



INDEX

- Acanthopeltis*, 95
Acaryochloris marina, 41, 85
Acetabularia, 22, 170, 171, 172
Achnanthes exigua, 379, 382
Achnanthes longipes, 364, 365
Achnantheidium minutissimum, 364
 acritrachs, 267
 Acrochaetiales, 103, 110
Acrochaetium, 92, 98, 102, 110
Acrochaetium asparagopsis, 102
Acroseira, 436
Actiniscus pentasterias, 268
Actinocyclus subtilis, 367
 adelphoparasites, 93, 128
 agar, 10, 94, 95, 96, 97, 119, 122, 132, 184, 218, 365, 373, 510, 512
 agarophyte, 122, 510
 agars, 85
 agglutination, 138, 187, 230, 510
Aglaothamnion neglectum, 102
Aglaozonia, 427
 agricultural guild, 381
Ahnfeltia, 95
Akashiwo sanguinea, 256
 akinetes, 42
Alaria, 438, 450, 454
Alaria esculeata, 444, 451
 Alariaceae, 448, 450
Alexandrium, 271, 272, 493, 500, 508
 algicide, 62
 alginic acid, 10, 415, 445, 446, 447, 453
 alkaloids, 61
 allelochemical, 62
 allelopathic interaction, 62
 alloparasites, 93, 510
 allophycocyanin, 16, 41, 85
 amnesic shellfish poisoning, 374, 493
Amphidinium, 252, 257, 258, 282, 284, 500
Amphidinium carteri, 252, 257, 258
Amphidinium cryophilum, 282
Amphidinium klebsii, 284
 Amphiesma, 250
Amphiprora, 501
Amphiroa, 118
Amphiscolops langerhansi, 284
Amphora, 365, 374, 390
Amphora coffaeformis, 369
 amylopectin, 20, 21, 39, 86, 135, 311, 510, 516
 amyloplasts, 10, 133, 172, 173, 177, 179, 180, 207
 amylose, 21, 135, 311
Anabaena, 32, 34, 58, 61, 493
Anabaena azollae, 53
Anabaena circinalis, 68
Anabaena crassa, 39
Anabaena cylindrica, 59
Anabaena flos-aquae, 39, 40
Anabaenopsis, 64
 anatoxin, 61, 492, 493
 androsporangia, 217
 anemones, 283, 284
 anhydrobiotics, 59
 anisokont flagella, 8
 Anomoeoneis, 383
 Antarctic, 58, 430, 501
 Antarctic lakes, 503
 Antarctica, 312, 313, 484, 501, 503, 504, 507
Anthophysa, 322, 326, 328
Anthophysa vegetans, 322, 326
 antibiotics, 64
Antithamnion, 91, 92
Antithamnion nipponicum, 102
Antithamnion plumula, 91
Apedinella, 345
Apedinella spinifera, 347
Aphanizomenon, 40, 42, 58, 61, 493
Aphanizomenon flos-aquae, 39, 63
Aphanocapsa thermalis, 59
Aphanothece sacrum, 63
 Apicomplexa, 298
 apicoplast, 298
Apistonema, 485
 aplanospores, 137, 183, 215, 405
 apoprotein, 16
 apoptosis, 122
 aragonite, 87, 88, 89, 115, 178, 283, 416, 424, 477, 511
 Archaeplastida, 27
 Arctic, 58
Arthrobacter, 95
Arthrospira, 63, 67
Arthrospira fusiformis, 64
Ascophyllum, 7, 92, 93, 418, 456, 458, 459
Astasia, 240, 244, 245, 246
 astaxanthin, 133, 191
Asterionella, 381
Asterionella formosa, 380, 384
Asterocytis, 103, 107
Attheya, 335
Audouinella, 110
Aulosira fertilissima, 60
Aulosira implexa, 68
 Aurearenophyceae, 318
Aureococcus anophagefferens, 351
Aureodinium pigmentosum, 265
Aureoumbra lagunensis, 351, 352
 autolysin, 187
 autospores, 137
 autotrophic, 24
 auxiliary cell, 97
 auxospores, 368, 370
 axoneme, 3
Azolla, 38, 53
Azotobacter, 175
 Bacillariales, 390
 Bacillariophyceae, 355
 bacteriocin, 64
 baeocytes, 49, 51
Bangia, 10, 84, 104, 109
Bangia fuscopurpurea, 109
 Bangiales, 103, 107
Bangiomorpha pubescens, 109
 basal body, 5
 Batrachospermales, 104, 111
Batrachospermum, 103, 111, 113
 bicosoecids, 6
 Biddulphiales, 385
 biofilms, 364

- biofuels, 506
 bioluminescence, viii, 91, 273, 274,
 275, 276, 277, 279, 293, 511, 518,
 523
 bisporangia, 101, 103
 black band disease, 57
 blue-green algae, 32
Bodanella, 415
Bodo, 239
 bodonids, 237
Bolidomonas, 354
 Bolidophyceae, 354
Bonnemaisonia, 91
 Botrydiales, 405
Botrydium, 403, 404, 405
Botrydium granulatum, 406
 botryococenes, 202
Botryococcus braunii, 201, 203, 506,
 507
Brachytrichia, 63
 brevetoxin, 398, 492, 493, 494
 bromine, 91
 brown tides, 351
 Bryophyta, 158
Bryopsis, 170, 174, 175, 252, 254
Bulbochaete, 214
Bumilleria, 14
Bumilleriopsis, 14
 buoyancy, 40, 377
- Cachonina niei*, 252
 calcification, 87, 89, 90, 115, 117,
 160, 163, 170, 171, 178, 228, 230,
 234, 267, 268, 283, 416, 477, 479,
 480, 481, 482, 487, 490, 511
Calciodinellum operosum., 267
 calcite, 87, 88, 477
 calcium carbonate, 65, 87, 89, 90,
 160, 267, 416, 477, 479, 481, 511
Calothrix, 40, 55
Calothrix fusca, 68
Calothrix scopulorum, 56
Campylodiscus, 383
Campylodiscus clypeus, 384
 carbon fixation, 2
 carbonic anhydrase, 37
 carboxysomes, 37
 carotene, 15, 18
 carotenoid, 12, 15
 carpogonium, 97
