

A photograph of a light-colored bearded dragon being held by a person wearing blue nitrile gloves. The dragon is positioned horizontally, facing right. The background is dark. A white rectangular box with a thin border is centered over the dragon's body, containing the title text.

# CLINICAL MEDICINE OF **BEARDED DRAGONS**

**Grayson Doss, DVM, Dipl.ACZM**



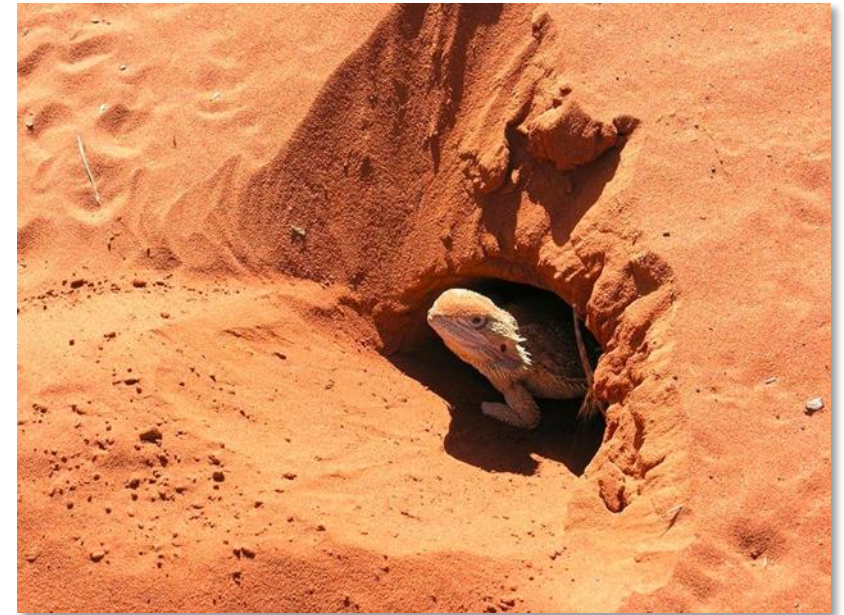
RACE Program #1331636

# Xeric woodlands



# Biology

- Seek out **microclimates**
- Burrows, underneath vegetation
- Higher **humidity**, cooler



reddit.com

# Biology

- Adult dragons imported from breeders in Germany in 1980s
- Average life span: 7-12 yrs

# Biology

- Genus **Pogona**
- 6 species

**Pogona vitticeps** - Central or inland bearded dragon most common pet species

# Biology

- Numerous 'morphs'
- Abnormal scales
  - 'Leatherback'
  - 'Silkie'



# Behavior

- Adults very calm
- Rarely bite, jump
- Extreme tolerance of handling
- Excellent beginner pet species



*beardeddragon.org*



*istockphoto.com*

# Behavior

- Forelimb ‘waving’
- Head bobbing
- Gular fold (“beard”) expansion
- Body flattening
- Body turning towards ‘attacker’



facebook.com



aminoapps.com

# Behavior

- Oral gaping
  - Basking
  - Defensive
- Tongue-touching surfaces
- Digging



[pinterest.com](https://www.pinterest.com)

# Behavior

- Cannibalistic
- Do not house males together



Just  
don't.

# Husbandry

- Substrate
  - Newspaper
  - Reptile carpet
- Avoid sand
- $\geq 2$  hiding areas



idse.net



# Husbandry

- **Always have water available**
- **Spray** nose, cage furniture daily



# Husbandry

- Soak 2 - 4x/week
- Promotes drinking, defecation
- Supervised
- Lukewarm, shallow water



# Husbandry

**Preferred optimum  
temperature zone (POTZ)**

**80 - 104°F**

**Cool side**

**Basking spot**

# Husbandry

- Need appropriate **UVB radiation**



# Nutrition

- Omnivores
  - Invertebrates
  - Small vertebrates
  - Green plants, flowers, fruits
- Juvenile: insectivores
- Adult: herbivores



wikidat a .org

# Supplementation

- Calcium supplement **without** Vit D<sub>3</sub>, phos
  - 3x/week
- **Multivitamin**
  - q 3 weeks
  - Active Vit A?



