Diagnostic exercise No.37, submitted by Barbara Vanselow

Female spotted-tailed quoll (*Dasyurus maculatus*), estimated 1y.o.

Found concussed by roadside 22km east of Walcha, NSW

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# Dasyurids

The order **Dasyuromorphia** (meaning "hairy tail") includes most of the Australian carnivorous marsupials, including quolls, dunnarts, the numbat, the Tasmanian devil and the recently extinct thylacine.

## Gross description:

Several areas of alopecia are evident. One, on the lateral aspect of the left hock, is an elevated pink cutaneous swelling which is punctuated by several small fistulous orifices, most of which contain multiple1mm (approx) nipple-like nodules. Many of these, in turn, have a tiny central pit.

Another area, over the right elbow, has fistulous holes without the nodules seen over the hock. A small (5-7mm) maggot-like creature is being expressed from one of the fistulae.

## Morphological diagnosis:

Chronic fistulating verminous pyoderma

## Aetiological diagnosis:

Cutaneous invasion by larvae of *Uropsylla tasmanica*
(native flea of dasyurids)

# The flea *Uropsylla tasmanica*

An ectoparasite whose entire life-cycle is spent on the host

Its life-cycle is related to the quoll's breeding season

In mid-winter when quolls breed, flea eggs are laid on skin

After hatching, larvae burrow into skin

Flea emerges to infest young quolls

**References:**

Ectoparasites and Skin Lesions in Wild-Caught Spotted-Tailed Quoll (*Dasyurus maculatus) (Marsupialia: Dasyuridae).* I-M Vilcins, JM Old, G Körtner, and EM Deane. Comparative Parasitology, 75(2):271-277. 2008.

Dunnet, GM & Mardon, LN (1991) "Siphonaptera (Fleas) in *The Insects of Australia*; 2nd edn., pp 705-716; Melbourne University Press, Melbourne. Cited by Beveridge, I & Spratt, D in *"The Biology of Carnivorous Marsupials"* eds.Jones, M, Dickma C and Archer, M (2003) pp 383-396 CSIRO Publishing Collingwood

# The flea *Uropsylla tasmanica*

(**Barbara's comments**)

The lesions on the right elbow were the typical initial changes seen on all four legs and base of the tail. The posterior ends of multiple larvae could be seen often as a group in one hole in the skin, and could be squeezed out as shown: the tails of these larvae emerged above the surface of the skin (slide 2) and were easy to remove with forceps.

I treated her with S/C moxidectin 200µg/kg (I had also given her oral moxidectin for internal parasites). It certainly did not kill all the larvae, so manual removal has been the most effective treatment (I need to find out if Selamectin is safe in quolls). I found no adult fleas on the quoll.

Her body weight has increased and her coat condition and colour has improved. Life in the wild with that degree of parasitism is obviously not easy as well as dodging foxes, randy male quolls, finding food for up to 6 young and enduring the cold of New England.

She has been enjoying stretching out on my lap in front of the fire at night!

There is speculation in Tasmania that the alleged dodginess of the Tasmanian devil immune system may favour heavy infestation by these fleas. What is perhaps more pertinent is the possibility that the fleas may facilitate transmission of the cells responsible for facial tumour disease.