Abstract

Morphological stomatal traits, such as size, form and frequency, have been subject of much literature, including their relationships with environmental factors. However, little effort have focused on ferns, and very few in the genus Blechnum. Stomatal length, width and frequency (as stomatal index) of a number of specimens of fourteen Neotropical species of Blechnum were measured in adult pinnae. The aim of the work was to find biometrical relationships between stomatal traits and between stomatal traits and habit, habitat and ecosystem of the plants. Statistical analyses of data were conducted using Exploratory Data Analysis and Multivariate Statistical Methods. Stomatal length and width showed a very high correlation, suggesting an endogenous, genetic control, thus giving these traits a considerable diagnostic utility. With respect to the relationships between stomatal traits and environment, we found significant statistical relationships between altitude and stomatal index. We also addressed the interpretation of the ecological- selective significance of various assemblages of stomatal traits in a diverse conjunction of habits, habitats and ecosystems.

Keywords

Blechnum, ferns, autoecology, selection, stomatal frequency, stomatal size.