

Archaeobotanical materials from the Neolithic site Ohoden-Valoga: Structure 1 and Grave 1

Elena Marinova

Изследваният археоботаничен материал от Оходен-Валога (Структура 1 и Гроб 1) дава една обща картина за ползваните в селището културни и диви растения. Неолитното земеделие на Оходен, както и на други селища от нашия регион, се е базирало на плевести пшеници (еднозърненка и двузърненка), ечемик и бобови култури (в случая леца и грах). Някои други познати от неолита на Южна България културни растения все още липсват в археоботаничните материали от Оходен. Необходими са по-нататъшни изследвания, за да се установи дали тази липса е обусловена от културните особености на селището или се дължи на сравнително малка изследвана площ. Разликата във функциите на двете изследвани структури също се е отразила и на съдържанието на растителни останки намерени в тях.

Намерените в изследваните структури различни видове семена/плодове и овъзглена дървесина показва, че заедно с дъбовите гори също и влажните зони и крайречни гори от околността са били използвани като допълнителен източник на растителни ресурси от неолитните обитатели на Оходен. Находките на степното растение коило повдигат въпроса за екстра зонални отворени тревисти растителни съобщества, в този иначе покрит с гори ландшафт.

Introduction

The archaeobotanical information from North Western Bulgaria is still very scarce. In the last 30 years no systematic archaeobotanical studies were undertaken there. The Neolithic site Ohoden-Valoga gives the opportunity to get information on the first stages of the introduction of the agriculture and the connected with it anthropogenic changes on the vegetation in this poorly studied region. To obtain this information numerous archaeobotanical samples were kindly taken and processed from the excavation team. This work is based on flotation samples recovered during the excavation seasons of 2004 and 2005 from Structures No 1 and Grave No 1.

Study area and archaeological settings

The site Ohoden is situated on a quite plain, orientated to south slope on the left side of the river Skât, at about 195 m altitude.

Ohoden-Valoga is a flat or open site and according to the excavator it shows relations with the Starcevo culture.¹ A plan of Structure No 1 from which are taken the most of the samples is given on Plate LXII.

The climate in the area has temperate continental character with precipitation maximum in the spring (Mai-June). The mean annual temperature is 10-11°C and the mean annual precipitation is about 600 mm. In the area prevail gray and brown forest soils or according to the FAO system chromic luvisols and chromic cambisols.² Such soils are have good fertility and suitable for growing cereal crops.

The potential natural vegetation in the area are light xerothermous oak forest with domination of different oak species (*Quercus*

1 Ганецовски 1999.

2 Коргалев 2002.

cerris, *Quercus frainetto*, *Quercus pubescens*), in this forests grow also some light demanding trees like *Carpinus orientalis*, *Fraxinus ornus*, *Acer monspessulanum*, *Acer campestre*, *Acer hyrcanum*, *Acer tataricum*, *Pyrus pyraster*, *Prunus mahaleb*, *Ulmus minor*. Their undergrowth is rich, consisting of various shrubs *Crataegus monogyna*, *Crataegus pentagyna*, *Rosa canina*, *Rosa gallica*, *Prunus spinosa*, *Cornus mas*, *Cornus sanguinea*, *Ligustrum vulgare*, *Cotinus coggygria*, *Rhamnus cathartica*, *Paliurus spina-christi*, *Ruscus aculeatus*. Also a herb undergrowth is developed.³ Today this natural vegetation is strongly influenced by agricultural activities and to great extent degraded.

Methods and Material

The studied material consist of charred plant macrofossils (seeds, grains, chaff, wood, etc.), which were accumulated in the settlement layers of Ohoden-Valoga during the Neolithic occupation of the studied during 2004 and 2005 Structure No 1 and Grave No 1. This material was obtained through manual flotation on the site. The sieves used were with 0,2 mm openings.

