

had little fat. The sample from Lerma was collected on 11 May, and the condition of the birds was similar to that of the birds from Charco Redondo.

My results confirm that there is an east to west trend in bill size, with western birds tending to have more slender bills than eastern ones. There is, however, a tremendous amount of overlap among populations, and the total range of variation is slight.

There is also clinal variation in both body size and bill size among the populations in saltmarshes along the Pacific Coast, from Morro Bay, San Luis Obispo County, California, south to Bahía Magdalena, Baja California Sur, with the birds from Morro Bay and San Diego being the smallest, with relatively gracile bills, and those from Bahía Magdalena being the largest, with stout bills. The latter birds are intermediate in size and shape between the birds from Guerrero Negro and those from along the coast of the Gulf of California in Sonora and Sinaloa.

## CONCLUSIONS

Savannah Sparrows show clinal variation in size, with birds from the northeast being slightly larger than those from the west. Additionally, they are strikingly larger on islands than from mainland sites. This is not obviously related to species diversity as the diversity of sparrows is high on some islands, and low on others. I speculate that the rather long breeding season and predictability of the weather select for individuals to be multibrooded, and this, in turn, may select for large body size. Savannah Sparrows tend to be larger in cool, moist areas, and small where it is hot and dry. They also tend to be smallest where they co-occur with several other sparrow species. They do not follow Bergmann's Rule. In general, measures of the climatic environment (summer temperature, precipitation) explain well patterns of morphological size variation.

Bill proportions vary subtly, with birds from the northeast having bills that average slightly more conical than those from the west.

Savannah Sparrows from isolated saltmarshes in California, Baja California, and coastal Sonora and Sinaloa show a great deal of interpopulational variation, with a clinal increase in body size from north to south along the Pacific Coast, and to a lesser extent along the east coast of the Gulf of California. Relative to other Savannah Sparrows, they have short wings and large bills, with the birds from the Gulf coast having the largest bills. As with body size, there is clinal variation with regard to these features, with an increase in bill size relative to body size from north to south along the Pacific Coast.

## TAXONOMIC COMMENTS

Sixteen subspecies of Savannah Sparrows were recognized in the 5th edition of the AOU Check-list of North American Birds (AOU 1957). In addition, they treated the Ipswich Sparrow as a separate species, *Passerculus princeps*. More recently, *P. princeps* has been treated as a subspecies (AOU 1998), *P. s. princeps*, bringing the number of subspecies recognized to 17. These subspecies were described on the basis of a variety of attributes relating to size, shape, and coloration.

Philosophically, I do not see much value in delimiting subspecies on the basis of clinal variation, unless there are well-defined steps in the clines. Chopping clinal variation into subspecies results in more or less arbitrarily delimiting overlapping groups on a phenetic continuum. I see no virtue in naming subspecies