Introduction

Bears are inhabitants of the Northern Hemisphere—Europe, Asia, North America, and the Arctic islands—except for the spectacled bear (*Tremarctos*), in the Andes of South America (see p. 2). They comprise a rather homogeneous group that is characterized by medium to large size, stocky form, very short tail, somewhat lengthened muzzle, and stout legs with five toes on each broad foot. The animals are plantigrade, like man, walking on the entire foot and commonly leaving a track showing both the large palm and sole pads and, in some, the claws. In the skeleton the bones of the forearm (radius, ulna) and of the lower leg (tibia, fibula) are separate—again a human parallel. In consequence, bears have considerable ability to rotate the forearm, which makes for skill in hunting, digging, or manipulating food, and facilitates climbing by some. The teeth of bears are sturdy. The molars, or "cheek teeth," in the hinder part of both upper and lower jaws have broad crowns and are nearly flat, with low tubercles to facilitate crushing; they lack the "carnassial" shearing mechanism of other carnivores in that the last upper premolar and first lower molar do not have cutting edges.

The bears are usually classified as comprising the family Ursidae, which separates them from other groups within the order Carnivora, such as the dogs (Canidae), the raccoons and pandas (Procyonidae), and the cats (Felidae). The bears are considered to have differentiated from the dogs late in geological time, in the mid-Miocene or early Pliocene. Indeed, some zoölogists believe that the bears and dogs should be included in the same family (Simpson, 1945 : 224–225).

In the opinions of some mammalogists, the living bears rep-

resent five to seven genera, although one recent student (Erdbrink, 1953) puts all existing bears in the one genus, *Ursus*. We here employ the usual generic designations for the several kinds of bears, except the Asiatic Black Bear.

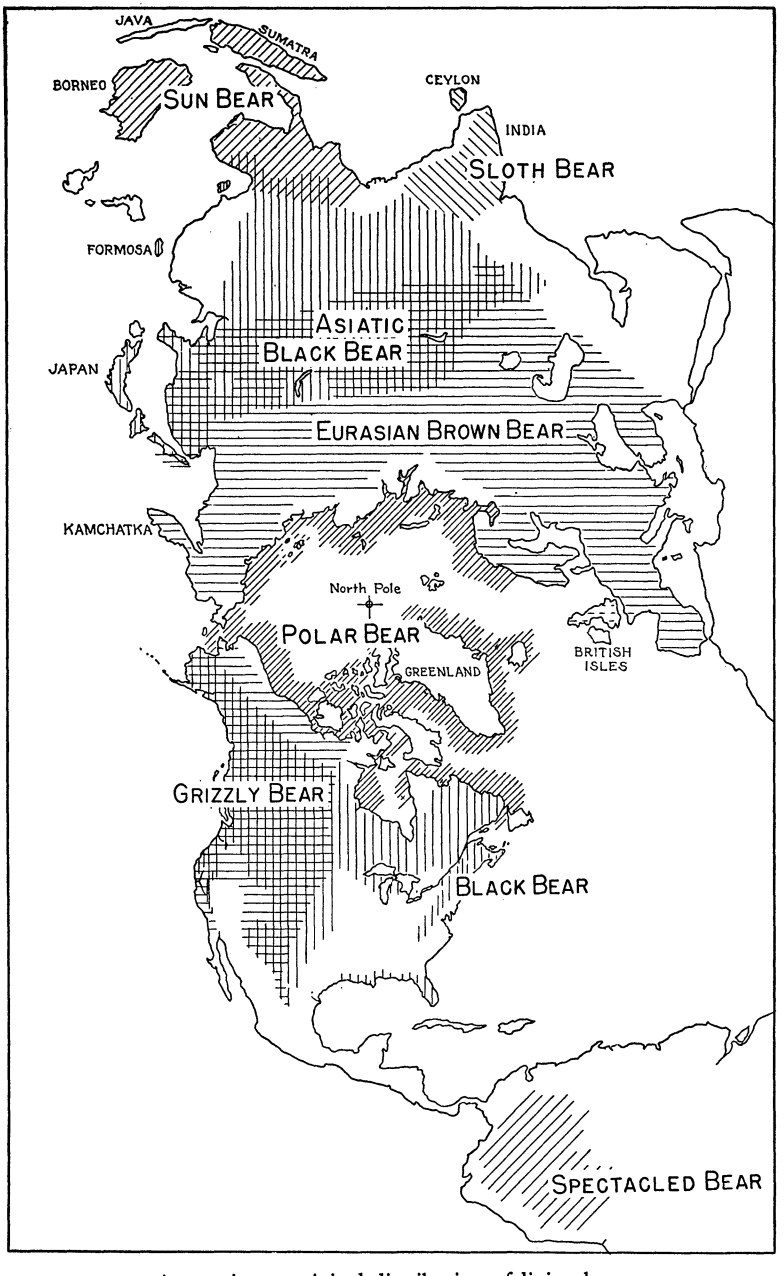
The Polar Bear, *Thalarctos maritimus* (Phipps), of the Arctic regions has a small, slender head, small ears, a long neck, and an elongate body. The very dense fur is uniformly yellowish white and the black soles of the feet are partly haired. The bear lives in the northernmost parts of Eurasia and North America, in some places on the mainland but principally on the ice, whence it occasionally is carried south on floating cakes of ice or icebergs to Hudson Bay, Ungava Bay, and the coasts of Greenland. The "ice bear," or "water bear," dives readily and swims long distances in the chilly polar waters.

