Systema Naturae.
The classification of living organisms.

© Alexey B. Shipunov

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Preface

Main features of the classification

This is the original variant of the classification of living organisms, based on latest available information. This classification has: (a) small number of kingdoms; (b) large phyla; (c) incorporating as much as possible taxonomical data from different sources. Please intend that order of taxa unlike usual practice, is important alongside with hierarchical structure.

1) The classification utilizes all described groups of living organisms, exclude fossils and viruses, from kingdoms and down to class level. Some thoroughly described "environmental" groups are also included.

2) Initial fragmentation of taxonomic space based on pre-existed hypotheses of how groups should be defined ("levels of complexity" for kingdoms– see below, "structure of life cycle" for plants, "bauplan" for animals). In cases where these hypotheses are absent, the most stable and inclusive molecular groups (corrected by morphology) are used.

3) Subsequent (and iterative) fragmentation of taxonomic space based on distance approach. Distances are obtained from "total evidence" of all available and up-to-date primary (like morphological or single molecular characters) and secondary characters (suggestions of similarity taken from different sources, e.g., trees). All characters are weighted.

4) Since the problem of paraphyly is in the first place the problem of communication between tree-based and space-based approaches, some paraphyletic groups are accepted, generally in cases of (a) unresolved, unstable and/or non-typical (like nets) structures in trees; (b) high inequality/irregularity in trees; (c) dense and multiply ("comb-like") grades.

5) The final criteria for the classification are (a) simplicity, (b) predictability and (c) evolutionary/ecological integrity.

6) All groups treated in most inclusive manner.

7) Classification is fully hierarchical; ranks should be comparable, at least across the largest divisions (kingdoms). The order of taxa is meaningful and reflects the position of taxon in the taxonomic space.

About kingdoms

Most of researches agree that kingdom-level classification of living things needs the special rules and principles. Two approaches are possible: (a) tree-based, Hennigian approach will look for main dichotomies inside so-called "Tree of Life"; and (b) space-based, Linnaean approach will look for the key differences inside "Natural System" multidimensional "cloud". Despite of clear advantages of tree-like approach (easy to develop rules and algorithms; trees are self-explaining), in many cases the space-based approach is still preferable, because it let us to summarize any kinds of taxonomically related data and to compare different classifications quite easily. This approach also lead us to four-kingdom classification, but with different groups: **Monera**, **Protista**, **Vegetabilia** and **Animalia**, which represent different steps of increased complexity of living things, from simple prokaryotic cell to compound eukaryotic cell and further to tissue/organ cell systems.

Typified names

Since most so-called "trivial" names for higher categories are used in very different senses, and often dubious, the classification introduces the use of globally typified names with rank designation. Such name constructed from generic name and rank designation (number), like "^{5}Name". Number-like designations are much better than traditional endings, which usually mask the

basionym, hard to remember, sometimes conflicting (for example, among protists where different nomenclature codes work together) and looks non-aesthetic.

Each basic rank have the number:

Species	1
Genus	2
Familia	3
Order	4
Classis	5
Phylum/Divisio	6
Regnum	7

Intermediate ranges are designated as decimal numbers:

Sub-	.8
Infra-	.5
Super-	.2

Thus, $^{5.2}$*Name* means this is a taxon with rank of superclass based on genus "*Name*". It is quite simple but efficient system.

The classification

Only recent taxa. Viruses are not included. Abbreviations: incertae sedis (i.s.); pro parte (p.p.); sensu lato (s.l.); sedis mutabilis (sed.m.); sedis possibilis (sed.poss.); sensu stricto (s.str.); status mutabilis (stat.m.); "quotes" for "environmental" groups; asterisk* for paraphyletic* taxa.

Regnum Monera [^{7}*Bacillus*]

Superphylum *Archebacteria* [$^{6.2}$*Methanobacterium*]

Phylum 1. ARCHEBACTERIA [^{6}*Methanobacterium*]

Classis 1(1). *Euryarcheota* [^{5}*Methanobacterium*][1]
2(2). *Nanoarchaeota* [^{5}*Nanoarchaeum*]
3(3). *Crenarchaeota* [^{5}*Crenarchaeum*][2]

Superphylum *Bacteria* [$^{6.2}$*Bacillus*][3]

Phylum 2. FIRMICUTES [^{6}*Bacillus*][4]

Classis 1(4). *Thermotogae* sed.m. [^{5}*Thermotoga*]
2(5). *Clostridia* [^{5}*Clostridium*][5]
3(6). *Mollicutes* [^{5}*Mycoplasma*]
4(7). *Bacilli* [^{5}*Bacillus*]

Phylum 3. ACTINOBACTERIA [^{6}*Actynomyces*]

Classis 1(8). *Actinobacteria* [^{5}*Actinomyces*]

Phylum 4. HADOBACTERIA [^{6}*Deinococcus*]

Classis 1(9). *Hadobacteria* [^{5}*Deinococcus*][6]

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[1] Incl. Methanobacteria, Methanococci, Methanomicrobia, Halobacteria, Thermoplasmata sed.m., Thermococci, Archaeoglobi, Methanopyri.

[2] Incl. "Korarchaeota", "C1" (*Crenarchaeum*).

[3] Incl. "Nanobacteria" i.s. et dubitativa, "OP11 group" i.s.

[4] Incl. "TM7" i.s., "OP9".

[5] Incl. Fusobacteria sed.m., Dictyoglomi sed.m., Thermolithobacteria.

[6] = *Deinococcus-Thermus* group.

