

A GLOSSARY

OF

TERMS COMMONLY USED IN GEOLOGICAL REPORTS.

- ACCRETION.** The process by which inorganic bodies grow larger, by the addition of fresh particles from the outside.
- ACOTYLEDON.** A plant in which the seed-lobes (cotyledons) are not present, or are indistinct, like the fern, lichen, and most of the coal plants.
- ACROGENS.** Plants which increase in height by additions made to the summit of the stem by the union of the bases of the leaves. The highest tribe of *Cryptogams*, such as *Sigillaria*, *Lepidodendria*, *Calamites*, *Ferns*, etc.
- AEROLITE.** A stone or other body which has fallen from the air, or, more correctly, has come to the earth from distant space; a meteorite.
- AGATE.** A semi-pellucid, uncrystallized quartz.
- ALGÆ.** Marine plants, comprising the seaweeds and many fresh-water plants.
- ALLUVIUM.** Earth, sand, gravel, loam, vegetable mould, etc., washed down by streams and floods, and deposited upon formations not permanently submerged.
- ALUMINA.** A characteristic ingredient of common clay.
- ALUMINOUS.** Pertaining to or containing alum, or alumina. The clay slates are very frequently impregnated with alum, and are then called alum-slates or alum-shales.
- AMMONITE.** An extinct genus of *Cephalopoda*, like the *Nautilus*, found in the Secondary or Mesozoic rocks; so called from the resemblance of its shell to the horns of Jupiter-Ammon.
- AMORPHOUS.** Bodies devoid of regular or determinate form. A name sometimes used to designate the sponges.
- AMPHIBIA.** Animals capable of living either in water or on land, like the frogs, newts, lizards, turtles, certain serpents, etc.
- AMYGDALOID.** A rock in which crystallized minerals are scattered in almond-shaped cavities.
- ANTICLINAL.** The crest or line in which strata dip in opposite directions.
- ARGILLACEOUS.** Clayey; composed in whole or in part of clay.
- ARTICULATA.** Animals characterized by the possession of jointed bodies or jointed limbs.
- AURIFEROUS.** Containing gold.

- AZOIC ROCKS.** Rocks formed before the existence of organic life, or, at least, of animal life, consequently destitute of fossil remains.
- BASIN.** An isolated or circumscribed formation, particularly where the strata dip inward, on all sides, toward the centre. Especially applied to the coal formations called "coal basins" or "coal fields."
- BATRACHIA.** The order of reptiles which includes the frog and related animals.
- BELLEROPHON.** A genus of *Gasteropoda*, having a univalve shell, found in the Paleozoic rocks.
- BITUMINOUS SHALE.** Shale impregnated with bitumen; usually of a dark brown or black color.
- BIVALVE.** Consisting of two plates or valves, hinged together with an elastic ligament.
- BOWLDER CLAY.** The stiff, unlaminated clay of the Drift period.
- BOWLERS.** Rocks, rounded or otherwise, which have been transported from more or less distant localities by natural agencies, especially during the Drift period.
- BRACHIOPODA.** A class of marine mollusks, characterized by two fleshy arms, continued from the sides of the mouth, and which served to create currents to bring them food.
- CALAMITE.** Extinct plants, with reed-like stems, sometimes attaining a diameter of fourteen inches and the height of trees, found almost entirely in the Coal Measures.
- CALCAREOUS.** Consisting of or containing carbonate of lime.
- CALCITE.** Crystallized carbonate of lime. Common limestone, all the white and most of the colored marbles, calc-sinter, calc-spar, calc-tufa, stalactites, and stalagmites are so classified.
- CARAPACE.** A protective shield. The upper shell of the tortoise, turtle, crab, lobster and other *Crustacea*.
- CARBONATE.** A salt formed by the union of carbonic acid with a base.
- CARBONIFEROUS.** Producing or containing carbon or coal.
- CARBONIFEROUS AGE.** The one immediately following the Devonian Age, or *Age of Fishes*, and characterized by the vegetables which formed the coal bed. This Age is divided into the Subcarboniferous, the Coal Measure and the Permian epochs.
- CARBONIFEROUS PERIOD.** The second, or middle, division of the Carboniferous Age.
- CARINATED.** Shaped like the keel of a ship. Applied to flowers consisting of two petals, either separate or united, inclosing the organs of fructification, and which have a longitudinal prominence like a keel.
