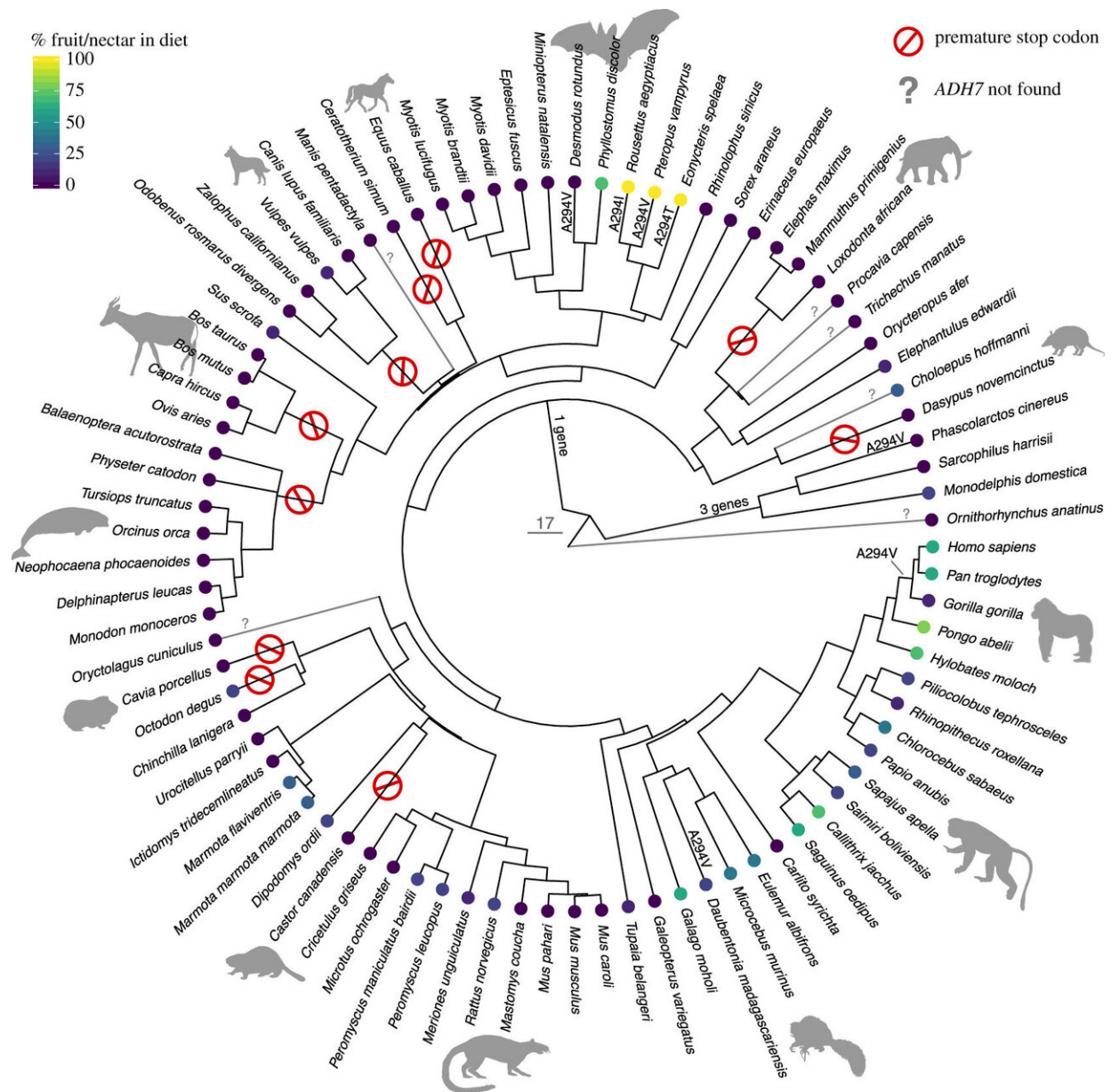


Study suggests elephants may get drunk naturally after all

April 29 2020, by Bob Yirka



Protein-altering changes in ADH7 along with evolutionary relationships and diets of species included in the analyses. Credit: *Biology Letters* (2020). DOI: 10.1098/rsbl.2020.0070

A team of researchers at the University of Calgary has found that variations in ethanol metabolism abilities in different species may account for the "myth" of natural animal intoxication. In their paper published in the journal *Biology Letters*, the group describes comparing mutations in the ADH7 gene in multiple species and what they found by doing so.

For many years, there has been anecdotal evidence of wild animals getting drunk and behaving badly after consuming fermented fruits and berries. One notorious example was of [elephants](#) consuming [fruit](#) from the malura tree after it fell and fermented. Herds were described as behaving erratically, sometimes crashing through villages after having abandoned their usually polite demeanor. But back in 2005, a team of researchers from the University of Bristol appeared to discredit such stories with a study in which they claimed to have found evidence that elephants were so large that it would take more fruit than they could consume to make them drunk. In this new effort, the researchers suggest that the team at Bristol forgot to account for a major contributing factor to drunkenness—how well a given animal is able to metabolize alcohol.

The work involved looking at the gene ADH7—it is present in a wide variety of animals. Its purpose is to instigate the production of enzymes that metabolize ethanol. Prior research has shown that most primates have an ADH7 mutation that allows them to metabolize ethanol more efficiently than those without it. It is believed the mutation persisted because it allowed primates to consume large amounts of fermented fruits and berries without getting too drunk to function. Notably, other

mammals such as bats (which also eat a lot of fruits and berries) have a similar mutation—flying while drunk would not turn out well.

The researchers looked at ADH7 in 85 mammals and found that many of them, such as horses, cows and elephants, do not have the mutation, and are thus not nearly as good at metabolizing [ethanol](#). This suggests that if such animals were to consume fermented fruits, they would become intoxicated much more easily than [animals](#) that do have the mutation. Thus, they suggest it is possible that elephants at times become inebriated, and because of that, may behave out of character.

More information: Mareike C. Janiak et al. Genetic evidence of widespread variation in ethanol metabolism among mammals: revisiting the 'myth' of natural intoxication, *Biology Letters* (2020). [DOI: 10.1098/rsbl.2020.0070](#)

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