
Glossary

This glossary provides brief explanations of the technical terms used in Chapter 1, the introductions to the chapters and in the 'Conclusions' sections of the site reports. These explanations are not rigorous scientific definitions but are intended to help the general reader. Detailed stratigraphical terms are omitted as they are given context within the tables and figures.

Age: a unit, usually taken to be the smallest division of geological time, of shorter duration than an epoch.

Algal limestones: sediments built up with a significant contribution from those marine algae that secrete or promote the deposition of calcium carbonate.

Ammonitina (-ites): 'horn of (Ammon) Jupiter', an advanced group of Mesozoic cephalopods, characterized by typically coiled, chambered shells that have complex sutures between the chamber walls and the outer wall of the shell.

Apatite: a mineral consisting essentially of calcium phosphate.

Aragonite: a form of calcium carbonate; distinguished from calcite by a different crystal structure. The shells of some molluscs (e.g. ammonites) are composed largely of aragonite. It is less stable than calcite and may recrystallize to the latter during diagenesis.

Arenaceous (noun: arenite): 'sand', describing a clastic sediment made of sand-sized particles.

Argillaceous (noun: argillite): 'clay', describing a fine-grained clastic sediment made of silt- or clay-sized particles.

Bed(-s): in lithostratigraphical terms, a subdivision of either a member or a formation; the smallest unit within the scheme of formal lithostratigraphical classification. Also used informally to indicate a stratum within a sedimentary rock succession.

Belemnnoidea (-ites): 'dart', an extinct order of marine cephalopod mollusc, the principal family of which is the Belemnitidae (belemnites), which possessed a bullet-shaped internal calcium carbonate shell.

Belemnite: See Belemnnoidea.

Benthos (adj. benthic): 'depths', aquatic organisms living on or in the seafloor.

Berthierine: an iron-rich silicate mineral of the serpentine group; an important original constituent of certain Jurassic sedimentary rocks.

Bioclast (adj. bioclastic): 'life fragment', sediment grains consisting of comminuted fossil remains.

Bioherm: 'life reef', a reef-type mound of sediment made up from the skeletons and shells of living and dead organisms.

Biomicrite: a limestone containing bioclasts in a predominantly carbonate mud matrix.

Biosparite: a limestone containing bioclasts in a cementing matrix of crystalline calcite.

Biostratigraphy: 'life-layer writing', the subdivision of sedimentary strata into biozones, based on fossil content, and enabling stratal correlation.

Biotite: a variety of the mineral mica, characteristically brown to black in colour.

Bioturbation: 'life disorder', burrows and feeding traces in sediment, made by the organisms living on or in it.

Biozone: in biostratigraphy, a restricted unit of sedimentary rocks defined by its fossil content, most usefully by species of narrowly defined temporal but wide spatial range, and named after one or more abundant or characteristic species.

Bivalvia (-ves): 'two shells', aquatic molluscs that have their bodies enclosed by two, often mirror-image, shells (valves); sometimes referred to as 'clams'; modern examples include cockles and mussels.

Boreal: 'northern', pertaining to the northern part of the Northern Hemisphere, and representing a relatively cold climatic zone; name given to one of the Jurassic faunal realms and provinces (see also Tethyan, Sub-Boreal and Sub-Mediterranean).

Brachiopoda (-ods): 'arm footed', a major group of shellfish superficially similar to the bivalve molluscs but distinguished by a different anatomy and symmetry. The two valves are typically dissimilar (cf. bivalves).

Calcite: the most common, rock forming, crystalline form of calcium carbonate; the main constituent of limestone; the shells of many molluscs, brachiopods, echinoderms etc. are made of calcite.

Calcrete: a deposit of concretionary calcium carbonate, specifically formed on or within the terrestrial soil layer.

Calcareous: containing, or composed of, calcium carbonate.

Carbonate: a mineral salt of carbonic acid, usually referring to the common sedimentary form of calcium carbonate in limestones and invertebrate shells, but also encompassing other minerals notably dolomite (magnesium carbonate).

Cardioceratidae (Aids): a Mid—Late Jurassic family of ammonites often characterized by a pointed or keeled venter.

Cephalopoda (-ods): 'head foot', a class of marine mollusc including modern squid, cuttlefish and octopus and their extinct fossil relatives including belemnites and ammonites.

Chronostratigraphy: 'time layer writing', the correlation and subdivision of rock units on the basis of relative age — a hierarchy of sequential units to which the layers of sedimentary rocks are allocated, through the study and interpretation of their stratigraphy. The hierarchy of principal chronostratigraphical units is system, series and stage, which are related, respectively, to the geological time units of period, epoch and age. Rocks of the Jurassic System (a chronostratigraphical unit) were laid down in the Jurassic Period (a geological time unit).