Phylum 5. CHLOROBACTERIA [[6]*Chloroflexus*][7]

Classis 1(10). *Ktedonobacteria* sed.m. [[5]*Ktedonobacter*]
2(11). *Thermomicrobia* [[5]*Thermomicrobium*]
3(12). *Chloroflexi* [[5]*Chloroflexus*]
4(13). *Dehalococcoidetes* [[5]*Dehalococcoides*]
5(14). *Anaerolineae* [[5]*Anaerolinea*][8]

Phylum 6. CYANOBACTERIA [[6]*Nostoc*]

Classis 1(15). *Gloeobacteria* [[5]*Gloeobacter*]
2(16). *Chroobacteria* [[5]*Chroococcus*][9]
3(17). *Hormogoneae* [[5]*Nostoc*]

Phylum 7. BACTEROIDETES [[6]*Bacteroides*][10]

Classis 1(18). *Fibrobacteres* [[5]*Fibrobacter*]
2(19). *Chlorobi* [[5]*Chlorobium*]
3(20). *Salinibacteria* [[5]*Salinibacter*]
4(21). *Bacteroidetes* [[5]*Bacteroides*][11]

Phylum 8. SPIROCHAETES [[6]*Spirochaeta*]

Classis 1(22). *Spirochaetes* [[5]*Spirochaeta*]

Phylum 9. PLANCTOBACTERIA [[6]*Planctomyces*][12]

Classis 1(23). *Gemmatimonadetes* sed.m. [[5]*Gemmatimonas*]
2(24). *"Poribacteria"* [[5]*"Poribacteria"*]
3(25). *Lentisphaerae* [[5]*Lentisphaera*]
4(26). *Verrucomicrobiae* [[5]*Verrucomicrobium*][13]
5(27). *Chlamydiae* [[5]*Chlamydia*]
6(28). *Planctobacteria* [[5]*Planctomyces*]

Phylum 10. PROTEOBACTERIA [[6]*Rhodospirillum*]

Classis 1(29). *Aquificae* sed.m. [[5]*Aquifex*][14]

[7]Incl. *Thermobaculum* i.s.
[8]Incl. Caldilineae.
[9]Incl. Prochlorophyceae, *Acaryochloris*.
[10]Incl. "TG3".
[11]Incl. Flavobacteria, Sphingobacteria.
[12]Incl. "OP3", *Ovibacter* i.s.
[13]Incl. Opitutae, Spartobacteria.
[14]Incl. Desulphurobacteriaceae.

2(30). *Thiobacteria* [^{5}*Desulfobacter*][15]
3(31). *Rhodobacteria* [^{5}*Rhodospirillum*][16]
4(32). *Geobacteria* sed.m. [^{5}*Synergistes*][17]
5(33). *Acidobacteria* sed.m. [^{5}*Acidobacterium*]

Phylum 11. ENDOMICROBIA [^{6}*Endomicrobium*]
Classis 1(34). *Endomicrobia* [^{5}*Endomicrobium*][18]

Regnum Protista* [^{7}*Euglena*]

Superphylum *Opistokontha* [$^{6.2}$*Agaricus*]

Phylum 12. CHOANOZOA [^{6}*Sphaeroeca*]
Classis 1(35). *Capsasporea* [^{5}*Capsaspora*]
2(36). *Choanomonadea* [^{5}*Sphaeroeca*][19]
3(37). *Ichthyosporea* [^{5}*Ichthyophonus*][20]
4(38). *Nucleariea* [^{5}*Nucleria*][21]

Phylum 13. EOMYCOTA* [^{6}*Mucor*]
Classis 1(39). *Chytridiomycetes* [^{5}*Chytridium*][22]
2(40). *Blastocladiomycetes* [^{5}*Blastocladium*]
3(41). *Rozellomycetes* [^{5}*Rozella*][23]
4(42). *Kickxellomycetes* [^{5}*Kickxella*][24]
5(43). *Mucoromycetes* [^{5}*Mucor*][25]
6(44). *Glomeromycetes* [^{5}*Glomus*]

[15]Incl. Deltaproteobacteria, Epsilonproteobacteria, Thermodesulfobacteria sed.m.
[16]Incl. Alphaproteobacteria, Betaproteobacteria, Gammaproteobacteria.
[17]Incl. Chrysiogenetes, Nitrospira, *Calditrix*, Deferribacteres.
[18]= "TG1".
[19]Incl. *Ministeria* stat.m.
[20]Incl. *Amoebidium*, Eccrinales, Aphelidea, *Corallochytrium*.
[21]Incl. Nucleariidae, Pompholyxophryidae sed.m.
[22]Incl. Neocallimastigales.
[23]Incl. *Olpidium* et *Caulochytrium* sed.m.
[24]Incl. Basidiobolaceae, Harpellales, Zoopagales, Entomophthorales, *Nephridiophaga*, Asellariales sed.m.
[25]Incl. Endogonales, Mortierellales.

