

# Sarcoptic mange outbreak in a herd of Bactrian camels in Sweden

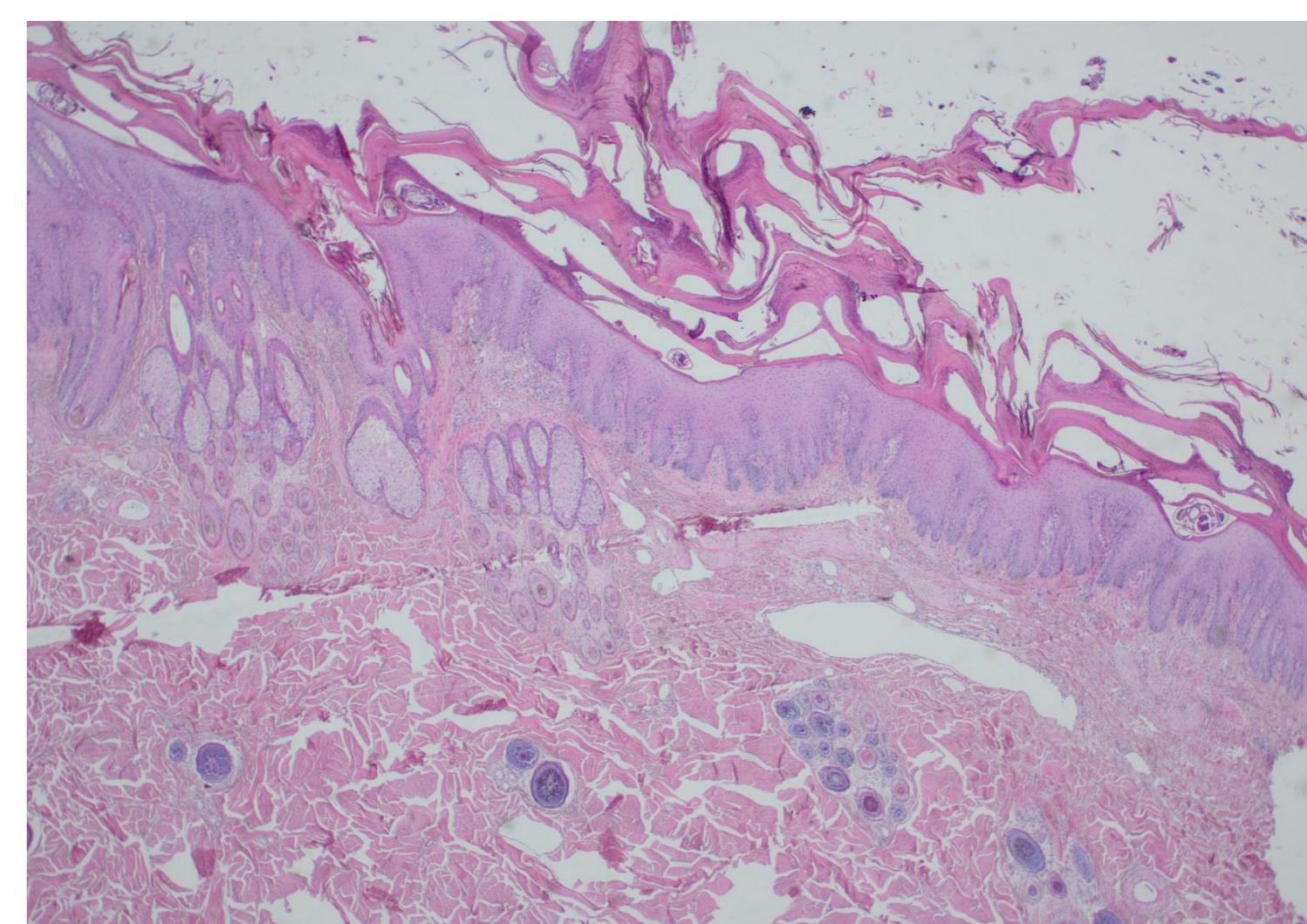
We report a fatal case of sarcoptic mange in an adult Bactrian camel most possibly infected by a red fox



