

# CAVE AND KARST TERMINOLOGY

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## Introduction

This list of terms is substantially longer than that included in Speleo Handbook (1968). The increase reflects the greater depth and breadth of interest of Australian speleologists in caves and their surroundings. It remains a highly selective list of terms recommended for use in particular ways by Australians and it does not purport to gather comprehensively actual usage, good, bad and indifferent. For more complete collections of terms the following publications are the most useful:

- W.H. Monroe      1970    A Glossary of Karst Terminology. **U.S. Geological Survey Water Supply Paper 1899K.**
- H. Trimmel      1965    Speläologisches Fachwörterbuch. **Third International Speleological Congress.** Vol. C.
- P. Fénelon      1968    Vocabulaire français des phénomènes karstiques. **Mémoires et Documents du Centre Documentaire Cartographique et Géographique**, 4: 193-282.
- C.A. Hill        1976    **Cave Minerals.** National Speleological Society, Huntsville.

English equivalents of foreign terms have been preferred except where the latter have long-established and agreed usage or where there is no precise counterpart in English. Amongst English words, simple Anglo-Saxon words are preferred to new inventions from Greek and Latin roots. Some terms which have markedly conflicting and confusing usages either within Australia or abroad or between Australia and abroad are omitted as the best deterrent to their further employment here. A very few terms not yet in common use have been introduced where these offer the opportunity of avoiding conflicting usages of other words which need to be retained despite this. A preliminary list was circulated to the ASF clubs and to a number of individuals for comment. The final list reflects very much suggestions from and discussions with the following:

E.G. Anderson, W.J. Counsell, J.R. Dunkley, Julia M. James, G.S. Hunt, D.C. Lowry, P.G. Matthews, N. Montgomery, G.J. Middleton, A. Pavey, Aola M. Richards, T.M. Wigley, and the National University Caving Club.

It must not be thought, however, that these helpers agree with the composition of the list or with every definition. Nor in a sense do I since I have allowed my own opinion to be overruled in many cases, though I have dug my toes in over some. No selection will please everybody, still less the meanings given to those chosen, but to assemble all terms and usages would not only result in a volume to itself but might confuse more cavers than it would assist.

# Abbreviations and conventions

Abb. = abbreviation

Syn. = synonym (word with same meaning)

Cf. = confer (compare) with the following term which is not identical but related to it.

n. = noun

v. = verb

A word in brackets in the left-hand column is commonly used in conjunction with the preceding word without altering the meaning.

A word in **bold** is defined elsewhere in this list.

Square brackets [ ] enclose statements not part of the definition but for special reasons included in the list.

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| ABNEY LEVEL     | A type of <b>clinometer</b> with a bubble tube used in cave survey to determine <b>vertical angles</b> .   |
| ABSEIL (n.)     | A controlled descent of a rope using friction obtained by: (1) wrapping the rope around the body in a particular way or (2) passing the rope through a <b>karabiner</b> or (3) passing the rope through a <b>descender</b> .   |
| ABSEIL (v.)     | To do an abseil.   |
| ACCIDENTAL (n.) | An animal accidentally living in a cave.   |
| ACETYLENE       | An inflammable hydrocarbon gas, C <sub>2</sub> H <sub>2</sub> , produced by water reacting with calcium <b>carbide</b> . When burnt, yields carbon dioxide as well as light.   |
| ACTIVE CAVE     | A cave which has a stream flowing in it. Cf. <b>live cave</b> .  |
| ADAPTATION      | An inherited characteristic of an organism in structure, function or behaviour which makes it better able to survive and reproduce in a particular environment. Lengthening of appendages, loss of pigment and modification of eyes are considered adaptations to the <b>dark zone</b> of caves. |
| AGGRESSIVE      | Referring to water which is still capable of dissolving more <b>limestone</b> , other <b>karst</b> rock, or <b>speleothems</b> .   |
| ANASTOMOSIS     | A mesh of <b>tubes</b> or <b>half-tubes</b> .  |
| ANCHOR          | A fixed object used to secure a man whilst operating a safety rope or for attaching equipment such as <b>ladders</b> or ropes.   |
| ARAGONITE       | A less common crystalline form of calcium carbonate than <b>calcite</b> , denser and orthorhombic.   |
| ARTEFACT        | A product of human manufacture or art, e.g. tools of bone, stone, etc., paintings, engravings. In caves, tools are often buried in <b>sediment</b> . [Scientific attention should be drawn to the finding of artefacts in caves.]  |
| ARTHROPODS      | The most common group of animals inhabiting caves, including insects, crustaceans, spiders, millipedes, etc. They have jointed limbs and external skeletons.   |
| ASCENDER        | A mechanical device for ascending ropes.   |
| ASSOCIATION     | A relatively stable community of different species living in a characteristic habitat.   |

