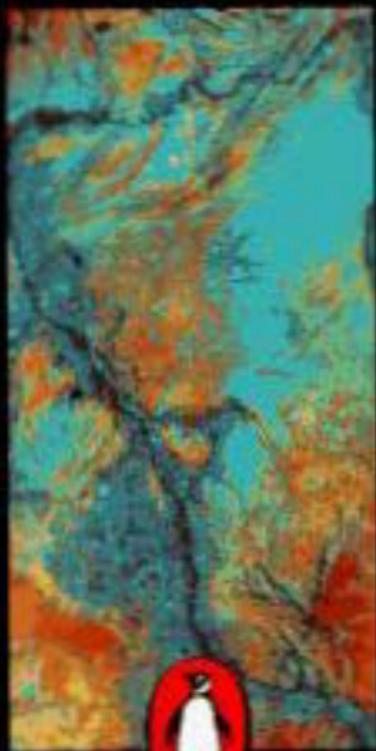


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THE NEW PENGUIN

# DICTIONARY OF GEOLOGY

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## boundary layer

of successive sediments deposited by a waning *turbidity current*, from base to top: A) structureless, most coarse-grained; B) *plane bed* in coarse- to fine-grained sand; C) *current ripple laminated bed* in fine sand-silt; D) *plane bed* in silt; E) structureless to very fine-grained in mud. All five units may not be developed.

**boundary layer** The marginal region of a flow where frictional resistance causes the velocity to decrease near the boundary and *shear stresses* are developed in the fluid.

**boundary mapping (contact mapping)** A method of *geological mapping* involving the following of a geological contact via a zigzag route, used when *exposure* is good or the contact follows a topographic or vegetational feature.

**boundary stratotype** A *chronostratigraphic* division comprising a sequence of rocks with standard reference points which are particularly complete at the sequence boundary. See *geological timescale*.

**boundstone** A *limestone* in which the grains were bound by an organism or organisms. See also *bafflestone*, *bindstone*.

**bourne** An intermittent *spring* in *chalk* forming when the *water table* rises sufficiently high for water to flow in a normally dry valley.

**bournonite** ( $\text{PbCuSbS}_3$ ) A *sulphide mineral* found in *hydrothermal veins* associated with copper and lead mineralization.

**bow-tie effect** A feature of an *unmigrated seismic reflection* section in which reflection events cross each other. Arises

over a *synformal* feature because reflections from different parts of the curved surface are focused onto the same portion of the section. Can be removed by *migration*.

**bowenite** A yellow/green variety of *serpentine*, sometimes used as a substitute for *jade*.

**Bowen's reaction series** A series of *minerals* crystallizing from a *magma* of specific chemical composition in which any *mineral* formed early in the series will later react with the melt to form a new *mineral* further down the series.

**bowlingite** See *saponite*.

**box fold** A composite *fold* with two *antiformal hinges* lying between two *synformal hinges* or vice versa.

**boxstone** A hollow *concretion*.

**boxwork** A honeycomb-like *structure* commonly found in *gossans* which forms when residual *limonite* remains in the cavity resulting when a sulphide grain is oxidized.

**BP** Before Present, by convention taken as 1950.

**Brachiopoda/brachiopods** A phylum of solitary, bilaterally symmetrical, unsegmented marine invertebrates with a *bivalved shell* and a complex feeding apparatus (the *lophophore*). Range *Cambrian-Recent*.

**brachyanticline** An elongate *periclinal dome* with varying axial *plunge*.

**brachydont** Descriptive of a tooth with low, short crowns and well-developed roots with narrow canals.

**brachysyncline** An elongate *periclinal basin* with varying axial *plunge*.

**Bradydonti** An order of subclass *Elasmobranchii*, class *Chondrichthyes*, super-class *Pisces*; sharks with powerful crushing teeth for eating hard-shelled prey. Range end *Devonian-Permian*.

**Bragg Law** A law controlling X-ray diffraction.  $n\lambda = 2d_{hkl}\sin\theta$ , where  $n$  is an integer,  $\lambda$  the X-ray wavelength,  $d_{hkl}$  the spacing of the  $(hkl)$  planes of the crystal and  $2\theta$  the angle between the incident and diffracted X-ray beams.

**braid** A multithread channel formed, for example, by the meltwater flow from a glacier in a sandur.

**braid bar** An accumulation of sediment causing flow to divide, eventually forming an island at most flow states.

**braided river/stream** A river/stream that divides and rejoins around bars of a width similar to the channel width and with a sinuosity of 1-1.3.

**braidplain** A gently sloping, extensive region covered by braid bars and channels.

**brammalite** A variety of illite in which sodium is the inter-layer cation.

**branch line** The location in an imbricate fault system where a fault forks and displacement is transferred to another fault.

**Branchiopoda/branchiopods** A class of subphylum *Crustacea*, phylum *Arthropoda*; small, bivalved animals enveloped by a carapace. Range L. *Devonian-Recent*.

**braunite**  $((\text{Mn}_2\text{O}_3)_3, \text{MnSiO}_3)$  A massive ore mineral of manganese.

**bravoite**  $((\text{Ni}, \text{Fe})\text{S}_2)$  A rare nickel ore mineral.

**brazilian emerald** A green gem variety of *tourmaline*.

**brazilian peridot** *Tourmaline* or *chrysoberyl* with the green colour of *peridot*.

**brazilian ruby** A red *tourmaline* or pink *topaz*.

**brazilian topaz** A clear blue variety of *topaz* valued as a gem.

**brazilianite**  $(\text{NaAl}_3(\text{PO}_4)_2(\text{OH})_4)$  A rare yellow/green gem found in *pegmatites*.

**breached anticline** An *anticline* whose core has been eroded so that the fold limbs form *scarp*s.

**breaching thrust** A *thrust fault* that offsets an existing, structurally higher fault or fold structure.

**bread-crust bomb** A volcanic bomb with a cracked outer crust and vesicular interior.

**break-back thrust** A *reverse fault* in a *piggyback thrust system* that forms in an existing *thrust structure* rather than nearer to the *foreland*.

**break-point bar** A permanently submerged coastal bar formed near the shore when steep, high energy waves break, depositing sediment onshore on the seaward side of the break point and offshore landward of it.

**breaker** A wave that enters shallow water and increases in height until it breaks.

**breaker zone** The beach zone in which wave energy is dispersed by breaking.

**breast** The face of a mine working.

**breccia** A *rudite* with angular *clasts*.

**breccio-conglomerate** A *rudite* intermediate between *breccia* and *conglomerate*, i.e. with approximately equal numbers of angular and rounded *clasts*.