



④ *Phylum Chordata*



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Welcome to Phylum Chordata of the European Woodlands

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European Hedgehog

Erinaceus europaeus

- Found in Europe, from Iberia and Italy northwards into Scandinavia
- Class: Mammalia
- Kingdom: Animalia
- Order: Eulipotyphla
- Phylum: Chordata
- Hedgehogs share distant ancestry with shrews (family Soricidae), with gymnures possibly being the intermediate link, and they have changed little over the last 15 million years
- They have a generalized body structure with unspecialized limb girdles
- They appear brownish with most of their body covered by up to 6,000 brown and white spines.
- In the wild, European hedgehogs can live up to six years. In captivity, they can live as many as ten years.



Class: Mammalia

Kingdom: Animalia

Order: Eulipotyphla

Phylum: Chordata

- European hedgehogs are solitary and non-territorial. They begin the mating process when a male encounters a female, at which time the male encircles the female while she lowers her head and makes a variety of snorts, grunts, and hisses. If the male is successful in courting the female, he attempts to mount her several times. After numerous copulations, the male leaves the female and does not provide any parental care to his offspring. He continues to roam alone and attempts to mate with other females until he begins preparing for hibernation. Males and females have multiple mates each season.
- A small, round animal with short legs that raise it about 1 inch above the ground. It is plantigrade and has 5 well-developed pads and claws on each foot. The first and fifth toes are smaller and weaker than the second, third, and fourth toes. Its coat is white and brown and consists of 3/4 to 1-inch spines, arranged in a radiating pattern, that cover all but its cheeks, throat, stomach, and limbs. Areas not covered in spines are covered in coarse hair that is yellow-brown in color, though white hedgehogs have been seen. It has an elongated, conical head and snout, a small braincase, a short neck and tail, and well-developed eyes and ears. The length of its body ranges from 135 to 265 mm, and males are usually slightly larger than females. The tail is about 20 mm long.