- CARPOLITE.** Petrified fruit. Literal meaning, "stone fruit."
- CENOZOIC.** Belonging to the Tertiary period, and means "recent life."
- CENTIMETRE.** A French measure of length, equal to .39368 of an inch.
- CEPHALOPODA.** A class of the *Mollusca*, comprising the cuttle-fishes and their allies, and characterized by a distinct head, surrounded by a circle of long arms or tentacles, which they use for crawling and for seizing objects.
- CHERT.** An impure, massive, flint-like quartz, or hornstone, of various dull shades of color.
- CHONETES.** A genus of fossil bivalve shells, of the class *Brachiopoda*.
- CINCINNATI GROUP.** The upper division of the Lower Silurian system. Same as *Hudson River Group*.
- CLEAVAGE.** That peculiar structure in rock which admits of its division into scales or layers.
- COAL BASIN.** Depressions formed in the older rock formations, in which coal-bearing strata have been deposited.
- COAL MEASURES.** Strata of coal, with the attendant rocks.
- CŒLENTERATA.** Proposed by Frey and Lenckhart, in place of the old term *Radiata*, for animals having "hollow bowels," which this term literally means.
- CONCHIFERA.** A species of the *Mollusca* having shells with a dorsal hinge, like the oyster, clam, mussel, and other ordinary bivalves. Literal meaning, "to bear a shell."
- CONFORMABLE.** Parallel, or nearly so; said of strata which lie in contact.
- CONGLOMERATE.** A rock, composed of pebbles cemented together by another mineral substance, either calcareous, siliceous or argillaceous.
- CONIFERA.** The order of the firs, pines and their allies, in which the fruit is generally a "cone" or "fir-apple"; literally, "I carry a cone."
- CONTORTED.** Strata which have been bent or twisted while in a soft and yielding condition.

- COPROLITES.** Fossilized excrements of animals.
- CORAL.** The solid secretion of zoophytes, produced within the tissues of the polyps, and corresponding to the skeleton in higher animals. It consists almost purely of carbonate of lime.
- CORALLINE ZONE.** That zone of marine life which extends from about 90 feet to 300 feet in depth.
- CORALLUM.** The coral or solid part of a zoophyte, whether composed of stone or horn.
- CRAIG.** A partially compacted deposit of the older Tertiary formation, consisting of sand and shells.
- CRETACEOUS.** Having the qualities of chalk; the uppermost or last of the Secondary formation.
- CRINOIDEA.** An order of lily-shaped marine animals, belonging to the sub-kingdom *Radiata*. They generally grow attached to the bottom of the sea by a jointed stem, though some are free.
- CRUSTACEA.** One of the classes of the *Articulata*, comprising lobsters, shrimps, and crabs, characterized by the possession of a hard shell or crust, covering the body, legs, etc.
- CYATHIFORM.** In the form of a cup or drinking-glass, a little widened at the top.
- CYATHOPHYLLUM.** Cup-shaped, rugose corals, very abundant in the rock formations of Indiana.
- DEBRIS.** Broken and detached fragments of rocks, taken as a mass or collectively.
- DEGRADATION.** A gradual wearing down or wasting, as of rocks, banks, and the like, by the action of water, frost, etc.
- DENUDATION.** The laying bare of rocks by the action of running water, or by removing earth, etc.; also, the excavation of rocks by running waters or by the action of waves.
- DEPOSIT.** Matter precipitated from suspension in water.
- DETRITUS.** Small portions of matter worn off from rocks by attrition.
- DEVONIAN.** Applied to rock strata lying next above the Silurian.
- DICOTOMY.** Dividing regularly by pairs.
- DIP.** The downward inclination of strata.
- DRIFT.** A collection of loose earth, sand, rocks, or boulders, distributed over a large portion of the earth's surface, especially in latitudes north of 40°, and which have come from the northward, brought thence, mainly, by glacial action.
- ENCRINITE.** The lily-shaped radiate; crinoid.
- Eocene.** The lowest division of the Tertiary rocks, in which but few specimens of existing shells are found.
- EOZOIC.** A term used for the oldest fossil-bearing rocks yet known, such as the Laurentian and Huronian of Canada.