Clastic (noun: clast): 'broken in pieces', descriptive of fragmental sediment composed mainly of particles derived from preexisting rocks or minerals, including organic remains (then designated as bioclastic).

Coelenterata (-ates): 'hollow intestine', a phylum (taxonomic group) of aquatic animals with tissues not constituted into definite organs; typically possessing radial symmetry. The group includes the Anthozoa (sea anemones and corals) and jellyfishes.

Concretion: rounded or irregular mass of mineral matter formed during diagenesis in a sedimentary rock.

Coral: A marine coelenterate, which produces colonial or solitary calcium carbonate skeletons. Abundant in the fossil record from early Palaeozoic to modern times.

Corallian: a Group of Oxfordian age, occurring in southern Britain and comprising mainly carbonate and arenaceous rocks, including fossilized coral patch reefs.

Cornubia: an area of ancient (Palaeozoic) rocks that formed a land area in Mesozoic times, encompassing much of present day Cornwall and parts of Devon.

Correlation: tracing and identification of a stratigraphical unit away from its type area.

Cretaceous: the last major subdivision (period) of the Mesozoic Era, ranging from about 140 to 65 million years ago.

Crinoidea (-oids): 'lily form', a group of echinoderms with flowering-plant-like structure, hence the common name 'sea lily'.

Cyclic sedimentation: sediment accumulation that takes place in recurring cycles, reflected in a repeating pattern of lithologies through a succession of strata.

Diagenesis: the process whereby changes of mineralogy and/or texture (e.g. cementation of grains) occur after deposition (excluding changes due to subsequent metamorphism).

Dip-slip fault: a tectonic break in strata in which the sense of displacement is parallel to the direction of inclination (see also strike-slip fault).

Disconformity: 'asunder with form'; a minor unconformity without angular discordance. See also non-sequence.

Dogger: A traditional term for a type of large concretion; also the name formerly used for the Middle Jurassic Series in continental Europe.

Downthrow: referring to the amount of displacement of rock downwards along a fault.

Echinodermata (-derms): 'spiny skin', a phylum (taxonomic group) of marine invertebrates, characterized by a fivefold symmetry and calcareous skeleton. The phylum includes starfish, sea urchins, crinoids and their fossil relatives.

Epoch: a unit of geological time, of shorter duration than a period and itself divisible into ages (e.g. the Late Jurassic Epoch).

Era: one of the five major divisions of geological time, namely the Archean, Proterozoic, Palaeozoic, Mesozoic and Cainozoic, each of which comprises several periods.

Erratic: a clast, generally left by melting ice comprising rock not found locally.

Event stratigraphy: the elucidation, classification and correlation of the stratigraphical rock record, based on isochronous geological events evidenced by, for example, disconformities, erosion surfaces or occurrences of particular fossils.

Eustatic: concerning global (as distinct from local) change of sea level resulting from a major geological event such as plate tectonic or isostatic movement of the crust (often associated with ice ages).

Facies: the sum total of a rock's lithological and gross faunal/floral characteristics that together reflect the particular environment in which it formed.

Fault: a fracture surface in rock along which there has been some movement of one side relative to the other.

Faunal realm: an extensive palaeobiogeographical unit based on the overall similarity of its contained fauna. On the basis of marine invertebrate faunas, two realms (see Boreal and Tethyan) are generally recognized in the Jurassic System.

Ferruginous: containing iron or iron-rich minerals.

Filter feeder: an aquatic organism that feeds by sieving food particles from the surrounding water.

Foliaceous: descriptive of the planar arrangement of features in a rock, such as colouration, manifested as 'banding' in profile.

Footwall: the lower surface of an inclined fault plane.

Foraminifera (-ans): 'carrying an opening', small unicellular aquatic organisms; their shells, of carbonate or other material, constitute an important group of microfossils with a long geological history.

Formation: a succession of contiguous rock strata that is distinctive enough in its lithology from the surrounding rocks to be mappable as a unit; the fundamental unit of lithostratigraphy.

Gastropoda (-ods): 'stomach foot', an ancient class of univalved molluscs, mostly characterized by helical shells made of aragonitic calcium carbonate.

GCR: Geological Conservation Review, in which nationally important geological and geomorphological sites were assessed and selected with a view to their long-term conservation as SSSIs.

Geophysical log: a continuous record of the physical properties (e.g. rock density and radioactivity) of a succession of strata, generally measured by tools lowered down a borehole.

Graben: a large block of crust downthrown between two parallel faults or fault systems to produce a rift or trough.

Grainstone: a limestone comprising sand-sized particles, generally with little supporting matrix.

Group: a stratigraphical unit combining several formations.

GSSP: Global Boundary Stratotype Section and Point; an internationally recognized chronostratigraphical boundary established following strict procedures of the International Union of Geological Sciences Subcommittee on Stratigraphy.

