Branching Out

An Integrated Pest Management Newsletter For Trees and Shrubs

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Scouting Report

Conifers

(As Christmas & Landscape Trees)

Bagworms (80,81)—Now is a good time to look for the spindle-shaped bags attached to twigs and foliage of cedar, arborvitae, juniper and other conifers. Remove and destroy these bags containing the overwintering eggs. This will help reduce the population and may eliminate the need to spray. If the bag feels empty it was probably the home of last year's male bagworm. This pest is not common in the northern parts of NY State but if you live in southeastern NY they can be of concern.

Spindle-shaped bag of bagworm

Balsam Twig Aphid (33)—We only found a few of the newly hatched tiny, pale green aphids in central New York on April 19. In addition to balsam and Fraser fir, white fir (*Abies concolor*) is also reported to be a host, but we see the pest far less often on that species. Examine trees with stunted and twisted growth on the previous year's needles. There may also be sooty mold present. Tiny droplets of honeydew exuded by the aphids are relatively easy to see and are the best clues that these aphids are active.

Balsam twig aphid damage

The stem mothers hatch from overwintering eggs before budbreak. They do not cause damage themselves because they feed on the older needles. However, the mature stem mothers deposit live young about the time the buds begin to break, and these young will damage the new growth.

Light infestations are usually overlooked by Christmas tree buyers and most homeowners. If past history suggests that populations are rising in a particular area, then management options must be considered. Where the insect already occurs on established plants, and where budbreak has not yet begun, you should still be able to apply a dormant oil treatment. If however, budbreak has begun, you should choose one of the other registered pesticides. They should be applied late April to early May (30–100 GDD_{50}). If you do spray after budbreak read the label carefully and observe all precautions about applying pesticides to tender fir growth. For the occasional aphid-infested fir in a landscape, imidacloprid (where allowed) may be applied to the soil in early spring or late fall.

CyclaneusmaNeedlecast*(26)*—This needlecast attacks mainly Scots pine and was prevalent throughout New England in 2010. The fungus can cause new infections at any time that the air temperature is above freezing. However, most infection occurs in the spring and early summer. Infected two- and three-year old needles become light tan to brown, develop transverse bands, and are prematurely cast from the tree.

This disease has no apparent effect on tree health and is only worth managing for aesthetic purposes. Therefore, landscape pines with unacceptable levels of Cyclaneusma probably ought to be removed unless they are so important that one is prepared to invest in treatments for the rest of the life of the tree.

Cornell University Cooperative Extension

Where this fungus has become a problem in Christmas tree plantations, treat with a registered fungicide at budbreak. Then make additional applications at 6–8 week intervals through October, and treat only those trees that are within two years of harvest.

European Pine Sawfly (2)—The eggs of this sawfly are beginning to swell at our scouting site in Ithaca. We expect the larvae to emerge soon. Egg laying sites look like rows of 6–10 pale yellow spots, one row per needle. The eggs are located inside the needles, just under the epidermis. Once

European pine sawfly eggs on pine needles

the spots are swollen you can expect the larvae to emerge soon after. This insect is an important pest of red, Scots, Japanese red, jack, Swiss mountain, and mugo pines. The newly hatched sawflies are less than ¼ inch long, and each one is grayish green with white markings and a black head. Only rarely are insecticides needed. Because the larvae feed in colonies, it is possible to spot treat infested areas or hand pick and destroy small populations.

Pine Bark Adelgid (31)—Look for this pest on the bark and at the bases of needles of new shoots of white pine. Other hosts include Scots and Austrian pines. The adelgids are now covered with fluffy, white cottony masses.

Where infestations are light the insects can be removed from the bark with a high-pressure water spray. If infested trees are in stressful sites or are otherwise not particularly thrifty, you may have to resort to application of an insecticide. Treat with dormant oil at 22–58 GDD_{50} or with another registered pesticide 58–618 GDD_{50}. Alternatively, a soil application of imidacloprid can be made in early spring or late fall where allowed.

