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## Glossary

This glossary provides simple explanations of the more important technical and arcane terms used in the Introductions to the chapters and in the Highlights and Conclusions of Chapters 2 to 9. These explanations do not pretend to be scientific definitions but are intended to help the general reader. Stratigraphical terms are omitted as they are given context within the tables and figures.

**Acanthodian:** 'spiny', a member of an extinct class of Palaeozoic primitive jawed fish, the so-called 'spiny sharks', which occupied both marine and fresh waters (Silurian–Permian).

**Aeolian:** sediments carried and deposited by wind.

**Aetosaur:** a member of the only plant-eating and armoured suborder of the extinct thecodont (basal archosaurs) quadruped reptiles of the late Triassic.

**Allantois:** an embryonic membranous sac which acts as an organ of respiration / nutrition / excretion.

**Ammonite zone:** a stratigraphically restricted unit of sedimentary rocks defined by its fossil content, most usefully by species of narrowly defined temporal range and named after a single characteristic species. Here, the term refers to the cephalopod ammonites, which are particularly useful zonal fossils in the Mesozoic because of their rapid evolution and widespread distribution.

**Ammononoid:** 'Jupiter form', a member of an extinct group of marine cephalopods, whose nearest living relative is the *Nautilus* and is generally characterised by a coiled shell, regularly partitioned into chambers (Devonian–end Cretaceous).

**Amniota:** 'foetal membrane', a group of craniates including reptiles, birds and mammals having an amnion (foetal membrane) around the embryo.

**Amphisbaenid:** 'fabulous serpent having a head at each end', a member of a highly specialised extant group of terrestrial squamate reptiles, limbless and worm-like with a wedge-shaped skull adapted for burrowing (mid Cretaceous–Recent).

**Anapsid:** 'without an arch', a member of a group of reptiles characterised by having no openings in the skull behind the eye, including turtles, tortoises, and extinct groups such as procolophonids and captorhinids.

**Ankylosaur:** 'fused lizard', a member of a group of ornithischian quadrupedal armoured dinosaurs with a horny beak for plant eating and the neck, shoulders and back encased in a tough skin reinforced with bony plates, spikes and a tail armed with a bony club (mid–end Cretaceous).

**Archosaur:** 'ruling lizard', a member of a major grouping of diapsid reptiles including the extinct dinosaurs, pterosaurs, thecodontians and living crocodiles.

**Astragalus:** a vertebrate ankle bone.

**Atoposaurid:** 'unusual lizard', a member of a group of very small terrestrial crocodylians with reduced armour and short broad skulls (late Jurassic–mid Cretaceous).

**Azhdarchid:** a member of a late Cretaceous group of pterodactyl pterosaurs.

**Belemnite:** 'javelin form', a member of an extinct group of cephalopod marine molluscs related to squids, having an internal solid calcium carbonate 'bullet shaped' and posterior skeletal element (predominantly Jurassic–Cretaceous but with problematic earlier Carboniferous and Triassic forms and a later questionable Tertiary form).

**Biostratigraphy:** the subdivision and correlation of sedimentary strata based on their fossil content.

**Bioturbated:** sediment that has been churned up or disturbed by the activities of organisms especially burrowing. The patterns of disturbance (trace fossils) are often characteristic for particular groups of organisms.

**Bone-bed:** a stratigraphically restricted sedimentary accumulation and concentration of bones, or other vertebrate remains such as teeth or scales often worn by transport and associated with fluvial deposition, especially channel-lag deposits or marine near-shore conglomerates. Bone-beds may reflect a lack of other coarse grained sediment or a mass / catastrophic extinction event and occasionally are an economic source of phosphates. They represent an important source of palaeontological and geological information.

**Calcaneum:** the relatively large heel bone of the foot in vertebrates.

**Capitosaurid:** 'head lizard', a member of a group of stereospondyl labyrinthodont amphibians with flattened skulls, some of which were 'crocodile-like' and reached considerable size (Triassic).

**Captorhinomorph:** a member of a 'primitive' group of small to medium sized anapsid stem reptiles of carnivorous habit and with a small pineal opening in the skull (late Carboniferous–Permian).