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| AZIMUTH            | The true bearing of a survey line, determined by measurement from an accurate survey or by observations of sun or stars.   |
| BARE KARST         | <b>Karst</b> with much exposed bedrock.  |
| BAT                | A member of the order Chiroptera, the only mammals capable of true flight as they have membranes between the toes of their forefeet.   |
| BATHYPHREATIC      | Referring to water moving with some speed through downward looping <b>passages</b> in the <b>phreatic zone</b> .   |
| BEARING            | The angle measured clockwise that a line makes with the north line. True, magnetic and grid bearings are measured respectively from <b>true</b> , <b>magnetic</b> and <b>grid north</b> .  |
| BED                | A depositional layer of sedimentary bedrock or unconsolidated sediment.  |
| BEDDING-GRIKE      | A narrow, rectilinear slot in a karst rock outcrop due to solution along a <b>bedding-plane</b> .  |
| BEDDING-PLANE      | A surface separating two <b>beds</b> , usually planar.   |
| BEDDING-PLANE CAVE | A cavity developed along a <b>bedding-plane</b> and elongate in <b>cross-section</b> as a result.  |
| BELAY              | (1) To attach to an <b>anchor</b> . (2) To operate a <b>safety line</b> .  |
| BIOSPELEOLOGY      | The scientific study of organisms living in caves.   |
| BLIND SHAFT        | A vertical extension upwards from part of a cave but not reaching the surface; small in area in relation to its height.  |
| BLIND VALLEY       | A valley that is closed abruptly at its lower end by a cliff or slope facing up the valley. It may have a perennial or intermittent stream which sinks at its lower end or it may be a <b>dry valley</b> .                                 |
| BLOWHOLE           | (1) A hole to the surface in the roof of a <b>sea cave</b> through which waves force air and water. (2) A hole in the ground through which air blows in and out strongly, sometimes audibly; common in the Nullarbor Plain.                |
| BOLT               | A high tensile steel bolt used as an <b>anchor</b> ; either a conical bolt screwed into a metal holder in a hole drilled in rock, causing expansion for grip, or a bolt with partially filed thread hammered into a slightly smaller hole. |
| BONE BRECCIA       | A <b>breccia</b> containing many bone fragments. [Scientific attention should be drawn to the finding of such in caves.]   |
| BRAKE BAR          | A round bar hinged to a <b>karabiner</b> or <b>rappel rack</b> used for <b>abseiling</b> .   |
| BRANCHWORK         | A dendritic system of underground streams or passages wherein branches join successively to form a major stream or passage.  |
| BREAKDOWN          | Fall of rock from roof or wall of a cave.  |
| BRECCIA            | Angular fragments of rock and/or fossils cemented together or with a matrix of finer sediment. Cf. <b>bone breccia</b> .   |
| BRUNTON COMPASS    | A type of <b>compass</b> , with a hinged mirror, which can be held in the hand or mounted on a tripod and which includes a <b>clinometer</b> . Designed also for measuring rock <b>dip</b> and <b>strike</b> .                             |
| CALCITE            | The commonest calcium carbonate (CaCO <sub>3</sub> ) mineral and the main constituent of <b>limestone</b> , with different crystal forms in the rhombohedral subsystem.  |
| CANOPY             | A compound <b>speleothem</b> consisting of a <b>flowstone</b> cover of a bedrock projection and of a fringe of <b>stalactites</b> or <b>shawls</b> on the outer edge.  |

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| CANYON         | (1) A deep valley with steep to vertical walls; in <b>karst</b> frequently formed by a river rising on impervious rocks outside the karst area. (2) A deep, elongated cavity cut by running water in the roof or floor of a cave or forming a cave passage. |
| CARBIDE        | Calcium carbide, CaC <sub>2</sub> , used with water to make <b>acetylene</b> in lamps.  |
| CAVE           | A natural cavity in rock large enough to be entered by man. It may be water-filled. If it becomes full of ice or <b>sediment</b> and is impenetrable, the term applies but will need qualification.   |
| CAVE BLISTER   | An almost perfect hemisphere of egg-shell <b>calcite</b> .  |
| CAVE BREATHING | (1) Movement of air in and out of a cave entrance at intervals. (2) The associated air currents within the cave.  |
| CAVE CORAL     | Very small <b>speleothems</b> consisting of short stalks with bulbous ends, usually occurring in numbers in patches.  |
| CAVE EARTH     | Clay, silt, fine sand and/or humus deposited in a cave.   |
| CAVE ECOLOGY   | The study of the interaction between cave organisms and their environment, e.g. energy input from surface, climatic influences.   |
| CAVE FILL      | Transported materials such as silt, clay, sand and gravel which cover the bedrock floor or partially or wholly block some part of a cave.   |
| CAVE FLOWER    | Syn. <b>gypsum flower</b> .   |
| CAVE PEARL     | A smooth, polished and rounded <b>speleothem</b> found in shallow hollows into which water drips. Internally has concentric layers around a nucleus.  |
| CAVE POSTULE   | A white, hemispherical wall and roof deposit of <b>calcite</b> .  |
| CAVE SPRING    | A natural flow of water from rock or <b>sediment</b> inside a cave.   |
| CAVE SYSTEM    | A collection of caves interconnected by enterable <b>passages</b> or linked hydrologically or a cave with an extensive complex of <b>chambers</b> and passages.   |
| CAVERNICOLE    | An animal which normally lives in caves for the whole or part of its life cycle.  |
| CAVING         | The entering and exploration of caves.  |
| CAVERN         | A very large <b>chamber</b> within a cave.  |
| CENOTE         | A partly water-filled, wall-sided <b>doline</b> .   |
| CHAMBER        | The largest order of cavity in a cave, with considerable width and length but not necessarily great height.   |
| CHERT          | A light grey to black or red rock, which fractures irregularly, composed of extremely fine crystalline silica and often occurring as nodules or layers in <b>limestone</b> .  |
| CHIMNEY        | A vertical or nearly vertical opening in a cave, narrow enough to be climbed by <b>chimneying</b> .   |
| CHIMNEYING     | Ascending or descending by means of opposed body and/or limb pressures against two facing walls.  |
| CHOCK          | A block of metal for use as a <b>chockstone</b> .   |
| CHOCKSTONE     | A rock wedged between two fixed rock surfaces.  |
| CHOKE          | Rock debris or cave fill blocking part of a cave.   |
| CLAUSTROPHOBIA | An irrational fear of being in a closed space.  |
| CLINOMETER     | An instrument for measuring <b>vertical angles</b> or angles of <b>dip</b> .  |
| CLOGGER        | A type of ascender without a handle; used with a <b>karabiner</b> to keep it securely on the rope.  |

