BI 131 Laboratory

Terrestrial Ecosystems of the Colby Campus and Arboretum

Species Seen During Forest Walk (FINAL list)

Common name	***Scientific name***	**Characteristics**
Ash, white	*Fraxinus americana*	
Aspen, bigtooth	*Populus grandidentata*	
Aspen, quaking	*Populus tremuloides*	
Aster	*Aster* spp.	
Basswood, American (linden)	*Tilia americana*	
Beech, American	*Fagus grandifolia*	
Birch, gray	*Betula populifolia*	
Birch, paper	*Betula papyrifera*	
Birch, yellow	*Betula lutea*	
Cedar, northern white	*Thuja occidentalis*	
Cherry, black	*Prunus serotina*	
Club moss, ground cedar	*Lycopodium tristachyum*	
Club moss, running	*Lycopodium clavatum*.	
Club moss, tree (princess pine)	*Lycopodium obscurum*	
Elm, American	*Ulmus americana*	
Fern, bracken	*Pteridium aquilinum*	
Fern, Christmas	*Polystichum acrostichoides*	
Fern, cinnamon	*Osmunda cinnamomea*	
Fern, interrupted	*Osmunda claytonia*	
Fern, sensitive (bead)	*Onoclea sensibilis*	

Fir, balsam	*Abies balsamea*	
Fungi, poplypore (bracket)	*Polyporus* spp.	
Goldenrod	*Solidago* spp.	
Hazelnut, beaked	*Corylus cornuta*	
Hemlock, eastern	*Tsuga canadensis*	
Lichen, crustose	Many species	
Lichen, foliose	Many species	
Lichen, fruticose	Many species	
Maple, red	*Acer rubrum*	
Maple, striped (moosewood)	*Acer pensylvanicum*	
Maple, sugar	*Acer saccharum*	
Moss, hair-cap	*Polytrichum commune*	
Oak, northern red	*Quercus rubra*	
Oak, white	*Quercus alba*	
Pine, eastern white	*Pinus strobus*	
Pine, red	*Pinus resinosa*	
Queen Anne's Lace (wild carrot)	*Daucus carota*	
Sumac, staghorn	*Rhus typhina*	
Touch-me-not (Jewel weed)	*Impatiens capensis*	
Viburnum, maple-leaved	*Viburnum acerifolium*	
Virginia creeper	*Parthenocissus quinquefolia*	
Witch-hazel	*Hamamelis virginiana*	

Themes for Forest Walk (FINAL list)

1) Adaptations representing evolutionary innovations of land plants.
2) Role of introduced pests in altering forest composition: A. chestnut, A. elm, E. hemlock.
3) Concept of ecological succession and the role of seral communities.
4) Lichens: an extreme example of symbiosis.
5) Fungal 'face' fruiting body (reproductive) vs. fungal 'body' mycelium (vegetative).
6) Sexual structures of woody plants: example of birch catkins.
7) Division of niches by species within a genus: one determinant of biodiversity.
8) Competitive economy of the forest: another determinant of biodiversity.
9) Wood (vascular tissue) is a means of achieving height.
10) Role of agriculture and forestry in maintenance and loss of biodiversity.
11) Vertical structure of forest: ground cover, shrub layer, understory, canopy.
12) Vines: an alternative to wood for achieving height.
13) Climax forest species of this region: E. hemlock, Sugar maple, A. beech.
14) Mast seed production in oaks and beeches as a defense against seed predators.
15) Vascular vs. non-vascular plants.
16) Club mosses as examples of current plants that are miniature versions of ancestors.
17) Wood as an evolutionary 'add-on' characteristic.
18) Example of extreme of co-evolution by gall-forming insects with their host plants.

Some Definitions

Abiotic: the non-living components of an environment, e.g., atmosphere, minerals, etc.

Biotic: the living components of an environment, e.g., plants, animals, etc.

Adaptation: an inherited characteristic that enhances an organism's ability to survive and reproduce in a particular environment.

Carboniferous: geological time period between 290-362 million years ago characterized by warm moist conditions, and extensive forests that eventually resulted in coal and oil deposits.

Ecological succession: temporal sequence of change in plant communities due to changes in abiotic and biotic conditions brought about by the plant communities themselves.

Natural selection: differential success of certain adaptations resulting from interactions with the environment. One of the driving forces of evolution.

Niche: a population's (species') role in its community.

Sere: one step in a series of ecological communities that follow one another in the course of the biotic development of an area or formation from pioneer stage to climax stage.