

Spiers Farm Quarry, Long Itchington, a new exposure of Blue Lias Formation

Historically, the Early Jurassic Blue Lias Formation has been widely quarried in southern and eastern Warwickshire as a source of building stone, agricultural lime and as raw material for the Rugby Cement Industry. In particular, cement manufacturing during the twentieth century provided large exposures of the classic 'Blue Lias' alternations of mudstone and fine-grained limestone (Hallam, 1968), now assigned to the Rugby Limestone Member of the Blue Lias Formation (Ambrose, 2001).

A number of disused quarries remain, but most are poorly accessible. Until recently, Southam Cement Works Quarry, Long Itchington (SP420630) provided extensive sections through the uppermost Triassic (Rhaetian) Langport Member, overlain by the Salford Shale Member (Liasicus up to Angulata Chronozone) and lower part of the Rugby Limestone Member (Angulata up to Bucklandi Zone) of the Blue Lias Formation. Accounts of this section have been provided for example by Clements (1975), Old *et al.* (1987), Ambrose (2001) and Radley (2002). Recently, pumping operations were halted and much of the section is now flooded or otherwise poorly accessible.

A new excavation (Spiers Farm Quarry; at SP425638) is now providing good sections through the upper part of the Salford Shale and a comparable Rugby Limestone succession to that at the flooded site, where Clements (1975) documented roughly 24 m of beds. Preliminary investigations at Spiers Farm have confirmed that the Salford Shale is characterised by tough, grey, laminated mudstones enclosing nodules and bands of fine-grained limestone. Much of the member is sparsely fossiliferous, though body chambers of schlotheimiid ammonites, fragments of ammonite-rich scour-fills gutter casts and a nautiloid (*Cenoceras* sp.) have been collected. As elsewhere, the



Silty limestone scour-fill enclosing schlotheimiid ammonites. Specimen is 129 mm in length.

base of the Rugby Limestone is defined by the incoming of well-developed fine-grained shelly limestone beds alternating with mudstones - the typical 'Blue Lias' facies development (Ambrose, 2001).

As in the adjacent quarry, the lowest few metres of the Rugby Limestone Member are highly fossiliferous, yielding especially oysters (*Liostrea* sp.), regular echinoid debris, oyster-encrusted nautiloids and some ammonites. Large, thin-shelled bivalves (*Plagiostoma giganteum* J. Sowerby and *Antiquilima antiquata* (J. Sowerby)), commonly oyster-encrusted, are common in certain limestone beds; some of which are quite coarsely bioclastic. Ichnofossils are similarly widespread within limestone beds in the lowest few metres, including *Kulindrichnus langi* Hallam and *Diplocraterion* isp.. Preliminary investigations of the succession suggest that some of the most intensely bioturbated and fossiliferous levels mark omission surfaces, *sensu* Sheppard *et al.* (2006).

Above, the remainder of the exposed Rugby Limestone is currently accessible via a series of benches and trench sections, and is revealing many of the marker beds detected in the adjacent disused quarry by Clements (1975; also Old *et al.*, 1987; Ambrose, 2001 and Radley, 2002). These include the Rhynchonella Bed, characterised by abundant small rhynchonellid brachiopods (*Calcirhynchia calcaria* S.S. Buckman) and at least one conspicuous paper-shale. These higher strata, generally less bioturbated and poorer in fossils than the lower beds, have nevertheless revealed *Chondrites*-dominated ichnofabrics and large, poorly preserved ammonites, and additionally mark the appearance of gryphaeid oysters (*Gryphaea arcuata* Lamarck) in the local Rugby Limestone succession. The author hopes to maintain close observation on this site as quarrying proceeds, as it promises to replicate much of the palaeobiological and palaeoenvironmental interest of the adjacent Southam Quarry.

References

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Jonathan D. Radley
Warwickshire Museum, Warwick CV34 4SA,
jonradley@warwickshire.gov.uk