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Editorial – Biodiversity in China

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Since 2004, I have been working on the causes and consequences of variation in ant species diversity along a single elevational gradient in the southern Appalachian Mountains in the USA. My students, postdocs and I (OK, mostly my students and postdocs) have hiked tens or perhaps hundreds of kilometers up and down the slopes of some of the most beautiful mountains anywhere in the world. Often, we hiked with backpacks full of gear, samples, and kilograms of leaf litter (from which we later extract the ants). Over the years, perhaps 15 students have been involved in the project, and their work has yielded some insights about some of the causes of spatial variation in ant community structure and perhaps elucidated a general principle or two. The data we've collected, from 29 sites along this single gradient, have been hard earned, and I'm proud of my group for all of their hard work.

So proud, in fact, that in 2007, I flew to a workshop organized by the Global Mountain Biodiversity Assessment in Copenhagen at GBIF (the Global Biodiversity Infrastructure Facility) to talk about how our work along this single gradient could inform bigger issues in the study of biodiversity and macroecology. I stood up in a room full of luminaries and proudly presented our results from this one bit of a single mountain range in the southeastern USA. The very next speaker was Professor Jingyun Fang, of Peking University. As I recall, he thanked me for warming up the crowd a bit and giving an overview of the importance of working on biodiversity in mountains. He also pointed out that we share many similar interests, and that he and his students had been doing the same kind of work, but mostly on plants since the mid-1990's. Professor Fang then proceeded to give a talk about how he and his group have examined patterns of diversity in trees and understory plants in China, but along 52 elevational gradients (the number is now up to 63). My jaw dropped (as did nearly every other jaw in the room), and the first thought I remember having was "wow." My second thought was "Professor Fang and his group have done 52× as much work as my group has." Professor Fang's work, and so much more, is the focus of this Special Issue on biodiversity in China.

As you will see in this Special Issue, Professor Fang and his group have compiled other datasets in addition to the 63-mountain dataset: vegetation and soil samples from ~1500 grassland plots at ~300 sites across China, an atlas of woody plants for all of China (Fang et al. 2011), and a database of plant functional traits (Han et al. 2011, Chen et al. 2013). These data come from all corners of an exceptionally biodiverse country, with climatic conditions that are comparable to nearly every corner of the globe (see Fig. 2b in the first paper by Fang et al. 2012). Needless to say, the data are impressive; actually they are more than impressive, they are overwhelming in their quality and quantity.

Ecography was inspired to publish this Special Issue on biodiversity in China because of these data. Ecography, at its core, strives to be the primary outlet for studies based on field-collected data that can be used to test theory in spatial ecology. Clearly, the data highlighted in this Special Issue are field collected and are used to test numerous bodies of theory, to describe repeated patterns and uncover their mechanisms, and to shed light on contemporary debates in macroecology and biogeography. But Ecography was also excited about this Special Issue on biodiversity in China because, simply put, the papers are about biodiversity in China. Chinese ecologists (and a few others) have long been working on documenting the impressive diversity all over China, from lowland tropical forests to the peaks of some of the world's highest mountains. But much of the work by Chinese ecologists on those striking patterns of diversity (and their causes) is only now beginning to reach the scientific community outside of China. With this Special Issue, Ecography hopes to play a role in increasing global awareness of biodiversity in China, and the impressive work that Chinese scientists are doing to understand the patterns, causes, and threats to biodiversity in China.

References

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Fang, J. et al. 2011. Atlas of woody plants in China: distribution and climate. – Springer and Higher Education Press.

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The first workshop on the Special Issue was held at Peking University in September 2009. Pictured are the PKU-PSD project leader, Professor Jingyun Fang (4th from the right in the second row), and some of his students along with the Deputy Editor-in-Chief of Ecography and Subject Editor for the Special Issue, Professor Nathan Sanders (6th from the right in the second row) and the Editor-in-Chief of Ecography, Professor Carsten Rahbek (5th from the right in the second row). The major authors of the Special Issue are Jingyun Fang, Xiujuan Qiao (3rd from the right in the first row), Shaopeng Wang (1st from the right in the first row), Zhiheng Wang (1st from the right in the second row), Zhiyao Tang (2nd from the right in the second row), Zehao Shen (2nd at the upper left), and Xiangping Wang (1st at the upper left). The photo was taken in the front of the West Gate of Peking University.