**Carnosaur:** 'meat-eating lizards', a member of a group of large carnivorous saurischian dinosaurs.

**Cephalopod:** 'head foot', a member of a class of marine molluscs including octopus, squid, nautiloids and ammonoids, having a well developed head surrounded by tentacles and a large mantle cavity opening to the exterior by a siphon. Some secrete a chambered shell, e.g. nautiloids and ammonoids, and have an excellent fossil record (Cambrian Recent).

**Chelonian:** a member of a large group of anapsid reptiles including the turtles and tortoises, having a short broad body protected by dorsal and ventral shields composed of bony plates overlain by epidermal plates of tortoiseshell (late Triassic–Recent).

**Choristodere:** 'separate neck', a member of an enigmatic fresh water, fish-eating crocodile-like diapsid group (late Triassic–Tertiary).

**Cladistic analysis:** an attempt to characterise natural groupings of organisms by means of a search for shared derived characters.

**Cladogram:** a branched tree-like classification diagram produced by cladistic analysis.

**Clastic:** fragmental sediment composed mainly of particles derived from pre-existing rocks or minerals, including organic remains (designated as bioclastic).

**Cleidoic:** 'closed', referring to the egg of amniotes enclosed within a protective outer coating or shell and a complex system of membranes around the embryo.

**Coccolith:** 'berry stone', a member of a palaeontologically important group of unicellular flagellate and planktonic marine microorganisms producing a calcium carbonate skeleton made up of a series of plates. The Cretaceous chalk limestone is often largely made up of coccolith skeletons (late Triassic Recent).

**Conchostracan:** 'shelled shell', a member of a group of freshwater crustaceans in which the body is contained within a chitinous bivalved shell (Devonian to Recent).

**Coprolite:** petrified or fossil faecal material which may contain identifiable food remains and occasionally abundant enough to be a source of phosphate.

**Cranial:** referring to that part of the skull which encloses the brain.

**Crocodylian:** a member of an ancient but extant group of quadrupedal archosaurs, which are often armoured, have front legs shorter than hind and an elongate body and laterally flattened tail for swimming (late Triassic–Recent).

**Cryptoclidid:** 'hidden key', a member of a group of marine long-necked plesiosaurs (late Jurassic–end Cretaceous).

**Cycad:** a member of a group of gymnosperms having a palm-like appearance with massive stems, which may be short or tree-like, pinnate leaves and sporophylls in cones (Permian–Recent).

**Cynodont:** 'dog tooth', a member of a group of advanced synapsid mammal-like reptiles of the Triassic.

**Dermochelid:** 'skin turtle', a member of an extant group of marine, ocean-living leathery turtles, in which there is almost no connected dermal skeleton but a series of small bony plates studding the skin of the back (Tertiary–Recent).

**Diachronous:** relating to sedimentary or stratigraphic units where the environmental or facies boundaries cut across the time boundaries in the succession of deposition. Diachronism reflects the migration of a geological event through time so that the sediment produced by that event is not everywhere the same age.

**Diapsid:** 'two arches', a member of a major grouping of extant reptiles, which includes the dinosaurs, extinct marine reptiles, crocodiles, lizards, snakes and the descendent birds, characterised by a pair of openings in the skull immediately behind the eye socket (late Carboniferous–Recent).

**Diagenesis:** the sum of all changes at 'normal' surface pressures and temperatures, i.e. chemical, physical and biological, which an unconsolidated sediment undergoes after deposition.

**Dicynodont:** 'double dog tooth', a member of a curious, specialised 'pig-like' group of herbivorous therapsids with reduced numbers of teeth (Permian–Triassic).

**Dinocephalian:** 'terrible head', a member of a short-lived group of large therapsid mammal-like reptiles, both herbivorous and carnivorous (late Permian).

**Dinoflagellate:** 'rotating whip', a member of a large and diverse group of aquatic unicellular micro-organisms, loosely placed with the algae, which swim by means of flagellae and some of which are covered with cellulose plates that can be preserved in the fossil record (mid Triassic–Recent).