# Nutrition



- Limit fat, sugar intake

- Mealworms

- Fruits



- Insect prey quantity, frequency

- **Gut-loaded**



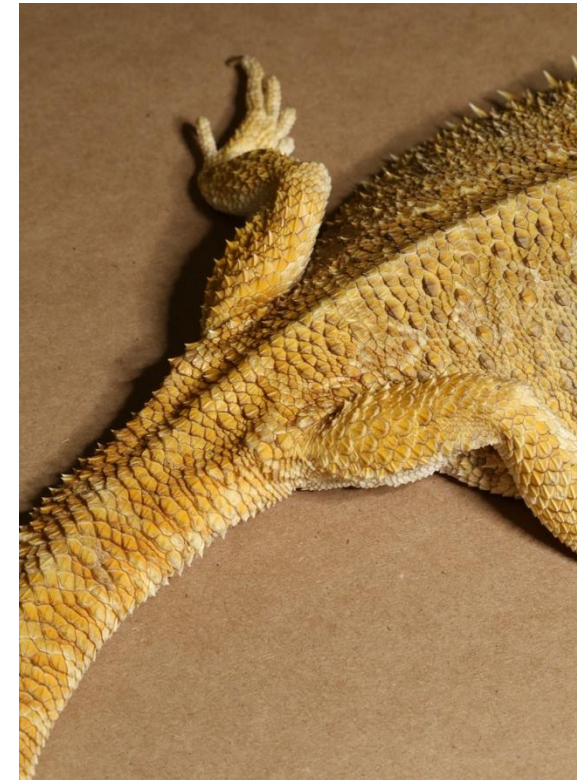
# Exam

- Observation

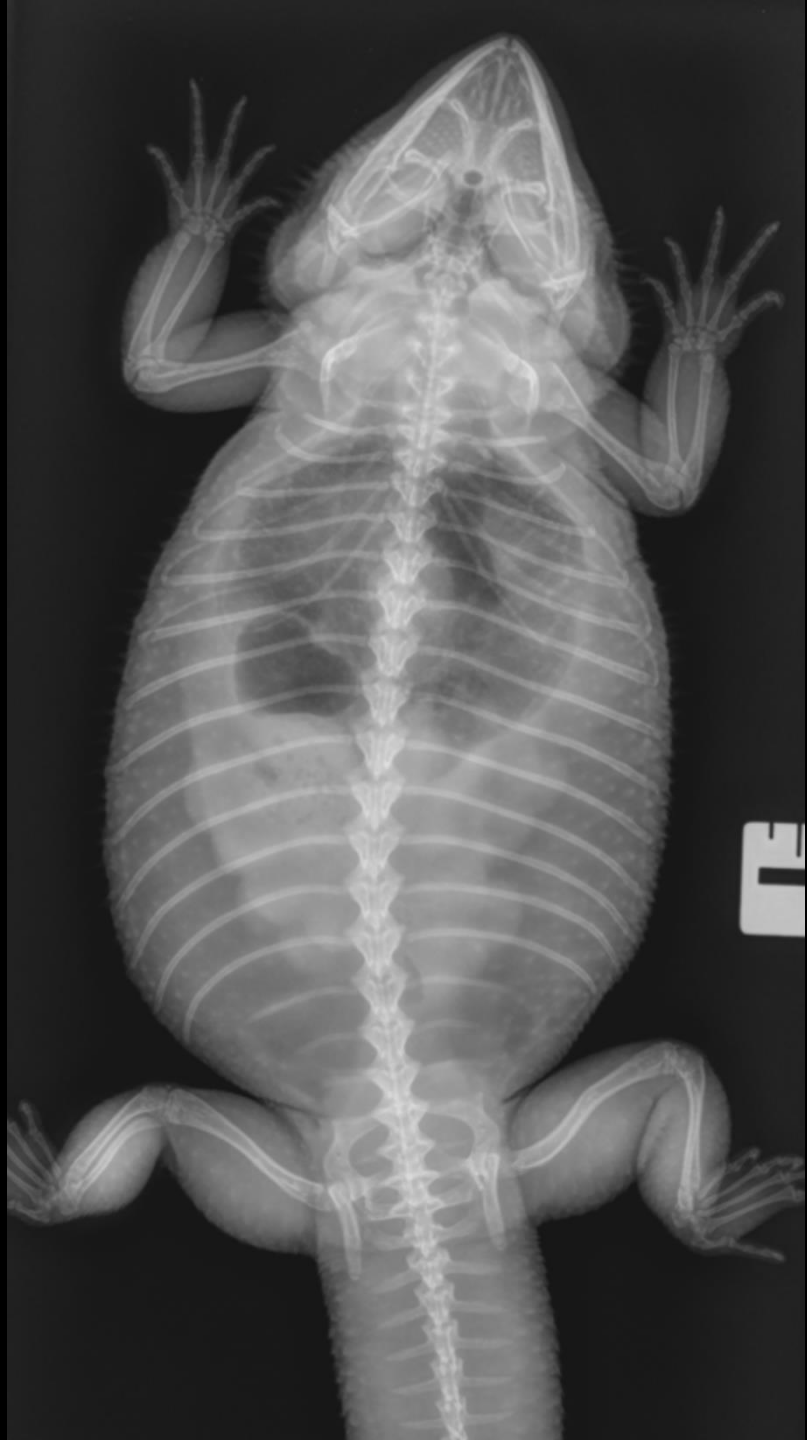


# Exam - body condition

- Epaxial, pelvic, skull musculature



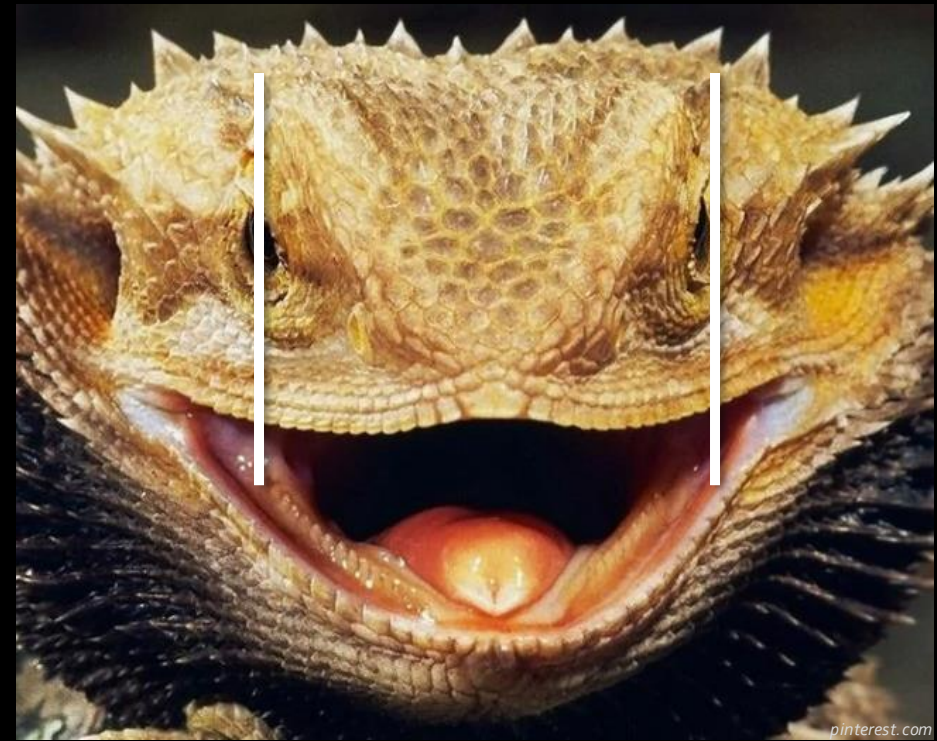




# Exam - hydration

- **Salivary viscosity**
- Eye position
- Skin turgor





# Exam

- Heart rate
- Respiratory rate, effort
- Facial symmetry
- Musculoskeletal
- Integument



