

Project:

Networks of Plant-Animal Interactions: the Architecture of Biodiversity

Plant-animal interactions have played a major role in the generation of biodiversity. While there have been many studies on specific interactions between pairs of species (i.e. pair-wise coevolution), there is almost no information on how coevolutionary interactions are shaped within species-rich communities. We will analyse the largest and most resolved data set on plant-animal networks, involving both mutualistic networks (pollination and seed dispersal) and antagonistic networks (plant-herbivore). First, we will characterise the network structure. Next, we will evaluate the robustness of the observed structure to several types of perturbations. Finally, we will combine the analysis of a suite of community assembly models with a parallel analysis of phylogenetic relationships among plants and animals in order to compare the various assembly processes for their ability to generate observed patterns. The project synthesises several approaches ranging from the statistical analysis of data sets to computer simulations and analytic models. Our ultimate goal is to build a general theory of coevolution in species-rich communities. This theory will provide insight into the origin and maintenance of biodiversity, and its responses to perturbations.

Comments:

Very interesting, out of the mainstream proposal. The results will provide new concepts in ecology. High impact on the field.

Jordi Bascompte is one of the few very good theoretical ecologists. He has a very good publication record, is already very well recognized in the field and is networked via interdisciplinary collaborations. With the establishment of his own group in Barcelona he has proven leadership. He is already an independent group leader. No doubt – he is a scientist with a very promising future.

Very good project dealing with a very important and interesting aspect of population genetics. It relies on pre-existing experimental data and is based on a new, tradition-breaking concept (Matrix Model). The project is by nature descriptive, as experiments in this area are not possible without influencing the ecological systems. There are many applications for the model. The system could be used for predictions.

Nationality: Spanish

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