The material was sorted and studied under binocular with magnification up to 40x. The wood charcoal particles were studied with microscope with reflecting light with magnification to 200x. For the determination of the diaspores (fruits, seeds etc.) and the wood the reference collection of the dept. Botany, Sofia University and the corresponding specialised literature was used.

During the processing and laboratory analysis many of the plant remains were easy to be destroyed by the first touch with the tweezers. This fact should be beard in mind by the interpretation of the obtained results. The reason for this is most probably the heavy loamy soil, which by the continental climatic conditions in the region with alternating quite dry and quite wet periods damages mechanically the plant remains, especially when the studied cultural layers are situated near to the modern soil surface.

Results and Discussion

The results of the analysis of seeds, fruits etc. called generalized diaspores (carpological analysis) from Structure No 1 and Grave No 1 are given on Table 21, and from the wood charcoal (anthracological) analysis of Structure No 1 in Table 22.

The prevailing cultivated plants are the hulled wheats – einkorn (*Triticum monococcum*) and emmer (*T. dicoccum*). They were the staple crops not only for the region of South Eastern Europe, but for entire Europe and Near East during the prehistoric period. Because of the bad preservation of the charred plant material only some fragments of grains of the hulled wheats were found in the samples. More numerous are the remains of their chaff and especially of the spikelet forks⁴ or their fragments (Plate LXIII:1). The presence of this chaff remains indicates that the harvested from the fields wheats were cleaned and prepared for consumption in the site.⁵ By such small quantities of the found material and by such small part of the excavated area it is not possible to say which of both wheat species was the prevailing in the site.

Quite numerous but only in Grave No 1 is the barley (*Hordeum vulgare*, Plate LXIII:2). The preservation do not allows to distinguish which of the forms of barley – hulled, naked or both were cultivated in the site. Some of the found grains show trace of husks, which could be an indication for hulled barley. The prevailing quantity of barley was found in the samples from Grave No 1, since in Structure No 1 it is almost absent. The different composition of the plant remains from the both structures (Structure No 1 mainly wood charcoal, Grave No 1 mainly seeds and fruits) is most probably connected with the different functions of them. It could also represent sampling biases, what could be not excluded by the small number of studied material.

An important part of the prehistoric crop inventory in Bulgaria together with the cereals, are the leguminous plants. It seems that during the whole studied period the most

3 Bondev 1990.4 „Spikelet forks” are the basal part of the chaff closing the grains and building a spikelet.

4 “Spikelet forks” are the basal part of the chaff closing the grains and building a spikelet.