**Dinosaur:** 'terrible lizard', a member of an extinct, diverse and particular group of land-living archosaur reptiles with an erect gait that flourished from the late Triassic to the end of the Cretaceous.

**Discoglossid:** 'round flat tongue', a member of a group of primitive frogs (anurans) with a long fossil record (late Jurassic–Recent) and both aquatic and terrestrial representatives.

**Elasmosaurid:** 'elongate lizard', a member of a marine group of sauropterygian diapsid reptiles along with the plesiosaurs and plesiosaurs. They had a very long neck with more than seventy vertebrae, small head and paddle-shaped limbs (mid Jurassic–end Cretaceous).

**Emydid:** 'fresh water turtle', a member of an extant group of marsh-dwelling (fresh water / terrestrial) turtles with a relatively abundant fossil record (Tertiary–Recent).

**Epeiric:** produced by large-scale uplift or subsidence of continental crust without the severe deformation of rocks associated with orogeny.

**Epicontinental:** located on a continent or the surrounding continental shelf.

**Euryapsid:** 'wide arch', a member of a group of reptiles characterised by a single upper opening in the skull behind the eye, now thought in this instance to be an artificial grouping of extinct marine reptiles that are modified Mesozoic diapsids.

**Eurypterid:** a member of an extinct group of Palaeozoic aquatic arthropods resembling scorpions.

**Eusuchian:** 'true crocodile', a member of the large extant group of crocodylians which retain the dorsal armour, have a well developed secondary palate and an extensive fossil record (mid Cretaceous–Recent).

**Evaporite:** a sediment deposited from a solution by evaporation of the solvent—normally water, which may be sea or fresh water. A wide range of mineral salts may be precipitated depending on the original composition of the solvent, e.g. carbonates, sulphates, chlorides and mixed with other types of sediment, often finely laminated.

**Facks:** a particular sedimentary deposit or part of a stratigraphic unit with sediment related characteristics which clearly distinguish it from other parts of the unit.

**Fissures:** cavities, often formed by solution of limestone host rock, infilled with relatively younger deposits, which may be of particular interest when they contain fossils, especially microvertebrates that are not preserved elsewhere.

**Foraminiferan:** 'carrying an opening', a member of a group of small unicellular aquatic organisms which secrete a coiled shell of various materials; often very abundant in marine waters with representatives that are benthic and planktonic (Cambrian–Recent).

**Gastrocentrous:** a distinctive type of vertebra with centra formed by pairs of intervertebrae.

**Geosaur:** see metriorhynchid.

**Glaucinitic:** containing the diagenetic (growing in place) mineral glauconite, a complex green-coloured hydrous potassium iron silicate which is sufficiently common in some shallow water marine sediments to give them an overall green colouration, e.g. Cretaceous Greensands.

**Goniopholidid:** 'angle scale', a member of a number of groups of crocodylians with both fresh water and terrestrial representatives (late Jurassic–end Cretaceous).

**Gorgonopsian:** a member of a late Permian group of moderate to large sized carnivorous therapsid mammal-like reptiles with 'sabre-teeth'.

**Gymnosperm:** 'naked seed', a member of a major division of the plant kingdom, consisting of woody plants with alternation of generations and seeds produced on the surface of the sporophylls and not enclosed in an ovary, e.g. seed ferns and conifers (late Devonian–Recent).

**Hadrosaur:** 'big lizard', a member of a group of large plant eating ornithischian ornithomimid dinosaurs, both bipedal and quadrupedal, having horny beaks and batteries of cheek teeth (mid–end Cretaceous).

**Halite:** common salt, NaCl, a naturally occurring mineral particularly associated with evaporite deposits from sea water.

**Haematothermia:** 'heated blood', a grouping of birds and mammals with a presumed shared ancestor in the Triassic.

**Herpetofauna:** a fauna of reptiles.

**Hypsilophodontid:** 'high ridge tooth', a member of a group of ornithomimid ornithischian dinosaurs, small (2 metres high) fast moving bipedal plant eaters with both horny beaks and self sharpening cheek teeth, short arms, long legs and feet and a stiff tail (late Jurassic–end Cretaceous).

