

# Archaeobotanical materials from Moldavia and Dobruja (millennia 1st B.C. - 1st A.D.)

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The work of the archaeobotanist is conditioned, on one hand, by the chance of discovering, during archaeological excavations, of certain determinable vegetal macrorests and, on the other, by the interest and kindness of archaeologists with whom the former may have close relations of cooperation. The discoveries of vegetal rests are quite rare and, that is why, the archaeobotanist should not neglect the smallest bits, in relation to which all possible hypotheses should be analyzed - of course, together with archaeologists - as thoroughly as possible.

Our most kind colleagues, Silvia Teodor, Virgil Mihăilescu-Bîrliba, Viorel Căpitanu, Octavian Bounegru and Costel Chiriac provided us some batches of vegetal macrorests from the well-known *dava* on the Siret, Poiana and Răcătău, from the tumular necropole of Braniște, from Histria, as well as from the early mediaeval settlement of Dumbrăveni, the county of Constanța.

POIANA (the village of Nicorești, the county of Galați).

From the *Cetățuia* site, situated on the Siret's left bank, Silvia Teodor<sup>1</sup> offered us an amount of organic material, in the form of a clod including agglutinated, intensely carbonized seeds. In the earth collected in the vicinity of the clod of carbonized matter, a small number of unburnt seeds were also found. The sample taken into analysis had been collected in 1990, in square 6, 2.20 m in depth. According to Silvia Teodor - who made the diggings - the samples were found under the defense wall of that place.

Considering the depth indicated on the mark, the sample belongs to the 4th level of archaeological depositions, called by Radu Vulpe Poiana II<sup>2</sup>, from "Cetățuia"<sup>3</sup>.

Within the depositions from "Cetățuia", this level includes two horizons, corresponding to some successive chronological phases, their differentiations being possible only by means of archaeological materials<sup>4</sup>. The deposition of Poiana's fourth level, containing traces of dwellings, ash, ceramics and other rests, has been dated as belonging to centuries 4th-2nd B.C.<sup>5</sup> However, for our sample, the interval between centuries 3rd-2nd B.C. has been indicated<sup>6</sup>.

The material subjected to analysis, 18 g in weight, represented a spherical agglutination of carbonized millet caryopses (*Panicum miliaceum*) seen as breaking when their separation was attempted. It was thus observed that the millet

grains were not decorticated. In the ground collected from the region of the millet clod, a number of actual, non-carbonized seeds - belonging to 7 species of segetal and ruderal plants - were found. Even if they seem to be in no way related to the small ancient deposit, it is however interesting to mention here the identified species: *Echium vulgare* (6 seeds), *Rumex* sp. (35 seeds), *Torilis rubella* (3 seed), *Setaria glauca* (1 seed), *Trifolium* sp. (23 seeds), *Brassica* sp. (10 seeds), *Umbellifere* (1 seed). The presence of non-carbonized seeds can be only explained by the activity of the actual rodents. Nevertheless, the clod of millet seems to belong to an ancient level, being probably, *in situ*. Unfortunately, no explanation on the role and significance of its being deposited under the defense wall was provided.

The discovery of *Panicum miliaceum* caryopses in a Geto-Dacian dwelling is not surprising. Quite large deposits, in which millet caryopses were mixed with other cereals have been found in the La Tène dwellings of Cârlomanești, the county of Buzău<sup>7</sup>, Popești-county Ilfov<sup>8</sup>, Ocnița-county Vâlcea<sup>9</sup>, well as in the Geto-Dacian cities of Brad and Răcățau, the county of Bacău<sup>10</sup>, and Barboși, the county of Galați<sup>11</sup>. More complete information mentions the presence of millet at Cealâc II (the region of Taraclia, Bessarabia), dated between 4th-3rd B.C.<sup>12</sup>. Here, millet was found mixed *Triticum dicoccum*, *T. compactum*, *Hordeum vulgare* and *Lens culinaris* in pit-stores, as well as among the rests of an external oven<sup>13</sup>. Quite interesting, at Cealâc II, the millet caryopses were decorticated, which would indicate that the mentioned mixture was prepared for further consumption<sup>14</sup>. A similar situation was mentioned too, in the contemporary dwelling of Comrat I, where the mixture - found in a vessel - included decorticated caryopses of *Triticum dicoccum* and *Panicum miliaceum*<sup>15</sup>.