Phylum Chordata of the European Woodlands



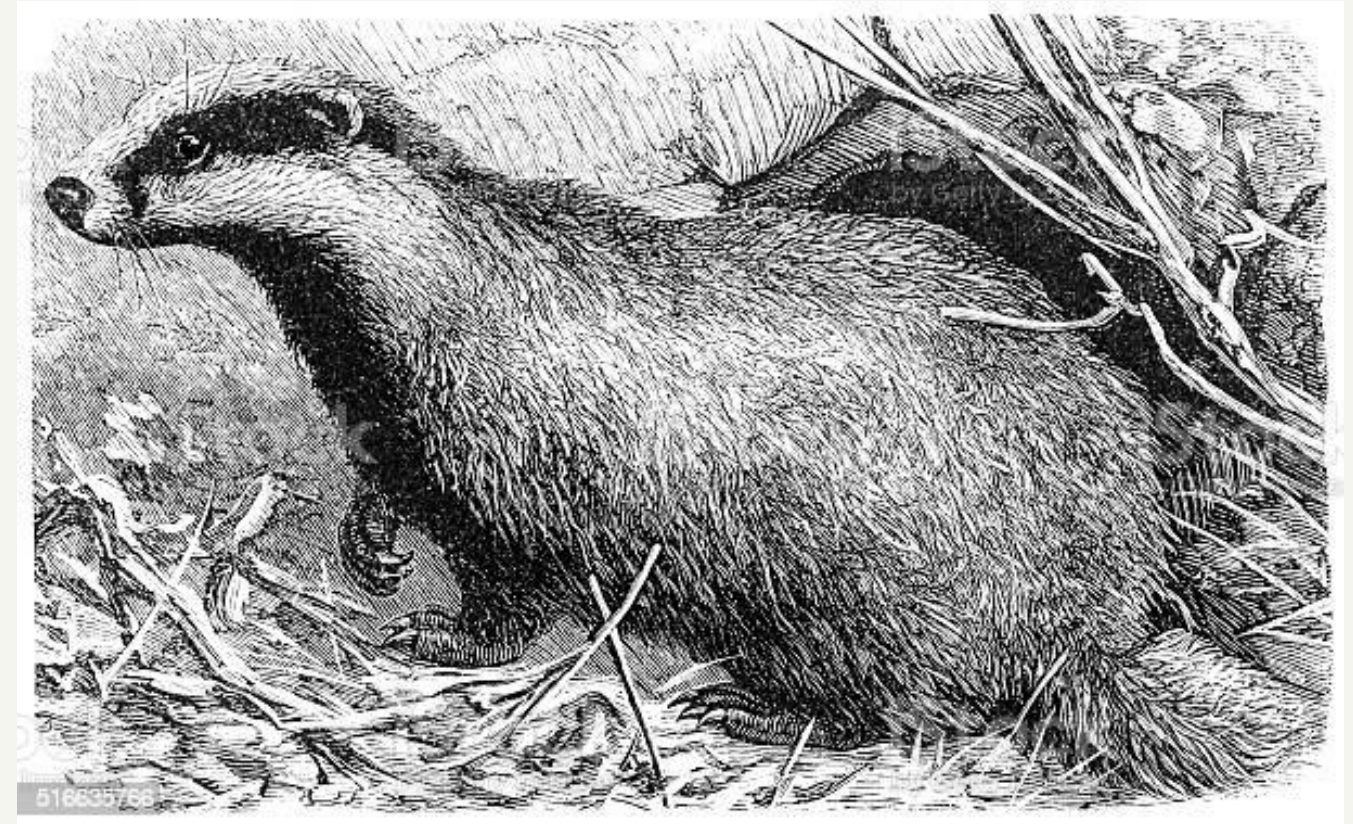


Class: Mammalia
Kingdom: Animalia
Order: Carnivora
Phylum: Chordata

— Eurasian Badger

Meles meles

- The species likely evolved from the Chinese *Meles thorali*. The modern species originated during the early Middle Pleistocene. A comparison between fossil and living specimens shows a marked progressive adaptation to an omnivore diet, namely in the increase in the molars' surface areas and the modification of the carnassials. Occasionally, badger bones are discovered in earlier strata, due to the burrowing habits of the species.
- Has a powerfully built black, white, brown, and grey animal with a small head, a stocky body, small black eyes, and a short tail. Its weight varies, being 7–13 kg (15–29 lb) in spring but building up to 15–17 kg (33–37 lb) in autumn before hibernation.
- Mating occurs year-round, but predominantly between February and May. During courtship, the male badger will pursue the female, biting the nape of her neck. After mating, a process known as delayed implantation occurs. This means cubs will not be born until January or February, regardless of when mating took place.
- The ideal badger habitat is a mixture of woodland and open country.
- They live on average 6-16 years depending on habitat threats in their area.



Red Fox

Erinaceus europaeus



Concept and definition



- The Red Fox is Eurasian in origin and may have evolved from either *Vulpes algaecides* or the related Chinese V. The earliest fossil specimens were uncovered in Hungary dating from 3.4 to 1.8 million years ago. The ancestral species was likely smaller.
- Foxes mate in the winter when they are most vocal. They use barks and screeches to attract a mate and warn off rivals. Litter of four or five are born in the spring in an underground den where they are raised by both their mother and father.
- The winter fur is dense, soft, silky, and relatively long. Most Eurasian red foxes have coarser fur in warmer months.
- They have binocular vision, that reacts mainly to movement. Their auditory perception is acute and they can hear black grouse changing roosts at 600 paces, the flight of crows at 0.25–0.5 kilometers (0.16–0.31 mi), and the squeaking of mice at about 100 meters (330 ft). They are capable of locating sounds to within one degree at 700–3,000 Hz, though less accurately at higher frequencies.
- They rarely live longer than three years, despite having few to no natural predators.
- Their conservation status is "Least Concern"
- Red foxes have a pair of anal sacs lined by sebaceous glands, both of which open through a single duct. The anal sacs act as fermentation chambers in which aerobic and anaerobic bacteria convert sebum into odorous compounds, including aliphatic acids. The oval-shaped caudal gland is 25 mm (1.0 in) long and 13 mm (0.51 in) wide and reportedly smells of violets.
- Their size depends significantly on their age, geographic variation, and sex.



Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Carnivora
Family: Canidae
Genus: *Vulpes*
Species: *V. vulpes*

Field vole

Microtus agrestis

- It has a Palearctic distribution. Its range extends throughout Western Europe and eastwards to Lake Baikal in Siberia and northwest China and northward to Norway, Sweden, and Finland.
- It is found in a range of habitats including meadows, field borders, plantations, woodland verges, clearings, upland heaths, dunes, marshes, bogs, and river banks, and tends to prefer wet areas
- They live about two years—less for spring-born individuals than for ones born later in the year.
- They are a small, dark brown rodent with a short tail, distinguishable from the closely related common vole (*Microtus arvalis*) by its darker, longer, and shaggier hair and by its more densely haired ears.



