

HEARING IN PRIMITIVE MAMMALS, I:  
OPOSSUM (*Didelphis virginianus*)<sup>1</sup>

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INTRODUCTION

This report is the first of a series concerned with the general question of the evolution of human hearing. Although the chief goal of the series is to determine if, and along what dimensions hearing capacity has changed, the present study is concerned with the hearing of the opossum, *Didelphis virginianus*.

bars on 1/2" centers wired to allow delivery of a shock to the animal's feet. A 1" thick layer of wood shavings lay beneath the grided floor. A water bottle and pellet dispenser were fastened outside of the chamber to one of the opaque walls. Tubes led from the bottle and the dispenser to a lick-spout and food cup, respectively, which were fastened

emphasized that throughout training and testing, every presentation of a tone was followed by an aversive shock whether or not the tone eventually proved to be suprathreshold.

*Threshold Testing Procedure.*

At each frequency, threshold testing was conducted in two ways: first, the threshold was estimated by a modified method of limits, then a second exhaustive determination was made by the method of constant stimuli.

In the first stage of threshold testing, the intensity of the tone was gradually decreased in 5-db steps on each successive trial until a failure to suppress was observed.

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READING IN PROGRESS

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This relative insensitivity of the opossum is directly supported by electrophysiological recordings of the cochlear microphonic potential (Fernandez and Schmidt, 1963; McCrady et al., 1937 and 1940). It is also, though indirectly, supported by anatomical differences between the structure of the middle ear of opossums and other mammals. Unlike the ear of advanced mammals, the tympanic membrane of the opossum

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