ORDER LAGOMORPHA

Lagomorphs have long confused taxonomists, so much so that Wood (1957) published an article entitled "What, if anything, is a rabbit?" At one time they were considered to have close affinities to rodents and were classified as a suborder of that group. The current consensus is that rodents and lagomorphs are rather distantly related. In fact, lagomorphs resemble artiodactyls in a number of fundamental characteristics (e.g., limb structure). Known fossil representatives, dating from the Oligocene, do not provide sufficient information to resolve the issue.

Although this order is not particularly diverse, its members are geographically widespread. They are important ecological and economic components of mammalian faunas in many parts of the world.

Coprophagy — the reingestion of fecal material — is a common behavior among species of both families of lagomorphs. Two types of fecal pellets are produced: soft moist pellets which are eaten, and hard fibrous ones which are discarded. This habit allows the animal to extract the maximum nutritional value from fibrous plant foods in the forms of proteins, vitamins, and metabolites; microbes present in the pellets also provide nutrients.

Recognition Characters:

- **two pairs of upper incisors, the second pair small and peg-like and located directly behind the first** (Figs. 65, 66).

1. size small to medium.
2. foot posture digitigrade.
3. **tail indistinct or small.**
4. **soles of feet largely or entirely covered with fur.**
5. maxilla fenestrated.
6. incisors and cheekteeth separated by large gap (diastema).
7. testes anterior to penis during breeding season.

Compare with: Rodentia.

Remarks: Pocock (1925) summarized external characters of lagomorphs. Limb structure was examined by Camp and Borell (1937).

KEY TO FAMILIES OF LAGOMORPHA

1a. Pinna short, rounded; no visible tail; pads on feet exposed; no supraorbital process; five upper cheekteeth ..... **OCHOTONIDAE** (p. 145)

1b. Pinna long, pointed; tail short but visible; pads on feet covered with fur; fan-shaped supraorbital process usually present; six upper cheekteeth (rarely five) .... **LEPORIDAE** (p. 146)

Family OCHOTONIDAE
(Pikas)

These chunky, guinea-pig-like mammals are the smallest lagomorphs. They occur primarily in mountainous regions of the northern hemisphere, and less commonly in forests, plains, and deserts. Ochotonids are distinguished from leporids (p.146) by numerous external, cranial, and dental features (see below).

Pikas are herbivorous. A curious habit related to their diet is the curing and storing of hay. In late summer and fall these animals gather cuttings of preferred plants and cure them in sheltered places exposed to the sun. These "haypiles" are then stored among the rocks and serve as a source of food during winter months.

Generally, members of this family are diurnal and active all year. They are solitary or colonial; some species are territorial. Most nest in rock crevices; others construct burrows. Breeding occurs during spring and summer, during which there may be two or three litters consisting of two to six offspring.

One genus, approximately 14 species; discontinuous distribution in mountains of North America, Europe, and Asia, including Japan.

Recognition Characters:

1. **pinna short, rounded.**
2. **tail very small, indistinct.**
3. limbs short.
4. **digits 5-4.**
5. **pads on digits exposed.**
6. **no supraorbital process** (Fig. 65).
7. **maxilla with single (occasionally two or three) perforations** (Fig. 65).
8. **nasal widest anteriorly** (Fig. 65).
9. jugal projecting conspicuously beyond posterior margin of zygomatic arch (Fig. 65).
10. cutting edge of first upper incisor V-shaped.

Dental formula: $\frac{2}{1}\frac{0}{0}\frac{3}{2}\frac{2}{3} = 26$

Compare with: Leporidae.

Genus:

Ochotona (14) - Pikas.

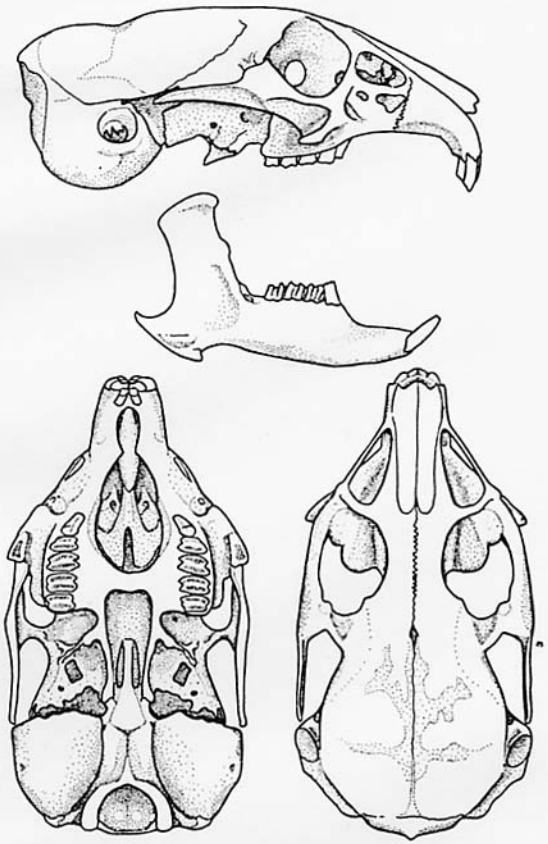


Figure 65. Skull of an ochotonid (*Ochotona*, x 1½).

Family LEPORIDAE
(Rabbits, hares)

Because they are distributed widely and are usually numerous and conspicuous, rabbits and hares are almost universally known. Probably the most obvious outward features are the relatively large ears and hindlimbs, small tufted tail, and hopping gait. A few, like Arctic hares (*Lepus arcticus*), can hop bipedally for short distances. Unlike pikas, leporids do not store food.