**Ichnofauna:** 'track fauna', an assemblage of trace fossils, records of life in sediments disturbed by the activity of organisms, e.g. worm burrows or foot prints (see bioturbated).

**Ichthyosaur:** 'fish lizard', a highly specialised marine reptile of the Mesozoic Era, well adapted for swimming with a streamlined body and paddle shaped limbs (Triassic–late Cretaceous).

**Inoceramid:** 'strong clay pot', a member of a large group of extinct pteroid marine bivalves, which have been used for biostratigraphical subdivision (Triassic–end Cretaceous).

**Intertemporal:** a paired membrane bone of the braincase.

**Kuehneosaur:** 'Kuehne's lizard', a member of a remarkable late Triassic group of terrestrial lepidosaurs, small early lizard forms with the ribs highly modified so that they could be projected out sideways as a pair of horizontal 'sails' for gliding, in a mode similar to that seen in the modern lizard *Draco*.

**Labyrinthodont:** 'labyrinth tooth', a member of a large extinct grouping of primitive amphibians, which included the first land vertebrates and are characterised by teeth with complex infolding of the dentine (late Devonian Triassic).

**Lepidosaur:** 'scaly reptiles', a member of a diverse group of largely terrestrial diapsid lizards (pleurosaurs, a marine exception) which includes living representatives, e.g. the tuatara (Triassic–Recent).

**Lignite:** a brown coal formed from peat under moderate pressure having a low calorific value, typically of Tertiary age.

**Lissamphibia:** 'smooth both lives', a subclass which includes all living amphibians with reduced or absent scales and skin respiration i.e. anurans, urodeles and apodans.

**Lithostratigraphy:** the organisation and division of strata into units and their correlation based entirely upon their lithological (rock compositional) characteristics.

**Mammal-like reptile:** a member of a large extinct group of synapsid reptiles, including the pelycosaurs and therapsids and which the mammals evolved, of particular importance during the Permian and Triassic (late Carboniferous–late mid Jurassic).

**Maniraptor:** 'hand robber', a member of a newly recognised grouping of small carnivorous theropod dinosaurs, including birds, based on cladistic analysis.

**Mass extinction:** a heightened rate of extinction as recorded in the fossil record by the termination of a significant number of species lineages over a relatively short period of time (in geological terms), reflecting a biotic crisis that may have a variety of causes e.g. a change in sea level or climate.

**Megalosaur:** 'great lizard', a member of a group of terrestrial theropod carnosaurs, large heavily built bipedal carnivores. They had large heads, short strong necks, saw-edged teeth, strong arms and powerful legs with formidable claws and long tails (late Triassic mid Cretaceous)

**Metriorhynchid:** 'moderate nose', a member of an extinct group of Jurassic to Cretaceous crocodiles that was highly adapted to an aquatic mode of life, having paddle shaped limbs and tail fins. The group includes both marine and fresh water forms.

**Micrite:** the fine-grained microcrystalline carbonate matrix of limestones much of which is chemically precipitated as a lime mud but also may include a significant proportion of organic derived mud.

**Microvertebrate:** literally the small fossil remains of vertebrates, whether they be of juveniles of a large species or just a small species. Such fossil remains tend to be disarticulated teeth and bones, and are usually size-sorted and deposited together by the processes of transport and deposition, especially by water currents.

**Monophyletic:** a natural taxonomic group that includes all descendants of a single common ancestor, e.g. the Amniota, which includes the reptiles, birds and mammals.

**Mosasauro:** 'Meuse lizard', a member of a group of large marine predatory squamate lepidosaurs, having large heads and jaws, short powerful necks, bodies and elongate flattened tails for swimming and paddle shaped limbs for steering and balance (late Cretaceous).

**Nodosaur:** 'node lizard', a member of a group of quadrupedal armoured ornithischian dinosaurs with alternate rows of large and small plates on the back and flanks (late Jurassic end Cretaceous).

