

The changes in a bat community at the Andes showed that species richness is correlated with elevation, climatic factors (temperature) and foliage-height diversity (Graham, 1983). In this paper, we compare the bat community in an altitudinal transect in a tropical mountain of the northern Hemisphere, where a much impoverished bat fauna is present, when compared to the Andes.

METHODS

Eight collecting localities were selected along an altitudinal transect in the Sierra de Pinal de Amoles, which is a part of the Sierra Madre Oriental, State of Querétaro, Mexico. The altitudinal range covers from 800 to 2,650 m and both faces of the Sierra de Pinal de Amoles. Sites were selected to represent the different vegetation as well as climate types.

Alternate field trips to one of the slopes of the mountain were done during one and half years, covering the different seasons for all the localities. Eleven trips were performed from 31 July 1982 to 30 December 1983, and for the purpose of this analysis, the period of one year, from September 1982 to August 1983 was considered.

Bats were mist-netted along streams, ponds and forests. Mist nets were placed for two nights in each locality. External body measurements of bats were taken in the field to all individuals caught. The reproductive condition was determined by autopsy, recording pregnancy, lactation and prominence of teats. Vaginal opening was annotated as closed or open. Testes in males were measured with dial calipers. Body weight is given in grams. Only free-ranging bats were included in this study, therefore bats captured in caves were not considered.

The altitude of the locality, number and size of mist nets utilized were recorded for each trapping month, allowing us to evaluate the number of species, density and biomass of bats captured in every locality weighted against the number and type of mist netting effort in each locality. The unit which allowed us to ponderate the effort was the linear meter of mist net. Relative abundance of bats was approximated as the number of individuals per linear meter of mist net, calculated as the ratio of individuals per linear meters of mist net for a two-night period per locality. The cumulative biomass in grams per linear meter of mist net was calculated for every locality, based on the individual body weights. The number of species, density and biomass of bats was analyzed for the whole group, and for the trophic guilds recorded in every locality.

STUDY AREA

The Sierra de Pinal de Amoles is located in the eastern part of the Mexican State of Querétaro. In this mountain range, the orographic rain phenomenon produces wet environment in the eastern slope, facing the Gulf of Mexico, whereas dry areas constitute the occidental slope towards the Mexican Plateau (Mosíño and García, 1974).