SYSTEMIC MICROSPORIDIOSIS IN INLAND BEARDED DRAGONS
(Pogona vitticeps)

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Abstract: The phylum Microspora consists of obligate intracellular unicellular protozoans that are termed collectively the microsporidia. Microsporidia have an unusual life cycle. Infection begins with injection of sporoplasm into the host cell followed by a proliferating merogonic phase. Several microsporidia are known to infect amphibians and reptiles. Bearded dragons (Pogona spp.) have become popular in the reptile pet trade. Bearded dragons are native to Australia and of the five species, the inland bearded dragon (P. vitticeps) is the most commonly sold bearded dragon in the United States. One laboratory hatched and reared inland bearded dragon (No. 1) and two privately owned inland bearded dragons (No. 2 and 3) died, showing nonspecific signs of illness. Light microscopic examination of hematoxylin and eosin stained tissue sections obtained from lizard No. 1 revealed severe hepatic necrosis with clusters of light basophilic intracytoplasmic microorganisms packing and distending hepatocytes and free in areas of necrosis. Similar microorganisms were within: 1) cytoplasmic vacuoles in distended renal epithelial cells; 2) alveolar epithelial cells; 3) gastric mucosal epithelial cells; 4) enterocytes; and 5) capillary endothelial cells and ventricular ependymal cells in the brain. In lizards No. 2 and 3, similar appearing microorganisms were in macrophages in granulomatous inflammation in the colon, adrenal glands, and ovaries. The microorganism was Gram positive, acid fast, and had a small polar granule that stained using the periodic acid-Schiff reaction. Electron microscopic examination of deparaffinized liver of lizard No. 1 revealed merogonic and sporogonic stages of a protozoan compatible with members of the phylum Microspora. This represents the first description of microsporidiosis in bearded dragons and only the second report for a lizard.