

## NATURAL HISTORY NOTES

### Barking frog courtship behavior?

Caren Goldberg

Illustration by Erika Duross

Neotropical frogs are well known for having a variety of elaborate courtship and parental care behaviors. Barking frogs (*Eleutherodactylus augusti*) are the only neotropical frogs native to Arizona. All known frogs in this genus lay their eggs terrestrially and skip the tadpole stage, emerging from eggs as tiny froglets (Townsend and Stewart 1985), except in *E. jasperi*, where females give birth to live froglets (Drewry and Jones 1976). In many *Eleutherodactylus* species, the male or female parent guards the eggs, protecting them from desiccation and predation (especially cannibalism; Townsend et al. 1984). Barking frogs live further north than any other species in their family, making protection from desiccation especially important their survival and reproduction. If parental care is necessary for the survival of barking frog eggs in Arizona's dry environment, the choice of a good mate to perform the task well would be very important.

In 1954, David L. Jameson observed a pair of barking frogs in Texas that stayed under a rock for three nights. The male called on each of these nights, but the pair did not mate (Jameson 1954). Jameson thought that this suggested a "long and possibly complex mating pattern" in barking frogs.

During the winter of 2000, I regularly visited an abandoned mine in which barking frogs were overwintering. All winter, at least four frogs, male and female, were piled into one crevice, while two females were out on opposite walls of the mine. On June 12, 2000, I encountered a male and female barking frog on a wall of the mine, away from the area where the female had spent the winter. The female was on a small ledge and the male was below the female by about a foot, facing upwards, resembling the balcony scene from *Romeo and Juliet*. The following day I observed another male and female less than a foot away from each other on the opposite wall. Four days later the summer rains started in the area, and the mine was empty. We found both males just over 60 meters upslope, calling.

Finding these two pairs in close proximity to each other just before the mating season, after they had spent all winter not behaving in this way, suggests that barking frogs may exhibit lengthy courtship behaviors. However, whether these pairs actually mated, or even continued to court after leaving the mine, is unknown. In the related coqui frog (*Eleutherodactylus coqui*) of Puerto Rico, the average courtship time is only 48 minutes (Townsend and Stewart 1986), while *E. cochranæ* has a courtship of approximately one day (Ovaska and Caldbeck 1997). But if a hasty mate choice can lead to lost reproduction for a whole year, the evolution of a lengthy courtship ritual remains a distinct possibility.

#### Literature Cited

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