The Sloth Bear, *Melursus ursinus* (Shaw), of southern Asia is small as bears go, weighing only about three hundred pounds. It has a shaggy coarse black coat, gray tip on the snout, an inverted white horseshoe mark on the chest, and white claws. It is native from Ceylon and southern India north toward the Central Provinces, Bihar, Bengal, Assam, and possibly Darjeeling. The sloth bear hunts partly by day and does not hibernate. Its food consists almost entirely of wild fruits and insects.

A second native of southeastern Asia is the even smaller Malayan Sun Bear, *Helarctos malayanus* (Raffles). This bear inhabits the Malay Peninsula, Thailand, Indochina, Burma, possibly parts of southern China, and Borneo and Sumatra. The animal is a forest dweller, climbs well, and is primarily a fruit-eater.

The Spectacled Bear, *Tremarctos ornatus* (F. Cuvier), inhabits forests from the base of the Andes to altitudes of about 9,800 feet. It occurs from western Venezuela across Colombia and Ecuador to Peru and Bolivia, lives in remote places, and is rather rare. The pelage is long, dense, and coal black, and each eye is more or less encircled by a yellow or white line. The animal is strictly vegetarian, eating palm fruits and young leaves. It makes beds of sticks and leaves in trees. (Cabrera y Yepes, 1940 : 141–143.)

The Asiatic (or Himalayan) Black Bear is commonly designated as *Selenarctos thibetanus* (G. Cuvier) or as *S. torquatus*



Approximate original distribution of living bears.

Grizzly and brown bears, ≡ ; black bears, |||.

(Wagner) and thus is placed in a different genus from the North American Black Bear. G. M. Allen (1938*a*: 330–332), however, in his monograph on mammals of China and Mongolia, weighed the evidence for this separation and concluded that both belong in the genus *Euarctos*. We accept Allen's conclusions. The Asiatic species is black with a narrow inverted crescent or horseshoe mark of white on the chest. The chin is white and the nose reddish brown. This bear ranges from eastern Siberia, Manchuria, Japan, and Formosa over most of China to Indochina and Thailand; and from Burma and Assam west to Nepal, Kashmir, Baluchistan, and Afghanistan.

The Black Bear of North America is distinguished from the grizzly–brown bear complex by certain obvious features, such as shorter muzzle; front claws of moderate length, not much longer than the hind ones; hind feet relatively short; fur short and of uniform length; last upper molar decisively shorter (less than 1¼ inch in black bear; 1¼ inch or longer in grizzly). In general, the black bear is smaller, although occasional old males are as large or larger than small adult female grizzlies. The grizzly has a conspicuous shoulder hump (figs. 1, 2) not present in the black bear, which makes it seem to stand higher at the shoulder. The forehead of the black bear is slightly more raised, and the head in profile appears shorter and less slender. The front claws of the black bear are shorter, narrower, more curved, and darker. The canine teeth (tusks) are larger at the base and taper more rapidly toward the tip than those of the grizzly. Tracks of bears are not necessarily a clue to identity of the species. The black bear is less likely to leave impressions of the claws; any hind-foot print in firm soil on level ground that exceeds 11 inches in length or 6 inches in width is that of a grizzly. Black bears climb regularly and easily in trees; young California grizzlies reportedly climbed, but the adults were strictly terrestrial.

