H.G.S visit to Strontian 8-11th June 2018

A field trip in the Strontian area was held over the weekend 8-11th June based at the Ariundle Field Centre.

Most members of the group met up at the Lochaber Geopark bookshop in Fort William where we were introduced to Jim Blair and his wife Alison who would accompany us for much of the weekend. The bookshop is definitely worth a visit with geological displays, maps and guides to browse through.

Two stops were made around Onich to view the broadscale geology with respect to the Great Glen fault zone before going onto Lochaline where the full party, 14 of us, met to be given a talk by the Lochaline Silica mine office manager (Veronique). We then embarked on a guided tour of the operational side of the processing plant with Dario, the production manager, and then ventured into the silica mine itself. The white, Cretaceous sandstones are exceptionally pure, >99% silica, and are used in the glassware industry. The mine itself consists of a large area (14 miles) of room and pillar type excavations; we were allowed to enter the mine for a few hundred yards where we were able to experience almost complete silence and darkness, two sensory experiences not often encountered! The sand mine is the only underground sand mine in the U.K and apparently has 14 years of useful life left.

Inside Lochaline silica mine

Room and pillar extraction (the room is ~3m across)

On the Saturday we travelled up to the Strontian mine area after first examining an exposure on the limit of the late Caledonian granite which exhibited interesting sheared xenoliths or possibly small basic intrusions.

HGS entering Whitesmith mine Strontian

Continuing on inland to the main mining area we explored the excavated gully of the Whitesmith's mine where we collected massive, cockscomb and desert rose varieties of barites although nobody managed to find any strontianite or brewsterite. A large block of rock with spectacular calcite crystals proved irresistible to Peter who managed to stagger back to the cars with his prize.

The mine has had a stop start history beginning in 1733 and has had various owners over the years; operations finally stopped around 1988 as recession, variable grades of ore and the remote location began to tell. Galena and zinc were the main products with barites becoming more important later in the mine's life.

Devonian conglomerate unconformity. Rubha na h-Earba

After lunch we drove out to the headland of Rubha na h-Earba where, having successfully negotiated a herd of cattle, we encountered a Monchiquitic Permo-Carboniferous dyke, a pegmatite vein and an interesting unconformity which seemed to be a block of lower Devonian conglomerate set at a steep angle in amongst the psammitic and semi-pelititic Moine country rocks.

On Saturday evening most of us enjoyed a meal in the Strontian hotel, accompanied by Jim and Alison.

Sunday saw the group heading back on the road towards Lochaline with a first stop at an old quarry. This seemed to comprise of multiple dykes from the Ardgour Dyke swarm (~290 Ma), but hordes of midges prevented us from a prolonged examination of the rocks. Nearer Lochaline we stopped at a forestry road which had exposures of Jurassic rocks (Broadford beds) packed with Gryphea fossils. The limestones have survived courtesy of the overlying Tertiary basalts. Nearby was a road-side exposure of a very blocky Triassic sandstone set on Moine mica-schists, another unconformity.

Limestone containing Gryphea. Ardtornish

Parking at the impressive Ardtornish estate buildings the party then set off towards Tennyson's waterfall. After half a mile of walking we encountered a stream in Jurassic limestones. The virtually dry stream bed allowed us to examine spectacular blocks of limestone packed with Gryphea.

The nearby old lime kiln and quarry attracted the more intrepid explorers amongst us, given that a machete would have more useful than a geological hammer in our efforts to inspect the geology.

Alison inspecting Jurassic limestone beds. Ardtornish

A short distance along the road, a sign indicated that Tennyson's waterfall was awaiting us at the top of a steep, heavily vegetated hillside. After a strenuous pull up the hill we eventually got to the waterfall on the edge of a basaltic lava sill.

Basalt with enigmatic structures Tennyson's waterfall

After a long dry spell the river was less than impressive but some basalt blocks above the river gained much attention with quite unusual structures present. Preferential weathering of different minerals, de-stressing and ice were all suggested as the cause of the striations present but, not for the first time, we were at a loss to a definitive answer to our questions.

Once back at the cars we had a short stop at an old basalt quarry to search for olivine crystals.

Our last day, Monday, was a shorter day to allow us to travel home and so, after taking the Corran ferry, we congregated at the Holly Tree hotel for coffee and chat before the geology began. We walked a short distance to an exposure of kentallenite beside a Lochaber Geopark information board. Jim had shown us a few of these boards and there are, in total, 20 of these very useful boards dotted around the area.

HGS group with Jim Blair at the Kentallen information board

Another short walk to the shore of Loch Linnhe allowed us to see the Dalradian/kentallenite junction and attempt to collect samples of kentallenite, a roughly textured igneous rock with an unusual combination of olivine, pyroxene, magnesium and potassium feldspar.

It was a particularly hard rock to collect samples from and we await Ann's thin sections with interest!

Junction between Dalradian rocks (left) and kentallenite (right)

Thus ended a very enjoyable 3-4 day excursion in beautiful surroundings with our group having seen a large variety of unusual geology; several of the exposures stimulated much discussion and we were grateful for Jim’s time and effort in organising such a successful trip.

Dave