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| CLOSED TRAVERSE | A <b>traverse</b> which begins and ends at survey points with known co-ordinates and <b>orientation</b> or at the same point.   |
| COCKPIT KARST   | <b>Conekarst</b> in which the residual hills are chiefly hemispheroidal and the closed depressions often lobate.  |
| COLUMN          | A <b>speleothem</b> from floor to ceiling, formed by the growth of a <b>stalactite</b> and a <b>stalagmite</b> to join, or by the growth of either to meet bedrock.   |
| COMPASS         | An instrument with a magnetic needle which is free to point to <b>magnetic north</b> . For survey the needle is either attached to a graduated card or can be read against a graduated circle to measure the angle in degrees from the north clockwise. |
| CONEKARST       | <b>Karst</b> , usually tropical, dominated by its projecting residual relief rather than by its closed depressions.   |
| CONDUIT         | An underground stream course completely filled with water and under <b>hydrostatic pressure</b> or a circular or elliptical passage inferred to have been such a stream course.   |
| COPROLITE       | Fossilized large excrement of animals, sometimes found in caves, especially those used as lairs.  |
| COPROPHAGE      | A <b>scavenger</b> which feeds on animal dung, including guano.   |
| CORRASION       | The wearing away of bedrock or loose sediment by mechanical action of moving agents, especially water.  |
| CORROSION       | Syn. solution.  |
| COVERED KARST   | <b>Karst</b> where the bedrock is mainly concealed by soil or superficial deposits.   |
| CRAWL (WAY)     | A <b>passage</b> which must be negotiated on hands and knees. Cf. <b>flattener</b> .  |
| CROSS-SECTION   | A <b>section</b> of a cave passage or a chamber across its width.   |
| CRYPTOZOA       | The assemblage of small terrestrial animals found living in darkness beneath stones, logs, bark, etc. Potential colonizers of caves.  |
| CRYSTAL POOL    | A cave pool generally with little or no overflow, containing well-formed crystals.  |
| CURRENT MARKING | Shallow asymmetrical hollows formed by solution by turbulent waterflow and distributed regularly over karst rock surfaces. Cf. <b>scallop</b> .   |
| CURTAIN         | A <b>speleothem</b> in the form of a wavy or folded sheet hanging from the roof or wall of a cave, often translucent and resonant.  |
| DARK ZONE       | The part of a cave which daylight does not reach.   |
| DARK ADAPTATION | A change in the retina of the eye sensitising it to dim light (the eye 'becomes accustomed to the dark'). Loss of sensitivity on re-exposure to brighter light is 'light adaptation'.   |
| DAYLIGHT HOLE   | An opening to the surface in the roof of a cave.  |
| DEAD CAVE       | A cave without streams or drips of water.   |
| DECLINATION     | The angle from true (or <b>grid</b> ) <b>north</b> to <b>magnetic north</b> for a given time and place.   |
| DECOMPOSERS     | Living things, chiefly bacteria and fungi, that live by extracting energy from tissues of dead animals and plants.  |
| DECORATION      | Cave features due to secondary mineral precipitation, usually of <b>calcite</b> . Syn. <b>speleothem</b> .  |
| DESCENDER       | A mechanical device for descending ropes.   |
| DEVELOPED       | The result of straightening out a <b>section</b> composed of several parts with differing   |

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| SECTION               | directions into one common plane. Usually the plane is vertical and the length of the section equals the plan lengths of the <b>passages</b> and <b>chambers</b> comprising it.   |
| DIG                   | An excavation made (1) to discover or extend a cave or (2) to uncover <b>artefacts</b> or animal bones.   |
| DIP                   | The angle at which beds are inclined from the horizontal. The true dip is the maximum angle of the <b>bedding planes</b> at right angles to the <b>strike</b> . Lesser angles in other directions are apparent dips.  |
| DOG-TOOTH SPAR        | A variety of <b>calcite</b> with acute-pointed crystals.  |
| DOLINE                | A closed depression draining underground in <b>karst</b> , of simple but variable form, e.g. cylindrical, conical, bowl- or dish-shaped. From a few to many hundreds of metres in dimensions.   |
| DOLINE KARST          | Karst dominated by closed depressions, chiefly <b>dolines</b> , perforating a simple surface.   |
| DOLOMITE              | (1) A mineral consisting of the double carbonate of magnesium and calcium, $\text{CaMg}(\text{CO}_3)_2$ . (2) A rock made chiefly of dolomite mineral.  |
| DOMAIN                | A biological region of the earth's crust.   |
| DOME                  | A large hemispheroidal hollow in the roof of a cave, formed by the <b>breakdown</b> and/or <b>salt weathering</b> , generally in mechanically weak rocks, which prevents bedding and <b>joints</b> dominating the form.   |
| DONGA                 | In the Nullarbor Plain a shallow, closed depression, several metres deep and hundreds of metres across, with a flat clay-loam floor and very gentle slopes.   |
| DRIPHOLE              | A hole formed by water dripping onto the cave floor.  |
| DRIPLINE              | A line on the ground at a cave entrance formed by drips from the rock above. Useful in cave survey to define the beginning of the cave.   |
| DRIPSTONE             | A deposit formed from drops falling from cave roofs or walls, usually of <b>calcite</b> .   |
| DRY CAVE              | A cave without a running stream. Cf. <b>dead cave</b> .   |
| DRY VALLEY            | A valley without a surface stream channel.  |
| DUCK (-UNDER)         | A place where water is at or close to the cave roof for a short distance so that it can only be passed by submersion.   |
| DUNE LIMESTONE        | Syn. <b>eolian calcarenite</b> .  |
| DYE GAUGING           | Determining stream discharge by inserting a known quantity of dye and measuring its concentration after mixing.   |
| DYNAMIC PHREAS        | A <b>phreatic zone</b> or part of a <b>phreatic zone</b> where water moves fast with turbulence under <b>hydrostatic pressure</b> .   |
| EASTING               | (1) The distance of a point east of the point of origin of the <b>grid</b> of a map or some abbreviation of it. (2) The west-east component of a survey <b>leg</b> , or of a series of legs or of a complete <b>traverse</b> ; east is positive and west is negative. |
| ECCENTRIC             | A <b>speleothem</b> of abnormal shape or attitude. Cf. <b>helictite</b> .   |
| ENDOGEAN              | Pertaining to the <b>domain</b> immediately beneath the ground surface, i.e. in the soil or plant litter.   |
| EOLIAN<br>CALCARENITE | A limestone formed on land by solution and redeposition of calcium carbonate in coastal dune sands containing a large proportion of calcareous sand from mollusc shells and other organic remains.  |