- They weigh 20-50 grams.
- They are induced ovulators, meaning they ovulate due to external stimulus rather than cyclically or spontaneously.
- Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Rodentia
Family: Cricetidae
Subfamily: Arvicolinae
Genus: *Microtus*
Subgenus: *Microtus*
Species: *M. agrestis*



Wood mouse / Field Mouse

Apodemus sylvaticus



- Wood mice inhabit forests, grasslands, and cultivated fields, tending to seek out more wooded areas in winter. In Europe, they range north to Scandinavia and east to Ukraine. The wood mouse is also found in northwestern Africa and on many Mediterranean islands.
- Wood mice have brown fur with pale underparts, large black eyes, big ears, and a long, hairless tail. Their bodies are around 10cm long.
- They breed from February to October with females producing litters up to six times a year. Each litter consists of four to eight young.
- Wood mice rarely survive longer than a year.
- They males experience morphology of the spermatozoa. This means they develop sickle-shaped heads, or falciform, after meiosis and before release during ejaculation.
- To avoid predation, wood mice tend to forage in covered microsites.
- Apodemus sylvaticus (L.) is phenotypically and taxonomically uniform over a wide area in Europe, but it has been split into 15 races or subspecies in the Hebridean and Shetland groups of islands.

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Rodentia

Family: Muridae

Genus: Apodemus

Species: A. sylvaticus



Scottish Wildcat



Felis silvestris



- Scottish wildcats are small felines with similar markings to domestic tabby cats. It has a thick, blunt tail with rings and a black tip.
- Mating season is from January to March. During this period males will search out females to mate with. Females produce a litter of one to eight kittens after a two and a half month gestation period.
- Kittens reach independence at six months old. At this point, they leave to establish their own territories.
- Females reach sexual maturity at one year old and males at about nine months.
- They only live in the Scottish Highlands, usually below 650 meters above sea level.
- Scottish wildcats are incredibly rare due to hunting and habitat loss, as well as road accidents.
- They hunt across the edges of dense woodlands.
- Recently, they have evolved due to hybridization as they breed with feral domestic cats.
- There are an estimated 35 true wildcats left in the wild.
- They can live up to 15 years in the wild, but accidental killing makes this highly unlikely.
- Scottish wildcats are heavier than domestic cats, have longer limbs, and a more robust skull. They also have a shorter gastrointestinal tract.



Eurasian Otter, *Lutra lutra*



- It is the most widely distributed otter species, its range including parts of Asia and Africa, as well as being spread across Europe, south to Palestine.
- They are classified as “Near Threatened.”
- They have thick brown fur, which is paler on their chest and belly, and a long slender body with a thick tail and short legs. The otters have a broad nose with small ears and high eyes to see well underwater.
- They are strong swimmers thanks in part to their webbed feet. Sensitive whiskers and claws help them hunt.
- They weigh 7-11kg and measure 94-155cm
- Otters breed any time of year. They mate underwater.
- They can live up to ten years in the wild.
- Otter droppings, or spraints, are a greenish, black-grey color and contain bones, shells, feathers, and fur. They smell sweet and musky, like jasmine tea or laurel flowers. Left on rocks and logs close to the water, they are a method of communication with other otters.
- Throughout their evolution, their bones have showed increased osteosclerosis, which increases their density to reduce buoyancy.
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Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Carnivora
Family: Mustelidae
Subfamily: Lutrinae
Genus: Lutra
Species: L. lutra





- These mice are only 6-9cm with a feathery tail of similar length. They have soft, golden brown fur and big black eyes.
- Their highest weight is just before hibernation at 40g.
- The females produce one litter of four to five young each summer.
- They give birth in nests of grass and bark hidden among tree branches on in hedges.
- The young are born pink, blind, and hairless.
- They can spend as much as seven months of the year asleep.
- Dormice are considered vulnerable, largely due to habitat loss.
- They can live up to four years in the wild and six in captivity.
- Higher genetic differentiation can be seen in Cornwall dormice. This genetic distinction shows that evolutionary adaptations take place regionally.

