

A Night of Frogging, by X. Bernal . . . 2000 (revised 2006 MJR)

1930 Meet froggers

Discuss the previous night's tests, any problems with the chamber, computer, etc. Bring up any interesting developments with the females (frogs, of course). Prepare the night's data sheets, be sure that tests and alternations are correct.

2000 Start looking for frogs. Bring plenty of plastic bags and a marker. In 1998, most frogs were taken from Quonset Ditch. Kent's Marsh (the ditches on both sides- be sure to bring the Off), and Santa Cruz, also proved fruitful when frogs were not found in Quonset Ditch. The Gamboa Rainforest Resort needs to be checked for for sites as do some of the other drainage ditches

Search for amplexed pairs. They are usually near male choruses and tend to be at the edges of puddles, often hiding under rocks and leaves. Check females for toe clipping and place the pairs in plastic bags, noting the location, as well as the female's number, if she is marked. Do not put water in the bag as the pair is likely to construct a nest while waiting to be tested. On returning to the lab, put pairs in the cooler under the sink.

2130 Turn on amplifier and start calibration (see below). Sound levels tend to fluctuate less throughout the night if the amplifier is allowed to warm up before the initial calibration. Do steps 1 and 2 30 minutes before beginning testing and step 3 right before testing.

NOTE: *Speaker levels should be retested after each female or approximately every 2 hours. Sound levels of both sides should be recorded on the data sheet and readjusted as described in step 3 below.*

Setting speaker levels

1. Place microphone attached to the sound level meter through hole in chamber wall and attach to tripod. Adjust microphone so that it points toward the far wall of the chamber, is at the level of the floor, and is centered in the center circle of the chamber. **BE CAREFUL WITH MICROPHONE.**

2. From C:\ prompt, enter:
 - ld_sig
 - cd sig00
 - up sig
 - r t 1 2
 - test500
 - test500
 - g t 1 2
 - pl t 1 2
 - <ENTER> 3 times
 - 0 for “time between repetitions”
 - <ENTER>

3. Turn on sound level meter and adjust the settings:
 - Gen Rad Settings:
 - Octave Filter Freq. Hz **WTG** Weighting **Flat**
 - dB range **50-100** Detector **Fast**
 - Digital Display **cont.**

Adjust left and right speaker levels until they are steady at **82.0 dB**. (*Hint: Center the speaker balance first. Then adjust the volume so that the quieter speakers is at 82.0 dB. Lower the level of the louder speaker by turning the balance knob towards the side opposite the louder speaker.*)

Remove the microphone (BE CAREFUL) and tripod from chamber and **be sure to plug the hole in the chamber wall** to prevent sound and light from leaking into the chamber during testing.

2200-2300 Begin testing.

Prepare the chamber:

Clean floor thoroughly with mop and water ONLY. Chamber floor should be kept damp and clean throughout the night with repeated spraying and mopping. A floormat placed outside the chamber helps to keep the chamber floor clean.

Be sure:

That the tests alternate sides, follow the data sheet.

Test the females:

Always check to see if the female is marked before beginning testing. If she is, be sure she has not been tested on the current tests. Only one repetition of each test is allowed per female.

Record chamber temperature. Turn on the Video and IR source. From within Signal, type *playbac1* and follow instructions to enter Stimulus A

and B and assign sides (check the data sheet). Place female under funnel. With chamber lights off, start playback and stopwatch and record start time.

After 3 min., reset the stopwatch. Start the stopwatch again while lifting the funnel and begin observing (the frog!!) on the Video screen. Record the female's path in the chamber. Mark female's position at 5 min. Continue timing until the female chooses or fouls (see below). Record choice, duration of test, and any observations on the female's behavior (**NOTE: these incidental observations are important . . . don't leave out any details if something strikes you as strange or interesting**). Put female back under the funnel, clean and wet the floor if necessary and start next test.

When a female is finished for the night return her to her marked back with her male. Measure and record sound pressure levels, record temperature and start a new female.

Foul:

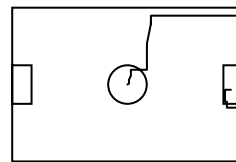
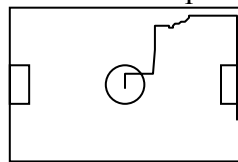
If the female does not leave the center circle within **5 min.**

If the female, once outside the center circle, stays in the same place for more than **2 min.**, use the countdown timer.

If the female does not choose within **15 min.**

Choice:

If the female crosses the lines at a distance of 10 cm from each speaker.



