*, în *Cercetări istorice*, XVII/1, Iași, 1998, p. 86-100.
- Marinescu-Bilcu, S.** *Asupra unor aspect ale raporturilor dintre culturile Precucuteni și Hamangia*, Pontica, 5, p.29-36.
- Marinescu – Bilcu, S.** *Cultura Precucuteni pe teritoriul României*, București, 1974, p. 15-20, 138.
- Marinescu-Bilcu, S.** *Relațiile între cultura Precucuteni și Boian – Gumelnița*, în SCIVA 3, 27, 1976, p. 349 – 352.
- Morintz, S., Ionescu, B.** *Cercetări arheologice în împrejurimile orașului Oltenița (1958-1967)*, în: SCIV, 19, 1, 1968, p.122.
- Nestor, I.** *Zur Chronologie der rumanischen Steinkupferzeit. Praehistorische Zeitschrift*, Berlin, XIX, 1928, 110–143.
- Özdogan, M.** *An interim report on excavations at Yarimburağ and Töltepe in Eastern Thracia*, Anatolica, XVIII, 1991, p.120.
- Parzinger, H.**, *Studien zur Chronologie und Kulturgeschichte der Jungstein- Kupfer- und Frühbronzezeit zwischen Karpaten und Mittleren Taurus*, Mainz am Rhein, 1993.
- Parzinger, H., Özdogan, M.** *Vortrag Zur Jahressitzung 1995 der Römisch-Germanischen Kommission. Die Ausgrabungen in Kirkklareli (Türkisch-Thrakien) und ihre Bedeutung für die Kulturbeziehungen zwischen Anatolien und dem Balkan vom Neolithikum bis zur Frühbronzezeit*, BRGK, 76, p. 5 – 29.
- Popov, V.** *Periodizatsia i hronologhia na neolitnite i halcolitnite kulturi ot porecieto na r. Rusenski Lom*, Ruse, 1996, p.7- 91.