Report

In summer 2007 during archaeological expedition samples were taken for archaeobotanical analyses from trench I .Total 24 samples were collected and were floated.

During fieldwork all the sediment were wet- sieved through a column of sieves of 4, 1 and 0,5 mm. Organic and inorganic parts of the fractions were separated. Light and heavy floated fractions were sieved, the fractions 4 , 1 and 0,5 mm . The fractions were then sorted using microscope, all material pieces larger than 1 mm were separated and set for examination.

Archeobotanical material being under study, Now were present preliminary results ;Following samples were study at present :N 74,75,76, 84,87,88,91,99,. . Plant remains are identified by microscope with magnifications between 6 and 50. The grains of wheats have been measured according to the criteria given by Schiemann (1948), Wasylkowa et al.(1991),Jacomet (2006). Material are identified and compared with a reference collection (atlases and keys : Beijerinck 1947, Mangafa et Kotsakis 1996 , Jacquat et Martinoli 1998), reference collections of modern seeds and fruits and identification manuals (Cappers et al 2006, Keller et al 1935). Remains are measured according to three parameters: length (L), width (B), thickness (T).The parameters of size-index L/B, L/T, B/T and B/LX100 are calculated

The quantity and structure of the archaeobotanical samples are diverse. Some of them are rather poor in botanical remains, while some others presented comparatively more diversified spectrum (sample75, 91). All samples ,contained carbonized remains.The state of preservation of fossilized plant remains was not the same due to different degree of carbonization. millets and pulses were better preserved, opposite of wheat grains.

Summery

In investigated samples from the Nokalakevi settlement following plants were found: emmer wheat (Triticum dicoccum), nacked wheat (Triticum aestivum), bromcorn millet (Panicum miliaceum), Italian millet (Setaria italica), lentils (Lens culinaris), garden pea (Pisum sativum), grape (probable both Vitis sylvestris and V.vinifera), Junglans regia (wulnut), Linum bienne (pile Flax) . Beside ,some wild plants were found too : elder (Sambucus nigrum), brown cyperus (Cyperus sp.), persicaria (Polygonum sp.p), dock (Rumex spec.), Eleusine indica, Oxalis stricta.) New records for the West Georgia is evidence of pulses. The species show the possible composition of diet for the inhabitants. However the material is under study and we hope that future investigation allow us more definitely to say which plant was of first or secondary importance and could make some statement about favoured food and crops cultivation Most of the plants were brought into the settlement area intentionally as food,. The finding of Vitis sylvestris, walnut`s fragments, also elder testify the gathering of fruits plants growing in the local forest and its eating.

Despite that study of plant remains is not finished yet, analysed of the some of the samples from the site give some preliminary information about agricultural practices and plant use in Hellinistic period of Nokalakevi settlement. Thus, it is possible to build up an outline picture of the agriculture activites of these periods in the studied area.

Triticum dicoccum, T. aestivum s.l. , T. aestivum , Pannicum miliaceum and Setaria italica were used by the inhabitants in food preparation. and probably also in ritual ceremonies (Menabde 1948). Reports of recent studies in the settlements of earlier periods situated in the vicinity Nokalakevi such as Nosiri also point to the presence of domestic plant remains, belonging mainly to wheat and millets. The results of this archaeobotanical study show similarities with those from some of the simultaneous

neighbouring sites situated in West Georgia (Gogadze 1982, Mikeladze 1982, Xaxutaishvili 1985). This could been attributed in part to similar natural conditions and in part to cultural preferences.

Lentil and pea and flax together with emmer wheat, einkorn wheat and barley, are among of the six most important Near East crops assemblage, that were spreaded from Near East nuclear area to Europe and central Asia. The available archaeological evidence indicates that garden pea, lentil, chickpea bitter vetch and grass pea were taken into cultivation more or less together with the principal cereals (Zohary, Hoff 2000).

Pisum sativum L., According to N. Vavilov (1926) the centre of origin of Pisum sativum L. is Transcaucasia. In Yanushevich`s opinion (1976) domestication of garden pea was started in the Tabriz and Zagross mountains and presumably in the Caucasus as well and then its migration from Asia Minor took place. It should be mentioned the fact of finding carbonized pea seeds in western Georgia, as before it was found only in south Georgia. According to ethnobotanical data broad bean, as more moisture-requiring plant, was given an advantage over garden pea in the Western Georgia (Ruchadze 1976, Javakhishvili 1948). It often clogs sowings of wheats and different species of bean.

Elder (Sambucus nigra)were known in Europe as early as Neolithic times (Renfrew 1973), seeds which were collected were collected and used for food.

Grape

Recovered in the study area Vitis vinifera remains indicate that they were part of the people diet.