Conifers

(As Landscape Ornamentals Only)

Arborvitae Leafminer (14)—For most of the year the larvae of this leaf mining moth are located in the tips of arborvitae foliage, as they are now. They are ¼ inch long, green with black heads. They mine the interior portions of the foliage and cause affected areas to turn yellow then brown. Hold suspect leaves up to the light, and you'll see the larvae at work. If the infestation is light, prune off infested tips. There are many effective larval and pupal parasites that suppress the populations. However, the parasites are usually not abundant in specimen trees. Acephate foliar sprays control the larvae. These applications can be made soon (150–260 GDD_{50}.) and again in mid-August (1800–2200 GDD_{50}.) but require the 2ee paperwork to be in the applicator's possession at time of treatment. See the Cornell Guidelines for other treatment options.

Gymnosporangium Rusts *(129–131)*—Galls on *Juniperus* spp. have already begun to send out "horns". The galls are reddish to golden brown swellings on twigs and branches. Within a couple of weeks, depending on the weather, gelatinous tendrils up to an inch long and ranging in color from reddish brown to bright orange will become very conspicuous as they mature and begin to cast spores. That will be the time to protect the alternate hosts from infection.

"Horns" emerging from cedar-aplle rust gall

If practical, the galls should be removed from junipers before spores are produced. Another alternative is to spray the broad-leaved hosts with a registered fungicide (see Cornell Guidelines). These sprays should be applied when orange rust masses begin to develop on juniper, around mid-May. Make applications at 7- to 14-day intervals or per label instructions.

In the future, try to avoid planting junipers (including eastern red cedar) near hawthorn, flowering crabapples and serviceberry to avoid contact between diseased and healthy plants. In addition, several rust resistant varieties of juniper are now available and can be used to avoid this disease.

Juniper Scale (46)—Look for the adult females, circular (about 1/16 inch diameter) and white, overwintering on needles. 'Pfitzer' juniper is especially susceptible. In addition to juniper, Arborvitae and Leyland cypress are also hosts. For heavy infestations, use a dormant oil spray in mid-April to early May (22–148 GDD_{50}).

Juniper Webworm (8)—Infested junipers have brown foliage and twigs that are webbed together. Look inside this webbed foliage for the larvae. When mature, the larvae are ¾ inch long, tan with brown stripes, black heads, and black legs. Young larvae mine needles, and the mature larvae consume the needles. Several natural enemies keep this pest in check. Prune out infested branches. If numerous larvae are detected, treat in late April for overwintering larvae. Make sure to cover the foliage and not just the webs when making an application. Spray material must get past the webs and impinge on the foliage. 'Pftizer' and 'Savin' junipers are apparently resistant so if you are installing new plantings, consider these.

Broad-leaved Trees and Shrubs

Apple Scab *(42)*—The newly developing leaves are vulnerable to apple scab so now is the time to do preventative treatment if you've had problems with this disease in the past. Protectant fungicides must be applied to the tissue before infection occurs. This means application is usually at pink bud, petal fall, plus two more applications at 10-day intervals, but treatment times vary by fungicide so follow the label directions. Post infection fungicides are also available but are limited to a short period (a few hours up to a few days) after infection and vary depending on temperatures during the infection period. Fungicide applications will not eradicate infections once they take place but should prevent new ones.

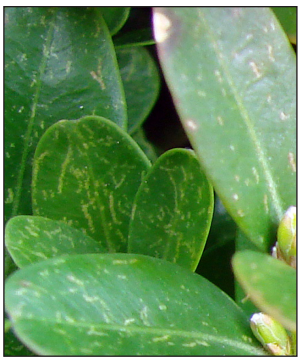
The fungus, *Venturia inaequalis,* overwinters on fallen leaves. The spores are distributed by rain splash or wind onto the newly developing leaves. Once the initial leaf infection occurs and spots form, additional spores are produced from those and infection continues to spread. Rainy weather encourages spread of the spores.

The symptoms on leaves begin as olive green, circular lesions. With time, lesions enlarge, darken and turn velvety. With heavy infections, the leaves may curl or become dwarfed. Lesions may also occur on fruit where they appear as rough, dark green areas. Chlorosis and death of the affected tissue is common. Treat with registered fungicide (see Cornell Guidelines).

Boxwood Leafminer (94)—The lemon yellow larvae of this leafminer can be found inside last year's boxwood leaves that are mined or blistered. An imidacloprid soil treatment in very early spring, early June or late summer might be the pest IPM approach. If deemed necessary a treatment

targeting the adults can be made starting in mid-May through early June (350–600 GDD_{50}). A foliar application for the larvae can be made at 1200–2400 GDD_{50}. Direct the applications to the underside of foliage. Most cultivars of *Buxus sempervirens* and *B. microphylla* are susceptible.

