

Formation of cultivated flora is constitutionally interconnected with human activities. It makes an integral part of the material culture of mankind. The most ancient memorials of human activities date back to the Palaeolithic. The earliest traces of agriculture in Georgia belong to the Mesolithic period. Among the monuments of this era are stone tools – pestles and graters. Archaeological findings of charred remains of wheat, barley, millet and flax seeds, as well as of agricultural utensils such as grain-grates, sickles, etc., confirm the diversity of the cultivated flora of Neolithic and particularly of the Eneolithic period.

Eneolithic culture of Georgia, which can be traced back to the third millennium B.C., was mainly represented by agriculture and cattle-breeding. Fruit gathering was also widely practised. Among the remains of the late Eneolithic and early Bronze Ages, such fruit of wild plants as chestnut (*Castanea*), beech (*Fagus*), oak (*Quercus*) and hazelnut (*Corylus*) have been discovered side by side with cultivated plants in the burial mounds of West Georgia.

Agriculture of ancient Georgia is best illustrated by the monuments of the early Bronze Age (second millennium B.C.). Many kinds of wheat were domesticated during that period; barley millet, flax and grapevine were subject to cultivation. In the late Bronze Era (10–7 centuries B.C.), in the States of Urartu and Diaokhi in Transcaucasia almost all branches of agriculture were well developed; cultivation of cereals, seed and forage legumes, fruit trees, grapevine and fodder-grass (especially for horse food and cattle-breeding). By that time irrigation had already been well organized.

Cultivation of many plants in ancient Georgia was mentioned in the works of writers of that time. Xenophon (the fifth century B.C.) speaks of two kinds of wheat cultivated in Colchis.

Wheat is one of the oldest domesticated plants in the world. Archaeological discoveries prove that Karthvelis (Georgians) started to cultivate wheat more than 5,000 years ago. During these millennia Karthveli farmers created many species and varieties of wheat.

The initial roots of some wheat species dating back to the Eneolith and Bronze eras (*Triticum macha*, *T. paleocolchicum*) are being preserved in the *ex situ*

collections of present-day Georgia. Such species of wheat as the so-called Zanduri, incomparable among world wheats for their qualities and immunity against diseases, are the products of labour of Kartveli farmers. So far, modern selection has failed to breed a kind of wheat with the properties of Zanduri.

By means of phylogenetic research, a basic variety of wheat species in the agriculture of Georgia has been revealed. Some of these species bear evolutionarily close affinity to wild wheat species, or have retained some of their features. The wheats Makha (*T. macha*), Colchic spelt (*T. paleocolchicum*), Zanduri (*T. timopheevi*, *T. zhukowskyi*) are unique plants, which are still being cultivated and which still retain the basic features of wild wheat.

Because of very brittle ears, harvesting of such species as Makha and Colchic spelt proceeds in two stages: first by means of two loosely bound sticks (so called shankvi) you throw the ears into baskets and then cut the straw. The species Makha is the living relict of primary agriculture, which has been cultivated by man since the prehistoric era (Eneolith-Bronze). Another unique monument of the prehistoric culture Zanduri wheat species. Species generating Zanduri population have nothing to do either with wild or cultivated species of Asia Minor, though they reveal genetic affinity with the species growing on the modern territories of Armenia and Azerbaijan.

On the whole the following cultivated species of wheat have been recorded in the fields of Georgia: *T. monococcum* (monograin), *T. dicoccum*, *T. timopheevi*, *T. zhukowskyi*, *T. paleocolchicum* (all species), *T. durum*, *T. carthlicum*, *T. turgidum*, *T. polonicum* (all hard wheats) and *T. aestivum*, *T. compactum*, *T. macha* (all soft wheats).

Georgian endemics are: *T. paleocolchicum*, *T. timopheevi*, *T. zhukowskyi*, *T. macha* and *T. carthlicum*. Only *T. carthlicum* has penetrated into the agriculture of neighbouring countries.

At present, maize, wheat, and barley are the principal cereals in Georgia. The first one, maize, absolutely predominates in West Georgia, while the second one, wheat, is mainly cultivated in the fields of East Georgia and in small quantities is available in foothills and mountain districts (Javakheti, Kazbegi), the greater part of acreage is held under barley (about 85 %). Winter wheat crops are encountered from the littoral or Black Sea in the West (near the town of Gagra) to the high-mountain agricultural zone (up to 2,000 m s.m.). Spring wheat crops are spread everywhere, but they prevail over winter crops only above 1,500–1,800 m.