# Exam

- Soft speculum
- Ophthalmic
- Otic
- Vent

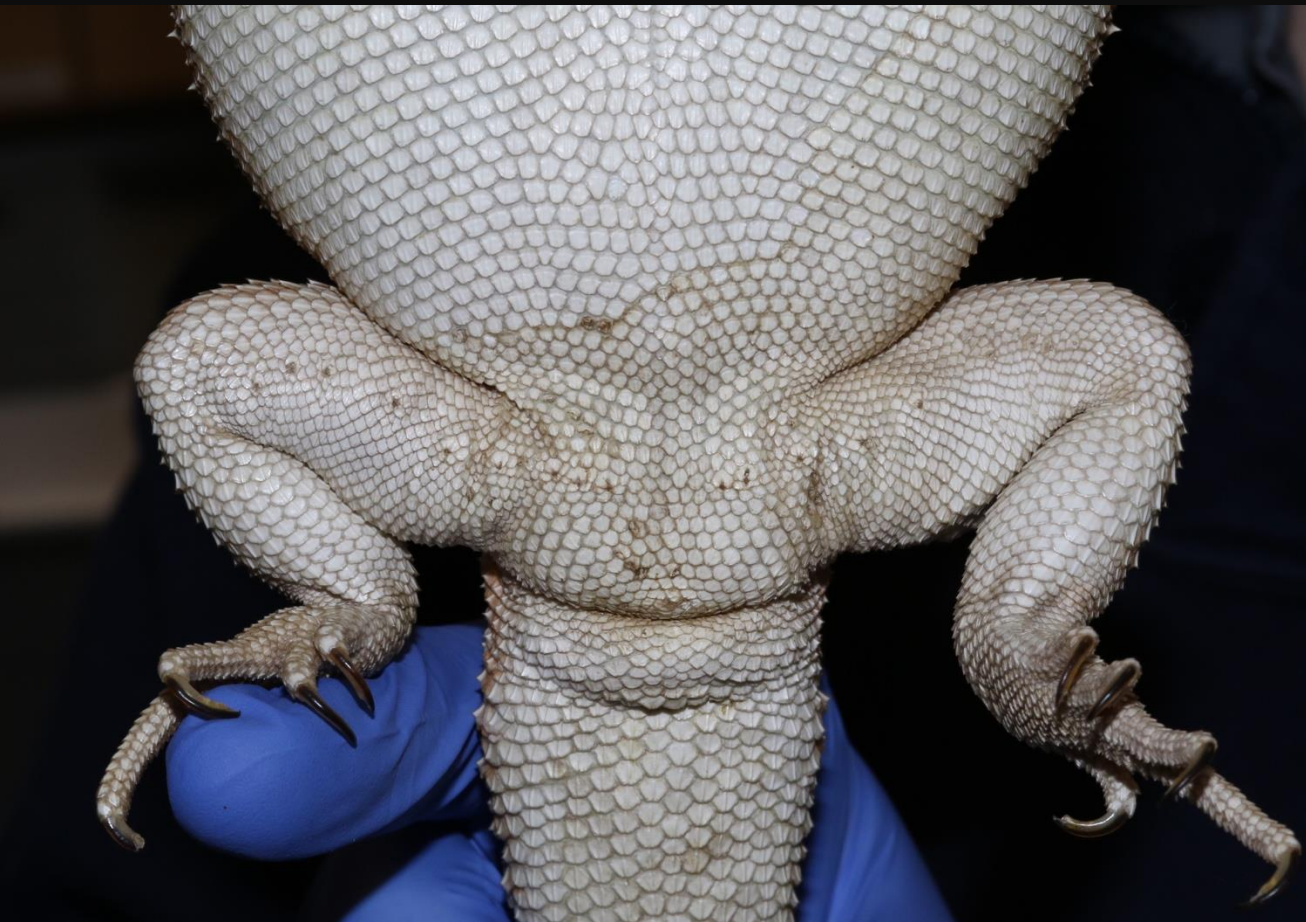




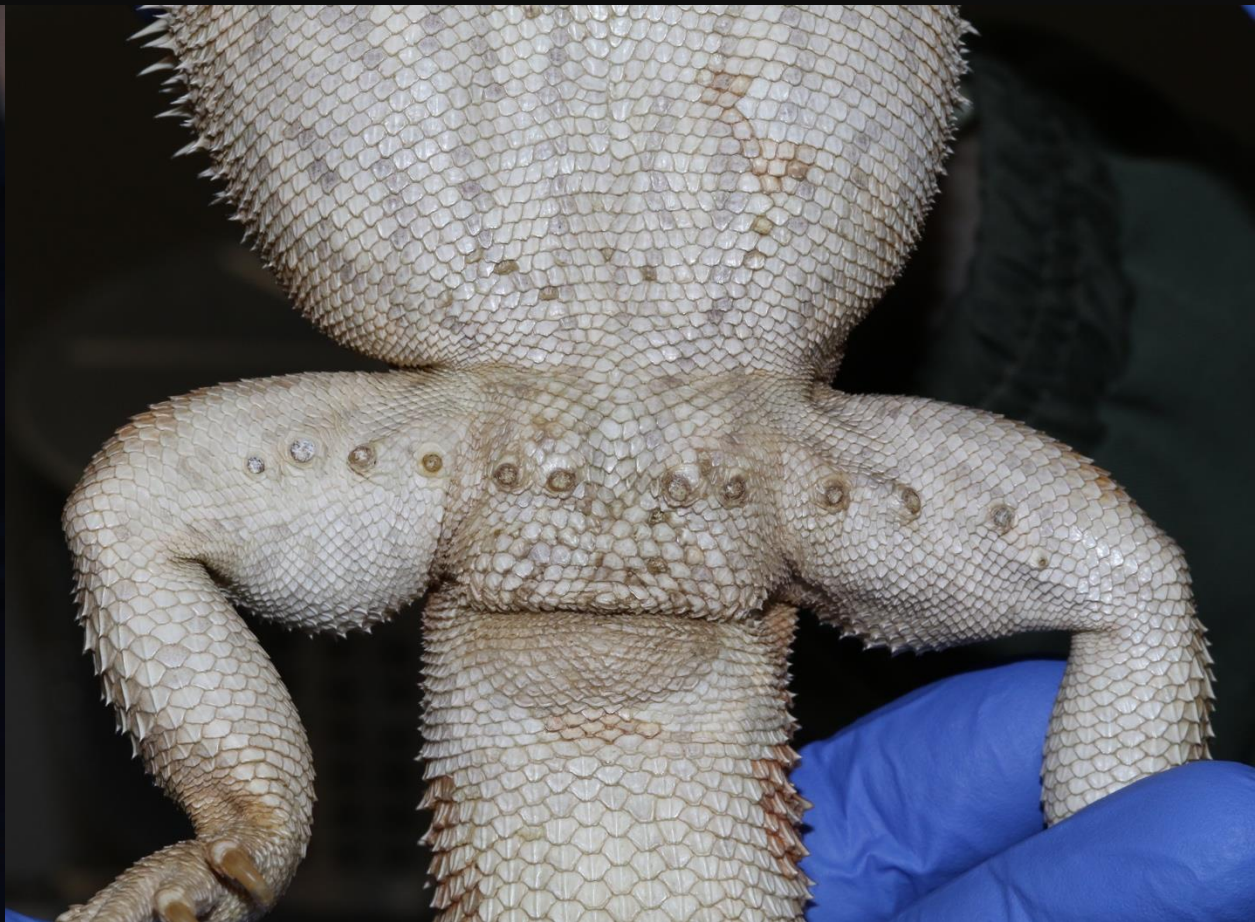