 carposporangia, 97
 carpospores, 97
 carrageenan, 10, 85, 95, 96, 97, 512
Caulerpa, 133, 175, 177, 179, 180
 Caulerpaceae, 173, 179
 Caulerpaceles, 133, 163, 169, 171, 172,
 180
 cell walls, 9
 cellulose, 9
 centrales, 385
 ceramiales, 104, 122
Ceratium, 250, 253, 256, 276, 287, 288
Chaetoceros, 370, 378, 386, 492
Chaetoceros dayaensis, 388
Chaetoceros diadema, 388
Chaetoceros didymos, 360
Chaetomorpha, 169, 458
 Chaetophora, 212, 213
 Chaetophorales, 184, 212
Chamaesiphon, 60
Chamaesiphon incrustans, 50
Chara, 160, 161
Chara corallina, 160
 charales, 27, 142, 150, 159, 161,
 163, 510
 Charophyceae, 138, 149
Chattonella, 397, 494
Chattonella antiqua, 397, 399
 chemical defense, 419
 chemical defense mechanisms, 500
 chemotactic, 61, 138, 217, 218, 312,
 440, 522
Chilomonas, 310, 311, 314
 chitin, 475
 Chlamydomonadaceae, 184
Chlamydomonas, 3, 4, 7, 12, 13, 14,
 133, 135, 136, 137, 138, 140, 168,
 183, 184, 185, 186, 187, 188, 189,
 190, 193, 503, 504
Chlamydomonas raudensis, 504
Chlamydomonas reinhardtii, 135
 chlamyopsin, 135
 chlamyrodopsin, 12, 14
Chlorarachnion reptans, 306, 307
 Chlorarachniophyta, viii, 303, 305
Chlorella, 135, 137, 207, 208
 Chlorellales, 137, 138, 184, 201, 203,
 205, 210
Chlorobotrys regularis, 339, 340
Chlorococcum, 205
Chlorogloea fritschii, 52
 Chlorophyceae, 139
 chlorophyll, 14
 chlorophyll *d*, 41
 Chlorophyta, 133
 chloroplast endoplasmic reticulum
 (E.R.), 10, 11, 21, 84, 232, 250,
 303, 305, 309, 311, 319, 367, 399,
 401, 412, 415, 416, 418, 470, 475
Chlorosarcina, 212
 Chlorosarcinales, 184, 212
Chlorosarcinopsis gelatinosa, 136
Chodatella, 208
Chondria, 91, 92, 127
Chondria caerulesens., 91
Chondrus crispus, 96
Chorda, 437, 440, 448
Chorda filum, 449
 Chordaceae, 448
Choreocolax, 92, 93, 94
Choristocarpus tenellus, 420, 421
 chromatic adaptation, 18, 41, 85, 261
Chromera velia, 298
 chromoplast, 10
 chromoproteins, 16
Chromulina, 321, 324, 326
Chromulina conica, 326
Chromulina placentula, 321
Chromulina psammobia, 324
 Chromulinales, 326, 328
 Chroococcales, 66
 Chroomonadales, 313, 315
Chroomonas, 310, 311, 314, 315
 Chrysoamoeba, 345
Chrysoamoeba radians, 346
Chrysochromulina, 471, 475, 484, 492
Chrysochromulina ephippium, 472
Chrysochromulina ericina, 477, 478
Chrysochromulina kappa, 476, 478
Chrysochromulina minor, 476
Chrysochromulina parkae, 478
Chrysochromulina parva, 472, 476
Chrysochromulina polylepis, 473, 477
Chrysochromulina pringsheimii, 477,
 478
Chrysococcus rufescens, 322
 chrysolaminarin, 21, 22, 26, 27, 235,
 243, 305, 318, 320, 323, 328, 329,
 335, 336, 337, 355, 367, 471, 475,
 512, 518

- Chrysomeridales, 326, 330, 353
 Chrysomerophyceae, 318
 Chrysophyceae, 318
Chrysosphaera magna, 329
 ciguatera fish poisoning, 270, 492
 ciguatoxin, 492, 494
 ciguatoxins, 270
 cilia, 3
 Ciliophrys, 345
 circadian, 48, 49, 50, 71, 102, 126,
 145, 236, 240, 274, 275, 277, 278,
 279, 280, 290, 440, 512
 circadian rhythms, 48
Cladonia cristatella, 210
Cladophora, 165, 169
Cladophora glomerata, 165
 Cladophorales, 163, 169
Clathromorphum, 88, 89
Closterium moniliforme., 156
cloustoni, 439
 coal deposits, viii, 273
 coccolithophorids, 481
 coccoliths, 470, 476
Coccolithus huxleyi, 482
Coccolithus, 479
 Codiaceae, 173, 174, 178
 Codiales, 172
Codium, 174, 176, 177, 178
Codium fragile, 176
Coenobia, 137, 184, 193, 208
Colacium, 236, 237, 239, 241, 243,
 246, 247
Colacium vesiculosum, 246
 Coleochaetales, 133, 142, 149, 150,
 158, 212
Coleochaete, 137, 158, 159, 523
 compsopegon, 86
 conceptacles, 450, 454
Conchocelis, 103, 107, 108, 109,
 110
 conchosporangia, 108
 conjugation, 150, 151, 152, 153,
 154, 155, 385, 390, 513
 conjuctor cells, 93
 contractile vacuoles, 22, 135
Convoluta, 148
Corallina, 118
 Corallinales, 104, 115
 coralline algae, 89
 Corallinoideae, 116
 corals, 55, 70, 77, 118, 283
Corethron, 335
Corethron hystria, 282
Corynebacterium, 95
Coscinodiscus, 355, 357, 370
Coscinodiscus linatus, 360
Coscinodiscus walesii, 364
Cosmarium botrytis, 155, 157
Cosmarium reniforme, 156
Cricosphaera, 482, 486
 cryptobiotic crusts, 59
 cryptoblasts, 451
 Cryptomonadales, 313, 314
Cryptomonas, 309, 310, 311, 312,
 314, 315
 Cryptophyta, 305, 309
 Cryptothecodinium, 252, 263
 Crystallolithus, 479
Cutleria, 419, 420, 424, 426
