

Leeches are extremely intriguing animals. In fact, they are so fascinating that their conceptualisation could have flown out of the pen of a science fiction writer. Were you to read an anatomical and behavioural text on leeches without being told what the text was about you'd certainly come to the conclusion that it was the work of a fiction writer describing an alien species. You'd probably also conclude that it was an alien species intent on human blood...!

Oh, yes, don't worry, so if you go trekking in the Crocker Range, or in any other part of Sabah's rainforest, you will certainly come across the occasional leech. They belong to Borneo's wildlife we almost can guarantee you to see! As for the rest, like orang utans and elephants, you'll need much more luck! During the wetter season of the year you might actually encounter quite a bit of leeches. They are essentially harmless, but I must admit that they are a bit of a nuisance to the trekker. There are some myths and legends around leeches that need to be demystified before each trekking, and before I share with you my passion on leeches and go into the more interesting anatomical and behavioural details here they are:

#### MYTHS:

\* Leeches leave part of their head inside you once they are finished/are pulled off – wrong: leeches are not ticks and as such do not normally leave any body parts behind when removed. They also do not transmit any diseases, at least thus far no case is known.

\* Leeches wait in ambush on trees and let themselves drop onto their prey – wrong: leeches do not climb trees; in fact, they hardly can coordinate an 'attack' and those who attach themselves to some prey do it more or less accidentally.

\* Leeches jump – wrong: leeches cannot jump; but an excited leech can move rather fast, in a peculiar way which is described below.

#### DETECTION AND REMOVAL

Leeches do suck blood, that is not a myth! And they do attach themselves immediately at the slightest touch or when they can get within close enough range to some warm-blooded prey; then they look for a suitable site to bite. When they find humans they like to hide under the straps of your sandals or in-between your toes, or even in your boots where you don't see them immediately; and you hardly can feel their bite. When you detect them and they are already dining on you it is ok to peel or pull them off but you'll keep on bleeding from the bite, sometimes for hours because of the anti-coagulant the leeches use. On the other hand, if you leave the leech finish its meal and detach by itself it will 'close' the wound and you won't lose an unnecessary drop of blood. You also minimise the risk of any secondary infection. Admittedly, it is not funny to walk around with a parasite who is feeding on one's blood, even if the quantities are minimal. The best technique to remove a leech is to use your fingernails to break the seal of the anterior sucker first by pushing your fingernail along your skin and under the sucker, then repeat with the hind sucker. In order that the leech does not stick itself immediately to your fingers roll it into a ball and flick it into the jungle (not onto your trekking partners...).

If you don't like touching or pulling on leeches, or if you can't get a good grip on them call your guide; if he is busy with someone else's leeches and you really, really want to get rid of the bloodsucker you might hold a flame close to it, or a lit cigarette; rub some salt on it or put a drop of medicated oil (massage oil, heat rub etc) on it; or squeeze a bit of tobacco juice on it. All of this will convince it to leave immediately but it won't have the time to close the bite properly and you'll keep on bleeding if the leech was already feeding on you. Besides, it might regurgitate and infect the wound in the process so the common methods above are medically inadvisable.

Leech wounds – those that the leeches have not closed themselves – tend to bleed for a long time though the blood loss is not important. You should wash the wound and use some antiseptic cream on it and apply a plaster. Healing wounds tend to itch but should be left alone. Scratching them open might cause secondary infections, and then they might become a problem!

#### PREVENTION

As for preventing leeches – bad news: there is so far no commercial leech-repellent; Baygone spray or industrial strength tropical mosquito repellent only last as long as you don't sweat or cross a river; the same applies for rubbing your legs with tobacco or stuffing your shoes with tobacco; high trekking shoes, leech socks and panty hoses only convince the leeches to crawl ever higher up until they find a juicy spot where to sink in their teeth ... I personally have a theory that maybe 100% woollen knee-socks might actually and very efficiently deter them. Once I had a trekker – dead afraid of leeches and not to be convinced of their intriguing nature – who wore pure woollen socks in his trekking shoes as a habit. He also armed himself with gaiters, panty hoses and jeans and while we guides and porters all had lots of leeches during that particular trekking trip he remained absolutely free of any, and that is the only time I have observed this. Even if you wear high trekking shoes and gaiters, some leeches will eventually gain access into your shoes and maybe even bite you through your socks.