# Exam

- **Coelomic palpation**
  - Adipose bodies/'fat pads'
  - Caudal GI tract



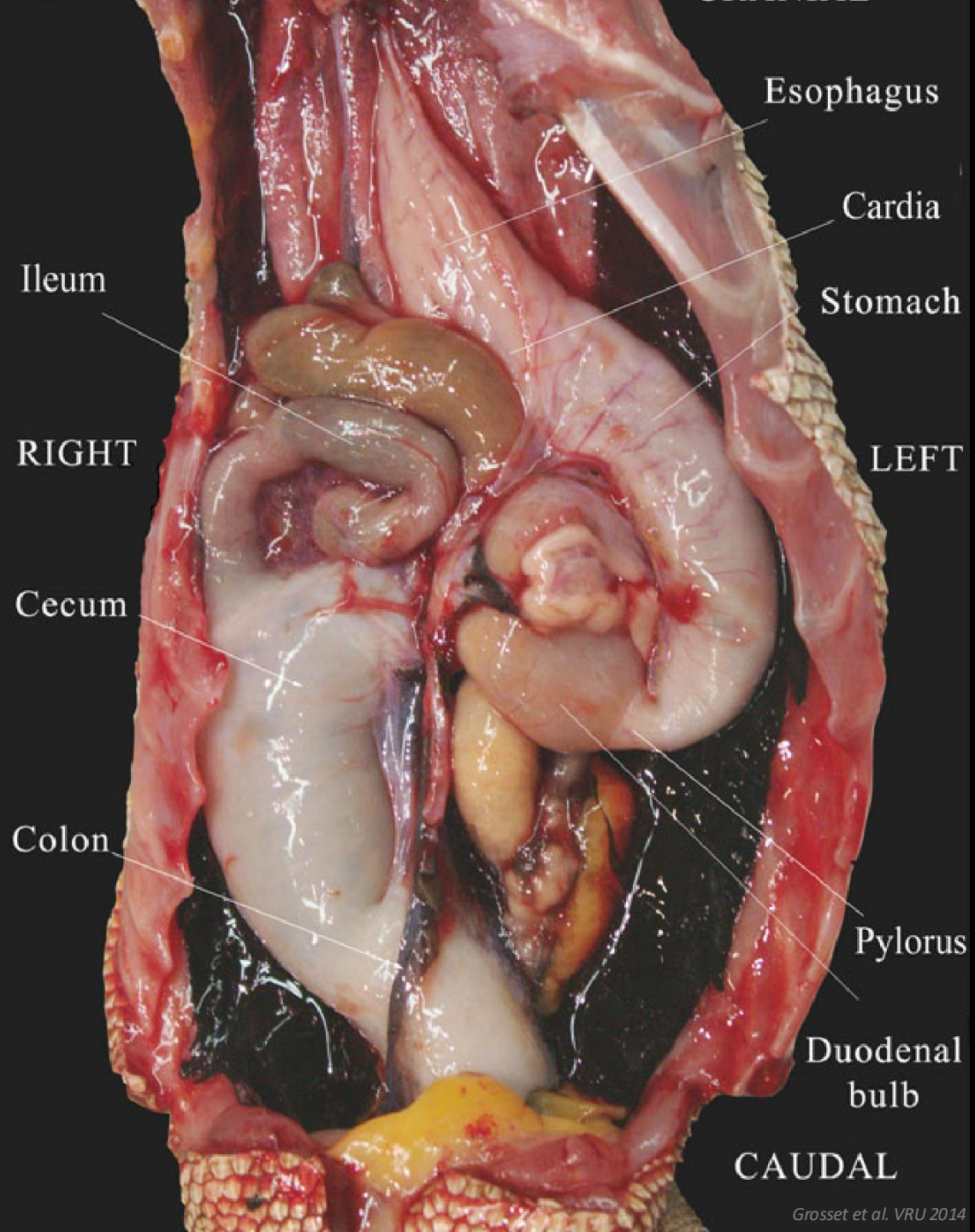


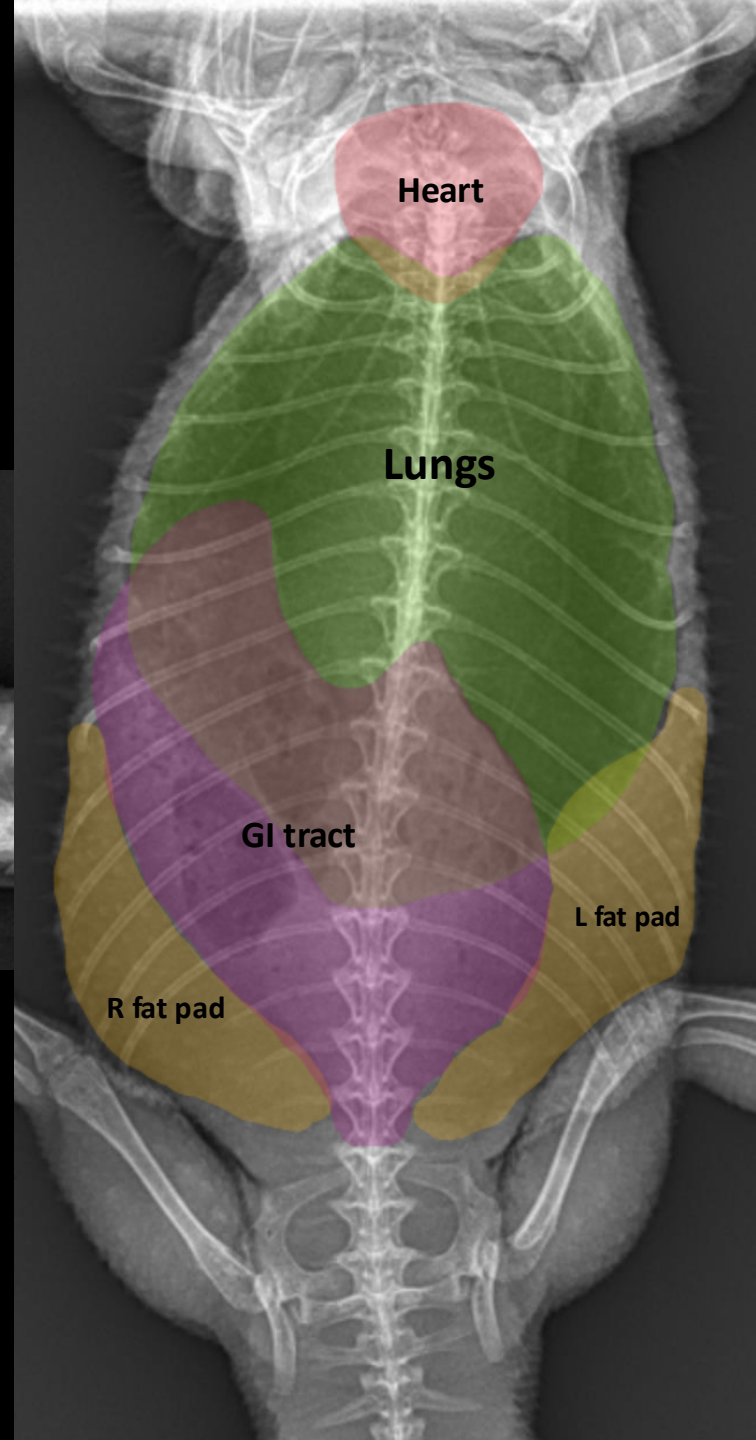
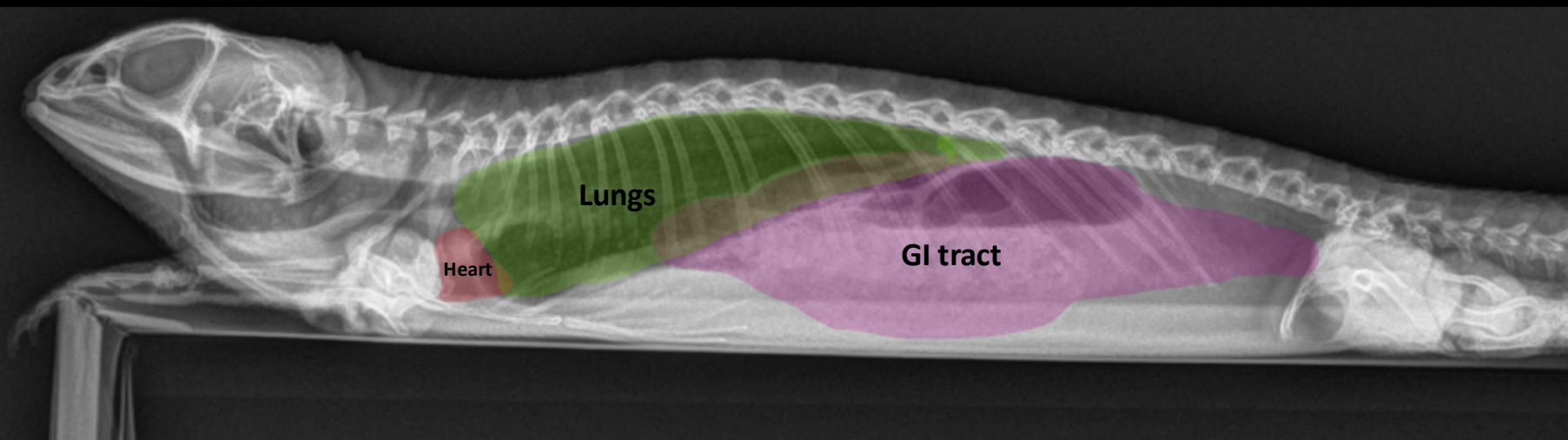
**Female**



