## THE FARMER'S ADVOCATE

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as the various flies whose maggots live at the sheep's expense.

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presence on the diseased animals of multitudes male has taken a full meal of blood, and has be- The keds being quite wingless, spend all their there are four pairs of jointed legs. Of these the lently removed the piercers are usually left be- of the female, and there grows into a full-developon the other legs; while in the female the legs of found on sheep with males clinging beneath them. pupa-case within which the ked comes to maturthe third pair have no foot segments, each leg The female finally drops to the ground, and there ity. The same female is able to produce five or bristles.

form of barbed piercers, which can be worked to for the opportunity of attaching themselves to a wool becomes matted and soiled, finally falling the skin, and become fully grown. Once more care. off. If not checked the mites multiply and spread they now wait for a passing animal from which over the body of the animal, causing the forma- they can suck blood, and on which they live for tion of the scabby and cracked skin wherever some time, the female becoming greatly swollen, they go.

are attached to the skin or wool of the sheep. In to a year) without taking food, and their growth less than a week the tiny six-legged young are depends upon their finding in each stage a "host' hatched; after casting its skin the young mite gets animal from which they can suck blood. its hindmost pair of legs, and it becomes fully grown and capable of pairing about ten days after hatching. It can be understood from these facts of their life history how rapidly the mites must increase in numbers. Both the mites and their eggs can live for two weeks or longer when removed from the sheep. In this way fences, posts and other objects against which sheep rub may become infected, and it is likely that mites are carried from diseased to healthy sheep by rooks and other birds.

## TICKS.

skinned, eight-legged creatures which may be

true insects have a distinct head and only six where they cannot be reached by the teeth or horny or leathery skins, and eight legs legs; they include, therefore, keds and lice, as well tongue of the beast on which they are feeding.

The common "scab" of sheep is caused by the female; this is especially noticeable after the fe-flies which live as parasites on horses and birds. Both males and females have their jaws in the young are hatched from the eggs. They wait which probably serves to attach it to the wool. as explained above. In their various stages the The female mite lays about twenty eggs, which ticks are able to live for a long time (six months

caused by ticks, they convey, in many cases, the nasal cavities, travelling by means of mouth minute parasites from the blood of diseased to the hooks, short spines on the body segments, and a blood of healthy animals, and thus spread most prickly process at the tail end, where the conserious illnesses (such as redwater in cattle). spicuous air holes are situated. They attach It has been shown that in some diseases a female themselves by their mouth hooks to the living tick may suck blood from an infected beast and membrane of the sheep's nasal cavity, and feed her young, in their early stage, convey the in- on the mucus through the autumn and winter. fection to a healthy animal; and as the parasites When fully grown they are 3-inch long; then they remain in the blood of animals after they have crawl down into the nostrils, causing great irrirecovered from the disease, the risk of infection tation, and the sheep having expelled them by is very serious. Louping-ill in sheep is probably sneezing, they fall to the ground. Under some True ticks are the comparatively large, smooth- spread by ticks from diseased to healthy animals. shelter the maggot skin hardens, to form the found sucking blood from sheep, cattle, and six-legged parasites of sheep, are often called a period of three or four weeks, the fly comes to

trunk; to this class belong mites and ticks. The the base of the legs, where the skin is delicate, and membered that the true ticks have smooth,

The keds are in reality degraded flies, their Both male and female ticks are to be found on structure and life history showing that they besheep and cattle. The male is smaller than the long to the same family as certain two-winged of small mites, each, when fully grown, only one- come swollen with numerous eggs, when her time clinging to the wool of their host-for which fortieth or one-fiftieth of an inch in length. These body assumes an enormous size, the skin being their strongly-clawed feet are admirably adapted; mites have stout, rounded bodies, the male being leathery in texture. The mouth of the tick is they only occasionally migrate from one sheep relatively shorter and broader than the female provided with two pairs of barbed piercers, which to another, or, after shearing, from sheep to and bearing behind a pair of stumpy processes, penetrate through the skin of the sheep, and en- lambs. The life history of these insects is re-each with three very long bristles. In both sexes able the tick to suck blood. If the tick is vio- markable. The egg is hatched within the body hindmost pair in the male are very short, and hind. The male tick also uses this piercing beak ed maggot, whose skin, immediately after birth without the three-segmented sucker-feet found in the act of pairing, and female ticks are often hardens and darkens to form the firm seed-like carrying at its tip two excessively long curving lays over 2,000 eggs among the rough herbage. more young, successively. The pupa-case is After about eight weeks the little six-legged often hidden by a whitish, sticky incrustation,

Keds possibly suck grease from the wool of the and fro. By means of these the mites cut into sheep or other passing animal, and after feeding sheep, but they feed principally by piercing the the skin of the sheep on which they live, causing for two or three days, fail to the ground again. skin and drawing blood, so that when present in great irritation, bleeding, and the discharge of Then they cast their skin and become eight-legged numbers they may cause much loss to the animals, fluid (serum), which hardens to form the crust or "nymphs." In this stage they again wait for and even, in the case of lambs, death. As their "scab" beneath which the mites shelter. They a chance of blood-sucking; then after another few whole life history is passed on the sheep's body, attack the woolly parts of the sheep, and the days' residence on a sheep, they drop off, change keds can be readily exterminated with proper

## THE NOSTRIL FLY.

It is about one-half inch long, slightly hairy, mottled with black, grey and yellow markings. It belongs to the same family as the ox warble-fly and, like that insect, has its jaws undeveloped, so that it cannot bite. In July or August the female either lays eggs, or deposits tiny maggots, already hatched within her body, around the sheep's In addition to the irritation and loss of blood nostrils. The maggots soon make their way into Keds, which are the familiar, hairy, wingless, smooth, dark pupa-case, within which, through other animals, usually attaching themselves at "ticks." No confusion is possible, if it be re- maturity. It is generally during April or May



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