Half-Graben: an elongate trough bounded by normal faults on one side only. See also graben.

Hanging wall: the upper surface of an inclined fault plane. See also footwall.

Holotype: 'whole pattern', the single specimen selected to epitomize a particular named species.

Homeomorphy: 'similar shape', the phenomenon whereby two different unrelated species are superficially similar.

Horst: an upfaulted block of crustal rocks; the converse of a graben.

Hyposaline: 'under salt', descriptive of salinities below that of normal sea water.

Iapetus Ocean: a former ocean, which separated what is now Scotland and northern Ireland from the rest of Britain until the ocean floor was subducted during early Palaeozoic times (see plate tectonics).

Igneous: 'fire', a rock formed by cooling and crystallization of a melt derived from within the Earth.

Inlier: an area of older rocks exposed by erosion through a 'window' in the younger surrounding rocks (see also outlier).

Isochronous: occurring at the same time.

Isostatic (movement): 'equal standing', vertical movement or readjustment of a relatively less dense body 'floating' on a more dense one, as a result of loading or unloading; with regard to crustal rocks, the loading can be produced by sediment deposition or ice and the unloading by erosion or ice melting.

Jurassic: the middle of three subdivisions (periods) of the Mesozoic Era, preceded by the Triassic and followed by the Cretaceous.

Kimmeridgian: a stage, of the Upper Jurassic Series. It is followed by the Portlandian and preceded by the Oxfordian.

Laterite (adj. lateritic): a weathering product, or soil rich in iron and aluminium oxides and hydroxides.

Lias: the oldest Group of the Jurassic System, approximately equivalent to the Lower Jurassic Series.

Limestone: a sedimentary rock consisting predominantly of carbonate material, of organic, chemical or clastic origin.

Lithology: 'stone study', the composition and form of rocks.

Lithostratigraphy: 'rock layer writing', the organization and division of strata into mainly mappable rock units and their correlation based entirely upon their lithological characteristics.

Littoral: 'seashore', pertaining to the zone between high and low water marks on a shoreline.

Member: a subdivision of a formation.

Mesozoic: 'middle life', the middle division (Era) of geological time with abundant life, between the Palaeozoic and Cainozoic eras and comprising the Triassic, Jurassic and Cretaceous periods.

Metamorphism: 'after formation', the processes whereby rocks undergo changes in the solid state by heat and/or pressure but without melting.

Micrite: carbonate mud, or limestone formed from such material. See also biomicrite.

Mollusca (-uscs): 'soft', a major group of invertebrates including some of the most important fossil-forming groups such as bivalves, cephalopods and gastropods.

Nautiloidea (-oids): 'nautilus form', an almost extinct group of cephalopods with straight or coiled, chambered conical shells.

Nekton (adj. nektonic): 'swimming', those organisms that actively swim in water.

Non-sequence: a minor break in accumulation of sediment and therefore a gap in the rock record.

Oolite: a sedimentary rock, generally limestone, composed mainly or entirely of ooids.

Ooid: a spherical/subspherical carbonate-coated sedimentary particle, less than 2 mm in diameter, formed of concentric, accretionary layers.

Oxfordian: the oldest stage of the Upper Jurassic Series. It is followed by the Kimmeridgian, and preceded by the Callovian.

Outlier: an outlying area of rocks isolated by erosion from the main outcrop (see also inner).

Palaeo-: 'ancient'.

Palaeobiogeography: a branch of palaeontology dealing with spatial distribution of plants and animals in the geological past, in particular referring to environmental conditions and climate.

Palaeoenvironment: An environment in the geological past.

Palaeoecology: a branch of palaeontology dealing with the relationships between plants and animals, and their palaeoenvironment.

Palaeontology: 'ancient being'; the study of fossil flora and fauna, including their evolution and reconstruction of past animal/plant communities and ancient environments.

Palaeozoic: 'ancient life', the first major division (era) of geological time, characterized by abundant life; succeeded by the Mesozoic Era.

Penecontemporaneous: occurring at almost the same time.

Period: a major division of geological time, of shorter duration than an era and itself divisible into epochs.

Perisphinctaceae (-eans): a Mid Jurassic–Cretaceous superfamily of ammonites including families such as Perisphinctidae, Aspidoceratidae and Aulacostephanidae.

Perisphinctidae (-ids): a Mid-Late Jurassic family of ammonites characterized by planulate forms with simple and/or branching ribs.

Pisolite: a large-grained oolite, with grains greater than 2 mm in diameter.

Plankton (adj. planktonic): 'wandering', belonging to the plankton; those generally small organisms that drift in water bodies and have limited powers of locomotion.

Planulate: a cephalopod shell form that is moderately compressed and coiled with a bluntly rounded venter.