Cutleria multifida, 420, 426
 Cutleriales, 422, 424
 cyanelle, 12, 54, 77, 80
 Cyanidiales, 103, 104
Cyanidioschyzon merolae, 21, 104,
 105
Cyanidioschyzon merolae., 21
Cyanidium, 84
Cyanidium caldarium, 104, 105
 cyanobacteria, 32
 cyanobacterin, 64
 cyanoglobin, 47
 cyanome, 54, 77
 cyanophages, 64
Cyanophora paradoxa, 12, 80, 81,
 82
 Cyanophyceae, 32
 cyanophycin, 37
 cyanotoxins, 61, 63
 cycad, 53
Cyclotella antique, 383, 384
Cyclotella cryptica, 374
Cyclotella glomerata, 359
Cylindrocystis, 151, 152, 155
Cylindrocystis brebissonii, 152
Cylindrospermopsis raciborskii., 43
Cylindrospermum, 49
Cylindrospermum majus, 39
Cymatiosphaera, 145
Cymatopleura, 383
Cymatopleura elliptica, 384
Cymbella, 390
Cystophora, 450
 cytoplasmic streaming, 161, 171,
 179, 281, 406, 514
 cytosome, 237, 244, 246, 249, 280,
 281, 513
 damselfish, 124
Daphnia, 208, 287
 Dasycladaceae, 170
 Dasycladales, 133, 163, 169, 170
 Dasycladus, 170, 171
 defense mechanism, 445
Delisea, 94
Demarestia aculeata, 420
 Dendrochronology, 88
Derbesia, 137, 173, 174
 Derbesiaceae, 172, 173, 174
Dermarestia, 419
Dermocarpa pacifica., 50
Dermocarpella, 51
 desmarestene, 420, 429, 441
Desmarestia, 427, 428, 429, 430
 Desmarestiales, 422, 427
 Desmidaceae, 151, 155
 desmids, 27, 137, 155, 157, 521
Desmonema wrangelii, 68
 desmoschisis, 212
Diacronema, 470
Diacronema vlkianum, 472
 Diarrhetic shellfish poisoning, 268,
 492
 diatomaceous earth, 383
 diazotrophic, 378
 diazotrophs, 46
Dichotomosiphon, 172, 180, 181
 Dichotomosiphonaceae, 173, 180
Dicrateria, 470
Dictyocales, 345, 348
Dictyocha, 348
Dictyocha fibula, 348
Dictyocha speculum, 349
Dictyochophyceae, 345
Dictyosiphon, 449
Dictyosiphonales, 433
Dictyosphaeria, 181, 182
Dictyota, 419, 423, 424
Dictyota dichotoma, 422, 423
 Dictyotales, 421, 422
 dictyotene, 422
Didymosphenia geminata, 379, 382
 dimethylsulfoniopropionate, 498
Dinobryon, 322, 323, 324, 325, 327,
 328, 331, 332
 Dinophysiales, 285
Dinophysis, 268, 269, 494

- dinophysistoxin, 270
 dinophysistoxins, 492, 493
 Dinophyta, 250
Dioon spinulosum, 54
Dipllopsalis, 281
 discobolocysts, 320, 321, 332
Dissodinium, 275
Ditylum brightwelli, 368, 369, 378, 379
 diurnal, 178, 287, 477, 514
 DMSP, 498
 domoic acid, 375, 493
Draparnaldia, 212, 213
Dreissena polymorpha, 62
 drinking water, 62
 dulcitol, 85
Dunaliella, 22, 133, 190, 191, 219, 282, 507
Durvillea, 451
 dynein, 5
- ecads, 459
 ecdysis, 252
 echinenone, 80
 echineone, 41
Ecklonia., 445
 Ectocarpaceae, 431
 Ectocarpales, 422, 431
 ectocarpene, 420, 424, 429, 432, 441
Ectocarpus, 419, 420, 431
Ectocarpus siliculosus, 420, 430
 ejectisomes, 299, 311, 314
 elatol, 94
 eleutheroschisis, 412
Ellipsagelosphaera britannica, 483
Ellipsoidion acuminatum, 339
Elysia, 177
 embryophytes, 138
Emiliania huxleyi, 477, 479, 483, 485, 500
Encephalartos, 54
 endogenous rhythm, 174
 endolith, 56
 endospores, 67
 endosymbiosis, 78
Enteromorpha, 165
Entosiphon, 235
Eohyella, 55
Eohyella dichotoma, 56
 epiphytes, vii, 92, 94
Epipyxia pulchra, 324
- Erythroopsis cornuta*, 262
Euastrum affine, 156
Eucheuma, 97
Euglena, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246
Euglena gracilis, 235, 236, 241, 243, 245
Euglena obtusa, 240
Euglena proxima, 240
 Euglenales, 235, 245, 246
Euglenomorpha, 235
 Euglenophyta, viii, 9, 11, 12, 13, 14, 22, 26, 231, 235, 248
Eunotia, 355, 357, 383
Eunotia soleirolii, 368
 euryhaline, 61, 397
 eurythermic, 397
 Eustigmatophyceae, 339
Eutreptia, 235, 239, 242, 246
 Eutreptiales, 245, 246
Eutreptiella, 235, 242, 243, 245, 246
 exospores, 60
 extracellular mucilage, 364
Exuviaella, 268
 eyespots, vii, 12, 13, 135, 138, 139, 149, 168, 184, 194, 224, 261, 311, 430, 485
- feedback control, 52
 feedback inhibition, 77
Fibrocapsa, 397
Fibrocapsa japonica, 398
 fish kills, 484, 492
 flamingos, 63, 133
 flatworms, 148, 149, 177, 284
 flavodoxin, 61
 Flimmergeissel, 6
 floridean starch, 20, 84, 86
 floridoside, 22, 23, 85, 93, 109, 515
 food supplements, 63
 fossils, vii, viii, 27, 28, 56, 65, 77, 88, 104, 109, 126, 163, 170, 178, 265, 267, 287, 294, 348, 382, 385, 390, 401, 410, 420, 427, 437, 450, 470, 498, 499, 502, 503
 fouling, 364
Fragilaria, 378
Fragilaria virescens, 379
Franceia, 208
Fritschiella, 212, 213
