Ant Biodiversity Data Synthesis: Present and Future

Jan 21-23, 2020, OIST

Symposium Description

Discovering, documenting, and understanding biological diversity has been a central task of biological science since the time of early explorers. In the past 250 years, researchers have steadily accumulated information on what species exist in nature, where they occur around the globe, the ecological communities within which they are a part, their phenotypic traits, their evolutionary relationships, and more recently-the information contained in their genomes. However, this accumulated information has been scattered widely across the literature or buried in museum collections around the world, and thus has been too fragmented for synthetic, large-scale studies seeking general patterns.

Recently, advances in computation and biodiversity informatics have led to a new era of data synthesis; all these scattered bits of information are being aggregated to reveal broad patterns and provide a snapshot of the current state of knowledge. While much progress has been made for well-studied groups such as vertebrates, hyperdiverse invertebrate groups are lagging behind. This represents a major challenge as invertebrates represent >80% of biodiversity and, according to several recent studies, are severely affected by the current biodiversity crisis. Assembling global-scale and comprehensive datasets about their ecology and distribution is thus critically needed to address both basic questions in in ecology and evolution as well as effectively implement global conservation initiatives.

Ants are among the most ecologically dominant animal taxa, and are relatively well studied compared with other arthropods, thus are a good exemplar arthropod group. For nearly 30 years, the ant biodiversity community has been ahead of the curve in efforts to organize information in taxonomic catalogs, specimen databases, image repositories, and web portals. More recent efforts have built upon this foundation and put together complementary datasets focusing on specimens, geographic occurrences, communities, morphological and ecological traits, etc. However, none of these datasets can be considered near finished as it will be decades before the global ant inventory is complete.

The goal of this mini-symposium is to bring together the primary groups working on ant data synthesis projects to take stock of current progress and identify priorities for the next phase. We aim to address the following questions: 1) What is the current status of ant biodiversity synthesis projects and what are the remaining gaps? 2) What steps can we take to make the projects to more integrated, more collaborative, more scientifically rigorous, and more available in the long term? 3) What resources should be developed for the ant research community, and how can we best contribute to broader cross-taxon biodiversity efforts (GBIF, Map of Life, IUCN etc.)? We believe this symposium will lay the foundation for the next phase of research that will ultimately lead to an unprecedented big data synthesis beyond what has been accomplished for any invertebrate group.

Schedule (Tentative)

Meeting Location

C210, OIST Main Campus
Note: Most of you are staying at Seaside House, which is about 1km from OIST main campus. We are arranging some regular times for taxi transfer between the two, but it is also very walkable so movement back and forth is not dependent on the taxis.

Day 1 (Jan. 21)

7:45-8:45 Breakfast at Chura Hall (Seaside House)

8:45 Taxi from Seaside House → OIST

09:15-09:40 Welcome and introductory words (Economo)

09:40-10:10 Talk: Benoit Guénard

10:10-10:30 Coffee break

10:30-11:00 Talk: Jamie Kass

11:00-11:30 Talk: Evan Economo

11:30-12:00 Talk: Rob Guralnick

12:00-13:00 Lunch Break

13:00-13:30 Talk: Brian Fisher

13:30-14:00 Talk: Anne Chao

14:00-14:20 Coffee break

14:20-14:50 Talk: Jon Shik

14:50-17:45 OIST Campus and lab tour

18:00 Taxi from OIST → Dinner Venue

18.15-20.15 Dinner @ Sakae

Day 2 (Jan. 22)

7:45-8:45	Breakfast at Chura Hall (Seaside House)
8:45	Taxi from Seaside House → OIST
09:15-09:30	Introductory words
09:30-10:00	Talk: Heloise Gibb
10:00-10:20	Coffee break
10:20-10:50	Talk: Kate Parr
10:50-11:20	Talk: Nate Sanders
11:20-11:50	Talk: Rob Dunn
11:50-13:00	Lunch Break
13.00-13:30	Talk: Steve Shattuck
13:30-14:00	Talk: Dave Lubertazzi
14:00-16:00	Group Discussion 1: Geographic data synthesis
16:00-17:30	Small Groups or Free time
17:30	Taxi from OIST → Dinner Venue
18:30-20:30	Dinner @ Kurasushi-Rycom

Day 3 (Jan. 23)

7:45-8:45	Breakfast at Chura Hall (Seaside House)
8:45	Taxi from Seaside House → OIST
09:15-09:30	Introductory words
09:30-10:10	Group Discussion 3: Ecological / Morphological Trait Data Synthesis
10:10-10:30	Coffee break and discussions
10:30-12:00	Group Discussion 4: Ecological / Morphological Trait Data Synthesis
11:45-12.45	Lunch Break
12.45-14:45	Group Discussion 5: Horizon scanning / Future planning
14:45-15:00	Coffee break
15:00-17:45	Working groups and/or free time
17:45	Taxi from OIST → Seaside House
18:00-20:30	Closing BBQ at Seaside House