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Rodentia
Family: Gliridae
Subfamily: Leithiinae
Genus: Muscardinus
Species: M. avellanarius



Hazel Dormouse



Muscardinus avellanarius

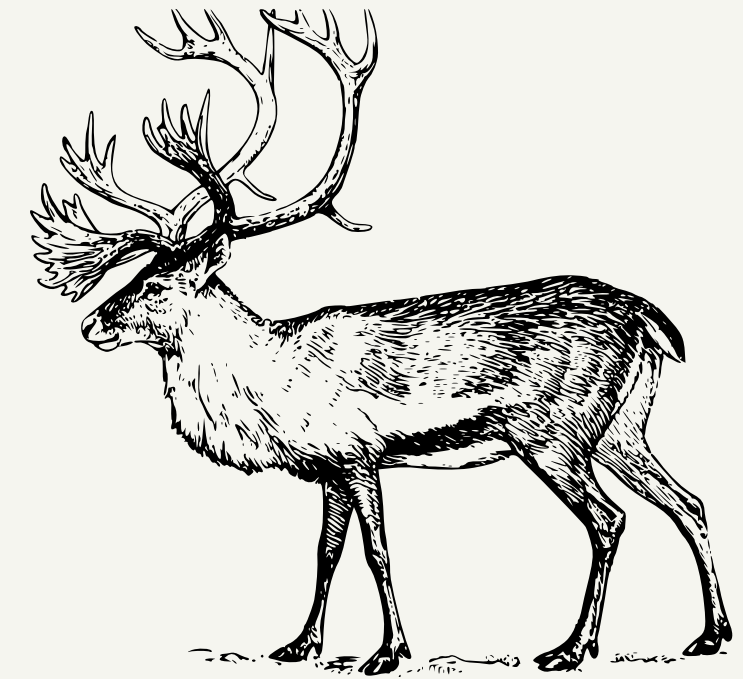


Eastern Grey Squirrel, *Sciurus carolinensis*

- Twenty different Pleistocene fauna specimens contain *S. carolinensis*, found in Florida and dated to be as early as the late Irvingtonian period. Body size seems to have increased during the early to middle Holocene and then decreased to the present size seen today.
- Native to North America, grey squirrels were first introduced to the UK in the 19th century. The species has spread rapidly and is now common across the UK, with the exception of the north and western Scotland and some islands. There are an estimated 2.7 million grey squirrels in the UK and the population is continuing to grow.
- The introduction of grey squirrels has had a disastrous impact on the UK's only native squirrel species, the red squirrel.
- Grey squirrels have double-jointed ankles, allowing their feet to face both forwards and backward – a perfect adaption for tree climbing.
- The eastern gray squirrel is one of the very few mammalian species that can descend a tree head-first. It does this by turning its feet so the claws of its hind paws are backward-pointing and can grip the tree bark.
- They can live up to six years in wild but adolescents have a high mortality rate.
- They mate in mid-summer and winter and gestate their young for about 45 days. The average litter is 2-3 young.

Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Rodentia
Family: Sciuridae
Genus: Sciurus
Subgenus: Sciurus
Species: *S. carolinensis*





Fallow deer

Dama dama

- Native to Turkey, Balkans, and the Mediterranean. Has been introduced all over the world. including across the UK.
- The European fallow deer was native to most of Europe during the last interglacial. In the Pleistocene (the last ice age) the distribution was restricted to the Middle East and refugia in parts of the Mediterranean Basin: Sicily, Anatolia and the Balkan.[
- Fossil evidence of the species' prehistoric presence in these apparent refugia is extremely fragmentary, contributing to the ongoing confusion about the species' true range.
- It is a European native species of deer with an impressive rack of antlers (males) and striking appearance. Its name is derived from the pale brown coloration of its body, although there is significant variation in the coat color of this species in different parts of the world.
- The Fallow Deer is a slender, medium-sized deer. It is quite distinctive in appearance because of its characteristic markings.
- It is not as stocky as many other species of deer. The legs are long and slender. The head is thin and narrow, and carried by a long neck.
- Semi-wild or captive deer have a maximum lifespan of about 11 to 15 years.
- In the wild, Fallow Deer do not live as long and are lucky to reach the age of 7 or 8 years.
- During the rut, the males become extremely excited and form small territories that they mark and fiercely defend from other Fallow bucks. This mating behavior is known as 'lekking'.
- Bucks can be extremely vocal during the rutting season. The males attempt to collect together and breed with small groups of females.
- Fallow deer weight anywhere from 25 to 130kg. Their length ranges from 145-215cm.

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Artiodactyla

Family: Cervidae

Genus: Dama

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