

Three cases of mortality in young wild-caught Arabian Tahr (*Hemitragus jayakari*) removed from their mother before weaning age



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Introduction

The Arabian tahr (*Hemitragus jayakari*) is a medium-sized ruminant (Fig. 1) endemic to the United Arab Emirates and Oman (Fig. 2) and endangered throughout its range. Fewer than 150 animals are kept in captivity in four centres in the UAE and Oman. The total population is less than 2,500 individuals and likely in decline. Habitat loss, competition with feral goats, and harvest (hunting and capture) are the main threats (Insall 2008; CBSG 2001, 2000).



Figure 1. Arabian Tahr (*Hemitragus jayakari*) and kid at the BCEAW.

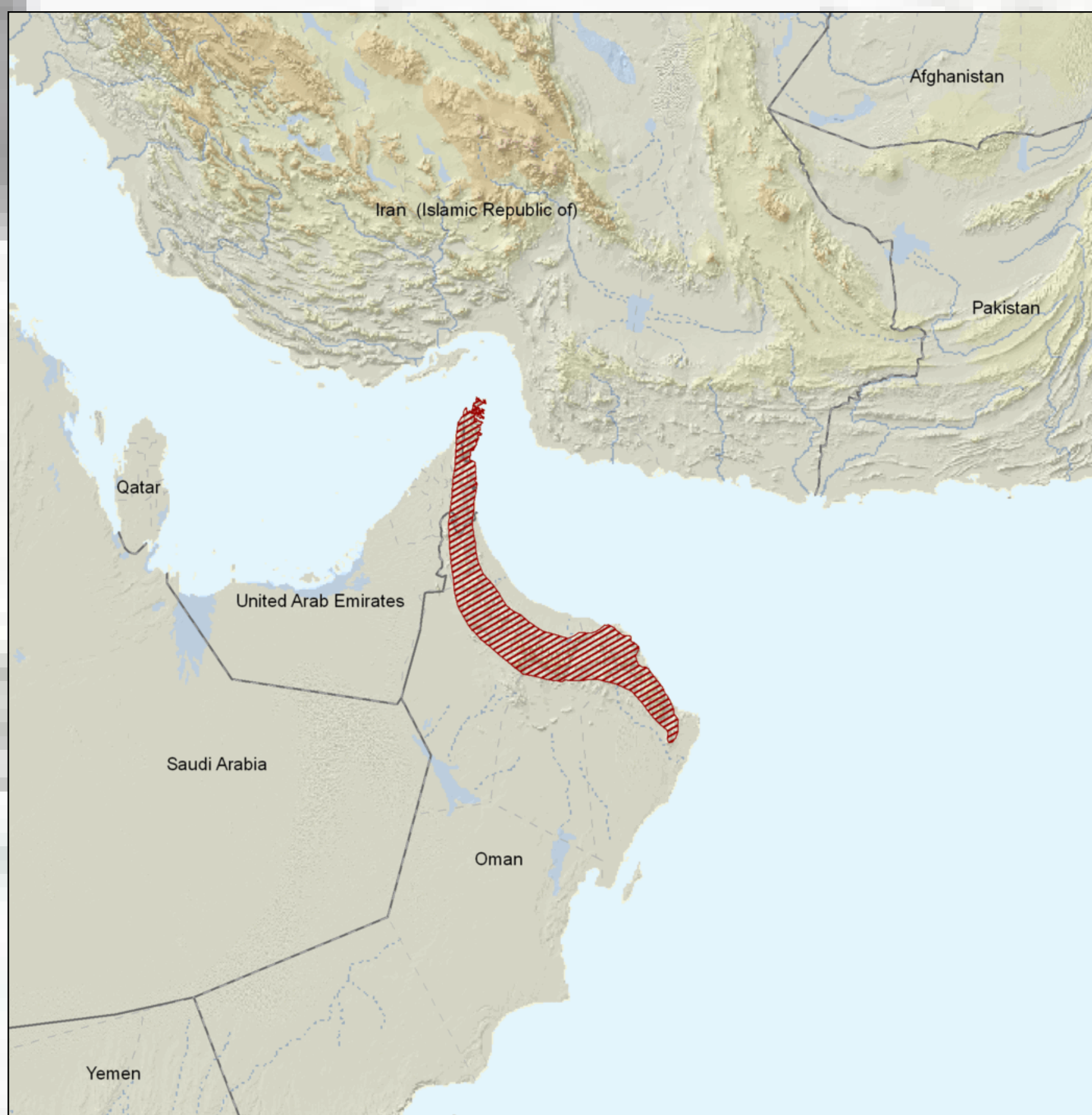


Figure 2. Geographic distribution of the Arabian Tahr (from Insall 2008, downloaded from www.iucnredlist.org)

Although protected in Oman and the UAE, the laws are not enforced and Arabian tahr populations still suffer from illegal hunting (Fig. 3) and capture for black market trade. In addition to direct killing, animals die from disease associated with captivity putting more pressure on the population. We describe three cases of wild-caught Arabian tahr kids which died in spite of intensive medical care following initial rescue.



Figure 3. Hunters caught on camera trap in Wadi Wurrayah, UAE.

Cases

In April and May 2006, three Arabian tahr kids were delivered to the Breeding Centre for Endangered Arabian Wildlife (BCEAW). They were very thin and appeared to be no more than several days old (Fig. 4), although they may have been older and stunted due to malnutrition. In either case, they had been separated from their mothers before weaning age.



Figure 4. Arabian tahr kids at the BCEAW, April/May 2006.

All animals had diarrhoea, signs of abdominal pain, some inflammation around their eyes, and mild nasal discharge. They were dewormed and treated with a daily regimen of topical and systemic antibiotics, gastrointestinal protectants, pain killers, and oral electrolyte solutions. The kids were fed goat's milk and gained weight daily.

However, 7 days after arrival, one kid collapsed and had multiple seizures, even with intensive IV, therapy and was euthanased. Progressively deteriorating, a second kid developed signs of sepsis and was euthanased nine days after arrival.

The third kid had been housed with a domestic goat for companionship. In spite of daily medical treatment, 5 weeks after arrival it collapsed with signs of pneumonia. It was treated aggressively with antibiotics, expectorants (airway dilators and mucous dissolvers), oxygen, fluids and nutritional support with close observation. Nine weeks after arrival the kid suffered from severe respiratory distress and was euthanased.

