

Mount Arailer on the Yegvard lava plateau in Central Armenia

Anna Asatryan

National Academy of Sciences of Armenia, Institute of Botany

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crocus@post.com

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Mount Aralier



Wild Tulip



Treeline



Flower-covered slope

Aralier extinct volcano rises lonely in the north of Yegvard lava plateau in Central Armenia. It is no mere chance that this mountain is named after the dying and resurrecting deity Ara in the Armenian mythology, who symbolizes the main features of pagan worship of spring, awakening of nature and vegetation ...

Aralier (2577m above sea level) is one of the largest extinct volcanoes in Armenia. It has rather steep slopes indented with many deep gorges and gullies. A 2km

diameter crater has remained at the top of the volcano. The crater opens to the south-west by a deep gorge. The mountain is situated in the area of arid climate with wide yearly and daily fluctuations of temperature and humidity. Considerable thermic contrasts are also observed among separate high altitude belts of the mountain. A stable snow cover on Arailer settles in December and melts by the end of May.

Various signs of the wild geological past of this mountain expressively testify to the wide diversity of the relief formation processes that took place here millions of years ago. Hardened lava appears before us in a great number of wonderful rocks, boulders and their heaps.

One can observe a very interesting phenomenon in the volcanic rocks on the eastern slope of Arailer. The rocks contain spherical inclusions of up to 4-5 cm diameter. Local inhabitants call them "Stone Hail". The scientists are of the opinion, that their origin is conditioned by a great quantity of half-hardened lava sprays that fell on the surface of the gliding liquid lava during the eruption of the volcano.

The first record of Arailer in the botanical literature relates to 1928 and belongs to A.Grossheim - one of the greatest researchers of the Caucasus flora. The first available plant collections from Arailer also belong to him. Later on, during the next decades Arailer attracted the attention of many prominent botanists - researchers of the Armenian and Caucasian flora. Species new both for science and for the Caucasus and Armenia were first collected and described from Arailer Mountain. However flora and the vegetation of this mountain have not been closely and purposefully studied. Only recently the full botanical research of Arailer and the generalization based on the available data was carried out. It showed very interesting results.

Mountain Arailer is notable for its extraordinary floristic diversity: here grow more than 650 species of vascular plants - nearly one fifth part of the whole Armenian flora. Such floristic richness is conditioned not only by geological, soil-climatic and historical causes, but also by the boundary botanical-geographical location of Arailer. It is situated on the junction of Aparan and Yerevan floristic regions of Armenia, accordingly of two sharply different humid Caucasian and arid Armeno-Iranian floristic provinces.

Owing to the great diversity of ecological conditions both typical semidesert and moisture-loving plants grow on the slopes of Arailer. There are a great number of plants adapted to growing on the rocks - one can find up to 15-20 plant species on a rock surface less than a quarter of square metre!

Life on Arailer wakes up in February-March with mass flowering of merendera (*Merendera trigyna*) and crocuses (*Crocus adami*). The local people call them snowflowers. Some time later start flowering irises, tulips and some other

beautiful spring plants. Active and luxuriant growth of vegetation takes place in May-June season. Large flowers of East poppy (*Papaver orientale*) break out on high mountain meadows in bright spots. The feather-grass meadow-steppes seem to be covered with fluffy clouds. Short cushion and rosette plants grow on the thin soil and on the rocks nearer to the top of Arailer. In July-August the sun scorches almost all vegetation on the woodless slopes of the mountain and the period of summer depression begins. It lasts till the first autumn rains.

One of the most interesting peculiarities that make Arailer original is the presence of forests on the northern slope, meanwhile the southern slope is completely deprived of forest vegetation. This fact draws special interest as Arailer is situated in the area of arid climate and doesn't have springs. This small oak forest is undoubtedly a remnant of larger forests of the past; it has managed to escape the destructive influence of Aragatz volcano lava streams, which ruined a considerable part of forests existing then in those parts on this area. Today only separate fragments of forest vegetation and single trees on the eastern and western slopes of Arailer indicate a larger spread of forests here in past.

