Cryptic species: What we don't know might hurt us

described from each region, and each of these three taxa may be a cluster of related taxa. The distribution of *T. syrichta* conforms well to the Ice Age landmass Greater Mindanao. The distribution of the *T. tarsier*-complex covers the Ice Age landmass of Sulawesi, and extends to discontiguous island groups, possibly indicating a relatively ancient dispersal throughout the proto-Sulawesi archipelago. The distribution of *T. bancanus* is limited to a greatly reduced subset of Sundaland, and may indicate a Holocene range expansion from a Pleistocene refuge in Borneo. The alpha-level taxonomy of the *T. tarsier*-complex is reviewed. Acoustic evidence provides a hypothesis of at least 17 distinct taxa, 16 known acoustic forms plus the enigmatic *T. pumilus*. The distribution of tarsier acoustic forms conforms to empirical biological and geological data to form a compelling biogeographic hypothesis for Sulawesi. Congruence among tarsier acoustic, genetic, and morphologic data is reviewed. One implication for conservation is that biodiversity in Sulawesi may be underestimated by as much as an order of magnitude. Rigorous testing of the hypothesis of so many new taxa will require a large investment of resources and time, but regrettably, current rates of deforestation indicate that time may be of short supply.

Poster -8

Cryptic species: What we don't know might hurt us

David Bickford

Department of Biological Science, National University of Singapore, 14, Science Drive 4, Singapore 117543, Republic of Singapore

The taxonomic challenge posed by cryptic species has been recognized for nearly 300 years, but the advent of relatively inexpensive and rapid DNA sequencing has given biologists a powerful new tool for detecting and differentiating morphologically similar species. Here, we synthesize the literature on cryptic and sibling species and discuss trends in their discovery. However, a lack of systematic studies leaves open the tantalizing questions such as whether cryptic species are more common in particular habitats, latitudes or taxonomic groups. Such uncertainties could have profound implications for evolutionary theory, biogeography planning and conservation planning.

Poster -9

Insular biogeography of web-building spiders on small tropical islands surrounding Singapore

Adrian L. Lim and Daiqin Li

Department of Biological Science, National University of Singapore, 14, Science Drive 4, Singapore 117543, Republic of Singapore

The main objective of this study was to investigate biogeographical effects that influenced the distribution and assemblage of web-building spiders on small tropical islands off Singapore in order to understand how this group of arthropods responded to biogeographical, environmental and human factors. Fifteen islands were sampled for web-building spiders. Correlation analysis, simple linear and multiple regressions, nestedness index and choros (*K*) model were used to test the six specific predictions that (1) area is the best predictor of species/genus richness at both community and specific/generic levels; (2) there is no correlation between island size and population density; (3) web-building spiders are non-randomly distributed on the islands and exist as nested subsets; (4) there is a correlation between environmental variables and web-building spider species/genus distribution; (5) body size (chelicerae to end of abdomen) of female insular *Nephila pilipes* increases with increasing island area; and (6) the choros (*K*) (Triantis *et al.*, 2003) model offers a better-fit than the classic species-area one.

Area *per se* was found to be the most significant factor accounting for web-building spider assemblage at both community and specific/generic levels. Contrary to the theory of Island Biogeography, there was a positive correlation between island size and population density. Web-building spiders were