5 Hillman 1981.

Sample Nr.	quadrant	depth	kontext	volume [l]	trivial name	scientific name																																																																																																																																																																																																												
O HV04/1	N13/3	-0.74	filling of house	28.05.2004 ¹⁰																																																																																																																																																																																																														
O HV04/2	M13/M12		filling of house	28.05.2004 ¹⁰																																																																																																																																																																																																														
O HV04/4	N13/3	-0.59	fill under daub	26.05.2004 ¹⁵																																																																																																																																																																																																														
O HV04/5	N13/1-2	0.13	concentration of sto-nes, pottery, bones	21.05.2004 ¹⁰																																																																																																																																																																																																														
OxB 04/6	N12/2	-0.62	under concentr. of stones, pottery, bones	25.05.2004 ¹⁰																																																																																																																																																																																																														
OxB 04/8	N12/1,2	-0.37	concentration of sto-nes, pottery, bones	22.05.2004 ¹⁵																																																																																																																																																																																																														
OxB 04/9	M13/	-0.93	fire place	28.05.2004 ¹⁵																																																																																																																																																																																																														
OxB 04/10	N12/4	-0.81	pit 2	02.06.2004 ¹⁰																																																																																																																																																																																																														
OxB 04/11	N13/2	-0.36	concentration of sto-nes, pottery, bones	22.05.2004 ¹⁵																																																																																																																																																																																																														
OxB 04/12	M13/4	-0.14		26.05.2004 ¹⁵																																																																																																																																																																																																														
OxB 04/14	N13/3,4	-0.33		25.05.2004 ¹⁵																																																																																																																																																																																																														
OxB 04/15	N13/4	-0.07	concentration of pottery	21.05.2004 ¹⁵																																																																																																																																																																																																														
O HV04/17	N13/3	-0.58		26.05.2004 ¹⁵																																																																																																																																																																																																														
<table border="0"> <thead> <tr> <th colspan="2">Wood</th> <th colspan="15"></th> </tr> </thead> <tbody> <tr> <td>Pine</td> <td>Pinus sp.</td> <td>3</td> <td>2</td> <td>-</td> <td>-</td> <td>2</td> <td>-</td> <td>4</td> <td>-</td> <td>-</td> <td>1</td> <td>1</td> <td>-</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Oak</td> <td>Quercus sp.</td> <td>32</td> <td>64</td> <td>29</td> <td>9</td> <td>15</td> <td>18</td> <td>12</td> <td>9</td> <td>8</td> <td>14</td> <td>16</td> <td>3</td> <td>21</td> <td></td> <td></td> </tr> <tr> <td>Alder</td> <td>Alnus sp.</td> <td>7</td> <td>-</td> <td>-</td> <td>2</td> <td>8</td> <td>4</td> <td>5</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td>-</td> <td>7</td> <td></td> <td></td> </tr> <tr> <td>Elm</td> <td>Ulmus sp.</td> <td>-</td> <td>2</td> <td>-</td> <td>-</td> <td>6</td> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td>3</td> <td>-</td> <td>-</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Cornel</td> <td>Cornus mas</td> <td>4</td> <td>7</td> <td>8</td> <td>5</td> <td>2</td> <td>11</td> <td>1</td> <td>-</td> <td>-</td> <td>-</td> <td>2</td> <td>2</td> <td>11</td> <td></td> <td></td> </tr> <tr> <td>Hornbeam</td> <td>Carpinus sp.</td> <td>1</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>4</td> <td></td> <td></td> </tr> <tr> <td>Ash</td> <td>Fraxinus sp.</td> <td>7</td> <td>9</td> <td>-</td> <td>-</td> <td>9</td> <td>-</td> <td>3</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>12</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Prunus sp.</td> <td>5</td> <td>-</td> <td>2</td> <td>3</td> <td>-</td> <td>6</td> <td>-</td> <td>8</td> <td>4</td> <td>-</td> <td>8</td> <td>-</td> <td>6</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Maloideae</td> <td>2</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1</td> <td>-</td> <td>5</td> <td>5</td> <td>-</td> <td>7</td> <td>-</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>poplar</td> <td>cf. Populus</td> <td>1</td> <td>-</td> <td>1</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>2</td> <td>-</td> <td>8</td> <td></td> <td></td> </tr> <tr> <td>lime</td> <td>cf. Tilia sp.</td> <td>-</td> <td>-</td> <td>-</td> <td>2</td> <td>-</td> <td>1</td> <td>-</td> <td>-</td> <td>-</td> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> </tr> </tbody> </table>							Wood																	Pine	Pinus sp.	3	2	-	-	2	-	4	-	-	1	1	-	2			Oak	Quercus sp.	32	64	29	9	15	18	12	9	8	14	16	3	21			Alder	Alnus sp.	7	-	-	2	8	4	5	-	-	-	4	-	7			Elm	Ulmus sp.	-	2	-	-	6	3	-	-	-	3	-	-	2			Cornel	Cornus mas	4	7	8	5	2	11	1	-	-	-	2	2	11			Hornbeam	Carpinus sp.	1	-	-	-	4	2	-	-	-	-	-	-	4			Ash	Fraxinus sp.	7	9	-	-	9	-	3	2	-	-	-	-	12				Prunus sp.	5	-	2	3	-	6	-	8	4	-	8	-	6				Maloideae	2	-	-	-	-	1	-	5	5	-	7	-	1			poplar	cf. Populus	1	-	1	-	-	-	-	-	-	-	2	-	8			lime	cf. Tilia sp.	-	-	-	2	-	1	-	-	-	3	-	-	-		
Wood																																																																																																																																																																																																																		
Pine	Pinus sp.	3	2	-	-	2	-	4	-	-	1	1	-	2																																																																																																																																																																																																				
Oak	Quercus sp.	32	64	29	9	15	18	12	9	8	14	16	3	21																																																																																																																																																																																																				
Alder	Alnus sp.	7	-	-	2	8	4	5	-	-	-	4	-	7																																																																																																																																																																																																				
Elm	Ulmus sp.	-	2	-	-	6	3	-	-	-	3	-	-	2																																																																																																																																																																																																				
Cornel	Cornus mas	4	7	8	5	2	11	1	-	-	-	2	2	11																																																																																																																																																																																																				
Hornbeam	Carpinus sp.	1	-	-	-	4	2	-	-	-	-	-	-	4																																																																																																																																																																																																				
Ash	Fraxinus sp.	7	9	-	-	9	-	3	2	-	-	-	-	12																																																																																																																																																																																																				
	Prunus sp.	5	-	2	3	-	6	-	8	4	-	8	-	6																																																																																																																																																																																																				
	Maloideae	2	-	-	-	-	1	-	5	5	-	7	-	1																																																																																																																																																																																																				
poplar	cf. Populus	1	-	1	-	-	-	-	-	-	-	2	-	8																																																																																																																																																																																																				
lime	cf. Tilia sp.	-	-	-	2	-	1	-	-	-	3	-	-	-																																																																																																																																																																																																				