Millet (*Panicum miliaceum*) is a graminacea originating from South-East China, which came very early to the Near East, wherefrom it spread to Europe<sup>16</sup>, too. The earliest discoveries on *Panicum miliaceum* are attributed to the pre-ceramic neolithic of Argissa Magoula<sup>17</sup>, the caryopses of this plant having been quite constantly found in the neolithic and chalcolithic places of South-East Europe<sup>18</sup>. In the Bronze Age probably due to a climatic change, as well, the cultivation of millet was intensified<sup>19</sup>. In the ages to follow, millet was more or less extensively cultivated, as depending on the culinary habits of the populations and, equally, on the soil and climatic conditions.

The Geto-Dacians seem to have utilized in their food millet mixed with other cereals, as a kind of porridge; however, one should not exclude the possible utilization of millet flour for the preparation of flat cakes or "mămăliga", a substituent for bread. In the present stage of investigations, a precise evaluation of the role and importance of millet cultivation by the Geto-Dacian tribes, is not possible.

## RĂCĂTĂU (the county of Bacău)

From the known Dacian walled city situated on the river of Siret, in the "Cetățuia" site, Viorel Căpitanu kindly entrusted us - for analyses and determinations - with an amount of 575 g of carbonized vegetal material. The Geto-Dacian deposits from Cetățuia have been dated, by the author of the diggings, between 4th B.C. - 2nd A.D. Our sample, marked as Cet./92; S XXXV; L2; -0,40-0,60 m, seems to originate from the 5th level (numbered from the bottom to the top) of the Răcătău deposits<sup>20</sup>, dated by its discoverer between 1st B.C. - 1st A.D.<sup>21</sup>

The sample we were given contained 250 g of coal from several woody vegetal species, along with fragments of barely and pea grains. From the batch taken into study, an amount of 121 g, containing barley caryopses (*Hordeum vulgare*), and 196 g pea seeds (*Pisum sativum*), could be determined. The barley caryopses' length varies between 5.8-6.0 mm, while their width in the median region is of 2.7-3.0 mm. The pea seeds - almost spherical, and quite well preserved, have a diameter ranging between 5.0-7.5 mm.

Both plants detected in the sample from Răcătău were already known from older discoveries, made in various Geto-Dacian places. Thus, *Hordeum vulgare* has been signaled out in the Getic dwellings of Cărlomănești (about 87% of the pattern) and Popești (0.3%)<sup>22</sup>; also *Pisum sativum* was found - in quite reduced ratios - at Cărlomănești<sup>23</sup>.

Some researches consider *Pisum sativum* a hybrid resulted from two species' interbreeding. It seems that such a process occurred, indeed, in Central Asia<sup>24</sup>. The earliest archaeobotanical record comes from the preceramic neolithic from Jericho and Jarmo<sup>25</sup>. This leguminous plant constatly occurs in the neolithic and chalcolithic of the Near East<sup>26</sup>, being also met in Europe's<sup>27</sup> chalcolithic. Although, for the ages to follow, information on the cultivation of such plants is missing, it is our opinion that the situation is exclusively caused by insufficient investigations on the specialists' part.

The batch of vegetal macrorests from Răcătău brings no special or new information, however, it states more precisely and enriches the existent data on the plants cultivated by Geto-Dacians, in the classical period.

## NEMȚIȘOR-BRANIȘTE (county Neamț)

Our colleague, Virgil Mihăilescu-Bîrliba<sup>28</sup>, offered us for determination, from the necropolis of the "Carpathian tumuli culture"; some vegetal macrorests collected from tombs. The tumular cemetery of Nemțisor-Braniște belongs to the 3rd century A.D., being attributed to Taifalians<sup>29</sup>, a population that seems to include Geto-Dacian<sup>30</sup> elements, as well. The CTC necropoles are usually placed 0.5 km away from the settlement<sup>31</sup>. In the pits found under the tumuli's mantle,

there have been found various objects, human and animal bones, various amounts of charcoal. Luckily, in some cases, a few determinable vegetal macrorests were found in the pits.