Phylum 14. MICROSPORIDIA [^{6}*Microsporidium*]

Classis 1(45). *Microsporea* [^{5}*Microsporidium*][26]

Phylum 15. BASIDIOMYCETES [^{6}*Agaricus*]

Subphylum *Ustilagomycotina* [$^{5.8}$*Ustilago*]

Classis 1(46). *Entorrhizomycetes* sed.m. [^{5}*Entorrhiza*]
2(47). *Wallemiomycetes* sed.m. [^{5}*Wallemia*]
3(48). *Exobasidiomycetes* [^{5}*Exobasidium*]
4(49). *Ustilaginomycetes* [^{5}*Ustilago*]

Subphylum *Pucciniomycotina* [$^{5.8}$*Puccinia*]

Classis 5(50). *Pucciniomycetes* [^{5}*Puccinia*]
6(51). *Atractiellomycetes* [^{5}*Atractiella*]
7(52). *Cystobasidiomycetes* [^{5}*Cystobasidium*]
8(53). *Agaricostilbomycetes* [^{5}*Agaricostilbum*]
9(54). *Microbotryomycetes* [^{5}*Microbotryum*][27]
10(55). *Mixiomycetes* [^{5}*Mixia*]

Subphylum *Agaricomycotina* [$^{5.8}$*Agaricus*]

Classis 11(56). *Tremellomycetes* [^{5}*Tremella*]
12(57). *Dacrymycetes* [^{5}*Dacrymyces*]
13(58). *Agaricomycetes* [^{5}*Agaricus*]

Phylum 16. ASCOMYCETES [^{6}*Ascomyces*]

Subphylum *Taphrinomycotina** [$^{5.8}$*Ascomyces*]

Classis 1(59). *Taphrinomycetes* [^{5}*Ascomyces*][28]
2(60). *Schizosaccharomycetes* [^{5}*Schizosaccaromyces*][29]
3(61). *Saccharomycetes* [^{5}*Saccaromyces*]
4(62). *Neolectomycetes* [^{5}*Neolecta*]

Subphylum *Pezizomycotina* [$^{5.8}$*Peziza*]

Classis 5(63). *Orbiliomycetes* [^{5}*Orbilia*]
6(64). *Pezizomycetes* [^{5}*Peziza*]
7(65). *Dothideomycetes* [^{5}*Dothidea*][30]

[26]Incl. Metchnikovellida sed.m., *Mikrocytos mackini* sed.m.
[27]Incl. Cryptomycocolacales, Classiculales.
[28]Incl. *Saitoella*.
[29]Incl. *Pneumocystis*.
[30]Incl. Arthoniales.

8(66). *Eurotiomycetes* [^{5}*Penicillium*]
9(67). *Lecanoromycetes* [^{5}*Lecanora*][31]
10(68). *Laboulbeniomycetes* [^{5}*Laboulbenia*]
11(69). *Leotiomycetes* [^{5}*Leotia*]
12(70). *Sordariomycetes* [^{5}*Sordaria*]

Superphylum *Sarcomastigonta** [$^{6.2}$*Cercomonas*][32]

Phylum 17. AMOEBOZOA sed.m. [^{6}*Amoeba*][33]

Subphylum *Lobosea* [$^{5.8}$*Amoeba*]

Classis 1(71). *Tubulinea* [^{5}*Amoeba*][34]
2(72). *Stereomyxida* [^{5}*Stereomyxa*]
3(73). *Acanthomoebidae* [^{5}*Acanthamoeba*][35]
4(74). *Flabellinea* [^{5}*Vannella*]

Subphylum *Conosea* [$^{5.8}$*Physarum*]

Classis 5(75). *Phalansterea* [^{5}*Phalansterium*]
6(76). *Multiciliatea* [^{5}*Multicilia*][36]
7(77). *Filamoebae* [^{5}*Filamoeba*]
8(78). *Masigamoebidae* [^{5}*Mastigamoeba*][37]
9(79). *Dictyostelia* [^{5}*Dictyostelium*]
10(80). *Myxomycetes* [^{5}*Physarum*][38]

Phylum 18. APUSOZOA sed.m. [^{6}*Apusomonas*][39]

Classis 1(81). *Apusomonadea* [^{5}*Apusomonas*][40]
2(82). *Breviatea* sed.m. [^{5}*Breviata*][41]
3(83). *Anisomonadea* sed.m. [^{5}*Diphylleia*][42]

[31]Incl. Lichniales.
[32]*Meteora* i.s.
[33]Incl. 'X-cells' i.s.
[34]Incl. Copromyxidae sed.m., *Fonticula* sed.m
[35]Incl. *Mayorella*, *Platyamoeba*.
[36]Incl. *Gephyramoeba* sed.m.
[37]Incl. *Pelomyxa*, *Entamoeba*, *Endolimax*, *Endamoeba*.
[38]Incl. *Hyperamoeba* aggr., Protostelida sed.m.
[39]Incl. *Micronuclearia* i.s.
[40]Incl. *Amastigomonas*, *Apusomonas*, *Ancyromonas* sed.m.
[41]Sed.poss. intra Excavata.
[42]Incl. *Diphylleia*, *Collodictyon*, *Sulcomonas*; sed.poss. intra Excavata.

Phylum 19. CERCOZOA [^{6}*Cercomonas*]

Subphylum *Monadofilosea* [$^{5.8}$*Cercomonas*]

Classis 1(84). *Imbricatea* [^{5}*Euglypha*][43]
2(85). *Thecofilosea* [^{5}*Cryothecomonas*][44]
3(86). *Sarcomonadida** [^{5}*Cercomonas*][45]
4(87). *Proteomyxidea* [^{5}*Dimorpha*][46]
5(88). *Chlorarachniophyceae* [^{5}*Chlorarachnion*][47]

Subphylum *Retaria* [$^{5.8}$*Gromia*]

Classis 6(89). *Plasmodiophorea* [^{5}*Plasmodiophora*][48]
7(90). *Gromiea* [^{5}*Gromia*][49]
8(91). *Foraminifera* [^{5}*Globigerina*][50]
9(92). *Ascetosporea* [^{5}*Haplosporidium*][51]

Subphylum *Radiolaria* [$^{5.8}$*Acanthometra*]

