

August 26, 2018 SLB recordings near Portal, AZ Shotgun mic, amplifier and into Zoom H4 recorder.

STE-017.wav

Female *Protandrena mexicanorum* on *S. rostratum*.

First buzz is a long tip buzz on purple anther, then grooming. 5 buzzes end time at 31.951s. Grooming. 8 or 9 buzzes then the last one was **buzz milk with a tip buzz ending at 1min 6.688 seconds**. Bee moved to different flower. 3 buzzes, long tip buzzes on purple anther at 1m 27.7s. Grooming. 2 buzzes and spooked bee at 1m 47.7s. Bee on a new flower. Grooming. 4 soft buzzes not sure what kind end at 2m 43.5s. Moved to new flower. 3 buzzes, **buzz milk with a long tip buzz on purple anther end at 2m 58.165s**. About 8 buzzes, she moved to the shorter yellow anthers end at 3m 34.08s. She's up on purple anther now with a tip buzz and then grooming. One buzz, a buzz milk and a tip buzz on short yellow anthers at 3m 49.413s. 5 buzzes some buzz milking 4m 18.299s and tip buzzes on short yellow anthers. Now grooming. 2 buzzes that was a buzz milk on purple. 4m 31.952s. About 11 buzzes last one was a tip buzz on long purple anthers. 5m 8.268s. Grooming. About four tips buzzes in a row on purple. 5m 38.918s. Now grooming. About 7 buzzes don't know which anther type. Moving to a new flower. 6m 2.231s. Spooked the bee. Notation about the good buzz recordings. End time is 7:39 am MST.

***Also on this date is our only PCB accelerometer recording of a *Protandrena mexicanorum* on *S. rostratum* (Protandrena906.wav). A very clean strong signal.**

August 27, 2018

STE-004.wav

Female *Protandrena mexicanorum* on *S. rostratum*. Good annotation with the type of buzz and anther color! **Buzz milk** and tip buzz on purple anther just before 15.5 seconds on recording. Grooming. Buzz milk on yellow anthers (can they slide up on these short anthers?) at 30.65s. Grooming. About 4-5 buzzes. Last buzz was tip buzz on purple anther. 50.80s. Grooming. 2 long buzzes on yellow anthers. 1min. 5.9s. Moving to another flower. 2 long buzzes and spooked the bee. Moving to another flower. About 3 buzzes with some fly noise contamination. 1m 47.74s. Grooming. 3 long buzzes, noisy other bees in background. Grooming. 2m 13.93s. 2 buzzes then flight. Moved to another flower. About 4 buzzes. 2m 41.7s Grooming. About 3 buzzes. 3m 11.4s. Sound contamination. Time at end is 6:55 am. MST.

STE-005.wav ******This is a really good set of buzzes, especially earlier in recording. Later, there are some fly sounds and other bee contaminating sounds.**

Female *Protandrena mexicanorum* on *S. rostratum*. Nice clean loud buzzes. Good annotations for type of buzz and anther color. 2 long buzzes just before 22.013 seconds. Grooming. Previous buzzes were long tip buzzes on purple anther. 27 s. Flies to new flower. ***Buzz-milking and long tip buzz on purple, now grooming. At about 46.81seconds on recording**. 3 or 4 buzzes on short yellow anther set. Bee moved to new flower. 59.90s. 2 or so buzzes. 1m 71s. Grooming. 2 buzzes, moving to new

flower. 1m 23.2s. ***Long tip buzz on purple anther, a bit of fly noise at about 1 minute and 37.059 seconds.** Now grooming. Females always land on purple long anther then move/buzz on shorter yellow anthers. 1m 51.17s. Grooming. 4 buzzes with some fly noise and wind? 2m 50.62s. Previous buzzes were on short yellow anthers. Now grooming. 2 buzzes and moved to new flower. 3m 6.8s. About 4 soft buzzes with some fly and bird sounds. Grooming. 3m 21.8s. About 4 soft buzzes and fly noise. This bee landed on yellow then went to purple. Grooming. 3m 47.64s. About 6 buzzes. Tip buzz on purple. 4m 25.17s. Grooming. This bee went and buzzed the long purple anther about 3 times. Huge pollen load. Grooming. 4m 33.8s. Flew to new flower. ***Long tip buzz on purple at 4m 53.4s.** Grooming. Still grooming. Pesky nearby fly buzzes. *Protandrena* on same flower. 5m 34.27s. About 6 or 7 buzzes on yellow anthers, some noise pollution from other bees in background. 6m 15.14s. Noise pollution from *Protoxaea* in distance. Still grooming. Lots of loud *Protoxaea* buzzes in this region of recording. Again, buzzes are from closeby *Protoxaea*, not *Protandrena*. 2 or 3 buzzes, difficult to tell. Sound contamination. End time is 7:02am.

STE-020.wav *This is a nice set of loud and clean recordings.

Female *Protandrena mexicanorum* on *S. rostratum*. Nice loud noise-free buzzes. Has annotation comments about buzz type and anther color. 13 buzzes. Wow, it did some tip buzzes on long purple anther and went to yellow anthers. 47.18s. Bee on a new flower. 2 buzzes. Grooming. 56.8s. 1 buzz then flight sound. 3 buzzes, last few buzzes were buzzes on yellow anthers. 1m 13.56s. New flower. Wow, that was a long purple tip buzz. 1m 25.72s. Back, same flower. 7 buzzes. 1m 41.98s. Back and forth between purple and yellow. Chasing the bee. On new flower. 7 buzzes including two very long ones. 2m 12.72s. New flower. Chasing the bee. Lost bee. Time is 7:53 am.