

# Plant Health Care Report

Scouting Report of The Morton Arboretum



THE  
CHAMPION  
of TREES

May 31, 2024

Issue 2024.5

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Contact us via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org) or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4pm).

## Quick View

### What indicator plant is in bloom?

Japanese tree lilac (*Syringa reticulata*) is in full flower (fig. 1)

**Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 468.5 (as of May 30).**

### Insects/other pests

- Four lined plantbug
- Magnolia scale
- European elm scale
- Woolly aphids
- Two-marked treehopper
- Sawflies
- Rose slug sawfly
- Rose plume moth

### Diseases

- Downy leaf spot on hickory
- Oak leaf blister
- Plum pockets

### Weeds

- Pokeweed



Figure 1 Japanese tree lilac (photo: Sharon Yiesla)

## Soil temperatures around Illinois (from Illinois State Water Survey)

This information will be provided all season. For data from other reporting stations, go to <https://warm.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

Max. Soil temps For 5/30/2024*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	79.5	91.6	87.8
4-inch, bare soil	81.4	83.5	79.8
4-inch, under sod	69.1	78	75.6
8-inch, under sod	65.9	72.5	74.4

\* This is the maximum soil temperature recorded the day prior to publication of PHCR.

## Seasonal precipitation

Seasonal precipitation (rain and melted snow) in inches.			
	2024	2023	Historical average (1937-2023)
Jan	3.9	2.85	1.95
Feb	.56	4.88	1.81
Mar	2.64	2.29	2.53
April	4.44	2.23	3.65
May	3.73 (thru 5/30)	.79	4.17
June			
July			
Aug			
Sept			
Year to date	15.27 (thru 5/30)	13.04 (thru May)	14.11 (thru May)

## Degree Days (current and compared to past years) and rainfall

As of May 30, we have 468.5 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2023) for this date is 354 GDD<sub>50</sub>. The table below shows a comparison of GDD in different years. We are comparing the GDD<sub>50</sub> reported in this issue with the GDD reported last year, and in 2019 and 2018. These years were selected since publication dates of the issue were within a day or two of each other. Glencoe, and Waukegan (60085) were not used in 2018, so there is ‘no report’ from those stations.

Location	GDD as of 5/30/2024	GDD as of 6/1/2023	GDD as of 5/30/2019	GDD as of 5/31/2018
Carbondale, IL*	1188	917	872	922
Champaign, IL*	831	718	602	798
Chicago Botanic Garden**	512	448	231 (5/29)	387.5 (5/30)
Glencoe*	279	189	134	No report
Chicago O'Hare*	694	575	376	557
Kankakee, IL*	678	589	440	640
Lisle, IL*	701	583	398	577
The Morton Arboretum	468.5	439.5	302	538
Quincy, IL*	893	755	631	880
Rockford, IL*	596	514	317	542
Springfield, IL*	906	727	642	870
Waukegan, IL* (60087)	514	446	252	412
Waukegan, IL* (60085)	582	495	288	No report

\*We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to <https://gddtracker.msu.edu/>

\*\*Thank you to Elizabeth Cullison, Chicago Botanic Garden, for supplying us with this information.

## How serious is it?

Problems that can definitely compromise the health of the plant will be marked “serious”. Problems that have the potential to be serious and which may warrant chemical control measures will be marked “potentially serious”. Problems that are seldom serious enough for pesticide treatment will be marked “minor”. “Aggressive” will be used for weeds that spread quickly and become a problem and “dangerous” for weeds that might pose a risk to humans.

## Pest Updates: Insects

Examples of insects that may emerge soon in northern Illinois (based on growing degree days)			
GDD (base 50)	insect	Life stage present at this GDD	Type of damage
500-700	Euonymus scale	Crawlers emerging	Feeding on sap
500-600	Viburnum crown borer	Caterpillars hatching and entering bark	Tunnel under bark
700-800	<a href="#">Bagworm</a>	Caterpillars emerging	Chewing foliage
900-1200	Japanese beetle	adults	Chewing foliage; mating and laying eggs

### Four-lined plantbug (minor)

Be looking for the four-lined plantbug (*Poecilocapsus lineatus*). This strange spring seems to have accelerated everything and the adults of this pest are already out. The nymph stage slipped right past us, but the feeding damage is being found on a variety of plants. This insect feeds on 250 species, including many kinds of perennials, vegetables, and shrubs such as bluebeard, forsythia, and sumac. Feeding injury (fig. 2) is frequently mistaken for a fungal leaf spot disease. Four-lined plantbugs have piercing, sucking mouthparts which they use to break plant cells and then flush the feeding wound with digestive juices. Damage appears as dark leaf spots which subsequently turn translucent. Both nymphs and adults feed on leaves.



