Wildlife Vets Namibia May 2020 Edition 26

NEWSLETTER MAY

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- African Swine Fever outbreak
- Online conservation courses
- Genetics, nutrition and age – the driving forces behind quality trophy production

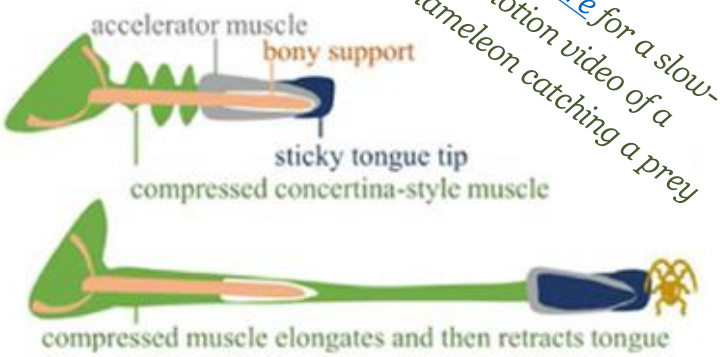
Dear clients,

The end of the month is almost there... Time for our latest newsletter! In this edition you can learn about the amazing abilities of a chameleon's tongue. At the end of April/early May there was an outbreak of African Swine fever in northern Namibia. What is this disease exactly? We list a website with some (free) online wildlife/conservation courses and we give a summary of our newest online article; what are the driving forces behind quality trophies? Kind regards, Ulf and Mariska

THE CHAMELEON'S BALLISTIC TONGUE

How often have you seen a chameleon catching a prey? With a flick of the eyes the prey is gone... How do they do this?

Click here for a slow-motion video of a chameleon catching a prey



Schematic view of a chameleons tongue
© Wang (2019)

The chameleon's tongue is made up of accelerator muscles ('launching muscles') and retractor muscles. At the back of the mouth there is a 'U'-shaped bone, which is called the hyoid bone. Inside the hollow tongue, is a small horn of bone, the hyoid horn. When the chameleon is resting, the muscles are coiled around the hyoid, on top of layers of elastic collagen tissues. When the accelerator muscles contract, the tongue is launched off the hyoid horn. So, simply said, when a chameleon sees a prey, they contract the muscles in their tongue. This is called '*elastic recoil*'. You can compare it to a person pulling back the string of a bow. When the chameleon is ready to strike, it releases its tongue muscles, the tongue shoots forward, and catches its prey. Very much like the release of the bow string, to propel the arrow. After the strike, the contractor muscles pull the tongue (incl. prey) back into the mouth.

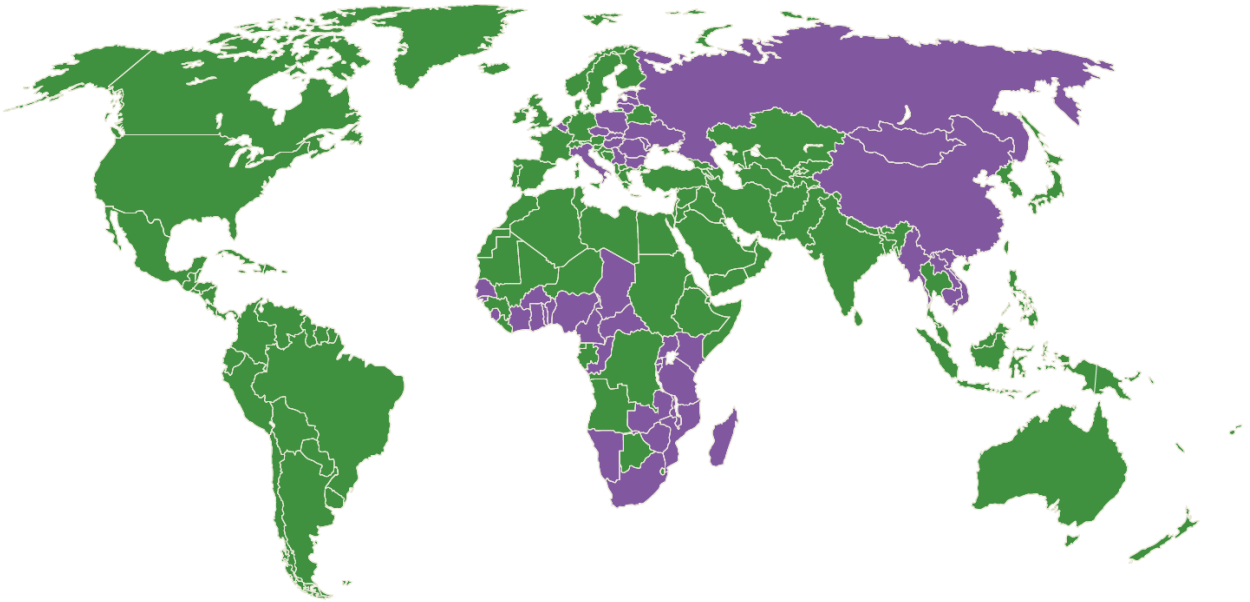
The chameleon's tongue has many amazing adaptations. First of all, it is very long. On average, a chameleon's tongue is about twice the length of its body. In humans, that would be a tongue of about 3 to 4 meters! To put the speed of the tongue strike into perspective, if we would compare it to a car, it would mean an acceleration time of 0 to 100km/h in 1/100th of a second. By just having a fast tongue, the chameleon is not done yet. They also have to bring their prey back to their mouth... Chameleons don't wrap their tongue around their prey, instead, they produce a viscous, sticky mucus on the tip of their tongue. This mucus is 1000x more viscous than human saliva. How amazing can animals be!

