**Supplementary results**

The following are the results from analysing the explanatory power of each proximate social complexity trait in turn. FS, functional sterility; OS, obligate sterility; CS, colony size; NC, nest complexity; HM, helper polyphenism.

1. **Leave one out Phylogenetic MANOVA**

Df SumOfSqs R2 F Pr(>F)

FS 1 52.344 **0.40492** 66.683 0.001 \*\*\*

Residual 98 76.926 0.59508

Total 99 129.270 1.00000

Df SumOfSqs R2 F Pr(>F)

OS 1 27.01 **0.20894** 25.885 0.001 \*\*\*

Residual 98 102.26 0.79106

Total 99 129.27 1.00000

Df SumOfSqs R2 F Pr(>F)

CS 1 41.204 **0.23747** 30.52 0.001 \*\*\*

Residual 98 132.306 0.76253

Total 99 173.510 1.00000

Df SumOfSqs R2 F Pr(>F)

NC 1 71.186 **0.32987** 48.24 0.001 \*\*\*

Residual 98 144.614 0.67013

Total 99 215.800 1.00000

Df SumOfSqs R2 F Pr(>F)

HM 1 15.745 **0.06847** 7.2034 0.005 \*\*

Residual 98 214.205 0.93153

Total 99 229.950 1.00000

1. **MANOVA**

Df SumOfSqs R2 F Pr(>F)

FS 1 112.11 0.37748 59.426 0.001 \*\*\*

Residual 98 184.89 0.62252

Total 99 297.00 1.00000

Df SumOfSqs R2 F Pr(>F)

OS 1 43.057 0.14497 16.616 0.001 \*\*\*

Residual 98 253.943 0.85503

Total 99 297.000 1.00000

1. **Worker Reproductivity**

Df SumOfSqs R2 F Pr(>F)

WR 1 46.346 **0.35852** 54.772 0.001 \*\*\*

Residual 98 82.924 0.64148

Total 99 129.270 1.00000

* 1. **MCMCglmm**

post.mean l-95% CI u-95% CI eff.samp pMCMC

(Intercept) 0.28228 -0.51538 1.08101 1337 0.487

NC 0.32226 0.06458 0.57148 1217 0.023 \*

HM 0.05754 -0.09967 0.24374 1384 0.520

CS -0.03349 -0.19792 0.13593 1297 0.709