From tumulus nr.8 (Pit.11) a fragment from the median region of a hazelnut's pericarp could be recovered. The fragment is 1 cm in length. From pit 2 of the same tumulus, a mature fruit of *Corylus avellana* was collected from the filling material. The nut was broken, but the seed was well-preserved<sup>32</sup>. The pericarp was quite deteriorated and, in spite of our efforts, it could not be restored and illustrated. The pericarp, especially, had been affected by fire, the fruit being almost wholly calcinated.

*Corylus avellana* is a bush met especially on the forest skirts and in glades, being present in the whole woody region - from the plain up to higher mountainous zone<sup>33</sup>. Due to the nutritive qualities of the hazelnuts - quite simple to preserve over the winter - the bushes have been protected by all traditional<sup>34</sup> communities; also, some magic properties have been conferred to them<sup>35</sup>. However, the presence of hazelnuts in the incineration pits from tumulus 8 at Braniște cannot be explained by alimentary necessities. Considering the conditions in which they were discovered, it is our opinion that the hazelnuts<sup>36</sup> came to the ritual pits only accidentally, falling from the branches of which the funeral piles were formed.

In the same pit 2 of T 8/c., in which the hazelnut was found, an intact kernel of *Prunus insititia* (bullace)<sup>37</sup> was also discovered 19 mm in length and 15 mm in width. The kernel is globular, slightly flattened, smooth, both ends having the shape of an obtuse angle. Nowadays, the bullace is both cultivated, various types being known, and wild, frequent on hills sunny slopes and skirts<sup>38</sup>. The kernel found in T/8 comes from a mature fruit. *Prunus insititia* was found, with some probability, at the Cucuteni B level of Sărata Monteoru<sup>39</sup>, as well as in a contemporary dwelling on the territory of Bessarabia (Varvareuca XV)<sup>40</sup>.

Other vegetal macrorests have been discovered in T/18, investigated in 1976. In sector A of the mentioned tumulus, 5 fruits - that seem to belong to the groups of capsules - have been discovered. Such capsules open - when reaching maturity - due to the splits placed towards their top. The peduncles are cylindrical, smooth, empty inside. Fruits' dimensions: length 10-12 mm, width 4-7 mm. From the C/complex 1c section - 0.30 m depth - there have been discovered other 2 well-preserved fruits, connected among them. The insufficient characteristics we have prevent us, for the time being - from achieving precise determinations and a correct taxonomic classification of the fruits discovered.

The vegetal macrorests discovered at Braniște belong to some plant species from the spontaneous flora, with the exception of *Prunus insititia* - which is also cultivated - never signaled out up to now, in Moldavia, as a result of archaeobotanic

investigations. The fact that the hazelnuts and the bullace had reached maturity permits the assumption that the cremations of T/8 occurred by the end of summer or beginning of autumn.

The interval between August 20 and September 30 seems to reflect - most probably - the moment of the ritual occurrence of tumulus 8 at Branîște.

#### HISTRIA (the county of Constanța)

The sample and information on the conditions in which the discovery was made were kindly provided by Octavian Bounegru<sup>41</sup>. The vegetal macrorests come from the Domus zone, a complex of *villas* in the city's residence district, on the floor of a room in a palace (according to the discoverer). The sample has been attributed to the Roman-Byzantine period - towards the middle of the 6th century A.D. - therefore, under Justinian I.

The batch subjected to determinations, unitary from a botanical point of view, contained 57 seeds of *Vicia sativa* and - most probably - one seed of *Vicia ervilia*. No hypothesis has been forwarded as to the manner in which the vegetal macrorests came on the floor of that room.

Both *Vicia sativa* and *Vicia ervilia* are fodder plants, the seeds of which were also employed in human alimentation. *Vicia sativa* was cultivated for its meliferous properties, as well. The flour obtained from *Vicia sativa* is used in the alimentation of horses and poultry. The seeds of this species possess medical qualities, the flour being employed as poultice emollient and purgative. The presence of small store of *Vicia sativa* seeds in a special building might be explained by the possible breeding - in a palace - of decorative or singing birds, once known that such things quite frequently occurred.

