

# NEWSLETTER JULY

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Dear clients,

We are halfway through 2022 already! Once again we hope you will enjoy this newsletter, in which we talk about swimming hippos... but do they actually swim? We give a short summary on the Post-Mortem course that we presented earlier this month, and we discuss an interesting case we had - a sable bull with a massive tapeworm cyst in his neck! Have a wonderful day!

Kind regards, the Wildlife Vets Namibia team

## DO HIPPOS SWIM?

The name “*hippopotamus*” comes from a Greek word meaning “water horse” or “river horse”. For an animal that lives up to 16 hours a day in the water, you would think they are like a fish in the water! But actually... they can't swim! How come?

First of all, the hippo lacks adaptations that are required for swimming. They are not streamlined, nor do they have powerful additions to their body such as flippers or a tail for forward propulsion. Secondly, they are too dense to float – they weigh more than their body volume filled with water, and thus they sink. Most mammals are naturally buoyant, but hippos are very heavy, and have very dense bones that help them to stay at the bottom.

However, we all have seen videos of hippos charging out of the water, how do they do that? The hippo always maintains some contact with the bottom, by either walking or bouncing themselves off – like a sort of gallop. This means that a hippo would not be able to survive in the ocean for example; if the water is too deep to reach for air, they would drown.



*Hippos cannot swim, when they are at the surface, they either pushed their way to the surface from the bottom (like in this photo), or they are standing at the bottom. © M. Bijsterbosch*

A hippo also cannot breath underwater; they can only stay under for about 5 minutes on a single breath and close to 8-10 minutes when they are asleep. The nostrils have sphincter valves that stop water from coming in when they submerge.

Have a look at this [YouTube video](#) from the BBC, in where they took stunning footage of hippos underwater in the Okavango Delta in Botswana. The hippo section starts at 1:19 min.

*When hippos exert energy (by e.g. by walking fast under water), they often come to the surface with an explosive exhale and spray © M. Bijsterbosch*



## POST-MORTEM COURSE AT SAROA SAFARI LODGE

During the weekend of 09-10 July, we presented our Post-Mortem course at SAROA Safari Lodge near Nina. It was a great weekend with a great group of people and an interesting Post-Mortem examination.



We started the course with an intensive day of lecturing. We spoke about when you can do a Post-Mortem examination yourself, and when you should NOT do one. We also discussed what to do with the carcass. In a 'back to the biology class'-lecture we spoke about where the different organs are and what they do. The next lecture was about what changes in the body after an animal has died, so when is the 'abnormal' still 'normal'? The next lecture was about photography. This is a very important part of your PM examination – your photos are basically the vet's eyes! If you can take proper photos, your vet will be better able to help you diagnosing why an animal has died. The same goes for sample collection. We discussed what samples are important to take, and how you should take them. Sometimes one cannot see with the naked eye why an animal has died. Then the vet or the lab must check your samples under the microscope – so its very important that the samples are taken properly. We also discussed what you should have in your PM kit. One of the last lectures was a big lecture on lesions (Afr. letsels) that you might encounter – this lecture contains many photos of what can go wrong in the body.

On the last day we spoke about how to conduct a PM, and we did a practical. One of the participants brought a boerbok that died the day before. The PM examination was very interesting, revealing death by suffocation due to a ruptured lung abscess with pus blocking the airways. The goat was also very bloated, which in itself could have caused the suffocation... but in this case it was as a result of aerophagia (swallowing air) while trying to force air into the lungs. This case clearly demonstrated the need for doing a comprehensive PM and not to lock in on the most obvious abnormalities found.



We would like to thank all the participants for joining the course! It was great getting to know you all and we hope the course taught you some valuable information. We also would like to thank the SAROA Safari Lodge team for the wonderful venue and amazing food! We are very grateful we could present the course here, and we hope to present more courses here in the future. Click [here](#) to follow the SAROA Facebook-page.

This was our last planned course for this year, but next year we will continue with our Post-Mortem and Animal Crime Scene and Evidence handling course. If you want to be notified when we plan another course, feel free to contact Mariska at [mariska@wildlifevetsnamibia.com](mailto:mariska@wildlifevetsnamibia.com).