# LEECHES

All you ever wanted to know about leeches, and some

By HERMAN SCHOLZ, The Flying Dusun



But it is virtually unheard of that you don't find at least one or two leeches in your shoes after serious trekking. So I have only one reasonable explanation for that, and I think it must have been the 100% woollen socks, that is socks that are made of a purely natural product and maybe there is some agent or property to sheep wool that deters leeches.

If you want to know how I prevent leeches from biting: I trek in flip-flops or even barefoot, and in shorts. This allows me to see leeches crawling up my legs and I can flick them off before they have a chance to bite. OK, this works with about 80% of the leeches as there are always some smart ones that hide between toes, or on the sole of my feet and since you can't feel the bite I tend to overlook them until they are huge and ugly, gorged on my blood. At that moment I leave them to fall off by themselves so that the wound does not keep on bleeding. While trekking in single file in the jungle we also always watch the legs of the person before us and inform them of any leech so that they can be removed before they settle down for a meal.

Now as to why leeches are so truly fascinating creatures!

#### LEECH FACTS

Leeches are annelids (segmented worms) and are actually closely related to common earthworms, the ones we use for fishing. But leeches are anatomically and behaviourally rather more specialised and fascinating.

While most leeches are freshwater animals there are also many terrestrial and marine species. What you will encounter in Borneo are land leeches and they commonly live on the ground or in low foliage in humid rainforest, secondary forests, and swampy areas. During the dryer season they can be found wherever there are moistened places – along riverbanks, at water sources and small ponds. Land leeches do not enter water and cannot swim, but they can survive periods of immersion.

Belonging to segmented worms, the bodies of leeches are divided into 34 segments with powerful clinging suckers at each end. The hind sucker is very effective and when you try to remove a leech by hand you have to exercise quite some pull before it comes loose – usually the leech wins because besides the firm grip it is very slippery and can extend considerably until it slips through your fingers, literally.

The mouth is in the front (or anterior) sucker, and our leeches have usually three jaws. When you observe a recent bite you can clearly distinguish the y-shaped incision they make.

The anus of a leech is on the surface top just behind the rear sucker.

Leeches vary in body shape. Generally their bodies are elongated and thin, but they can become round when fully gorged with blood. However, they are grouped according to the way they feed. The ones we encounter are the jawed leeches (or Gnatbobdellida), which are armed with teeth with which they bite the host – usually humans. The blood is prevented from clotting by the proteolytic non-enzymatic secretion called hirudin. Land leeches are only encountered by trekkers in the rainforest. In this group: the tiger leech, and the common leech.

A second group (the jawless leeches or Rhynchobdellida) insert a needle-like protrusion called a proboscis into the body of the host and secrete an enzyme, hemetin which dissolves blood clots once they have formed. Leeches which are not in this group: the tiger leech, and the common leech. A second group (the jawless leeches or Rhynchobdellida) insert a needle-like protrusion called a proboscis into the body of the host and secrete an enzyme, hemetin which dissolves blood clots once they have formed. Leeches which are not in this group: the tiger leech, and the common leech.

A third group, (the worm leeches or Pharyngobdellida) have no jaws or teeth and swallow the prey whole. It includes a group of small invertebrates – not humans, thanks here.

Leeches breathe through their body wall, and in water they move to the surface when in water with their head above water. The body surface also contains a number of sense organs, and together with those on the head they detect changes in light intensity, temperature, and vibration. They are also equipped with chemical receptors which provide them with a sense of smell. Plus, they have eyes, sometimes only one pair but often several pairs.

As if all the above would not be sufficient, leeches are hermaphrodites and thus have both male and female sex organs. Their love act is short and precise, but exciting but surely gives the slogan 'equality' a true-to-the-letter definition: when mating, two leeches twine and each deposits sperm in the other's body. Rhynchobdellids have no reproductive organ but instead have packages of sperm which are forced through the body wall in the clitellar area. Once inside the body the sperm travel to the ovaries where fertilisation takes place. The cocoon which the clitellum secretes a tough gelatinous substance into which the eggs are deposited. The leech shrugs itself free of this cocoon, sealing it in the body wall. The cocoons can be buried or attached to the surface.