Plate tectonics: the theory that the Earth's lithosphere (Earth's crust and upper mantle) is divided up into a series of rigid 'plates' that move relative to each other (of the order of a few centimetres per year). Over geological time therefore, the continents carried by the 'plates' can 'drift apart' or 'collide', and oceans can grow or 'close' as a result (see subduction). Relative movement between plates leads to earthquake and tectonic activity, which is most concentrated at boundary zones between plates.

Portlandian: the final stage of the Upper Jurassic Series, preceded by the Kimmeridgian and followed by the Cretaceous System.

Prograde: to cover with sediment in the situation where supply of sediment is greater than rise in sea level, such that the shoreline recedes seaward.

Proto-Atlantic: 'first Atlantic', the Iapetus Ocean.

Proximal: applied to a sediment or sedimentary environment (or volcanic products) close to the origin or source of the material forming the deposit.

Pterosaur: 'winged lizard', member of an order of Jurassic and Cretaceous reptiles capable of flight, having an membraneous wing supported by an elongate fourth finger.

Scleractinian: a type of reef-building coral, which first appeared in the Triassic Period and still exists today.

Sediment (adj. -ary): rock material that is deposited on or near the Earth's surface by natural (e.g. marine, lacustrine, fluvial, terrestrial) processes.

Series: a major stratigraphical division of a geological system comprising all the rocks formed during a particular epoch.

Siderite: an iron carbonate mineral.

Siliceous: silica-bearing.

Siliciclastic: describing rock where the clasts are predominantly made of siliceous material, in particular indicating lack of carbonate material.

Spiculite: a rock composed largely of siliceous sponge spicules.

SSSI: Site of Special Scientific Interest; the designation of an area of land for statutory protection under the provisions of the *Wildlife and Countryside Act 1981*.

Stage: a chronostratigraphical subdivision of a series.

Strata (singular: stratum): layers within sedimentary rocks. The term is often used instead of beds.

Stratigraphy (adj. -ical): 'layer writing', the study of rock successions preserved from the geological past, in order to reveal the history of the succession of events and life of the past.

Stratotype: 'layer pattern', a sequence of strata at a particular location that has been internationally recognized as the definitive section for a particular stratigraphical subdivision.

Strike-slip: horizontal movement along a fault.

Strike-slip fault: a tectonic break in strata in which the sense of displacement is at right angles to the direction of inclination (see also dip-slip fault).

Sub-Boreal: pertaining to a province of the Boreal Faunal Realm covering areas including southern England, Normandy, the Boulonnais, northern Germany, parts of Poland and Russia west of the Urals. (See also Tethyan.)

Subduction: the process whereby one plate of oceanic crust is carried down into the Earth's mantle beneath another plate. See plate tectonics.

Sub-Mediterranean: pertaining to a province of the Tethyan Faunal Realm covering areas including Portugal, northern Spain, most of France south of and including the southern half of the Paris Basin, the Helvetic Alps, southern Germany and Poland, parts of the Balkans, the Crimea and Caucasus.

Succession: in stratigraphy, a continuous sequence of sedimentary rock units.

Supratidal: pertaining to the seashore above high water mark.

Syncline: a structural downfold produced by tectonic deformation.

Syn depositional: having occurred at the same time as the deposition of the sediment.

Synsedimentary: see syn depositional.

System: a chronostratigraphical unit comprising all the rocks formed during a geological period, e.g. the Jurassic System comprises all the rocks of the Jurassic Period.

Taxonomy (adj. -ic): the science of classifying organisms into units (kingdom, phylum, class, order, family, genus, species) according to physical similarities or evolutionary relationships.

Tectonism (adj. tectonic): 'builder', the processes of crustal deformation (e.g. rock folding and faulting), often associated with plate tectonics and mountain building.

Terrigenous: derived from the land.

Tethyan: pertaining to the Tethys Ocean which, in Mesozoic times, centred around the modern Mediterranean; name given to one of the Jurassic faunal realms and provinces covering the world outside the Boreal Realm. (See also Boreal, Sub-Boreal and Sub-Mediterranean)

Triassic: the first major subdivision (period) of the Mesozoic Era preceding the Jurassic Period.

Unconformity: a break in the relationship between successive strata resulting from a lack of deposition during an intervening phase of tectonism and erosion; the unrepresented time interval may be substantial, and there is often an associated angular discordance.

Upper Jurassic: the youngest series of the Jurassic System, preceded by the Middle Jurassic Series and followed by the Cretaceous System. It comprises the Oxfordian, Kimmeridgian and Portlandian stages.

Zeolites: a group of hydrated aluminium silicates of sodium, potassium, calcium and barium.

Zone: see biozone, but also used, more or less formally, as a 'building block' of a Stage in the chronostratigraphical hierarchy.

[References](#)