## TAPEWORM CYST IN A SABLE

Recently we were called out to move some young sable bulls out of a herd. One of the sables had a lump on its neck. To check what the lump is, we make an aspirate; we insert a needle into the lump and withdraw the substance inside into a syringe. Then we evaluate the colour, consistency etc. to decide on what to do next. In this case a clear fluid came out, which is very suspicious for tape worm cysts...



### What is it?

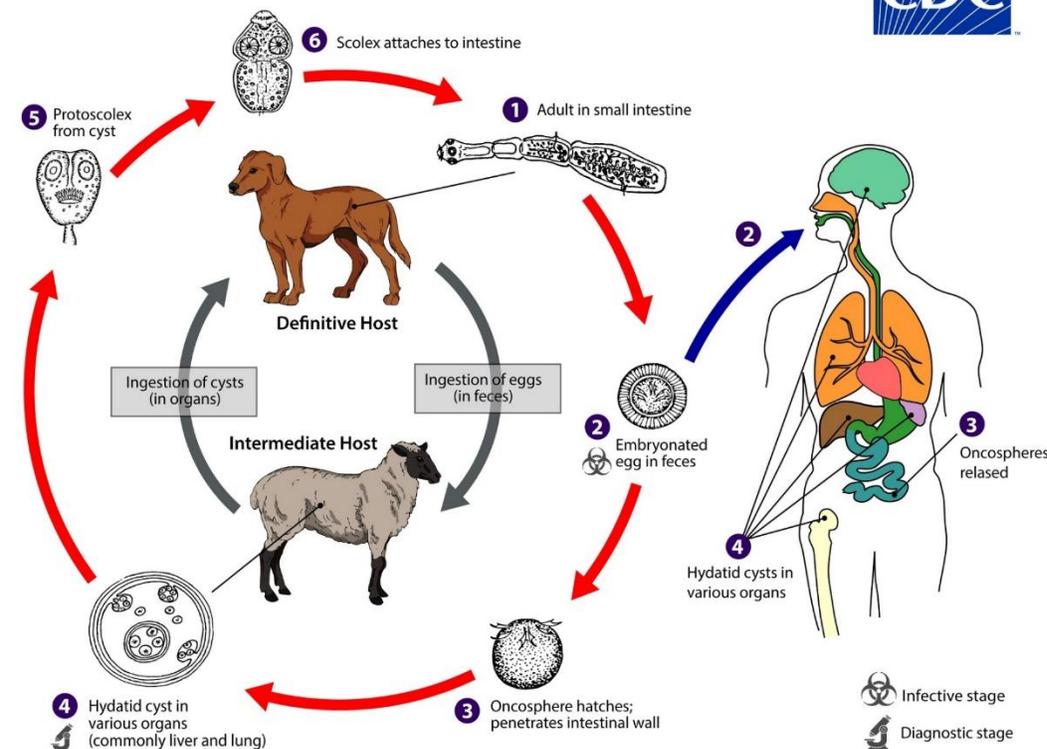
A tapeworm infection is caused by ingesting food which is contaminated with tapeworm eggs or larvae. The eggs can migrate outside the intestines, and form larval cysts in body tissues or organs.

There are different species of tape worms, but this cyst was likely caused by the *Echinococcus granulosus*. They cause fluid-filled cysts in the body, which is called *cystic echinococcosis*. The cysts can occur in any organ of the body, from the liver, the lungs, muscles, brain or chewing muscles. It is found in a wide range of species, from lions and hyenas, to zebras, buffalo, hippos, impalas and even humans. Elephant and blue wildebeest do not seem susceptible for some reason.

The definite host that carries the actual tape worm in its gut (e.g. lion or dog and in other tapeworms, man!) is rarely clinically affected by the infection. In the intermediate hosts (e.g. sable or sheep) the cyst grows very slow, and the animal won't show any signs until the cysts start damaging adjacent tissues and organs.

