

# Systematic Botany. Lecture 27

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# Outline

Questions and answers

Protista

Panalgae

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Protista

  Panalgae

## Previous final question: the answer

Name at least four algal groups (higher than genera)

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- ▶ Chromophyta, Phaeophyceae, Chrysophyceae, Dinzoa etc.

# Protista

# Panalgae

## Ciliates—Pr-6

Phylum 33. CILIOPHORA [<sup>6</sup>*Paramecium*]

Subphylum ***Postciliodesmatophora*** [<sup>5,8</sup>*Spirostomum*]

Classis 1(151). *Karyorelictea* [<sup>5</sup>*Trachelocera*]

2(152). *Heterotrichea* [<sup>5</sup>*Spirostomum*]

Subphylum ***Ventrata*** [<sup>5,8</sup>*Paramecium*]

Classis 3(153). *Phyllopharyngea* [<sup>5</sup>*Podophrya*]<sup>100</sup>

4(154). *Nassophorea* [<sup>5</sup>*Nassula*]<sup>101</sup>

5(155). *Colpodea* [<sup>5</sup>*Colpoda*]

6(156). *Prostomatea* [<sup>5</sup>*Prorodon*]

7(157). *Plagiopylea* [<sup>5</sup>*Plagiopyla*]

8(158). *Oligohymenophorea* [<sup>5</sup>*Paramecium*]

Subphylum ***Spirotrichia*** [<sup>5,8</sup>*Oxytricha*]

Classis 9(159). *Protocruziidea* *Protocruzia* sed.m.

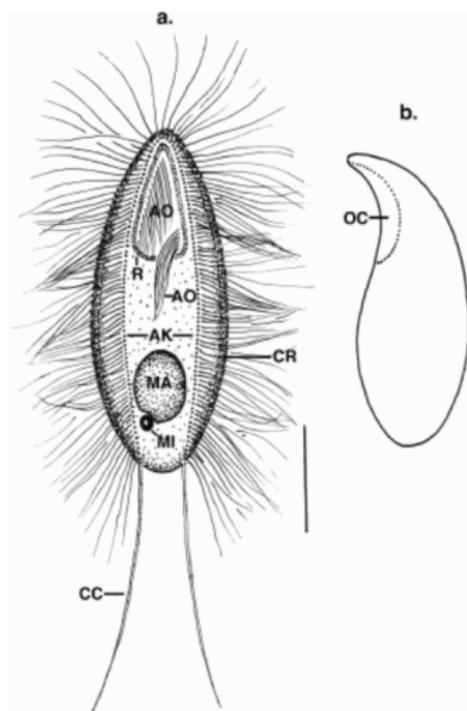
10(160). *Spirotrichea* [<sup>5</sup>*Oxytricha*]<sup>102</sup>

Subphylum ***Lamellicorticata*** [<sup>5,8</sup>*Clevelandella*]

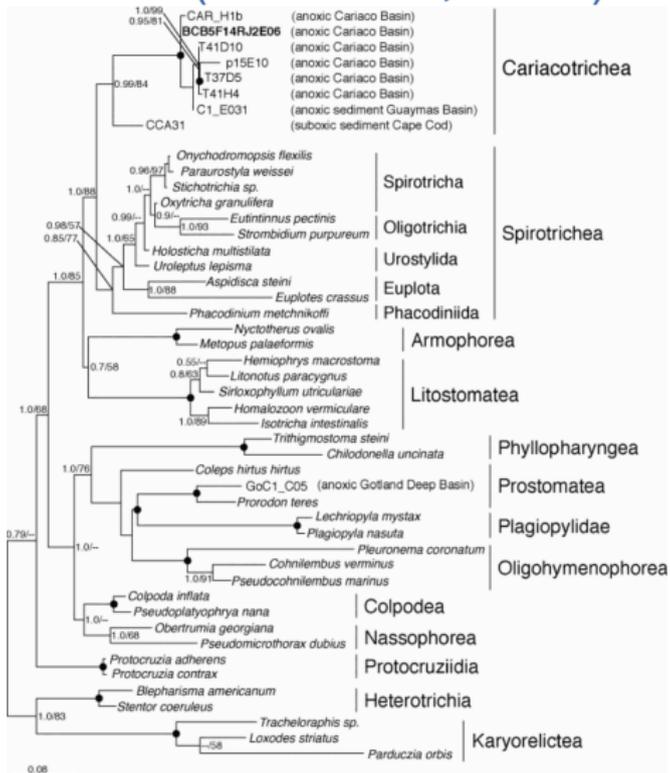
Classis 11(161). *Armophorea* [<sup>5</sup>*Clevelandella*]