Classis 10(93). *Spumellaria* [^{5}*Dictycoryne*][52]
11(94). *Acantharia* [^{5}*Acanthometra*]
12(95). *Polycystinea* s.str. [^{5}*Collosphaera*][53]

Superphylum *Excavata* [$^{6.2}$*Euglena*]

Phylum 20. METAMONADA [^{6}*Trichomonas*]

Classis 1(96). *Malawimonadea* sed.m. [^{5}*Malawimonas*][54]
2(97). *Preaxostyla* [^{5}*Oxymonas*][55]
3(98). *Fornicata* [^{5}*Hexamita*][56]

[43]Incl. Spongomonadida, Thaumatomonadida.
[44]Phaeodarea, Ebriida, *Protaspis*.
[45]Incl. *Metopion* sed.m.
[46]Incl. Desmothoracida, Gymnosphaerida, Dimorphida, Gymnophrea, *Pseudospora*, *Leucodictyon* sed.m., *Massisteria*.
[47]Incl. *Metromonas*, *Sainouron* sed.m.
[48]Incl. *Phagomyxa*.
[49]Incl. *Reticuloamoeba* sed.m.
[50]Incl. Xenophyophorea, *Reticulomyxa*, *Komokiacea*, *Schizocladus*, *Corallomyxa* sed.m.
[51]Incl. Paramyxidia, *Bonamia*, *Claustrosporidium*.
[52]Incl. *Sticholonche* sed.m.
[53]Incl. Collodaria, Nassellarida.
[54]Sed.poss. intra Euglenozoa.
[55]Incl. Oxymonadida, *Trimastix*.
[56]Incl. Retortamonadida, Diplomonadida, *Carpediemonas*, *Dysnectes*.

4(99). *Parabasalea* [^{5}*Trichomonas*][57]

Phylum 21. Euglenozoa [^{6}*Euglena*]

Classis 1(100). *Jacobea* [^{5}*Jacoba*][58]
2(101). *Heterolobosea* [^{5}*Acrasis*][59]
3(102). *Hemimastigea* sed.m. [^{5}*Hemimastix*][60]
4(103). *Pseudociliata* sed.m. [^{5}*Stephanopogon*]
5(104). *Euglenophyceae* [^{5}*Euglena*][61]
6(105). *Saccostoma* [^{5}*Bodo*][62]

Superphylum *Alveolata* [$^{6.2}$*Paramecium*]

Phylum 22. Dinozoa [^{6}*Peridinium*]

Classis 1(106). *Apicomonadea** [^{5}*Perkinsus*][63]
2(107). *'RM12'* [^{5}*'RM12'*][64]
3(108). *Conoidasida* [^{5}*Gregarina*][65]
4(109). *Aconoidasida* [^{5}*Plasmodium*][66]
5(110). *Ellobiopsea* [^{5}*Ellobiopsis*][67]
6(111). *Syndinea* [^{5}*Syndinium*][68]
7(112). *Oxyrridea* [^{5}*Oxyrris*]
8(113). *Dinoflagellata* [^{5}*Peridinium*]

Phylum 23. Ciliophora [^{6}*Paramecium*]

Classis 1(114). *Karyorelictea* [^{5}*Loxodes*]
2(115). *Heterotrichea* [^{5}*Stentor*]

[57]Incl. Trichomonadida, Hypermastigida.
[58]Incl. *Andalucia*.
[59]Incl. *Pleurostomum*.
[60]Incl. *Spironema*, *Stereonema*, *Paramastix* sed.m.
[61]= Plicostoma; incl. Diplonemea.
[62]Incl. Kinetoplastea, *Calkinsia*, *Postgaardi*.
[63]Incl. *Colponema* sed.m. *Algovora*, Myzomonadea (*Voromonas*, *Aplphamonas*, *Chilovora*), Perkinsida (*Perkinsus*, *Rastrimonas*, *Parvilucifera*, *Phagodinium*), Colpodellida (*Colpodella*, *Acrocoelus*).
[64]Unicellular alga with apicoplast and alveoli (Walker, 2007).
[65]Incl. Gregarinea, *Cryptosporidium*, *Selenidium*, *Rhytidicystis*, Coccidia sed.m.
[66]Incl. Haemosporidia, Piroplasmida, *Nephromyces*.
[67]Incl. *Ellobiocystis*, *Parallobiopsis*, *Rhizellobiopsis*, *Thalassomyces*.
[68]Incl. Syndiniales ("Marine Alveolate Group II"), Dubosquellaceae ("Marine Alveolate Group I").

3(116). *Spirotrichea* [^{5}*Stylonychia*][69]
4(117). *Armophorea* [^{5}*Clevelandella*]
5(118). *Litostomatea* [^{5}*Didinium*]
6(119). *Phyllopharyngea* [^{5}*Ephelota*][70]
7(120). *Nassophorea* [^{5}*Nassula*]
8(121). *Colpodea* [^{5}*Colpoda*]
9(122). *Prostomatea* [^{5}*Prorodon*]
10(123). *Plagiopylea* [^{5}*Plagiopyla*]
11(124). *Oligohymenophorea* [^{5}*Paramecium*]

Superphylum *Chromista* [$^{6.2}$*Fucus*]

Phylum 24. LABYRINTHOMORPHA [^{6}*Labyrinthula*]
Classis 1(125). *Labyrinthulea* [^{5}*Labyrinthula*][71]

Phylum 25. BICOECEA [^{6}*Bicosoeca*]
Classis 1(126). *Bicoecea* [^{5}*Bicosoeca*][72]

