

Little Blue Cattle Louse *Solenopotes capillatus* (Enderlein) (Insecta: Phthiraptera: Anoplura: Linognathidae)¹

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

Of the five sucking lice that feed on cattle in Florida (Kaufman et al. 2007), *Solenopotes capillatus* (Enderlein) is the smallest in size (Grubbs et al. 2007). The little blue cattle louse, as it is commonly called, is in the family Linognathidae (the pale lice) and is one of the nine currently recognized species in the genus *Solenopotes* (Durden and Musser 1994).

Distribution

Solenopotes capillatus is found throughout the world but is generally restricted to areas with domestic livestock. *Solenopotes capillatus* was reported by Kim to be the most frequent sucking louse encountered on Korea's livestock (as cited in Price and Graham 1997), and the louse was also identified in Europe and Australia in the early part of the 20th century (Matthysse 1946). Discovered in the United States in 1917, but not reported until 1921, the little blue cattle louse is the most abundant sucking cattle

louse species in Wyoming and many areas of the east and southeast (Matthysse 1946; Price and Graham 1997).



Figure 1. Adult little blue cattle louse, *Solenopotes capillatus* (Enderlein).

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Description

Eggs

The female louse lays one to two 0.7 mm (< 1/16 in) eggs per day, each attached to a hair. Often the hair is bent, a feature not observed with other cattle lice.

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Figure 2. Egg of the little blue cattle louse, *Solenopotes capillatus* (Enderlein), cemented to a hair.
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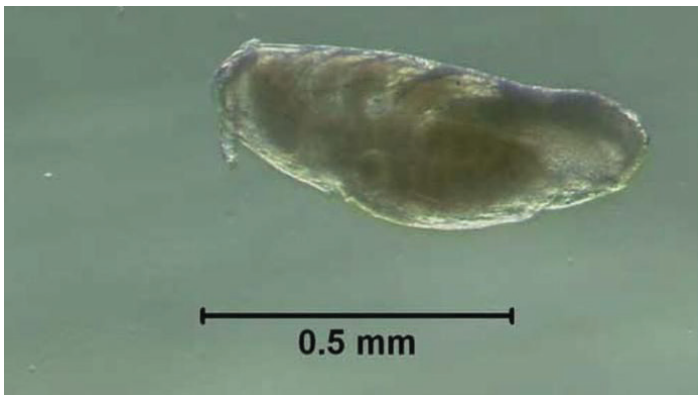


Figure 3. Ventral view of an adult little blue cattle louse, *Solenopotes capillatus* (Enderlein).
Credits: Kevyn J. Juneau, UF/IFAS



Figure 4. Ventral view of an adult little blue cattle louse, *Solenopotes capillatus* (Enderlein).
Credits: Kevyn J. Juneau, UF/IFAS

Nymphs

First instars are smaller than the eggs at 0.69 mm (< 1/16 in) and successively grow to 1.06 mm (< 1/16 in) as a third instar.

Adults

Solenopotes capillatus has a short broad head, broad sensoria on segments four and five of the antennae, and it has a hexagonal shaped sternal plate on the thorax (Ignoffo 1959). The front tarsal claws are the smallest of the three pairs. The middle and hind tarsal claws are approximately the same size. *Solenopotes capillatus* has prominent abdominal tubercles that bear the spiracles. Adult males measure 1.08 mm (< 1/16 in), similar to that of the third instars, while the adult females are 1.5 mm (< 1/16 in) in length.

Biology

Solenopotes capillatus is a small louse, often confused with *Linognathus vituli* nymphs (Matthysse 1946), that feeds on the head, primarily the face and jaw regions, with sporadic occurrences on other body regions (Watson et al. 1997) of domestic livestock and captive ungulates. Once an individual establishes itself on a host, it rarely relocates on the host's body (Skogerboe et al. 2000).

The incubation period for the egg is about 12 days, and *Solenopotes capillatus* nymphs have three instars that each take approximately four to five days to develop. There is a preoviposition period of two days before the adult female begins to lay eggs. In total, it takes approximately 28 days to complete a life cycle from egg to oviposition.

Hosts

Solenopotes capillatus feeds on a variety of ungulates but are most prolific on captive ungulates in zoos, such as gazelles (Yeruham et al. 1999), and those used for agriculture, specifically cattle. *Solenopotes capillatus* congregate mostly on the face and may be so plentiful that the host appears to be wearing glasses (Townsend 2000). The lice are spread through direct contact between the cattle during mating, nursing, or other interactions such as herding. Older cows with longer hair and bulls that have large body mass are more prone to infestation because of the difficulty with self-grooming (Townsend 2000).

Economic Importance

Like most cattle lice, *Solenopotes capillatus* can cause irritation, restlessness, and some studies suggest lice may be linked to a decrease in milk production and poor

quality hides for harvest (Nafstad and Grønstøl 2001). Lice infestations cause the animal to scratch the areas infested, resulting in lesions or abrasions and areas of alopecia (hair loss) that can lead to bacterial or viral infections and insect infestations that cause the animal to become ill. A heavy load of lice may also cause the animal to become anemic (Holdsworth et al. 2006).



Figure 5. Infestation of the little blue cattle louse, *Solenopotes capillatus* (Enderlein), around the eye of a cow.

Credits: Phillip Kaufman, UF/IFAS

Management

Chemical Control

Chemical treatments, including pour-on and dip insecticides, have historically been the primary method of louse control on cattle (Townsend 2000, Kaufman et al. 2001, White 2007). Recently, formulations administered subcutaneously have also been shown to be successful at treating lice (Cleale et al. 2004). Many new systemic insecticides require only one treatment for long-term louse control, but organophosphates and pyrethroids require two applications (Townsend 2000). Some formulations of pyrethroids and avermectin derivative-type treatments are the current recommendations for control of lice on lactating dairy cattle (Nafstad and Grønstøl 2001). Dust bags placed in locations where the cattle are forced to use them provide easy application of insecticides (Kaufman et al. 2007).

New cattle brought to a farm should be treated with an appropriate insecticide and kept separate from the herd until there is significant evidence that the animal is free of

lice. This will eliminate the spread of lice between farms to reduce the chance of future infestations.



Figure 6. Dust bag used to apply insecticides to cows.

Non-chemical Control

Clipping the animal's hair may help control the lice by rendering the microhabitat unsuitable (Allen and Dicke 1952). Providing special clothes and boots for visitors, especially veterinarians, may also reduce the chance of contaminating a louse-free farm (Nafstad and Grønstøl 2001).

For additional information on cattle lice and their control, see the following UF/IFAS EDIS publications:

External Parasites of Dairy Cattle <https://edis.ifas.ufl.edu/IG050>

External Parasites on Beef Cattle <https://edis.ifas.ufl.edu/IG130>

Cattle Tail Lice <https://edis.ifas.ufl.edu/IG127>

Management of External Parasites with Forced-Use Dust Bags <https://edis.ifas.ufl.edu/IG135>

Management of External Parasites on Beef Cattle <https://edis.ifas.ufl.edu/IG130>

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