Black bears are native to the forested regions of North America. They occur from the Kenai Peninsula of Alaska south along the Pacific Coast in California to Sonoma County and also in the Tehachapi region; in the Rockies they were represented as far south as the Sierra Madre in Chihuahua, Mexico; and in eastern North America from Labrador and Nova Scotia south

to Florida and Louisiana. In recent years, black bears have been introduced into some regions of California where they were not native.

Most mammalogists consider that the North American population of black bears represents one wide-ranging species, *Euarctos americanus* (Pallas), divided into a number of subspecies. Others characterize certain of the regional forms as distinct species: *floridanus* (Florida), *luteolus* (Louisiana), *machetes* (Chihuahua). The "black" bear (*Euarctos americanus* and its subspecies or closely related species) has various color phases, the most common being black and cinnamon although some are literally yellow.[1]

Last but most outstanding among all bears are the Grizzly Bear and the Brown Bear that originally were native in much of the Northern Hemisphere. They are distinguished for their size, their shaggy coats, the long, curved front claws, and their terrestrial habits. Largest and most powerful of the bears, they are the peerless "big game" of rugged hunters who have contested with them for centuries. The largest are found on Kodiak and Afognak islands and the Alaska Peninsula. Of these Rausch (1953 : 97) says: ". . . the greatest reliable weight of which I know is 1,200 lbs. Weights exceeding 1,500 lbs. are frequently reported, but these are estimates . . ."

The Old World Brown Bear is considered by Ellerman and Morrison-Scott (1951 : 236–238) to be a single wide-ranging species, *Ursus arctos*, named formally by Linnaeus in 1758, and having six subspecies in Eurasia. Its original distribution reached from Spain, Greece, and northern Africa to Sweden and Norway, over most of the U.S.S.R. (in summer far into the tundra), and across Asia to Japan.

There is general agreement that the brown and the grizzly bears all belong to one genus, *Ursus;* but there are differences of opinion concerning the relationships between the two kinds, and the number of species or varieties represented. Earlier it was thought that two distinct kinds existed, brown and grizzly, and

[1] These differences are genetic, probably simple Mendelian characters, since litters are reported containing both black and cinnamon cubs; and in Alaska both "glacier" (blue) and typical black bear cubs have been seen in the same litter (Nelson, 1918 : 437).

that the brown bears of southeastern Alaska were more closely related to the Eurasian brown bear, *Ursus arctos*, than the grizzly. Even Merriam (1918 : 12–13) stated that "The typical brown bears . . . [have more uniform color] with less of the surface grizzling due to admixture of pale-tipped hairs; the claws are shorter, more curved, darker, and scurfy instead of smooth; the skull is more massive . . . But these are average differences, not one of which holds true throughout the group."

Anthony (1928 : 83–84) recognized seven kinds of brown bears ranging from Unimak Island in the Alaska Peninsula northeasterly to Baranof Island, and one from north of Great Slave Lake. Another competent authority, G. M. Allen (1938*b* : 266), stated: "There can be no doubt that [the bears from western China and eastern Tibet, of the *Ursus arctos* group], as Miller suggests, are closely related to the North American grizzly bears, which doubtless represent the Brown Bears in the New World." Indeed, Allen (1938*a* : 328) uses the term "Black Grizzly" for *Ursus arctos lasiotus* of northern China and Mongolia.

A European biologist, D. P. Erdbrink (1953 : 339), who studied fossil and recent bears of the Old World, working solely from the literature and museum material in The Netherlands, thought the case for the grizzly as a distinct species or subspecies ill-founded and made the novel suggestion "to recognize a 'grizzly mutation' occurring now and then among the members of the species *U. arctos*, and more frequent in some geographical regions than others." In his opinion, this "mutation" is characterized by curved, nontapering, bone-colored claws; fur often containing whitish or yellowish hairs among the darker ones and producing the grizzled appearance; the skull usually broad in front; and a tendency to develop accessory cusps on the last premolars and molars. His map (p. 536) shows approximate "areas where the grizzly mutation chiefly occurs" extending in North America from the Canadian prairies into Mexico (but excluding much of the Pacific Coast States) and in the Old World from central China to eastern Turkey!

