Key to Living Families

CHAPTER 22

THE RABBITS, HARES, AND PIKAS

Order Lagomorpha

ORDER LAGOMORPHA

Lagomorph literally means "hare-shaped." Although this name does not describe a diagnostic feature of the order, it does point out the similarity among living species. Lagomorphs are terrestrial mammals, although some species burrow and may be considered semifossorial. Members of the living families have tails that are short to very short to absent and hindfeet that are at least somewhat larger than the forefeet. In rabbits and hares, Leporidae, the hindfeet are considerably larger than the forefeet, the external ears are generally very long, and the tail is short (absent in *Romerolagus diazi*) but usually evident externally (Fig. 22.1). Pikas, Ochotonidae, are smaller than most leporids, the hindfeet are only slightly larger than the forefeet, the ears are relatively short and rounded, and the tail is absent externally (Fig. 22.2).

The term "*rabbit*" is properly applied to those leporids that have **altricial** young (that is, born naked, blind, and helpless). The young of "*hares*" are **precocial** (that is, born furred, sighted, and capable of moving about on their own). In North America, the domesticated rabbit, *Oryctolagus cuniculus,* and the various species of cottontails, *Sylvilagus,* are called "rabbits," whereas the so-called "jack rabbits," arctic hares, and snowshoe rabbits, *Lepus,* are actually "hares."

Lagomorphs are almost totally herbivorous and feed on a wide variety of forbs, grasses, and, to some extent, shrubs. Reingestion of caecotrophic feces is known to occur in most species of lagomorphs and enables them to assimilate more plant nutrients and certain B vitamins that are produced by bacteria in the caecum (Hansen and Flinders 1969).

The social structure in lagomorphs ranges from a dispersed system in many hares (*Lepus*) to that of dominance

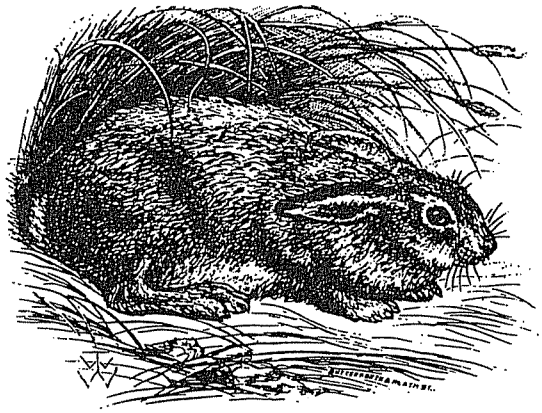

Figure 22.1 The mountain hare, *Lepus timidus,* Leporidae. (Flower and Lydekker 1891:493)

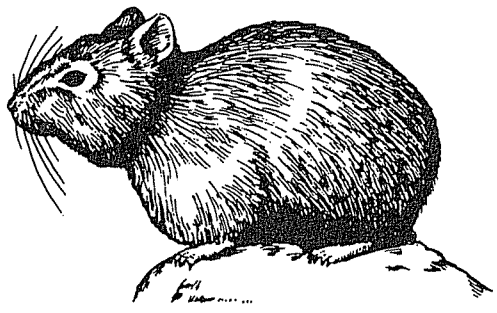

Figure 22.2 A pika, *Ochotona,* Ochotonidae. (Hsia et al. 1964:24)

hierarchies in the European rabbit, *Oryctolagus cuniculus* (Eisenberg 1966). Certain pikas (*Ochotona*) may establish territories based on the defense of accumulated hay piles, although these territories are not generally defended during the reproductive season (Kawamichi 1976; Lutton 1975). Most species of lagomorphs spend their entire lives above ground, but there are notable exceptions. Montane pikas (*Ochotona*) establish passageways among rock piles, steppe-dwelling pikas live in burrows, and European rabbits (*Oryctolagus cuniculus*) construct extensive underground burrow systems or warrens. Certain other species of rabbits of the genera *Caprolagus, Poelagus,* and *Romerolagus* are also known to construct burrows (Walker et al. 1975).

Wild lagomorphs are of some economic importance as sources of fur and meat and as game animals. In some places, they are pests. This is particularly true in areas such as Australia and southern South America where *Oryctolagus* has been introduced by humans and has greatly multiplied and damaged native ecosystems. The domestic rabbit is raised for meat, for fur, as a pet, and for laboratory research.

DISTINGUISHING CHARACTERS

The dental formula is 2/1 0/0 3/2 2–3/3 = 26–28. The first incisors are large and "rodentlike." The second upper incisors are small, peglike teeth located directly behind the first incisors (Fig. 22.3). The cheek teeth are hypsodont, rootless, and evergrowing. Each maxilla is perforated on the side of the rostrum by a single large opening in the Ochotonidae or by numerous small openings separated by a lattice of bone in the Leporidae (Fig. 22.4).