A distinction is often made between hares (e.g., *Lepus, Pronolagus*) and rabbits (e.g., *Sylvilagus, Oryctolagus*). Hares bear precocial young in the open, whereas rabbits produce altricial young in nests. However, the common names are often used interchangeably (see below).

Hares and rabbits occupy various habitats in boreal, temperate, and tropical areas from sea level to 5000 meters. They take shelter in crevices and hollows or construct burrows or shallow depressions in soil or vegetation. They are mostly nocturnal and herbivorous. Their populations often exhibit large cyclic fluctuations (Keith, 1963).

Whereas in most mammals males are larger than females, the reverse is true in leporids. Most species are solitary (*Oryctolagus* is colonial), and many are territorial. Females are polyestrous. Two to eight (but occasionally a dozen or more) young are produced in a litter.

Rabbits and hares carry a variety of diseases transmissible to humans (e.g., tularemia). Humans value them for food and sport; they are often agricultural pests, especially in places where they have been introduced.

Eight genera, approximately 50 species; worldwide, including introduced forms in Australia, New Zealand, and some oceanic islands.

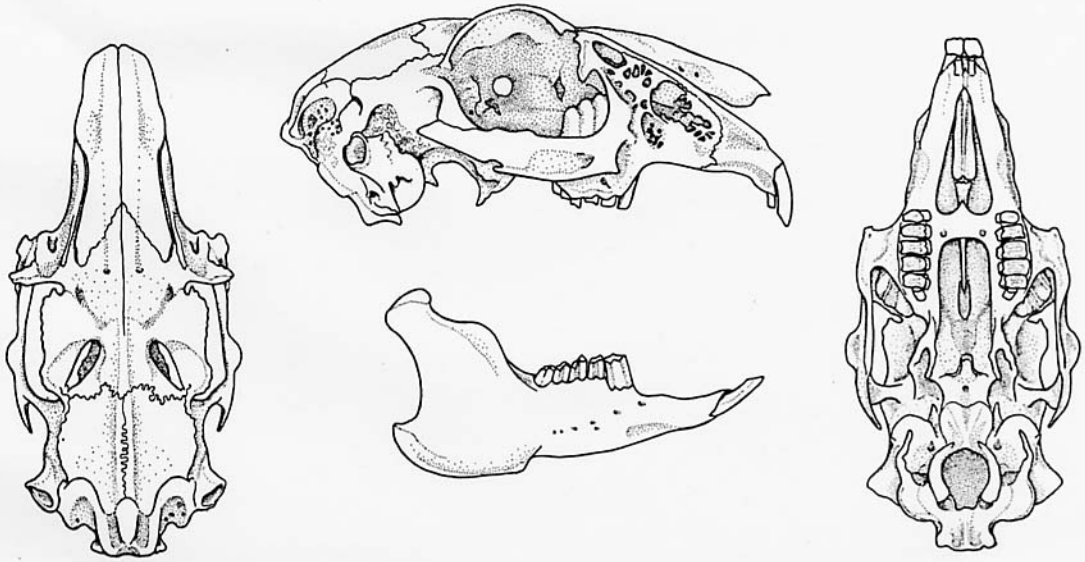


Figure 66. Skull of a leporid (*Lepus*, x 2/3).

Recognition Characters:

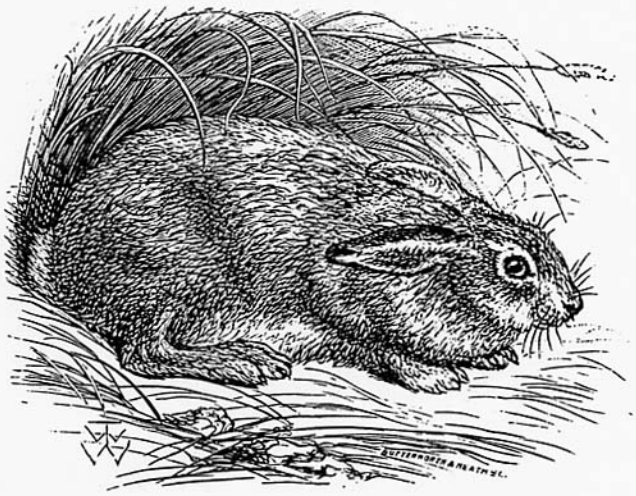
1. **pinna long, pointed.**
2. **tail short but distinct.**
3. hindlimbs longer than forelimbs, modified for hopping and running
4. **digits 4-4,** but first digit reduced on forefoot and hindfoot.
5. **pads on digits present but covered with hair.**
6. **supraorbital process present, fan-shaped** (often fused to varying degrees with frontal bone) (Fig. 66).
7. **maxilla with numerous perforations** (Fig. 66).
8. **nasal widest posteriorly** (Fig. 66).
9. jugal contained wholly within zygomatic arch.
10. cutting edge of first upper incisor straight.

Dental formula: $\frac{2\ 0\ 3\ 2\text{-}3}{1\ 0\ 2\ \text{-}3} = 26\text{-}28$

Compare with: Ochotonidae.

Representative Genera:

Lepus (25) - Hares, jack-rabbits.
Oryctolagus (1) - *O. cuniculus,* the Old World rabbit or European hare, is the common domesticated species.
Pronolagus (5) - Rock hares.
Sylvilagus (13) - Rabbits, cottontails.



Hare.