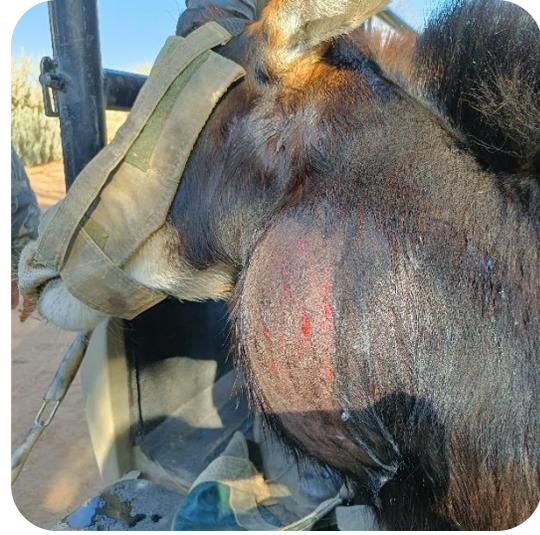
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### Cystic Echinococcosis *Echinococcus granulosus sensu lato*



Life cycle of the *Echinococcus granulosus*. The adult *E. granulosus* (2-7 mm long) lives in the small intestine of a definitive host (e.g. dog) (1). Eggs are released, and passed on into the faeces (2). They are immediately infectious. When a host (e.g. sheep) ingest these eggs, they hatch in the small intestines, and six-hooked larvae (oncospheres) (3), penetrate through the intestines and migrate via the circulatory system to various organs (especially the liver and lungs). The larvae develop into a cyst, which gets bigger and starts producing parasite larvae (protoscolices) and daughter cysts. The definitive host (e.g. dog), becomes infected by eating the cyst-containing organs. After ingestion, the parasite larvae (protoscolices) attach to the intestines (5-6), and develop into the adult stage in 32-80 days (1).

Humans are intermediate hosts, and can become infected by ingesting the eggs (2). The larvae (oncospheres) are released in the intestine (3), and cysts develop in several organs (4). If the cyst ruptures, it may cause secondary cysts in other sites of the body. ©



The sable was operated outside of the camps to prevent contamination. The white dots you see on the third photo are the larvae, which live in the fluid-filled cyst. © M. Bijsterbosch

### What about the sable?

In this case, the sable developed a big lump on the left side of the neck. Due to the location and size of the cyst, we decided to surgically remove it. The area was shaved and disinfected, and a large cut was made to get to the cyst. One aims to remove the cyst without popping it, but this cyst was so large that it could not be removed without breaking it. The cyst was dissected out and removed in total. The wound was then thoroughly flushed to make sure all the larvae are out of the wound. The wound was stitched up and a drainage hole was left at the bottom. The sable was treated with long-acting antibiotics and anti-inflammatories and is doing well.

### What if you encounter a cyst?

A predator can be treated with anthelmintic (deworming) drugs, like Praziquantel, however, it is rarely practical in a game ranching environment. Where man is the suspected culprit, it is advisable to deworm farmworkers on a regular basis, provide toilets and prohibit them from “going into the bush”. This is especially important where game camps are adjacent to workers houses!

In cases like in this sable, surgery was needed to remove the cyst, it would not help to deworm it as the deworming only works in the gut. Sometimes you won't notice anything, and you only notice the cyst when you slaughter the animal. In that case, discard the affected meat and make sure that scavengers cannot get to it.

Remember this is a **zoonotic disease** (a disease that is transmitted from animals to humans and potentially back); humans can become infected by ingesting the parasite's eggs in contaminated food, water, or via contact with faeces. Human infection with *E. granulosus* (also called hydatidosis) can lead to the development of cysts, usually in the lungs and liver, and sometimes in the bones, kidneys, spleen, muscles and central nervous system. It can take several years for the cysts to become big enough that they start causing signs. When it occurs in the liver, it can cause abdominal pain, nausea and vomiting. When the lungs are affected, it can lead to chronic cough, chest pain and shortness of breath. It is a complex infection to treat, which might even require extensive surgery. Thus... better to prevent an infection at all times! After handling animals, always wash your hands, do not touch faeces with your hands (wear gloves), avoid ingestion of food, water or soil that might be contaminated with animals' faeces, deworm your dogs, vaccinate your livestock (esp. sheep) and work as hygienic as possible in the slaughter area. If you find a cyst, never cut it open! Discard the cysts by burning them. Never give infected meat or the cysts to your pet.





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