- EPOCH.** The period during which a formation was produced; thus, geologists speak of the Millstone Grit epoch, etc.
- ESCARPMENT.** The steep face presented by the abrupt termination of strata.
- FAULT.** A sudden interruption of the continuity of strata or veins in the same plane, caused by a crack or fissure.
- FAUNA.** The animals of any given area or epoch.
- FAVOSITES.** A kind of fossil coral, having a prismatic structure closely resembling that of a honey-comb.
- FERRUGINOUS.** Containing iron; also, partaking of the quality of iron.
- FIRE-CLAY.** Any clay capable of sustaining intense heat without vitrifying. Abundant in the Coal Measures, beneath each coal seam.
- FISSILE.** Capable of being split, cleft, or divided in the direction of the grain.
- FLORA.** The system of vegetable species native in a given locality, region, or period; as the Flora of the Coal Measures, etc.
- FLUVIATILE.** Belonging to rivers; formed by rivers, as fluvial strata.
- FLUVIO-MARINE.** Formed by the joint action of a river and the sea, as in the deposits at the mouths of rivers.
- FOLIATED.** Having leaves or leaf-like projections, as foliated shells; composed of thin laminae or layers, as mica schist, schistose, and the like.
- FORAMINIFERA.** A minute genus of the *Protozoa*, characterized by having a calcareous shell perforated by numerous pores, or foramina.
- FORMATION.** The series of rocks belonging to an Age, period, or epoch, as the Silurian formation, and the like.
- FOSSIL.** That which may be dug up; the petrified form of a plant or ani-

- mal in the strata composing the surface of the earth.
- FOSSILIFEROUS.** Containing fossils or organic remains, as fossiliferous rocks.
- FUCOIDS.** Fossils resembling sea-weeds.
- FUSIFORM.** Shaped like a spindle; tapering at each end.
- FUSILINA.** A spindle-shaped *Foraminifer*.
- GASTEROPODA.** A univalve mollusk, having a fleshy ventral disk, which serves to take the place of feet; as the snail.
- GEMMATION.** The formation of a new individual by the protusion of any part of an animal or plant, which may then become free or remain connected with the parent stock; budding. Polyps and some other animals reproduce by buds.
- GENUS.** An assemblage of species possessing certain characters in common, by which they are distinguished from all others.
- GEODE.** A rounded nodule of stone, containing a small cavity usually lined with crystals, sometimes with other matter; the cavity in such a nodule.
- GEOLOGY.** A science which treats of the materials which compose the earth, the methods in which those materials have been arranged, and the causes and modes of origin of those arrangements.
- GLACIAL RIVER; GLACIER.** A field or immense mass of ice, or snow and ice, formed in the region of perpetual snow, and moving slowly down mountain slopes or through valleys, usually bearing along bowlders and fragments of rock.
- GNEISS.** A crystalline rock, consisting of quartz, feldspar and mica, but, unlike granite, having these materials arranged in planes, so that it rather easily breaks into coarse slabs or flags.
- GRANITE.** A crystalline rock, of the same materials with gneiss, but differing therefrom in these materials being grainy and not stratified.
- GYPNUM.** Sulphate of lime. Plaster of Paris is made from this mineral by calcination.
- HABITAT.** The natural abode or locality of an animal or plant.
- HEMATITE.** Sesqui-oxide of iron. So called because of the red color of the powder.
- HEMIPRONITES.** A fossil bivalve shell, sometimes known as the genus *Strepatorhynchus*.
- HETEROCERCAL.** A fish having the vertebral column continued into the upper lobe of the tail, which lobe, on this account, is larger than the lower one. Literal meaning, "A diverse tail." This form prevailed in Paleozoic times.
- HOMOCERCAL.** A fish in which the vertebral column terminates at the commencement of the tail, the lobes of which are symmetrically equal. Literal meaning, "Common tail."
- HUDSON RIVER GROUP.** An upper division of the Lower Silurian formation. Same as Cincinnati Group.
- HUMUS.** A dark brown substance formed in the soil by the action of air on solid animal or vegetable matter. It is a valuable constituent of soils.
- ICHTHYOLOGY.** The science of the systematic arrangement or classification of fishes.
- IGNEOUS ROCKS.** Resulting from the action of fire; such as lavas, basalt, trap, and the like.
- IMBRICATED.** Lying over each other in regular order, like the scales of a fish and those on the leaf-buds of plants.
