

## Coal to Newcastle by J Saxon

For several years I had contemplated building a patio in my back garden but the size of the job was somewhat off-putting since it involved removing a wall retaining the soil and making a considerable excavation to bring the level down to an existing path.

The retaining wall would have to be rebuilt at a position much further back. I estimated that it would involve the removal of several cubic metres of overburden, which is quite a daunting amount since it had to be done by hand there being no access to bring in a mechanical digger. The wall was removed and digging commenced.

At the back of the excavation I struck bedrock at about 720mm below the surface and the remainder of the overburden had to be removed to reveal the surface of the rock. The dip was 10° in a direction 10° North of west, similar to the dip on the foreshore between Thurso and Scrabster and at Thurso East shore.

It was clearly necessary, if we were to level the site off, to quarry out the bedrock by hand. The top 200mm consisted of dark incaceous shales which were poorly fissile and had to be broken up using a sledge hammer. Below the shales was a bed of grey limestone with a ripple-marked surface. When struck with a hammer it gave off a sulphurous smell, a phenomenon commonly associated with fossiliferous rocks. On removing the limestone layer it proved to be charged with organic remains in the form of scales, bones and plates of two groups of fishes: the osteolepids and the dipnoi, together with coprolites. Early in the excavation work I came on the frontal part of the skull of *Gyroptychius milleri*, clearly a small specimen. About 160mm below the top of the limestone band I came upon a complete specimen of *Dipterus valenciennesi* 410mm in length. The state of preservation of the specimen was reminiscent of those from Weydale quarry. This quarry was unfortunately destroyed as a collecting site by indiscriminate dumping by the late Thurso Town Council in spite of a plea from the Nature Conservancy Council to preserve a small part of it for scheduling as a Site of Special Scientific Importance.

The small exposure in my back garden has a significance out of all proportion to its size. The nearest rocks exposed on the sea shore are the Mey Beds containing mainly *Thursius pholidotus* and *Millerosteus minor*. This exposure is bounded on the east side by a fault which occurs roughly where the steps lead down from Victoria Walk to the promenade and on the west by the fault which produces the scarp overlooking Scrabster Harbour. To the east we have the Spittal Beds of the Kirk Ebb and Thurso East shore and to the west we have the Spittal Beds of Holborn Head. Since the Mey Beds are younger than the Spittal Beds this means that Thurso's Mey Beds must be faulted down.

It was already known that the Scrabster Burn cuts through Spittal Beds of Holborn Head type on the Hill of Forss and that there was therefore a further fault inland, running between the Thurso Fault and the Scrabster Fault but its exact position was not known. Now the small exposure in my garden is of Spittal Beds of the Thurso East type and the field in front of my house displays the gentle undulations which suggests that the cyclothem of this system extend down the hill towards the A836 road. The significance of this is that the fragment of Mey Beds faulted down may be very narrow indeed. There is a very prominent boulder clay escarpment known as the Braes of Scrabster

between Scrabster Burn at Burnside and the oil storage tanks at Scrabster. This may well prove to be the fault scarp against which the Mey Beds are thrown down, confining the exposure to little more than a coastal strip.

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