NOTES ON THE MOLTING OF A TARANTULA, *BRACHYPELMA SMITII* (ARANEAE: THERAPHOSIDAE) — (Note).
The molting process is a critical period in the life cycle of a tarantula; nutritional and other deficiencies become obvious at this time; a weak spider will fail to complete this process. It is at this time the spider is most vulnerable to predators; the spider is totally defenseless for at least 3 hr.

The molting process of tarantulas has seldom been described. Baerg (1922. Sci. Mon. 14(5): 481-8) gave the most complete account of tarantula molting to date. The molting of *Brachypelma smithi* (F. O. Pickard—Cambridge), a tarantula from western Mexico, has never been described. The entire molting process of *B. smithi*, which took 7 hr 15 min. was observed on 1 August 1976. The specimen was a female ca. 18 years old.

The following is an account of the observation.

1:00 PM—The tarantula was in her normal stance, with her body a few mm from the substrate with her legs held close to the body.

1:15 PM—The spider was lying on her left side with the legs of the left side tucked under her body. The legs of the right side were extended upward. The spider was motionless at that time.

4:00 PM—Carapace separation was suspected; the carapace being the first piece of old exoskeleton to separate when a spider molts. But, because the space between the “old” carapace and the “new” carapace was so slight, definite separation could not be confirmed.

5:40 PM—Carapace separation was confirmed. The space between the “old” and the “new” carapace was ca. 2 mm. The spider was still motionless on her left side.

6:25 PM—Carapace separation had increased greatly, with the “new” carapace clearly visible. There was substantial wrinkling of the “old” abdominal skin at this point.

6:50 PM—The “old” carapace was off and folded back over the abdomen. The “old” abdominal skin had split laterally exposing the new layer. The spider was rolling out of the “old” exoskeleton to her left. At that time, the trochanters of the legs of the right side were free of the “old” exoskeleton.

7:08 PM—All the legs were out of the “old” exoskeleton except for the tarsi. The abdomen had rolled out of the “old” abdominal skin.

7:26 PM—The spider was free of her “old” exoskeleton but the “new” exoskeleton had to dry before she could move normally. From the time the carapace peeled back over the abdomen, the spider made regular pulsating movements to extricate herself from the “old” exoskeleton. After she was out of the “old” exoskeleton she lay motionless on her left side with all her legs extended ventrally.

7:50 PM—At that time she had rolled onto her back with all her legs drawn up close to her body. She stayed in that position until 8:30 PM at which time with a gentle prodding from me she righted herself after a few seconds of violent thrashing.

For the next 10 days the spider spent much time with her venter pressed against the sand in the bottom of her cage with her legs extended laterally. I have not observed such “ground-hugging” behavior in 9 previous observations of tarantula molting. Other than the “ground-hugging” her behavior has been normal.

When crickets were presented 3 days after the molt the tarantula ate 12 before ceasing as compared to a usual meal of 6-8 crickets at a time. John R. Randall, and Willard H. Whitcomb. Department of Entomology and Nematology, University of Florida, Gainesville, 32611.