Namaqua chameleon in the Swakopmund dunes
© M. Bijsterbosch

AFRICAN SWINE FEVER OUTBREAK IN NORTHERN NAMIBIA

You might have heard that the Omusati region in northern Namibia has been hit by an outbreak of African Swine Fever. It has so far killed almost 300 pigs. According to Omusati's chief veterinarian, Dr Josephat Peter, the outbreak seems to be contained now as there have no new cases for a week. In this article we provide you with more information about this disease.

African Swine Fever (ASF) was first described in 1921. Between 1957 and mid-1990s the disease spread to Europe and southern America. By mid-1990, the virus had been eradicated everywhere outside Africa, but in 2007 the virus turned up again in Georgia, and from there it spread over many countries. In 2018 ASF nearly killed half of China's pigs.



Map showing countries (highlighted in purple) that reported ASF in the last five years. © National Pork Board

ASF is a DNA virus of the Asfarviridae family. It is the only known virus that can infect both certain soft-bodied ticks, as well as mammals. The disease is highly contagious and often fatal for domestic pigs. Please note that ASF is completely harmless to humans.

Mode of transmission: suids and ticks

The historic natural hosts for ASF are warthogs (*Phacochoerus* spp.), bush pigs (*Potamochoerus* spp.) and the giant forest hog (*Hylochoerus meinertzhageni*), but do not show symptoms. Domestic pigs and wild boars (*Sus scrofa*) are also susceptible. Certain ticks can also become infected with the virus, these are ticks of the so-called *Ornithodoros* genus. They occur in tropical and subtropical regions. Other animals (and thus also humans) are not susceptible.

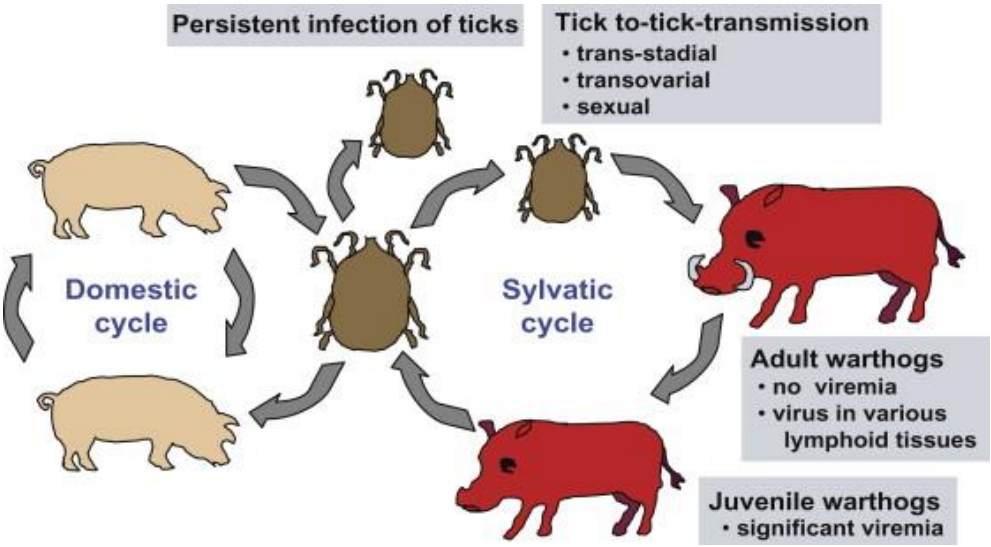
In Africa, mainly the warthog and a soft-bodied tick (mainly the species *Ornithodoros moubata*) maintain the virus cycle in the wild. Some of the *Ornithodoros* species can survive up to 20 years! At certain life stages they are able to survive 5-6 years without feeding, and can maintain and transmit the virus for at least 2 years. They only feed for up to 30 minutes, and then move on.

