



# CAES

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## Acorn pip gall, *Callirhytis operator* (Cynipidae)



Fig. 1. Damaged acorns

An initial indicator of possible attack by the acorn pip gall, *Callirhytis operator* Osten Sacken/Ashmean 1885/Bass (Cynipidae) is unexplained premature acorn drop by affected oaks (*Quercus* spp.). Acorn drop can also be caused by environmental stress. With the wasp, on close examination there is a flattened, tooth-like or wedge-shaped gall inserted between the acorn and the cap (Figure 2).

Inside is a gall wasp larva.

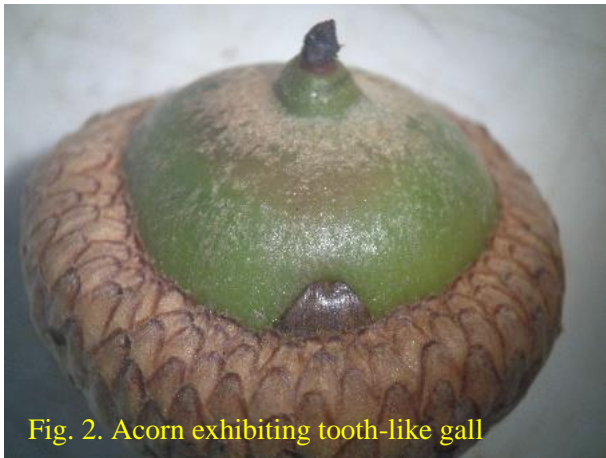


Fig. 2. Acorn exhibiting tooth-like gall

### Life cycle

The life cycle of this wasp is complex. The acorn pip gall has two forms. A “spring form” (asexual generation) which attacks oak staminate flowers/catkins and a “fall form” (sexual generation) which attacks oak acorns during mid- summer into fall. The spring form which makes an irregular woolly mass is called the woolly blossom gall or woolly catkin gall.

Once established in the acorns it takes 20 months for the asexual larvae to develop emerging two years later during spring (Weld 1922). There are two alternating generations emerging every year from early April into early May. Year one is population A, year two population B, year three population A, and so on. In spring parthenogenetic (agamic) females emerge and oviposit in developing oak catkins. Larvae hatch and quickly mature as the sexual generation which emerge as male and female wasps in June. According to Weld (1922) there are “two kinds of young acorns on the tree at that date and it is the 1-year-old acorns that are attacked.” The females were



Fig. 3.  
Damage caused by a squirrel feeding on gall

observed by Weld to “back up toward the stigma, slipping the ovipositor down between acorn and cup.” In July affected by the gall chemistry, acorns abort and fall to the ground. The deliquescent (softened) acorns allow the galls to slip out and development completes on the ground. This insect can damage acorns enough to make them nonviable. They can also cause impacted trees to weep sap following acorn separation.

In Connecticut reports indicate it is primarily attacking black, white, and red oaks. It has been

reported on scarlet, scrub, and Spanish oaks (Felt 1940). The insect was first collected in Waterbury, CT on August 23, 1871 on scrub/bear oak *Quercus ilicifolia*. Outbreak events are rare.

### Reporting.

Please report to Dr. Gale E. Ridge and/or submit samples.

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### References

- Weld, Lewis H. 1922.** Notes on American Gallflies of the family Cynipidae producing galls on acorns, with descriptions of new species. No. 2440. From the Proceedings of the United States National Museum, Vol. 61, Art.19, pp.1-32, pls. 1-5.
- Felt, Ephraim Porter. 1940.** Plant Galls and Gall Makers. 1940. Ithaca, New York Comstock Pub. Co. Inc.