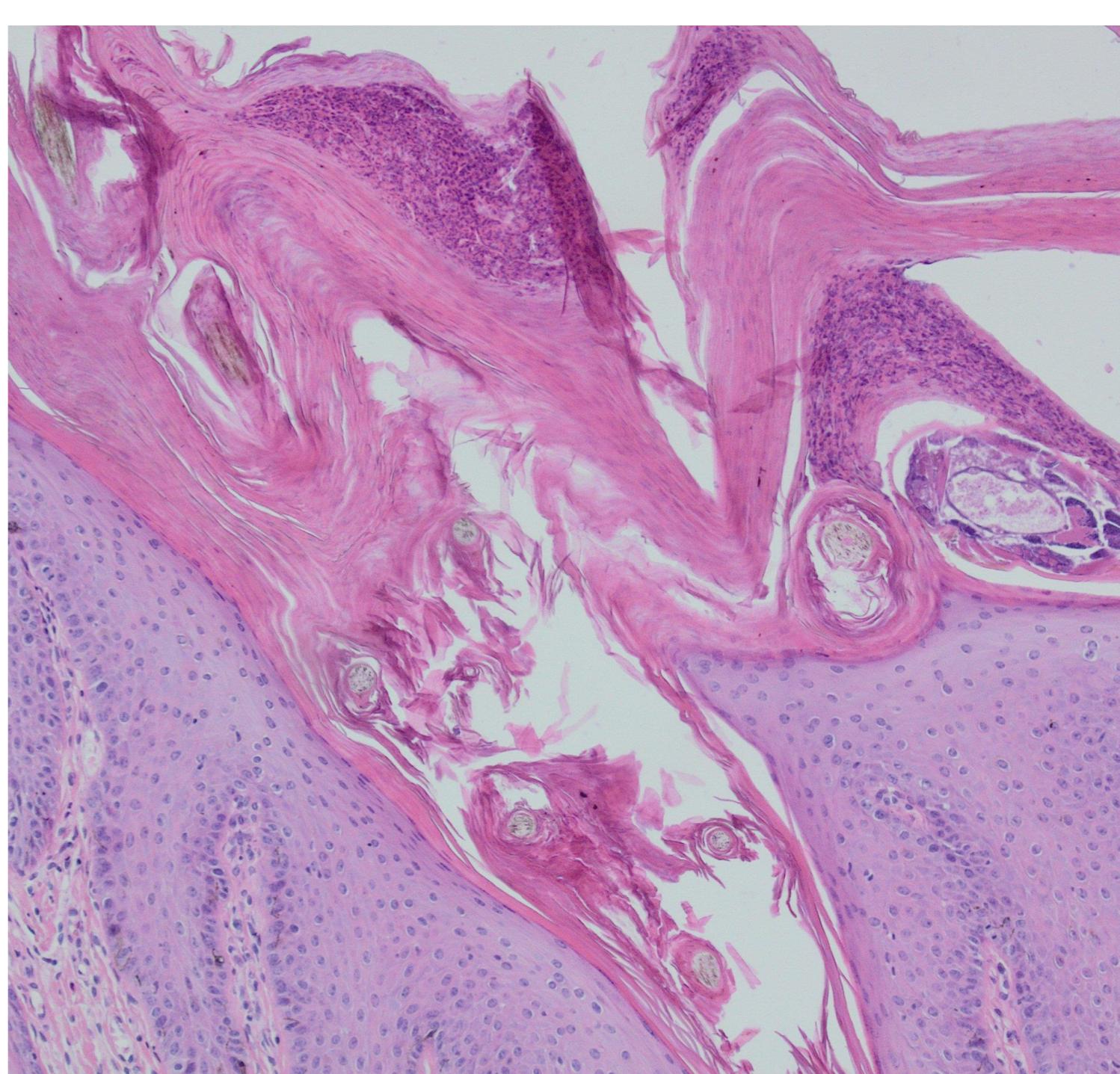
The camel presented with large lesions on the abdomen, the sides of the body and the head.



Left: *Sarcoptes scabiei* var *vulpes/canis* (SEM); right: red fox with *S. scabiei* var *vulpes/canis* infection.



Chronic hyperplastic crusting and perivascular dermatitis (HE x20).



Chronic hyperplastic, crusting and perivascular dermatitis. Mites are embedded in the keratin layer and in superficial crusts (HE x100).

## Conclusion

This is to our knowledge the first report of *S. scabiei* var *canis* infection in a Bactrian camel and underlines the importance of this ectoparasite as a threat to animal health. The observation of a mangy looking red fox in the vicinity of the herd and the finding of *S. scabiei* var *canis* in the camel strongly indicate that red foxes were the source of the infection.

## Background

The burrowing mite *Sarcoptes scabiei* causes sarcoptic mange in animals and scabies in humans. The mange severely affects animal welfare and is sometimes fatal. It often leads to reduced production and economic losses. Sarcoptic mange is found in well over 100 animal species including camelids, particularly dromedaries and alpacas. It is not well documented in Bactrian camels. Different variants exist and are named after the particular host species infected i.e *S. scabiei* var *cameli*. These variants are morphologically indistinguishable. Host specificity is not complete. Interspecies transmission does occasionally occur, eg from infected dromedaries to humans and more often from infected dogs to humans. With PCR technology and molecular marker systems it has been possible to distinguish some variants of *S. scabiei*. In the Swedish island of Öland, sarcoptic mange is prevalent in the red fox (*Vulpes vulpes*) population.

## Case presentation

- An adult female Bactrian camel kept outdoors together with 11 other Bactrians, in the Swedish island of Öland.
- Skin lesions on the abdomen, sides of the body including the humps, hyperkeratotic areas on the head, nose and lips.
- Ulcer in front of one hump
- A mangy looking red fox had been seen close to the herd at the time of the outbreak.

## Investigation and results

- Histopathologic findings showed chronic hyperplastic crusting and perivascular dermatitis with numerous intralesional mites, some with features characteristic of *S. scabiei*.
- PCR from biopsies positive for *S. scabiei* var *canis*.

## Management and outcome

The diseased camel was given extra feed and isolated from the rest of the herd in an animal-shed. Ivermectin was administered twice subcutaneously, 10 days apart. Despite treatment, the camel deteriorated quickly, stopped eating and died within two weeks. Four more camels in the herd showed small confined skin-lesions characteristic of mange. All were eventually treated with ivermectin with promising results.