Mike Bedgood – Rocks, Minerals & Gems

An aunt presented me with a large chunk of rose quartz as a birthday present in the early 1970's. Ever since then, I have had an interest in collecting/buying samples of various rocks, minerals, gems and fossils.

To begin with, the collection was small until the mid 1990's (redundancy time from Nortel). After that I started collecting more seriously until the present. The collection currently numbers over one thousand specimens of rocks, minerals and gems and some 60 fossil samples from all over the world.

Collecting can be a very absorbing pastime. You can make a general collection, or can specialise in one particular type of rock/mineral. For example, quartz is a very common mineral, but can come in a huge variety of different forms such as rose quartz, amethyst, citrine, smoky quartz, agate, chalcedony, jasper etc. It may be easier, however, to start with an understanding of the rocks and minerals to be found in the United Kingdom.

We are very lucky in this country to have all but one of the complete geological sequence of rocks. These rocks underlie the countryside giving us the huge variety of landscapes and habitats that we see around us.

The geological sequence starts in the far north-west of Scotland around Durness, with the Lewisian Gneiss (dated to at least 3,200 million years old) and continues very roughly in bands running from north-west to south-east across the country finishing with the chalk cliffs along the south-east shore of the English Channel (the youngest dating from a mere 1 million years old).

Identifying rocks is, initially, quite a daunting task, and is something that can only be learned by the experience of seeing and handling them.

The rocks on display are of four different types:

- Sedimentary rocks – formed from the weathering of base rocks by wind, water, carbon dioxide and oxygen from the air
- Igneous rocks – formed directly from volcanic activity
- Metamorphic rocks – reconstruction of existing rocks deep in the earth by temperature and pressure
- Minerals – naturally occurring parts of the Earth's crust having a specific or unique structure.

Find out more

Most local museums will have small collections of local rocks and minerals. The best and most comprehensive collection is in the Natural History Museum in London. Most good bookshops will have copies of easy-to-understand general books on rocks, minerals and gemstones for the beginner. More specialized books can also be found for those interested in more particular aspects of the subject.

Examples of Sedimentary rocks and where they can be found

Mudstone	Limestone	Conglomerate
Mud laid down anywhere from a puddle to a delta to deep ocean.	Laid originally from the skeletons of corals and other reef organisms.	Caused by flash floods in desert conditions and shore environments.
North Somerset	*South Gloucestershire*	*Antrim, N. Ireland*

Sandstone	Flint	Chalk
Generally quartz ground up by wind or wave action. Compacted over time to form rock.	Nearly always found in chalk. Believed to be where silica precipitates out.	The exoskeletons of tiny sea creatures called forminifora.
Vale of Eden	*Salisbury Plain*	*Salisbury Plain*

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Examples of Igneous rocks and where they can be found

Volcanic Tuft	Gabbro	Pegmatite
Appears like slate, but is volcanic ash, often laid in water.	Intrusive igneous rock. Coarse grained equivalent of basalt.	Coarse grained intrusive igneous rock like granite – but with larger feldspar crystals.
Borrowdale, Cumbria	*Scourie, Sutherland*	*Antrim, N. Ireland*

Micaceous Quartz	Schist	Gneiss
Milky quartz with mica in it. It lacks the feldspar to be a granite.	Medium grade metamorphic rock. Often is very micaceous.	Highest grade of metamorphic rock. Often striated and/or folded.
Isle of Skye	*North-west Scotland*	*Durness, Sutherland*

Examples of Metamorphic rocks and where they can be found

Granite	Basalt	Serpentine
Igneous rock cooled underground. Exposed on the surface by erosion. Formed of quartz, mica & feldspar.	Cooled lava from a volcano. Bubbles often infilled with zeolites, calcite or more rarely amethyst.	Present in oceanic crusts as olivine. Only seen in terrestrial rocks when uplifted from the ocean bed. Weathering has altered it to serpentine.
Cornwall	*Ardnamurchan, Argyll*	*The Lizard, Cornwall*

Slate	Quartzite	Marble
Low temperature and low-pressure alteration of mudstone.	Arenaceous quartz sandstone, which has been altered by heat and pressure. A very hard rock.	Chalk or limestone, which has been altered to a crystalline structure by heat and pressure.
North Wales	*Cumbria*	*Purbeck, Dorset*

Examples of Minerals and where they can be found

Agate	Wad	Talc
Part of the quartz family. Can be found in a huge variety of colours.	Hydrous manganese oxide. Seams of it found in limestone quarries.	Weathered alteration of serpentine.
Central Scotland	*Merehead Quarry, Somerset*	*Cornwall*

Orthoclase Feldspar	Plagioclase Feldspar	Fossil Wood
Monoclinic potassium feldspar forming in the mid temperature range.	These are sodium and calcium feldspars forming a continuous solution series between albite (pure sodium) and anorthite (pure calcium).	Part of a tree trunk found in the lower Jurassic beds (Lower Lias).
Cumbria	*Cumbria*	*Peterborough*