#### DUMBRĂVENI (the county of Constanța)

The diggings made between 1992-1993 by C.Chiriac and T.Papasima in the "Canaraua fetii" site allowed the recovery of two batches of vegetal macrorests we were invited to investigate.

The vegetal macrorests were found inside a church wall, dated between centuries 9th-10th<sup>42</sup>. According to the information provided by Costel Chiriac, in the vicinity of such deposits, agricultural tools, ceramic fragments, a whetstone and a curved knife - considered by archaeologists either a hedging knife or a reaping hook - were also found.

Two samples have been shown to us. The former, marked as N1, S I/1992, 8 g in weight, contained 70% *Panicum miliaceum* caryopses and 30% *Setaria glauca* 5 g ones. The millet caryopses were agglutinated, while the 5 fruits, intensely calcinated, could not be separated, being either glued together or glued to the millet small clods.

The latter sample, marked as Dum/93, B1, N2, contained 11 g *Panicum mi-liaceum* and very few 5 g caryopses. This time, the *Panicum* caryopses were no more glued together, so that they could be easily separated by the *Setaria* ones.

In our opinion, *Setaria* occurs in the two samples as a segetal plant, which probably was a weed in millet cultures. Worth mentioning here is the very high ratio of *Setaria* caryopses from the former batch, which would indicate either a strong weeding or a possible fodder culture. The presence of millet at Dumbrăveni is quite normal, such a cereal being known in the regions of Low Danube as early as the neolithic (see *supra* - Poiana). Depending equally on the climatic conditions and on historical events, the cultures of millet have been either restricted or extended. In early feudalism, millet might have been used for bread, tortillas or of a fermented beverage - attested, later on, on both banks of the Lower Danube. As to the less common presence of some deposits of cereals and agricultural tools in a church - the explanation remains to be offered by the authors of the diggings.

The dispersion, in both time and space, of the samples analysed in the present paper, prevents us from drawing ultimate and firm archaeobotanic conclusions. Nevertheless, the information presented in the paper, even if incomplete, may contribute to a subsequent, more thorough analysis of the plants cultivated, on the territory of Romania, in ancient times.

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## FOOTNOTES

1. We want to express our whole gratitude to our colleague for having so kindly provided the necessary information and archaeobotanical materials.

2. R.Vulpe and collab., in SCIV, II, 1951, 1, pp.184-185.

3. S.Teodor, *Stratigrafia stațiunii arheologice de la Poiana, jud.Galați*, in *Carpica*, XXIII/1, 1992, pp.115-124; S.Teodor, V.Mihăilescu-Bîrliaba, *Descoperiri monetare din așezarea geto-dacică de la Poiana-Tecuci*, in *ArhMold.*, XVI, 1993, pp.121-123.

4. *Ibidem*.

5. *Ibidem*.

6. Dating has been specified by Silvia Teodor - head of the Poiana excavation.

7. M.Cârciumaru, *Considerații paleoetnobotanice și contribuții la agricultura geto-dacilor*, in *Thraco-Dacica*, IV, 1983, 1-2, pp.128-129.

8. *Ibidem*.

9. *Ibidem*.

10. *Ibidem*.

