

- Oahu, 150, 163, 179, 271*, 282; map of, 292
- Obi-Irtish River, 30
- Obolella, 425§, 481, 486, 496; crassa, 471*; plicata, 520; polita, 478*
- Obolus, 72, 73 (composition of shell), 425§, 482, 521; Apollinis, 427*; Davidsoni, 567; Labradoricus, 480
- Obsidian, 64, 84§
— Cliff, 264*, 276, 337*
- Occident, 21, 22
- Ocean, abyssal depths of, 229; amount of salts in, 120, 121; silicates made at the bottom, 136; the great mineral spring, 120, 320
— as a mechanical agent, 209; earthquake waves, 213; abyssal work, 229
- Oceanic currents, 42, 43, 46*
— era, 440; islands, 20, 22, 23; life not easily exterminated, 142
- Oceans, arrangement of, 17; depth, 18, 19§, 380
- Ocoec group, 468
- Octopods, 424
- Oculina arbuscula, analysis of, 72
- Ocydromus Australis, 1019
- Odontaspis, 863
- Odontidium, 163, 164*, 165; pinnulatum, 894*
- Odontocephalus, 591
- Odontocetus, 927
- Odontopolys compsothyris, 916
- Odontopteris, 637, 671, 685, 693, 699; obtusiloba, 704; Schlottheimi, 670*, 689; sphenopteroides, 689
- Odontopteryx, 923§
- Oeningen, fossils at, 921, 922, 926
- Oesel zones, 568
- Ogden, Utah, 360*, 361; Canon, 581; quartzite, 580, 581
- Ogygia, 482, 520, 521; Buchii, 520
- Ohio, mean height of, 23; mineral oil and gas, 522, 523, 554, 607, 608, 609
- Ohio River, filled by drift, 965
- Ohio shales, 603, 606, 615
- Ohioerinus, 516
- Oil. See Mineral oil
- Oil-creek group, 638
- Oil-sand, 607
- Okhotsk Sea, 927
- Oklahoma, 836; mean height of, 23
- Öland, 521
- Olcostephanus Astierianus, 865; Speetonensis, 865; Traskii, 837
- Oldhamia, 482; antiqua, 481*; radiata, 481*
- Olean conglomerate, 647
- Olefiant gas, 523
- Olete acid, 124
- Olenellus, 467, 473*, 479, 481, 482; asaphoides, 473; Callavei, 481; Gilberti, 473, 474*; Kjerulfii, 482; Thompsoni, 473*; Vermontanus, 473*
- Olenellus zone, 464, 482
- Olenoides, 482; Fordii, 473*
- Olenopsis, 482
- Olenus, 481, 482, 483; micrurus, 481*
- Olenus schists, 482
- Oligobunus, 918
- Oligocarpia, 699, 756; Gutbieri, 699; robustior, 749*
- Oligocene, 880§, 886, 918, 920, 921, 926
- Oligoclase, 64*§; gneiss and granite, 83
- Oligoporus nobilis, 641*, 646
- Oliva, 922; Mississippensis, 916
- Olivella, 916
- Olivine. See Chrysolite
- Omnivores, 930
- Omosaurus armatus, 787
- Omphacite, 88§
- Omphyma, 567; turbinata, 564*, 567
- Onchidium, 424§
- Onchus, 546, 565, 626; Clintoni, 546, 550; Deweyi, 550; tenuistriatus, 566*
- Oncoceras, 551, 561; gibbosum, 549; ovoides, 558, 562
- Oneida conglomerate, 538
- Oneonta sandstone, 603, 606, 612, 618, 621
- Oniscia harpua, 916
- Oniscus, 509, 783
- Onoclea sensibilis, 840, 922
- Onondaga beds, sections of, 552, 553*
— Lake, 553
— limestone, 576, 581
— period, 408, 410, 535, 552-558, 570, 572
— salt group, 552
- Ontarian, 446
- Ontario, salt group in, 552
- Ontario (Lake), 200, 201*, 494, 533, 946, 947 (depth)
- Onychodus, 417; sigmoides, 539*
- Onyx, 133
- Oolitic, 82; limestones, 79
- Oölyte, 79§, 96§
—, Bath, 775, 777, 790; Corallian, 790; Great, 775, 777, 779, 790; Oxford, 775, 790
- Oölytic epoch, 738, 775
- Opal, 62§, 64§, 135
- Operculates, 54
- Ophiacodon grandis, 688
- Ophiderpeton, 706; Brownriggii, 704
- Ophileta, 495, 499*, 515, 520; compacta, 500, 520; complanata, 499*; levata, 499*; Owenana, 514; primordialialis, 478*; uniangulata, 499*
- Ophiolyte, 79, 89§
- Ophiurans, 55
- Ophiuroids, 429§, 505*, 646
- Ophyte, 86§
- Opossum, 415, 902, 910, 924, 926
- Oppelia, 794
- Oquirrh Mts., 340, 469
- Oracanthus Milleri, 702
- Oracodon conulus, 853*
- Orange-ouang, 54
- Orange, N.J., columnar basalt, 262*
— Bay, 858
— sand group, 891, 965
- Orbicula, 482
- Orbicular dioryte, 87§, 97*
- Orbiculoidea, 514, 612; Lodensis, 612*, 620; minuta, 592, 602; rugata, 567; tenuilamellata, 562; Vanuxemi, 557
- Orbitoides, 433§, 896; Mantelli, 896, 898*
- Orbitoides limestone, 896
- Orbitolites, 433§
- Orbitulina conoidea, 865; discoidea, 865
- Orbitulites Texanus, 834*, 836
- Orbulina universa, 432*
- Orea, 144
- Orchestia, 420*
- Orchids, 435
- Ordovician, 489
- Ore, ores, 327, 345, 810; origin of, 342, 343
- Oregon, 23, 25; glaciers of, 240; igneous action in, 265, 266, 280; volcanoes of, 296; Cretaceous in, 818, 830; Tertiary, 882, 885, 892; John Day beds of, 911; sandstone veins, 344
- Oreodon, 907, 918; gracilis, 910*
- Oreodon beds, 886, 894, 910, 918
- Oreodoxites plicatus, 839
- Oreti series, 770
- Organic acids, 665
— contributions to rock-making. See Rocks, organic constituents of
— nature, essential elements of, 9, 418
— remains, 71§
- Orient, 21, 22
- Orinoco River, 30, 456
- Oriskany period, 577
— sandstone, 577, 578
- Orizaba (Mt.), height of, 937
- Ormoceras, 501; creprisepum, 516; tenuifilum, 514
- Ormoxyton Erianum, 622
- Ornithomimus, 847, 856; velox, 847*
- Ornithopoda, 761, 764, 786, 845, 863
- Ornithorhynchus, 415, 795
- Ornithostoma, 863
- Orodus, 644, 692, 702; mammillaris, 644*, 647
- Orogenic work, 345, 376§, 391
— movements, Tertiary, of Long Island and Martha's Vineyard, 1021*. See further, Mountain-making
- Orohippus, 905, 912, 913*, 918; agilis, 905*
- Oromeryx, 918
- Orthacanthus, 687; arcuatus, 692
- Orthaulax Gabbi, 899*, 917; pugnax, 916
- Orthaulax bed, 891
- Orthids, 719 (time range); Upper Silurian, 574
- Orthis, 310, 425§, 426§, 481, 482, 516, 517, 521, 550, 561, 562, 568, 579, 622, 642, 705 (last in Permian), 707; acuminata, 503; arcuata, 625; bifurcata, 507*, 514, 520, 550; Billingsi, 475*; biloba, 548*, 551; borealis, 503; Bouchardi, 520;