

Rough Bulletgall Wasp

Scientific Name: *Disholcaspis quercusmamma* (Walsh)

Order: Hymenoptera (Bees, Wasps, Ants, Sawflies, and Relatives)

Family: Cynipidae (Gall Wasps)

Identification and Descriptive Features: Rough bulletgall wasps produce a woody, generally rounded gall on bur oak. The galls have a slight point and are initially brown. However, the galls exude honeydew that covers the gall and allows growth of sooty molds that darken older galls.

Larvae are pale colored and legless grubs, developing within a chamber in the center of the gall. Adults are stubby bodied, dark brown wasps with a generally round abdomen. They are present only briefly in late October/early November when they emerge from the gall and oviposit in the dormant buds.



Figure 2. Fall appearing agamic female of the rough bulletgall wasp prior to egg laying.

The recently identified sexual forms occur within a tiny gall that resembles an enlarged bud scale and is formed in spring. Adults of this generation are smaller than the fall generation and oviposit in the green, current season twigs.

Distribution in Colorado: Likely found in most locations where its host (bur oak, *Quercus macrocarpa*) has been planted. Native to the midwestern US where the host plant is native.

Life History and Habits: Like many gall wasps associated with oaks, the rough bulletgall wasp has a complex life cycle that involves two generations of different habit and appearance.

A female only (agamic) generation of adult wasps emerge from the large twig galls in late October and early November. A small, circular exit hole in the gall is produced during emergence. Shortly after emergence the females insert eggs into the terminal growth of the dormant buds.



Figure 1. Galls produced by the rough bulletgall wasp on bur oak



Figure 3, 4. (Above) Twiggalls produced by the rough bulletgall wasp. (Below) Twiggalls in various stages of development during late summer. (There is an acorn in the lower center.)



occur that largely cover twigs, reducing growth rate of the tree. Following leaf drop, the galls can be highly conspicuous, giving the tree a warty appearance. The galls also exude a honeydew-like sweet material that is attractive to bees and wasps and may attract nuisance numbers of insects during fall.



Figure 5. Gall produced by the spring appearing sexual forms of the rough bulletgall wasp.

Following bud break the following spring, a minute gall is produced by the developing wasps in the terminal point or at the base of an emerging leaves. The gall is light tan and somewhat resembles a slightly enlarged bud scale. Only a single wasp develops in each gall, but both males and females are present at this time. They emerge in mid-late spring, after most of the stem elongation has occurred. The females oviposit in the green stems of the current season twigs.

Egg laying and subsequent larval develop of the subsequent generation produce the large rounded gall that are most often associated with the insects. Galls are pale brown and soft in early stages, later darkening and hardening. Only a single wasp develops in each gall, although sometimes other insects (inquilines) also share the gall. The larva pupates within a small, oval cell in the center of the gall. Adults chew their way out of the gall, emerging in fall.

This insect can cause some injury to susceptible trees. Very heavy infestations can



Figure 6. Spring form female of the rough bulletgall wasp ovipositing in current season twig.

Management of Rough Bulletgall Wasp: There is a wide range in the resistance of individual trees to gall production by this insect. Some individual trees appear to be highly resistant to attack and may be essentially gall-free even when growing adjacent to a heavily galled tree. General observations indicate that the presence of less fluted bark may be associated with trees that have greater resistance to galling.

Natural enemies, such as parasitic wasps, are common and can be important in control. Since these wasps emerge in spring, removing galls during winter and spring, after the gall wasps have emerged, will have the adverse effect of destroying natural enemies, while not affecting the gall wasp. Emerging parasites produce a smaller emergence hole than do the gall wasps. Bird predation of developing larvae within galls may also be common.

To date, no effective insecticidal controls have been identified that will significantly reduce production of the large twig galls.