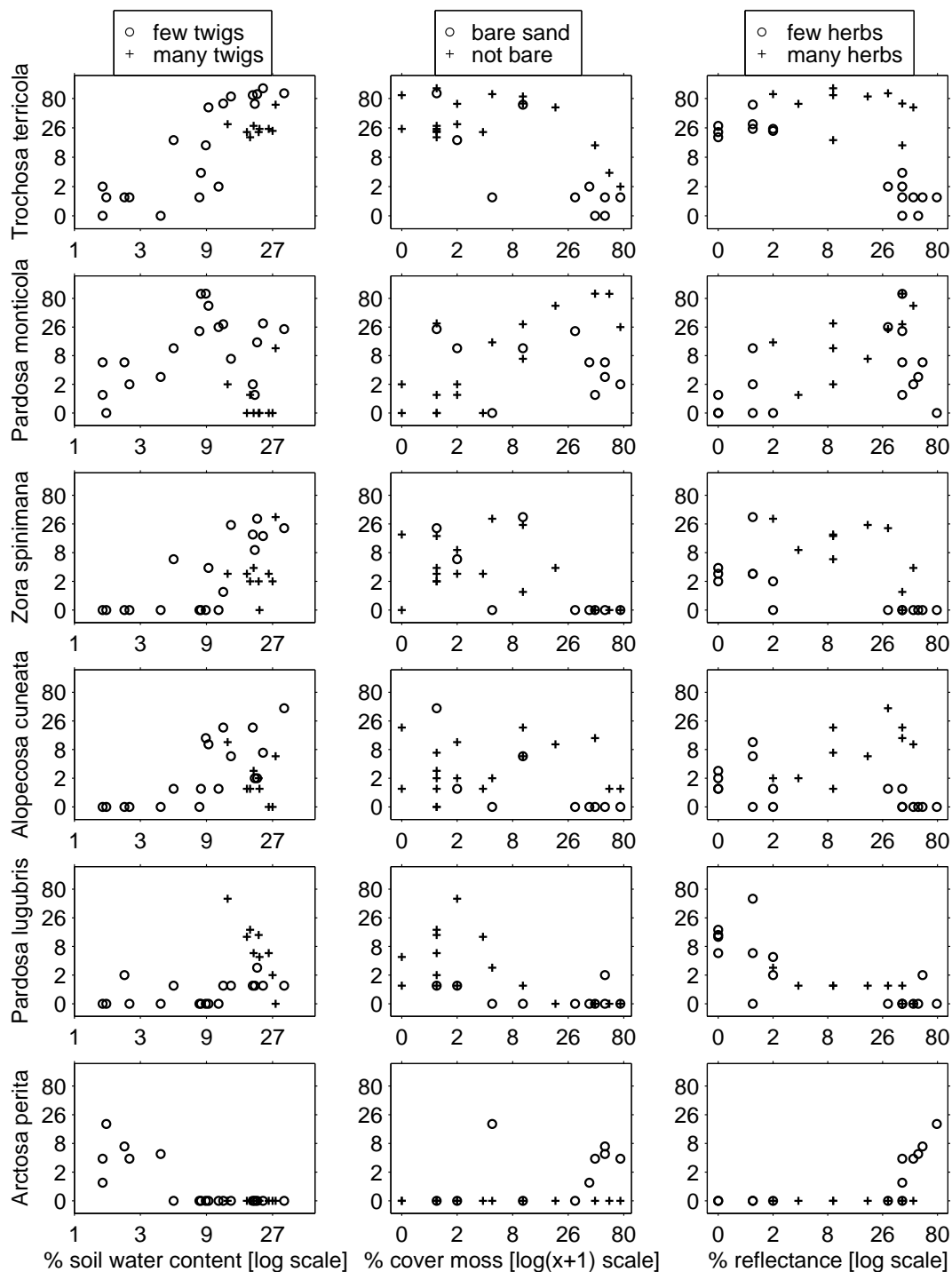


## A Relationship between hunting spider abundance and all six environmental variables

Below is an alternative plot for the hunting spider dataset, in which all environmental variables are included in order to visualise the relative strength and nature of relationships between the different environmental variables and spider abundance. Abundance is only plotted for six species, which were chosen systematically as every second species, when ranked by total abundance as in Figure 4.

On careful inspection, it can be seen that the relationships in the second column of Figure 8 is looser than for the other columns, for several species (*Alopecosa cuneata*, *Pardosa monticola*). This is confirmed by best subsets regression, where moss and bare sand together explain about 35% of variation in abundance, on average (compared to 59% and 52% for the other two pairs of environmental variables). Similar information could be inferred from the relative length of arrows for environmental variables in a CCA plot, but differences are not obvious on Figure 3. The different directions in which effects were observed can be seen in Figure 8 – when the trend was increasing for abundance vs soil moisture, it was decreasing for abundance vs moss cover or light reflectance, and vice versa. This was also suggested in the CCA ordination, because the arrows in Figure 3 pointed in opposite directions for soil moisture and each of moss cover and light reflectance. Three of the species in Figure 8 (*Trochosa terricola*, *Zora spinimana* and *Alopecosa cuneata*) appeared to be more abundant when there were many herbs, whereas they were less abundant when there were many twigs. This pattern of opposite associations with abundance of high twig cover and high herb cover was also evident in the CCA ordination, in fact it was expressed more clearly (Figure 3), as arrows pointing in opposite directions for herb and twig cover.



**Figure 8** Hunting spider abundances (on the  $\log(y + 1)$  scale) for six of the 12 species, against each of the six environmental variables – against soil moisture content and twig cover (first column), bare sand and moss cover (second column), herb cover and reflectance (last column). The average  $R^2$  for multiple regression against the three pairs of environmental variables is respectively 59%, 35% and 52%. “Few twigs” refers to sites with  $< 5\%$  cover of twigs, “few herbs” refers to  $< 50\%$  cover. Every second species has been graphed, when ranked by total abundance.