

## A CANONICAL ANIMAL TOUR

### *Animals in the Sherlock Holmes Stories*

#### *that can be seen at the American Museum of Natural History*

By Judith Freeman

This is a virtual tour, adapted from an actual tour that the author gave at the American Museum of Natural History. For the full titles of the Sherlock Holmes adventures, please see the appendix at the end of the article. The 4-letter abbreviations used (i.e., BLUE) were developed by Jay Finley Christ and are frequently used as a form of Sherlockian shorthand instead of writing out the full name of each story.

There are many, many animals mentioned in the Sherlock Holmes stories, animals of all kinds – insects, fish, reptiles, birds and mammals. Sometimes they are mentioned as allegories (a description of one thing is a symbol for another), sometimes as similes (in which one thing is likened to another) and sometimes they play an actual role in an adventure. With this tour we are going to look at some of them.

#### Hall of Ornithischian Dinosaurs (4<sup>th</sup> Floor)

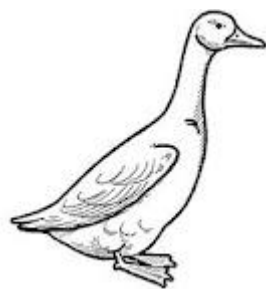
***Psittacosaurus mongoliensis*** (parrot-like reptile) approximately 107 million years old, extinct, found in Mongolia

Adventure: BLUE

The theory that birds are decedents of dinosaurs is supported by many similarities in their skeletal structures. There is also the evidence of gastroliths.



Gastroliths –Stomach or gizzard stones were/are used by the



herbivorous dinosaurs and the herbivorous birds of today to aid in digestion. The stones help to break down the fibers in the vegetation. No doubt Maggie Oakshott's geese would have no problem accepting that famous blue stone as just another gastrolith.

There are about 9,000 species of birds, divided into 27 orders. Different orders have different configurations of their digestive systems. Some of those systems include crops. This brings us to another avian feature that has been the subject of much discussion by Sherlockians.

Crops – there are three kinds of crops: 1) True Crops found in most seed eating birds, 2) False Crops (or diverticulum) found in condors and vultures, and 3) Rudimentary Crops (or an enlargement of the esophagus) found in many fish eating birds, i.e. cormorants.

The crop can serve different functions in different birds. The primary purpose of a crop is for food storage. In areas were food is scarce some birds will gorge themselves. When the glandular stomach is full, the extra food is stored in the crop. In predatory birds, such as the eagles, hawks, owls and many seabirds that swallow their food whole, the crop is also used to pre-digest their food. However, geese do not have a true crop.

Glandular stomach (proventriculus) – after the food leaves the crop it moves into the glandular stomach, which digests the food chemically with gastric juices (peptic enzymes). Some birds, such as the carnivorous ones, have gastric juices so highly acidic that they can digest bones. The Lammergeyer or bearded vulture's (E. Europe to China) gastric acid can dissolve a cow vertebra in 1 to 2 days.

Muscular stomach or gizzard – the food then goes to the gizzard or muscular stomach, which performs the same action as teeth in grinding up food. Birds all have gizzards, they swallow small stones (some as fine as grains of sand) which aid in the grinding up the food. These are called gastroliths. In some species birds deprived of grit will lose weight and die.

In 1681, a scientist named Borelli fed turkeys glass balls, hollow tubes of lead and wooden pyramids. The following day the glass balls were crushed, the tubes flattened and the wood chopped. The gizzard is made up of striated muscles arranged in bands. Galliforms (i.e. chickens, turkeys, grouse), Fringillids (i.e. finches, canaries, cardinals) and Anseriformes (i.e. geese and water fowl) all have gizzards. To the best of my knowledge, no one has experimented with feeding precious gem-stones to birds with gizzards to see which stones survive and which are crushed in the gizzard.