- Fructosans, 22
 frustule, 355
Frustulia, 383
Frustulia rhomboides., 384
 Fucales, 420, 422, 450
 fucoidan, 10, 415
 fucoserratene, 420, 455
 fucoxanthin, 15, 18, 26, 27, 258, 259, 305, 318, 319, 344, 354, 355, 397, 401, 412, 415, 418
Fucus, 420, 450, 451, 452, 454, 455, 456, 457
Fucus cottonii, 460
Fucus serratus, 420, 458
Fucus spiralis, 458
Fucus vesiculosus, 453, 459
- Galaxaura*, 87, 115
Galaxaura diesingiana, 115
Galdieria sulphuraria, 104
Gambierdiscus, 252, 253, 254, 269, 270, 494
Gambierdiscus toxicus, 252, 253, 254, 269
 gambieric acid, 270
 gas vacuoles, 40
 gas vesicle, 454
Gastroclonium, 92
 Gelidiales, 104, 118
Gelidium, 95, 119, 120
 genicula, 117
Geosiphon, 81
 geosmin, 62
 geotaxis, 137, 516
 germanium, 334, 361, 373
Gigartina, 97
Gigartina stellata, 96
Giraudyopsis, 330
Glaucocystis, 81
Glaucocystis nostochinearum, 81
 Glaucophyta, 80
Glenodinium, 254, 260, 261
Glenodinium foliaceum, 254, 261
 gliding, vii, 12, 13, 14, 32, 33, 34, 35, 49, 51, 99, 103, 154, 167, 235, 364, 365, 366, 367, 385, 473, 516
Gloeobacter violaceus, 39, 41, 67
 Gloeothecae, 36, 55, 66
Gloeotheca magna, 67
Gloeotrichia, 40, 58
Gloeotrichia echinulata, 39

- Gloeotrichia ghosei*, 40
 glycolyx, 252, 455
 glycolate, 19, 138, 139, 143, 144,
 149, 158, 184, 244
 glycolate dehydrogenase, 19
 glycolate oxidase, 19
 glycosides, 22
 goiter, 446
 Golgi body, 2
Gomphonema parvulum, 362
 gonidia, 195
 gonimoblast, 86, 97
 Gonimophyllum, 92
 Goniomonadales, 313, 314
Goniomonas, 309, 314
Goniotrichum, 103, 105, 106
Gonyaulax ellegaardiae, 267
Gonyaulax polyedra, 275
 gonyautoxins, 493
Gonyostomum semen, 399
Gracilaria, 93, 94, 95, 120, 121, 122
Gracilaria conferta, 94
Gracilaria verrucosa, 93
 Gracilariales, 104, 120
 Great Oxidation Event, 32
 green tides, 168
 greenhouse effect, 502
Gymnocodium, 115
 gymnodimine, 493
 Gymnodiniales, 285, 287, 289
Gymnodinium catenatum, 272, 493
Gymnodinium fungiforme, 282
Gymnodinium neglectum, 263, 265
Gymnodinium pseudopalustre, 289
Gymnodinium sanguineum, 256
Gyrodinium, 256, 257
Gyrodinium uncatenum, 256
 gyrogonite, 163
Gyrosigma, 383
Gyrosigma attenuatum, 384
- Haematococcus*, 133, 135
 haidai, 447
Halicystis, 173, 174
Halidrys, 458
Halidrys siliquosa, 459
Halimeda, 177, 178, 179
 halogens, 91
 halophilic, 61, 190
 halotolerant, 61, 190, 502
Hantzschia amphioxys, 373
- haptonema, 470, 472
 Haptophyceae, 470
Harveyella, 92
Haslea, 382
Hegneria, 235
 heliotropism, 65
 hematochrome, 133
 Hematococcus, 191
 Hematodinium, 280
Hemiaulus, 378
 hepatotoxins, 61, 492
Heribaudiella, 415
Heribaudiella fluviatilis., 416
Heterocapsa, 253, 255
Heterococcus, 209
 heterocysts, 42, 43
 Heterokontophyta, 305, 318
 Heteronematales, 245
Heterosigma, 397, 494
Heterosigma carterae, 397, 398
 heterothallic life cycle, 385
 heterotrichous, 67
Holmsella, 92
Holmsella pachyderma, 93
 holophytic, 24
 homothallic life cycle, 385
 hormogonia, 49
 hot springs, 58, 105
 hydrocarbons, 15, 95, 202, 203, 273,
 420, 463, 506, 507
Hydrocoleus, 67
Hydrodictyon reticulatum, 206, 207
 hydrogen gas production, 506
Hydrosera triquetra, 372, 388
Hyella, 36, 55
Hyella immanis, 56
Hymenomonas, 486
Hymenomonas carterae, 485, 486
Hymenomonas roseola, 472, 473
 hyphae, 438
 hystrichosphaerids, 267
- Imantonia rotunda*, 472, 484
 infochemicals, 208
 iodine, 91, 446
 Iridaea, 92
 iridescence, 91
 iridescent bodies, 91
Ischadites abbotiae, 170
Isochrysis, 470
Isochrysis galbana, 484
- isofloridoside, 22, 324
 isokont, 8
- Jania rubens*, 118
Julescraneia grandicornis, 450
 junctional pore, 34
- Kairomones, 500
Kappophycus, 97
Karenia, 259, 260, 493, 494
Karenia brevis, 259
Karenia mikimotoi, 259
Karlodinium veneficum, 259
 karyolymph, 2
Katablepharis, 299, 300
Katagnymene, 47
Katodinium rotundatum, 255
 kelp, 444, 446, 449
Kephyrionrubri claustris, 322
 kerogen, 273, 506, 517
Khawkina, 235, 239
 kieselguhr, 383
 kinesin, 198
 Kinetoplastida, 237
 kinetoplastids, 244
 Klamath Lake, 63
Klebsiella, 235
 Klebsormidiales, 149, 150, 151
Klebsormidium, 150, 151
 kleptoplastids, 260
 Kombu, 447
 krill, 501
Kylinia, 98, 103, 110
Kylinia rhipidandra, 98
- labyrinthulids, 6
Laminaria, 107, 418, 420, 437, 438,
 439, 440, 441, 443, 444, 445, 447,
 449, 461, 463, 467
Laminaria hyperborea, 444
