



Lipoptena cervi (Deer ked) infestation on a spotted deer

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Abstract

Lipoptena cervi (Deer ked) was reported in a spotted deer (*Axis axis*) carcass. Brownish, wingless insects were found moving through the fur of carcass. Some of the insects had blood meal in the abdomen. The adult ked was dorsoventrally flattened, without wings and was about 4 – 5 mm in length with mouth parts projecting forward. The head had distinct, simple eyes (or ocelli) and well-developed maxillary palps. Some of the keds deposited larva in the glass vial that pupated immediately.

Keywords: *Lipoptena cervi*, Deer ked, Ectoparasites, Spotted deer.

Introduction

Deer ked is a blood-feeding ectoparasite of deer, moose and other cervids, often misidentified as tick. The adult keds are dorsoventrally flattened and adapted for moving through animal fur, and have specialized claws that aid them to cling to the hair of their hosts. *Lipoptena cervi* is relatively small, adults usually being 5–7 mm in length and are brownish in colour. Their body is flat and elastic, making their removal difficult. *L. cervi* is a poor flier and can only fly for short distances. They are winged when they emerge from their puparia, which often remain attached to the fur of the host or fall to the ground. After emergence, the winged flies seek a suitable host, whereby they break their wings off along a cleavage line and become permanently associated with that host. *Lipoptena cervi* has been reported from temperate areas of Europe, Siberia, Northern China, and North America (Maa, 1967). In this study we report the presence of *L. cervi* on the carcass of a spotted deer in Namakkal.

Materials and Methods

A carcass of a spotted deer was brought to the Department of Veterinary Pathology, Veterinary College and Research Institute (VC&RI), Namakkal, Tamil Nadu for necropsy. When the external surface of the carcass was examined for the presence of any ectoparasites, the moving flies were noticed. The parasites were collected manually in an insect collection vial for identification at laboratory of Department of Veterinary Parasitology, Veterinary College and Research Institute (VC&RI), Namakkal. The collected insects were kept at 4°C and cleared in lacto-phenol for one day as standard procedure.

Results and Discussion

Microscopic examination (4X) of the flies (Fig. 1a) revealed a dorsoventrally flattened body about 5 mm in length with no wings and mouth parts projecting forward. The head had distinct simple eyes (or ocelli) and well-developed maxillary palps. The morphological features observed such as each leg ending a pair of curved claws, broad abdomen than thorax, absence of wings were similar to that of sheep ked, and the ectoparasites were identified as adult *Lipoptena cervi*, or deer ked

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(Bequaert, 1941; Maa, 1967, Wall and Shearer, 1997). The wingless adult deer ked can be distinguished from *Melophagus ovinus* by the presence of halteres (Wall and Shearer, 1997). Both sexes take a blood meal, mate,

and after an indeterminate period the female will give birth to a mature larva that will begin to pupate. Some of the flies deposited larva in the glass vial that pupated immediately (Fig.2).

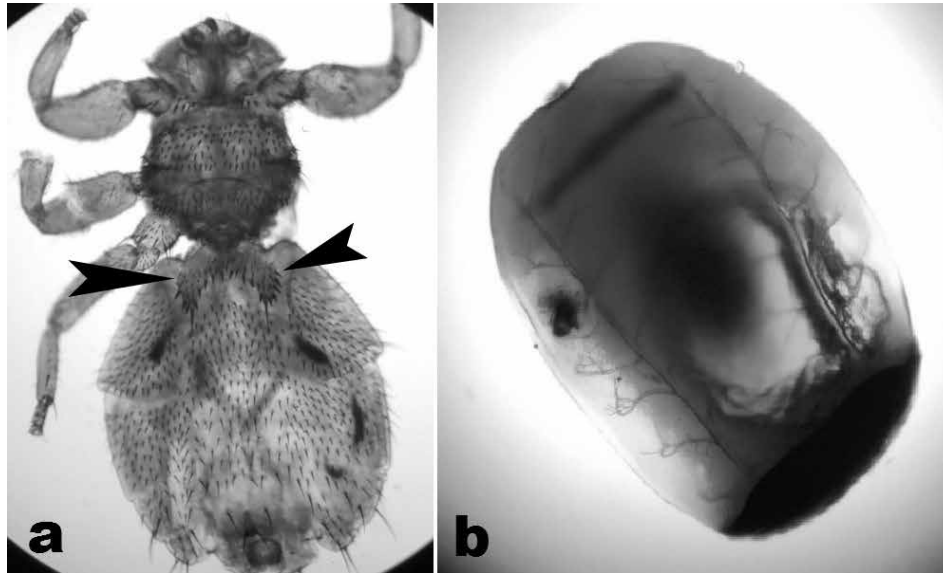


Fig. 1. Adult fly (a) showing the broad abdomen, absence of wings and halteres (arrowheads) and the pupa (b) released.

Lipoptena cervi is not only a nuisance, it has also been incriminated as a vector for *Anaplasma phagocytophilum*, a gram-negative, obligate intracellular bacterium that causes anaplasmosis, and also for *Borrelia burgdorferi*, the causative agent of Lyme disease (Buss *et al.*, 2016). They reproduce only on the body of deer host. They will however bite humans, and the bites are said to be painful and may cause an allergic skin reaction. Initially the bite may be barely noticeable and leaves little or no trace. Within 3 days, the site develops into a hard, reddened welt (Roymon *et al.*, 2006). The accompanying itch is intense and typically lasts for 14 to 20 days. Occasionally, an itchy papule may persist for a year. The main annoyance in humans is the inconvenience and unpleasantness of removing keds from hair and clothes. Horses have been attacked, with severe symptoms of colic as a result (Jonas, 2007). Dogs that are bitten may develop a moderate to severe dermatitis (Christoph *et al.*, 2004). Further studies are needed to identify the geographical distribution of *L. cervi*, and their potential role as reservoirs of the zoonotic pathogens.

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