12(162). *Litostomatea* [<sup>5</sup>*Spathidium*]

# Cariacotrichea (Orsi et al., 2011)—new class of ciliates



# Phylogeny of ciliates (Orsi et al., 2011)



# Hacrobia—Pr-25, Pr-26

## Infraregnum Hacrobia [ <sup>6,5</sup>*Cryptomonas* ] s.m.

### Phylum 34. CRYPTISTA [ <sup>6</sup>*Cryptomonas* ] s.a.

- Classis 1(163). *Cryptophyceae* [ <sup>5</sup>*Cryptomonas* ]<sup>103</sup>
- 2(164). *Katablepharidea* [ <sup>5</sup>*Katablepharis* ] sed.m.<sup>104</sup>
- 3(165). “*Biliphyta*” [ <sup>5</sup>“*Biliphyta*” ]<sup>105</sup>
- 4(166). *Palpitomonadea* † [ <sup>5</sup>*Palpitomonas* ]
- 5(167). *Telonemea* [ <sup>5</sup>*Telonema* ] stat.m.

### Phylum 35. CENTROHELIDA [ <sup>6</sup>*Acanthocystis* ] sed.m.

- Classis 1(168). *Holosea* [ <sup>5</sup>*Luffisphaera* ] i.s.<sup>106</sup>
- 2(169). *Centrohelea* [ <sup>5</sup>*Acanthocystis* ]<sup>107</sup>

### Phylum 36. HAPTOPHYTA [ <sup>6</sup>*Prymnesium* ]

- Classis 1(170). *Prymnesiophyceae* [ <sup>5</sup>*Prymnesium* ]<sup>108</sup>
- 2(171). “*Rappenomonadae*” [ <sup>5</sup>“*Rappenomonas*” ]<sup>109</sup>

## Lower Chlorobionta—Pr-33

### **Infraregnum Chlorobionta** [<sup>6,5</sup>*Volvox*]

#### Phylum 37. GLAUCOPHYTA [<sup>6</sup>*Glaucocystis*]

Classis 1(172). *Glaucophyceae* [<sup>5</sup>*Glaucocystis*]

#### Phylum 38. RHODOPHYTA [<sup>6</sup>*Bangia*]

Classis 1(173). *Cyanidiophyceae* [<sup>5</sup>*Cyanidium*]<sup>110</sup>

2(174). *Rhodellophyceae* s.a. [<sup>5</sup>*Rhodella*]<sup>111</sup>

3(175). *Compsogonophyceae* [<sup>5</sup>*Compsopogon*]

4(176). *Bangiophyceae* [<sup>5</sup>*Bangia*]

5(177). *Florideophyceae* [<sup>5</sup>*Palmaria*]

# Chlorophyta—Pr-28

Phylum 39. CHLOROPHYTA [<sup>6</sup>*Volvox*]\* s.a.

Subphylum *Chlorophytina* [<sup>5,8</sup>*Volvox*]

Classis 1(178). *Prasinococcophyceae* [<sup>5</sup>*Prasinococcus*]<sup>112</sup>

2(179). *Pyraminomonadophyceae* [<sup>5</sup>*Pyraminomonas*]

3(180). *Mamiellophyceae* [<sup>5</sup>*Mamiella*]

4(181). *Nephroselmidophyceae* [<sup>5</sup>*Nephroselmis*]\* s.a.<sup>113</sup>

5(182). *Chlorodendrophyceae*<sup>†</sup> [<sup>5</sup>*Tetraselmis*]

6(183). *Trebouxiophyceae* [<sup>5</sup>*Chlorella*]<sup>114</sup>

7(184). *Chlorophyceae* [<sup>5</sup>*Volvox*]

8(185). *Ulvophyceae* [<sup>5</sup>*Ulva*]

Subphylum *Charophytina* [<sup>5,8</sup>*Chara*]\*

Classis 9(186). *Mesostigmatophyceae* [<sup>5</sup>*Mesostigma*]<sup>115</sup>

10(187). *Charophyceae* [<sup>5</sup>*Chara*]\*<sup>116</sup>

## Final question (2 points)

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Why it is still easy to find a new higher taxon (e.g., class) of protists?

## For Further Reading



Margulis and Chapman. 2009.

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