Phylum 26. OPALOZOA [^{6}*Opalina*]
Classis 1(127). *Blastocystea* [^{5}*Blastocystis*]
2(128). *Opalinea* [^{5}*Opalina*][73]
3(129). *Actinophryida* sed.m. [^{5}*Actinophrys*][74]

Phylum 27. OOMYCOTA [^{6}*Saprolegnia*]
Classis 1(130). *Oomycetes* [^{5}*Saprolegnia*][75]

Phylum 28. CHROMOPHYTA [^{6}*Fucus*]
Classis 1(131). *Bacillariophyceae* s.l. [^{5}*Diatoma*][76]
2(132). *Chrysophyceae* s.l. [^{5}*Chrysococcus*][77]

[69]Incl. *Protocruzia*, *Phacodinium*, *Lycnophora*.
[70]Incl. Suctoria.
[71]Incl. *Diplophrys*, *Sorodiplophrys*, Thraustochytridiales, Labyrinthuloideales.
[72]Incl. Placidiales (incl. *Wobbia*), Borokales, Anoecales (incl. *Cafeteria*, *Caecitellus*), Bicoecales, *Commation* sed.m., *Metromonas* sed.m., *Discocelis* sed.m., "MAST" groups.
[73]Incl. Proteromonadida.
[74]Sed.poss. juxta Pedinellales.
[75]Incl. Hyphochitriomycetales, *Developayella*, *Pirsonia*.
[76]= Khakista, incl. *Bolidomonas* stat.m.
[77]= Limnista, incl. *Synchroma* stat.m., Eustigmatales stat.m., Picophagea stat.m. (*Picophagus*, *Chlamydomyxa*), *Oikomonas*, *Paraphysomonas*.

3(133). *Hypogyrophyceae* stat.m. [^{5}*Pedinella*][78]
4(134). *Raphidophyceae* [^{5}*Rhaphidomonas*]
5(135). *Phaeophyceae* s.l. [^{5}*Fucus*][79]

Superphylum *Chloronta* [$^{6.2}$*Volvox*]

Phylum 29. HAPTOPHYTA [^{6}*Prymnesium*]
Classis 1(136). *Prymnesiophyceae* [^{5}*Prymnesium*][80]

Phylum 30. CENTROHELIDA [^{6}*Raphidiophrys*]
Classis 1(137). *Holosea* sed.m. [^{5}*Luffisphaera*][81]
2(138). *Centrohelea* [^{5}*Raphidiophrys*]

Phylum 31. CRYPTISTA [^{6}*Crypromonas*]
Classis 1(139). *Cryptomonadea* [^{5}*Cryptomonas*][82]
2(140). *Katablepharidea* sed.m. [^{5}*Katablepharis*][83]
3(141). *Telonemia* [^{5}*Telonema*]
4(142). *"Picobiliphyta"* [^{5}*"Picobiliphyta"*]

Phylum 32. GLAUCOPHYTA [^{6}*Glaucocystis*]
Classis 1(143). *Glaucophyceae* [^{5}*Glaucocystis*]

Phylum 33. RHODOPHYTA [^{6}*Bangia*]
Classis 1(144). *Cyanidiophyceae* [^{5}*Cyanidium*][84]
2(145). *Rhodellophyceae* [^{5}*Rhodella*][85]
3(146). *Compsogonophyceae* [^{5}*Compsopogon*]
4(147). *Bangiophyceae* [^{5}*Bangia*]
5(148). *Florideophyceae* [^{5}*Palmaria*]

[78]Incl. Pedinellales, Rhizochromulinales, Dictyochales, Pelagomonadales, Sarcinochrysidales, Pinguiochrysidales stat.m.

[79]= Fucistia, incl. Chrysomeridales stat.m., Xanthophyceae stat.m., *Schizocladia*, Phaeothamniales.

[80]Incl. Pavlovophyceae.

[81]Incl. *Paraluffisphaera*.

[82]Incl. *Goniomonas*.

[83]Incl. *Leucocryptos*, *Platychilomonas*, *Hatena*.

[84]Incl. *Cyanidium*, *Galdieria*, *Glaucosphaera*.

[85]Incl. Stylonematophyceae, Porphyridiophyceae, Rhodellophyceae.

Phylum 34. CHLOROPHYTA* [[6]*Volvox*]

Classis 1(149). *Prasinophyceae** [[5]*Prasinomonas*][86]
2(150). *Ulvophyceae* [[5]*Ulva*]
3(151). *Chlorophyceae* [[5]*Volvox*]
4(152). *Trebouxiophyceae* [[5]*Trebouxia*][87]
5(153). *Chlorodendrophyceae* [[5]*Tetraselmis*]
6(154). *Charophyceae** [[5]*Chara*][88]

Regnum Vegetabilia [[7]*Magnolia*]

Phylum 35. BRYOPHYTA* [[6]*Bryum*]

Subphylum *Hepaticae* [[5.8]*Marchantia*]

Classis 1(155). *Haplomitriopsida* [[5]*Haplomitrium*][89]
2(156). *Marchantiopsida* [[5]*Marchantia*][90]
3(157). *Jungermanniopsida* [[5]*Jungermannia*]

Subphylum *Bryophytina* [[5.8]*Bryum*]

Classis 4(158). *Takakiopsida* [[5]*Takakia*]
5(159). *Sphagnopsida* [[5]*Sphagnum*][91]
6(160). *Andreaeopsida* [[5]*Andreaea*][92]
7(161). *Polytrichopsida** [[5]*Polytrichum*][93]
8(162). *Bryopsida* [[5]*Bryum*][94]

Subphylum *Anthocerotophytina* [[5.8]*Anthoceros*]

Classis 9(163). *Anthocerotopsida* [[5]*Anthoceros*][95]

[86]Incl. Micromonadales.
[87]Incl. *Helicosporidium*.
[88]Incl. *Mesostigma*, Conjugatophyceae.
[89]Incl. Treubiaceae.
[90]Incl. Blasiales, Sphaerocarpales, Monocleales.
[91]Incl. *Ambuchanania*.
[92]Incl. *Andreaeobryum*.
[93]Incl. Oedipodiales, Tetraphidales, Polytrichales, Buxbaumiales.
[94]Incl. Diphysciales.
[95]Incl. Leiosporocerotopsida.