11. *Ibidem*.
12. Z.V. Janušević, *Kul'turnye rastenija Severnogo Pričernomor'ja. Paleoetnobotaničeskie issledovanija*, Chișinău, 1986, p.16.
13. *Ibidem*.
14. *Ibidem*.
15. *Ibidem*.
16. Idem, *Kul'turnye rastenija Jugo-Zapada SSSR po paleobotaničeskim issledovanijam*, Chișinău, 1976, pp.152-153; J.M.Renfrew, *Palaeoethnobotany. The prehistoric food plants of the Near East and Europe*, London, 1973, pp.99-102.
17. Z.V. Janušević, *op.cit.*, p.152.
18. *Ibidem*, pp.153-157; J.M. Renfrew, *op.cit.*, pp.99-101.
19. Z.V. Janušević, *op.cit.*, p.157.
20. V. Căpitanu, *Principalele rezultate ale săpăturilor arheologice în așezarea geto-dacică de la Răcățiu (jud. Bacău)*, in Carpica, VIII, 1976, pp.51-53.
21. *Ibidem*, p.53. We thank Viorel Căpitanu, who supplied the sample for study.
22. M. Cărciumaru, *op.cit.*, pp.129-130.
23. *Ibidem*, p.129.
24. Z.V. Janušević, *op.cit.*, p.168.
25. *Ibidem*; J.M. Renfrew, *op.cit.*, p.110-111.
26. *Ibidem*; W. van Zeist and J.A.H. Bakker-Heeres, *Archaeobotanical Studies in the Levant I*, in *Palaeohistoria*, 24, 1982, tab.5-10, p.208; idem, *Archaeobotanical Studies in the Levant.2. Neolithic and Halaf Levels at Ras Shamra*, in *Palaeohistoria*, 26, 1984, p.160, tab.1-4.
27. Z.V. Janušević, *op.cit.*, p.169; K. Wasylkowa, M. Cărciumaru, E. Hajnalová, B.P. Horthyányi, G.A. Pashkevich, Z.V. Yanushevich, *East-Central Europe*, in Van Zeist, Wasylkowa and Behrs (eds), in *Progress in Old World Palaeoethnobotany*, Rotterdam, 1991, pp.212, 215, 218, 224; M. Cărciumaru, F. Monah, *Déterminations paleobotaniques pour les cultures Précucuteni et Cucuteni*, in M. Petrescu-Dîmbovița et al. (eds), *La civilisation de Cucuteni en contexte européen. Session scientifique Iași-Piatra Neamț 1984*, Iași, 1987, p.173.
28. Our special thanks are extended to Virgil Mihăilescu-Bîrlița for the materials offered, as well as for the complete and thorough information so kindly supplied. Cf. V.Mihăilescu-Bîrlița, *Nemțisor-Braniște*, in *Glasgefässe in der Sântana de Mureș Kultur*, Berlin, 1996 (in press).
29. Cf. V. Mihăilescu-Bîrlița, N. Mirițoiu, M.St. Udrescu, *Raport preliminar privind cercetarea de la Tîrzia, com. Brusturi-Drăgănești, jud.Neamț*, in *Materiale*, Tulcea, 1980, pp.246-253; V. Mihăilescu-Bîrlița, *Un nouveau groupe culturel sur le territoire de la Roumanie. Les fouilles de Braniste-Nemțisor (comm. de Vinători, dép. Neamț)*, in *Dacia*, N.S., XXIV, 1980, pp.181-207.
30. *Ibidem*; idem, *Ethnical Elements in "the Carpathian Tumuli Culture"*, in *Archaeological "Objectivity" in Interpretation I. The World Archaeological Congress, 1-7 September 1986*, Southampton and London, Southampton, 1986, pp.1-15.
31. *Ibidem*, p. 2.

32. Idem, *op.cit.*, in Glasgefässe...
33. *Flora R.P.R.*, I, București, 1952, pp.200-202.
34. A.M. Petrequin, P. Petrequin, *Le Néolithique des lacs. Préhistoire des lacs de Chalain et Clairvaux (4000-2000 av.J.-C.)*, Paris, 1988, p.32.
35. R. Vulcănescu, *Mitologie română*, București, pp.479-480.
36. *Ibidem*.
37. J.M. Renfrew, *op.cit.*, p.144.
38. *Flora R.P.R.*, II, București, 1956, pp.844-845; Z.V. Januševič, *op.cit.*, pp.185-186.
39. M. Cărciumaru, F. Monah, *op.cit.*, p.173.
40. Z.V. Januševič, *op.cit.*, p.185.
41. Also, thanks are due to Octavian Bounegru for the information he gave us.
42. Data on the place and conditions in which the discoveries were made have been kindly offered by Costel Chiriac to whom special thanks are addressed.