Laminaria saccharina, 444
Laminaria setchellii, 107
 Laminariaceae, 448, 449
 Laminariales, 420, 422, 436
 Laminarin, 21, 415, 418, 445, 446
 lamoxirene, 420, 440
 lanosol, 94
Laurencia, 10
Laurencia obtusa, 94
Laurencia spectabilis, 116
 laver, 110

- Lepocinclis ovata*, 238
Lepocinclis spirogyroides, 236
 Lessepsian species, 179
 Lessonia, 430
Lessonia nigrescens, 449, 450
 Lessoniaceae, 448, 449
 leucoplast, 10, 310, 314, 326, 328, 517
 leucosin, 21, 475
Liagora, 87
Liagora viscida, 98
 lichen, 2, 53, 54, 77, 184, 209, 210,
 218, 503, 521
Lichina, 55
Lichina pygmaea, 54
 light-harvesting complexes, 15
Limnophycus paradoxa, 427
Lingulodinium, 257, 263, 266, 275,
 276, 277, 278, 279
Lingulodinium polyedra, 275
Lingulodinium polyedrum, 257, 263,
 266, 275, 276, 277, 278, 279
 lithophyte, 67
Lithothamnion, 117
 lithotrophic, 24
Littorina, 458
 lorica, 191, 236, 243, 321, 322, 324,
 328, 329, 332, 518
 luciferin, 274, 275, 277, 518
 lurlene, 188
 lutein, 41
 lycopadiene, 202
Lyngbya, 58, 67
Lyngbya aeruginosa, 34
Lyngbya birgei, 67
Lyngbya sordida, 56
- Macrocystis*, 430, 438, 444, 447, 449
Macrocystis pyrifer, 437, 444, 445
 macrolide toxins, 268, 492
 maërl, 118
 maitotoxin, 270, 492, 508
 malaria, 298
Mallomonas, 334
Mallomonas acaroides, 336
Mallomonas zellensis, 335
 mannan, 10
 mannitol, 22, 85, 418, 445, 446,
 453, 470
Mantoniella, 147, 184, 502
 marine fouling, 364
 marine snow, 364
- marl, 160
Mastigocladus laminosus, 58
 mastigonemes, 6
Mastogloia, 356
 mating reaction, 187
 mating-type reaction, 138
 McMurdo Dry Valleys, 503
 Mehler reaction, 55
Melobesia, 116, 117
Melobesia lejolisii, 116
Melobesia limitata, 116
Melobesia marginata, 116
 Melobesoideae, 116
Melosira, 370, 385
Melosira arenaria, 383, 384
Melosira varians, 385, 386
 Mereschkowsky, 77, 78
Mesenchytraeus, 189
Mesodinium, 257, 313, 314
Mesophyllum, 117
Mesostigma, 133, 149, 150
Mesostigma, 133
 Mesotaeniaceae, 151, 155
Mesotaenium, 151, 152, 155
Mesotaenium de greyi, 152
 MIB, 62
Micrasterias radiate, 156
 Microcoleus, 59
Microcoleus chthonoplastes, 56, 61
Microcoleus vaginatus, 58, 59
 microcystin, 61, 62, 492, 493
Microcystis, 40, 58, 61, 62, 66, 493
Microcystis aeruginosa, 40, 62, 67
 Micromonadophyceae, 145
Microspora, 210, 211
 Mischococcales, 404
Mischococcus, 404
 mitochondria, 18
 mixotrophic, 24, 30, 312, 313, 323,
 324, 345, 489
 mixotrophy, 280
 molluscs, 55, 177, 274, 458, 483
 monosporangia, 103
Monostroma, 110, 165, 168
Montastraea cavernosa, 54
Mougeotia, 151, 152
 muciferous bodies, viii, 236, 241,
 320, 346, 399, 475
 mucilages, 9
 mud flats, 61, 235, 240, 241, 324,
 364, 373
- multifidene, 420, 427
 multilayered structure, 138, 139,
 140, 141, 149, 163, 165, 512
 mutualism, 124, 130, 519
 mycobiont, 53, 54, 209, 210
 mycosporine-like amino acids, 505
Myrionecta rubra, 313
 myxophycean starch, 21
 myxoxanthophyll, 41, 80
- Nannoceratopsis*, 287
 nannoplankton, 470
Navicula, 356, 357, 365, 370, 382,
 390
Navicula cuspidata, 372
Navicula glaciei, 379
Navicula pelliculosa, 373
 neap tides, 165
 necridia, 49
 Nemaliales, 104, 111
Nemalion, 112, 114
Nemastoma laingii, 98
 nemathecia, 115
 nematocyst, 280, 281
Nematodinium armatum, 262
Neomeris, 170, 171
Nereocystis, 438, 449, 451
Nereocystis luetkeana, 449
 neurotoxins, 61, 492
Nitella, 160, 161, 162, 179
 nitrogen fixation, 44, 46, 47, 48, 49,
 53, 54, 55, 59, 71, 73, 176, 506,
 519
 nitrogenase, 44, 46
 nitrogen-fixing, 37, 40, 44, 46, 47,
 48, 49, 54, 57, 60, 175, 378, 395
Nitzschia, 365, 374, 390
Nitzschia corta, 502
Nitzschia palea, 365, 373
Nitzschia putrida, 365
Nitzschia stellata, 501
Noctiluca, 275, 280, 281, 284
Nodularia, 55, 61, 493
Nodularia spumigena, 56
 nodularin, 61, 492, 493
 nori, 110
Nostoc, 42, 61, 63, 64, 493
Nostoc commune, 59, 60
Nostoc linckia, 68
Nostoc verrucosum, 63
 Nostocales, 66

- Notheia*, 436
 nucleoids, 14
 nucleomorph, 26, 303, 305, 306,
 309, 310
- Ochromonas*, 24, 319, 320, 321, 322,
 323, 324, 326, 328
Ochromonas danica, 319, 320
Ochromonas malhamensis, 24
 Ochrophyta, 27
Oedocladium, 214
 Oedogoniales, 133, 138, 184, 210,
 212, 214, 510
Oedogonium, 138, 214, 215, 216,
 217, 512
 ogonori poisoning, 122
 oil, viii, xii, 21, 153, 168, 202, 218,
 230, 273, 290, 321, 329, 341, 346,
