



GROUND

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Murder Hornet—The Plot Thickens . . . *By Diane Escure*

Any good murder mystery has several key elements that make it riveting, including the location, detective, suspects, victim, weapon, clues, and suspense. News this year that an Asian giant hornet (*Vespa mandarinia*), nicknamed “Murder Hornet, which was spotted last fall in Vancouver, Canada, and then late last year in Blaine, Washington has all the makings of a good mystery. Where did it come from, why is it called the Murder Hornet, who are its victims and how are they murdered, are there clues where this predator can be found, and who is hot on the trail searching for it? So, let’s get to it.

Location—The Murder Hornet has been officially spotted and confirmed in only one county in Washington to date. In September 2019, beekeepers destroyed a hornet nest in the ground near a public footpath in Nanaimo, near Vancouver, Canada. Another was discovered in Blaine, WA, in December 2019. Lone flying hornets, two of them queen hornets, have now shown up this year on both sides of the Canadian-U.S. border: Langley, British Columbia; and Blaine, Bellingham, Custer, and Birch Bay, all in Whatcom County.

Apparently, this wasn’t the first time the Asian giant hornet, a nonnative to North and South America, was discovered in the United States. In 2016, an inspector flagged an express package coming into the San Francisco airport that held a papery honeycomb-like nest of Asian giant hornet pupae and larvae, with a few still alive. The package was opened in a secure room so no hornets escaped and all were destroyed.

The Detective—The Washington State Department of Agriculture (WSDA) is overseeing the detection, reporting, and trapping efforts of this invasive pest. Since the first report of Asian giant hornets in Washington, the WSDA Pest Program has been doing extensive research and planning to find and, if possible, eradicate Asian giant hornets from Washington this summer, using primarily traps and heat detectors. The hornets tend to nest in forested areas in pre-existing underground cavities with narrow openings, such as rodent burrows, or in hollowed trunks or roots of dead trees, no more than 3-6 ft above the soil surface.

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The Suspect— The Asian giant hornet ranks as the world's largest hornet. Queens can grow some 2 inches long, about the length of an average-sized woman's thumb. Wingspans can exceed 2.8 inches, not quite the full width of a woman's palm. Workers are smaller. The hornet has a large orange and yellow head, prominent black eyes, and a yellow- and black-striped abdomen.



Asian giant hornets have a formidable sting that can require medical treatment - even for people who aren't allergic. They aren't normally aggressive, but will vigorously defend their nest if threatened. Photo by Q. Baine

The Weapon—Asian giant hornets have a much longer stinger than honeybees. Typical beekeeping attire will not protect them from Asian giant hornet stings. They can sting repeatedly. Additionally, their venom is more toxic than that of local honeybees and wasps, and they have a comparatively greater supply of the venom as well. Those who are allergic to bee or wasp stings should never approach an Asian giant hornet.

Victims—The Asian giant hornet attacks and destroys honeybee hives and earned its nickname from preying on them. It can swoop down and grab honeybees out of the air. The hornet then carries this prey home to nourish young hornets and larvae. A raiding party of several dozen Asian giant hornets can kill a whole hive, thousands of bees, in just a few hours. In such mass attacks, hornets bite the heads off adult bees. Attackers leave the adult bodies in heaps. They carry off young bees as protein for young hornets. They defend hives as their own, taking the brood to feed their own young. They also attack other insects but are not known to destroy entire populations of those insects, which include beetles, mantids, caterpillars, and spiders.

The Asian giant hornet is typically solitary; however, late in the season, hornets will also conduct mass attacks against other species of *Vespa*, yellowjackets, various paper wasps as well as the honey bees. Mass attacks occur when a worker hornet locates a nest and releases a pheromone attracting more hornets. It typically targets colonies that are within ½ to 1 mile of their nest. Commercial bee colonies are typically lost when these attacks occur and are especially vulnerable because they are more concentrated than wild bee colonies.

Mistaken Identities for the Asian Giant Hornet



Paper wasps are ½ to 1 inch long and oval with smoky black wings flat in the resting position. Their heads are black. Photo: WSDA



Bald-faced hornets are about an inch long and are mostly black with white stripes and spots. Photo: WSDA



Yellow jackets are less than an inch long. They have distinctly yellow faces with a black area near the top of the head. Photo: WSDA



The elm sawfly can be as large, or larger, than the Asian giant hornet. They have a black face and yellow stripes, but they lack a stinger. Photo: WSDA

Clues—You may not see Asian giant hornets themselves, but you may see the aftermath of an Asian giant hornet attack. These hornets will leave piles of dead bees, most of them headless, outside their beehive.