- INFUSORIA.** Microscopic animals found in water and other fluids, multiplying by gemmation.
- INORGANIC.** Devoid of an organized vital structure. Rocks, minerals and all chemical compounds are inorganic substances.
- IN SITU.** In its original situation. Said of rocks which remain where they were formed.
- INVERTEBRATA.** Animals without a spinal column.
- LACERTIAN.** The lizard species.
- LACUSTRAL.** Pertaining to lakes or swamps.
- LAGOON.** A marsh, shallow pond, or lake, especially one into which the sea flows.
- LAMINATED.** Consisting of plates, scales or layers, one over another.
- LAND-SLIP.** The sliding down of a considerable tract of land.
- LENTICULAR.** Having the form of a double-convex lens.
- LEPIDODENDRON.** A genus of fossil cone-bearing trees, belonging to the Carboniferous Age, and so-called from having their stems marked with scars or scales, produced by the falling off of the leaves.

- LIGNITE.** Mineral coal showing the texture of wood, and found in the Tertiary formation.
- LINE OF BEARING.** The direction of the strike, or outcrop.
- LINE OF DIP.** The line of greatest inclination of a stratum to the horizon.
- LITHOLOGY.** The science which treats of the characteristics and classification of rocks.
- LOAM.** A soil composed of siliceous sand, clay, and carbonate of iron, with more or less oxide of iron, magnesia, and various salts, and also decayed animal and vegetable matter.
- LOESS.** A division of the Quaternary System, Lacustral Age. Common along the Mississippi and many of its tributaries.
- LOWER CARBONIFEROUS PERIOD.** The first, or earliest, division of the Carboniferous Age.
- MAMMALIA.** Vertebrate animals that suckle their young.
- MAMMOTH.** An extinct elephant, fossil remains of which have been found on both American continents.
- MARL.** A mixture of carbonate of lime, clay, and sand in varying proportions. A valuable fertilizer.
- MASTODON.** An extinct gigantic mammal, resembling the elephant, so called from the conical (nipple-shaped) protuberances on its molar teeth (grinders).
- MATRIX.** The earthy or stony substance in which metallic ores or crystalline minerals are found.
- MESOZOIC.** The Secondary period. Literal meaning, "Middle life."
- METAMORPHIC.** Rocks or minerals which have undergone changes in form or shape since their original deposition; usually applied to changes made by heat.
- METEORITE.** Same as Aerolite; which see.
- METRE.** A French measure of length, equal to 39.368 inches. (See, also Centimetre and Millimetre.)
- MICA SLATE.** A schistose rock, consisting of mica and quartz, with, usually, some feldspar. The lowest stratified rock except gneiss. It bears no fossils.
- MILLIMETRE.** A French measure of length, equal to .039368 of an inch.
- MILLSTONE GRIT.** A hard, gritty, sandstone, a kind of conglomerate, found under the Coal Measures, sometimes containing quartz pebbles.
- MIOCENE.** The middle division of the Tertiary rocks, in which the minority of the organic fossils are of recent species.
- MOLLUSCA.** Invertebrate animals, having a soft fleshy body (whence the name), which is inarticulate, and does not radiate internally. Includes the shell-fish proper.
- NAUTILUS.** A fossilized and living genus of the Molluscan Cephalopods.
- NIAGARA GROUP.** A division of the Upper Silurian system.
- NODULE.** A rounded mass of irregular shape.
- NUCLEUS.** A kernel; a central mass or point, about which other matter is gathered.
- OOLITE.** An epoch in the Jurassic Age. A variety of limestone, consisting of round grains like the roe of a fish. Name is derived from two Greek words, which mean "Egg-stone."
- OOLITIC.** Resembling Oolite.
- ORGANIC REMAINS.** Fossilized remains of animals or plants.
- ORTHIS.** A genus of *Brachiopoda*, named in allusion to the straight hinge-line.
- ORTHO CERAS.** A family of the *Nautilidae*, in which the shell is straight, or nearly so.
- OUTCROP.** That part of an inclined stratum which shows at the surface of the ground.
- PALEONTOLOGY.** The science of the ancient life of the earth, or of the fossils which are the remains of such life.
- PALEOZOIC.** Applied to the older division of geological time and the fossil-bearing rocks of the Silurian, Devonian, and Carboniferous Ages.