Boxwood Mite (229)—Now is a good time to scout for boxwood mite damage and if evidence of severe damage is found make a treatment plan for later this spring. Leaves of infested plants appear to be pin-pricked or scratched with tiny white or yellow marks. Boxwood is its only host, and this mite is a pest of both European and American boxwood varieties. Japanese boxwood appears to be less susceptible. Adult mites are greenish brown and will be appear in May. They feed on the underside of leaves and are difficult to see even with a hand lens. Treat with insecticidal soap, horticultural oil, or other registered pesticide at 245–600 GDD_{50}.



Closeup on boxwood mite damage

Calico Scale (169)—This scale overwinters as nymphs on the twigs of its hosts including honeylocust, ornamental stone fruit, Persian walnut, elm, zelkova, maple, pyracantha, pear, sweet gum**,** Boston ivy, Virginia creeper, red bud, magnolia, *Carpinus*, dogwood, buckeye, wisteria, *Sophora japonica*, and flowering crabapple. Where practical, brush off the scales before crawlers emerge in mid-summer. If this pest is a problem, treat in mid-April to May (35–145 GDD_{50}) for dormant treatment.

Where practical brush off the scales before crawlers emerge

Dogwood Borer (123)—If you have had problems with this pest in the past, set up your traps in mid-April to begin monitoring. Note that the dogwood borer may not respond to the same lure in different parts of its range, so the value of the pheromone trap may be limited depending on where you live. If an insecticide treatment is warranted apply in mid-May to mid June (148–700 GDD_{50}).

Eastern Tent Caterpillar (76)—While scouting in the Ithaca area on April 20 we found newly hatched eastern tent caterpillars. They were very small (¼ inch long) and looked like they had hatched that day. The eggs of this pest hatch soon after budbreak of the host plant. Wild cherry, apple, and crabapple are the most common hosts, but cotoneaster has been observed being attacked as well. When full grown the caterpillars are about 2 inches long, and black with a white stripe running down their backs. Their bodies have blue dots that run in between yellow longitudinal lines. The larvae gather at the crotches of trees and spin a mass of webs that expand as the caterpillars grow. Prune and destroy nests during the day while most caterpillars are inside.

Euonymus Scale (186)—The fertilized adult females have black, oyster-shell shaped, ⅛ inch long scale covers and can be found overwintering on bark of susceptible plants. Hosts include euonymus, bittersweet, holly, and pachysandra. Horticultural oil treatments (35–120 GDD_{50}) are effective for light infestations. Treat crawlers in June. There are some resistant euonymus species.

European Fruit Lecanium Scale (174)—Immature female scales overwinter on the twigs and limbs of their multiple hosts. Usually two- to three-year old twigs are attacked. Young stressed plants and newly transplanted plants are more susceptible. Honeydew and sooty mold may develop with large scale populations. In addition, growth may be stunted, leaves may drop, and shoots may dieback. There are many effective parasites that keep the populations in check. If beneficials aren't controlling this pest, treatment may be necessary. Treat in mid-April to early May (35-145 GDD_{50}) for dormant treatment.

Mossyrose Gall Wasp—Dan Gilrein, Extension Entomologist from Suffolk County reports getting a sample of this gall on shrub rose into his lab recently. He has identified the cause of this gall as *Diplolepis* sp., possibly *D. bassetti,* as the similar *D. rosae* has larger galls.

Galls on rose caused by Diplolepis sp.*, Photo by J. Komorowska-Jedrys*

Things to Look For in the Upcoming Weeks

Dogwood Anthracnose (*52*)—Flowering dogwood trees threatened by dogwood anthracnose must be sprayed soon after the first leaves emerge.

Forest Tent Caterpillar (76)—The forest tent caterpillars will be hatching soon. When the egg hatches, the young larva crawls into the tops of trees where it begins to feed on flowers and leaf buds. Later, it feeds on the foliage. Outbreaks of this pest have occurred in several areas of New York State during the last few years and warrant close attention. If you are in an area where you are expecting high populations this year apply a registered pesticide at 192–363 GDD_{50}.