**Male**

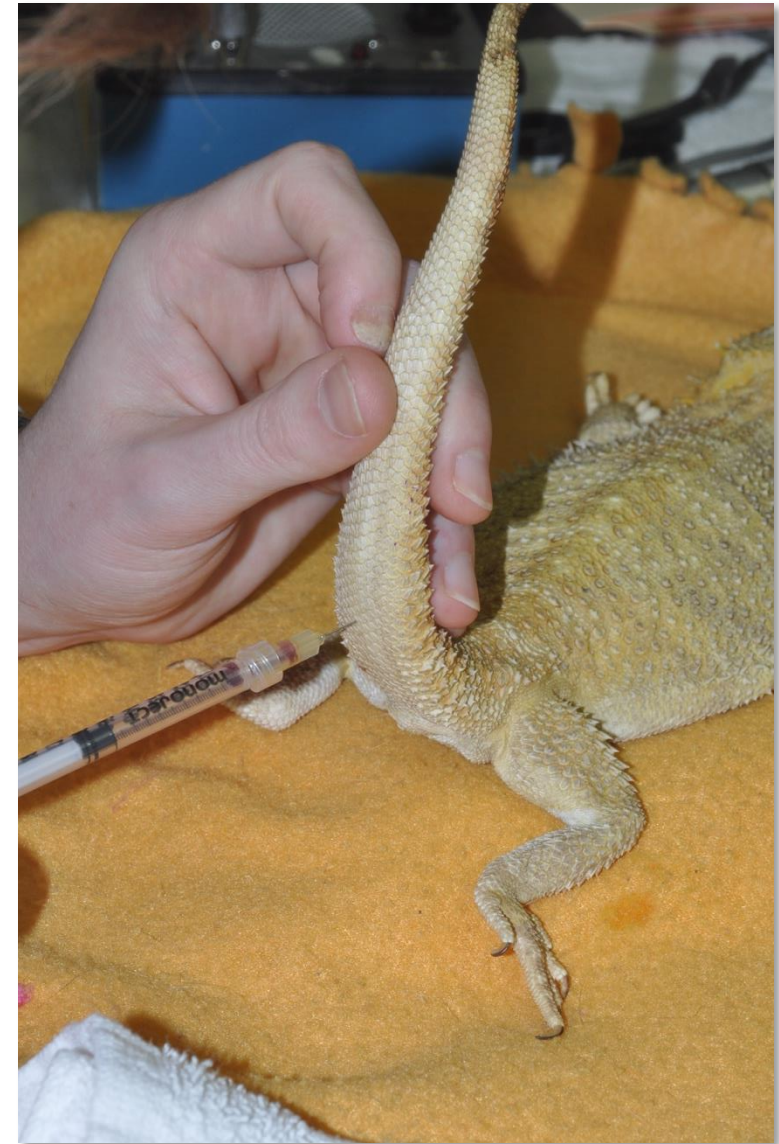






# Venipuncture

- **Caudal vein easiest**
  - Ventral, lateral
- **Jugular**
  - Lymph contamination common





# Sedation

- Dexmedetomidine + midazolam +/- ketamine combinations
- Alfaxalone



# Analgesia

- IM, SC hydromorphone, morphine
- Fentanyl patch
- Neuraxial bupivacaine, lidocaine, morphine



# Fluid therapy

- **SC** route used most frequently
  - Along sides, dorsal to side 'spines'
  - Cervical area has most elasticity
- **IV** route: caudal vein
- **IO** route
  - Tibia, femur



