

## Colorado Insect of Interest

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# Black and Yellow Mud Dauber

**Scientific Name:** *Sceliphron caementarium*  
(Drury)

**Order:** Hymenoptera (Bees, Wasps, Ants, Sawflies)

**Family:** Sphecidae (Hunting Wasps)



**Figure 1.** Black and yellow mud dauber.

**Identification and Descriptive Features:** The body form is narrowly elongated and with a very narrow constriction at the base of the abdomen. The general color is black but yellow stripes cross the body and band the legs. The black and yellow mud dauber is usually between 25-30 mm in length.



Figures 2, 3. Black and yellow mud dauber building nest (above); mud dauber collecting mud (below).



**Distribution in Colorado:** Statewide

**Life History and Habits:** The black-and-yellow mud dauber is a solitary hunting wasp that preys on spiders, returning them to a previously constructed nest cell. Orb-weaver spiders are most commonly attacked, including cat-faced spiders, but crab spiders and wolf spiders are also sometimes used.

Nest cells are established in dry, sheltered locations and often are seen under eaves of buildings or in corners or outbuildings. The nests are in the form of cylindrical mud cells that are constructed by the female. During nest construction the female repeatedly visits a muddy patch to collect a ball of mud. This is used to build out a nest cell, which is constructed by producing a series of half arches. About 30-40 trips may be needed to complete construction of a single nest cell, which may be completed in as little an hour. Nest cells are usually oriented vertically.

The female then searches for spider prey to provision the nest cell. Each spider is paralyzed by a well-placed sting then carried back to the nest cell; between 6-15 spiders typically are captured to provision each cell. When it is full she lays an egg in it then covers the cell with a thick plug of mud. If provisioning is not completed by the end of the day a thin mud cap is constructed to exclude parasite. The wasps leave the nest at night to rest on nearby vegetation and return the following day to complete work at the nest site.



**Figure 4.** Cat-faced spider prey from two black and yellow mud dauber nests.



**Figure 5.** Larva of the black and yellow mud dauber feeding on paralyzed spider.

Multiple cells may be constructed at a nest site, each one constructed and fully provisioned before construction of the next begins. When a female has complete nesting at the site the entire group of nest cells is further covered with mud. She may then establish more nest cells at a new site.

The larva of the black and yellow mud dauber soon hatches from the egg and begins to consume the paralyzed spiders. Development is rapid and the spiders are ultimately completely consumed. Larvae that develop in early summer pupate then later emerge to produce a second generation of adult wasps that are active later in summer. Larvae that develop in nests that were provisioned in August or later go into a

suspended state of development (diapause) when full-grown. They subsequently do not pupate until the following spring, and the first generation adults then emerge in late May or early June of the following season.

Because the mud dauber larva has a closed alimentary system it does not excrete any waste material until it has completely consumed the spider prey. During the last larval stage it does produce an anus and subsequently excretes the waste in the form of a sac that is quickly sealed off from the rest of the cell with a cement-like material. This allows the pupa or the overwintering larva to complete development in a waste-free cell.

Like other solitary hunting wasps of the family Sphecidae the black and yellow mud dauber is not aggressive and will sting only if it is held or trapped next to the body. The sting is mild and much less painful than that of social wasps (e.g., yellowjackets, baldfaced hornet, European paper wasp) or social bees (e.g., honey bee, bumble bees).

**Related Species:** The blue mud dauber, *Chalybion californicum* Drury, is a metallic blue-black wasp of generally similar size and body form as the black and yellow mud dauber. It similarly hunts spiders to provision nest cells of the larvae but does not construct its own mud nest. Instead it usually uses the abandoned nests of the black and yellow mud dauber or other preexisting cavities. A related of similar habit reported from Archuleta, Montezuma and Baca

counties is *Chalybion zimmermani azteca*.