- PEAT.** Accumulation of vegetable matter, on and near the surface of the earth, in moist places. It is intermediate between pure vegetable matter and lignite, 80 parts in 100 being combustible, and is, therefore, often dried, and then used for fuel.
- PERMIAN.** The epoch following the Coal Measure epoch, and regarded as closing the Carboniferous Age and the Paleozoic era.
- PLEISTOCENE.** Quaternary. Pertaining to the epoch or to the deposits following the Tertiary, and immediately preceding man. Compounded from two Greek words, meaning "most new."
- PLIOCENE.** The upper division of the Tertiary period. Meaning, "more new."

- PLUTONIC ROCKS.** Those deriving form from igneous action.
- POLYPI.** Radiates, having many feet (whence the name) or feelers.
- POLYZOA.** The lowest order of *Mollusca*, in which many animals are united in one structure. A compound group among the *Bryozoa*.
- PRIMITIVE (or PRIMARY) ROCKS.** Rocks supposed to be first formed, being irregularly crystallized, aggregated without a cement, and containing no organic remains, such as granite, gneiss, and the like.
- PRIMO-CARBONIFEROUS.** Upper Coal Measures (?). See "Coal Measures," *ante*.
- PRODUCTUS.** An extinct genus of *Brachiopoda*, in which the shell is "eared," or has its lateral angles drawn out.
- PROTOZOA.** The lowest division of the animal kingdom.
- PTERODACTYL.** A winged saurian; a fossil reptile which had the little finger of the hand greatly elongated, for the purpose of bearing a membranous wing. Meaning, "wing-finger."
- PTEROPODA.** A class of *Mollusca*, which swim by means of fins attached near the head. Meaning, "wing-foot."
- PUDDING STONE.** A coarse conglomerate, composed of siliceous or other pebbles, united by a cement.
- PYRITES.** A combination of sulphur with iron, copper, cobalt or nickel.
- QUAQUA-VERSAL.** Dipping toward all points of the compass from a central point, as beds of lava around a crater.
- QUARTZ.** Pure silex, occurring in pellucid, glassy crystals, having the form of a six-sided prism, terminated at each end by a pyramid. The crystals are usually clear, but sometimes are variously colored, more or less transparent, and even opaque.
- QUARTZITE.** Granular quartz; sandstone that has been changed by metamorphic action to a hard quartz rock.
- QUATERNARY.** Later than the Tertiary; equivalent to the English Pleistocene.
- RADIATA.** One of the great sub-kingsdoms of animals, in which all the parts are arranged uniformly around the longitudinal axis of the body, such as star-fishes, corals, erinoids, etc.
- RASH COAL.** An impure coal.
- RECENT.** Of a date subsequent to the creation of man.
- RENIFORM.** Kidney-shaped; applied to certain minerals.
- RECEPTACULITES.** An extinct genus of *Protozoa*. Meaning, "A stoue receptacle."
- REPTILIA.** The class of *Vertebrata* comprising snakes, lizards, tortoises, turtles, etc. From Latin verb *repto*, "I crawl."
- RETICULATED.** Having sets of parallel fibres or lines crossed by others, likewise parallel, so as to form meshes resembling those of a net.
- RHYNCHONELLA.** A small bivalved Brachiopod, having a *rynchos* (nose or beak).
- RHYNCHONELLA OSAGENSIS.** Same as *R. Pecosii*.
- RHYNCHONELLA PECOSI.** Same as *R. Osagensis*.
- ROCK.** Any natural deposit of stony material.
- RUGOSE.** Wrinkled; full of wrinkles.
- SAURIAN.** Any lizard-like reptile.
- SEAM.** A layer of substance, more or less wide, parallel with the stratification of surrounding material.
- SEDIMENTARY ROCKS.** Those formed from materials precipitated from suspension in water.
- SEISMOLOGY.** The science of earthquakes and their characteristics.
- SERRATED.** Notched on the edge like a saw.
- SHALE.** A fine-grained rock, having a slaty structure; an indurated clay, deposited in thin layers.
- SHELL MARL.** A deposit of shells, which have been disintegrated into a gray or white pulverulent mass.
- SIGILLARIA.** Fossil trees, the bark of which is covered with impressions as if by a seal. Found in the Coal Measures.