Gypsy Moth (61,62)—The peak hatching period for gypsy moth caterpillars coincides with the blooming of *Amelanchier*. Be ready to treat with *Bacillus thuringiensis* subsp. *kurstaki* and *aizawai* beginning in late April (90–448 GDD_{50}). Refer to the Cornell Guidelines for other registered materials. The best control is obtained when directed toward young larvae.

Hemlock Woolly Adelgid (32)—The tiny, reddish-brown crawlers will soon be active on Eastern hemlocks. They are difficult to see and vaguely resemble minute aphids. Look at the base of needles of hemlocks for the woolly adelgids. Foliar sprays can be made in late April to early May to treat for crawlers. See Cornell Guidelines for treatment recommendations. Addition of an adjuvant will improve penetration and coverage of foliar sprays. Thorough coverage is important.

Hickory Leaf Stem Gall Phylloxera (222)—We will soon be entering the window of opportunity to treat for this pest. This pest's presence isn't life threatening, but it affected trees are unsightly and for conspicuous trees, management may be warranted. This pests causes globose galls on shoot bark and leaf petioles of hickory and occasionally on the mid-vein of the leaflet. If this pest soon if it has been a problem for you in the past Treat late April to mid-May (91–246 GDD_{50}) with dormant oil to control the overwintering eggs.

Honeysuckle Aphid (149)—The new growth is just beginning on honeysuckle, and we expect to see these aphids hatching soon. The feeding from this aphid results in witches' brooms on the terminals of honeysuckle leaves. The leaves in these

brooms are light green and folded upward along the midvein. Pruning and destroying the witches' brooms, before overwintering eggs have hatched can achieve some control. This will reduce early season populations of aphid. But because not all the eggs will be removed a pesticide treatment may be necessary if unsightly growth is unacceptable. See Cornell Guidelines for further information.

Lilac Borer (122)—If predators are not sufficiently managing these borers, an insecticide application may be made in mid-May (200 – 299 GDD_{50}). Sex pheromone traps are useful to monitor and determine spray date. Set out the traps soon. The adults are ½ inch long and metallic brownish black. Make an application ten days after the first male moth is caught. Prune and destroy infested portions, however, avoid pruning when moths are present.

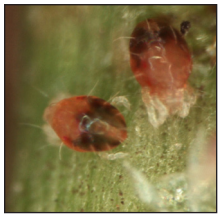
Maple Bladder Gall Mite (232)—Most infestations are not worth treating because the galls are not detrimental to the health of the trees. This mite causes bright red bladder galls on the upper surface of red and silver maple. If there was an abundance of galls last year and it was unacceptable you might want to consider treating with a registered pesticide between 58 – 148 GDD_{50}.

Pine-Pine Gall Rust *(151)*—The conspicuous dusty bright orange spores will be emerging from the galls soon. Prune galls before this occurs. Pine-pine gall rust occurs on two and three needle pines, especially Scots and occasionally Austrian and mugo. Most galls vary in size from that of a golf ball on small branches to as large as a softball when developing on the stem.

Pine-pine gall rust occurs on two and three needle pines.

Spruce Budworm (7)—Spruce budworm attacks true firs and Douglas-fir as well as spruces. It overwinters as a small larva in a silken nest, and when it resumes feeding in the spring, it heads for the expanding bud. As it feeds there, it may tie shoot tips together with webbing to make a nest. When full grown in early June, the caterpillars are about an inch long and yellowish brown with a darker head. Closely examine the curled new growth to find the caterpillars because they blend in with the surrounding foliage. The adult is a dark gray moth. This pest is usually not a problem on landscape trees. It may be possible to handpick and destroy budworms on small trees. If necessary a registered pesticide may be applied in late April through mid-June.

Spruce Spider Mite (52)—Look for spruce spider mites around the time redbud trees are blooming. The newly hatched spider mite nymphs have only six legs. Later stages will have eight legs. Their hosts include many conifers with damage common on spruce, pine, true firs, arborvitae and hemlock. If necessary apply insecticidal soap, horticultural oil, or other registered pesticide in mid to late May (192 – 363 GDD_{50}). A horticultural oil to treatment can be made to the eggs in April (7 – 121 GDD_{50}).



Spruce spider mites

Zimmerman Pine Moth—If this pest has been a problem for you in the past, apply bark sprays with a registered pesticide in late April through mid-May (121 – 246 GDD_{50}) to control the larvae before they bore under the bark where they will be protected. Add a wetting agent to improve bark penetration.

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