**Nothosaur:** 'false lizard', a member of a group of long necked diapsid lizard-like aquatic reptiles, up to 4 metres long that flourished in Triassic seas.

**Notosuchian:** 'back crocodile', a member of a group of stratigraphically restricted (Coniacian, Upper Cretaceous) terrestrial armourless crocodylians.

**Oolite:** a sedimentary rock, usually a limestone made up of small (1 mm–1 cm) ovoid accretionary bodies cemented together. The ovoids resemble fish eggs but are formed by the precipitation of layers of calcium carbonate concentrically arranged around a nucleus e.g. a sand grain, as it is rolled around on the sea floor by waves and currents, especially in shallow tropical and subtropical seas.

**Ophthalmosaur:** 'eye lizard', a member of a group of Jurassic marine ichthyosaurs.

**Ornithischian:** 'bird hipped dinosaurs', a member of a major grouping of diapsid plant eating dinosaurs with a 'bird-like' pelvis, horny 'bill' and leaf shaped teeth, e.g. stegosaurs (Triassic–end Cretaceous).

**Ornithopod:** 'bird-feet', a bipedal or quadrupedal plant eating and bird-hipped (ornithischian) dinosaur (Jurassic–end Cretaceous).

**Ornithosuchid:** 'bird crocodiles' carnivorous bipedal and quadrupedal members of a family of Triassic thecodonts (Upper Triassic).

**Orogeny:** a process of mountain building during which the rocks and sediments of a particular area of a continent(s) is deformed and uplifted to form mountain belts. Although these processes take a long time they can be distinguished as recognisable and discrete phases in Earth history and are named accordingly, e.g. Variscan orogeny.

**Ostracod:** 'shell like', a member of a group of small crustaceans having a bivalved shell around the body. Throughout their long geological history (Cambrian–Recent) they have diversified into a wide range of aquatic ecological niches both on land and at sea.

**Pachycephalosaur:** 'thick skulled lizard', a member of a group of large plant eating ornithischian dinosaurs having high domed, thick bony brain cases with both bipedal and quadrupedal representatives (mid–end Cretaceous).

**Palynology:** the study of plant spores and pollen and their distribution, which has proved to be of considerable biostratigraphic use.

**Palynomorph:** a microscopic, resistant walled organic body found in palynological preparations, including both plant derived bodies such as spores and pollen and also other acid resistant remains such as acritarchs and chitinozoans.

**Pangaea:** a supercontinent formed by plate collision of all continents in the late Permian.

**Paraphyletic:** arising from a single common ancestor but not including all descendants, e.g. Class Reptilia, which does not include the descendent birds and mammals.

**Pareiasaurs:** a member of an extinct primitive and relatively short lived group of large plant-eating anapsid reptiles in which the limbs were positioned close to the body and bore the weight more vertically than in earlier reptiles (late Permian).

**Parietal:** one of a pair of bones forming the roof of the vertebrate braincase.

**Pelomedusid:** 'clay snake head', a member of an archaic but extant group of marine and fresh water pleurodire turtles which are capable of withdrawing their heads into their carapaces by means of a sideways movement (mid

Cretaceous–Recent).

**Pelycosaur:** 'sail-finned lizards', a mammal-like reptile of the Carboniferous and Permian, some of which have distinctive 'sail fins' on their backs.

**Peneplain:** a landscape surface with greatly reduced features as the result of prolonged weathering and erosion.

**Perleidid:** a member of a group of bony 'ray-finned' fish with ganoid scales of Triassic age.

**Pes:** technical name for the vertebrate foot.

**Pholidosaurid:** 'scale lizard', a member of an extinct group of long snouted crocodylians that included both fresh water and terrestrial forms (late Jurassic–mid Cretaceous).

**Phreatic:** relating to the water table, here referring to solution cavities opened up in limestone by the underground rise and fall of the water table.

**Phytosaur:** so called 'plant lizard', a member of a group of Triassic crocodile like thecodontians, which were in fact carnivorous fish eaters (piscivores).