No Choice:

Female follows edge of wall behind speaker and continues along wall past speaker.

Choice:

Female follows edge of wall behind speaker but comes back out to front of speaker.

If a female moves along the wall to the speaker, stop the timer when she crosses the line, but leave the stimuli playing to see whether she comes to the front of the speaker or continues past it.

If the female climbs the wall, treat her as if she were stationary. If she does not come down within **2 min.**, she fouls. If she comes down before the two minutes are up and continues moving around the chamber,

continue observing and recording until she chooses or fouls. In either case, indicate on the data sheet that she was a “climber”.

If a female does not choose a bread tests (see explanation below for difference between bread and cheese tests), she fouls out for the night. Place her back in her numbered bag with her male for later marking and release.

If a female fouls on a bread test that came after one or more cheese tests, all the cheese tests are invalid.

Bread v. Cheese Tests

There are two different types of tests given to females. One is used to test recognition of a call, while the other is used to test discrimination between two calls. The former are called sandwiched tests (or cheese tests) because they must always be preceded and followed by non-sandwiched (or bread tests). When testing a call for recognition, one must be sure that a non-choice (or foul) is not an artifact of female motivation at the time. To do this, a discrimination (non-sandwiched) test is given to the female before and after presenting her with the recognition test. If she responds to both discrimination tests, while fouling on the sandwiched test, one can say that she didn't respond because she didn't recognize the stimulus. No choices on bread tests are not counted as data. No choices on cheese tests are counted as data if not sandwiched between two bread tests in which the female chose.

<u>Non-sandwiched</u>	<u>Sandwiched</u>
1. “bread”	“cheese”
2. discrimination	recognition
3. can be presented in isolation	must be presented between non-sandwiched tests
4. No choice does not count as data	No choice counts as data as long as test is properly “sandwiched”- that is preceded with and followed by a choice on a bread test

TEST UNTIL YOU CAN TEST NO MORE.

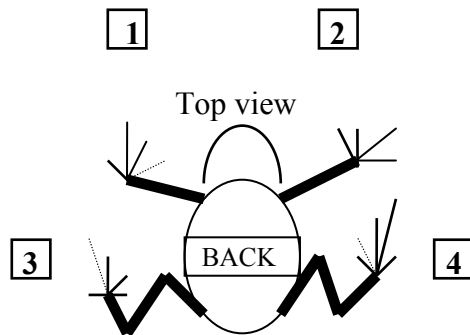
Then, early in the morning

Mark and release females and enter data into the excel sheets.

Record the site where the female was collected, the color morph of the male and female, and the marked number as described below.

Marking:

The frog's identification code consists of four numerals. With the frog's back up, the front left foot is numeral 1, the front right is numeral 2, the rear left is numeral 3, and the rear right is numeral 4. The toes are numbered from left to right (see diagram).



1	2	3	4
↓	↓	↓	↓
4	0	2	2

This frog is marked as number 4022 (dashed lines indicate cut toes in diagram).

When cutting toes, remove the terminal phalanx. Try not to cut too much toe off, but be sure to cut enough so that the female will be identifiable if recaptured.

Release the females once they are marked and their information is recorded. Be sure to release them to the same location where they were found.

Summarize the night's results on the data sheet. Include # of tests completed. Fill out daily and to date totals for each test to compare with the DBASE printout (see below)

Go to end of data file and enter all new data from the night:

DATE, STIMA, STIMB- self-explanatory

TYPE- sandwiched (S) or non-sandwiched (N) . . . see above

FROG- # from that night

SIDA- left (L) or right (R)

TIME- time at which stimulus is started

DUR- time from funnel up to choice or no choice

CHOICE- A or B

DIR- direction (R or L) that female leaves center circle

S5M - the side where the female is at 5 min after funnel up

Compare data printout with daily and running total sheet to check for errors in data entry. Leave the night's results as well as the data printout for others to examine the next morning.

SLEEP.

SURVIVAL IN GAMBOA

Do not let all the hard work with the frogs prevent you from fully enjoying your time in Panama. In Gamboa, people get together often to talk, hang out, and dance. Every Friday and Sunday afternoon, STRI people from BCI, Panama city and Gamboa meet to play ultimate frisbee near the stadium. Pipeline road is a short drive or walk and a great place to see tons of animals. Outside Gamboa, San Blas, Boquete, and Bocas del Toro are must see places that make for great 2 and 3 day trips. Taboga is fun to get away to for a day. And don't forget Summit which is a short drive and a great place to see frogs.