Figure 2 Four-lined plantbug damage

Nymphs are red and will develop dark wing pads as they mature. The adult stage, which is out now, is 1/4" to 1/3" long and has four longitudinal black lines on its yellow or green back, thus the name. It's quite a shy insect that scurries away when you try to find it. The insect overwinters as eggs laid in slits cut into plant shoots. There is one generation per year.



Figure 3 Four-lined plantbug adult

**Management:** Some people try to hand-pick these insects, but their timidity makes them difficult to catch. Small populations don't generally need to be controlled. Cutting down infested stems of the host plant at the end of the season may reduce the number of eggs that overwinter and thus reduce the population that can attack plants next spring.

Good website: <https://extension.umn.edu/yard-and-garden-insects/four-lined-plant-bugs>

### Magnolia scale (potentially serious)

Magnolia scale (*Neolecanium cornuparvum*) has been an ongoing problem in northern Illinois for a number of years now. While we have received fewer calls about magnolia scale this year, it is still fairly prevalent. It is worth reviewing this pest. The Plant Clinic at The Morton Arboretum recently received a sample that showed crawlers beginning to mature into adults and form their protective coverings.



Figure 4 Adult magnolia scale

This is an unusual scale insect because they're so big and easy to see! These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. As with most soft scale infestations, plant leaves are often covered with sooty mold, a black fungus that grows on the honeydew excreted by the scales. Sooty mold cuts down on photosynthesis because it blocks sunlight from the leaf.

Initially, maturing magnolia scale are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time (fig. 4). This wax is lost at the time new crawlers are born in late August or early September. The new crawlers produced in late summer are tiny, flattened, and vary in color from yellow to reddish-brown. The crawlers settle on one- to two-year-old twigs to feed and remain there through the winter.

**Management:** At this point, since the crawlers are maturing into adults and forming their protective coverings, contact insecticides will not be effective. Systemic insecticides applied now can kill the maturing insects and also kill the new crawlers that come out later this summer. These products do not always provide complete control so be watching for new crawlers in late summer.

Good web site: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/magnolia-scale-neolecanium-cornuparvum/>  
<https://bygl.osu.edu/node/1986>  
<https://lancaster.unl.edu/magnolia-scale>

### European elm scale (potentially serious)

A report of European elm scale (*Eriococcus spurius*, formerly *Gossyparia spuria*) on elm came into the Plant Clinic at The Morton Arboretum last week. These are soft scales, and since they feed in the phloem, they produce honeydew, which supports the growth of sooty mold. This

scale can produce honeydew in large quantities, so look for sticky plants and obvious growth of sooty mold. Very heavy infestations can cause leaf and twig dieback.

The photos we received showed mature females, which are dark in color and surrounded by a fringe of white (fig. 5). This insect produces one generation per year. It overwinters as half-grown nymphs and matures into adults in early summer. Eggs are laid around the end of June into July. The eggs hatch within a few hours into bright yellow crawlers. Crawlers migrate to feeding sites along the midrib of the underside of leaves, where they will remain until the end of summer. In fall, crawlers return to limb or bark crevices to overwinter as immature females.



Figure 5 European elm scale

**Management:** Insecticides that target crawlers can be used. Systemic insecticides can also be useful in control of this species. As with other scale insects, this species can cause stress to the host tree. Watering trees during dry weather can help boost the vigor of the tree. Applications of nitrogen fertilizers should be avoided. Excess nitrogen helps the plant produce more amino acids, and these serve as a food source for the scale. This could actually increase the population of this pest.

