

# Biogeography

Alexey Shipunov

Minot State University

## Lecture 10

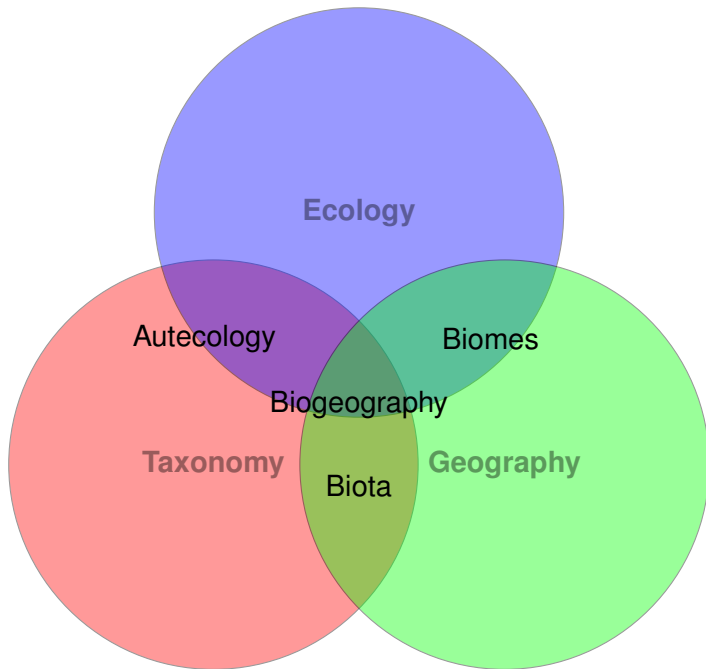
# Outline

## Taxonomy

### Basic principles

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## Basic principles



# Two corner stones

- ▶ The diversity around us has a structure
- ▶ This structure is hierarchical

## How to describe hierarchy

### ► With ranks

Simple, efficient, practical. However, for every name you will need to remember a rank\*. Also, number of ranks is restricted so some potentially useful information will be ignored. Last but not least, no clear definition of any rank exists. The working definition is “*we call this genus because in the neighbor family we apply the genus rank to similarly segregated groups*”.

\*There are multiple workarounds, e.g. endings and numerical ranks.

### ► With trees

More objective, no need to remember rank, no restrictions for numbers of levels. However, you should remember the graphic object instead of text, interpretation is not easy, conflicts are not simple to resolve. As a result, it is much easier to become lost with trees than with ranks.

Many current approaches try to cross ranks and trees.

# Names and ranks

- ▶ Ranks (including species) are very useful practically but do not have explicit criteria
- ▶ 7 basic ranks: species, genus, family, order, class, phylum, kingdom
- ▶ Names of species are binomial. This is again extremely useful but will result in instability—binomial names are not perfect IDs

# Priority, starting dates and conservation

- ▶ Names only look like meaningful words. In fact, they are IDs. So it is impossible to change a name if it looks “incorrect”, like *Simmondsia chinensis* (jojoba) which does not grow in China.
- ▶ The earlier name is always preferred. Good rule, but adds to the instability of names.
- ▶ Starting dates allow to disregard all names published before 1753 (for plants) or 1758 (for animals)
- ▶ Conservation allows to disregard older names if the newer name is conserved



# Summary

- ▶ There are seven main taxonomic ranks
- ▶ Subspecies are geographical races

# For Further Reading



A. Shipunov.

*Biogeography* [Electronic resource].

2014—onwards.

Mode of access:

[http://ashipunov.info/shipunov/school/biol\\_330](http://ashipunov.info/shipunov/school/biol_330)



A. Shipunov.

*Introduction to Biogeography and Tropical Biology* [Electronic resource].

2017—onwards.

Mode of access:

[http://ashipunov.info/shipunov/school/biol\\_330/intr\\_biogeogr\\_trop\\_biol/intr\\_biogeogr\\_trop\\_biol.pdf](http://ashipunov.info/shipunov/school/biol_330/intr_biogeogr_trop_biol/intr_biogeogr_trop_biol.pdf)



**Biological classification.**

[http:](http://en.wikipedia.org/wiki/Biological_classification)

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