Ornithodoros moubata – a.k.a. African hut tampan or eyeless tampan. © J.W. McGarry

The transmission of ASF between ticks and warthogs probably only occurs in the first 3-6 weeks of life. The young warthogs spend most of their time in burrows, which are inhabited with many ticks. An infected tick bites the young warthog, and the virus enters the bloodstream (viremia). When a non-infected tick bites this young warthog, the virus enters the tick. Most adult warthogs don't have the virus in their blood, and do not act as a source of infection.

Warthogs, bush pigs and forest hogs usually do not show clinical signs, compared to domestic pigs and wild boars. Scientists are not sure why this is the case, it may be that the immune response of the young warthogs play an important role in controlling the virus.

Transmission of the disease from warthogs to domestic pigs is believed to occur via infected ticks. Domestic pigs, wild boars and feral pigs can infect each other by direct contact. Other ways domestic pigs can get infected are via the ingestion of infected meat/contaminated food and via contact with contaminated objects (e.g. clothes).



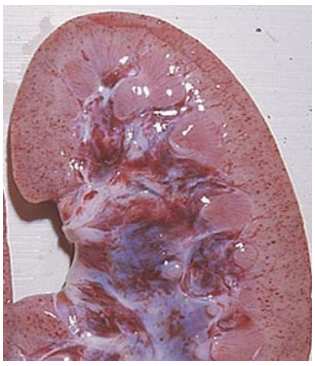
Mode of transmission between warthogs and domestic pigs. Sylvatic cycle refers to that part of the disease cycle that involves wild animals, in this case warthogs. © *Fenner's Veterinary Virology*

Clinical signs

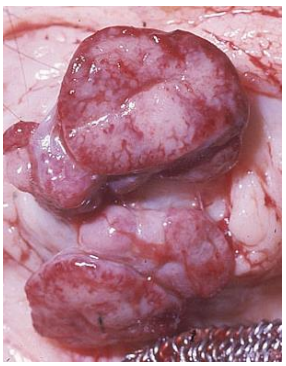
ASF is highly contagious and infection spreads rapidly in domestic pigs. 3-7 days after infection, the pigs get a high fever (up to 42°). Other signs are loss of appetite, vomiting, difficulties breathing, coughing, nasal/eye discharge and abortion. Hyperaemia (increase of blood flow to tissues in the body) of the ears, abdomen and legs colours the skin reddish/bluish. Death usually occurs in 5-10 days.

Hyperaemia of the ears © *Dr. C.A.L. Oura*

Hyperaemia of the abdomen and legs © *Dr. C.A.L. Oura*



Kidney showing multiple pinpoint haemorrhages (bleeding)



Lymph nodes showing multiple areas of haemorrhage

When you conduct a PM, you will usually find haemorrhages (bleedings) in the lymph nodes, kidneys and heart, possibly a large and friable spleen, blood-stained fluid in the lung, heart and abdominal cavities and congested red (congestion = excessive accumulation of blood) lungs.

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Diagnosis

The clinical signs of ASF can be similar to other diseases, such as classical swine fever, Salmonellosis, Pasteurellosis and Aujeszky's disease. A lab test, based on blood and tissue samples, can detect ASF.

Treatment and Prevention

There is no treatment for ASF, and there are no vaccines. Prevention is most important; ensure that infected live pigs, or contaminated products or objects cannot spread to non-infected areas. Make sure there are measures in place to limit contact between domestic pigs and wild boars (e.g. double fencing pig-proof barriers and proper biosecurity measures). Infected pigs should be slaughtered and disposed.

The disease is listed as a Notifiable Disease, and when ASF is suspected, the local state veterinarian must be contacted immediately.

ONLINE CONSERVATION COURSES

We believe that education is very important. The more knowledge you have, the better you can do your job. Therefore, we would like to share this interesting website with you, where 11 sites are listed that offer (free) courses. There are many different topics, from conservation, wildlife management, agriculture etc. etc. With a bit of searching, we are sure you find something you find interesting!

Click here to visit the website, and find the links to the sites that offer the courses.

"Once I learn how to use Google, isn't that all the education I really need?"

GENETICS, NUTRITION AND AGE – THE DRIVING FORCES BEHIND QUALITY TROPHY PRODUCTION

We have uploaded a new article on our website about the driving forces behind quality trophies. Here is a short summary of the article, you can download the full article with more information on the Documentation-section on our website (direct link below).

Trophy (horn or tusk) production is regulated by age, nutrition, and genetics. The goal of this article is to clarify the basic influences of these factors on horn development and then discuss how they may interact in the ultimate expression of trophy quality on your game farm. You will realise that significantly improved trophy development can be achieved through good management principles adjusted to local conditions.

