Forestry 240 Wood Science
Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University

Lab Practical 1: Macroscopic features of softwoods and identification

1. **SAFETY FIRST!!** Read closely the handout entitled "*Safety: The use of Knives and Razor Blades*" and read Chapter 7 in the Identifying Wood lab manual. The professor will demonstrate the use of razor blades and knives. Please ask for clarification of any of these procedures.

2. General Wood Identification (Applies to all wood blocks examined)
   a. Become familiar with the use of a handlens (10x) for observing features on the cross section of wood blocks. Be able to discern between a "clean cut" surface and a "rough" surface. Please be aware that the macroscopic descriptions are written for use with a 10x handlens and therefore observations using a higher magnification may lead to incorrect assessment of features.
   b. Be able to identify the cross, radial, and tangential surfaces on any wood block. Note the effect of the sawing method on these surfaces by observing the orientation of the growth rings in cross section. Be able to find true radial and tangential surfaces by alignment parallel or perpendicular to the rays as observed on the cross section. Be able to identify the longitudinal, radial, and tangential directions as distinct from the surfaces.

3. Examination of three common softwood species.
   a. Examine each wood block with a handlens and fill in the macro-features worksheet. Consult species descriptions in the Identifying Wood lab manual and in the descriptions provided for information concerning the presence or absence of features and range of variation present. Observe within and between growth ring variation as well as between wood block variation where more than one wood block is provided for a species.
   b. Be able to draw in cross sectional view a group of two or three abrupt transition growth rings and similarly a group of tow or three gradual transition growth rings as observed with a handlens.
   c. For "color", "odor", and "weight" refer to descriptions and compare differences between wood blocks. The feature "grain" is grain appearance and is categorized as "even", "fairly-even", "moderately uneven", or "uneven-grained". Grain orientation (i.e. straight, wavy, etc.) will be discussed later.
   d. Using the features noted on the macro features sheet for Southern pine, Douglas fir, and western red cedar, key out these three woods using the "KEY TO CONIFEROUS WOODS – GROSS FEATURES" dichotomous key provided.

4. Examination of unknown wood blocks.
   a. Obtain an unknown wood block, and examine it with the handlens and fill in the macro features sheet. Attempt to key out the block using the "KEY" and Identifying Wood lab manual. If appropriate, follow the key in two directions to see what taxa result.
   b. Obtain 2 other unknown wood blocks and repeat step 4a.

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Block Number			
1. Resin Ducts			
a. Present, traumatic			
b. Size			
c. Distribution (even/uneven)			
d. Frequency (numerous/sparse)			
2. Growth Rings			
a. Transition (gradual/abrupt)			
b. Percent latewood			
c. rate of growth			
d. radial variation			
3. Texture			
a. fine (even, uneven)			
b. medium (even, uneven)			
c. coarse (even, uneven)			
4. Heartwood (distinct/indistinct)			
5. Color			
a. Heartwood			
b. Sapwood			
6. Rays (visible/not visible) to naked eye			
7. Odor			
8. Weight			
9. Grain			
10. Wood Type			