 356, 407, 483, 506, 507
 oil shales, 202, 483
 okadaic acid, 268, 269, 492, 493
 ooids, 55
 oomycetes, 6
Ophiocytium majus, 401, 403
Opuntia californica, 91, 92
 organotrophic, 24
Ornithocercus, 285
Oscillatoria, 32, 40, 58, 61, 67, 493
Oscillatoria agardhii, 39, 40
Oscillatoria limnetica, 42
Oscillatoria princeps, 34
Oscillatoria terebriformis, 58
 Oscillatoriales, 57, 66, 67
 oscillin, 34
 osmoregulation, 22
 osmotrophic, 24, 244
 osmotrophy, 280
Ostreococcus tauri, 145
Ovulites margaritula, 178, 179
Oxyrrhis, 250, 255, 263, 266, 286,
 500
Oxyrrhis marina, 250, 255, 286
 ozone layer, 42
- paddy fields, 60
Padina, 416, 424
Padina vickersiae, 421
Palaeoconchocelis starmachii, 109
Paleocodium, 178
 pallium, 280, 519
Palmaria mollis, 88
Palmella, 191, 201
Palmella miniata, 191
 Palmellaceae, 201
Pandorina, 192, 194
 pantonematic flagellum, 6
 paralytic shellfish poisoning, 268,
 272, 493
Paramecium, 207
 paramylon, 22, 26, 235, 236, 237,
 242, 243, 244, 245, 402, 475, 520
Paraphysomonas, 321, 322, 328
 parasites, 92
 parasporangia, 103
 Parmales, 321, 326, 330, 355
Pavlova, 472, 475, 487
Pavlova granifera, 487
Pavlova lutheri, 487
Pavlova mesolychnon, 22, 472, 475
 Pavlovaales, 470, 487
Pedinella, 346
Pedinella hexacostata, 347
 Pedinellales, 345
Pedinomonas, 284
 peduncle, 280, 282, 283, 347, 520
Pelagococcus subviridis, 351, 352
Pelagomonas calceolata, 351, 352
 Pelagophyceae, 351
Pelagophycus, 449
 pellicle, 26, 235, 236, 237, 238, 241,
 246, 250, 252, 253, 254, 520
Pelvetia canaliculata, 458
Pelvetia fastigata, 458
Penicillus capitatus, 175
Penicillus, 174, 178
Penium curtum, 137
 Pennales, 390
Pentalamina, 330
 peptidoglycan, 32
Peranema, 235, 237, 239, 244, 245
 Peridinales, 262, 285, 287, 289
 peridinin, 250, 257, 258, 259, 260,
 520
Peridinium, 62, 250, 251, 255, 256,
 261, 276
Peridinium gatunense, 62
 periplast, 23
 perizonium, 370
 Permian extinction, 496
Permocalculus, 115
 peroxisomes, 18, 143
Petalonia, 419, 431, 434
Petalonia fascia, 434
 petroleum, 14, 15, 202, 483, 506
 petroleum deposits, 273
Pfiesteria pisciicida, 282, 283
Phacotus lenticularis, 191
Phacus, 236, 238, 242, 245, 246
Phacus acuminatus, 236
Phacus pyrum, 238
Phacus trimarginatus, 236
Phacus triqueter, 238, 245
 Phaeaster, 345
Phaeaster pascheri, 346
Phaeocystis, 484, 500
Phaeocystis globosa, 475, 476
Phaeocystis poucheti., 484
Phaeodactylum tricornutum, 367,
 373, 374, 375
 Phaeophyceae, 415
 phaeophycean tannins, 418
Phaeoschizochlamys, 412
Phaeothamnion, 412
Phaeothamnion polychrysis, 413
 Phaeothamniophyceae, 412
 phagotrophy, 237, 280, 312, 317,
 328, 346
 pheromone, 155, 188, 217, 420, 422,
 424, 455, 520
 pheromones, 421, 500
 phlorotannins, 418, 500
Phormidium, 34, 40, 55, 67
Phormidium autumnale, 67
Phormidium inundatum, 39
Phormidium unciatum, 51
Phormidium, 32
 phosphorescence, 91, 273, 274, 275
 photoautotrophic, 243
 photochemical reaction center, 15
 photoluminescence, 274
 photoperiod, 457
 photophobia, 13
 photoreceptor, 12, 13, 14, 135, 136,
 240, 279, 318, 319, 334, 335, 410,
 416, 519, 520, 522
 photoshock, 13
 phototactic movement, 135, 137,
 154
 phototaxis, vii, viii, 12, 13, 14, 35,
 50, 135, 136, 140, 168, 195, 229,
 239, 240, 260, 261, 311, 316, 324,
 365, 394, 416, 436, 520, 524
 phototropin, 188
Phragmites communis, 381, 382
 phragmoplast, 138, 142, 149, 158,
 159, 520

- phycobiliprotein, 12, 16, 37
 phycobilisomes, 12, 20, 37, 85
 phycobionts, 53, 209
 phycocyanin, 12, 16
 phycocyanobilin, 16
 phycoerythrin, 12, 17
 phycoerythrobilin, 17
 phycoerythrocyanin, 41
 phycomata, 145
 phycoplast, 139, 142, 143, 182, 213,
 214, 521
 phycotoxins, 268, 492, 493, 495,
 496, 497
 physodes, 418
 phytochrome, 108
 picophytoplankton, 55
 pili, 35
 Pinguiphyceae, 343
 pinnatoxins, 493
Pinnularia, 389, 390
Pinnularia viridis, 358, 360, 366
 pit connections, 86
Placobranthus, 177
 planozygote, 287, 292, 328, 336,
 337, 521
 plasmodesmata, 142, 214
Plasmodium, 298
 plastid DNA, 14
 plastids, 10
Platydorina, 192, 194
Platymonas, 147
Plectonema, 59
Plectonema notatum, 58
Pleonosporium vancouverianum, 98
 plethysmograph, 419
Pleurocapsa, 67
Pleurocapsa minor, 67
Pleurochloris magna, 339, 340
Pleurochrysis, 480, 481
Pleurochrysis carterae, 481, 483