Age

The only and easiest way you can influence trophy development with regard to age is not to harvest animals before their optimum age. The age at which one can expect to see some animals in record-book proportions depends on the species in question, but is rarely sooner than 4 years of age. Allowing males with exceptional (genetic?) horn development to reach their full potential (age) obviously has, as secondary spin-off benefits:

Message: Irrespective of the buck's genetic potential, trophy size increases every year until the wear of age starts to show.

a) You get the opportunity to identify these truly magnificent animals.
b) They have plenty of opportunity to breed and thus disseminate their genes in your herd.

Genetics

Just like people, animals are born with a genetic code that dictates what potential their characteristics have, including horn development. Some bulls/rams are destined to become monsters while the majority will grow into "average" bucks.

Messages: Antlers of successive generations were either made larger or smaller through selection. Females also influence trophy production – ensure females allowed to reproduce originate from superior males.

You can affect (manage) the gene pool on your farm in two ways:

a) Cull animals with obviously inferior trophy potential (easier said than done since early recognition of animals with poor trophy potential is not always easy) and allow those exceptional bulls/rams on your farm maximal opportunity to breed.
b) Introduce new stock originating from farms with a record of producing superior trophies. The new breeding stock will also minimise inbreeding, which should be of concern to any game farmer keeping isolated populations on fenced-in properties.

Nutrition

Message: Feed them well, grow them big!

Science has proven beyond doubt that, with proper nutrition, animals can grow dramatically larger trophies up to two years faster than they would achieve on poor nutrition. Proper nutrition has many benefits beyond trophy development, including better reproductive success and greater stress- and disease resistance.

Click here to read the full article

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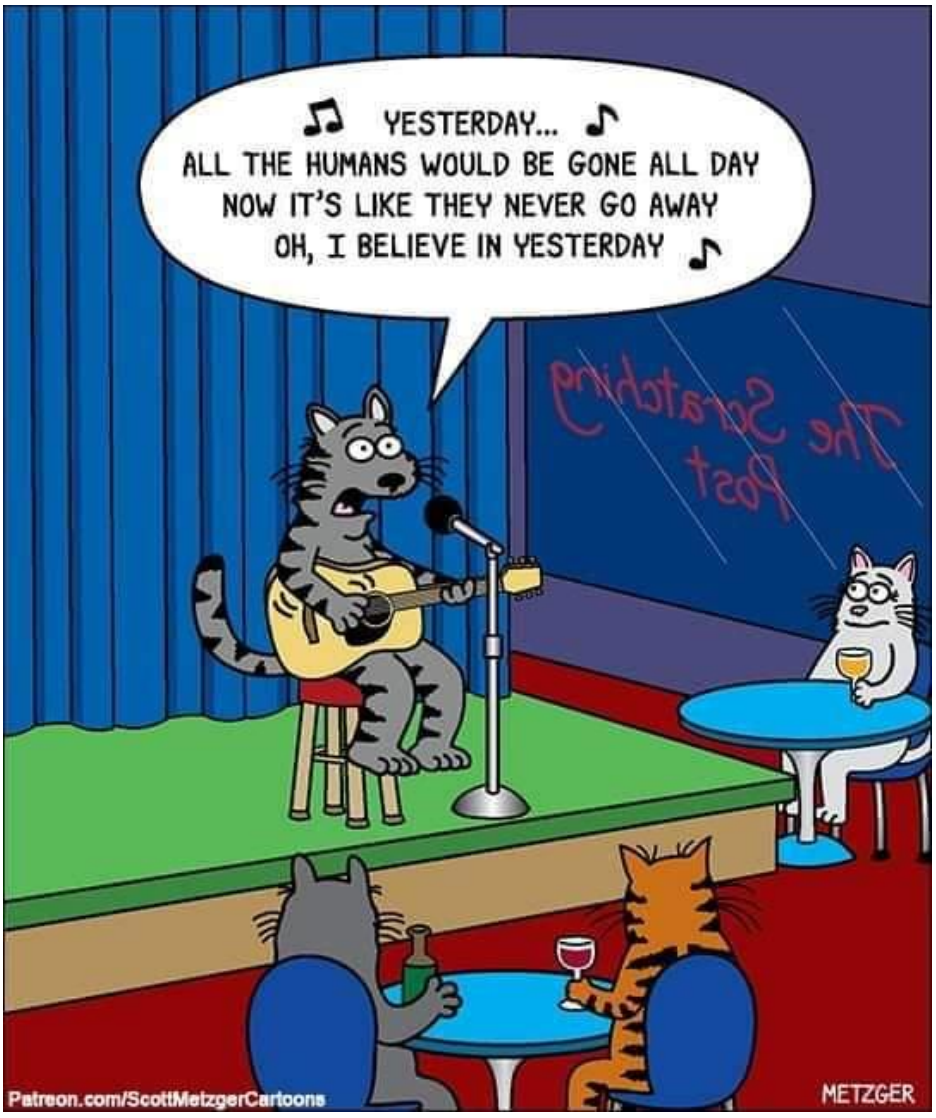

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