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| EPIGEAN             | Pertaining to the biological <b>domain</b> at the surface or above it.   |
| EPIPHREATIC         | Referring to water moving with some speed in the top of the <b>phreatic zone</b> or in the zone liable to be temporarily in flood time part of the phreatic zone.  |
| EROSION             | The wearing away of bedrock or sediment by mechanical and chemical actions of all moving agents such as rivers, wind and glaciers at the surface or in caves.  |
| EXSURGENCE          | A <b>spring</b> fed only by <b>percolation water</b> .   |
| FAULT               | A fracture separating two parts of a once continuous rock body with relative movement along the <b>fault plane</b> .   |
| FAULT CAVE          | A cave developed along a <b>fault</b> or fault zone, either by movement of the fault or by preferential <b>solution</b> along it.  |
| FAULT PLANE         | A plane along which movement of a <b>fault</b> has taken place.  |
| FISSURE             | An open crack in rock or soil.   |
| FISSURE CAVE        | A narrow, vertical cave <b>passage</b> , often developed along a <b>joint</b> but not necessarily so. Usually due to <b>solution</b> but sometimes to tension.   |
| FLATTENER           | A <b>passage</b> , which, though wide, is so low that movement is only possible in a prone position.   |
| FLOE CALCITE        | Very thin flakes of <b>calcite</b> floating on the surface of a cave pool or previously formed in this way.  |
| FLOWSTONE           | A deposit formed from thin films or trickles of water over floors or walls, usually of <b>calcite</b> . Cf. <b>travertine</b> .  |
| FLUORESCENIN        | A reddish-yellow organic dye which gives a green fluorescence to water. Detectable in very dilute solutions so used in <b>water tracing and dye gauging</b> in the form of the salt, sodium fluorescein.                                   |
| FLUOROMETER         | An instrument for measuring the fluorescence of water; used in <b>water tracing and dye gauging</b> .  |
| FORESTRY COMPASS    | A lightweight, compact instrument to be mounted on a tripod, which functions as a <b>compass</b> and a <b>clinometer</b> , and has a telescopic sight. Some types facilitate measurement of horizontal angles as well as <b>bearings</b> . |
| FOSSIL              | The remains or traces of animals or plants preserved in rocks or <b>sediments</b> .  |
| FREE PITCH          | Where a rope or <b>ladder</b> hangs vertically and free of the walls.  |
| FREE-SURFACE STREAM | A cave stream which does not normally fill its <b>passage</b> to the roof.   |
| GARDENING           | Clearing stones or other loose material from a route, usually a <b>pitch</b> , which might otherwise be dangerous to a caver continuing.   |
| GIBBS               | An <b>ascender</b> with its cam operated by the weight of the caver.   |
| GLACIER CAVE        | A cave formed within or beneath a glacier.   |
| GOUR                | Syn. <b>rimstone dam</b> .   |
| GRADE               | The class of a cave <b>survey</b> on the basis of the precision of the instruments and the accuracy of the methods.  |
| GRID                | A system of squares on a map formed by straight lines which represent progressive distances east and north of a fixed point of origin.   |
| GRID NORTH          | The direction of a north-south grid line on a map. Except for the north-south grid line through the point of origin of the <b>grid</b> , it will differ slightly from <b>true north</b> .  |

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| GRIKE                | A deep, narrow, vertical or steeply inclined, rectilinear slot in a rock outcrop due to <b>solution</b> along a <b>joint</b> .   |
| GROTTO               | A <b>room</b> in a cave of moderate dimensions but richly decorated.   |
| GROUNDWATER          | Syn. <b>phreatic water</b> .   |
| GUANO                | Large accumulations of dung, often partly mineralized, including rock fragments, animal skeletal material and products of reactions between excretions and rock. In caves, derived from <b>bats</b> and to a lesser extent from birds. |
| GUANOBLIA            | An animal <b>association</b> feeding on <b>guano</b> . Not considered true <b>cavernicoles</b> as guano is not confined to caves.  |
| GYPSUM               | The mineral hydrated calcium sulphate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ .   |
| GYPSUM FLOWER        | An elongated and curving deposit of <b>gypsum</b> on a cave surface.   |
| HALF-BLIND VALLEY    | A <b>blind valley</b> which overflows its threshold when the <b>stream sink</b> cannot accept all the water at a time of flood.  |
| HALF-TUBE            | A semi-cylindrical, elongate recess in a cave surface, often meandering or <b>anastomosing</b> .   |
| HALITE               | The sodium chloride mineral, $\text{NaCl}$ , in the cubic crystalline system.  |
| HALL                 | A lofty <b>chamber</b> considerably longer than it is wide.  |
| HARNESS              | An arrangement of <b>tape</b> for attaching the lower body (seat harness) or the upper (chest harness) to <b>ascenders</b> or <b>descenders</b> .  |
| HELICTITE            | A <b>speleothem</b> , which at one or more stages of its growth changes its axis from the vertical to give a curving or angular form.  |
| HELMET               | A miner's, climber's or other kind of non-metallic, protective helmet used in caving.  |
| HISTOPLASMOSIS       | A lung disease which may be caught from the <b>guano</b> of some caves, caused by a fungus, <u>Histoplasmosis capsulatum</u> . Usually mild in effect, it can be fatal in rare cases.  |
| HORIZONTAL ANGLE     | The difference in direction of two survey lines measured clockwise in a horizontal plane.  |
| HYDROSTATIC PRESSURE | The pressure due to a column of water.   |
| HYPOGEAN             | Pertaining to the <b>domain</b> below the <b>endogean</b> , including the <b>dark zone</b> of caves.   |
| ICE CAVE             | A cave with perennial ice in it.   |
| INFLOW CAVE          | A cave into which a stream enters or is known to have entered formerly but which cannot be followed downstream to the surface.   |
| INTERSTITIAL MEDIUM  | Spaces between grains of sand or fine gravel filled with water which contains <b>phreatobia</b> .  |
| INVERTED SIPHON      | A <b>siphon</b> of U-profile.  |
| JOINT                | A planar or gently-curving crack separating two parts of once continuous rock without relative movement along its plane.   |
| JOINT-PLANE CAVE     | A cavity developed along a <b>joint</b> and elongate in <b>cross-section</b> .   |
| JUMAR                | An <b>ascender</b> with a simple finger-operated safety catch, a handle and several attachment points.   |
| KANKAR               | (pronounced kunkar) A deposit, often nodular, of calcium carbonate formed in soils   |



