
Chapter 5. Roofs, Walls, and Eaves

Topic Sections in the Chapter	Lines of Inquiry in the Section
Introduction	None
Schoolyard Wasps	Mud Dauber Wasp Nest Construction

Solitary Wasps: Mud Dauber Wasps

Family: Sphecidae

Globs of mud in the corners or doorways, under eaves, and in other sheltered locations around your school building are the handiwork of this fascinating group of wasps. Mud daubers are solitary, not social, wasps; they live on their own and do not have a structured social order. Mud daubers build cells of mud, in each of which they lay a single egg, provision it with food, then seal the cell; a single female wasp will produce many mud cells. The food is usually spiders that have been captured and paralyzed through venom injected by the wasp's stinger. Paralyzed spiders are packed into a cell; when the larva hatches from the egg, it feeds on the paralyzed spiders. The larva grows and eventually pupates inside the cell. When it becomes an adult, it emerges from the cell by boring a hole to the outside (in many nests you can see the holes from which the adults emerged). The female's role in providing for the offspring ends with sealing the mud chamber. Male wasps mate with the females but otherwise are not involved in rearing the young.

Adult wasps may be observed collecting mud that they mix with their saliva to make the nest-building material. You may also observe the wasps hunting for and catching spiders to provision the nest. (For an entertaining description of mud dauber nest construction—complete with commentary on the fate of the spiders—see page 378 of Anna Comstock's *Handbook of Nature Study*. The reference is listed in the Additional Materials chapter of this book.)

Three kinds of mud dauber wasps are common in southwest Virginia: **Yellow Mud Dauber**, **Blue Mud Dauber**, and **Organ Pipe Mud Dauber**. During the winter (after several hard freezes), nests can be removed (with varying degrees of success) from the walls by sliding a putty knife underneath

them. The contents of the nests will reveal many interesting clues to the life history of the wasps. You may find eggs, paralyzed spiders, dehydrated spider parts, shed skins, developing pupae, parasitized pupae, and possibly other inhabitants.

Yellow Mud Dauber (*Sceliphron caementarium*). This wasp is a "thread-waist" wasp, aptly named because of its distinctly narrow "waist" that connects the abdomen and thorax. Adults are black to brown with yellow markings, yellow legs, and clear wings. This mud dauber builds its nests in clumps. Close examination of cells will reveal mud layers carefully added in symmetrical arcs.

Blue Mud Dauber (*Chalybion californicum*). This is also a thread-waist wasp, but it differs from the Yellow Mud Dauber in that it has an almost metallic blue body with bluish wings. This species is the free-loader of the wasp world: It does not build its own nests, but rather it refurbishes the old nests of other mud daubers. Instead of collecting mud, it will gather water and use this to dissolve the mud of existing chambers to repair and seal ones that it will use. As a result, this species expends considerably less energy in building nests, and more of its energy can go to egg production and food gathering.

Organ Pipe Mud Daubers (*Trypoxylon* species). These shiny black wasps are most easily distinguished by the nature of the mud nests they build. Instead of randomly building cells in clumps, as the Yellow Mud Dauber does, this wasp organizes the cells in long rows. Once several rows are completed the nest has the appearance of a pan flute or a pipe organ. Later, as wasps emerge, rows of holes will appear, making the structure even more flute-like.