Tabl. 22. Results of the analysis of charred wood from Structure No 1.

important of them were the pea (*Pisum sativum*) and lentil (*Lens culinaris*). This are the most common pulses for the Bulgarian Early Neolithic.⁶

In the archaeobotanical material from Ohoden some of the typical for the southern part of the county crops, like grass pea, bitter vetch, are fully absent. From the archaeobotanical studies from Serbia and the Western parts of Romania is known that this cultures were less important during the Neolithic than in South Bulgaria and Northern Greece.⁷

There is a wide range of collected plants: cornel (*Cornus mas*), plums (*Prunus sp.*), raspberry/blackberry (*Rubus sp.*), hasel (*Corylus avellana*), wild vine (*Vitis vinifera ssp. sylvestris*), water chestnut (*Trapa natans*). The last is a water plant growing in standing waters with relatively high summer.

In a sample from q. N13/3 depth -0,32

-0,58, henbane (*Hyoscyamus niger*) was found. This is a poisonous and medicinal plant with hallucinative action. It grows on wet places, near rivers and the antropogenic activities are favourable for its spreading.

In the materials from Grave No 1 also remains from feather grass (*Stipa sp.*, Plate LXIII:3) were available. The feather grass is characteristic for the steppe vegetation and do not belong to the natural vegetation of the surrounding of Ohoden today. It is not excluded that during the Early Neolithic some rests of open Late Glacial/Early Holocene open vegetation were preserved in the area. Possibility of the occurrence of *Stipa* in the plant remains from Ohoden was connected with the use of this plant. In the Epipaleolithic Abu Hureira, Syria⁸ and the Neolithic of Central Europe⁹ numerous finds of it confirm its gathering for eating the grains.