#### Hall of Early Mammals (4<sup>th</sup> Floor)

Adventure: BLAC

**Narwhal** (*Monodon monoceros*) or Sea Unicorn, extant

The narwhal is a cetacean or marine mammal; cetaceans include whales, dolphins and porpoises. Its habitat is the North Atlantic and Arctic. A unique feature of the male is an elongated tooth or tusk, which can reach length of 8 feet. The function of the tusk is to attract the female of the species. This animal can grow to length of 16 feet not including the tusk. The remains of narwhals have washed up on the shores of various northern European countries. Trade between various cultures would have also brought this animal's tusk to the rest of Europe. This tusk is believed to be the inspiration for the mythical Unicorn. Hence the Narwhal could be called a sea unicorn.



FYI: There has been a ban on whaling since 1986 – some countries are trying to end the ban.

Types of whales: Odontoceti (whales with teeth) = 20 species

Mysticeti (whales with baleen) = 10 species

#### Hall of Advanced Mammals (4<sup>th</sup> Floor)

**Dog** (*Canis dirus* or Dire wolf)

Adventures: Many - there are 28 mentions of dogs and/or hounds, plus mention of 18 specific breeds of dog

The oldest canid fossils were found in North America, which back to approximately 37 m.y.a. (million years ago). About 7 m.y.a. various canids began to migrate across land bridges to other continents. Eventually the first true wolf evolved (about 1 m.y.a.) and then they migrated back to the Western Hemisphere. The DNA of wolves and dogs is almost identical, much closer than that of humans and chimpanzees. The wolf is the ancestor of all the dogs in the Canon, with one exception (*the Hound*).



In 1959, a Russian scientist named Belyaev experimented with silver foxes. Only the tamest foxes were allowed to breed. The eventual results were friendly little foxes that retained all the characteristics of juveniles. It is believed that a similar process brought about the domestication of the dog. The dog was the first domesticated animal – archeological evidence dates to about 6,000 years ago; the DNA evidence to about 125,000 years ago.



### ***Amphicyon ingens*** (Ambiguous dog) – extinct

Adventure: HOUN

The *amphicyon* is also known as the bear-dog. This is because it has characteristics of both bears and dogs. The shape of the head and the arrangement of the teeth are dog-like. Carnivorous animals all have specially modified molars called a carnassial. The placement of amphicyons' carnassials matches the placement of carnassials in members of the canine family. Additionally, Amphicyons' teeth are tremendous. Their canine teeth are longer than the length of a human thumb, perfect for the tearing out of throats.

Bears, like primates, walk plantigrade, or heel to toe on the hind feet. All canines and felines walk digitigrade or on the tips of their toes on all four feet. Amphicyons walk plantigrade. Fossils of amphicyon have been found in Europe, Africa and North America.

Ever since humans found the skeletal and/or fossil remains of animals they were not familiar with, they have created mythological creatures to account for those remains. So it is possible that finding the remains of an amphicyon jaw for instance could inspire the legend of the immortal hound that was passed along to Arthur Conan Doyle by Fletcher Robinson and became the basis for "The Hound of the Baskervilles."

### **Horse (*Equus Simplicidens*)**

Adventures: SHOS, SILV plus mentions in 24 additional stories

The earliest known member of family equidae (*hyracotherium*) first evolved approximately 55 m.y.a. It was a small animal, about 8 inches at the shoulder, with small teeth and several toes. It lived in humid forests and browsed on tree leaves. It was first described by the famous English anatomist Richard Owen in 1841. As some of the oldest fossils have been found in areas of Wyoming, it is possible equus may have first evolved in America.

Over the millennia there were changes in climate. Drier conditions caused many of the forests to morph into open plains. Members of equidae adapted. Their teeth grew in size so they could chew the tougher grasses that grew on the plains. All but one toe receded and that toe became elongated and the hoof is really an enlarged toenail. Horses became fast with great endurance and stamina.



At the end of the last ice age, about 10,000 years ago, horses went extinct in the Western Hemisphere. It wasn't until the 16<sup>th</sup> century



that Spanish explorers reintroduced them to the plains where they evolved. The Conquistadors were high maintenance. They traveled with men at arms, food, clothing and horses. They came to loot and plunder the gold and treasure of the New World. Once they filled their ships with the plunder the ships could not take the weight of the horses. So they gave some to Native Americans and the rest were set free to roam the Great Plains.

