

# Introduction to life history

## Dr. Vera Krischik, Department of Entomology

- **Common name**
- **Taxonomy: Order, Family, Genus, species**
- **Functional ecology: How it feeds**
- **Pesticides: Conventional and biorational**



**Tuliptree soft scale, male and third instar females**

## **Binomial nomenclature, 1758**

**Carl Linnaeus, born 1707, Sweden**

- **Systema Naturae, editions from 1737-1758**

**Genus, species**

***Lymantria dispar***

**Common name: gypsy moth**

**Order: Lepidoptera**

**Family: Lymantriidae, tussock moth**

# Binomial nomenclature

**Carl Linnaeus, born 1707, Sweden**

**Systema Naturae in 1737**

**King: K: Kingdom: Animalia**

**Phillip: Phylum: Arthropoda, jointed foot**

**Came: Class: Insecta, Hexapoda, six legs**

**Out: Order: Lepidoptera, scaly wings**

**From: Family: Lymantriidae, tussock moths**

**Greece: Genus: *Lymantria***

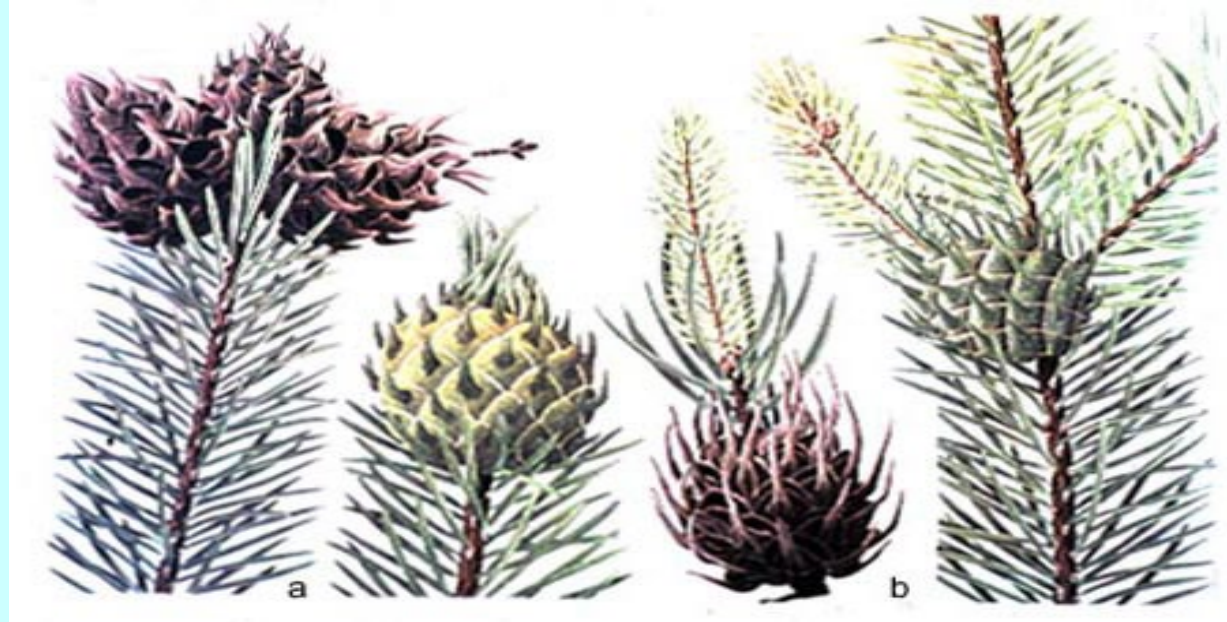
**Singing: Species: *dispar***

- **Birch leafminer**
- **Order Hymenoptera**
- **Family Tenthredinidae**
- **Sawfly larvae feed, adults do not**
- **Hollow out patches between leaf surfaces**
- **Birch trees**



- **Spring cankerworm**
- **Order Lepidopera**
- **Family Geometridae**
- **Moth larvae feed, adults do not feed**
- **Defoliation, shot hole injury**
- **Apple, elm, oak, hickory, linden, birch, beech, maple**