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|                                   | of semi-arid regions. Sometimes forms cave roofs.  |
| KARABINER                         | A steel or other alloy, oval- or D-shaped link with a spring-loaded gate on one side to admit a rope or to clip to a <b>ladder</b> , <b>piton</b> , etc.   |
| KARREN                            | The minor forms of <b>karst</b> due to <b>solution</b> of rock on the surface or underground.  |
| KARST                             | Terrain with special landforms and drainage characteristics due to greater solubility of certain rocks in natural waters than is common. Derived from the geographical name of part of Slovenia.   |
| KARST WINDOW                      | A closed depression, not a <b>polje</b> , which has a stream flowing across its bottom.  |
| KERNMANTEL<br>ROPE                | A rope with a plaited sheath around a core of parallel or twisted strands.   |
| KEYHOLE<br>(PASSAGE)              | A small passage or opening in a cave, which is round above and narrow below.   |
| KRAB                              | Colloquial abbreviation of <b>karabiner</b> .  |
| LADDER                            | In caving, a flexible, lightweight ladder of galvanized or stainless steel wires and aluminium alloy rungs.  |
| LAKE                              | In caving, a body of standing water in a cave, but used for what would be called a pond or pool on the surface.  |
| LAVA-CAVE                         | A cave in a lava flow; usually a tube or tunnel formed by flow of liquid lava through a solidified mass, or by roofing of an open channel of flowing lava. Small caves in lava also form as gas blisters.  |
| LAY                               | The way in which strands of a rope or cable are twisted.   |
| LEAD                              | A <b>passage</b> noticed but as yet unexplored.  |
| LEAD-ACID CELL                    | A rechargeable acid battery for use with an electric cap lamp.   |
| LEADER                            | In caving, the person directing the activities of a caving party, especially with regard to safety.  |
| LEG                               | A part of a survey <b>traverse</b> between two successive <b>stations</b> .  |
| LEUCOPHOR                         | A colourless water <b>tracer</b> , which fluoresces blue.  |
| LIMESTONE                         | A sedimentary rock consisting mainly of calcium carbonate, CaCO <sub>3</sub> .   |
| LINTEL LINE                       | A line on the ground at a cave entrance perpendicularly beneath the outer edge of the rock above; may or may not coincide with the <b>dripline</b> .   |
| LIQUID MEDIUM                     | Contains the aquatic <b>cavernicoles</b> .   |
| LIVE CAVE                         | A cave containing a stream or active <b>speleothems</b> .  |
| LONGITUDINAL (or<br>LONG) SECTION | A <b>section</b> along the length of a cave passage or chamber or combination of these, or along a survey <b>traverse</b> in a cave.   |
| MAGNETIC NORTH                    | The direction to the north magnetic pole at a given place and time. This differs from the direction towards which the north end of a <b>compass</b> points by a small individual compass error and by the effect of any local magnetic attraction. |
| MARBLE                            | <b>Limestone</b> recrystallized and hardened by pressure and heat.   |
| MAZE                              | Syn. <b>network</b> .  |
| MEANDER                           | An arcuate curve in a river course due to a stream eroding sideways.   |
| MEANDER NICHE                     | A hemispherically-roofed part of a cave formed by a stream meandering and cutting down at the same time.   |