Pleurochrysis scherffellii, 477, 479
Pleurocladia, 415
Pleurocladia lacustris, 416
Pleurosigma, 382
Pleurotaenium nodosum, 156
 Polyglucan granules, 39
 polyhedral bodies, 77
 polyhedral body, 37
Polyhedriella helvetica, 339, 340
Polykrikos kofoides, 280, 281
 polymorphism, 155, 227
 polyols, 22
 polyphosphate bodies, 38
Polysiphonia, 85, 91, 92, 93, 94, 122,
 123, 124, 125
Polysiphonia lanosa, 92, 93
Polysiphonia nigrescens, 91
 polysporangia, 101, 103
 Porolithon, 118
Porphyra, 10, 84, 85, 107, 108, 109,
 110, 111, 517, 519
 Porphyridiales, 103, 105
Porphyridium, 82, 85, 99, 105
Porphyridium cruentum, 85
Porphyrosiphon, 59
Porphyrosiphon notarisii, 58
Postelsia palmaeformis, 449, 450
Poterioochromonas malhamensis, 24
Prasinocladia, 148, 149
Prasinocladus, 147
 Prasinophyceae, 138, 145
Prasiola, 203, 204
 Prasiolales, 184, 203
Prochlorococcus, 56
Prochlorococcus marinus, 67
 Prochlorophyta, 32
 projectiles, 265
 propagula, 424
 properizonium, 370
 proplastid, 10, 319, 367, 522
 Prorocentrales, 285
Prorocentrum, 265, 268, 285, 286,
 494
Prorocentrum, 494
 prostaglandin, 122
Protopteridinium, 257, 281, 282
Protopteridinium conicum, 257, 282
Prototheca, 207
 Prymnesiales, 485
 prymnesin, 483, 493
 Prymnesiophyta, ix, 9, 11, 12, 14,
 21, 22, 27, 303, 305, 470
Prymnesium, 470, 494
Prymnesium parvum, 472, 474, 483,
 484
Pseudobumilleriopsis, 14, 404
Pseudobumilleriopsis
pyrenoidosa, 402, 404
Pseudocharaciopsis texensis, 339,
 341
 pseudocilia, 184, 201, 522
Pseudokephyrion pseudospirale, 322
Pseudo-nitzschia, 370, 373, 374,
 390, 493
Pseudo-nitzschia multiseriata, 375,
 376
Pseudopedinella, 345
Pseudostaurosira, 367
Pseudotrebouxia, 209
 psychrophilic, 351
 psychrotrophs, 58
 pteriatoxin, 493
Pteridomonas, 345
Pterocladia, 95
Pterosperma, 145
Pterosperma cristatum, 147
Pterygophora californica, 437
 pusule, 22, 257
Pyramimonas, 133, 145, 146, 231,
 234, 249
 pyrenoid, 2, 12
Pyrocystis, 275
Pyrocystis fusiformis, 275
Pyrodinium bahamense, 272, 276,
 493
Pyropia, 84, 85, 107, 108, 109, 110
Pyropia gardneri, 107

 quiescence, 13

Ralfsia, 431, 432
Ralfsia confusa, 433
 Ralfsiaceae, 431, 432
Raphidonema, 150, 151
 Raphidophyceae, 397
 receptacles, 450
 Receptaculitaceae, 170
 red algae, 19, 27, 41, 77, 84, 85, 86,
 87, 88, 89, 90, 93, 95, 96, 97, 103,
 109, 130, 178, 260, 298, 310, 510,
 511, 512
 red snow, 188
 red tide, 268, 493, 500, 522
 resting spore, 368
 retinal, 12, 135, 136, 319, 519, 522
Rhipocephalus, 178
Rhizochromulina, 345
Rhizochromulina marina, 346
 Rhizochromulinales, 345
 rhizoplast, 7, 138, 139, 140, 147,
 184, 522
Rhizosolenia, 335, 378, 382
Rhizosolenia castracanei, 378, 379

- Rhodella*, 105, 106
Rhodochaete, 86
Rhodochorton, 10, 85, 92, 102, 110, 112, 130
Rhodochorton purpureum, 102
 rhodoliths, 87
Rhodomela laria, 94
Rhodomonas lacustris, 314
 Rhodophyta, 84
 rhodopsin, 135, 136, 319, 519, 522
Rhodorus, 85, 105, 106
 Rhodymenia, 10
Rhopalodia gibba, 384
 rhythm, 48, 49, 145, 174, 178, 236, 240, 241, 274, 275, 276, 277, 278, 279, 280, 440, 444, 477, 512
 ribosomes, 25
 ribulose-1,5-bisphosphate
 carboxylase/oxygenase, 12, 80
Rivularia, 55
Rivularia dura, 68
 rock snot diatom, 382
 R-phycoyanin, 85
 Rubisco, 12, 13
- Saccorhiza*, 426, 437, 440, 442
Saccorhiza bulbosa, 449
Saccorhiza polyschides, 444, 445
 salt marshes, 61
 salt-stress proteins, 61
 Sargasso Sea, 460
Sargassum, 450, 460
Sargassum filipendula, 460
 saxitoxin, 61, 492, 493
Scenedesmus, 207, 208
Scherffelia dubia, 7
 Schizocladiphyceae, 318
Schizothrix, 59, 65
Schoenoplectus lacustris, 382
 scintillons, 275
Scrippsiella trochoidea, 251, 265, 267
Scyphosphaera apsteinii, 480
Scytonema, 59
Scytonema arcangelii, 68
Scytonema hofmanni, 60, 64
 scytonemin, 59
Scytosiphon, 431
Scytosiphon lomentaria, 417, 434
 Scytosiphonaceae, 431, 433
 sea ice, 501
 sea-ice cover, 88
 sea sawdust, 57
 secretory cells, 91
 sexual hormone, 440
 shellfish, 374, 492
 siderophores, 64
 sieve cells, 438
 silaffins, 361
 silica, 318, 321, 323, 329, 334, 335, 336, 348, 355, 358, 361, 363, 364, 369, 370, 380, 381, 382, 390, 395, 523
 silica deposition vesicle, 321, 323, 329, 334, 361, 363, 523
 silicalemma, 334
 siliceous skeletons, 268, 348
 silicoflagellates, 348
 silicon, 355
 Siphonales, 172
