A Long Master Chronology of *Pinus nigra* Arn. and its Contribution to Climatology and Pollen Analysis

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Pinus nigra Arn (Black Pine) is one of the most important tree species in dendrochronological analysis. Turkey has three monumental Black pine stands, the oldest one is in Çiçekli vicinity of Sandras mountain located between Denizli and Mugla, in Mediterranean region.

I sampled ten trees diagonally to extract twenty cores using a Swedish Increment Borer in Çiçekli vicinity. I measured the collected samples and analyzed them statistically. Based on ring width measurements, I was able to construct a 651 years long master chronology. I was able to do further comparison with other Pinus nigra Arn chronologies from the region and generate a regional master chronology, TRWMPINI.

To analyse the relationships between climatic records and ring widths of the master chronology from Sandras mountain, correlation coefficients were calculated. The results are very clear. Temperature has generally negative impact on the growth of the tree rings except October of previous year and February and March of current year. Precipitation has significantly negative influence on tree rings in November of previous year and March of current year, and obviously positive in September. Precipitation has not a significant effect in summer, on the contrary temperature has very important negative influence on the growth of tree rings. As result, high temperature in summer is an important limiting factor on the tree ring width.

Comparison between tree ring chronology and pollen diagrams, from lake sediments, reveals considerable parallel variations in climate. Based on this studies, we can compare the periodic changes in pollen diagrams and tree-ring chronologies, and we can control dating years in both of them. A study like this and similar researches can be made under a name "Dendropalynology".

Master Chronologies of Norway Spruce (*Picea abies* L. Karst.) on Dry Forest Sites in Lithuania

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Master chronologies from living Norway spruce trees (Picea abies L. Karst.) in Piceetum vaccinio-myrtillosum (Pc. v-m) and Piceetum hepatico-oxalidosum (Pc. h-ox) forest types are created in Lithuania for the first time. Three chronologies were created in each forest type: latewood, earlywood and annual ring increment. Chronology in Pc. v-m forest type encompasses data of radial increment from 18 experimental plots (464 trees) and in Pc. h-ox - 13 experimental plots (354 trees). Due to more poor dating quality, reaction-compression wood, chronology for latewood covers a shorter period. Length of chronology, created using

annual radial increment of living spruce trees growing in Pc. v-m forest type is 132 years and in Pc. h-ox - 100 years.

During XX century more significant pointer years of negative increment were: for latewood - 1911, 1980, 1992; for earlywood - 1941, 1954, 1980, 1992, 1993; and for annual ring - 1941, 1954, 1979, 1980, 1992, 1993. Years with positive increment in latewood - 1961; earlywood - 1946, 1948, 1950, 1962; and annual ring - 1946, 1961, 1962, 1974.

Dendrochronological Dating of 8th-18th Century Wooden Structures in Latvia: Results and Future Prospects

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More or less systematic dendrochronological dating of historical wood in Latvia has been proceeding for about six years. The low level of funding for Latvian science and the consequent lack of staff and modern equipment have slowed progress, but the results are interesting.

Since 1995, dendrochronological dating has been performed on wooden structures from 10 different historical sites. As a result, 7 floating chronologies and 4 absolute chronologies have been obtained: 3 chronologies are 9th-10th century (pine, spruce), 3 are 13th-14th c. (pine, oak, ash) and one is 15th-16th c. (pine). All absolute chronologies are 17th and 18th century. The surprising degree of similarity (t >14.0) of a chronology from two buildings in Riga with a chronology from a house in the County of Kent, U.K. suggests that the building materials were supplied from trees growing in quite nearby areas (probably in present-day Belarus).

Currently, logs from the foundation of the defensive ramparts of the city of Riga (17th century) are being dated. Also promising for dating is a revetment structure at the bank of the River Daugava, built in several consecutive layers (probably 15th-18th century).

Dendrochronological units on Scots pine in Poland

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Scots pine in conditions of transitional climate in Poland combines sensitivity both, to drought and heat in summer like pines of the southern border of their range and to coldness in this season like pines from North Europe. But specific attribute of this species in Poland is sensitivity to frosty winters and cold Springs, especially March. The autors of this project come out with hypothesis that dendrochronologically homogenous areas (on the base on increment reaction) reflect the spatial mutability of climate). In pine forests from the whole area of Poland 136 study areas were distinguished and local chronologies were worked out for each of them. Main factors affecting radial growth of the analysed trees of Scots pine were