### Hall of North American Birds (3<sup>rd</sup> Floor)

#### **Pigeon** (*Columba livia*)

Adventures: BRUC, FINA, ILLU & LAST

Unfortunately pigeons have a bad reputation; they are often referred to as stool pigeons and rats with wings. However, during WWII thousands of homing pigeons were members of all branches of the Allied forces according to the Royal Pigeon Racing Assoc. in England. They saved many lives and the success of certain vital military operations. At the war's end, 31 birds were honored with the Dickin Medal instituted in 1943 in the U.K. to honor the work of animals in war. It is commonly referred to as the animals' equivalent of the Victoria Cross.



Pigeons, also known as rock doves, are monogamous. They feed their young "crop milk" which is regurgitated food mixed with enzymes in the bird's crop. The feathers on their backs and flanks are made to break away easily to aid in escaping predators. This does not always work, which is one of the reasons why predatory birds are thriving in urban areas.

#### **Peregrine falcon** (*Falco peregrines*) - Falconiforms include all members of the hawk family

Adventures: DEVI, REDH, SIGN, STUD, VALL



Falcons are members of a group of birds known as raptors. Raptors include eagles, owls, hawks, falcons and vultures. Some of the characteristics of raptor birds are excellent eyesight and great speed. The Peregrine is the fastest of any vertebrate animal, able to dive at speeds clocked at 200 to 275 miles per hour.

The use of DDT once threatened all raptor birds in the United States. The chemical got into the food chain and weakened the calcium in the shells of the bird's eggs. Unlike many other birds, raptors breed only once a year and produce few offspring. In 1973 the Endangered Species Act became law and recovery in the population of raptor birds has been remarkable.

We all know the story of the miracle on the Hudson when a plane struck a flock of birds and had to land in the Hudson river. The miracle was that everyone was safely taken off the plane before it sank. JFK airport in NYC is located on the edge of Jamaica Bay, home to many species of birds. In order to clear the runways, the Port Authority has hired a falconer to fly his hawk a least a couple of times a day to frighten the other birds away; which is an interesting use of a 4,000 year old sport to protect modern technology.

FYI: There are approximately 9,000 species of birds – 30 are mentioned in the Canon.

### Hall of Animals of New York State (3<sup>rd</sup> Floor)

#### **Turkey Vulture** (*Cathartes aura*) a.k.a. buzzard

Adventures: BLAN, SHOS, STUD, VALL

Family: Cathartidae – from the Greek word to cleanse. There are seven members of this family; all exist in the Western Hemisphere. The turkey vulture is so named for the red head and neck which are similar to the turkey. Its geographic range is from Canada to Tierra del Fuego.

Adult vultures have bald heads due to how it eats. It plunges its head into the carcass, and the baldness prevents viscera from contaminating its feathers. It has large nostrils for hunting by scent as well as excellent vision for hunting by sight. Other vultures will follow this bird as it can find food they can't see.



#### **American Bittern** (*Botaurus lentiginosus*)

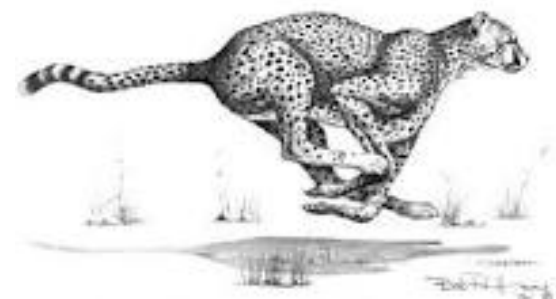
Adventure: HOUN

Bitterns are solitary birds, inhabiting reedy and marshy places. It has a long sharp beak. At the approach of a potential predator they stand motionless with their head up and neck vertical so that their variegated plumage provides camouflage. The North American bittern very similar to Eurasian bittern (*B. stellaris*) of which there are about only 70 breeding pairs left in southern England. Their diet consists of frogs, fish, tadpoles and sometimes snakes. Mating call is made by the male from April to June at night.