Good website: <https://bygl.osu.edu/node/1974>

### Woolly aphids (minor)

Aphids have been showing up on plants, and now, their fuzzy cousins, the woolly aphids, are out and about. In our last full issue, we talked about the woolly apple aphid on elms. Now, our scouts have found woolly beech aphids (fig. 6). There are also woolly birch aphids, but we don't yet have a report on them being out. Both these insects look a lot like regular aphids, except they dress themselves up with a little bit of white fluff. Like regular aphids, they are sap feeders and also produce honeydew.



Figure 6 Woolly beech aphid

The woolly beech aphid (*Phyllaphis fagi*) feeds only on beech trees (*Fagus* spp). It seldom does any real damage to beech trees. It can become a nuisance when populations are high, due to the mess of the honeydew it produces.



The woolly birch aphid (*Hamamelistes spinosus*), however, has two hosts, birch (*Betula* spp.) and witch-hazel (*Hamamelis* spp.). The insect overwinters on the bark of a birch tree. When spring comes, the female will give birth to live young on the undersides of new leaves. The feeding of the woolly birch aphid causes the leaf to take on a corrugated look at first. Later, the feeding will lead to curling of the leaves, with most of the insects tucked into the lower side of the leaf (fig. 7) protected by the curling of the leaf.



Figure 7 Woolly birch aphid tucked in on underside of leaf

In late June, the aphids will go to their other host, witch-hazel. They will lay eggs on the twigs, and these eggs will overwinter on the witch-hazel. The eggs will hatch, and the feeding caused by this generation of aphids will lead to the formation of a spiny gall on the stem. The female produces a number of aphids in the gall, and then she leaves the gall to fly to the birch.

**Management:** Both of these woolly aphids are fairly minor pests. They can often be washed off the plant with a strong stream of water from the garden hose. Insecticides would not be needed, unless a very high population of insects develops.

Good websites: <https://content.ces.ncsu.edu/spiny-witchhazel-gall-aphid>  
<https://bygl.osu.edu/index.php/node/2143>

### Two-marked treehopper (minor)

Last week, our scouts found the nymphs of the two-marked treehopper (*Enchenopa* species, often referred to as the *Enchenopa binotata* complex). It is likely that the adults are out now or will be soon. There are a number of species within this complex and they are all very host-specific. Our scouts found the nymphs on black walnut (*Juglans nigra*). We often see the species that attacks redbud. Adults are dusky brown with two yellow spots on their backs (fig. 8), thus the name. They have a high, curved horn that points forward coming out of their thorax. The adults are less than ½ inch long. The nymphs look



Figure 8 Adult two-marked treehopper

quite different from the adults. They're about 1/8- inch long, dark gray to brown, and have spines sticking out of their abdomens (fig. 9).

In late summer, adult females cut slits in bark to lay their eggs, then cover the area with small, white egg-plugs that can be mistaken for mealybugs or scale insects. The insect overwinters in the egg stage. The young nymphs hatch out in spring and feed on shoots of the host tree. Nymphs, and later adults, suck plant juices, but don't do much damage. The damage appears as pale-yellow stippling on the leaves. Female adults can injure twigs by laying eggs in slits made in the bark, but even this is fairly minor.



Figure 9 two-marked treehopper nymphs

**Management:** Control is generally not necessary.

Good website: <https://bygl.osu.edu/node/1388>

### Sawflies (minor to potentially serious)

We are getting reports of a variety of different sawflies out and about. European pine sawfly has been out working on pines this year. We have seen photos of a species of sawfly on fringed loosestrife (*Lysimachia ciliata*) and another species on dogwood (*Cornus* sp.). A couple of years ago, we saw a wide range of sawfly species on a wide range of plants. This may be another busy year for sawflies. So, who are they?

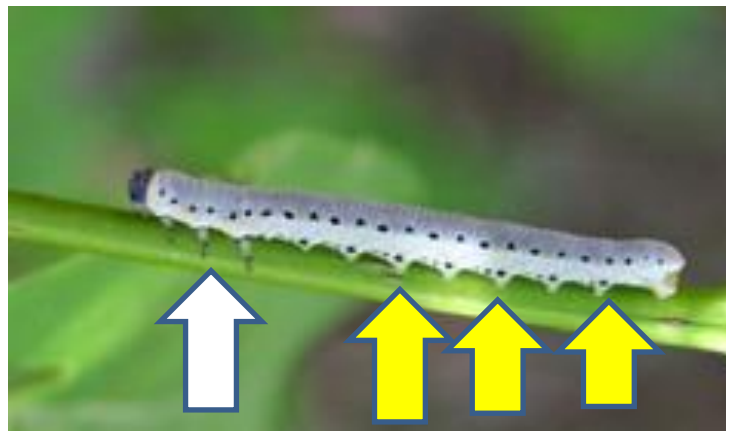


Figure 10 Sawfly larvae showing true legs (white arrow) and prolegs (yellow arrows)