Phylum 36. PTERIDOPHYTA* [^{6}*Pteris*]

Subphylum *Lycopodiophytina* [$^{5.8}$*Lycopodium*]

Classis 1(164). *Lycopodiopsida* [^{5}*Lycopodium*][96]

Subphylum *Pteridophytina** [$^{5.8}$*Pteris*]

Classis 2(165). *Psilotopsida* [^{5}*Psilotum*]
3(166). *Ophioglossopsida* [^{5}*Ophioglossum*]
4(167). *Equisetopsida* [^{5}*Equisetum*]
5(168). *Marattiopsida* [^{5}*Marattia*]
6(169). *Pteridopsida* [^{5}*Pteris*]

Phylum 37. SPERMATOPHYTA [^{6}*Magnolia*]

Classis 1(170). *Cycadopsida* [^{5}*Cycas*]
2(171). *Ginkgoopsida* [^{5}*Ginkgo*]
3(172). *Gnetopsida* [^{5}*Gnetum*]
4(173). *Pinopsida* [^{5}*Pinus*][97]
5(174). *Angiospermae* [^{5}*Magnolia*]

Regnum Animalia [^{7}*Felis*]

Subregnum *Parazoa** [$^{6.8}$*Sycon*][98]

Phylum 38. PLACOZOA [^{6}*Trichoplax*]

Classis 1(175). *Placozoa* [^{5}*Trichplax*]

Phylum 39. SPONGIA* [^{6}*Spongia*]

Subphylum *Silicea* [$^{5.8}$*Spongia*]

Classis 1(176). *Hexactinellea* [^{5}*Euplectella*]
2(177). *Demospongia* s.str. [^{5}*Spongia*]

Subphylum *Calcarea* [$^{5.8}$*Sycon*]

Classis 3(178). *Calcarea* [^{5}*Sycon*]

Subphylum *Homosclerea* [$^{5.8}$*Oscarella*]

Classis 4(179). *Homoscleromorpha* [^{5}*Oscarella*]

[96]Incl. Isoëtopsida stat.m.
[97]Incl. Cupressopsida.
[98]Incl. *Salinella* i.s. et dubitativa.

Subregnum *Eumetazoa* [$^{6.8}$*Felis*]

Infraregnum Anephrozoa* [$^{6.5}$*Felis*]

Phylum 40. CTENOPHORA [^{6}*Beroë*]

Classis 1(180). *Ctenophora* [^{5}*Beroë*]

Phylum 41. CNIDARIA [^{6}*Hydra*]

Subphylum *Anthozoa* [$^{5.8}$*Actinia*]

Classis 1(181). *Anthozoa* stat.m. [^{5}*Actinia*]

Subphylum *Myxozoa* [$^{5.8}$*Myxidium*]

Classis 2(182). *Malacosporea* [^{5}*Tetracapsula*][99]

3(183). *Myxosporea* [^{5}*Myxidium*][100]

Subphylum *Medusozoa* [$^{5.8}$*Hydra*]

Classis 4(184). *Staurozoa* [^{5}*Lucernaria*]

5(185). *Cubozoa* [^{5}*Carybdea*]

6(186). *Scyphozoa* [^{5}*Aurelia*]

7(187). *Hydrozoa* [^{5}*Hydra*]

8(188). *Polypodiozoa* stat.m. [^{5}*Polypodium*]

Phylum 42. ACOELOMORPHA [^{6}*Convoluta*]

Classis 1(189). *Acoela* [^{5}*Convoluta*]

2(190). *Nemertodermatida* [^{5}*Nemertoderma*]

Infraregnum Deuterostomia [$^{6.5}$*Felis*]

Phylum 43. XENOTURBELLIDA [^{6}*Xenoturbella*]

Classis 1(191). *Xenoturbellida* [^{5}*Xenoturbella*]

Phylum 44. ECHINODERMATA [^{6}*Echinus*]

Classis 1(192). *Crinoidea* [^{5}*Metacrinus*]

2(193). *Ophiuroidea* [^{5}*Ophiura*]

3(194). *Asteroidea* [^{5}*Asterias*][101]

4(195). *Echinoidea* [^{5}*Echinus*]

[99] = *Tetracapsula*, *Buddenbrockia*.

[100] = Actinomyxidia.

[101] Incl. *Xyloplax*.

