notes on Bd

16 January 2022

* general info [here](https://en.wikipedia.org/wiki/Batrachochytrium_dendrobatidis) and [here](https://microbewiki.kenyon.edu/index.php/Batrachochytrium_dendrobatidis); also see chapter 7 from Wayne and Bolker (2015), posted on Teams
* most chytrid fungi are harmless **saprophytes** or parasites of microbes, but a few are pathogenic on amphibians, including …
* *Batrachochytrium dendrobatidis* (“Bd”) ([Joyce Longcore](https://en.wikipedia.org/wiki/Joyce_E._Longcore))
* life cycle: *thallus* → *zoosporangia* (frog skin) → *zoospores* (free living, motile, aquatic) → …
* where did it come from?
  + **novel pathogen hypothesis**: mutation/speciation + dispersal
  + **tipping point hypothesis**: in populations all the time, but something happened to make it virulent
* extinction paradox (De Castro and Bolker 2005)
  + **extirpation** (local extinction) vs global (‘true’) extinction
  + **density-dependent** parasites can’t cause host extinction (in simple theoretical models!)
  + alternatives: density-independence, small populations, reservoirs
* how does it move around/persist in the environment?
  + alternative hosts?
  + environmental reservoir?

## References

De Castro, Francisco, and Benjamin Bolker. 2005. “Mechanisms of Disease-Induced Extinction.” *Ecology Letters* 8 (1): 117–26. <https://doi.org/10.1111/j.1461-0248.2004.00693.x>.

Wayne, Marta, and Benjamin Bolker. 2015. *Infectious Disease: A Very Short Introduction*. Oxford University Press.

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