

The Song of the Túngara Frog

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Lively (♩=200)

The musical score is written in 3/4 time with a tempo of Lively (♩=200). It consists of ten staves of music. The first four staves are instrumental, featuring a melody of eighth and quarter notes with rests, and are accompanied by a series of 'click' sounds. The fifth staff begins the vocal line with the lyrics: 'Down in the tro-pics, where win-ters are warm And hun-gry mos- Dark-ness to dawn, bea-ting wings fill the air: The fringe-lipped bat, -qui-toes bring sick-ness, The tree-tops are filled with a world-fa-mous frog, Tra-chops cir-rho-sus, While un-der its flight path dwell tún-ga-ra frogs, (2)'. The sixth staff continues the lyrics: 'The love-ly, red-eyed A-ga-lych-nis. Or Phy-sa-lae-mus pus-tu-lo-sis.'. The seventh staff continues: 'Li-ving where so ma-ny spe-cies a-bound, One cri-ti-cal tún-ga-ra'. The eighth staff continues: 'skill is Not get-ting con-fused with the much lar-ger frog Lep-to-dac-ty-lus'. The ninth staff continues: 'pen-ta-dac-ty-lus. There-fore, the male has a call that's u-'. The tenth staff concludes the lyrics: '-nique, See-king mates in a wa-ter-filled hol-low: It starts with a whine of a de-scen-ding pitch, Du-ring which none to six short clicks fol-low.' The score includes various chords (C, F, G7, D7) and a double bar line at the end.

Ay [click click] Ay Ay Ay Ay [click click click click click]

Ay [click click] Ay Ay Ay Ay [click click click click click]

Ay [click click] Ay Ay Ay Ay [click click click click click]

Ay* [click click] Ay Ay Ay Ay [click click click click click]

Down in the tro-pics, where win-ters are warm And hun-gry mos-
Dark-ness to dawn, bea-ting wings fill the air: The fringe-lipped bat,
-qui-toes bring sick-ness, The tree-tops are filled with a world-fa-mous frog,
Tra-chops cir-rho-sus, While un-der its flight path dwell tún-ga-ra frogs, (2)

The love-ly, red-eyed A-ga-lych-nis.
Or Phy-sa-lae-mus pus-tu-lo-sis.

Li-ving where so ma-ny spe-cies a-bound, One cri-ti-cal tún-ga-ra

skill is Not get-ting con-fused with the much lar-ger frog Lep-to-dac-ty-lus

pen-ta-dac-ty-lus. There-fore, the male has a call that's u-

-nique, See-king mates in a wa-ter-filled hol-low: It starts with a
whine of a de-scen-ding pitch, Du-ring which none to six short clicks fol-low.

Complete words are on the other side

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Chorus, before the first verse and after every verse, but ending at * after the last verse has been sung:

Ay [click click] Ay Ay Ay Ay [click click click click click]
Ay [click click] Ay Ay Ay Ay [click click click click click]
Ay [click click] Ay Ay Ay Ay [click click click click click]
Ay* [click click] Ay Ay Ay Ay [click click click click click click]

Down in the tropics, where winters are warm
And hungry mosquitoes bring sickness,
The treetops are filled with a world-famous frog,
The lovely, red-eyed *Agalychnis*.
Darkness to dawn, beating wings fill the air:
The fringe-lipped bat, *Trachops cirrhosus*,
While under its flight path dwell *túngara* frogs,
Or *Physalaemus pustulosus*.
Living where so many species abound,
One critical *túngara* skill is
Not getting confused with the much larger frog
Leptodactylus pentadactylus.
Therefore, the male has a call that's unique,
Seeking mates in a water-filled hollow:
It starts with a whine of a descending pitch,
During which none to six short clicks follow.

Túngara frogs don't have shiny, smooth skin;
Instead, it is heavily warted,
So much so, in fact, that as toads and not frogs
They have been incorrectly reported.
Nor do they grow to a very great length,
Perhaps thirty-five millimetres;
When two of them mate, the male breathes fast and deep,
To make his legs work like egg beaters.
Air is whipped into their floating foam nests,
Constructed of several pairs' mating,
To yield more volume per surface, of course,
Than would nests built without congregating:
Not to protect them from water-borne snakes
That might gobble eggs by the dozens,
But rather to lessen their being consumed
By tadpoles of their red-eyed cousins.

In the moist warmth of a tropical night,
The *túngara* male seeking action
Will float on the surface, puff up his loose cheeks,
And try to become an attraction.
Found in a place where no males compete,
His call consists only of whining,
And no clicks are added to break up the sound
As the pitch of each whine is declining.
But, as the chorus increases in size,
The males add clicks to their voices,
Creating a range of acoustic events
From which their future mates can make choices:
It is the case, far more often than not,
The lowest clicks mark the location
Containing the largest frog, and thus the one
With the best rate of fertilization.

In the fierce battle for *túngara* mates,
Let's pity the most likely winner,
Because the short clicks that draw females near
Help fringe-lipped bats home in on dinner.
Thus, the dilemma for *túngara* males
Is which of two courses to treasure:
To aim for a longer but lonelier life
Or risk more for moments of pleasure.
Long evolution of frogs and of bats
Has given them each special talents,
And mixtures of noisy and quieter frogs
Help to keep the two species in balance.
If you suspect that I'm making this up,
Or if you should think that I'm lyin',
Then go read the book called *The Túngara Frog*;
It was written by Michael J. Ryan.

Reference: Michael J. Ryan, *The Túngara Frog*, ©1985, University of Chicago Press, 230 pages

On page 36, Ryan describes the song of the *túngara* frog as having 'two components, a "whine" and a "chuck" ... the *túng* resembles the whine and the *ara* the chucks [when] the first syllable is stressed and the second syllable is pronounced very rapidly'. He does not state how the chucks are generated. In this song, I substitute the word "click" for "chuck" and I generate the click by pulling the side of my tongue away from the inside of my upper jaw, just above the upper molars, to make a sound similar to that of removing a suction cup from a polished surface.