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| MICROCLIMATE              | The climate (i.e. temperature, humidity, air movements, etc.) of a restricted area or space, e.g. of a cave or on a lesser scale of the space beneath stones in a cave.  |
| MICROGOUR                 | Miniature <b>rimstone dams</b> with associated tiny pools of the order of 1 cm wide and deep on <b>flowstone</b> .   |
| MOONMILK                  | Syn. <b>Rockmilk</b> . A soft, white plastic <b>speleothem</b> consisting of <b>calcite</b> , hydrocalcite, hydromagnesite or huntite.   |
| MUD PENDULITE             | A <b>pendulite</b> with the knob coated in mud.  |
| NATURAL ARCH              | An arch of rock formed by weathering.  |
| NATURAL BRIDGE            | A bridge of rock spanning a ravine or valley and formed by erosive agents.   |
| NECROPHAGE                | A <b>scavenger</b> feeding on animal carcasses (not prey).   |
| NETWORK                   | A complex pattern of repeatedly connecting passages in a cave.   |
| NIFE CELL                 | A rechargeable alkaline battery for use with an electric cap lamp.   |
| NORTHING                  | (1) The distance of a point north of the point of origin of the <b>grid</b> of a map, or some abbreviation of it. (2) The south-north component of a survey <b>leg</b> , or of a series of legs, or of a complete traverse; north is positive and south is negative.                                     |
| NOTHEPHREATIC             | Referring to water moving slowly in cavities in the <b>phreatic zone</b> .   |
| NUMBERING                 | Assigning an alphanumeric index to a cave entrance.  |
| OPEN TRAVERSE             | A <b>traverse</b> which does not close onto a survey point of known co-ordinates and <b>orientation</b> or onto itself.  |
| ORIENTATION               | The relationship of a survey line to <b>true</b> , <b>grid</b> or <b>magnetic north</b> .  |
| OUTFLOW CAVE              | A cave from which a stream flows or formerly did so and which cannot be followed upstream to the surface.  |
| PASSAGE                   | A cavity which is much longer than it is wide or high and may join larger cavities.  |
| PARIETAL<br>(ASSOCIATION) | Animals found on walls around cave entrances.  |
| PENDANT                   | Syn. <b>rock pendant</b> .   |
| PENDULITE                 | A kind of <b>stalactite</b> which has been partly submerged and the submerged part covered with <b>dog-tooth spar</b> to give the appearance of a drumstick.   |
| PERCOLATION<br>WATER      | Water moving mainly downwards through pores, cracks and tight fissures in the <b>vadose zone</b> .   |
| PERMEABILITY              | The property of rock or soil permitting water to pass through it. Primary permeability depends on interconnecting pores between the grains of the material. Secondary permeability depends on solutional widening of <b>joints</b> and <b>bedding planes</b> and on other solution cavities in the rock. |
| PHREAS                    | Syn. <b>phreatic zone</b> .  |
| PHREATIC WATER            | Water below the level at which all voids in the rock are completely filled with water.   |
| PHREATIC ZONE             | Zone where voids in the rock are completely filled with water.   |
| PHREATOBIA                | An animal <b>association</b> found in water separating grains of sand or fine gravel.  |
| PILLAR                    | A bedrock column from roof to floor left by removal of surrounding rock.   |
| PIPE                      | A tubular cavity projecting as much as several metres down from the surface into <b>karst</b> rocks and often filled with earth, sand, gravel, <b>breccia</b> , etc.   |
| PITCH                     | A vertical or nearly vertical part of a cave for which <b>ladders</b> or ropes are normally  |

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|                   | used for descent or ascent.  |
| PITON             | A solid or folded metal spike, of steel or other alloy, to be driven into a crack in the rock to form an <b>anchor</b> .   |
| PLAN              | A plot of the shape and details of a cave projected vertically onto a horizontal plane at a reduced <b>scale</b> .   |
| PLUNGE POOL       | A <b>swirlhole</b> , generally of large size, occurring at the foot of a waterfall or rapid, on the surface or underground.  |
| POLJE             | A large closed depression draining underground, with a flat floor across which there may be an intermittent or perennial stream and which may be liable to flood and become a lake. The floor makes a sharp break with parts of surrounding slopes.  |
| POLYGONAL KARST   | <b>Karst</b> completely pitted by closed depressions so that divides between them form a crudely polygonal network.  |
| POOL DEPOSIT      | (1) Any <b>sediment</b> which accumulated in a pool in a cave. (2) Crystalline deposits precipitated in a cave pool, usually of crystalline shape as well as structure.  |
| POPULATION        | Individuals of a species in a given locality which potentially form a single interbreeding group separated by physical barriers from other such populations (e.g. populations of the same species in two quite separate caves).  |
| POROSITY          | The property of rock or soil of having small voids between the constituent particles. The voids may not interconnect.  |
| POT (-HOLE)       | A vertical or nearly vertical <b>shaft</b> or <b>chimney</b> open to the surface.  |
| PREDATOR          | An animal which captures other animals for its food.   |
| PRISMATIC COMPASS | A <b>compass</b> with a prism attached so that the compass card can be read at the same time as the compass is directed into the line of sight to a distance point.  |
| PROJECTED SECTION | The result of projecting a <b>section</b> composed of several parts with differing directions onto a single plane. Usually the plane is vertical along the general trend of the cave. The horizontal distance apart of points is not correct, only the vertical, so that slopes are distorted. |
| PRUSIK KNOT       | A friction knot which will slide along the rope when no weight is applied but grips when a pull is exerted on it. Used for ascending ropes.  |
| PRUSIK SLING      | A <b>sling</b> fastened by a <b>prusik knot</b> to the rope.   |
| PRUSIKING         | Ascent on a rope using <b>prusik knots</b> or <b>ascenders</b> .   |
| PSEUDOKARST       | Terrain with landforms which resemble those of <b>karst</b> but which are not the product of karst processes.  |
| RAPPEL            | Syn. <b>abseil</b> .   |
| RAPPEL RACK       | A <b>descender</b> consisting of a frame mounting 5 or 6 <b>brake bars</b> .   |
| RESURGENCE        | A <b>spring</b> where a stream, which has a course on the surface higher up, reappears at the surface.   |
| RHODAMINE         | A red organic dye which gives a red fluorescence to water. Detectable in very dilute solutions so used in <b>water tracing</b> and <b>dye gauging</b> .  |
| RIFT              | A long, narrow, high and straight cave <b>passage</b> controlled by planes of weakness in the rock. Cf. <b>fissure</b> .   |
| RIMSTONE          | A deposit formed by precipitation from water flowing over the rim of a pool.   |
| RIMSTONE DAM      | A ridge or rib of <b>rimstone</b> , often curved convexly downstream.  |