### Hall of African Mammals (3<sup>rd</sup> Floor)

#### **Cheetah** (*Acinonyx jubatus*)



Adventure: SPEC

There are certain characteristics that are common to all cats – short snout, excellent hearing, eyesight and sense of smell. They are extremely well muscled and able to spring or pounce great distances in relation to their size. All cats are fast, the cheetah can sprint at 68 miles per hour, 45 to 50 miles per hour for tigers. However they are not endurance runners. If they don't bring down their prey quickly they will stop and wait for the next

opportunity. All felines have similar behaviors – like grooming, spraying to mark territory. Big cats need 10 to 20 pounds of meat per day. But they only succeed in making a kill one in five to one in eight attempts. Cheetahs generally made a kill once every three days. Cheetahs prefer a habitat of tall grass with high lookout positions. They are slender with long legs and a long thick tail for balance. Some males may form coalitions to defend territory.

The cheetah's former geographic range included not only Africa but a good part of Asia as well, including the Indian sub-continent. Some small populations can still be found today in Pakistan and maybe in Iran.

### **Baboon** (*Papio hamadryas Anubis* a.k.a. Olive baboon)

Adventures: SIXN, SPEC, STUD

There are five species of baboons. Different species occupy different habitats – savannas, woodlands, semi-desert and some rain forest. Most of them live in sub-Saharan Africa.

Baboons are the largest of the monkeys; males can grow to between 30 to 60 pounds. Males are larger than the females. They have cheek pouches, which allow them to eat and run in case of danger. They are omnivorous; they eat fruit, seeds, roots, insects, eggs, small birds and small mammals. They hunt cooperatively. Baboons migrate as they feed, traveling from 3 to 6 miles per day. They need a home range of about 9 square miles.

They have dense fur which varies in color but which is basically gray or brown. Males of many species grow capes at maturity, about age 10. Like most primates they are social animals, living in large groups called troops and form bonds. They can live to be 20 to 30 years old in the wild.

Baboons are similar in appearance to the Rhesus macaque (*Macaca mulatta*) found in Asia as can be seen in the two pictures below. The baboon is on the left and the macaque on the right.



### Hall of Reptiles and Amphibians (3<sup>rd</sup> Floor)

#### **Gila monster** (*heloderma suspeplum*)

Adventure: SUSS

There are approximately 3750 species of lizard but only 2 are toxic – the Gila monster and its cousin the Mexican beaded lizard (*H. horridum*). The Gila monster can grow to about 2 feet in length, has a sausage like tail where it stores fat reserves. They are endangered due to loss of habitat.

The toxins of both animals affect the blood pressure of the victim animal, causing a precipitous drop. Their toxins are similar but not identical. Their toxins are being studied for two new medicines – one to reduce high blood pressure (NYT 5/98) and another to treat type 2 diabetes (Nat. History 7/04).



Their venom glands are located along the outer edge of the lower jaw and the ducts empty the toxin at the bases of greatly enlarged grooved teeth. The grooves are along the sides of triangular shaped teeth. They bite in self-defense, holding on with a viselike grip. Their toxins cause excruciating pain, weakness and dizziness, but seldom death, in healthy humans.

### Indian Cobra (*Naja naja*)



Adventure: CROO, ILLU, LION

There are about 3,000 species of snakes of which only approximately 430 have toxins. Cobras are members of the family of poisonous snakes Elapidae. Cobras are recognized by the hoods that they flare when angry or disturbed. The hoods are created by the extension or flattening of the ribs behind the cobra's head. The Indian cobra is generally less than 6 feet long.

The snake causes thousands of deaths each year in India, where it is regarded with religious awe and seldom killed. This snake can spray its venom from a distance of about 7 to 8 feet. Their venom is modified saliva, which is neuro-toxic. Cobras are aggressive as they go after their prey. However, cobras will seldom attack humans unprovoked. Cobras aren't able to hear; they react to movement.