5(196). *Holothurioidea* [^{5}*Holothuria*]

Phylum 45. HEMICHORDATA [^{6}*Balanoglossus*][102]

Classis 1(197). *Enteropneusta* [^{5}*Balanoglossus*]
2(198). *Pterobranchia* [^{5}*Rhabdopleura*]

Phylum 46. CHORDATA [^{6}*Felis*]

Subphylum *Cephalochordata* [$^{5.8}$*Branchiostoma*]

Classis 1(199). *Cephalochordata* [^{5}*Branchiostoma*]

Subphylum *Vertebrata* [$^{5.8}$*Felis*]

Classis 2(200). *Cyclostomata* stat.m. [^{5}*Myxine*]
3(201). *Chondrichtyes* [^{5}*Squalus*]
4(202). *Actinopterygii* [^{5}*Perca*]
5(203). *Dipnoi* [^{5}*Peripatus*][103]
6(204). *Amphibia* [^{5}*Rana*]
7(205). *Reptilia** [^{5}*Gecko*]
8(206). *Aves* [^{5}*Gallus*]
9(207). *Mammalia* [^{5}*Felis*]

Subphylum *Tunicata* [$^{5.8}$*Ciona*]

Classis 10(208). *Ascidiacea* [^{5}*Ciona*][104]

Infraregnum Protostomia [$^{6.5}$*Araneus*]

Superphylum *Chaetognatha* [$^{6.2}$*Sagitta*]

Phylum 47. CHAETOGNATHA sed.m. [^{6}*Sagitta*]

Classis 1(209). *Chaetognatha* [^{5}*Sagitta*]

Superphylum *Spiralia* [$^{6.2}$*Scarabaeus*]

Phylum 48. GASTROTRICHA [^{6}*Macrodasys*]

Classis 1(210). *Gastrotricha* [^{5}*Macrodasys*]

[102]Incl. *Planctosphaera* i.s.
[103]Incl. *Latimeria* sed.m.
[104]Incl. Thaliacea, Larvacea stat.m.

Phylum 49. GNATHIFERA [^{6}*Rotifer*]

Classis 1(211). *Gnathostomulida* [^{5}*Gnathostomula*][105]
2(212). *Micrognathozoa* [^{5}*Limnognathia*]
3(213). *Syndermata* [^{5}*Rotifer*][106]
4(214). *Cycliophora* [^{5}*Symbion*]
5(215). *Kamptozoa* [^{5}*Pedicellina*]

Phylum 50. PLATYHELMINTHES [^{6}*Planaria*]

Classis 1(216). *Catenulida* [^{5}*Catenula*]
2(217). *Rhabditophora** [^{5}*Planaria*]
3(218). *Neodermata* [^{5}*Taenia*][107]

Phylum 51. DICYEMIDA sed.m. [^{6}*Dicyema*]

Classis 1(219). *Rhombozoa* [^{5}*Dicyema*]

Phylum 52. NEMERTINI [^{6}*Nemertes*]

Classis 1(220). *Nemertini* [^{5}*Nemertes*][108]

Phylum 53. BRYOZOA [^{6}*Plumatella*]

Classis 1(221). *Gymnolaemata* [^{5}*Flustra*][109]
2(222). *Phylactolaemata* [^{5}*Plumatella*]

Phylum 54. MOLLUSCA [^{6}*Trochus*]

Classis 1(223). *Aplacophora* [^{5}*Neomenia*][110]
2(224). *Polyplacophora* [^{5}*Chiton*]
3(225). *Monoplacophora* stat.m. [^{5}*Neopilina*]
4(226). *Bivalvia* [^{5}*Mytilus*]
5(227). *Gastropoda* [^{5}*Trochus*]
6(228). *Scaphopoda* [^{5}*Dentalium*]
7(229). *Cephalopoda* [^{5}*Octopus*]

Phylum 55. BRACHIOPODA [^{6}*Lingula*]

Classis 1(230). *Phoronata* stat.m. [^{5}*Phoronis*]

[105]Incl. Filospermoidea, Bursovaginoidea.
[106]Incl. Hemirotifera stat.m. (*Seison*, Acanthocephala et Bdelloidea), Monogononta.
[107]Incl. Monogenea, Trematoda, Cestoda.
[108]Incl. *Arhynchonemertes*, Anopla, Enopla.
[109]Incl. Stenolaemata.
[110]Incl. Caudofoveata.

2(231). *Inarticulata* [^{5}*Lingula*][111]
3(232). *Rhynchonellata* [^{5}*Rhynchonella*]

Phylum 56. ANNELIDA [^{6}*Nereis*]
Classis 1(233). *Sipunculida* stat.m. [^{5}*Sipunculus*][112]
2(234). *Polychaeta* [^{5}*Nereis*][113]

Phylum 57. ORTHONECTA sed.m. [^{6}*Rhopalura*]
Classis 1(235). *Orthonectida* [^{5}*Rhopalura*]

Superphylum *Ecdysozoa* [$^{6.2}$*Scarabaeus*]

Phylum 58. CYCLONEURALIA*
Subphylum *Nematoidea* [$^{5.8}$*Ascaris*]
Classis 1(236). *Nematoda* [^{5}*Ascaris*][114]
2(237). *Nematomorpha* [^{5}*Gordius*]
Subphylum *Scalidomorpha* [$^{5.8}$*Priapulus*]
Classis 3(238). *Priapulida* [^{5}*Priapulus*]
4(239). *Kinorhyncha* [^{5}*Kinorhynchus*]
5(240). *Loricifera* [^{5}*Nanaloricus*]

Phylum 59. TARDIGRADA [^{6}*Macrobiotus*]
Classis 1(241). *Tardigrada* [^{5}*Macrobiotus*]

Phylum 60. ARTHROPODA [^{6}*Araneus*]
Subphylum *Onychophora* [$^{5.8}$*Peripatus*]
Classis 1(242). *Onychophora* [^{5}*Peripatus*]
Subphylum *Cheliceromorpha* [$^{5.8}$*Araneus*]
Classis 2(243). *Chelicerata* [^{5}*Araneus*][115]
3(244). *Pantopoda* [^{5}*Pycnogonum*]

[111]Incl. Craniata, Lingulata.
[112]Incl. Sipunculoidea, Phascolosomatidea.
[113]Incl. *Lobatocerebrum*, *Jennaria*, Aelosomata, Clitellata, Myzostomida, Echiura, Sibolginida (= Pogonophora et Vestimentifera).
[114]Incl. Adenophorea, Secernentea.
[115]Incl. Xiphosura.