- **Cooley spruce gall adelgid**
- **Order Hemiptera**
- **Family Adelgidae**
- **Aphid like sucking insect**
- **Galls on tips of branches**
- **Spruce and Douglas-fir**



- **Cottony maple scale**
- **Order Hemiptera**
- **Family Coccidae**
- **Soft scale, sap sucking insect**
- **Yellowing, stunting, dieback**
- **Maple, elm, hawthorn, dogwood, poplar, linden**

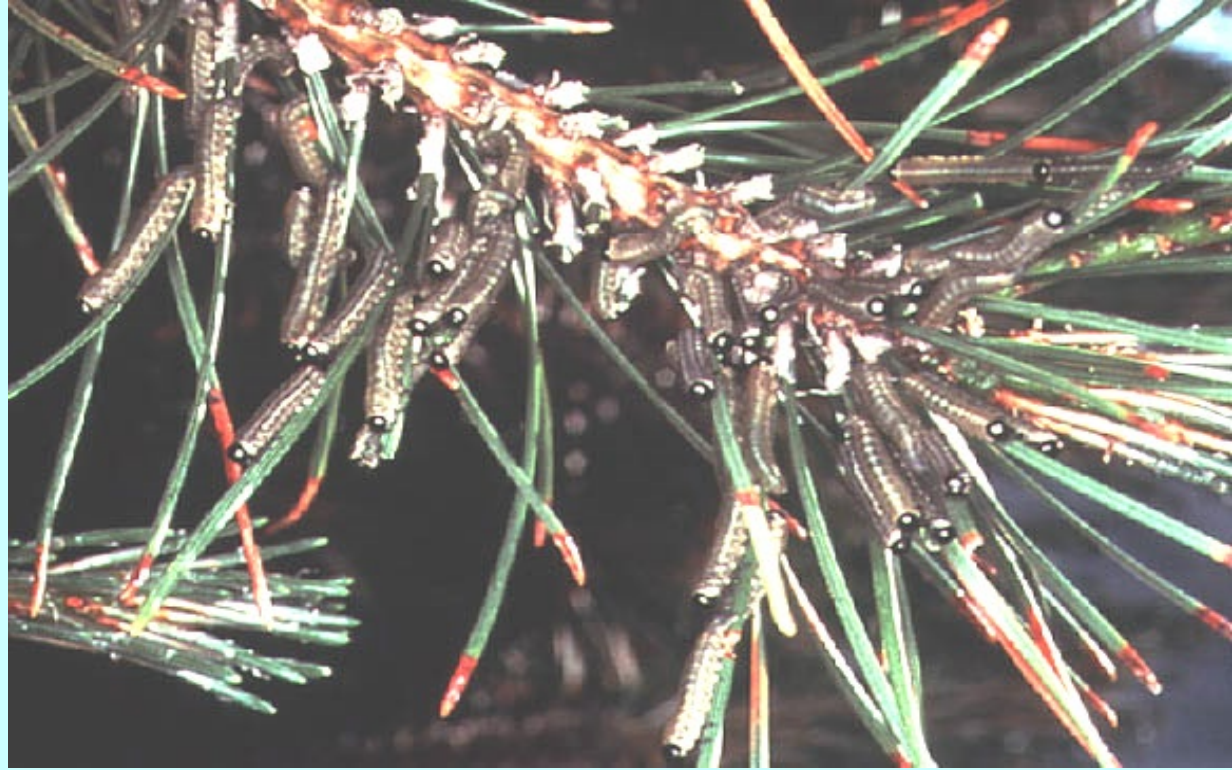


- **Elm leaf beetle**
- **Order Coleoptera**
- **Family Chrysomelidae**
- **Beetle larvae and adults feed**
- **Defoliation**
- **Most elm species**



- **Eriophyid mites**
- **Order Acari**
- **Family Eriophyidae**
- **Sucking arachnids causing erineum, spider relatives**
- **Erineum are gall like, foliage discoloration**
- **Various deciduous and coniferous species**





- **European pine sawfly**
- **Order Hymenoptera**
- **Family Diprionidae**
- **Sawfly larvae feed, adults do not feed**
- **Defoliation**
- **Various pines**



