**Table. Linear models of log clade size contrasts against log substitution rate contrasts.**

**Table. Linear models of log clade size contrasts against contrasts in host plant diversity measures.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Phylogeny | Rate type | Coefficient | Std. Error | *t* | P-value |
| Lepidoptera - Families | Total | -0.585 | 5.062 | -0.116 | 0.909 |
|  | dS | -0.668 | 3.594 | -0.186 | 0.855 |
|  | dN | -0.146 | 0.233 | -0.624 | 0.541 |
| Papilionoidea - Genera | Total | -0.033 | 0.641 | -0.052 | 0.959 |
|  | dS | 0.401 | 0.644 | 0.621 | 0.537 |
|  | dN | -0.318 | 0.203 | -1.571 | 0.121 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Phylogeny | Rate type | Coefficient | Std. Error | *t* | P-value |
| Lepidoptera - | **Total Host Families** | **1.230** | **0.138** | **8.886** | **< 0.001** |
| Families | **Total Host Species** | **0.802** | **0.102** | **7.864** | **< 0.001** |
|  | **Mean Hosts / Species** | **3.288** | **0.730** | **4.505** | **0.001** |
|  | **Propn. generalists** | **4.986** | **1.569** | **3.177** | **0.010** |
|  | Host phylodiversity | -0.875 | 1.491 | -0.587 | 0.567 |
| Lepidoptera - | **Total Host Families** | **0.858** | **0.137** | **6.263** | **< 0.001** |
| Major lineages | Total Host Species | 0.006 | 0.090 | 0.072 | 0.943 |
|  | **Mean Hosts / Species** | **0.871** | **0.415** | **2.100** | **0.043** |
|  | Propn. generalists | 0.585 | 1.010 | 0.532 | 0.598 |
|  | **Host phylodiversity** | **0.444** | **0.087** | **5.120** | **< 0.001** |
| Papilionoidea - | Total Host Families | 0.515 | 0.290 | 1.775 | 0.084 |
| Genera | **Total Host Species** | **0.455** | **0.132** | **3.443** | **0.001** |
|  | Mean Hosts / Species | 0.246 | 0.196 | 1.256 | 0.217 |
|  | Propn.Generalists | 0.189 | 0.298 | 0.632 | 0.532 |
|  | **Host phylodiversity** | **0.692** | **0.181** | **3.818** | **0.002** |

**Table. Linear models of log host family numbers against log substitution rates**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Phylogeny | Rate type | Estimate | Std. Error | t value | Pr(>|t|) |
| Lepidoptera – Families | Total | 5.486 | 5.354 | 1.025 | 0.330 |
|  | dS | 5.516 | 3.996 | 1.380 | 0.198 |
|  | dN | 0.962 | 5.150 | 0.187 | 0.856 |
| Papilionoidea - Genera | Total | 0.735 | 0.581 | 1.267 | 0.213 |
|  | dS | 0.451 | 0.555 | 0.812 | 0.422 |
|  | **dN** | **0.626** | **0.255** | **2.458** | **0.019** |