Indoor Flies
General Life Cycle of Flies

- Eggs
- Larva (maggot)
- Pupa (puparia)
- Adult
Wasp and Fly Control Products
“Big Flies”
Blow Flies

Diptera: Calliphoridae
Common Scavenging Species of Blow Flies

Black blow fly

Blue bottle flies

Green bottle flies
Most blow flies develop on carrion (animal manure may be another breeding material for some species)
Greenbottle flies often are associated with animal feces
Maggots crawling in the home?

Likely source is a dead animal behind a wall or elsewhere in the home.
Garbage in Dumpster
– How quickly could flies develop in this source?
Critical concern: How long between when eggs are laid until full-grown larvae migrate to sites for pupation?
Garbage in Dumpster – How quickly could flies develop in this source?

Assumption: Temperatures during the day are warm enough for adult flies to be active (above 50F) and lay eggs

Assumption: Temperature in the pile is at 72F
# Life History of Certain blowflies and fleshflies reared at 22°C (Hours)

<table>
<thead>
<tr>
<th>Species</th>
<th>No. of Gen.</th>
<th>Egg</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>Prepupa</th>
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<tr>
<td><em>S. cooleyi</em></td>
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Interval between egg laying and end of 3\textsuperscript{rd} instar

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Black blow fly – 3.6 days

Sarcophagid fly – 3.75 days

Bluebottle fly – 6.4 days
Control of Blow Flies in the Home

• Eliminate breeding sites in and around the building
• Seal/Screen to exclude flies originating from outdoors
• Traps?
Fly Traps for Blow Flies?
– Attractive to adults, yes. Help with overall control - maybe, maybe not.
Sticky Fly Traps?

May capture some flies, if placed in location where flies congregate.
Cluster Flies - *Pollenia* spp.

The most common indoor flies during the cool months
Cluster flies are parasites of earthworms – they are not ‘filth flies’
Cluster fly searching for a site to lay eggs
Curly golden hairs mark cluster flies
Scenario for Cluster Fly Invasion of a Building

- Flies move to sunlit vertical surfaces when during period when seeking winter shelter
- Flies move upward as sun sets
- Flies enter upper areas of building
Management of Cluster Flies

• Prevention
  – Seal all openings prior to time when cluster flies enter buildings
  – Insecticides can be applied to exterior around openings
  – Drying dusts can be blow in into wall voids to kill flies behind walls.
Management of Cluster Flies

• Coping
  – Explain nature of problem
    • Transient nuisance invader
    • Self-limiting; no breeding occurs indoors
    • Not a filth fly
  – Vacuum individuals as they are observed
Fly Traps for Cluster Flies?
– They are probably not responsive to fly trap lures
Sticky Fly Traps?

May capture some flies, if placed in location where flies congregate
“Medium-Sized Flies”
House Fly (Musca domestica)
The house fly primarily breeds in decomposing vegetable material.
Ceroxys latiusculus – A picture-winged fly that commonly enters buildings in autumn

Larvae develop in plants of the genus Senecio
“Small Flies”

- Humpbacked flies
- Fungus gnats
- Vinegar flies/Small fruit flies
- Moth flies
Vinegar/Small Fruit Flies

Diptera: Drosophilidae
Vinegar fly larvae develop on yeasts that grow on overripe fruit or in other sources of damp vegetable matter.
Small fruit fly larvae developing in overripe peach
Residue in containers, such as those kept for recycling, can support larvae of small fruit flies.
Control of Small Fruit Flies/Vinegar Flies in the Home

• Eliminate all sources of breeding material
  – Remove, promptly consume or refrigerate all susceptible fruits
  – Clean out any residues that may allow yeasts to grow

• Trap out residual adults
A simple vinegar ("fruit") fly trap
Fungus Gnats

Diptera: Mycetophilidae, Sciaridae
Eggs
Larvae
Pupae
Adult

Adult
Pupae
Larvae
Eggs
Adult fungus gnats usually live for only 4-5 days. Females lay eggs in soil cracks along surface.
Fungus gnat larvae require 3-4 weeks or more before being full grown. They primarily eat fungi and decaying plant matter.
Fungus gnat larva on a potato slice
Fungus Gnat – Cultural Controls

• Reduce watering frequency
• Eliminate sources of decaying vegetation
Larvae of fungus gnats feed primarily on fungi.

Potting soil that remains moist is most favorable to fungus gnats.
Biological Controls for Fungus Gnat Larvae

- Soil predator mite (*Hypoaspsis miles*)
- Entomopathogenic nematodes (*Steinernema feltiae*)
- *Bacillus thuringiensis* var. *israelensis* (Bti)
Several strains of Bt are sold. Each is specific in the type of insect it can control

- **kurstaki, aizawi** strains (leaf feeding Lepidoptera larvae)
- **tenebrionis** strain (leaf beetles)
- **israelensis** strain (mosquito, gnat, black fly larvae)
Mosquito bits label has been changed to now allow use for fungus gnats in house plants.
Psychodidae –
Drain Flies, aka Moth flies

Associated with bacterial slime coating surfaces of drains in buildings.
Larvae of the moth flies are associated with bacterial slime coating surfaces of drains in buildings.
Humpbacked flies
aka drain flies, phorid flies

Diptera: Phoridae
Larvae of humpbacked flies live in moist, semi-solid media. This can occur in drains, or sometimes occurs when there has been a break in plumbing.
Control of Drain Flies

- **Identify source of origin**
  - Clean drains in a manner that eliminates food sources
    - Cleaning must remove all debris, surface film of bacterial slime
      - Normal drain cleaners insufficient
      - Drain cleaners that foam, break down debris can be effective
      - Scrubbing out drain can be useful
  - Fix leaking, cracked plumbing, if necessary
A sticky card placed over a drain can determine if it is the source of the flies.
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Indoor Flies
This presentation will be posted at the Insect Information web site

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- “Insect Information”
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