

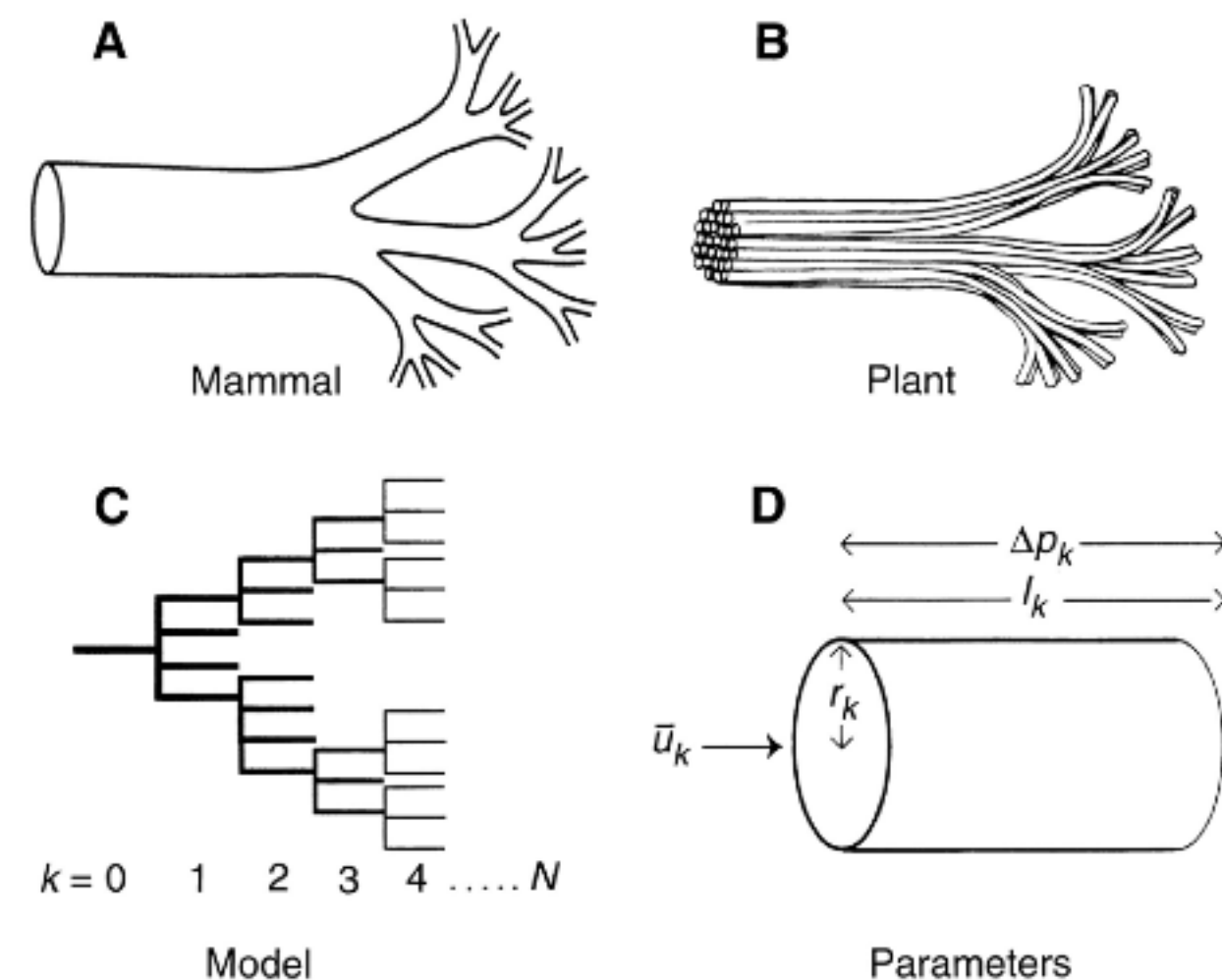
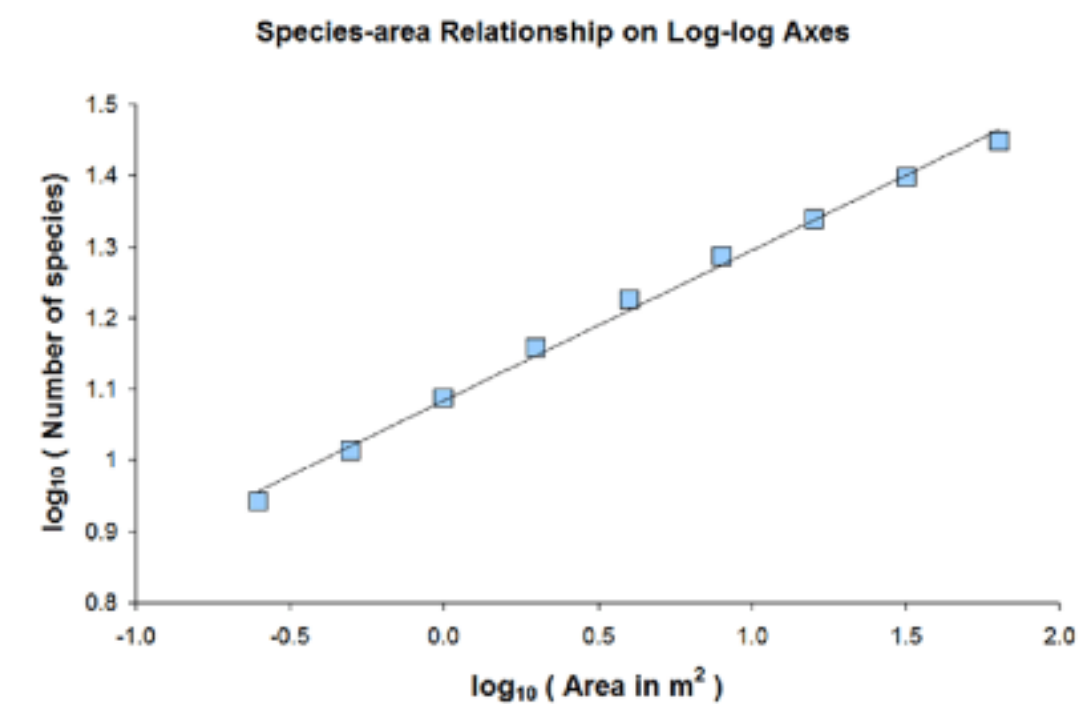
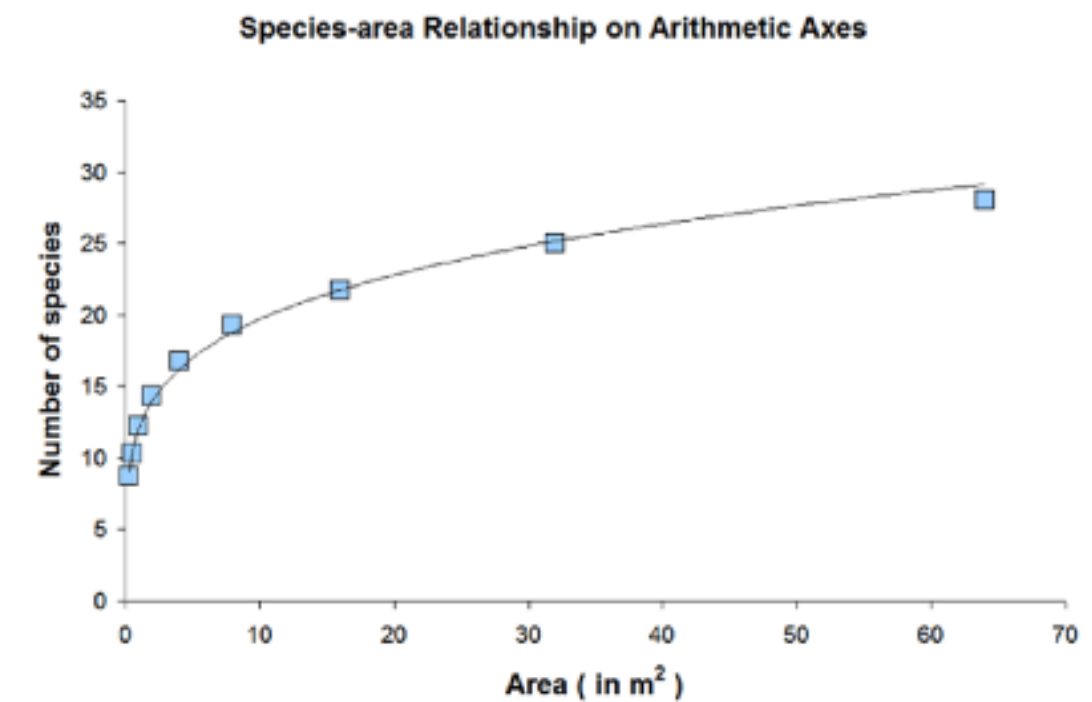
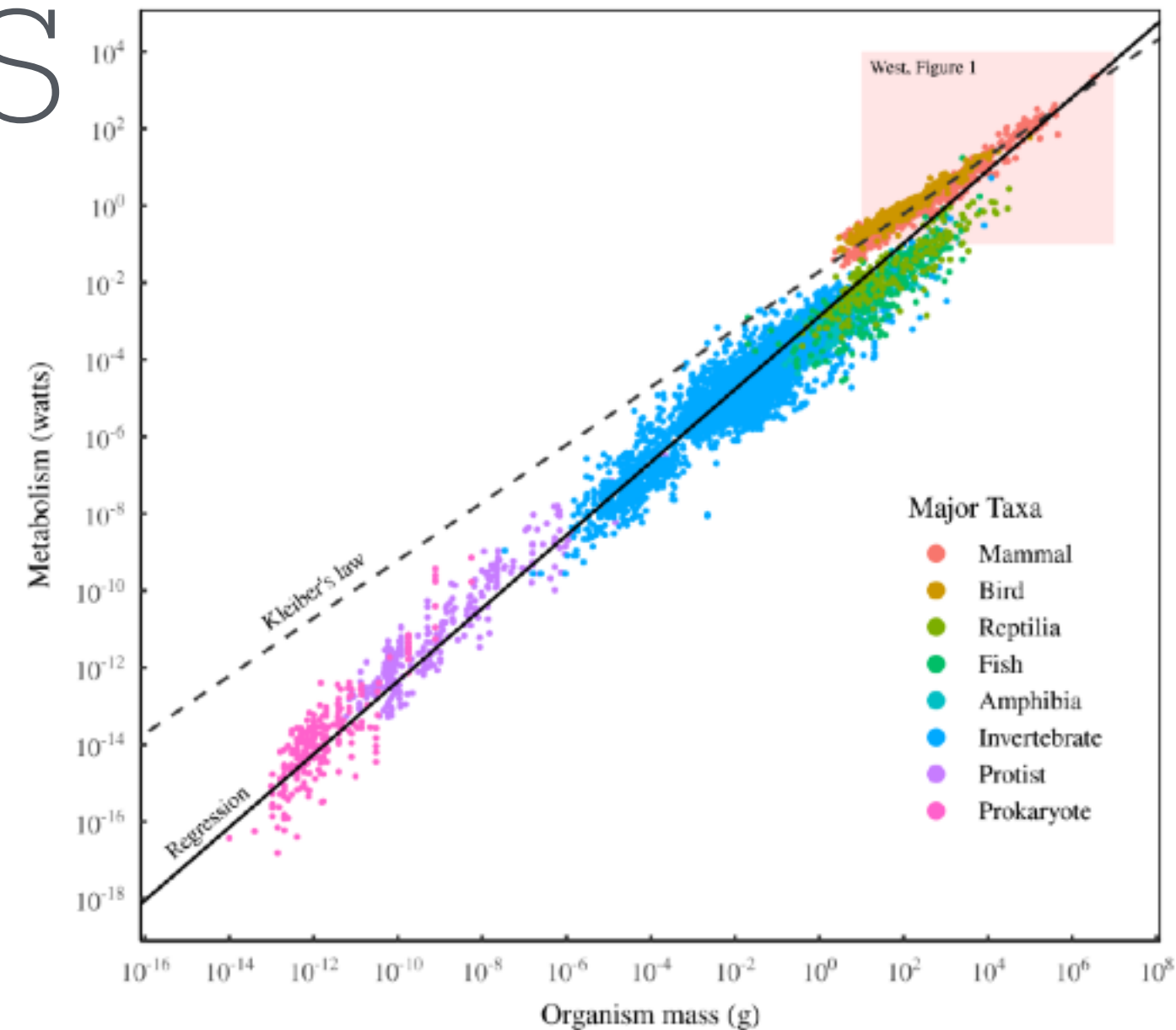
# Power-law relations

## Log-log regressions

- Several biological relations take the form of power-law relations

$$y \propto ax^b$$

- These appear for different reasons:
  - West et al. (1997) attempt to link scaling laws to fractal relations at different scales
  - Every time a proportional increase leads to a consistent proportional change (like in species-area relations)



# Power-law relations

## Log-log regressions

- Several biological relations take the form of power-law relations
- We can linearize these relations using a log-log transformation

$$y \propto ax^b$$



Take the log on both sides

$$\log(y) \propto \log(ax^b) = \log(a) + \log(x^b) =$$

$$\log(y) \propto \log(a) + b \log(x)$$