The most widespread (and therefore the most important one at present) are three species: (1) soft wheat (*T. aestivum*), (2) Karthlian wheat (*T. carthlicum*) and (3) hard wheat (*T. durum*). The rest of the species occupy small areas.

Soft wheats are the leaders in the cereal economy of the country. Many centuries of popular selection resulted in a great number of local varieties, some of which (e.g. Dolis-puri) have retained their considerable part in national economy.

Karthlian wheat Dika (*T. carthlicum*) mainly occurs in the mountain agricultural belt within 1,000–2,300 m s.m. Popular varieties are sown, and partly those of modern pureline section. Hard wheat crops extend in the lower agricultural belt from 800 to 900 m. Its acreage can be found mainly in East Georgia.

On the Black Sea coast (in the vicinity of Gagra) small tracts of so-called English wheat (*T. turgidum*) have been preserved until now.

At present, production of wheat crops is mainly represented by selection and selectionally improved varieties, and more seldom by more popular selection varieties.

On the basis of phylogenetical research, it was ascertained that the principal specific variety of wheat has been preserved only in the agriculture of Georgia and has never even surpassed the boundaries of the land of wheat crop originators, so that primary species of crops close to wild species are known only here and used only by Georgian people.

The idea is that the creation of primary species of cultivated plants is genetically connected with the natural conditions of some geographical regions, where only useful plants of the wild flora make primordial source of popular selection. It has already been stated that Asia Anterior–South-West Asia (including Transcaucasia) is the only region of habitation of wild wheat. Therefore, it is natural to presume that the cultivation of wheat is the result of creative activities of civilized people of Asia Anterior–South-West Asia. Archaeological materials and botanical-genetic analysis of modern wheat composition give enough grounds to attribute wheat cultivation to Khetto-Iberian group of people.

Natural conditions for wheat domestication did exist only in that region.

All the aforesaid underline the primordial character of a Georgian wheat cultivation. The Georgian nidus by origin and formation of wheat species diversity is a consequence of a long process of popular selection, the main roots of which are genetically connected with the pre-historic activity of Hetto-Sumeret peoples, living in the territory of Asia-Anterior – the region of habitats of wild wheat.

The creative process of Georgian popular selection is not limited by the above-stated. The collective work of Georgian cultivators manifests itself by the cultivation of grapevine. At present, there are over 400 varieties with Georgian appellations. Versatility and antiquity of the culture is confirmed not only by the existence of numerous sorts, but by data of Eneolithic culture as well. In the times of the existence of the state of Urartu, Colchis and Diaokhi, wine-making as well as viticulture was highly developed. Georgian popular grape sorts – Saperavi, Rkatzhiteli, etc. – enjoy on our days the same unsurpassed fame, which in its turn points to the long process of selection of high-grade grape varieties.

Georgia is likewise the home of many fruit plants. Many species of wild fruit-trees (*Malus*, *Pyrus*, *Prunus*) have undoubtedly served as the principle components in the origin of cultured plants like apple, pear, and plum-trees.

It has been proved by the investigation of Georgian scientists that the Georgian apple sort Khomarduli is the initial variety for the so-called English and French paradise-apples widely diffused in European countries.

Ancient agricultural crops were formed exclusively on the basis of the utilization and cognition of aboriginal useful wild plants. In this way, primary independent nidi of agriculture arose. In the subsequent period of the cultural development and intercourse of peoples those primary agricultural groups were mutually enriched with imported plants. It has been ascertained from historical sources that in ancient

Georgia the introduction of useful foreign plants was organized on a large scale. It is obvious that the presence of the *Citrus* type of agriculture production created in Georgia from representatives of foreign subtropical plants indicates a great interchange carried on between the peoples inhabiting lands with different ecogeographical conditions. Many of these plants, no doubt passed through a number of “replantation” points to the way from their initial habitats to their new home in Georgia. These points played a certain part in acclimatization and selection.

Gardens of royal and feudal families of ancient Georgia played a major role in the introduction of foreign plants, in particular Citrus, decorative and other useful ones.

At present, numerous representatives of foreign vegetation – the tea-bush, the tangerine-tree, subtropical fruit-trees and technical and decorative plants, etc., are important (and in some regions the chief) objects of agricultural production (Menabde 1961).