- **Forest tent caterpillar**
- **Order Lepidoptera**
- **Family Lasiocampidae**
- **Moth larvae feed, adults do not feed**
- **Defoliation**
- **Fruit and shade trees**



- **Hackberry nipple gall maker**
- **Order Hemiptera**
- **Family Psyllidae**
- **Adult psyllid, aphid-like**
- **Plant forms gall over insect nymph**
- **Hackberry**

- **Honeylocust plant bug**
- **Order Hemiptera**
- **Family Miridae**
- **Plant bug nymphs and adults feed**
- **Stippled leaf discoloration and distortion**
- **Honeylocust**

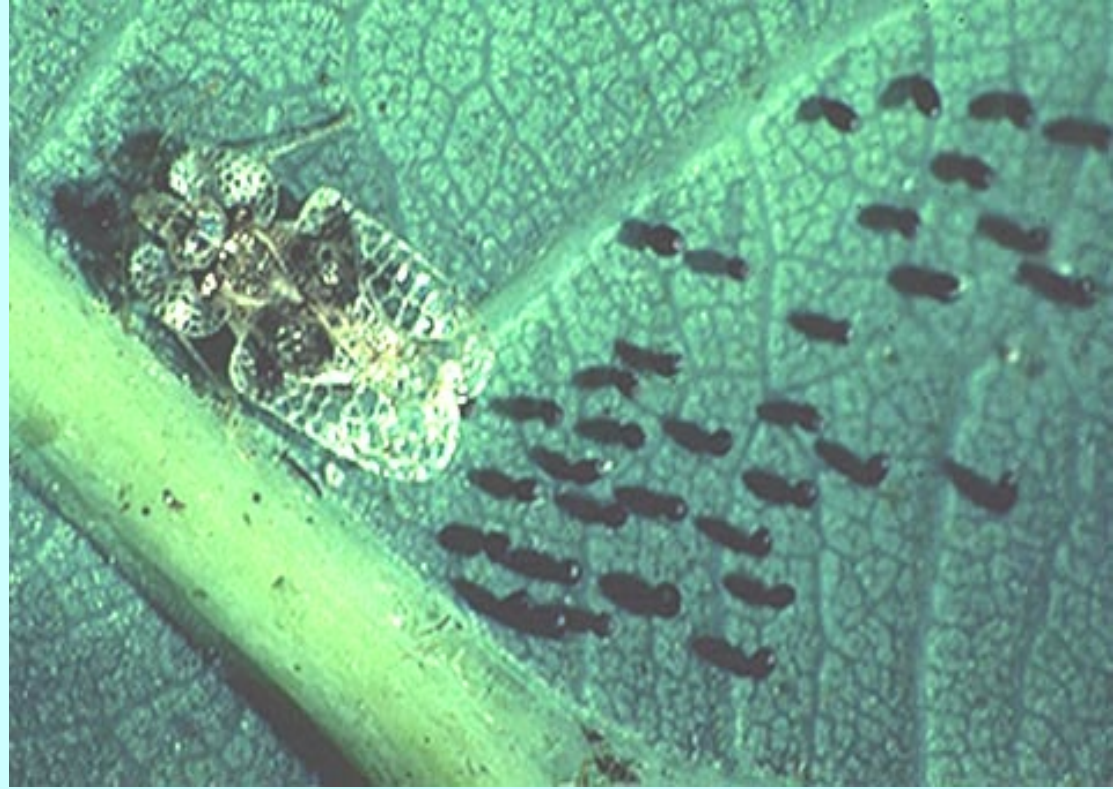


- **Cottonwood leaf beetle**
- **Order Coleoptera**
- **Family Chrysomelidae**
- **Beetle larvae and adults feed**
- **Defoliation**
- **Various willow and cottonwood**



- **Kermes scale**
- **Order Hemiptera**
- **Family Kermestidae**
- **Gall-like scale scale, sap sucking**
- **Chlorosis, foliage distortion, and tip dieback.**
- **Oaks**





