

Geology Collection at Glasgow Museums Resource Centre

Sat 11th June 2016

Leader: Ann Ainsworth, Curator of Geology
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Participants 10 Reporter:

Ten of us met up at 10.30 am on a damp morning at the Glasgow Museums Resource Centre (a most impressive building), 200 Woodhead Road, South Nitshill Industrial Estate, Glasgow, G53 7NN, where we were met by our guide for the morning, Ann Ainsworth, Curator of Geology. Most museums can exhibit only a tiny proportion of their objects, and museum stores are rarely accessible to the public. With the current gallery space, only 2% of Glasgow's vast and varied collections can be displayed at any one time and as a result, GMRC is the store for the remainder of these collections (started in 1870). It is a vast building with 17 purpose-built and environmentally controlled storage 'pods' housing around 1.4 million objects. The main collections are Archaeology, Art and Painting, Arms and Armour, Natural History, Transport and Technology and World Cultures. Glasgow's store is exceptional in that it stores one of the finest museum collections in Europe and the public can explore it and its collections through a wide range of tours, talks and activities for all ages, including school visits and events for families with children. It is free to visit GMRC, but all visits must be booked in advance. <http://www.glasgowlife.org.uk/museums/GMRC>.

Our guide led us into a long narrow locker room where large bags and any food /drinks had to be left and which acted as an 'airlock' from the outside world. We exited by a second door at the far end and found ourselves in a big room, where the geology collection of 62,000 specimens, together with the botany and insect collections, are held. The room contained numerous rows of steel cabinets, each about 6 feet tall, and our interest lay in three of these rows at one end of the room. Each row was made up of eight cabinets which revealed, when opened, two columns of twenty-one trays. The geology collection is divided into four sections, and we started off with the '**minerals**' section with 8,000 specimens. We were shown a fascinating selection of native metals – platy copper and dendritic copper, chromium, gold, platinum, aluminium from Lochaber (1930), tungsten labelled 'Tungsten Ltd Glasgow' and sulphur, and also a number of metal ores many of which are Scottish:

- Copper ores – chalcopyrite (copper sulphide with its characteristic blue iridescence) and red needles of bornite (a copper-iron sulphide)
- Zinc blende and stibnite, an ore of antimony
- Semi-precious gemstones – pale red spinel, known as false ruby, sapphire, a whole tray of agates, and several coloured and clear rock crystals (quartz)
- A selection of fluorite specimens, whose crystals are octahedral, including banded blue and yellow Blue John (its name comes from the French 'bleu jaune'), as well as other banded purple, green and white samples.
- Green malachite
- Botryoidal (bunch of grapes or kidney-shaped) haematite which was shiny and with quartz
- Many trays of calcite including 'Dog's tooth', stalactites and platy samples
- Galena (lead ore) from Wanlockhead, Lead Hills, Southern Uplands and the Clyde Plateau Lavas
- Smokey quartz from Cairngorm, actinolite (prismatic and dark blue) from Skye, and talc/soapstone

The samples were all labelled with a number, using the nationally recognised 'Hey's Catalogue of Minerals' in which they are ordered by chemical composition.

We then came to the '**rocks**' section with 4,000 specimens. This included Permian red sandstone, blonde sandstone from Giffnock, red sandstone with load casts, Rhynie chert with plant remains, Lochaline glass (made from a very pure sand of tiny fragments), pure basalt, amygdaloidal basalt, obsidian from Iceland, gneiss, gabbro, larvakite, shale with a cone in cone structure, several granites including grey Rubislaw, landscape marble and several limestones. Lastly there were a number of fulgarites, created when lightning strikes and penetrates a bed of sand causing the quartz to melt and then fuse.

The '**fossils**' section came next.....and it was huge with some 50,000 specimens, many of them Scottish. There were 2,000 Devonian and Carboniferous fish, and our guide picked out some of the more interesting – a Carboniferous dorsal fin bone, very small fish embedded in Caithness flags, a 5 inch long Megalodon tooth from the Cretaceous of America (the Megalodon was a gigantic shark, similar to the great white but much bigger), lots of fish from southern England, a whole fish in shale/sandstone from Fife, Devonian fish with scales and fins from Orkney, a half jaw of a rhizodont with one 4 inch incisor plus a half an incisor and lots of very small teeth. The fossil bones were mostly of non-Scottish Jurassic fish, but there were also 200 non-fish vertebrates including the paddle bones of a Plesiosaur from Peterborough, East Yorkshire, rhinoceros teeth from North America, the tooth of a small horse (Eohippus, Eocene) and the big leg and foot bones of a Moa from New Zealand. Among the invertebrates were numerous, mostly Carboniferous, colonial and solitary corals, several of which were sliced and polished. At this point one of our group asked why all the labels were still handwritten, and not typed, and we were told that, in the interests of conservation, acid free ink and paper had to be used. There were abundant brachiopods (some giants and eight inches in diameter), a variety of graptolites, some coiled, from Dob's Lynn, and pieces of Orthocones (unusually long straight shells of a nautiloid cephalopod). There were also (mostly bits of) fossils of Euripteryd, a kind of Silurian sea scorpion, in shale, from the Southern Uplands, and – the best preserved – a whole body with claw, head and tail, from Lesmahagow. It seems that many of these would have been moults, and that all the animals came together to moult and to grow and harden a new shell. The Clyde Bed fossils, 13 -11,000 ka, contained various gastropods indicating the change from fresh, cold to warm, saline waters as the ice melted, as well as bivalves, barnacles, pearls, tiny sea urchins, starfish and echinoid spines. There were rare Carboniferous ammonites (nautiloids) from High Blantyre and a Productus with spines. We moved on to plants – a large number of Lepidodendron leaves and cones, in both 2D & 3D, stigmara (the root system), seed ferns and horse tails (calamites). Eocene leaves from the Mull leaf bed included birch, beech, holly, ginkgo and magnolia, 50 Ma, found between the lava and ash beds. These, of course, are the same trees as those of the present day.

Lastly our guide led us to a display of '**rare minerals**' laid out on a table:
Strontianite, collected in the 1790's
Greenockite, collected in 1899, this is orange and formed in cold conditions in the River Clyde.
There was also 'Lanarkite' and 'Lead Hillite'!
Ikanite – a calcite pseudomorph, a hydrated form of calcite. Dredged from the Clyde, it is an indicator of Snowball Earth
Azurite from the Lead Hills, garnets from Rosshire, topaz from the Cairngorms, Ailsa Craig riebeckite, kyanite, zircon, Iceland spar and barite.

There was a touch of ‘Geo tourism’ in the form of ‘lava embedded with a coin’ from Pompeii and a sample of Mt St Helen’s ash, Carboniferous raindrops from the Campsies, a piece of limestone with tiny folds, graphic granite, deformed trilobites, jawless fish, an Elgin fish fin with its body, and a fish model made of clay. Finally, there was a fascinating box of replica famous historical diamonds such as the Koh-I-Noor, a set of crystal models demonstrating different crystal structures, a box of samples of the chemical elements from 1896, and an amazing slice of flexible sandstone from Massachusetts which our guide was able to flex up and down as if it were a wave! She explained that this was because of its unique porosity, due to the specific spaces between the quartz grains.

As we made our way to the exit, we were able to view several large specimens (up to a metre in diameter) of rocks and minerals (several of blue and green fluorite), and an iron meteorite from Namibia. Ann was then thanked most sincerely for a very interesting and entertaining tour.



Investigating the samples in a cabinet.

Photo by Hugh Leishman