

Beware of Beggars

➤ BEGGARS, bane of tourism in some of the world's older, poorer lands, are little seen in our more prosperous, prideful country. Yet tourists in some of our national parks frequently encounter mendicants as shameless and brazen as any that might beset them in the Orient. They grow fat and sleek, too, for most of their victims are delighted to make offerings to their greediness.

Beggars in our national parks, to be sure, are not human beings. They are bears, that haunt certain spots by the roadside and await gifts of candy, fruit and other edibles from passing motorists. They are sometimes called "holdup bears," but this is an out-and-out misnomer. There isn't the least likelihood that these beggar bears will back up their demands with violence as genuine bandits would. If you drive right on past them all they do is wait, resignedly, for a driver who may prove an easier sucker.

Park rangers and administrators do not like these beggar bears, and tolerate them only because they are popular with tourists who get a thrill out of momentary familiarity with a wild animal that has had a bad reputation ever since the days of the prophet Elisha. They do bring some profit to the park stores where the chocolate bars are bought, and to the photographic shops

where the tens of thousands of hastily snapped films are developed and printed.

If you should encounter one of these hairy beggars masquerading as a bandit, and feel that you really must stop and get a snapshot, here are two recommended safety procedures: Preferably, don't get out of your car. Toss your candy bar onto the ground at good snapshot range, and get your picture as the bear picks it up. If you can't use your camera without dismounting, be even more careful to keep your

distance. Never under any circumstances hold your offering at arm's length and invite the bear to come up and eat out of your hand. A bear is all too apt to bite the hand that feeds him, not because he is ungrateful but simply because of all dumb animals the bear is about the "dumbest." And a mere awkward wave of his paw, without any hostile intent, might easily tear off half your face or smash the ribs over your heart and kill you.

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ACOUSTICS

Ears Muffle Own Noise

➤ THE croaking of a frog, the bawling of a calf, the crowing of a rooster, or the bellow of a baseball fan angered by an umpire, do not sound as loud to the individual making the noise as to those around him.

Why this is so is explained by Dr. Georg V. Bekesy, of the Psycho-Acoustic Laboratory, Harvard University. The reason is to be found in the structure of the ear which is equipped with automatic means of reducing its sensitivity to the vocalizations of the same animal.

When a frog croaks, he opens his mouth and vibrates the end of his tongue. Although these vibrations subject the eardrum of the frog to intense sound pressures, these pressures are balanced by the vibrations inside the mouth. Acting on both sides of the eardrum at the same time, the net vibration is greatly reduced. This equalization of pressures is aided by the great width of the Eustachian tube of the frog. If you look into the open mouth of the frog, you can see about half of the eardrum through the Eustachian tube. When the frog shuts his own mouth, he can then hear his neighbors.

The rooster has a different mechanism for automatically muffling his own crowing. He stops up his ears when he raises his head to crow. The opening of the ear canal of the rooster is surrounded by a cartilaginous ring which can be pulled very easily in one direction so as to close the ear canal. This pulling takes place whenever the rooster lifts his head to crow.

Man, like the frog, opens his Eustachian tube when he opens his mouth to roar (or yawn).

Hearing by bone conduction of one's own voice is limited by the position of the inner ear deep in the head where vibrations by bone conduction are kept at a minimum. The ear is so placed in animals with thick, bony skulls, such as the ox and man.

If it were not for these and other automatic means of reducing the noise we make ourselves, we should find most annoying not only our own voices, but the sounds made by chewing and swallowing. Even walking produces vibrations of the body which can be heard if the ear canal is

closed. The vertebrae of the spine cushion some of these vibrations.

In dogs, cats, mice and other small mammals in which the size of the middle ear is greater than the thickness of the bony wall of the skull, the middle ear is surrounded by a capsule called a bulla. This structure also serves to minimize the bone transmitted vibrations.

The bony structure of the middle ear serves the same purpose. When you use your voice, the vibrations set up in your skull are at a minimum in the direction parallel to the axis of the ear canal, and at a maximum in vertical to it. The bones of the middle ear are so constructed that a movement of the bone called the hammer in the direction of its long axis does not cause a displacement of the fluid in the cochlea.

Dr. Bekesy's report appears in the JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA. (May).

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Words in Science— CYCLONE-TORNADO

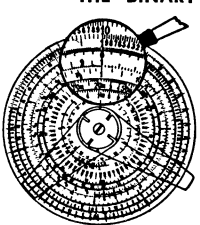
➤ A CYCLONE is a circular area of low atmospheric pressure around which the winds blow counter-clockwise in the northern hemisphere, and clockwise south of the equator.

Hurricane is the name given to a tropical cyclone, especially one in the West Indies. It is also the designation of the highest wind force on the Beaufort Wind Scale, those 75 miles an hour or faster. In the China Sea area, a hurricane has the special name typhoon.

Tornado is the name used for the violent rotary storms occurring in southern and central United States. These winds, known popularly as "twisters," are calculated to attain a speed of higher than 300 miles an hour. The updraft inside the funnel cloud may blow at 100 to 200 miles per hour. The path is short, averaging about 300 miles. A hurricane, by contrast, may cover thousands of square miles and have a diameter of 1,500 miles.

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