# Constipation

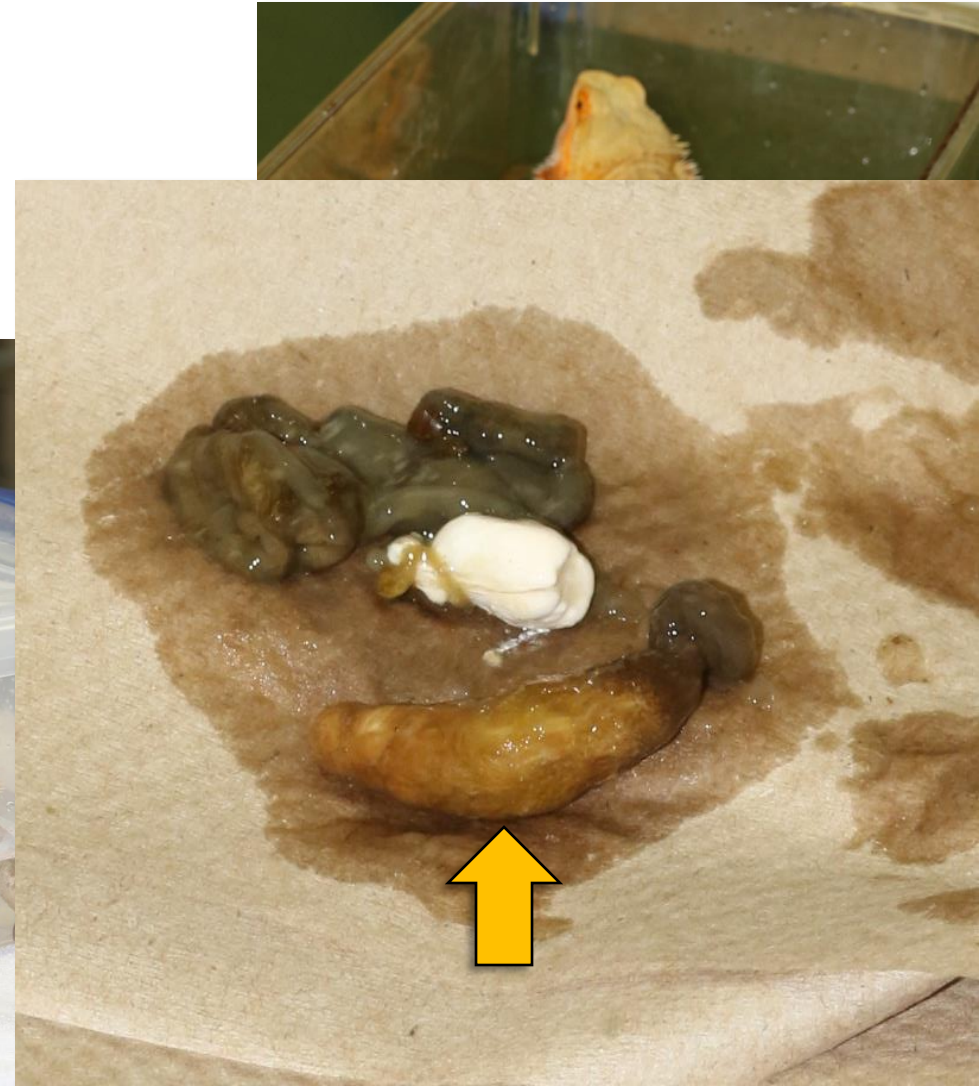
- Clinical signs: **anorexia, lethargy**
- **Dehydration** most common cause
  - **Urate “plug”**
- Firm colon in caudal coelom