6 Marinova 2002.
7 Kreuz et. al 2005.

8 Hillman 2000
9 Bieniek 2002

The prevailing plant material in Structure No 1 is wood charcoal. This plentiful material was additionally analysed. The most numerous as in the most of the prehistoric sites in Bulgaria is the wood of oak (*Quercus* sp. – 76%) – like today also during the Neolithic this were the prevailing forests in the region. On second place found in much smaller quantities are the wood charcoals of cornel (*Cornus* sp.) and alder (*Alnus* sp.) – each about 8 % from the whole quantity of studied charred wood. Most probably the big quantity of the found cornel is partly connected with a selective preservation of its strong and compact (also in charred state) wood. Relatively wide is the range of the wood species, which grows on wetter places or near rivers. Possibly such wood charcoals like, alder, elm (*Ulmus* sp.), ash (*Fraxinus* sp.), poplar (*Populus* sp.) originate from riverine forests near the site.

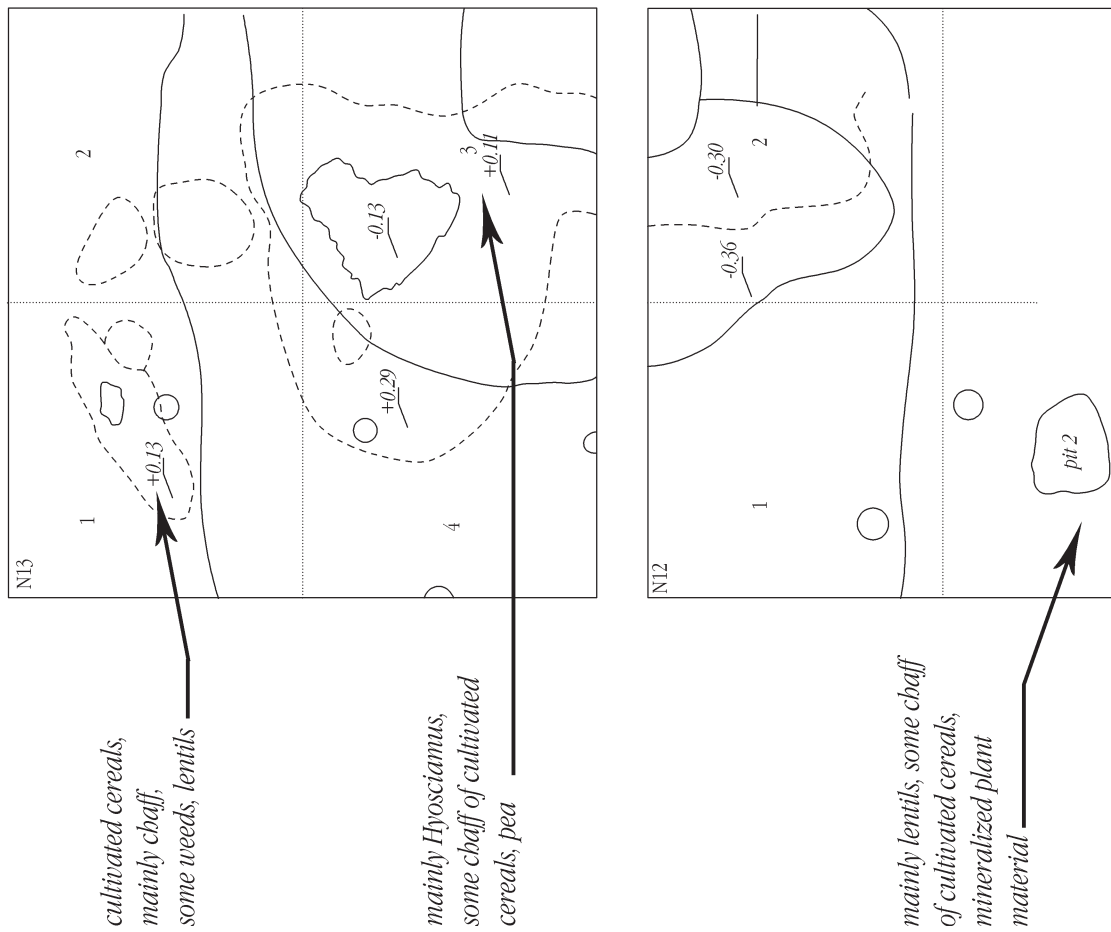
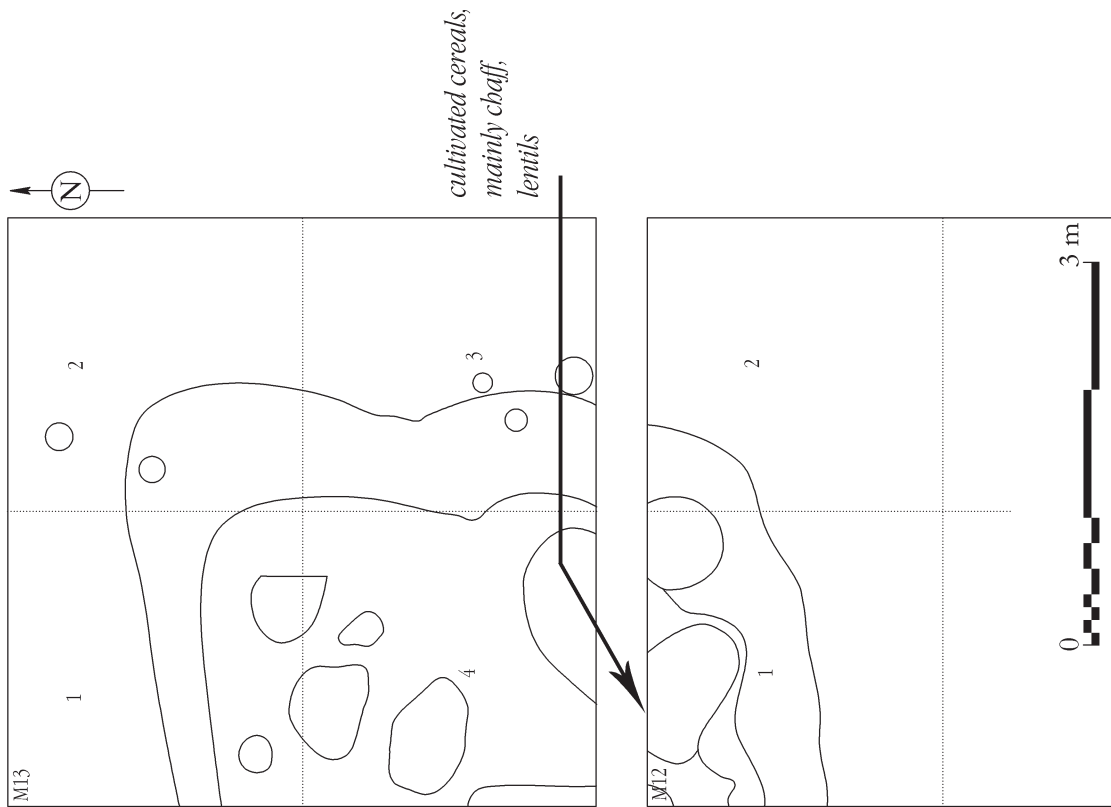
References