Sawflies are a large group of insects, literally hundreds of species. These insects can be confusing. As adults, they often have a fly-like or wasp-like appearance and may go unnoticed. As larvae, they look like caterpillars but are not true caterpillars (this means that *Bacillus thuringiensis* var. *kurstaki* will NOT kill them). Sawfly larvae and caterpillars do differ from one another. While each will have three pairs of tiny legs near the head end of the body, they differ in the number of prolegs at the far end (fig. 10). Prolegs are outgrowths in the abdomen that the insect uses like legs. Caterpillars have five or fewer pairs, while sawfly larvae have six or more pairs. So, to be sure who you have, you'll need to get close and count those prolegs. Caterpillars have hooks, called crochets, on the bottom of their prolegs, so they can hold on tight. Sawfly larvae lack these hooks and can easily be dislodged from their host, so hitting



them with a stream of water from the garden hose often gets rid of them. Sawfly larvae vary in color by species. Some are very colorful, while others are not. Some may be identified by spots, spines or other marks.

Sawfly larvae eat foliage, and the severity of their damage depends on the host, the size of the population and general health of the plant. High populations of sawfly can do a lot of damage and will add some stress to the host's life, but generally won't kill the host. Repeated defoliation year after year can lead to decline. Deciduous hosts can often tolerate more damage than evergreen hosts, and healthy plants can tolerate more defoliation than weak plants.

**Management:** Because sawfly larvae don't have hooks on the prolegs, they can't hold on tight. That makes them easy to wash off with the garden hose or to pick by hand.

Good websites: <https://www.extension.umn.edu/garden/insects/find/sawflies/>  
<https://bugguide.net/node/view/13142>

### Rose slug sawfly (minor)

Speaking of sawflies, here is one that is irritating rose gardeners across the region. The rose slug sawfly (*Endelomyia aethiops*) is back again chewing on rose leaves. The larvae are greenish yellow with orange heads (fig. 11) and are about ½ inch long when fully grown. They resemble caterpillars but are not. They are often covered in a little slime that helps protect them from predators. When larvae mature, they lose their slimy coverings. The rose slug sawfly feeds on the upper layers of the leaf, leaving behind the lower epidermal layer and creating a "windowpane" effect. (Other rose pests may make bigger holes, all the way through the leaf.) Around mid-June (possibly a little earlier this year) larvae will drop to the ground to pupate, so this is a short-lived problem.



Figure 11 Rose slug sawfly larva and damage

**Management:** Minor infestations of rose slug sawfly can be controlled by using a forceful jet of water to dislodge the sawfly larvae or by handpicking. Although this insect looks like a caterpillar, it is not, so *Bacillus thuringiensis* var. *kurstaki* (Btk) will NOT control this pest.

Good website: <http://hort.uwex.edu/articles/roseslug-sawfly>

### Rose plume moth caterpillar (minor)

The rose slug sawfly mentioned above may have company on your rose plant. Rose plume moth caterpillars (*Cnaemidophorus rhododactyla*) are now at work on roses. This larva is a caterpillar and is approximately ½ inch long. It is light green with a reddish stripe (fig. 12) running from its head to the middle of its body at one point in its life cycle. The adults are present June through August. New larvae are produced in fall and overwinter inside the stems of the rose. They resume feeding in spring.



Figure 12 Rose plume moth caterpillar

Plume moth larva has been most commonly found near the tips of rose bushes, damaging the buds and leaves and sometimes creating some webbing (fig. 13). The caterpillar's color blends with the color of new rose growth nearly perfectly, so they may be difficult to find. A lot of frass (insect excrement) is also found in these areas.