# Constipation - treatment

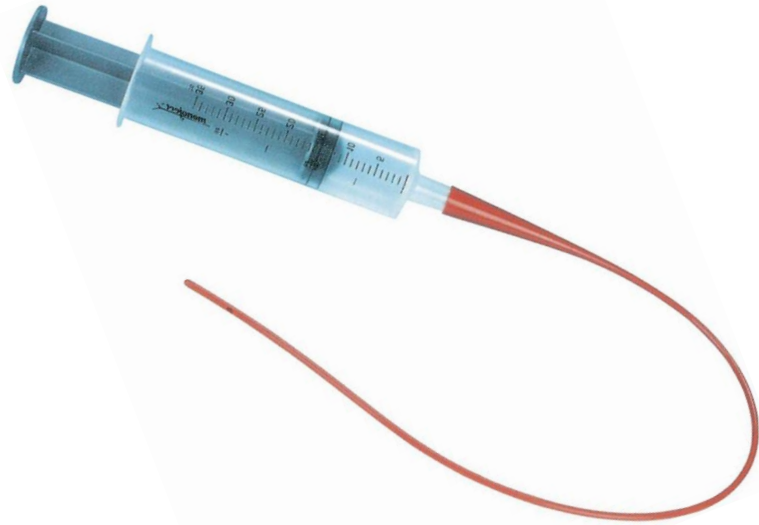
- Warm water soaks





# Constipation - treatment

- Warm water enema (10 - 20 mL/kg)
- Parenteral fluid therapy



# Periodontal disease

- Acrodont dentition **predisposes**
- Older animals

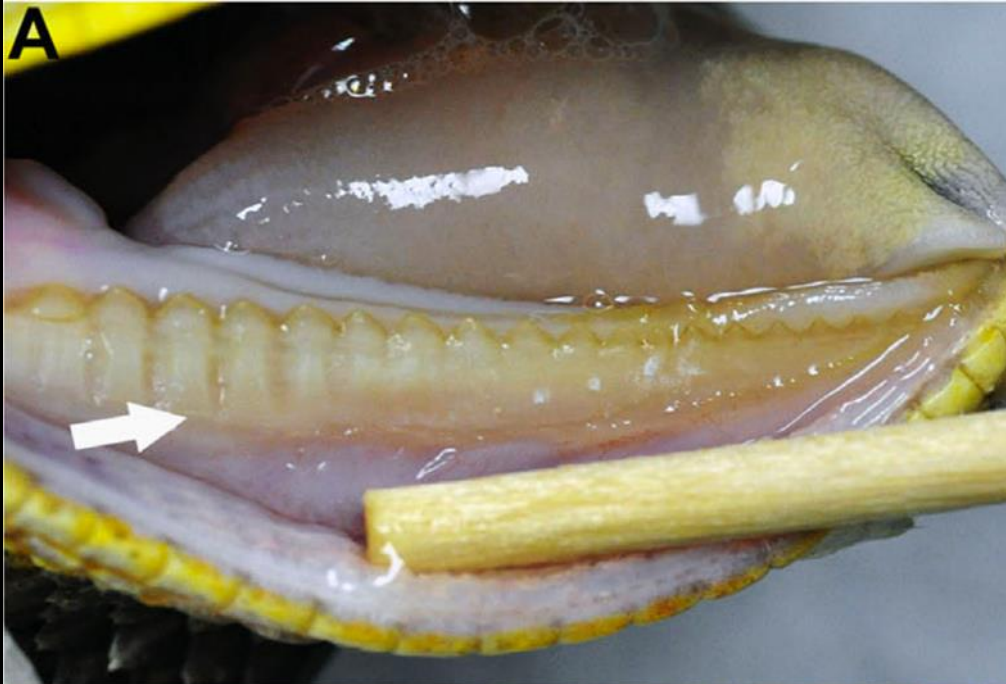


# Periodontal disease

- **Inappropriate diet**
- Processed items, mealworms, fruits
- **Lack of abrasive** food material

# Periodontal disease

- Plaque formation, gingival recession
- **Bacterial & fungal osteomyelitis, sepsis**  
sequelae

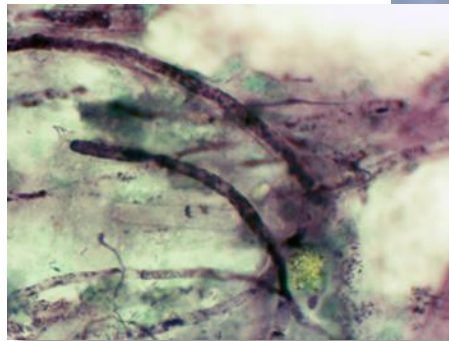






# Periodontal disease - treatment

- Cytology
- **Biopsy**
- Culture/sensitivity
  - **Bacterial + fungal**



*Images courtesy of Christoph Mans*

# Periodontal disease - treatment

- Anesthesia and debridement



# Periodontal disease - treatment

- Topical & **systemic** medications



# Nannizziopsis guarroi

- Formerly part of *Chrysosporium* anamorph of *Nannizziopsis vriesii* (CANV) complex
- “Yellow fungus disease”
- Many lizard species affected



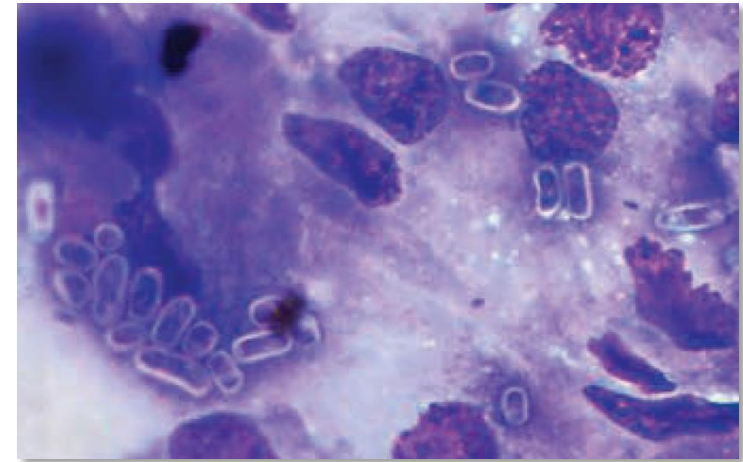
# Nannizziopsis guarroi

- Starts as superficial dermatitis, spreads systemically
- Prognosis guarded to grave
  - Treatment difficulties, recurrence



# Nannizziopsis guarroi

- **Be aggressive with diagnosis and treatment**
- Biopsy, fungal culture, PCR



*Pare et al.; JHMS, 26(1-2), 2016*

# Nannizziopsis guarroi

- Rapid progression

MYCOLOGIA  
<https://doi.org/10.1080/00275514.2021.1954445>

 Taylor & Francis  
Taylor & Francis Group

 Check for updates

**Koch's postulates: Confirming *Nannizziopsis guarroi* as the cause of yellow fungal disease in *Pogona vitticeps***

Savannah L. Gentry<sup>a,b</sup>, Jeffrey M. Lorch<sup>c</sup>, Julia S. Lankton<sup>c</sup>, and Anne Pringle<sup>a,b</sup> 

<sup>a</sup>Department of Botany, University of Wisconsin–Madison, Madison, Wisconsin, 53706; <sup>b</sup>Department of Bacteriology, University of Wisconsin–Madison, Madison, Wisconsin, 53706; <sup>c</sup>National Wildlife Health Center, U.S. Geological Survey, Madison, Wisconsin, 53711



# Nannizziopsis guarroi - treatment

- Prevent spread: highly contagious
- Baths
- Topical antifungal tx?



# Nannizziopsis guarroi - treatment

- Require systemic antifungal drugs
- Terbinafine PO
- Voriconazole PO
- Monitoring biochemistry
- Analgesia, supportive care
- **Decontaminate** environment!
  - 10% bleach for 2+ minutes



# Follicular stasis - etiology

- “Pre-ovulatory stasis”
- Abnormal cessation of follicular development
- Solitary female lizards without sensory contact with other conspecifics

# Follicular stasis - clinical signs

- Anorexia
- Decreased defecation
- Coelomic distension



# Follicular stasis - clinical signs

- Abnormal respiratory pattern, body posture
- **Pale** mucous membranes





# Follicular stasis - treatment

- Provide suitable egg-laying environment
- **Ovariectomy often necessary**

# Surgery

- **Ovariectomy/ovariosalpingectomy**
  - **Paramedian approach**
- Hemoclips
- Self-retaining (Lone Star) retractors
- **Pigmented** coelomic membrane, mesovarium