The forefeet are digitigrade, and the hindfeet are plantigrade. The tail is short to absent. There is no baculum, and the testes descend seasonally into a scrotum located anterior to the penis. The uterus is duplex.

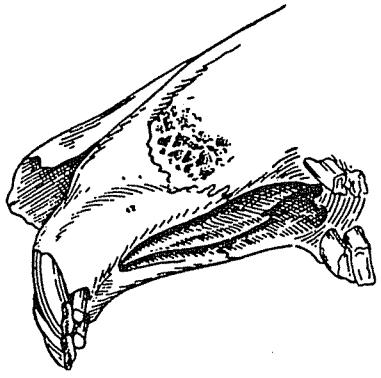

Figure 22.3 Rostrum of lagomorph, showing upper incisors. (Guryev 1964)

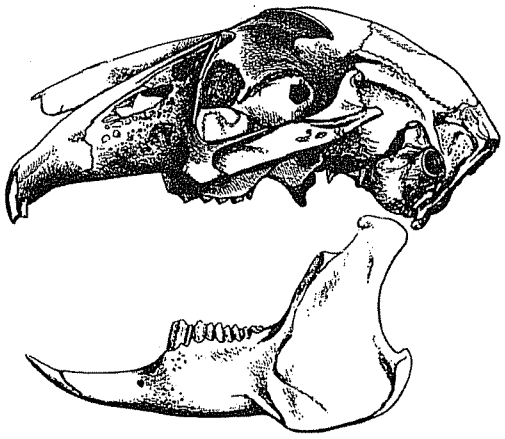

Figure 22.4 Skull of mountain hare, *Lepus timidus,* Leporidae. Note the fenestration of the rostrum. (Flower and Lydekker 1891:492)

LIVING FAMILIES OF LAGOMORPHA

There are two living families of Lagomorpha. The **Ochotonidae,** the pikas, includes two genera and 26 species (one of these species, †*Prolagus sardus,* is historically extinct from the islands of Corsica and Sardinia) which range through the mountains of the western Nearctic and the mountains and steppes of the Palearctic. The **Leporidae,** the rabbits and hares, includes 11 genera and 54 species and are distributed worldwide except for portions of the Oriental Region and Madagascar. Some species have been introduced into the Australian Region and to many oceanic islands by humans. The number of families, genera, and species (including the extinct †*Prolagus sardus*) is based upon Hoffman (1993).

KEY TO LIVING FAMILIES OF LAGOMORPHA

1 Cutting edge of I^1 with V-shaped notch (Fig. 22.5A); dental formula 2/1 0/0 3/2 2/3 = 26; well-developed supraorbital process of frontal absent (Fig. 22.6A); external tail absent; ears no longer than wide ..... **Ochotonidae** pikas

1' Cutting edge of each first upper incisor straight (Fig. 22.5B); dental formula usually 2/1 0/0 3/2 3/3 = 28 (2/1 0/0 3/2 2/3 = 26 in *Pentalagus*); supraorbital process of frontal present (Fig. 22.6B); short external tail usually present; ears longer than wide ..... **Leporidae** rabbits and hares

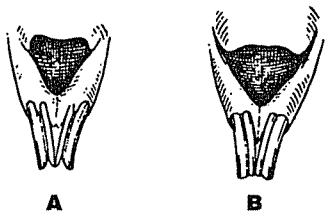

Figure 22.5 Anterior view of the first upper incisors of an ochotonid (A) and a leporid (B).
(Gromov et al. 1963)

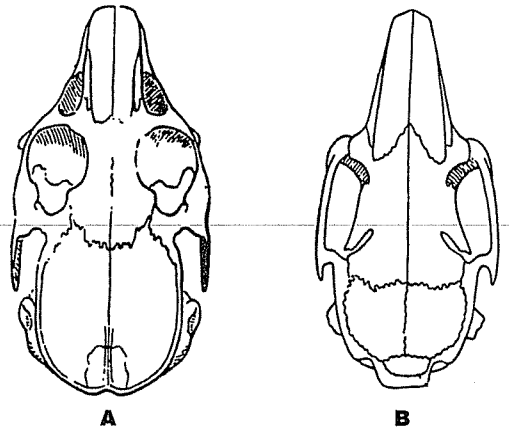

Figure 22.6 Skulls of (A) a pika, *Ochotona,* Ochotonidae, and (B) a domestic rabbit, *Oryctolagus cuniculus,* Leporidae.
(Gromov et al. 1963)

Comments and Suggestions on Identification

All rabbits and hares have a similar basic appearance, but some rodents (such as the springhaas) superficially resemble lagomorphs. Pikas could be confused with several kinds of rodents. Be sure to check for the characteristic second upper incisor, which is lacking in all rodents.