**Playa:** the flat dry bottom of a desert basin, often the bed of an ephemeral lake and underlain by evaporites.

**Plesiosaur:** 'near lizard', a predatory marine reptile of the Mesozoic Era, swimming with flipper shaped limbs, a long neck and relatively small head (total length up to 12 metres).

**Pleurosauro:** 'side lizard', a member of an extinct marine group of lepidosaurian diapsid lizards (Jurassic–early Cretaceous).

**Pleurosternid:** 'side chest', a member of a group of anapsid turtles (testudines) with both fresh water and marine representatives (late Jurassic–early Tertiary).

**Pliosaur:** 'more lizard', a member of a short necked group of predatory marine Mesozoic reptiles, swimming with flipper shaped limbs.

**Postorbital:** a bone forming part of the posterior wall of the eye socket in vertebrates.

**Prolacertiform:** 'early lizard shape', a member of a group of Triassic diapsids.

**Prolocophonids:** a member of an extinct group of small primitive plant eating anapsid reptiles (late Permian–late Triassic).

**Prosauropod:** 'first lizard foot', a member of a group of saurischian sauropod plant eating dinosaurs with long necks and tails and both bipedal and quadrupedal forms (late Triassic early Jurassic).

**Protobranch:** 'first gills', a member of a 'primitive' group of marine bivalve molluscs with a very long fossil record (early Cambrian Recent) that commonly occupy mud substrates and feed by extracting organic material from the mud, e.g. the nuculids.

**Protorothyridid:** 'first door', a member of one of the 'stem' or 'basal' reptile groups.

**Pterodactyloid:** 'winged finger', a member of a large group of pterosaurs including the pterodactyls and pteranodontids (late Jurassic end Cretaceous).

**Pterosaur:** 'winged lizards', members of an order of Jurassic and Cretaceous archosaur reptiles capable of flight, having a membranous wing supported by an elongate fourth finger.

**Quadrate:** the bone with which the lower jaw articulates in birds, reptiles, amphibians and most fish.

**Rauisuchian:** 'Rau's crocodile', terrestrial quadrupedal thecodont reptiles of the Triassic.

**Red beds:** sedimentary deposits that are predominantly red in colour, generally as a result of abundant iron oxides, which often reflect deposition in an oxidising situation, e.g. in an arid terrestrial environment and may be associated with evaporites.

**Regressive:** referring to the retreat of the sea from land areas as the result of a fall in sea level or elevation of the landmass.

**Reptile:** 'creeping animals', a member of a large class of amniote vertebrates, having a long fossil history extending back to the Carboniferous, with a dry, waterproof horny skin of scales, plates or scutes, functional lungs, a four chambered heart and laying eggs fertilised inside the female's body.

**Rhynchosaur:** 'snout lizard', a member of a group of squat 'pig-like' late Triassic diapsids with curious hooked 'beaks'.

**Rhythmic sequence:** a regularly banded vertical sequence of sediments, reflecting rhythmic changes in the supply of sediment often related to seasonal changes, e.g. the yawed couplets of silt and clay in glacial lakes.

**Rudist:** 'stirring rod', a member of an unusual and varied group of extinct marine cemented bivalve molluscs (also known as hippuritoids), which flourished in the shallow tropical seas of the Tethyan area and in places formed reef like clusters. Some had thick cone shaped shells up to a metre long, whilst others had coiled 'snail like' shells (late Jurassic–end Cretaceous).

**Sabkha:** a halite encrusted surface of salt flats, which are often developed just inland parallel to dry hot tropical coastlines, where periodic flooding by the sea is evaporated with precipitation of various evaporite minerals and laminae of dried algae.

**Saurischian:** 'lizard hip', a member of a major grouping of Mesozoic archosaur reptiles with a characteristic pelvic structure in which the pubis is long and points forward and down from the hip socket. Includes both bipedal carnivores (therapods) and very large quadrupedal herbivores (sauropods).

**Sauropod:** 'lizard feet', a member of a large group of saurischian dinosaurs, many of which were very large quadrupedal plant eaters with small heads, long necks and tails and bulky bodies, e.g. brachiosaurs (late Triassic end Cretaceous).

