

CHRONICLE

Quantitative Wood Anatomy Workshop in Estonia

Quantitative wood anatomy analyses the variability of xylem anatomical traits in trees, shrubs, and herbaceous species to address research questions related to plant functioning, growth, and the environment (von Arx et al. 2016). Quantitative wood anatomy plays an important role in dendrosciences (Carrer et al. 2015), since, e.g. it enables to study climate growth relationships on intra-annual scale and can also explain year-by-year patterns related to xylogenesis and physiological function of plant stems.

Quantitative wood anatomy is getting more and more attention each year. It seems that there is an interest in the Baltic countries as well, since recent seminar on quantitative wood anatomy, which was held in Estonian University of Life Sciences on 5th of October 2018, gathered researchers, undergraduate and graduate students working or studying in Estonia and Latvia (including visiting students from Poland and Denmark). That was originally planned to be a short workshop for researchers employed in one of the chairs of the Institute of Forestry and Rural Engineering (Chair of Forest Management Planning and Wood Processing Technologies), suddenly became an international event after it was mentioned couple of weeks before the date at the BaltDendro conference in Liškiava, Lithuania. During the seminar, Dr. Alan Crivellaro (University of Padova, Italy) introduced the idea of qualitative and quantitative wood anatomy using collection of vivid images of microscopic sections. Examples on what kind of possibilities do wood anatomical traits provide for research applications were also given. Presentation by Dr. Marcin Klisz (Forest Research Institute, Poland) addressed some issues related to creating and processing of digital images of microscopic slides (Figure 1). A new approach for creating images of cross sections from entire increment cores (Klisz et al. 2018) was presented. Short overview of possibilities of ROXAS software tool (von Arx and Carrer, 2014) for quantifying numerous wood anatomical traits was followed. After the presentations, participants had a chance to practice preparation of microscopic slides using sledge microtome (Gärtner et al. 2015; Figure 2), staining procedures, processing images and quantification of anatomical traits of interest.

For this short event it was possible to gather in one room students and researches of various backgrounds and institutions. People working in the field of biology, dendrochronology, forest ecology and wood science

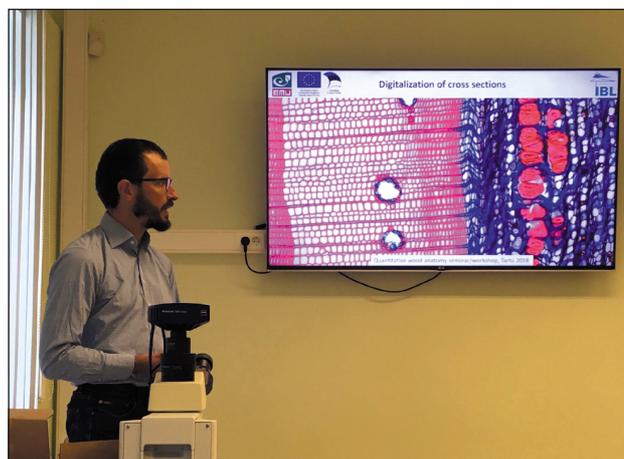


Photo 1. Presentation by Dr. Marcin Klisz about processing of digital images of microscopic slides (photo by Sandra Metslaid)



Photo 2. Dr. Alan Crivellaro is demonstrating sample preparation using the sledge microtome (photo by Alar Läänelaid)

were united by one common interest in learning more about new possibilities in research activities that provides quantitative wood anatomy. Atmosphere created by the lecturers during the day enabled participants to interact and discuss various related issues, expand the idea of application of wood anatomy, and most importantly, to get new thoughts for future or current projects, results of which might enlighten a research problem from different perspective.

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