### Indian Mongoose (*Herpestes edwardsi*)

Adventure: CROO

Mongoose – they are carnivores, most closely related to civets. Like cobras there are African and Asian species. The most common species in India is *Herpestes edwardsi*, a.k.a. the Indian gray mongoose, which is known for its ability to kill snakes. It may also explain why Henry Wood's mongoose is named Teddy. Teddy is short for Edward.



When attacking a snake, the mongoose repeatedly provokes it to strike, avoiding being bit by agile dodging.

When the snake is exhausted the mongoose seizes its head in its jaws and crushes the skull. Their ability to kill snakes is due not only to their quick movements but their thick protective hide and long, thick hair as well. Skill in evading the snake is learned, and young mongooses often die of snakebite. However, ingested snake venom is harmless to the mongoose that eats the head venom glands and all. The Indian mongoose is easily tamed and is often kept as a pet, which can control vermin. It also eats lizards, eggs and insects. It is illegal to import a mongoose into the United States or Canada because of their destructiveness (they love to dig).

### The Hall of Asian Mammals (2<sup>nd</sup> Floor)

#### Tiger (*Panthera tigris tigris*)

Adventures: ABBE, BLAC, BRUC, DYIN, EMPT, IDEN, LADY, RETI, SIGN, SIXN, VALL, WIST

The historic geographic range for tigers is from the Caspian Sea to Siberia, south through China & SE Asia through the islands of Indonesia. The cats we know today began to evolve about 7 to 5 m.y.a. from ancestors like *Proailurus* whose fossil records dates back at least 35 m.y.a.

Today there are between 6,000 to 7,000 tigers – that includes the ones in the wild, the ones in zoos and the ones on breeding



farms. At the beginning of the 20<sup>th</sup> century there were 8 sub-species. Today there are only 5 – the Bengal, the Indochinese, the Siberian and the Sumatran who are tied for 3<sup>rd</sup> place with between 300 to 500 each, depending on which reference you consult. Coming in last is the south Chinese (*Tigris amoyensis*) with maybe only 20 to 80 tigers left.



The tiger is the biggest of the big cats. The Siberian is the biggest of the big – one male weighed in at 850 pounds. Like all cats they can be 20 feet away from you and you may never know it unless they want you to. Even against the snows of Siberia the large tawny cat with the black stripes can disappear from sight.

The tiger may disappear entirely some day. All wild cats are endangered, some more than others are. Loss of habitat due to forestry, mining, road building, and ever expanding human population accounts for 80% of the species loss to

extinction. With predatory animals, loss of prey base is as serious of loss of habitat. What good is open space if there are no prey species?

People in Asia still believe in the magical powers of tiger products; enough so that there is a substantial black market in tigers. One tiger can bring between \$10,000 to \$65,000 from selling the pelt, bones organs, etc. Farm bred tigers are not considered to be as potent as wild tigers. The rarer the sub-species, the more money the poachers can get for the animal.

Conservation efforts are slow to take effect.

### Hall of Bio-diversity (1<sup>st</sup> Floor)

#### **Butterflies** (Order Lepidoptera)

Adventures: HOUN, ILLU, 3GAB, 3GAR

Most of the animals on Earth are insects. There are about 1 million species of insects. 250,000 of them are Lepidoptera, of which 18,000 are butterflies. Their wings are made of a hardened membrane, strengthened by veins, covered with thousands of tiny scales. The scales are arrayed in complex patterns. They overlap each other like shingles on a roof.

Butterflies consume only liquids, sucking up their food through the proboscis, a tube that resembles a drinking straw. They find food by using their large compound eyes, which are sensitive to light, movement, color and patterns. They also use their antennae, which have chemical receptors and are used primarily for smelling to find food.