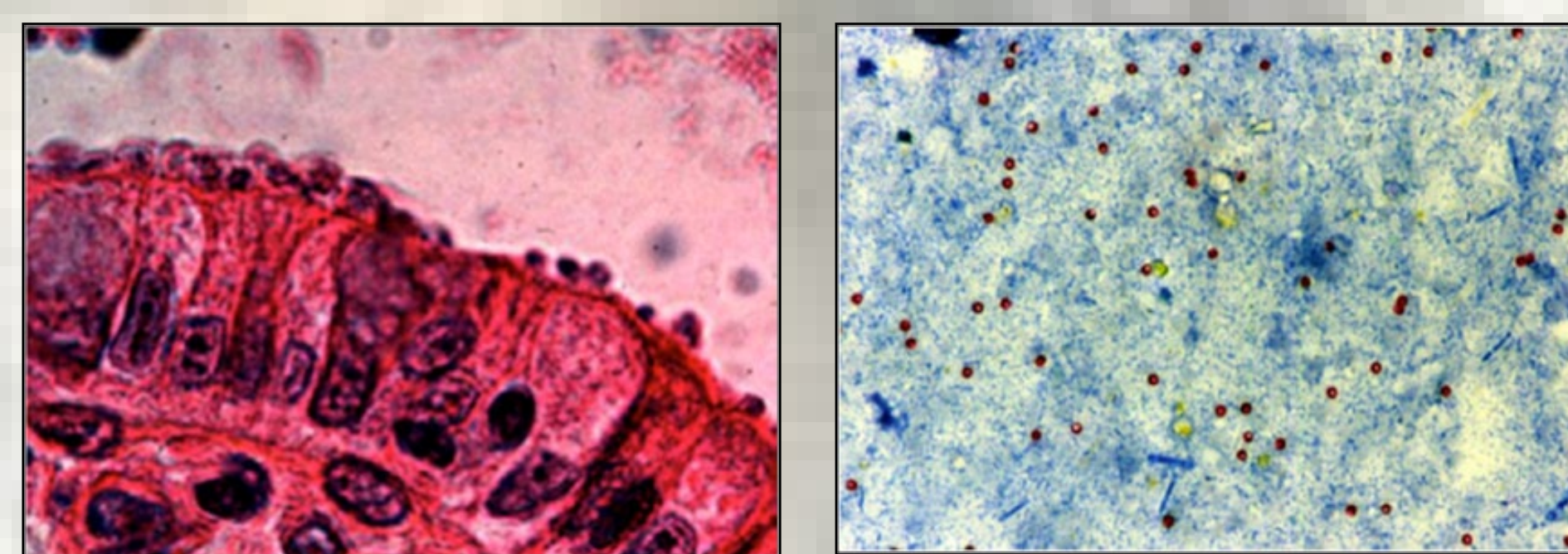


Figure 5. (top left) Cryptosporidium on the surface of intestinal cells. (left) Instestinal villi damaged by Cryptosporidium (top) Cryptosporidia in faeces stain red with a modified acid-fast stain

Post-mortem exam of the first two tahr revealed cryptosporidium infection of the intestines (Fig. 5) responsible for the chronic diarrhoea and a depletion of gut-associated lymphoid tissue. One of these tahr also had evidence of pneumonia. The third tahr had inflammation of lymphoid tissue and a severe, necrotizing pneumonia caused by *Pasteurella* bacteria (Fig. 6). The severity of disease in all three cases warranted the decision to humanely euthanase the animals.