Even in the eighteenth century the grizzly was noted as being different from other kinds of bears and was commonly called the "red bear," or "grizzle bear," to distinguish it from the black

bear; but it was not characterized scientifically until early in the nineteenth century. The second edition of William Guthrie's "Geography"[2] published at Philadelphia in 1815 contains a section on "Zoology of North America," by George Ord, in which scientific names were first applied to several animals of this continent. The grizzly bear was designated as *Ursus horribilis* (p. 291). Curiously, Ord provided no description of the animal; instead he quoted (pp. 299–300) from H. M. Brackenridge (1814 : 55–56), *Views of Louisiana* (that is, the then vast Louisiana Territory), which had borrowed from the first account of the Lewis and Clark expedition, published in 1814 (see Coues, 1893 : 297, 298, Lewis and Clark Journals). The only precise information included by Ord is of a bear killed "near the Porcupine river." This bear, the largest seen until that time by Lewis and Clark, was shot on May 5, 1805, near old Fort Charles at the mouth of Little Dry or Lackwater Creek, in what became Dawson County in northeastern Montana (Rhoads, 1894 : 28). This place, in zoölogical parlance, is the type locality for the species; it is restated by G. S. Miller (1924 : 92) as being "Missouri River, a little above the mouth of Poplar River." The grizzly measured as follows: from nose to extremity of hind feet, 8 ft. 7½ in.; girth of neck, 3 ft. 11 in.; girth of body near forelegs, 5 ft. 10½ in.; girth of forelegs at middle, 1 ft. 11 in.; length of [front] claws, 4⅜ in. Its weight was estimated to be between five and six hundred pounds (Ord, in Guthrie, 1815 : 300).

Another name, *Ursus ferox* Rafinesque 1817, was used by some early writers, but is a *nomen nudum*, without description; being later in date, it is a synonym for Ord's name.

The earliest scientific description of the grizzly in California is that by Spencer F. Baird, first Secretary of the Smithsonian Institution, in his monograph (1857) on mammals collected by the Pacific Railroad surveys.[3] He had five skins and seven skulls from

[2] This exceedingly rare book is of interest to zoölogists because of the scientific names applied by Ord. The zoölogical section was reprinted by Samuel N. Rhoads (1894).

[3] In March, 1853, Congress appropriated $150,000 for the survey of possible routes for a railroad from the Mississippi River to the Pacific Ocean. Eight or more parties were organized to explore routes between the 32d and 47th parallels. Specimens collected by members of these parties were forwarded to the Smithsonian Institution in Washington.

California, together with eight skins and five skulls from other parts of the western United States. His characterization of the grizzly as a single species, *Ursus horribilis* Ord, was as follows (p. 219):

> Size very large. Tail shorter than ears. Hair coarse, darkest near the base, with light tips. An erect mane between the shoulders. Feet very large; fore claws twice as long as the hinder ones. A dark dorsal stripe from occiput to tail, and another lateral one on each side along the flanks, obscured and nearly concealed by the light tips; intervals between the stripes lighter. All the hairs on the body brownish yellow or hoary at tips. Region around ears dusky; legs nearly black. Muzzle pale, without a darker dorsal stripe.

A specimen from New Mexico was named by Baird *Ursus horribilis* var. *horriaeus*. In 1838 Swainson described *Ursus richardsoni* from the shores of the Arctic Ocean, and in 1903 D. G. Elliot characterized *Ursus hylodromus* from British Columbia. With these exceptions, all other names proposed for grizzlies were the work of one man, C. Hart Merriam (1855–1942).

The classification of grizzlies and brown bears in North America was a major interest of Dr. Merriam, who was Chief of the Bureau of Biological Survey, United States Department of Agriculture, from its establishment in 1885 until 1910, and thereafter continued his research, under a private endowment, for the remainder of his life. He collected large series of specimens of the small native mammals of North America and classified and named many new species and outlined their geographic distribution. His methods and points of view are the basis of much current mammalogical research in taxonomy and distribution.