Butterflies are food for a number of animals, including birds, amphibians and other predatory insects. They have evolved remarkable methods of defense. Some use camouflage, their coloration helps them blend in with their surroundings. Some species are toxic. The caterpillars of these species feed on toxic plants that make both the caterpillar and the butterfly poisonous to predators. They are brightly colored as a warning of their toxicity. Some butterflies have evolved the bright colors of the toxic butterflies as their defense, a phenomenon called mimicry.



## Sponges (phylum Porifera)

Adventures: BLAN, ILLU, LAST, SIGN, TWIS

Sponges are the simplest of multi-cellular animals, considered the most plant like. They have no true organs or tissues, just reproductive, digestive and skeleton building cells, which are embedded in a mass consisting of either spicules (tiny needles) or fibrous protein spongin.

Sponges are lightweight, with a tough, fibrous, porous skeleton. Most are soft, elastic and compressible, and absorb many times its own weight in liquid. Some sponges are hard. There are approximately 10,000 known species, ranging in size from a few millimeters to 2 meters. Sponges grow in many shapes and sizes and come in a wide variety of colors.

They are filter feeders, waiting for food to drift by. They also provide food and shelter for other animals.

Sponges have no teeth, claws, shells or spines for protection. They can barely move so rapid retreat is not possible. Therefore, they use chemical protection – toxins.

Sponge toxins affect different systems in the human body in different ways. At the right dosages some sponge toxins can become lifesaving pharmaceuticals. A chemical found in the Pacific purple rope sponge has potential as a cancer drug.

While some sponges have some limited mobility, most attach themselves to solid surfaces, such as rocks, reefs and wharf pilings. Sponges often contribute to the building of coral reefs.



## Lion's Mane (*Cyanea capillata* - Phylum Cnidaria)

Adventure: LION

The lion's mane is the largest jellyfish, with a bell that can reach 8 feet in diameter and tentacles that can reach 200 feet long. Their bell or umbrella has eight primary lobes, where there are light sensing organs called rhopalla. They move primarily by drifting with the current but they can move through contractions of their bells.



There are some 2000 species of jellies. There are warm-water, cold-water, deep-water and shallow-water jellies. The deep-water jellies can be bioluminescent (an animal's ability to produce light using chemicals in their bodies). Jellies are characterized by having a transparent or translucent gelatinous body. They start out life as polyps for a brief time but spend most their lives as medusas (in which the body is shaped like an umbrella) Depending on species they can live from a few weeks to a few years. They have no brain, no heart and no blood. Their bodies are 95% to 99% water and they dry out quickly and die if wash up on shore. They can still be toxic even though they are dead.

All cnidarians (corals, hydroids, anemones and jellies) have nematocysts. With jellies the upper surface of their bell and their tentacles are lined with nematocysts (stinging cells) which can fire tiny hair-thin poison harpoons or darts. All jellies are neuro-toxic. They use these stinging cells to paralyze their prey. They feed on fish and other jellies that come close enough to the tentacles to be stung and paralyzed.

Often all it takes is a passing contact with the jelly to trigger the nematocysts, which is how humans swimming in the ocean get stung. Not all jellies have toxins that are fatal to humans. Also, the amount of

toxins injected depends on how many of the darts hit an individual. The Australian box jelly contains toxins so potent that it can kill an adult human in three minutes. The venom of the Lion's Mane causes respiratory paralysis; the victim dies of suffocation.

The Lion's Mane is a color phase animal: pink as a juvenile, red at adulthood and as they mature they turn brownish purple.

### **Sharks (*Condriichthyans*)**

Adventures: MAZA, SIGN, VALL

Sharks are the oldest continuous existing predator – there are fossilized shark teeth that date to 400 m.y.a. Their teeth are not embedded in their jaw unlike other vertebrate animals. Instead they are on what amounts to a conveyor belt of collagen. Sharks have several sets of teeth in their mouth at the same time; as one set falls out the next set rolls up. Some species get a complete new set every two weeks and can have as many as 12,000 teeth in their lifetime.



