FIGHTING IN YOUNG AND MATURE OPOSSUMS

L. T. EVANS
Albert Einstein College of Medicine

The fighting posture of the young opossum is indicated by the uptilted snout and widely opened mouth. This pattern is derived from the open-mouth response which the animal makes to the sudden impact of any tactile, odorous, auditory or visual stimulus, from the moment it emerges voluntarily from the pouch until old age overtakes it. This threat posture serves as the "releaser" for nearby opossums to open their jaws in the same fashion. Any stimulus at this moment of tension releases a swift, slashing bite and a return to the alert but immobile threat posture. The actual bite may be delivered in 1/16th second and is directed mostly at the snout of adversaries, although fatal wounds are sometimes suffered.

The adult male also slashes downward, penetrating the hide of its rival with the relatively huge and deeply rooted upper canines. The lower jaw then closes upon the victim which is shaken vigorously. To one who has studied the patterns of lower vertebrates, this opossum technique bears a striking resemblance to the intimidatory display of the snapping turtle, alligator, lizard or serpent. (15 minutes).

THE ANALYSIS OF ANIMAL SOUNDS

D. J. BORROR
Ohio State University

Accurate information on animal sounds may be of considerable value to taxonomists and students of animal behaviour.

To analyse an animal sound, we need to determine the frequencies of the various notes, their relative loudness, and their rhythm. Most of these characteristics can only be estimated by ear, but electronic instruments are now available which can measure them with considerable accuracy.

Most instrumental analyses of animal sounds are made with either an oscillograph or a sound spectograph from recordings. The sound spectograph is an instrument that makes graphs of sounds, portraying time on the horizontal axis and frequencies on the vertical axis. The use of this instrument is described, and graphs of the songs of several bird species are shown to illustrate the sort of information that can be obtained. Features that make a song musical or nonmusical are pointed out, and some practical applications of sound spectograph data are suggested.

SOUND PRODUCTION AND COMMUNICATION IN INSECTS

R. D. ALEXANDER
University of Michigan

Sound communication in insects can be discussed under two headings: (1) long-distance signalling, or communication from outside the range of other senses, (2) and signalling among individuals in close proximity. Long-distance signals function primarily in bringing adult males and females together, and consequently a high degree of specific distinctiveness and complexity in song rhythms, and of sensitivity in auditory organs, has evolved. Congregation occurs in several different ways.

In close proximity sound signals may function in courtship, in fights between males, in escape from predators, and in other situations. Intraspecific structural modifications with change in situation are often remarkable. Interspecific distinctiveness is less evident, though it may be marked among closely related species which initially congregate in the same habitat niches.

Experimental work recently published and in progress continues to stress the significance of understanding of acoustical behaviour in studies on the systematics, ecology, and evolution of a wide variety of insects.