 siphonein, 133, 163, 172
 Siphonocladales, 133, 163, 181
Siphonocladus tropicus, 181, 182
 siphonoxanthin, 133, 163, 172, 181
Skeletonema costatum, 374, 379
Skeletonema pseudocostatum, 375
Smithora, 85
 snow algae, 188
 snow worm, 189
 sorbitol, 85
 spermatangia, 98
 spermatia, 97, 98
 spermine, 100
Sphacelaria, 415, 416, 419, 424, 425
Sphacelaria lacustris, 416
 Sphacelariales, 421, 424
Sphaeroplea, 211
Sphaeroplea annulina, 211
 Sphaeropleales, 184, 210, 211
Sphenomonas, 235
Sphenomonas laevis, 243
Spirogyra, 151, 152, 153, 154, 155
Spirogyra adnata, 151
 spiroliide poisoning, 493
 spiroliodes, 493
Spirotaenia, 151, 152, 155
Spirotaenia condensata, 152
Spirulina, 63, 67
Spirulina major, 67
 Splachnidiaceae, 431, 436
Splachnidium, 436
Spondylosium moniliforme, 156
 spring tides, 166
Stanieria cyanosphaera, 51
 starch, 21
 statoliths, 161
 statospore, 322, 323, 328, 329, 336, 337, 523
Staurastrum curvatum, 156
Stegastes nigricans, 125
 stephanokont flagella, 8
Stephanoon, 192, 194
Stephanopyxis, 370
Stephanopyxis turris, 378, 379
Stichococcus, 150, 151
Stigeoclonium, 212, 213
 stigma, 12, 135
Stigonema turfaceum, 68
 stoneworts, 160
 stramenopile, 6
 Streptophyta, 27, 28, 138, 149
 stromatolite, 65
 superoxide dismutase, 144
Symbiodinium, 252, 265, 283
Symbiodinium microadriaticum, 265, 283
Symbiodinium natans, 252
 symbionts, 476
 symbiosis, 53, 78, 149, 184, 209, 257, 283, 284, 309, 524
 Synchronophyceae, 318
 syncyanoses, 80
 syncyanosis, 77
Syndinium, 263, 264
Synechococcus, 19, 38, 47, 56, 58, 66
Synechococcus aeruginosus, 39
Synechococcus elongatus, 49
Synechococcus lividus, 58, 59
Synechocystis, 35, 56, 66
 syngamy, 138
 synomones, 501
Synura, 335
Synura petersenii, 335, 336, 337
 Synurophyceae, 334
- Tabellaria*, 367, 383
Tabellaria fenestrata, 358, 379
Tabellaria flocculosa, 379, 381, 382
 Tasmanites, 145
 tertiary endosymbiosis, 257, 259
Tetrachrysis, 412
Tetraparma, 330

- Tetraselmis*, 133, 141, 145, 147, 148
Tetraspora gelatinosa, 201, 202
 Tetrasporaceae, 201
 Tetrasporales, 184, 201
 Tetrasporangia, 101
 tetraspores, 97
 tetrasporophyte, 97
Tetrasporopsis, 412
Thalassiosira pseudonana, 374
Thalassiosira wailesii, 360
 thallusin, 165
Thysanocladia densa, 91
Tiffaniella snyderae, 102
Tolypothrix, 40
Tolypothrix tenuis, 68
 toxic algae, 492
 toxins, viii, ix, 268, 293, 397, 483, 508, 509
Toxoplasma, 298
Trachelomonas, 236, 241, 242, 243, 245, 246
Trailiella, 91
Trebouxia, 137, 209, 210
 Trebouxiales, 184, 203, 209
Trentepohlia, 209
Tribonema, 401, 404, 405
Tribonema bombycinum, 403
 Tribonematales, 405
 Tribophyceae, 401
Triceratium, 356, 357
 trichoblasts, 122
 trichocyst, 251, 252, 265, 266, 311, 399, 522, 525
Trichodesmium, 40, 47, 57, 61, 67, 493
Trichodesmium lacustre, 67
 trichome, 32
 trichothallic growth, 424
Tridachia, 177
Triparma, 330
 Trochiliscaceae, 163
 trypanosomatids, 237
 tubulin, 5
Udotea, 174, 175, 178
Udotea conglutinata, 175
Ulothrix, 135, 137, 140, 151, 164, 165
Ulothrix zonata, 164, 165
 Ulotrichales, 133, 138, 163
 ultraplankton, 351
 ultraviolet sunscreens, 505
Ulva, 5, 6, 29, 135, 165, 167, 168, 228
Ulva lactuca, 6
 Ulvales, 163, 165
 Ulvophyceae, 138, 163
 urea, 138, 139, 144, 149, 184, 325
Uroglena, 325, 326, 328
Uroglena conradii, 326
Vacuolaria, 398
Vacuolaria virescens, 399
Valonia, 181, 182, 183
Valonia ventricosa, 182, 183
Vaucheria, 14, 401, 404, 405, 407, 409, 420
Vaucheria dillwynii, 407
Vaucheria sessilis, 408
 Vaucheriales, 405
Ventricaria ventricosa, 182, 183
Verrucaria, 55
 viridene, 429
 Viridiplantae, 27, 133
 vitamin B₁₂, 243
 volatile organic compounds, 62
 volutin granule, 38
 Volvocaceae, 184, 191, 193, 194
 Volvocales, 22, 133, 135, 137, 138, 147, 184, 191, 192, 201
Volvox, 134, 135, 137, 193, 194, 195, 196, 197, 198, 199, 200, 224
 volvoxopsin, 135
 Warnowiaceae, 262
 white tip disease, 95
Woloszynskia coronata, 261
Woloszynskia tenuissima, 260
Woloszynskia tygota, 265, 267
 wound plug, 169, 179, 227
Xanthidium antilopaeum, 156
 Xanthophyceae, 401
 xanthophylls, 16
Xanthoria parietina, 209
 yessotoxin, 268, 492, 494
Zanardinia, 424
 zebra mussels, 62
 zooxanthellae, 22, 54, 55, 79, 283, 525
Zostera marine, 351
 Zygnemataceae, 151, 155
 Zygnematales, 133, 137, 138, 149, 150, 151
Zygonium, 151, 152