

# UPPER VISÉAN AND LOWER SERPUKHOVIAN CONODONTS FROM THE LOWER AND UPPER LIMESTONE FORMATIONS OF CENTRAL SCOTLAND, AND THE BOWLAND SHALE FORMATION, CRAVEN BASIN, ENGLAND UK

M. T. Dean

*British Geological Survey, Murchison House, West Mains Road, Edinburgh EH9 3LA, