



Photo by Audrey Brandt

Oak Galls in California
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Have you noticed “oak apples” in oak trees? The ones most people are familiar with grow on members of the white oak sub-group, such as valley and blue oaks. They are sometimes very large, roundish fruitlike things that range from green to white to black.

Those strange “oak apples” are oak galls. They are made after a parasitic wasp deposits one egg in a twig. Usually, it is the deposition of the egg that prompts the gall to begin forming, growing around and protecting the minute larvae until it hatches. These wasps are tiny (1-8 millimeters) members of the Cynipid family. There are about 800 members of this family in North America and the majority of them colonize oak trees. What is wonderful is that each species of this wasp produces a different shape of gall. The galls take the forms of everything from tiny grains of rice, to inverted umbrellas, sea urchins, turbans, and alien-looking helmets, and can be every color of the rainbow, sometimes simultaneously. They really can be spectacular and are fun to discover on an oak leaf or on a twig. The “oak apple,” which is the largest of these galls, is formed by the wasp *Andricus californicus*.

The wasps are considered parasitic to the trees, though they don't harm them. The galls are in turn parasitized by other insects (hyperparasites), that lay their eggs in the growing galls. Other insects eat the gall material itself. The galls provide a somewhat safe haven for these minute creatures, except for the parasitism within or the possibility that a mouse may discover its inhabitant once it falls to the ground. To improve their protection, some galls secrete a honeydew that attracts and feeds ferocious ants, who protect the galls from attack by other insects.

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Some wasps can take up to two years to mature, while other species produce two generations a year, with one being created from the mating of a male and female wasp, while the next generation is created through parthenogenesis, or asexual generation. The appearance of the galls, which it varies from species to species, also varies depending on how the eggs are generated, either sexually or asexually.

Each species of wasp lays its egg on a specific species of oak, such as only blue oaks; or only members of a sub-group, such as all oaks in the white oak sub-group.

The wasps are harmless to the tree and are probably a sign that the environment is fairly healthy. They are among the hundreds to even thousands of species of animals, fungi and arthropods that rely on oaks for their existence. The wasps play their part in the intricate life that goes on and around an oak tree.

If you are interested in identifying the various galls, try [Field Guide to Plant Galls of California and Other Western States](#), by Ronald A. Russo. If you are interested in the myriad of insects and diseases that can be found in oak trees, I suggest [USDA - A Field Guide to Insects and Diseases of California Oaks](#), (Swiecki and Bernhardt). And finally, if you just want to know more about oaks, [Oaks of California](#), (Pavlik, Muick, Johnson, and Popper) is a must-have.

Master Gardeners are pleased to announce that we have new online classes planned for 2021. Coming up on January 16 is a class on methods for controlling invasive weed control, featuring the notorious yellow starthistle. And on Jan 30, there will be a class on spring and summer vegetables. You can view our class schedule here: http://mgeldorado.ucanr.edu/Public_Education_Classes/?calendar=yes&g=56698 Click on each class title for more information and instructions for registering in advance.

Due to the pandemic, Master Gardener events will for the foreseeable future continue to be limited. We realize our public classes are valued by county residents and we are doing our best to provide virtual learning opportunities. You can find our new online class schedule at:

http://mgeldorado.ucanr.edu/Public_Education_Classes/?calendar=yes&g=56698, and recorded classes on many gardening topics here:

Due to the California stay-at-home order, the Sherwood Demonstration Garden will be closed until further notice. Check http://mgeldorado.ucanr.edu/Demonstration_Garden for updates.

Have a gardening question? Master Gardeners are working hard remotely and can still answer your questions. Leave a message on our office telephone: 530-621-5512, or use the "Ask a Master Gardener" option on our website: mgeldorado.ucanr.edu. We'll get back to you! Master Gardeners are also on Facebook, Instagram, and Pinterest.

For more information on the UCCE Master Gardeners of El Dorado County, see our website

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at <http://mgeldorado.ucanr.edu>. To sign up for notices and newsletters, see http://ucanr.edu/master_gardener_e-news.