There is a relatively high percentage of osteoarthritis among zoo mammals (71), reptiles (23), and amphibians (23). Numerous specimens exhibit intriguing pathological lesions, but these data were not previously catalogued systematically. The goal of this project was to create, through visual observation and photographic documentation, a reference catalogue of the pathological specimens in the collection to facilitate teaching and research related to skeletal pathology. This poster summarizes the results and highlights some of the interesting pathological specimens encountered during the project.

Pathology Among Specimens in the Collection

We examined 1118 specimens of mammals (469), birds (555), reptiles (71), and amphibians (23).

### Table 1.

<table>
<thead>
<tr>
<th></th>
<th>Mammals</th>
<th>Birds</th>
<th>Reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma</td>
<td>9</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Other Lesions</td>
<td>25</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>16</td>
<td>6</td>
</tr>
</tbody>
</table>

**Osteoarthritis Among Mammals**

Zoo specimens are kept alive to old age in artificial and restricted environments.

**Table 2.** There is a relatively high percentage of osteoarthritis among zoo specimens in comparison to their wild counterparts.

<table>
<thead>
<tr>
<th></th>
<th>Total in Collection</th>
<th>Speculated with Osteoarthritis</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoo Specimens</td>
<td>35</td>
<td>5</td>
<td>14.29%</td>
</tr>
<tr>
<td>Non-Zoo Specimens</td>
<td>434</td>
<td>2</td>
<td>0.46%</td>
</tr>
<tr>
<td>Total</td>
<td>469</td>
<td>7</td>
<td>1.49%</td>
</tr>
</tbody>
</table>

**Interesting Specimens**

- **Figure 1.** Abnormal bone remodeling in the left tibia and fibula diaphyses of a raccoon (*Procyon lotor*). Speculation: Malunion fracture (Katt et al., 2020).
- **Figure 2.** Abnormal bone growth on the sides of the left and right metacarpus of an American bison (*Bison bison*). Speculation: Osteoarthritis (Orthoinfo, 2021).
- **Figure 3.** Abnormal bone growth on the proximal end of the left tarsometatarsus of a broad-winged hawk (*Buteo platypterus*). Speculation: Osteoarthritis (Orthoinfo, 2021).
- **Figure 4.** Abnormal bone extending outwards from the interstitial space between the left ulna and radius of a red-tailed hawk (*Buteo jamaicensis*).
- **Figure 5.** Abnormal bulbus growth on sternal end of right 13th rib of a domestic cow (*Bos taurus*). Speculation: Osteomyelitis on sternal end of right 13th rib of a domestic cow (*Bos taurus*). Speculation: Osteomyelitis (Johns Hopkins Medicine, 2021).
- **Figure 6.** Small metal ball embedded in the proximal end of the right ulna of a wild turkey (*Meleagris gallopavo*). Speculation: Bone remodeling over a lead shotgun pellet (Green et al., 2022).
- **Figure 7.** Circular hole through the anterior view of the cranium of a bobcat (*Lynx rufus*). Speculation: Firearm injury (Bird & Fleischman, 2015).
- **Figure 8.** Abnormal bone growth on the thoracic vertebrae of an American black bear (*Ursus americanus*). Speculation: Ankylosing spondylitis (Mayo Clinic, 2022a).

**Discussion**

- This project represents a first attempt to comprehensively summarize the abundance and diversity of pathological lesions on specimens within the UTM comparative faunal collection.
- The catalogue generated through this project is a work in progress and additional research is needed to better interpret the etiology of the pathological lesions documented.
- In its current form, the catalogue will facilitate the use of the comparative collection for teaching paleopathology.
- The availability of this catalogue will aid future researchers in identifying specimens that may be relevant to a wide range of research topics on animal pathology.

**References**


