

Pyramid Ants Guild

(No common names)

Dorymyrmex bureni

Dorymyrmex medeis

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DESCRIPTION

Taxonomy and Basic Description

Pyramid ants are easily identified in the field by their distinctive cone-shaped mounds with an entrance hole in the center. In South Carolina, 2 species have been collected and identified. Taxonomically, the Pyramid ants are in the subfamily Dolichoderinae. The Dolichoderine ants are distinguished as having a single “hump,” or node, between the thorax and gaster and the absence of a stinger. The genus *Dorymyrmex* is distinguished by the presence of a distinct mid-dorsal cone-shaped protuberance. It should be noted that over the years the genus name has shifted from *Dorymyrmex* to *Conomyrma* and back to *Dorymyrmex*. Hence, some papers from the mid 1980s will bear the *Conomyrma* name.



Photo by T.S. Davis

The best treatment of the identification of the pyramid ants in the Southeastern United States currently is a paper by James Trager published in 1988. While color is rarely a good character for identifying ants, this character works well with pyramid ants. *D. bureni* is a light red to yellowish ant. *D. medeis* is dark brown, almost black in color. Another important character is the shape of the mesonotum. In *D. bureni*, the mesonotum is smooth without a sharp angle. In *D. medeis* the mesonotum has a sharp angle.

There are nearly 9,000 species of ants that have been described on a world-wide basis. As would be expected, the biology and life histories of these ants are nearly as diverse as the group itself. Understanding the biology and life history of a given species is critical to decisions made regarding the management and/or conservation of an ant species.

Status

Only 2 intensive studies have been conducted in South Carolina in the last century. M. R. Smith published a list of ants from collections around Clemson College in 1918, and a subsequent list of species that had been sent to him for identification throughout his career in 1934. In 1976, Van Pelt and Gentry conducted an intensive survey of ants at the Savannah River Plant. A study conducting 243 pitfall transects throughout the entire state of South Carolina was conducted in 2000 and 2001. This collection due to its method is largely limited to ants that forage on the surface.

With so little information it is very difficult to judge the status of any ant species. *D. burenii* is frequently found throughout the State. *D. medeis* is found throughout the state, but much more rarely than *D. burenii*. When *D. medeis* is found the numbers of nests and ants can be quite large in a localized area.

POPULATION SIZE AND DISTRIBUTION

Pyramid ants are distributed from Maryland and Virginia south to Florida and west to Mississippi, Louisiana and Texas.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS



Pyramid Ants are often thought of as a “weedy” type species. This is due to the fact that they quickly inhabit and prefer highly disturbed areas. They are most often found in pastures, open fields, open scrub, Sandhills, dunes, lawns and roadsides. They particularly favor sandy soils such as are found in the lower half of the State.

One of the primary benefits of these ants is their role as natural predators against other undesirable ants. They are predators of numerous arthropods. Close observation of their nests will often reveal “bone piles”

around the outside edges of the nests. One of the interesting achievements of the species is their ability to exist in close proximity to the invasive Red Imported Fire Ant. It is common to actually see this species attacking individual foraging fire ants and newly-mated fire ant queens. An analysis of the contents of the bone piles reveals a great percentage of their prey to be fire ants.

CHALLENGES

The primary challenge to this species is their ability to survive near fire ants and the public attitude against ants in general. Many treatments for fire ants can also be devastating to pyramid ant populations. Fire ants and pyramid ants partition themselves by foraging at different temperatures. There is some overlap, but baiting when the surface soil temperature is below 38°C (100°F) will reduce the impact upon the pyramid ants. Testing to be certain the fire ants are

actively foraging will also allow the fire ant, by force of numbers, to get the lion share of the bait and reduce the impact upon this beneficial species.

Some of the granular products such as Fipronil also seem to have little impact upon the pyramid ant due to some of the differences in foraging behaviors. Fire ants forage primarily within the soil itself. Pyramid ants, on the other hand, forage primarily on the surface of the soil. With Fipronil, the toxin binds to the organic matter in the soil forming a toxic layer. Pyramid ants do not come in contact with large amounts due to their foraging behaviors.

CONSERVATION ACCOMPLISHMENTS

One study conducted at McEntire Air National Guard Base and Fort Jackson used a combination of traditional chemical controls and the release of *Pseudacteon tricuspis* and *Thelohania solenopsae*. The results were quite interesting for the native ant species.

The control sites saw no change in the overall composition of the ant population. The chemical treatment alone initially saw a reduction in both native ant species and fire ants. Within 18 months, the fire ant population had recovered to the previous levels, and almost zero native ants were collected. The treatment site with both chemicals and biological controls present saw an initial drop in both populations. The native ants were the first to recover from the treatments. Nearly 3 years after the initial treatment, fire ants had not yet returned to the treated site, and the biological controls were established and found in high numbers surrounding the treated site. It is hypothesized that the introduction of disease and parasitoid activity against the fire ant population allowed the native ant population to better compete and exclude the fire ants for a longer period of time.

CONSERVATION RECOMMENDATIONS

- Educate the public regarding which ants are desirable and which are not.
- Encourage the use of ant treatments that are friendly to the desirable species and target the undesirable species.

MEASURES OF SUCCESS

As research and management needs are identified, projects will be initiated to address those needs.

LITERATURE CITED

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