

# Zoos and One Health from 1800 to 1950

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## Background

→ The human fascination with collecting and displaying wildlife is not a recent idea. Records of menageries (private animal collections) extend back hundreds if not thousands of years. However, the London Zoo, which opened in 1828 and was developed by the Zoological Society of London (ZSL), was among the first modern zoos. HRH King Charles IV granted the ZSL a royal charter and the zoo welcomed the world's first insect house, reptile house, and aquarium over the next 60 years. In the following decades, Dr. Rudolf Virchow coined the term "zoonosis," and Dr. Robert Koch identified *Bacillus anthracis* as the causative organism of Anthrax. With others, these scientists contributed to the rapid growth in scientific interest that was essential to the concurrent development of the One Health approach.

→ In 1830, the Royal (Dick) Veterinary School in Edinburgh created a post-graduate course in 'tropical veterinary medicine' in response to a need for veterinarians in European colonies. The Royal Zoological Society of Scotland (RZSS), established in 1909, predated the Edinburgh Zoo by four years—nine years before the influenza pandemic of 1918. Through these events and others, 19th- and early 20th-century zoos in Great Britain professionalized the veterinary field, expanding upon One Health initiatives, and impacting human-wildlife interactions.

→ Authors compiled, organized, and researched the ways which zoos in 19th-century Great Britain impacted the veterinary profession, public health institutions, and growing interests in One Health initiatives. Findings included events surrounding the Royal Zoological Societies of London and Scotland, London Zoo, Edinburgh Zoo, as well as historical figures such as Thomas Stamford Raffles, Thomas Gillespie, William Dick, and many more.

## Methodology

→ Digital primary and secondary sources were located and examined through various university and public health databases, and other notable scientific journal archives. Physical sources were located and examined at the Kansas State University College of Veterinary Medicine's Veterinary Medical Library.

→ Researchers collected historical data over two months, working with Kastner over zoom to discuss progress and findings.

→ In addition to presenting research at the the 2023 Kansas Public Health Association Conference, the researchers be giving a lecture to Dr. Kastner's honors class, 'Human and Veterinary Health in the Age of Sherlock Holmes' later in the Fall 2023 semester.

## Key Findings

### 1. Zoos aided in legitimizing the veterinary profession and expanding on One Health initiatives.

- Increasing public health threats such as Bovine Tuberculosis, Cholera, and other zoonotic disease outbreaks gave medical doctors cause for concern, and allowed the concept of professional veterinary medicine to gain traction.
- Growing public interest in comparative anatomy increased the value of studying live specimens (focusing on nutrition, gestation periods, mental enrichment, etc.) which required human specialties to study animal health.

### 2. Colonialism motivated many aspects of 19th century zoos and the transport of non-native species.

- The 19th century saw the people, goods, livestock, plants, and exotic animals, moving farther and faster around the globe than ever before. Much of this movement was induced by European efforts to colonize other nations. Much of this movement also allowed for zoonotic disease travel to occur faster and farther than ever before.
- The private ownership of exotic animals by royalty and societal elites symbolized a theme of man's dominion over wild beasts—a living metaphor for colonial power.

### 3. The acts of keeping and examining wild species in zoos allowed for a broadened understanding of comparative anatomy, animal welfare, and zoonotic disease.

- Early medical doctors involved with the zoological societies of Great Britain had a high interest in comparative anatomy. While this benefitted zoology and medicine as a whole, but disregarded adequate animal welfare practices.
- Animals in poor health in zoos highlighted large gaps in human knowledge of wildlife, from poor enclosure ventilation and design, to inadequate dietary plans, to little to no consideration of mental enrichment.

*The authors concluded that zoos in 19th-century Great Britain contributed significantly to the history of One Health, and remain relevant in public health conversations.*



Fig 1. - Stamford Raffles (left), founder of the Zoological Society of London in 1826. The ZSL initially focused on comparative anatomy of exotic wildlife. William Dick (right) founder of the Royal (Dick) Veterinary School in Edinburgh in 1823. Dick trained hundreds of veterinary students in epidemiology and anatomy

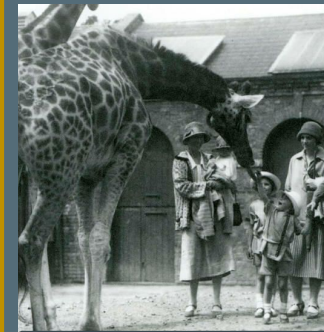


Fig 2. - Visitors meeting giraffes at the London Zoo in the early 1900s. Many railings and modern safety measures were not implemented until decades later. Current zoo regulations no longer allow their giraffes to kiss guests in greeting.



Fig 3. - Sir Arthur Conan Doyle with his children and their nanny at the London Zoo in July, 1914. It is possible that Doyle drew inspiration for his book, 'Adventures of the Creeping Man' from primates at the London Zoo

## Selected References

- Woods, Abigail., et al. *Animals and the Shaping of Modern Medicine: One Health and Its Histories*. First edition 2018., Springer Nature, 2018.
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