About 1891 he turned to study the large bears, and shortly recognized eight species, five of which he described as new (Merriam, 1896 : 65–83). In 1914 he characterized thirty apparently new grizzly and brown bears in North America (Merriam, 1914 : 173–196), and in 1918 he published a "Review of the Grizzly and Brown Bears of North America" (Merriam, 1918), which included eighty-six kinds.[4] In this, most of the named forms were

[4] The entire series was subdivided into fourteen "groups," but these were not defined. The characterization of individual species and subspecies is not of a sort readily understood or interpreted by other persons. For his 1918 "Review," Merriam had assembled practically all skulls of grizzlies and brown bears in museums within the United States; in his 1914 paper (p. 173) he mentions "more than 500"

considered as full species, but a few were listed as subspecies. Dr. Merriam was long engaged in writing a book on bears, but the task was incomplete at his death and the volume has not been printed.

Merriam ascertained that in most species of bears the males are much larger than the females (*magister* of southern California being conspicuous in this respect), but in a few the difference is slight. It was his opinion that cranial (bony) characters are more permanent and of greater significance for classification than minor tooth characters. "The teeth are strongly modified by food and consequently in some cases present marked variations in the same group" (p. 13).

Merriam held to the belief that hybridization among animals in nature is rare. Because of this he wrote: "One of the unlooked-for results of the critical study of American bears is the discovery that the big bears, like mice and other small mammals, split up into a large number of forms whose ranges in some cases overlap so that three or more species may be found in the same region" (*ibid.*, p. 9).

Because of Dr. Merriam's long preoccupation with the bears, other mammalogists did little with them. When necessary to cite scientific names and geographic ranges they usually followed his 1918 paper, but most of them were doubtful whether the large bears were so finely and intricately subdivided. G. G. Simpson (1945 : 225) wrote that "C. H. Merriam distinguished about ninety species of North American bears alone, but he had a . . . unique conception of the character of a species, giving it less scope than most authors give a minor geographic race, not much more than an individual genetic family group. In such a system twin bear cubs could be of different species." H. E. Anthony in preparing his *Field Book of North American Mammals* made a synopsis for "every one of the 84 forms," but "in the final analysis" discarded it in favor of "a much briefer, more comprehensive treatment" (Anthony, 1928 : 80). He finally recognized eleven species of grizzlies and seven of brown bears.

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then brought together. But there is no indication of the number of specimens of each form or of the actual total. Museums of the United States contain only 34 skulls ascribed to California, according to a survey by the present authors in 1952 (see App. A).

The limited number of specimens of grizzlies in museums, many with fragmentary or dubious data for locality and sex, precludes a study of these bears comparable to the monographic analysis possible for many other genera of North American mammals.

A recent investigation of big bears in Alaska by Rausch (1953 : 95–107) tends to clarify the situation by emphasizing the high degree of individual variation among these animals. In any one place "there is rarely size-uniformity in a grizzly population. The majority of animals may be of about the same size, but unusually large and unusually small individuals are seen" (*ibid.*, p. 97). "Maximum size in *Ursus arctos* is attained where an unlimited supply of high protein food is available" (*ibid.*, p. 98),[5] as in the salmon runs in southeastern Alaska. "The colour of grizzlies is highly variable and . . . has little or no taxonomic value. . . . Grizzly claws are very variable in shape, size, and colour"—white to nearly black (*ibid.*). The skulls are nonuniform in gross size, length–width ratio, profile, length of rostrum (nose), dimensions of the palate, form and length of mandible, size of teeth, and other features. A series of twenty-two from one region (Brooks Range) when arranged in presumed sequence of increasing age, as judged by over-all length and degree of tooth wear, shows no correlation in the change of parts; they tend to grow independently. Rausch has photographs and measurements of skulls of four old or aged males from among thirty-five bears killed in one region in the course of five years (Anaktuvuk Pass, central Brooks Range). "According to Merriam's system of bear classification, it would be acceptable to consider each of these four animals representative of a different species" (*ibid.*, p. 101), but "they probably comprised interbreeding members of a single population" (*ibid.*, p. 99).