Suspense— Will WSDA’s efforts to eradicate the Asian giant hornet happen this year or will this effort need to continue in the future? Will setting traps work? One hornet was found in a trap in late July, so it is an encouraging sign that traps may be effective. The best time to trap them is from July through October when colonies are established and workers are out foraging. Traps can be hung as early as April if attempting to trap queens, but since there are significantly fewer queens than workers, catching a queen isn’t very likely. Will new hives be established next spring?

Hornet traps currently on the market in the United States don’t work for Asian giant hornets because their holes are too small. WSDA has researched numerous trapping options and has provided instructions on its website on how to make and monitor homemade traps for Asian giant hornets. Volunteers from the Mt. Baker Beekeeper Association are working with WSDA to test an experimental “sap trap” that uses tree sap as the bait to attract Asian giant hornets. Will this experimental trap be effective in the spring when the queens emerge? What about natural known enemies of the Asian giant hornet? We could import the Asian honeybee that knows how to defend against an Asian giant hornet invasion. However, the Asian honeybee will compete with our European honeybee population, which will likely destroy commercial hives. What about the praying mantis? Entomologists say while they eat a variety of pests, they may not necessarily target the Asian giant hornet enough to eradicate them.

Epilogue:

It’s critical to eradicate the Asian giant hornet population in the northwest because of its potentially devastating impacts on destroying honeybees in our environment and on negatively affecting our agricultural industry and food supply. But it is also important to recognize the many contributions of beneficial insects; insects make up 60-70% of all animals. To name a few of their benefits, they not only pollinate 1/3 of our crops and ¾ of the world’s flowering plants, but also break down waste and kill harmful pests in the environment.

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Beware of Unsolicited Seeds . . . *By Jennifer Marquis, WSU Master Gardener Program Leader*

Experts with the Washington State University Extension Master Gardener Program urge gardeners to be aware of and report unsolicited seeds mailed from overseas.

National and state agricultural regulators report that residents throughout the U.S. have received unsolicited packages of seeds, the majority of which appear to come from China. In Washington state, several residents received packages labeled as jewelry, but found seeds inside.

The WSU Master Gardener program has asked its network of more than 4,000 trained volunteer educators to be aware of the risks from unsolicited and unidentified seeds, and to assist Washington communities in safeguarding their local environment and agriculture.

"Our volunteers are often the state's first line of defense in identifying and stopping invasive species and threats to the environment," said Jennifer Marquis, WSU Master Gardener Program Leader. "It's important for all of our volunteers and partners to know the potential dangers, understand where to seek help and information, and to share this information with their neighbors."

According to the U.S. Department of Agriculture, unsolicited seeds appear to be mailed to allow online sellers to post fake customer reviews. The USDA is collecting seed packages, and will test them to learn if they could be harmful to agriculture or the domestic environment.

Citizens who receive unexpected international seed packages should not open the seed packets or plant the seeds. Regulators ask that Washington state residents place seeds and their packaging in a plastic bag and mail them to USDA for investigation. Washington residents can submit suspect seeds to: USDA-APHIS-PPQ - Attn: Jason Allen, Seattle Plant Inspection Station, 835 South 192nd Street, Bldg. D, Ste 1600, SeaTac, WA 98148.

Residents who have already planted the seeds should leave plants where they are, and contact Tim St. Germain, USDA-APHIS State Plant Health Director, at Timothy.StGermain@usda.gov or (253) 944-2040.

Questions about submitting seeds locally should be sent to the [State Plant Health Director](#).



Unidentified seeds may be invasive, or harbor pests and diseases. Photo credit source: CBS News.

Get Your Gardening Questions Answered. . . By Mark Amara

With the current emphasis on staying at or close to home with the new normal conditions associated with the COVID-19 pandemic, gardening has become a more popular activity for individuals and families. The WSU Master Gardeners are eager to help. There are lots of publications and services available.

Master Gardeners have been providing public outreach in Washington state for almost 50 years!

Washington State University Cooperative Extension started the first Master Gardener program in 1973 in the greater Seattle area to provide assistance with urban horticulture and gardening advice. The program has grown to offer Master Gardener programs in all 50 states as well as in eight Canadian provinces.

The WSU Master Gardener program came to Grant County, Washington, in 1982 when four interns were certified after completing rigorous training through the Cooperative Extension office. By the third year of the program, the number of certified Master Gardeners had grown to 32. Numbers have fluctuated over the years because to remain certified, Master Gardeners must take annual educational training to expand their knowledge and keep current on gardening issues. In addition, Master Gardeners are required to annually volunteer in a variety of public outreach activities that support the program.