This forest is formed of almost 45 tree and shrub species among which are many fruit and berry plants. Along with oak (*Quercus macranthera*) different species of maple, birch, sorbus (here are 7 out of 13 *Sorbus* species of Armenian flora), as well as aspen, pear-tree, cherry- and apple-trees, guelder-rose, hawthorn, honey-suckle. Raspberry, gooseberry, currant and some species of dog rose form impenetrable bushes.

Q. macranthera stands out among other oak species for its hardiness: its capability to stand cold and drought makes possible for it to grow at the upper limits of forest vegetation, on rather stony sites and rocks.

Nearer to the upper area the forest gradually thins out and turns into subalpine open crook-stem forest. The trees growing on that altitude, oak, maple, sorbus and birch, are not tall. Their stems are crooked and almost pinned down. The bushes of old-field juniper are found on top territories beyond the forest vegetation.

The crater of Arailer is an extraordinary and picturesque place. Whimsical rocks together with different vegetation groupings condition the fairy beauty of this place. Called «Tzakhkevank» - «The Temple of Flowers», it is the place of traditional pilgrimage of local people. They celebrate here the religious feasts of spring and flowers, both Christian and Heathen.

There is a small cave in the huge rock rising at the outlet of the crater to the gorge. People come here to put candles not only from the neighbouring villages. The water flowing down the cave walls is considered to have medicinal qualities in curing eye diseases. Tzakhkevank gorge and crater have a great scientific, aesthetic and historical-cultural significance, which is a sufficient base to give this

place the status of a Natural Monument. Besides that the crater of the volcano as well as all the mountain is a very prospective place for ecotourism.

The conservation activities must not damage aged traditions of local inhabitants, who in their turn can do much for their own environment conservation without which their traditions will lose any sense.

Mountain Arailer is a very important life source for thousands of local people. Early in spring food plants are picked up from the mountain slopes. These plants are very rich in vitamins necessary for the man in the early spring time. A considerable part of the slopes is used as pastures and hayfields. Large territories on the southern, eastern and western slopes are very stony and are used only as pastures. The meadows of the Upper Mountain and subalpine belts are mainly good for hay-mowing. Their productivity is high, but a great quantity of poisonous species growing on some meadows considerably lowers the hay quality. Recent overgrazing led to degradation of the most part of pastures of Arailer. Overgrazing of foothill pastures and undergrazing on higher ones adversely affects negatively their condition at present.

The uncontrolled wild decorative plant collection arouses anxiety. Many of collected plants are the Red Data Book listed species. The plants of bright large flowers such as irises, tulips, gladioluses and others suffer most. Their quantity reduces yearly because of unlimited collection and destruction of their habitats. These plants remain only in relatively inaccessible places - in the bushes and on the steep gorge slopes (the needs of local flower sellers are unsustainable).

The present condition of Arailer forest massive is particularly alarming. Historically felling is one of the main reasons of forest reduction. But lately it has acquired threatening scale. Felling takes place along the whole wooded territory and trees are felled irrespective of their species, age and condition. This leads to serious violation and destruction of soil and vegetation. Melting snow waters and showers easily wash the thin fruitful soil stratum off the steep slopes of the mountain - the soil on which Nature has spent thousands of years to make. Forest animals are deprived of their habitats, the destruction of the ecosystem takes place.

Natural forest regeneration on this territory is very difficult because of the dry climate and permanent human factor pressure. This small but unique forest which is a carrier of the richest genetic pool of wild plant species including such rare and endemic species as *Sorbus hajastana*, *S. luristanica*, *Polygala urartu*, *Grossheimia ahverdovii*, *Allium aucheri* and others strongly needs urgent conservation measures.

Mountain Arailer rises up above the plateau majestically and proudly - the whole ecosystem that has been forming for ages, full of sun and saturated with bird songs, insect buzzing and smell of flowers. This mountain is very generous and

kind and it waits patiently when people at last will understand that it also has the right to live.

Notes to readers

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The author may be reached at:

National Academy of Sciences
Institute of Botany
Avan, Yerevan 375063
Armenia
Tel: (3741) 621210