Because of the wide variation in skulls, bodily size, and coloration, Rausch concluded that all big bears in North America, "grizzly" or "brown," belong to one highly variable Palearctic species, *Ursus arctos* Linnaeus.[6] The stocks in all of continental

[5] Abundance of range livestock in Spanish and Mexican days in California may have had a similar effect on the size of bears.

[6] Couturier (1954), in a book issued after completion of our manuscript, also

North America, past or present, he ascribed to a single subspecies, *U. a. horribilis* Ord; those of the Alaska Peninsula to another, *U. a. gyas* Merriam; and those on Kodiak, Afognak, and Shuyak islands to a third, *U. a. middendorffi* Merriam.

Merriam described seven kinds of grizzlies in California: he assigned *californicus* (Monterey), *tularensis* (Fort Tejon), and *colusus* (Sacramento Valley) to the "horribilis" group that extended to Colorado, Montana, and Yakutat Bay, Alaska; *klamathensis* (Klamath River), *mendocinensis* (Mendocino County), and *magister* (southern California) to the "arizonae" group that had representatives from northern Mexico and New Mexico to Yukon Territory and southeastern Alaska; and *henshawi* (southern Sierra Nevada) to the small "horriaeus" group having two other species in Arizona and New Mexico. Grinnell (1933), in summarizing the distribution of California mammals, accepted all seven of Merriam's varieties, and these were also included in the work on California fur bearers (Grinnell, Dixon, and Linsdale, 1937).

The diversity of physical, climatic, and biological environments in California, such as the northwestern humid coast, the drier central and southern coastal regions, the Great Central Valley, and the Sierran foothill and mountain areas, are commonly reflected in subspecific differences among the native mammals, both large and small. The lines or areas of demarcation vary from one species or genus to another. It is possible that the grizzlies of California in the several regions indicated showed some small differences in average adult size, coat color, and skull characters; but when grizzlies were abundant and available there were no local mammalogists, and now there is not enough museum material. Whether California had one, seven, or some other number of varieties of grizzly, it is impossible to determine.

It is reasonable to think that the grizzly stock in California was different in some degree from that in the Rockies and to the north in Canada and Alaska. In 1896 Merriam characterized a bear from this state by the name *californicus*, based on a speci-

concludes that all the brown and grizzly bears constitute one species, *Ursus arctos*. He would abandon all attempts to recognize subspecies and merely refer to local groups as "populations."

men from Monterey. We may therefore use the name *Ursus arctos californicus* Merriam as appropriately designating the once common and widespread native of this western state and linking to it the name of the most distinguished student of grizzlies.

The grizzly bear originally ranged over an enormous territory in North America (p. 3). A map by the United States Fish and Wildlife Service based on specimens in the United States National Museum and records in the literature show the grizzly as ranging north to the Arctic Coast of Alaska and Canada (east to Longitude 100° W.) and thence down to southern Durango, Mexico.

It once occupied three limited areas in the north-central, northeastern, and southeastern parts of Washington (Dalquest, 1948 : 177); and in Oregon was in the Coast Range (but not on the coast itself), the Willamette Valley, the Cascade Range, and some eastern parts of the state (Bailey, 1936 : 324). Some early explorers traveling southward in Oregon, such as the Wilkes party of 1841, met none until they reached the Umpqua River (Cassin, 1858 : 13). Grizzlies reportedly were abundant in the Rogue River Valley and up into the region that is now Crater Lake National Park (Wright *et al.*, 1933 : 121–122). In California there were grizzlies from about Siskiyou and Humboldt counties to San Diego County. None lived in the Great Basin. The easternmost extent of their range is uncertain. In Texas one was recorded in the Davis Mountains, Jeff Davis County (Bailey, 1905 : 192). For Kansas there are three records: Castle Rock, Gove County, and Smoky Hill River, Logan County, in the west, and Council Grove, Morris County, in the central part of the state (Cockrum, 1952 : 238–239). We have no record of grizzly bears in Nebraska. Only two are recorded in South Dakota—in the extreme western part—but there are records of several in North Dakota from the eastern border westward. In Canada the easternmost records are from near Calgary, Alberta, northeasterly to the Arctic coast near Simpson Strait, Mackenzie District (Anderson, 1946).

