

# **Excursus: Vegetation, natural history and geo-politics (1)**

Friday 21 December 2007, by [Hans-Peter Geissen](#)

**There are times when to observe Turkish politics may be tiresome and frustrating, particularly if you feel some sympathy for the Turks (in a broad meaning), the main victims of these politics. As an observer, you can't do much about it. So sometimes it may be better to leave for a stroll in the greenery.**

## **I Nature and history**

The colour green has a tonic effect on human minds in general, and most people feel the beauty of flowers and trees, but with some floristic and plant-ecological knowledge the greenery may also tell you something about the land, its conditions, and even about its history. In a sense, the flora and its "societies" (vegetation) may tell you where you are. And the flora of Turkey is particularly interesting, so much so that it might fascinate a number of people even in grey theory.

A few years ago, I read about the Hittite Empire in the second millenium BC and how they were badly affected by nomad invasions from the north, the so-called "Kaski" people. Such is a very common topos in Middle-Eastern history, so you would find it easy to believe in it unless you have the respective information on flora and vegetation. Because in this case, questions arise. What's the business of such nomads in primeval beech-fir and mixed oak forests? In particular in case that much of these forests is characterized by a dense understory of evergreen or deciduous shrubs and lianas...

In case you have this information on vegetation, you may guess that even the knowledgable archaeologist was somewhat biased. He probably studied Oriental issues and applied the respective stereotypes in an "Oriental" country even though the physical environment of time and place is witnessing against. The witness however must be examined, otherwise he won't speak. On the other hand, for a Rhinelander virtually free from Orientalist knowledge it's quite natural to find a better eco- (-logical as well as -nomic) -historical analogy for the Kaski: the Ancient Germans, and the Roman Limes.

In fact, the Hittites didn't construct a continuous limes, but a line or net of smaller fortresses along their northern range, generally in a terrain that by then was an open woodland or wood-steppe, more easy to clear for agricultural purposes than the more northern mountain forests. One of these small fortresses was in what is now known as the capital of the country, Ankara. Sometimes, Hittite military incursions into the forests failed to bring up any Kaski, sometimes they fell victim to an ambush, and even when they succeeded to subdue one tribe or another, there were still other tribes not bound by any treaty of peace or allegiance. When the Great Empire broke down, the Kaski were still in place, yet their involvement in this breakdown is hitherto not clear.

Not much is known about the Kaski, but the name and regional occurrence may suggests a connection with the Caucasus. It's not improbable that they made temporary use of alpine pastures, in what we may call an economy of alpine (Caucasian) transhumance. Probably they spoke some of the indigenous Caucasian languages. They extended westwards roughly to the Kaski mountains of Hittite usage, probably those later known as Olgassys in Greek, today Turkey's Ilgaz mountains somewhat north of Ankara (well, obviously "Ilgaz" has nothing to do with later "Gazi"-warriors, but originally refers to the Kaski people). It also brings to mind that the vegetation of northern Anatolia and the southern Caucasus is much the same.

## II. Nature per se

Today, the Caucasus region as well as Anatolia are known as hotspots of global biodiversity. Anatolia alone has three quarters of the number of higher plant species noted in all (the rest of) Europe (ca. 9.000 vs. 12.000 species), and together with southern or "Trans"-Caucasia they may slightly surpass this Europe, although they have just a fraction of the area. There is an immense number of plant species or subspecies endemic to these countries, not occurring elsewhere in the world. It is said that in the number of endemic species they surpass Europe by far, and indeed the rate of endemism in Turkey or Georgia is as much as, or even more than one third of their total flora, which is hard to compete with.

However, some caution is advisable, as the technicalities of the term "endemic" may be handled in various ways, which at present makes it difficult to compare numbers. On one hand, it's a question of scale. Liechtenstein may not have a single species endemic to the country, though it shares in quite a number of species endemic to the Alps.

Turkey however is a big country extending over several climatic regions, whereas in geo-ecological terms the country has many small-scale regions; so some endemism may be expected simply as a result of this extension and characteristics. But Phoenix theophrasti, one of only two surviving European palm trees, is not an official endemic here, though it is known from just twelve locations - nine on Crete (Greece) and three at the SW-Anatolian coast (Turkey), thus endemic neither in Greece nor Turkey (but the Southern Aegean). Such situations are widespread in Europe because European states tend to be rather small in relation to plant territories, and most geo-ecological regions there are shared by several states. This is also the case in ("Trans-") Caucasia.

On the other hand, the Soviet tradition of botanical nomenclature excelled in describing rather slight variations as a separate species or subspecies, which makes it difficult to compare them with the more restrictive practice in western Europe (including Turkey). Turkish authors are also, in general, quite strict in the application of the national category of endemism, whereas for instance Armenian authors tend to prefer the regional (Caucasian) approach. Because, the number of species peculiar to the state territory of Armenia is much less impressive compared to their share in the state-transcending Caucasian endemism. Both may highlight the importance of the nation(all territory), so preference for one or the other mode is a question of territorial scale rather than botany.

Nonetheless, the rate of endemism is unquestionably high in the region, exceptionally high in terms of Western Eurasia at the very least; and the question may be why, and how to deal with it.

