

# BIOLOGY UNDER COVER

## Selected Journal & Book Covers from SBS Faculty

“*Cytochrome P450 2B diversity in a dietary specialist—the Red Tree Vole (*Arborimus longicaudus*)*”

Kitanovic S, Orr TJ, Spalink D, Cocke GB, Schramm K, Wilderman PR, Halpert JR, **Dearing MD**.



iss. 3, June 2018, vol. 99

**Commentary:** This study sought to identify the physiological mechanisms that enable Stephen's woodrat (featured on the cover), to specialize on a diet of juniper- a plant that contains a lethal dose of turpentine. We quantified the number of particular detoxification genes in the specialist, i.e., cytochrome P450 2B "CYP2B" -- the enzymes encoded by these genes are known to act on the toxins in juniper. We also examined the DNA sequences of these genes, and compared the number of genes and gene sequence variation to that present in a related dietary generalist, the white-throated woodrat (*N. albigula*). We found that Stephen's woodrat, the specialist, had more CYP2B genes with less gene sequence variation compared to the generalist woodrat. The greater abundance of highly specialized CYP2B genes in Stephen's woodrat may enable it to efficiently process the turpentine in juniper.

**Access Article:** <https://doi.org/10.1534/g3.117.300443>