- Bieniek 2002:** Bieniek, A. Archaeobotanical analysis of some early Neolithic settlements in the Kujawy region, central Poland, with potential plant gathering activities emphasised. - *Vegetation History and Archaeobotany*, 11/1-2, 2002, 33-40.
- Bondev 1990:** Bondev, I. Растителността на България. Карта с мащаб 1 : 600 000 и обяснителен текст. - St. Kliment Ohridski University Press. - Sofia, 1990, 187 pp.
- Hillman 1981:** Hillman, G. C. Reconstructing crop husbandry practices from charred remains of crops. - In: Mercer, R. (ed) *Farming practice in British Prehistory*. Edinburgh University Press. - Edinburgh, 1981, 123-162.
- Hillman 2000:** Hillman G. C. The plant food economy of Abu Hureyra 1 and 2: The Epipaleolithic. - In: Moore, A. T. M., G. C. Hillman, A. J. Legge (eds.) *Village on the Euphrates. From foraging to farming*. Oxford University Press, 2000, 327-398.
- Koprarev 2002:** Koprarev, I. (ed.) *Geography of Bulgaria. Physical geography. Socio-Economic Geography*. ForComPublishers. - Sofia, 2002, 758 pp.
- Kreuz et al. 2005:** Kreuz, A., E. Marinova, E. Schfer, J. Wiethold. A comparison of early Neolithic crop and weed assemblages from the Linearbandkeramik and the Bulgarian Neolithic cultures: differences and similarities. - *Vegetation History and Archaeobotany*, 2005, 14/2.
- Marinova 2002:** Marinova, E. Archaeobotanical study on the Neolithic agriculture in Modern South Bulgaria. - *Arheologia*, 2, 2002, 13-24
- Ганецовски 1999:** Ганецовски Г. Раннонеолитно селище Оходен-Валоба, Врачанско (предварително съобщение). – *Известия на музеите в Северозападна България*, 27, 1999, 11-28.