Depending on the species, sharks can live from 7 to 75 years. Sharks are both scavengers and predators. As predators sharks have all the gifts. They have excellent sense of smell – they can smell 1 drop of blood in 25 gallons of water in a 100-yard radius. They have excellent eyesight – there are rods and cones in the back of their eyes that constantly adjust to available light levels. They have sensory nerves along the sides of their bodies that pick up on vibrations. They not only know when something is moving, but what kind of movement – like when a fish is in distress.

Sharks reach sexual maturity at 12 to 13 years old. Some species give birth by laying eggs that are encased in a pouch referred to as a mermaid's purse. Others give birth to live young. There is no parental care.

There are about 350 species of sharks – the whale shark is the largest at 60 feet and 40 tons.

In 1996 the National Marine Fisheries Service reported that the populations of sharks along the coasts of the United States had dropped between 50% to 75% during the previous 20 years.

What does this loss mean to us? How big a deal is it when we lose species? Actually it matters a great deal. It affects the quality of our lives. I'm not talking about esthetics, although esthetics are good. I'm talking about the quality of our lives. During the mid-1990's, studies done in the United States have shown that the more diverse the bio-mass of any given environment, the healthier that environment. That means the greater the variety of living things in an environment, the cleaner the air, the purer the water, the healthier the soil. We, as a species, breathe air, drink water and eat foods grown in soil. Dare I say it – it's elementary!

There is one other reason, one last thought I would like to leave with you. To many a Sherlockian it is always 1895. However there are, I hope, generations of readers yet to come, readers who will someday find a comfortable place to sit and open for the first time a book we all know and love. It would be nice to think that they will exist in a world where there are still real live sharks, and real live whales, and real live lions and tigers and bears, oh my. That these animals and all the animals in the Canon will not have gone the way of the gas lit street lamp or the hansom cab.

## APPENDIX

ABBE - The Adventure of the Abbey Grange - Tiger  
 BLAC - The Adventure of Black Peter – Narwhal, Tiger  
 BLAN - The Adventure of the Blanched Soldier – Vulture, Sponge  
 BLUE - The Adventure of the Blue Carbuncle – Psittacosaurus  
 BRUC - The Adventure of the Bruce-Partington Plans – Pigeon, Tiger  
 CROO - The Crooked Man – Cobra, Mongoose  
 DEVI - The Adventure of the Devil’s Foot – Falcon  
 DYIN - The Adventure of the Dying Detective – Tiger  
 EMPT - The Adventure of the Empty House - Tiger  
 FINA - The Final Problem – Pigeon  
 HOUN - The Hound of the Baskervilles – Amphicyon, Bittern, Butterflies  
 IDEN - A Case of Identity - Tiger  
 ILLU - The Adventure of the Illustrious Client – Pigeon, Cobra, Sponges, Butterflies  
 LADY - The Disappearance of Lady Frances Carfax - Tiger  
 LAST - His Last Bow – Pigeon, Sponges  
 LION - The Adventure of the Lion’s Mane – Cobra, Lion’s Mane  
 MAZA - The Adventure of the Mazarin Stone - Shark  
 REDH - The Red-Headed League – Falcon  
 RETI - The Adventure of the Retired Colourman - Tiger  
 SHOS - The Adventure of Shoscombe Old Place – Horse, Vulture  
 SIGN - The Sign of Four – Falcon, Shark, Sponges, Tiger  
 SILV - Silver Blaze – Horse  
 SIXN - The Adventure of the Six Napoleons – Baboon, tiger  
 SPEC - The Adventure of the Speckled Band – Cheetah, Baboon  
 STUD - A Study in Scarlet – Falcon, Vulture, Baboon  
 SUSS - The Adventure of the Sussex Vampire – Gila monster  
 3GAB - The Adventure of the Three Gables – Butterflies  
 3GAR - The Adventure of the Three Garridebs - Butterflies  
 TWIS - The Man with the Twisted Lip - Sponges  
 VALL - The Valley of Fear – Falcon, Vulture, Shark, Tiger  
 WIST - The Adventure of Wisteria Lodge – Tiger




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