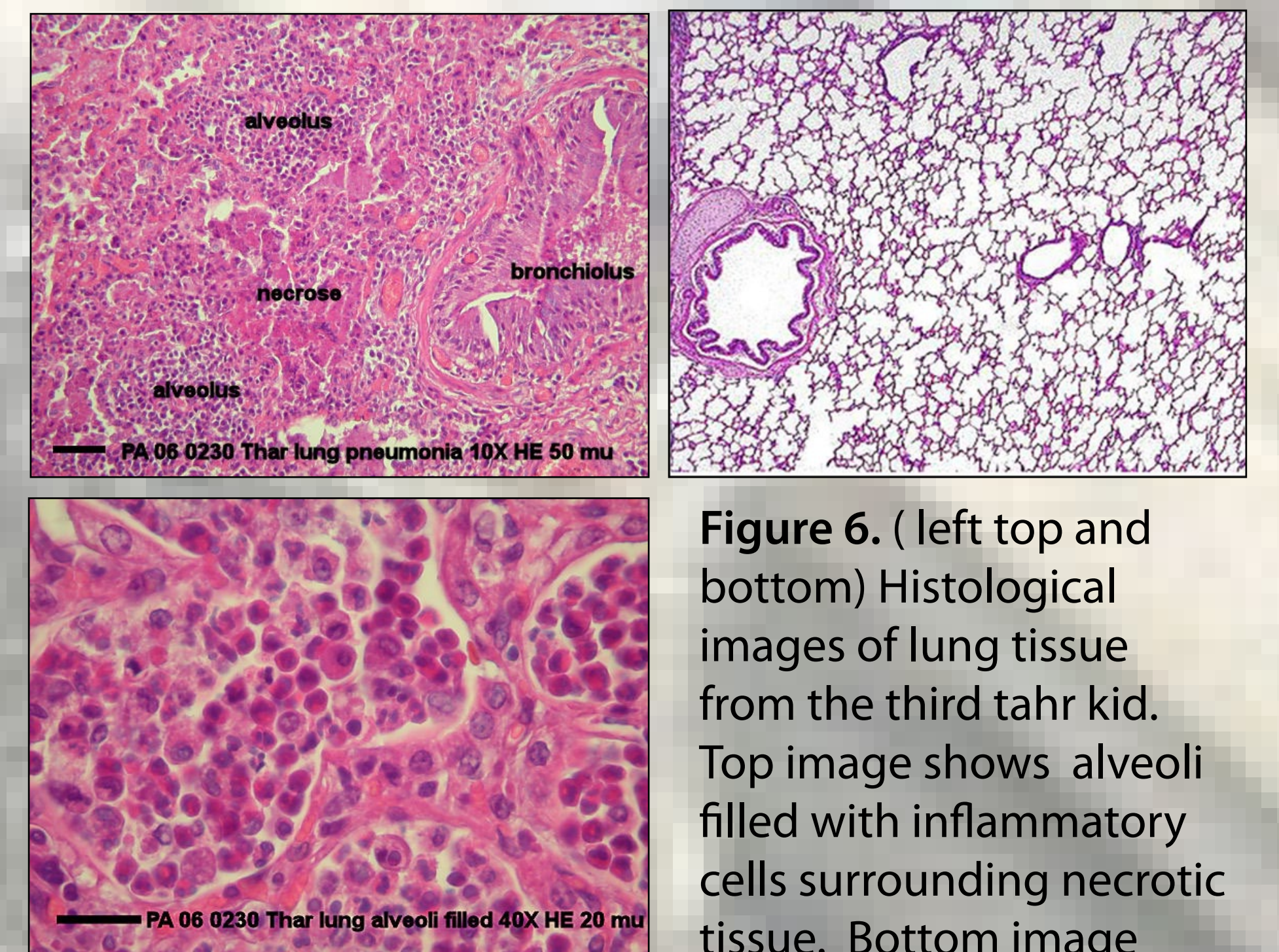


Figure 6. (left top and bottom) Histological images of lung tissue from the third tahr kid. Top image shows alveoli filled with inflammatory cells surrounding necrotic tissue. Bottom image shows inflammatory cells and necrotic debris fil (images courtesy of Prof. dr dr hc Gerry M. Dorrestein). (right) Histologic al image of normal lung tissue. Alveoli and bronchioles are filled with air.

Discussion

Two Arabian tahr kids were euthanased due to overwhelming infectious disease. *Cryptosporidium* is a common pathogen of young animals that usually does not cause severe disease, however in these cases the tahr succumbed to the infection as they were immune compromised. Separation from their mothers, premature weaning, and captivity-induced stress lead to improper nutrition and resulted in them being more susceptible to pathogens that would not normally result in the death of the animal.

The third tahr died of a *Pasteurella* pneumonia. *Pasteurella* is a bacterium commonly carried by goats without causing disease. It is possible that the tahr contracted this bacterium from its goat cage-mate and then developed disease due to a compromised immune system. This highlights the risk domestic goats pose to wild tahr as asymptomatic carriers of infectious disease.

Even though these tahr showed only mild signs of illness when they arrived at the BCEAW, they could not be recovered. Captivity had depleted their immune systems and brought them into contact with pathogens. Conservation efforts of Arabian tahr must consider the threat of infectious disease if wild and captive populations are to be protected.

Acknowledgements

Special thanks to veterinary pathologist Prof. dr dr hc Gerry M. Dorrestein (Nederlands Onderzoek Instituut Voor Vogels en Bijzondere Dieren) and keeper Sanjeewa Fernando (BCEAW) for their help and input on this case.

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