

Systematic Botany. Lecture 18

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Outline

Questions and answers

Monera

Bacteria

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Monera

Bacteria

Previous final question: the answer

Which rank is between phylum and order?

Previous final question: the answer

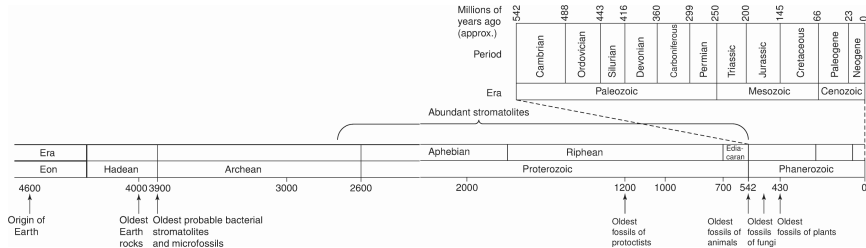
Which rank is between phylum and order?

- ▶ Class

Announcement: Lab 1 paper

- ▶ Due October 21
- ▶ 1000-1200 words
- ▶ Topics: (1) Basic principles of plant construction; (2) Prairie plant communities

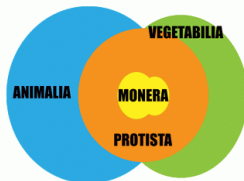
Timeline of evolution



Classification Web site

© Shipunov A.B. Systema Naturae [Electronic resource]. 1995—onwards.
Mode of access: <http://herba.msu.ru/shipunov/os/os-en.htm>

Systema Naturae



Current β version:

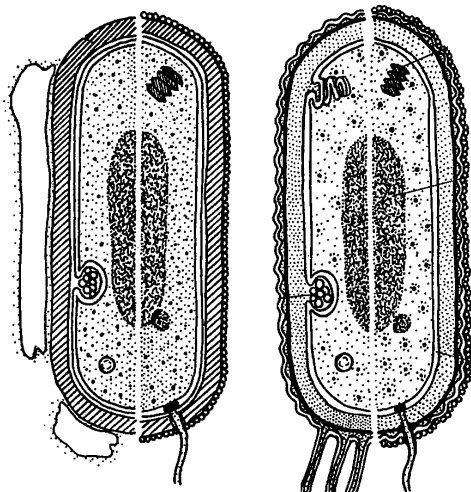
- [Classification itself](#), in PDF (version information inside)
- [What's new](#) since 5.4, plain text
- [Treemap of classification](#), in SVG
- [Pyramid of kingdoms](#), in SVG
- [References](#), in BibTeX

Stable version 5.802 (April 2009):

Shipunov A.B. Systema Naturae or the outline of living world classification // Protistology. 2009. 6 (1): 3-13,
[Open access](#), or [Local PDF](#).

<http://ashipunov.info/shipunov/os/os-en.htm>

Gram-positive *versus* Gram-negative bacteria



Basal lineages (B-13 & B-14)

Regnum Monera [⁷*Bacillus*]

Subregnum *Bacteria* [^{6,8}*Bacillus*]* ¹

Superphylum *Terrabacteria* [^{6,2}*Bacillus*] s.a.

Phylum 1. THERMOBACTERIA[†] [⁶*Deinococcus*] s.a.

Classis 1(1). *Deinococci* [⁵*Deinococcus*]²

2(2). *Thermodesulfobacteria* [⁵*Thermodesulfobacterium*] i.s.

3(3). *Aquificae* [⁵*Aquifex*] sed.m.³

4(4). *Thermotogae* [⁵*Thermotoga*] sed.m.

Phylum 2. OBSCUROBACTERES[†] ⁴

Firmicutes (B-9, B-10, B-12)

Phylum 3. ACTINOBACTERES[†] [⁶*Actinomyces*]

Classis 1(5). *Actinobacteria* [⁵*Actinomyces*]

Phylum 4. FIRMICUTES [⁶*Bacillus*] s.a., sed.m.⁵

Classis 1(6). *Fusobacteria* [⁵*Fusobacterium*] sed.m.

2(7). *Dictyoglomia* [⁵*Dictyoglomus*] sed.m.

3(8). *Mollicutes* [⁵*Mycoplasma*]⁶

4(9). *Clostridia* [⁵*Clostridium*] s.a.⁷

5(10). *Negativicutes* [⁵*Negativicoccus*]

6(11). *Bacilli* [⁵*Bacillus*] s.a.⁸

Photosynthetic lineages (B-6 & B-7)

Phylum 5. CYANOBACTERIA [⁶*Nostoc*]

- Classis 1(12). *Gloeobacteria* [⁵*Gloeobacter*]
2(13). *Oscillatorineae** [⁵*Oscillatoria*] s.a.⁹
3(14). *Nostocineae* [⁵*Nostoc*]

Phylum 6. CHLOROFLEXES [⁶*Chloroflexus*]¹⁰

- Classis 1(15). *Armatimonadetes* [⁵*Armatimonas*] stat.m.¹¹
2(16). *Dehalococcoidetes* [⁵*Dehalococcoides*]
3(17). *Chloroflexi* [⁵*Chloroflexus*]
4(18). *Thermomicrobia* [⁵*Thermomicrobium*]¹²
5(19). *Anaerolineae* [⁵*Anaerolinea*]¹³
6(20). *Ktedonobacteria* [⁵*Ktedonobacter*]

Final question (1 point)

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Name one photosynthetic phylum of Bacteria

For Further Reading



Margulis and Chapman. 2009.

Kingdoms and domains: an illustrated guide to the phyla of life on Earth. 4th edition.

Chapter 1 (pp. 37–57; 65–107).