Currently, there are about 20 Master Gardeners and interns here in Grant-Adams Counties under the auspices of the WSU Grant County Extension office who can help you with your home gardening questions. The Master Gardeners have been trained by WSU Extension and local industry specialists in subjects such as taxonomy, plant pathology, soil health, entomology, cultural growing requirements, sustainable gardening, nuisance wildlife management, and integrated pest management.



Photo credit: B Guillard

How do you find local Master Gardeners?

WSU Grant-Adams Master Gardeners are available to answer your questions through a free online service. Our answers are based on using science-based research produced by Washington State University or other university extension programs.

Right now, we offer a year-round email helpline: ga.mgvolunteers@wsu.edu. WSU Master Gardeners staff the helpline via email and phone. Individuals may contact us through this medium with questions and if digital pictures of their gardening and landscape issues or of plants or insects are provided, we can identify them and

offer recommendations for controls or management. Additional information can be accessed by going to: https://extension.wsu.edu/grant/gardening/master_gardeners/. We are available via phone (509) 754-2011 extension 4313, email (above), and videoconference, when available.

We hope that plant clinics at farmers markets or other venues will resume and that Master Gardeners will be available to speak at public events after the health emergency has passed. Currently, only virtual classes, clinics or online services are offered (in addition to distribution of our quarterly newsletter). Over the [past 5 years, WSU Master Gardeners, Master Gardener Foundation of Grant and Adams Counties, and Grant County Conservation District have organized and held an annual eco-gardening symposium open to the public. The sixth annual event is being planned for April 17, 2021.

How Do You Like Your Spuds - Straw or Dirt? . . . *By Duane Pitts*

For the June 2020 issue of *GROUNDED*, I wrote about setting up my Straw Bale garden. Now, the photo updates.

APRIL 18 - heating up bales before planting.



JUNE 20: Potatoes, tall & short; 3 Sisters* behind.



JUNE 20: These potatoes LOVE the dirt!



JULY 26: My son's dirt potatoes, some harvested.



JULY 26: Dirt-loving potatoes!



JULY 26: Straw bale potatoes, 3 Sisters* behind them.



***3 Sisters (corn, green beans, acorn squash) planted together in their own raised bed behind the spuds.**

On April 19, I planted Rose Finn Apple potatoes both in a dirt raised-bed and imbedded in two straw bales. My son planted his potatoes (Russet and Northland) in the dirt around April 1. He harvested some potatoes last week, and mine appear to have about 3 more weeks to go. When I compare, my potatoes bushes are much larger than his - I just hope the spud tubers are bigger, too. Otherwise, all my watering and fertilizing just went to stems and leaves! I could take a peak, but I won't. I'll save that for a third article!

After planting both beds of potatoes, I watered them each day to keep them moist. We had yo-yo hot and

cool days for a while, so I was surprised to see early on that the dirt spuds did better than the bale spuds. I had expected growth to be about the same, if not a bit more in the bales (they were heating up as they composted on the spot, and those bales kept the spuds warm and comfy!).

Starting on May 2, I began the biweekly regime of fertilizing both beds of potatoes with 10-10-10 fertilizer and watering in the fertilizer. Both got the same amount - about 1 cup of fertilizer sprinkled as evenly as possible on the bed and then thoroughly soaked each bed. Each day, I checked for bugs and when I found them, I squished them. Interestingly, I found none on the straw bale spuds, but I do not know why. Bugs like potatoes regardless of where they are growing! I left the praying mantis alone.

On June 20, it seemed that the dirt potatoes were going to surpass the straw bale potatoes in height and density. I had wanted it the other way. Once again, Mother Nature ignored me.

By July 26, the straw bale potatoes had outgrown the dirt potatoes in height. Density of stems and leaves is about the same. All things being equal, they both have been easy to deal with, but I do not have to stoop over the straw bale potatoes the way I do with the dirt raised-bed potatoes. Pulling weeds and fertilizing are easier with the straw bale garden. My arthritis appreciates my not stooping!

I am hoping that soon, the straw bales will have as many spuds (if not more) than the dirt raised-bed. I will weigh and count them. If all ends up the same, I plan to continue straw bales - they are easier to clean spuds that come out of them. Dirt takes a bit of rinsing and scrubbing to get off the spuds; straw chaff will take a simple brushing or quick dip in water to rinse off.

So, do you want your potatoes with dirt or with straw? Let us know this time next year.