The evidence of vitis vinifera in Western Georgia, in archaeological settlement of Sochumi (V cent .B.C) (Trapsh 1955) indicates that grape was cultivated in antic period. In the same period seeds belonging to wild forest grapes and intermediate type indicate that wild grape were collected by population as show the discovers of Gienos (VIII-VII centuries B.C.), Ergeta (VII-Vcenturies B.C.) (Rusishvili 1990). By the opinion of Rusishvili grape cultivation in western Georgia began considerably later than in eastern Georgia where the earliest evident data is from Dangreuli Gora (VI-IV Mill. BC) (Apakidze, Burchuladze 1987, Ramishvili 2004,)

Linum bienne (Pale flax)- this delicate annual or biennial plant, has the palest blue flowers – attractive to bees - with narrow stems wearing alternated pairs of narrow three-veined leaves and small seeds.

According to Vavilov (1926), Sinskaya (1953) and Gorgidze (1958), Linum biennne, the most primitive form of cultivated flax was similar to L. angustifolium, the wild form, by the morphological features, small fruits and seeds. Linum bienne was grown in the seaside of Asia Minor, especially in the subtropical regions of Transcaucasia. The wild bienne forms are widespread in 'ARC'(Zohary, Hopf 2000).

Linum bienne Mill. is considerated as an intermediate type, which can be used both for preparing fiber, as L. usitatisimum, and for obtaining the fatty oil as L. humille. Some scientists (Vavilov 1926; Zhukowski 1950) assume that Transcaucasia might be the place of origin of cultivated flax, where from it could presumably spread to the Mesopotamia and then to the East and West. The high quality flax production and its export to the ancient antic countries were provided by written sources and archeological excavations.

The oldest notes about production of high-quality linen fabric in Colchis can be found in the old written sources by Xenophon (435/431 c c BC), Herodotus (5th century BC) and Strabon (I century BC). As reported by Xenophon, tribes inhabiting the east coast made

their armour from spinned flax and were equipped with flax fabric. According to Herodotus Colchian flax fabric was competitive with Egyptian one. Flax export is thought to occupy an important place in the economics of ancient Colchis (Lortkipanidze 1971).
Lots of artefacts of the so-called weaving ceramics with imprints of flax fabric on them have been found along the Black Sea coast in West Georgia. These artefacts confirm that flax fabric was used here as mould (matrice) for shaping ceramic vessels since Bronze Age (Xoshtaria, 1944, Kuftin, 1950). Earthen and stone weights for weaving processing were discovered from the Nokalakevi settlement in the VII-III cc. BC cultural layers (Lomitashvili 1991).

P.S. small botanical reveiw Colchis, knows as Kolkheti in Georgian and Kolkhida in Russian, is a part of the Caucasian refugium, which also includes the southern coasts of the Black and Caspian Seas. It is one of three major locations in Western Asia where thermophilous plants survived the cold and aridity of glacial periods (Röhrig, 1991).

Colchis is characterized among countries of Western Eurasia by its striking botanical and geographical originality. Its flora retains in its composition to the present day some relicts of the ancient mesophile and hydrophile flora, which dominated in the Caucasus in beyond geological periods (Maruashvili 1978,). Colchis is a remarkable refigium of Tertiary thermophylius species with features of subtropical nature.(Kikvidze & Ohsawa 2001). Representative of Tertiary-relict vegetation is natural forests of Quercus iberica, Q. hartwissiana, Fagus orientalis, Castania sativa, Pterocarya fraxinifolia, Zelkova carpinifooia. with evergreen understorey : Laurocerasus officinalis, Buxus colchica, Ruscus ponticus, Hedera colchica etc (Ketskoveli 1959, Kolakovskii 1961., 1973, 1980). In Colchis, due to its comparatively warm and humid climate, Tertiary relict survived in actual forest : Laurus nobilis, Dioscorea caucasica, Periploca greaca, Vitis sylvestris, Tamus communis (Nakhutsrishvili 1999, Denk et al. 2001).
Nokalakevi is situated in the eastern part of Colchidia, 40 km far from the Black sea, on the left side of Tekhuri River about 461 m above sea level. It consists in a terrace and a mount lying on a Late Kimmerigan calcareous substrate. The climate is warm, moderately humid, the annual precipitations reach 1500-1700 mm. The strongest factor controlling the spatial pattern of the flora and vegetation is the bedrock geology and the development of calcareous soils in this area. Representative types of vegetation are: natural forests of sweet chestnut, beech, alder, and hornbeam, containing a great number of Colchic elements, such as the undergrowth holly, cherry-laurel. In the vicinity of villages the land is cleared for gardening and is occupied almost exclusively by cultivated plants (Nakhutrishvili 1999)