

Feature

Beware of ticks



Darren Bullock of specialist clothing company Rovince UK (an NGO sponsor) enlightens us about ticks and the need to be tick-aware.

WITH THE SHOOTING SEASON NOW WHAT seems to be a distant memory, most of us are now looking forward to what we hope will be a good spring and summer. With this refreshing time of year also comes the need to be on the lookout for one of the UK's feared parasites, the tick, as this is when the larvae become active. With somewhere in the region of 3,000 cases of Lyme Disease contracted each year from ticks these spider-like creatures are not to be over-looked.

In the UK we have two families of ticks. The soft tick family called Argasidae and the hard tick family called Ixodidae. Out of these, three particular species of hard tick are more likely to attach to humans and their pets: *Ixodes ricinus* also known as the sheep tick, wood tick, deer tick and castor bean tick; *Ixodes hexagonus* also known as the hedgehog tick; and *Dermacentor reticulatus* also known as the ornate cow or marsh tick. However some species of soft tick will also bite given the opportunity.

THE TICK LIFE CYCLE

When ticks hatch, called the larvae stage, they immediately need to feed to build strength and grow. At this stage they only have six legs and are very small. Once the first feed is complete they moult and move to their next stage and become nymphs, they will now

have eight legs. The nymph ticks continue to feed and moult again when they move to the last stage: adult. At the adult stage breeding takes place and the whole cycle starts again.

WHO'S HUNTING WHO?

In order to feed, ticks need a host. Normally they choose farm live stock and wildlife to feed on, but humans give off the same signals therefore we accidentally become targets. Ticks can only crawl, so they position themselves at the top of grasses, plant stems or on the edge of leaves where they wait to ambush a victim as it brushes past.

Ticks have a number of ways to detect that a host is approaching. Firstly, while waiting they wave their forelegs in the air which carry the Haller's Organ. This is a sensory organ that picks up odours produced from the host's body. The black-legged tick, which is a close relative to the UK wood tick, has been known to pick up human odours from 11 metres away. The tick can also detect carbon



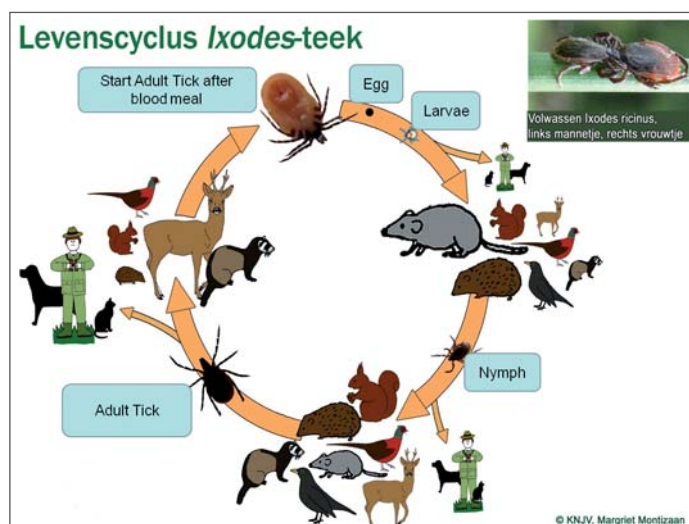
dioxide from the potential host's breath, which also lets them know a host is close. Finally, the tick picks up vibrations and can detect a moving shadow. At this point it stretches its legs out waiting to catch hold of the host as it passes.

Once on the host, the tick's mission is to remain undetected, so it crawls around to locate a dark warm area where it prepares to feed. (This is why it is important to inspect your whole body thoroughly if you have been in a tick area as there is a danger the tick will not be noticed until it starts to swell with blood.) Once this area has been found, the tick's weapon is deployed. Ticks do not have a head; instead they have some serious mouth parts. The tick's sensory palps guide its cutting limbs (called 'chelicerae') to begin slicing the skin. The sawing motion is combined with a salivary secretion which anaesthetises the area, prevents blood coagulation and also helps cement the mouth parts in the skin. Once the mouth parts are in, the tick's barbed feeding tube (the 'hypostome') is inserted. This also anchors the mouth parts in place and the feeding begins. It is these mouth parts that can break off and stay in the skin if a tick is wrongly removed.

TICK REMOVAL

It is worth noting here that although there are a lot of diseases that can be passed onto humans by ticks, not all ticks carry infections. This obviously means that someone may have had many tick bites and never had a problem or you could have just one bite

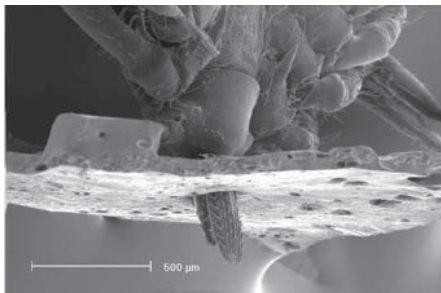
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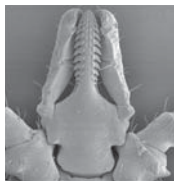


Above, below and right: tick mouth parts under the microscope.

and be infected. Should you find a tick attached on your body correct removal is most important. The best and safest method advised by professionals is to use a tool such as the O-tom tick removal tool. Under no circumstances should any other methods be used. Once a tick is attached and feeding should it feel threatened in any way it will regurgitate its stomach contents back into its host in order to escape. This will only increase the risk of transferring disease. For more information on tick removal visit www.bada-uk.org/correct-tick-removal

WORKING IN THE OUTDOORS AND PREVENTION

For people who go into the countryside recreationally, being tick aware is very important. For those who work in the countryside, ticks can become an occupational hazard. For this reason it is even more important to understand how a tick works, where they are likely to be and what steps to take to prevent ticks from attaching. Should you be in a position where you employ people to



work in the countryside, thought needs to be taken about your employees' safety. Make sure everyone is tick-aware and make sure protection is offered as this will show a responsible approach has been taken should an employee become affected by ticks.

There are three main ways of preventing tick bites. One is to wear light-coloured clothing as this will show up ticks crawling up you so you can knock them off before they attach. Secondly is the use of sprays and creams, which can be used to coat your clothing and repel ticks from crawling onto you in the first place. The third and relatively newest method in the UK is protective clothing. The market leading manufacturer of anti-tick clothing is Rovince. Clothing from Rovince is impregnated with their patented ZECK-Protec treatment which causes a thermal barrier over the garment. This barrier stops ticks being able to grip the garment and makes them fall off, meaning they never get chance to find a way onto the body. Tests in Europe have shown the ZECK-Protec treatment to be 98%

effective against ticks. Compared with other methods, the clothing offers a much more user-friendly approach. For example, the clothing comes in darker colours so it is more suited to the countryside. Another benefit is that the treatment used on all Rovince clothing is added under controlled conditions making it safe for the user therefore the user cannot overdo additional spraying which could affect their health in other ways. Using this newest technology protection is as simple as getting dressed! An added value of the clothing is that, because ticks cannot stay on the garment, the risk of transporting ticks back to the family home where they can attach to other family members is dramatically reduced. The clothing is washable and the medium weight garments are active for 80 washes which makes them a serious battle against tick.



ROVINCE UK

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