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Now is the Time to Renovate or Plant a New Lawn . . . By Diane Escure

Mid-August through September is an ideal time to reseed thinning patches in your lawn or to establish a new lawn. At this time of year, the warm soil and the longer, cooler nights help prevent the seedlings from drying out as quickly and allow rapid root growth.

For our area, a mixture of perennial ryegrass/fescue/Kentucky bluegrass is recommended. Perennial ryegrass is very quick to germinate and is capable of going from scattered seed to mow-able lawn in about 21 days. It provides shade and protection to the other grass species like Kentucky bluegrass, which can take up to three weeks to get started. Fescue is heat and drought tolerant. Turf-type tall fescues have a wider leaf blade than fine fescues and are often used in seed blends where a shade loving, slow-growing or drought-resistant turf is desired. Fescues require much less water and nutrients to thrive than traditional lawn grasses like Kentucky bluegrass. Kentucky bluegrass is a cool-season grass that grows best during the fall, winter, and spring months when temperatures are cool. During the summer months, if stressed for water, Kentucky bluegrass can go dormant.

Fescues and perennial ryegrass are drought tolerant and can handle heat traffic (such as dogs and kids) well. The blend of grasses provides a good mix to obtain a healthy green turf. It is recommended to use certified seed.

- Steps for Renovating a Lawn. Improve thinned areas by:
 - Aerating, raking out dead grass.
 - Over seeding, applying lawn patch products.
 - Top-dressing the area with about ¼" compost.
 - Keep seeded area moist.
- Steps for Planting a New Lawn (Seeding):
 - Get a soil test to know if any amendments are needed.
 - Apply any amendments and weed-free compost over the area to be seeded.
 - Rototill the site to a depth of 4-6 inches and remove rocks, clods, sticks, and other debris. Note: do not rototill wet soil.
 - Rent a lawn rake/roller. Divide the seed in two parts. Apply one half (at 2 - 3 lb seed/1000 sq. ft) in one direction. Apply the second half at a right angle to the first part.
 - Rake and then roll the seeded area.
 - Cover lightly with a ¼" layer of mulch.
 - Keep area moist until seedlings have been established (2-3 weeks).
- Steps for Planting a New Lawn (Sod):
 - Sod usually comes in 3-foot sections, 18 inches wide, with less than ½ inch of soil attached.
 - Choose high quality sod that is actively growing.
 - Prepare the soil as in the steps above for planting a new lawn, rototilling the area and removing any rocks, debris, etc.
 - Start laying the sod along a straight edge such as next to a driveway or sidewalk.
 - Unroll sod pieces tightly against each other but do not overlap.
 - Using a sharp knife, cut sod pieces to fit curves or small areas.
 - After the sod has been installed, roll it to ensure good contact with the soil.
 - Irrigate with about one inch of water to achieve complete wetting of the sod and at least one inch of soil.
 - After watering, lift up edges of sod at several locations to be sure water has penetrated the sod and soil below.
 - Continue watering one or two times a day to prevent sod from wilting and keep the soil moist. As sod becomes established, gradually reduce the frequency of watering.
 - Do not saturate the sod and soil to the point of standing water. New roots could begin to rot under these conditions. After sod has been mown two or three times, water deeply and infrequently depending on the weather conditions.

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Home Horticultural Training –2021

Due to the COVID 19 pandemic, training for gardeners in the Grant-Adams Counties service areas has come to a standstill. The Grant-Adams Master Gardeners have not offered workshops or classes for adults and youth, and plant clinics have not been going at farmers markets or other venues. And, the annual gardening symposium which has been gaining in popularity since it began 5 years ago, had to be cancelled. These functions have become impossible because of the logistics of physical distancing, social etiquette, and sanitation; and limiting travel has made it difficult to come together safely.

To alleviate some of the frustration in not holding training sessions of any kind, Washington State Master Gardeners will be offering an intensive Home Horticultural training program starting in January 2021. The training is being designed for people interested in learning, but not necessarily interested in the volunteer part of the MG program. The training will be done virtually and taught by WSU and staff over 20 Saturdays from January through April. It will also have an online training component. Fortunately, there will be an east side and a west side session. Participants who complete the training will get a certificate of completion.

Registration will open on November 14, 2020, through WSU, and access to the course space will open on December 15, 2020. Cost will be \$300/student. The number of registrants will be capped since space is limited. WSU Zoom meetings will be the program platform for the Saturday classes.

Since some of the training overlaps with instruction provided to become WSU certified Master Gardeners, those who wish to continue with the program can fill out a WSU MG application, proceed with a background check, attend face-to-face instruction and participate in public outreach (with a mentor) to complete the training. Additional promotional details are forthcoming as the dates, topics, duration, and training details are established.

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