Conclusions

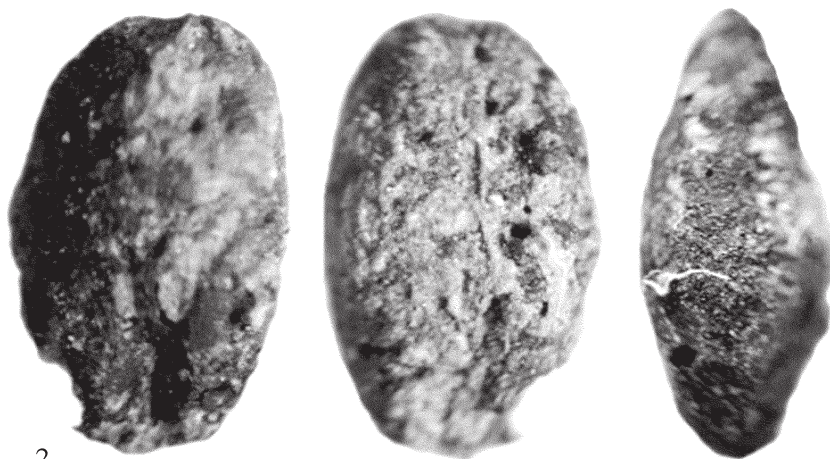
The archaeobotanical material analysed gives the general picture of the most used in the site cultivated and wild plants. The agriculture of the site, like in the other sites in the region, was based on hulled wheats (einkorn and emmer), barley and pulses (lentil and pea). The other known from the Southern Bulgaria crop plants are lacking until now from the Neolithic archaeobotanical materials from Ohoden. Further studies are needed to proof if this is due to real absence of this crops or to bad preservation condition characteristic for the site and restricted study area.

Together with the oak forests the wet areas around the rivers were used as additional source of plant resources for the Neolithic inhabitants of Ohoden. The found steppe plant – feather grass arouses the question of existence of open areas in the supposed to be covered with woods landscape.





1



2

0 1 mm



3

0 1 mm

Георги Ганецовски

ОХОДЕН

СЕЛИЩЕ
ОТ РАННИЯ НЕОЛИТ

РАЗКОПКИ 2002-2006 г.

Craft House Bulgaria Ltd.

София
2009

Рецензент
чл.-кор. проф. д.и.н. Хенриета Тодорова

*Издаването на настоящата монография
се осъществи благодарение подкрепата
на Община Враца, представяна
от кмета инж. Тотьо Младенов*

© Георги Ганецовски, Радка Златева-Узунова,
Елена Маринова, Вивиана Митева, автори (2009)
© Красимира Лука, компютърна обработка на плановете, таблиците и образите (2009)
© Craft House Bulgaria Ltd, издател (2009)

ISBN: 978-954-92223-2-6

БГ Принт ООД – Враца, печатница

Първо издание

Printed in Bulgaria