Figure 13 Rose plume moth caterpillar damage

**Management:** Pruning off infested tips may be the best management advice that can be offered at this time. Since this is a caterpillar, *Bacillus thuringiensis kurstaki* (*Btk*) should be effective, but is best used when the caterpillars are small.

### Pest Updates: Diseases

#### Downy leaf spot of hickory (minor)

Downy leaf spot, also known as white mold or white leaf spot, caused by the fungus *Microstroma juglandis*, has been found on hickory (*Carya* sp.). Powdery, white, fuzzy spots that are more concentrated near the leaf veins are forming on the underside of the leaf surface (fig. 14). Corresponding chlorotic spots appear on the upper leaf surface. These spots vary in size and may coalesce to form large angular lesions. The fungus may also cause witches' brooms near the ends of branches with stunted and yellowish leaves that may drop in early summer.



Figure 14 Lower leaf surface showing white fungal spots of downy leaf spot

**Management:** Downy leaf spot attacks hickories and walnuts but is not a significant threat to the trees. Witches' brooms can be pruned to improve the appearance of the tree. Chemical management is not recommended.

Good website: <http://plantclinic.cornell.edu/factsheets/downyleafspothickory.pdf>

### Oak leaf blister (minor)

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, has been found already this season. Leaves develop wrinkled, raised, pale whitish-yellow blisters (fig. 15) on their upper surface and corresponding gray depressions on the lower leaf surface in spring and early summer. Blisters range from 1/10 of an inch to an inch in diameter. As they age and merge, the blisters become thickened and puckered and the leaf may become distorted. Red oak (*Quercus rubra*) is the most susceptible species. Oak leaf blister, like other *Taphrina* diseases, usually develops only during cool, wet springs (like this year!!). Oak leaf blister mostly a cosmetic problem. Infected leaves become distorted and may prematurely drop. The disease usually slows during the summer.



Figure 15 Oak leaf blister

**Management:** The fungus survives the winter on twigs and bud scales. On oak, leaf blister is more unsightly than harmful, so control is not a high priority.

Good website: <http://plantclinic.cornell.edu/factsheets/oakleafblister.pdf>

### Plum pockets (potentially serious)

This cool, wet spring has been favorable for fungi in the genus *Taphrina*. In our [May 17<sup>th</sup> issue](#) we wrote about peach leaf curl, caused by *Taphrina deformans*. This week, we are reporting on oak leaf blister, caused by *Taphrina caerulescens* (see above). Thanks to one of our observant Plant Clinic volunteers, we also have a report of plum pockets, caused by *Taphrina communis*. This disease attacks both wild plums and American plums.

Plum pockets causes unripe fruit to grow unusually large early in their development. The infected fruit have a bladder-like appearance (fig. 16), with a spongy texture and an empty



Figure 16 Fruit deformed by plum pockets

interior. Some of the infected fruit will fall off the tree, but some may remain hanging on the tree throughout winter. Spores are produced on the surface of these infected plums and can serve to re-infect the host tree next spring. On some trees, leaves may be deformed in the same way that peach leaf curl deforms peach leaves. Trees may defoliate early in the season and this can stress the host tree. Repeated infections year after year may cause a tree to decline.

**Management:** The fungus overwinters in buds and on infected fruit. Clean up all infected fruit from the ground and the tree. Fungicides are only effective when applied in fall after leaf drop or in spring before bud swell. Any fungicide used would need to be labeled for use on edible fruit. Once the leaves have emerged, fungicides are no longer effective.

## **Pest Updates: Weeds**

### **Pokeweed (dangerous)**

Here is one of those situations where a native plant can cause trouble for us even as it serves pollinators and animals. Pokeweed (*Phytolacca americana*) is a native plant, but it can also be a dangerous one. It is dangerous to handle and ingest. It commonly grows in wet areas such as meadows and marshes, as well as open fields and disturbed areas. But, we often find it popping up in home gardens. It produces beautiful dark purple fruit (fig. 17) which are very tempting, but which should not be eaten. Consumption can cause symptoms such as gastrointestinal issues, nausea, vomiting, headache, and seizures. In addition to that, sap from the plant can be absorbed through broken skin and can cause a rash in some individuals.