Subphylum *Myriapoda* [$^{5.8}$*Lithobius*]

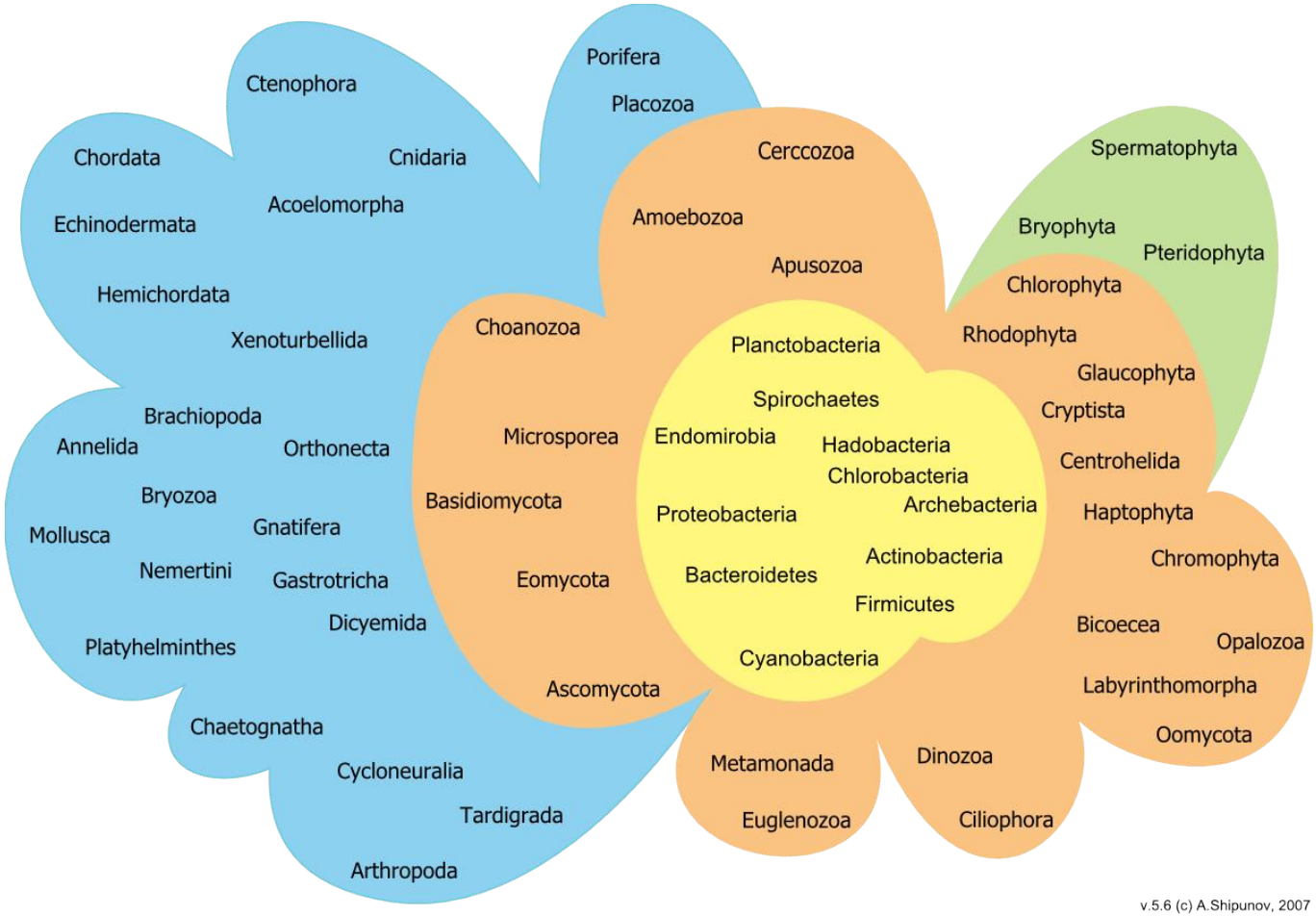
Classis 4(245). *Chilopoda* [^{5}*Scolopendra*]
5(246). *Progoneata* stat.m. [^{5}*Julus*][116]

Subphylum *Pancrustacea* [$^{5.8}$*Scarabaeus*]

Classis 6(247). *Ichthyostraca* [^{5}*Argulus*][117]
7(248). *Ostracoda* stat.m. [^{5}*Cypris*]
8(249). *Maxillopoda* [^{5}*Balanus*][118]
9(250). *Malacostraca* [^{5}*Cancer*][119]
10(251). *Remipedia* [^{5}*Speleonectes*]
11(252). *Cephalocarida* [^{5}*Hutchinsoniella*]
12(253). *Branchiopoda* [^{5}*Daphnia*]
13(254). *Hexapoda* [^{5}*Scarabaeus*][120]

[116]Incl. Simphyla, Dignatha (Pauropoda et Diplopoda).
[117]Incl. Branchiura, Pentastomida.
[118]Incl. Tantulocarida, Mystacorarida, Copepoda, Thecostraca stat.m.
[119]Incl. Leptostraca.
[120]Incl. Collembola, Protura, Diplura.

Schematic view of the classification



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