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| RIMSTONE POOL         | A pool held up by a <b>rimstone dam</b> .  |
| RISING                | Syn. <b>spring</b> .   |
| ROCK PENDANT          | A smooth-surfaced projection from the roof of a cave due to <b>solution</b> . Usually in groups.   |
| ROCK SHELTER          | A cave with a more or less level floor reaching only a short way into a hillside or under a fallen block so that no part is beyond daylight.                                     |
| ROCKHOLE              | A shallow, small hole in rock outcrops, often rounded in form and holding water after rains. Well known on the Nullarbor Plain.  |
| ROCKPILE              | A heap of blocks in a cave, roughly conical or part-conical in shape.  |
| ROOF CRUST            | Thin <b>speleothem</b> on cave precipitated from water films exuding from pores or cracks.   |
| ROOM                  | A wider part of a cave than a <b>passage</b> but not as large as a <b>chamber</b> .  |
| ROPE PROTECTOR        | A length of heavy fabric or plastic hose placed around a rope where it may rub against rock.   |
| SAFETY LINE           | A safety rope attached to a caver climbing on a <b>ladder</b> or negotiating a difficult situation and held by a man above.  |
| SALT WEATHERING       | Detachment of particles of various sizes from a rock surface by the growth of crystals from salt solutions. Forms substantial features in Nullarbor Plain caves.                 |
| SAPROPHAGE            | A <b>scavenger</b> feeding on decaying organic material.   |
| SATURATED             | (1) Referring to rock with water-filled voids. (2) Referring to water which has dissolved as much <b>limestone</b> or other <b>karst</b> rock as it can under normal conditions. |
| SCALE                 | The ratio of the length between any two points on a map, <b>plan</b> or <b>section</b> to the actual distance between the same points on the ground or in a cave.                |
| SCALING POLES         | A lightweight metal alloy pole, in short sections for transport and fastened together where used, to raise a <b>ladder</b> to points inaccessible by climbing.                   |
| SCALLOPS              | <b>Current markings</b> that intersect to form points which are directed downstream.   |
| SCAVENGER             | An animal that eats dead remains and wastes of other animals and plants (cf. <b>coprophage</b> , <b>necrophage</b> , <b>saprophage</b> ).  |
| SEA CAVE              | A cave in present-day or emerged sea cliffs, formed by wave attack or <b>solution</b> .  |
| SECTION               | A plot of the shape and details of a cave in a particular intersecting plane, called the section plane, which is usually vertical.   |
| SEDIMENT              | Material recently deposited by water, ice or wind, or precipitated from water.   |
| SEEPAGE WATER         | Syn. <b>percolation water</b> .  |
| SELENITE              | A crystalline form of <b>gypsum</b> .  |
| SHAFT                 | A vertical cavity roughly equal in horizontal dimensions but much deeper than broad. Wider than a <b>chimney</b> .   |
| SHAWL                 | A simple triangular shaped <b>curtain</b> .  |
| SHOW CAVE             | A cave that has been made accessible to the public for guided visits.  |
| SINGLE ROPE TECHNIQUE | The practice of climbing up and down ropes with the help of <b>ascenders</b> and <b>descenders</b> . Abb. = SRT.   |
| SIPHON                | A waterfilled <b>passage</b> of inverted U-profile which delivers a flow of water whenever the head of water upstream rises above the top of the inverted U.                     |

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| SLING              | A joined loop of rope or <b>tape</b> .  |
| SOLUTION           | In karst study, the change of bedrock from the solid state to the liquid state by combination with water. In physical solution the ions of the rock go directly into solution without transformation. In chemical solution acids take part, especially the weak acid formed by carbon dioxide (CO <sub>2</sub> ). |
| SOLUTION FLUTE     | A solution hollow running down the maximum slope of the rock, of uniform fingertip width and depth, with sharp ribs between it and its neighbours.  |
| SOLUTION PAN       | A dish-shaped depression on flattish rock; its sides may overhang and carry <b>solution flutes</b> . Its bottom may have a cover of organic remains, silt, clay or rock fragments.  |
| SOLUTION RUNNEL    | A solution hollow running down the maximum slope of the rock, larger than a <b>solution flute</b> and increasing in depth and width down its length. Thick ribs between neighbouring runnels may be sharp and carry solution flutes.  |
| SPECIES            | A group of actually or potentially interbreeding populations which is reproductively isolated from other such groups by their biology, not simply by physical barriers.   |
| SPELEOGEN          | A cave feature formed erosionally or by weathering in cave enlargement such as <b>current markings</b> or <b>rock pendants</b> .  |
| SPELEOLOGY         | The exploration, description and scientific study of caves and related phenomena.   |
| SPELEOTHEM         | A secondary mineral deposit formed in caves, most commonly <b>calcite</b> .   |
| SPLASH CUP         | A shallow cavity in the top of a <b>stalagmite</b> .  |
| SPONGEWORK         | A complex of irregular, inter-connecting cavities intricately perforating the rock. The cavities may range from a few centimetres to more than a metre across.  |
| SPRING             | A natural flow of water from rock or soil onto the land surface or into a body of surface water.  |
| SQUEEZE            | An opening in a cave only passable with effort because of its small dimensions. Cf. <b>flattener, crawl (way)</b> .   |
| STALACTITE         | A <b>speleothem</b> hanging downwards from a roof or wall, of cylindrical or conical form, usually with a central hollow tube.  |
| STALAGMITE         | A <b>speleothem</b> projecting vertically upwards from a cave floor and formed by precipitation from drips.   |
| STATION            | A survey point in a chain of such points in a <b>survey</b> .   |
| STEEPHEAD          | A steep-sided valley in <b>karst</b> , generally short, ending abruptly upstream where a stream emerges or formerly did so.   |
| STRAW (STALACTITE) | A long, thin-walled tubular <b>stalactite</b> less than about 1 cm in diameter.   |
| STREAMSINK         | A point at which a surface stream disappears underground.   |
| STRIKE             | The direction of a horizontal line in a <b>bedding plane</b> in rocks inclined from the horizontal. On level ground it is the direction of outcrop of inclined <b>beds</b> .  |
| STYLOLITE          | Suture in rock formed where pressure solution has taken place, often leaving a thin lamina of insoluble material along it.  |
| SUBJACENT KARST    | Karst developed in soluble beds underlying other rock formations; the surface may or may not be affected by the karst development.  |
| SUMP               | A point in a cave <b>passage</b> when the water meets the roof.   |