Pokeweed is a fairly easy plant to identify. It is a large perennial that can grow up to 8 to 10 feet tall. It has a very sturdy stem that is often reddish or purplish (fig. 18) in color. The simple, oval leaves of this plant are several inches long with untoothed edges. The plant produces an elongated stalk of tiny white flowers, which will produce the tempting deep purple fruit.



Figure 17 Pokeweed fruit (photo: Sharon Yiesla)



Figure 18 stem of pokeweed (photo: Sharon Yiesla)



**Management:** While this plant does serve pollinators and produces food for birds and animals, removal may be warranted in home gardens where small children and pets may be exposed to the temptations of the pretty fruit. To remove the plant, cut it down at the ground before it has a chance to set fruit. The root can be dug out.

Good website: <https://www.illinoiswildflowers.info/weeds/plants/pokeweed.htm>



***Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.***

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, Ph.D., Plant Health Care Leader; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum; and Juluia Lamb, Arboretum Volunteer. The information presented is believed to be accurate, but the authors provide no guarantee and will not be held liable for consequences of actions taken based on the information.

Thank you...I would like to thank all the staff and volunteers that report disease and pest problems when they find them. Your hard work is appreciated. Our volunteer scouts for 2024 are Deb Link, Maureen Livingston, Loraine Miranda, Molly Neustadt and Moira Silverman.

Literature/website recommendations:

Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book Coincide, The Orton System of Pest and Disease Management.

Additional information on growing degree days can be found at:

[http://www.ipm.msu.edu/agriculture/christmas\\_trees/gdd\\_of\\_landscape\\_insects](http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)

[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf)

This report is available as a PDF at The Morton Arboretum website at <https://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. You can contact the Plant Clinic via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org). Emails will be answered during business hours Monday through Friday. You can call the Plant Clinic (630-719-2424) or visit in person, Monday thru Friday 10 am to 4 pm.

Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

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## 2024 Plant Health Care Report Index



THE  
CHAMPION  
of TREES

Following is an index of the various subjects in this year's report. The number after each subject is the report number. For example, using the chart below, Cicadas..... 1 means that it was discussed in the PHCR 2024.01 or the newsletter dated April 5, 2024. The index is updated with the publication of each full issue and is included at the end of each full issue.

2024.1	April 5	2024.8	July 12
2024.2	April 19	2024.9	July 26
2024.3	May 3	2024.10	August 9
2024.4	May 17	2024.11	August 23
2024.5	May 31	2024.12	September 12
2024.6	June 14	2024.13	September 26
2024.7	June 28		
Aphids on viburnum and other species .....	2	Juniper webworm .....	2
Aphids, woolly .....	5	Measles on peony .....	4
Aphids, wooly apple, on elm .....	4	Oak leaf blister.....	5
Bark damage of oaks .....	2	Peach leaf curl .....	4
Bishop's weed .....	3	Plum pockets .....	5
Black knot .....	2	Poison hemlock .....	4
Boxwood blight or something else .....	2	Pokeweed .....	5
Boxwood leafminer .....	3, 4	Powdery mildew on ninebark .....	3
Boxwood psyllid .....	3	Purple deadnettle .....	1
Butterweed .....	4	Rose plume moth .....	5
Carpenter bees .....	3	Sawflies .....	5
Cedar-rust .....	2, 3	Sawfly, rose slug .....	5
Cicadas, periodical .....	1, 2	Scale, calico .....	4
Cleavers .....	4	Scale, euonymus .....	4
Crabgrass preventer .....	1	Scale, European elm .....	5
Creeping bellflower .....	2	Scale, magnolia .....	5
Downy leaf spot on hickory .....	5	Scale, oystershell .....	4
Eastern tent caterpillar .....	2	Spongy moth .....	2
Egg masses and more .....	1	Spotted lanternfly.....	1
Elm flea weevil .....	3	Tools you can use .....	1
European pine sawfly .....	2, 4	Two-marked treehopper .....	5
<i>Ficaria verna</i> .....	1	Using growing degree days.....	1
Four-lined plantbug .....	5	Viburnum crown borer .....	4
Fungicides, timing .....	1	Viburnum leaf beetle .....	2, 3
Gall, maple bladder .....	3	Volutella on pachysandra .....	3
Golden ragwort .....	4	Weather, climate and water.....	1
Hydrangea leaftier .....	3	Winter weather .....	
Indicator plants, what they tell us .....	1		