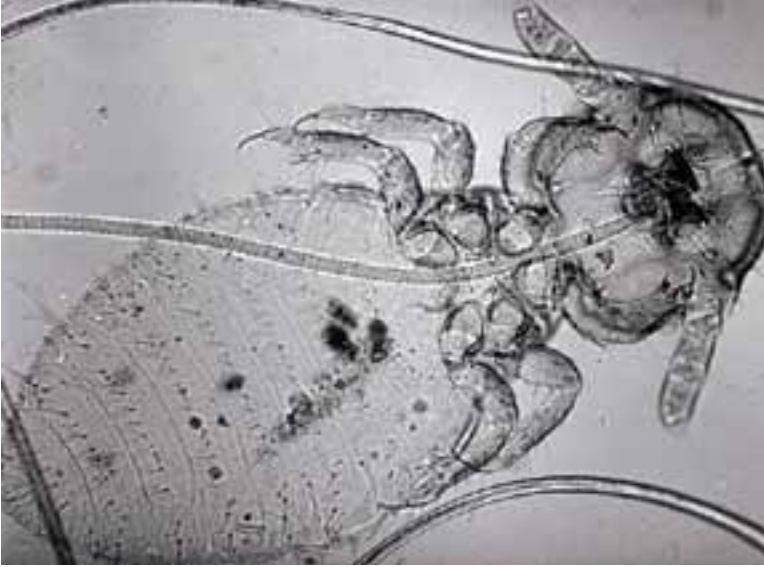


Lice, Keds, and Ticks

By Mary Smith, DVM, Cornell University

Etiology



1- This is a black and white photo of a tan biting louse. The head is broad with chewing mouthparts. The sheep body louse is *Bovicola (Damalinia) ovis*. The comparable louse in a goat is *Bovicola (Damalinia) caprae*.



2- This is a sucking louse on a goat. It has a bluish black body (because it is full of digesting blood) and narrow sucking mouthparts. Angora kids with heavy sucking lice infestations can die of anemia.

Etiology, Cont'd

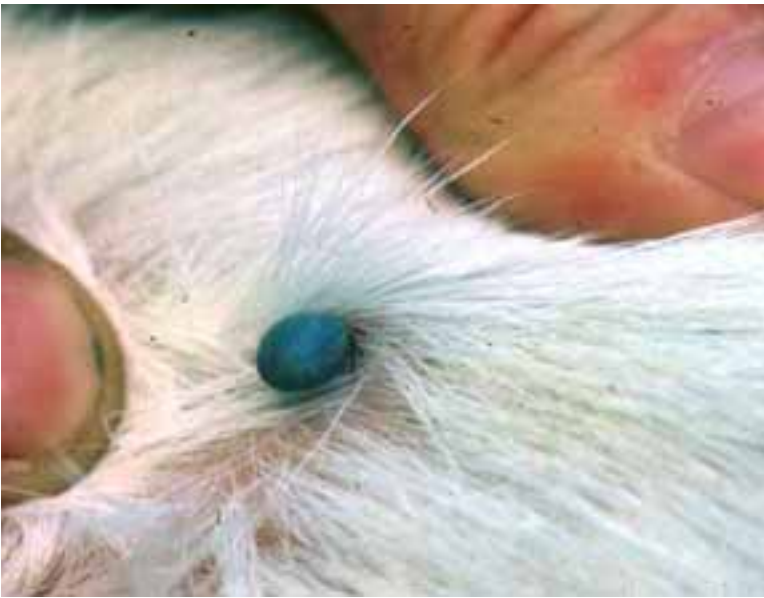


3 - This dead goat from an organic farm is covered with black specks that look like flea dirt but are actually sucking lice. Goats are susceptible to fleas, especially in tropical situations, but collecting the black material with a flea comb and looking at it under a dissecting scope will quickly confirm the diagnosis of louse (*Linognathus africanus*) infestation heavy enough to cause anemia.



4- Keds are wingless flies, *Melophagus ovinus*, with piercing mouthparts. They feed on blood. Larvae are retained in the abdomen of the fly and are extruded just before they pupate. The pupal case remains glued to the sheep's wool until the adult fly emerges 3 to 6 weeks later. Shearing removes both the adult parasite and the pupae. Diazinon sprinkled on from a watering can will kill them, as will systemic ivermectin and related drugs. Keds are often (incorrectly) referred to as "sheep ticks".

Etiology, Cont'd



5- Ticks occasionally are found on small ruminants in this country and are important vectors for disease in other countries. Pull gently to remove the tick with its head still attached. Owners will worry about the risk of Lyme disease to their pets, but we have no Lyme disease tests validated for small ruminants. In Lyme-endemic areas, lame goats that respond to treatment with oxytetracycline or penicillin are usually presumed to have had Lyme disease. Some tick species cause tick paralysis.

Clinical Signs



6- This Boer kid is only a few days old but is already pruritic because of lice transferred from its mother. When the kid scratches at its body, expect to find lice, whereas scratching at its ears would suggest an ear mite infestation (or poor aim on the part of the goat).

Clinical Signs, Cont'd.



7- This goat is frantic in its attempts to chew at the lice crawling on its back.



8 - This ewe has ragged wool because it has been rubbing and kicking at keds. Large numbers can cause anemia and the excreta from the keds can stain the wool.

Clinical Signs, Cont'd.



9- A flea comb is the easiest way to collect samples for diagnosis of lice. You can easily harvest undercoat, lice, and nits (louse eggs) with the comb and put all the material into a zip lock bag until you have access to better light, a hand lens, or a dissecting microscope.

Treatment



10- Permethrins are labeled for control of external parasites in both sheep and goats and can be sprinkled on sheep from a watering can. Pour-ons can also be applied along the topline of goats. Do recommend the use of plastic gloves to protect the person doing the job, especially if diazinon or other organophosphate products are being used. Shearing the sheep first removes many of the lice and nits, keds and pupae, and thus increases efficacy of the treatment. For a list of EPA approved insecticides, see www.sheepandgoat.com/articles/insecticides2014.pdf

Treatment, cont'd



II- Pour-on products will sometimes cause contact dermatitis, as in the case of this Finn sheep that was treated with permethrin.

For treatment of *Bovicola limbata*, the Angora goat chewing louse, Dr. Thomas Craig at Texas A&M notes that "some populations of this louse are resistant to insecticides. One approach that seems to work, with at least some populations, is 1 oz 10% fenvalerate (Ectrin) plus 12 oz water and a squirt of household detergent applied along the dorsal midline at 1 oz for an adult doe two weeks after shearing. Shearing alone will reduce the population but they will return." (from a message posted to AASRP-L on 12 Mar 05)

See the [LiceBoss website](#) in Australia on control and eradication of lice from sheep.

For many links on external parasites of small ruminants see the Maryland Small Ruminant [site](#). Also see a brochure on [external parasite control](#) produced by Cornell and Pennsylvania State.