The steady pressure of man on grizzlies has contracted their territory and numbers to a minute fragment of the original. A summary of information about grizzlies in 1922 led Merriam to

conclude that a few remained in Washington, although the last two records for Oregon were in 1894. The last grizzly in Texas was killed in 1890. A few were believed to exist in Arizona and New Mexico and in Utah in 1922, and Colorado still had a few; Idaho, Wyoming, and Montana had the most, many in the national parks and lesser numbers outside (Merriam, 1922). By 1941 their range in the United States had shrunk to small areas in Idaho, Montana, and Wyoming adjacent to and including national parks; their numbers in that year were roughly estimated as follows: national forests, 775; Indian reservations, 50; national parks and monuments, 420—a total of 1,345 (Jackson, 1944*a*, 1944*b*). In 1951 it was estimated that three national parks in the northern Rockies had 310 grizzlies: Grand Teton, 10; Yellowstone, 180; Glacier, 120 (Cahalane, 1952). In 1952 the estimated total was 908, of which 737 were in fourteen Montana counties (Hickie, 1952; letter, Montana Dept. of Fish and Game, May 3, 1954). These figures are not an accurate census but are based on collected opinions of forest, game, and park officials.

Outside the United States grizzlies are still present in British Columbia and other parts of western Canada and are common in much of Alaska. Some persist in parts of northern Mexico, but it is not certain that they occupy all the area indicated in a recent map by Couturier (1954 : 211–212).

Throughout its range, the grizzly, as an animal type, experienced a wide diversity of climatic and biological environments. To the north, grizzlies inhabitating the Barren Grounds and interior Alaska had short summers of continuous daylight alternating with long, severe, dark winters and extremely low temperatures. By contrast, the bears in the Great Central Valley of California experienced mild, rainy winters, only occasional frosts, and long, hot, dry summers. Between these extremes still others lived in the intermediate climatic regimens—in the Rocky Mountains, on the western edge of the Great Plains, in the moderate altitudes of southern Arizona, and in the northwestern coastal region of California.

Coronado was probably the first among the early explorers to see grizzly bears. In 1540 he marched from the City of Mexico to the Seven Cities of Cibola (the Zuni region of west-central

New Mexico) and on to the buffalo plains of Texas and Kansas. It is the opinion of Seton (1929 : 13) that Coronado "certainly saw many grizzly-bears," but the Spaniard's account merely states that the natives had "many animals—bears, tigers [jaguars?], lions," and so forth, and "the paws of bears." His lieutenant, Pedro de Castañeda, wrote, "There are many bears in this province . . ." (Winship, 1896 : 569–570, 518).

Baron Lahontan, who traveled in Canada from 1683 to 1691, listed "reddish bears" from the southern part of that country. "The reddish bears are mischievious creatures," he wrote, "for they fall fiercely on the huntsmen, whereas the black bears fly from them. The former sort are less [abundant?], but more nimble than the latter" (Lahontan, 1703, 1 : 234; in Pinkerton, 1812, 13 : 350, 351). It is not clear whether he actually saw grizzlies.

Edward Umfreville, who wintered on the Saskatchewan and at Cumberland House of the Hudson's Bay Company in Canada from 1784 to 1787, wrote: "Bears are of three kinds: the Black, the red, and the Grizzle bear" (1790 : 167–168). He mentions the savage nature of the "grizzle" and red bears and the number of maimed Indians who had been attacked by them. Samuel Hearne was possibly the first white explorer actually to see grizzlies in Canada. In July, 1771, he "saw the skin of an enormous grizzled bear at the tents of the Esquimaux at the Copper[mine] River" and said that "many of them are said to breed not very remote from that part." Hearne's account, however, was not published until twenty-four years later (1795 : 371–372).

Unnoticed by zoölogical writers, however, is another early record, and the first for California, which antedates all except that of Coronado. On a voyage of exploration, Sebastian Vizcaíno stopped at the site of Monterey from December 16, 1602, until January 3, 1603. While he was there, bears came down at night to feed on a whale carcass stranded on the beach (Ascensión, 1611; see Bancroft, 1884 : xxix, 102; Wagner, 1929 : 247). (See our chap. 5.) These animals could only have been grizzlies, since black bears were not native there. The reports of the Spanish author had no general circulation, however; those of the Canadian explorers in the eighteenth century were the first to announce grizzlies to the world at large.