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| SUPERSATURATED    | Referring to water that has more <b>limestone</b> or other <b>karst</b> rock in <b>solution</b> than the maximum corresponding to normal conditions.  |
| SURVEY            | In caving, the measurement of directions and distances between survey points and of cave details from them, and the plotting of cave <b>plans</b> and <b>sections</b> from these measurements either graphically or after computation of co-ordinates.  |
| SUUNTO CLINOMETER | A small, handheld pendulum <b>clinometer</b> commonly used in cave <b>survey</b> .  |
| SUUNTO COMPASS    | A small, handheld sighting <b>compass</b> commonly used in cave <b>survey</b> .   |
| SWIRLHOLE         | A hole in rock in a streambed eroded by eddying water, with or without sand or pebble tools.  |
| SYNGENETIC KARST  | <b>Karst</b> developed in <b>eolian calcarenite</b> when the development of <b>karst</b> features has taken place at the same time as the lithification of dune sand.   |
| TAGGING           | Affixing a metal tag bearing a cave <b>number</b> near its entrance, normally by means of rock drill and a small nail.  |
| TAFONI            | Roughly hemispherical hollows weathered in rock either at the surface or in caves.  |
| TAPE              | (1) In survey, a graduated tape of steel, plastic, wire-reinforced cloth, or fibreglass, used for measuring distance. (2) Strips of woven synthetic fibre used for <b>slings</b> and waist bands.   |
| TERRA ROSSA       | Reddish residual clay soil developed on <b>limestone</b> .  |
| THRESHOLD         | (1) That part of a cave near the entrance where surface climatic conditions rapidly grade into cave climatic conditions. Not necessarily identical with <b>twilight</b> zone. (2) Slope or cliff facing up a <b>blind</b> or <b>half-blind</b> valley below a present or former <b>streamsink</b> . |
| THROUGH CAVE      | A cave which may be followed from entrance to exit along a stream course or along a passage which formerly carried a stream.  |
| TOWERKARST        | <b>Conekarst</b> in which the residual hills have very steep to overhanging lower slopes. There may be alluvial plains between the towers and flat-floored depressions within them.   |
| TRACE             | A short length of wire with fasteners used for attaching <b>ladders</b> and ropes to an <b>anchor</b> .   |
| TRACER            | (1) A material introduced into surface or underground water where it disappears or into soil to determine drainage interconnections and travel time. (2) A material introduced into cave air to determine cave interconnections.  |
| TRAVERSE          | (1) The commonest form of cave <b>survey</b> in which direction, distance and <b>vertical angle</b> between successive points are measured. (2) A way along ledges above the floor of a cave. (3) To move along such a way.   |
| TRAVERTINE        | Compact calcium carbonate deposit, often banded, precipitated from <b>spring</b> , river or lake water. Cf. <b>tufa</b> .   |
| TROGLOBITE        | A <b>cavernicole</b> unable to live outside the cave environment.   |
| TROGLODYTE        | A human cave dweller.   |
| TROGLOPHILE       | A <b>cavernicole</b> which frequently completes its life cycle in caves but is not confined to this habitat.  |
| TROGLOXENE        | A <b>cavernicole</b> which spends only part of its life cycle in caves and returns  |

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|                   | periodically to the <b>epigean domain</b> for food.  |
| TRUE NORTH        | The direction of the geographical north pole at a place.   |
| TUBE              | A cave passage of smooth surface, and elliptical or nearly circular in cross-section.  |
| TUFA              | Spongy or vesicular calcium carbonate deposited from <b>spring</b> , river or lake waters. Cf. <b>travertine</b> .   |
| TUNNEL            | A nearly horizontal cave open at both ends, fairly straight and uniform in <b>cross-section</b> .  |
| TWILIGHT ZONE     | The part of a cave to which daylight penetrates.   |
| UVALA             | A complex closed depression with several lesser depressions within its rim.  |
| VADOSE FLOW       | Water flowing in <b>free-surface streams</b> in caves.   |
| VADOSE SEEPAGE    | Syn. <b>percolation water</b> .  |
| VADOSE WATER      | Water in the <b>vadose zone</b> .  |
| VADOSE ZONE       | The zone where voids in the rock are partly filled with air and through which water descends under gravity.  |
| VAUCLUSIAN SPRING | A <b>spring</b> rising up a deep, steeply-inclined, water-filled passage into a small surface pool.  |
| VERMICULATION     | Pattern of thin, worm-shaped coatings of clay or silt on cave surfaces.  |
| VERTICAL ANGLE    | The angle in a vertical plane between a line of sight and the horizontal, positive above the horizontal and negative below.                                      |
| WATER TRACING     | Determination of water connection between points of stream disappearance or of soil water seepage and points of reappearance on the surface or underground.      |
| WATERTABLE        | The surface between <b>phreatic water</b> which completely fills voids in the rock, and ground air, which partially fills higher voids.                          |
| WATERTRAP         | A place where a cave roof dips under water but lifts above it farther on. Cf. <b>duck (-under)</b> .   |
| WELL              | A deep rounded hole in a cave floor or on the surface in <b>karst</b> .  |
| WET SUIT          | A diving garment of foam neoprene designed to insulate the diver from the cold but which allows a thin film of water to penetrate between the suit and the body. |
| WHALETAIL         | A <b>descender</b> consisting of an aluminium block with slots, knobs and a safety gate.   |
| WINDOW            | An irregular opening through a thin rock wall in a cave.   |

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