## III. How to interpret the facts?

It is a foregone conclusion that the countries harboring hotspots of global biodiversity are responsible for the preservation of this global heritage, and that the global community has to support them in that task as far as possible. These are features of UN conventions and policies. Moreover, in the case of Turkey and Caucasia we have to mention that this biodiversity includes genetic diversity of a considerable part of key species for human nutrition, of both plants and animals, in both wild and domestic forms.

From an operational viewpoint, the "national" endemics are of first priority indeed, because only one country can provide and is responsible for their conservation.

At this point however another aspect shall be in the foreground, which is more specific for Europe: The key role the region may have for the European "continent" in coping with climate change. It may become understandable in context with the question of what caused the high rate of endemism in the region. But this requires a wider approach.

As a starting point, the lower Tertiary had something like an archipelago with tropical or subtropical evergreen forests and wetlands where now is Europe. Some parts of present Anatolia were (an) island(s)

then, too. When however the continent of Africa-Arabia drifted further north, the European archipelago and sea bed(s) were lifted and gradually connected with Asia, forming Eurasia. (And yet, still today Europe appears as a large peninsula composed of intermediate peninsulas which have lots of small-scale peninsulas, with quite a number of true islands, big and small, connected to it.)

The climate became cooler and occasionally drier (of more continental type), new plant types immigrated from the North or East (originating in what today is Greenland, Siberia, or Central Eurasia), and by the late tertiary (Miocene, Pliocene) the vegetation of Europe had the general outlines of today with several types of deciduous and conifer forests and woodlands, still including some laurophyllous evergreen forest species, and also with notable steppe and wetland elements. But much richer in tree species than today. Then came the Pleistocene (or Quaternary), a series of very cold and dry periods (the glacials) interrupted by warmer and moister periods (the interglacials). At the peak(s) of glacials, nearly all of Europe was covered by rather dry steppes with some tundra vegetation in wetter places, but also much semi-desert with a high share of open ground, and only some scattered local stands of nordic trees and bushes (some pine, birch, larch, juniper, willows, probably in sheltered valleys). If there was woody vegetation, most of it were dwarf shrubs.

It was rich in plant and animal species nonetheless, but the forest vegetation was near extinction and indeed many species and genera became extinct. In some cases (large prey animals) maybe with participation of a new type of predator, that is, Man; but in general mainly by climatic conditions. That climate was considerably colder than today (around ten degrees in summer, up to twenty in winter) on average, but as essentially, it was of "continental" type (meaning dry or very dry with pronounced extremes of temperature).

Some temperate forest flora (including Mediterranean dryland shrubbery) survived nonetheless, but in few and isolated stands. Where?

The general picture is that they needed a coincidence of three moderating factors. One were mountain chains covering the place from cold and desiccating winds from northern and (north-)eastern directions. The other is the proximity of the sea providing some moisture and moderating temperature extremes. And third, these had to be generally in the south, where temperatures were a bit higher on average. Thus, refuges were south and southwest of mountain chains of Mediterranean peninsulas, along the Adriatic, to a limited extent even the southern Crimea, and most prominently near the coasts in Anatolia and Southern Caucasia. Most prominently, perhaps, because it's there were the longest and/or the highest mountain chains of ancient Europe stretch in east-west or northwest-southeast directions, and because the whole territories extend between two seas.

Here, mainly in today's Turkey and Georgia, we find the famous Pontic or Euxinic (southern or southeastern Black Sea) relic flora, southern tips of the temperate-European forests with some Mediterranean and many endemic species. Added to which there are the southwestern- and southern-Anatolian types of relic forests (with endemic Cedrus, Liquidambar or Phoenix trees, for instance). Another type to mention is the southeasternmost "Hyrcan" type, named with an ancient term for the Caspian Sea. It extends south and southwest of the Caspian in northwestern Iran and some mountain ranges in eastern Azerbaijan, and contains, together with many typically European and Euxinian species at the southeastern tip of their ranges, some relic species now extinct in most of Europe but once (Mio-, Pliocene, and Pleistocene interglacials) really widespread, such as the iron-tree (*Parrotia persica*) and the chestnut-leaved oak (*Quercus castaneifolia*). Which is why geobotany in general includes it in the Euro-Siberian region of plant distribution.

When the ice-age ended, some relic species of the time spread over large parts of Europe (so that they are not considered relics today), while others did not. Reasons may be different (climatic, genetic, or accidentally by geographic isolation of the refuge), but are not yet known with certainty. One of them, the Omorika- or, in German, the Serbian spruce (*Picea omorika*), is quite productive in experimental forestry and has a worldwide distribution now as a garden and park tree. To a lesser degree it's the same with the ironwood - in German gardens for instance it grows well as it did in the wild a million or so years ago, as

well as in Poland or southern Sweden. No problems with a winter of present-day conditions.

When climate changes in our times, such relic species of various types may become important for Europe in ecological and economic terms. It may be the Pontic-Euxinic forms of temperate rainforests, for which there are adequate conditions in NW Europe already today; or somewhat more continental, draught-resistant types like Hyrkan mountain, S.Anatolian or Balkanic type; or Hyrkan lowland type in the Mediterranean region; perhaps even southern steppe species (especially in agriculture and gardens). Adequate forms may be found in the Balkans and other Mediterranean peninsulas, also on some islands, but mostly in the southern Caucasus and Anatolia.

To be continued...