- **Lace bug**
- **Order Hemiptera**
- **Family Tingidae**
- **Lace bug nymphs and adults feed**
- **Stippled, discolored foliage, and dieback**
- **Various trees and shrubs**





- **Clearwing borer**
- **Order Lepidoptera**
- **Family Sesiidae**
- **Moth borer larvae feed under bark; adults do not feed**
- **Chlorosis, wilting, and dieback**
- **Many deciduous trees and shrubs**



- **Black vine weevil**
- **Order Coleoptera**
- **Family Curculionidae**
- **Weevil larvae and adults feed**
- **Root and leaf damage**
- **Yews, many other perennials**

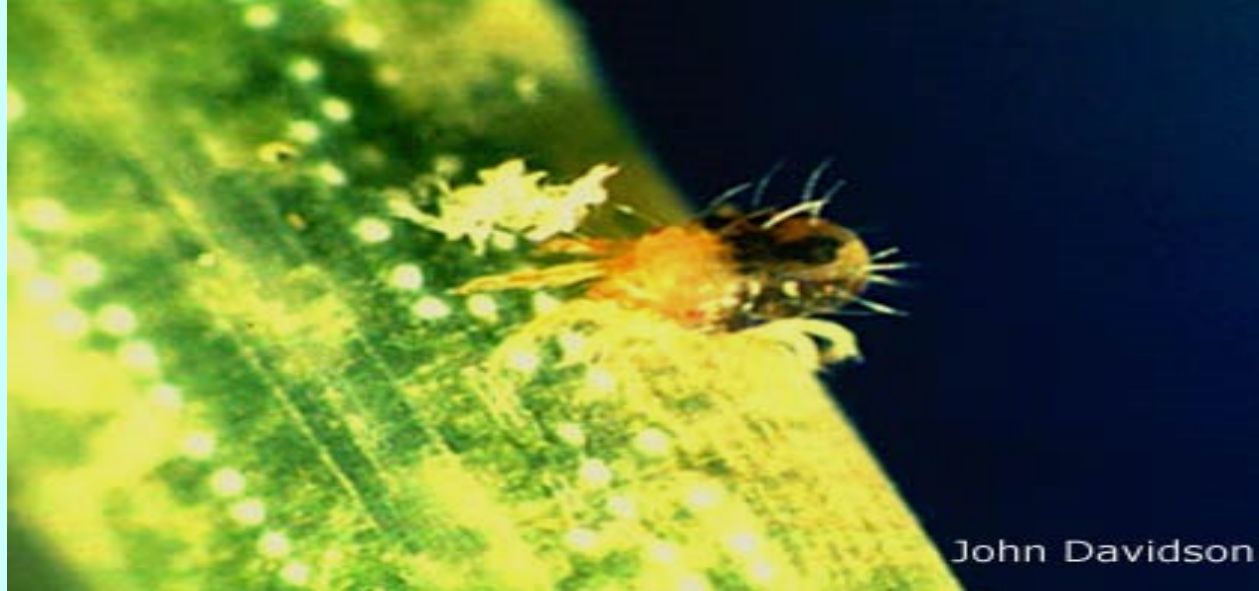


Kathryn Euzek

- **Rose slug sawfly**
- **Order Hymenoptera**
- **Family Tenthredinidae**
- **Sawfly larvae feed, adults do not feed**
- **Larvae skeletonize upper leaf surface**
- **Roses**



- **Pine needle scale**
- **Order Homoptera**
- **Family Diaspididae**
- **Armored scale, sap sucking**
- **Stunting and dieback**
- **Spruce, pine**



John Davidson

- **Spruce spider mite**
- **Order Acari**
- **Family Tetranychidae**
- **Sucking, spider relatives**
- **Suck out cells**
- **Conifers**



- **White pine weevil**
- **Order Order Coleoptera**
- **Family Curculionidae**
- **Weevil larvae and adults feed**
- **Leader dieback**
- **Pine and spruce**



- **Whitemarked tussock moth**
- **Order Lepidoptera**
- **Family Lymantriidae**
- **Moth larvae feed, adults do not feed**
- **Defoliation**
- **>60 various host plants**