**Sauropterygian:** 'lizard paddle', a member of an extinct Mesozoic group of amphibious and marine reptiles, e.g. plesiosaurs.

**Scute:** an external scale as seen in reptiles and fish.

**Sebecosuchian:** a member of an aberrant extinct group of giant terrestrial predatory crocodylians having high narrow skulls (Tertiary).

**Sedimentary cycle:** a regularly repeated sequence of environmental changes which are reflected in a repeated vertical succession of deposits.

**Sphenodontid:** 'wedge tooth', a member of a large group of lepidosaurian diapsid reptiles including the sphenodonts and pleurosaurs (Triassic–Recent).

**Sphenopsid:** 'wedge appearance', a member of an ancient group of pteridophyte plants, commonly called 'horsetails' (Devonian–Recent).

**Squamate:** 'scaly', a member of a large group of lepidosaur reptiles that includes the lizards and snakes (late Jurassic–Recent).



**Squamosal:** a membrane bone forming part of the side wall of the vertebrate skull.

**SSSI:** Site of Special Scientific Interest.

**Stegosaur:** 'roof lizard', a member of a group of quadrupedal ornithischian plant eating dinosaurs with rows of plates or spines arising from the neck, back and tail (late Jurassic–late Cretaceous).

**Steneosaur:** 'narrow lizard', a member of an extinct group of Jurassic to early Cretaceous marine crocodiles.

**Supratemporal:** a bone in the upper temporal region of the braincase.

**Synapsid:** 'union', a member of one of the 'stem' or 'basal' reptile groups to which the mammals are distantly related, characterised by a single opening low down on the skull behind the eye socket.

**Tabular:** a bone posterior to the parietal in the braincase of some vertebrates.

**Teleosaur:** 'complete lizard', a member of an extinct group of Jurassic to early Cretaceous marine crocodiles which includes the steneosaurs.

**Temnospondyl:** 'cut vertebrae', a member of an extinct group of labyrinthodont tetrapod amphibians that lived from Carboniferous to Triassic times.

**Temporal opening:** an important characteristic opening in the skull behind the eye and used to distinguish major groups of reptiles, e.g. anapsids (no opening), diapsids (two openings), euryapsids (single upper opening) and synapsids (single lower opening).

**Tetrapod:** developmentally four footed vertebrate including amphibians, reptiles and mammals.

**Thalassemyid:** 'sea power', a member of a group of marine amphibious Jurassic turtles (testudines).

**Thecodontian:** 'socket toothed', a member of a primitive group of early archosaurs (late Permian) from which the more advanced archosaurs, e.g. pterosaurs, dinosaurs and crocodiles evolved in the Triassic.

**Therapsid:** 'attendant', a member of a group of mammal-like reptiles of the late Permian and early Triassic.

**Therian:** 'small animal', a member of a group of mammals whose living members are viviparous and have a distinctive molar tooth pattern and a spiral cochlea.

**Theropod:** 'beast foot', a member of a large group of saurischian bipedal and largely carnivorous dinosaurs, e.g. carnosaurs (late Triassic–end Cretaceous).

**Thyreophoran:** 'shield bearer', a member of a large group of armoured ornithischian dinosaurs which includes the stegosaurs and ankylosaurs (Jurassic–end Cretaceous).

**Trilophosaur:** 'three ridged lizard', archosauromorph Triassic beaked reptiles with broad, sharp, shearing cheek teeth.

**Trionychid:** a member of an extant group of soft shelled cryptodire turtles with both fresh water and terrestrial representatives, which have lost the horny scutes and bear only thin dermal plates beneath the skin giving increased buoyancy (mid Cretaceous–Recent).

**Tritylodontid:** 'three knobbed tooth', a member of an extinct group of terrestrial cynodont reptiles with skulls close to the mammal condition including well differentiated teeth and a well developed secondary palate (late Triassic–late Jurassic).

**Turtle:** see chelonian.

**Zone:** see ammonite zone.

## References