- SILEX.** Silicic acid, generally impure, as it is found in nature, constituting flint, quartz, and most sands and sandstones. Literal meaning, "Flint."
- SILICEOUS.** Composed of silex.
- SILT.** Mud or fine earth deposited from running or standing water.
- SILURIAN.** The earliest of the Paleozoic formations; so called from the country of the Silures, who anciently inhabited a part of England and Wales, because the strata was most plainly developed in that country.
- SIPHUNCLE.** A tube of a membranous or calcareous nature, transversing the septa of a chambered shell.
- SLATE.** An argillaceous stone which easily splits into plates.

- SOAPSTONE.** A soft magnesian mineral, usually gray, white, or yellow; so called from its soapy or greasy feel; steatite; pot-stone.
- SPIRIFER; SPIRIFERINA.** Extinct species of *Brachiopoda*, with large spiral supports for their "arms."
- STALACTITES.** Icicle-like encrustations and deposits of lime, which hang from the roof and sides of caverns hollowed out of limestone.
- STALAGMITES.** Encrustations of lime formed on floors of caverns hollowed out of limestone.
- STIGMARIA.** Stem-like, fossilized vegetation, often traversing the under clay of the coal, and supposed to be the roots of *Sigillaria*; which see *supra*.
- STRATIFIED.** Formed in regular beds or layers.
- STRATUM (pl. STRATA).** A bed of earth or rock of any kind, formed by natural causes, and usually consisting of a series of layers.
- STREPTORHYNCHUS.** Often called *Hemipronites*.
- STRIKE.** The horizontal direction of the out-cropping edges of tilted rocks, which is always at right-angles to the dip.
- SUBCARBONIFEROUS PERIOD.** Same as Lower Carboniferous Period.
- SUTURE.** The line of junction of two parts which are immovably connected together, like the line where the whorls of a univalve shell join, or the lines made on the exterior of a chambered shell by the margins of the septa.
- SYNCHRONISM.** Concurrence in time of two or more events; contemporary; simultaneousness.
- SYNCLINAL.** Formed by strata dipping toward a common line or plane, as a synclinal trough or valley. The opposite of *Anticlinal*; which see, *supra*.
- TALUS.** A sloping heap of rock fragments lying at the foot of a precipice.
- TERRACE.** A shelf or bank of earth having an uniformly level surface.
- TERTIARY.** Third in order. Applied to the first period of the Age of Mammals, or Cenozoic time; also, to the rock formations of that period.
- TEST.** A shell, as of a mollusk.
- TESTACEA.** Mollusks are sometimes so called.
- THERMAL.** Hot, warm. Applied to springs which discharge water heated by natural agencies.
- THIN OUT.** Applied to beds or strata which grow gradually and continually thinner in one direction, until they entirely disappear.
- TRANSITION ROCKS.** The lowest uncrystalline stratified rocks, supposed to contain no fossils, and so called because thought to have been formed when the earth was passing from an uninhabitable to a habitable state.
- TRAP.** A heavy, igneous rock, of a greenish-black or grayish color, generally composed of feldspar, augite, and hornblende; so called because the rocks of this class often occur in large tabular masses, rising above one another like *treppe*, steps.
- TRILOBITE.** Three lobed. An extinct family of *Crustacea*, which derives its name from its body being so divided.
- TUFA.** A soft or porous stone, formed by depositions from water, usually lime-bearing, in which case the result is called calcareous tufa. Also a volcanic sand-rock, rather friable, formed of agglutinated volcanic earth or scoria.
- UMBO.** The beak (the point immediately above the hinge) of a bivalve shell is so called from its fancied resemblance to the "boss of a shield."
- UNCONFORMABLE.** Not lying in a parallel position; applied to rock strata.
- UPPER COAL MEASURES.** Upper strata of the coal system.
- VEIN.** A seam or parting of any substance, more or less wide, intersecting a rock or stratum, and not corresponding with the stratification.
- VENTRAL.** Belonging to the belly, or the surface opposite the back, or dorsal side. Sometimes used to designate the interior surface of the body.
- VERTEBRATA.** The division of the animal kingdom which is furnished with a spinal column.
- WHORL.** The spiral turn of a univalve shell.
- ZAPHRENTIS.** A genus of rugose (wrinkled) fossil corals.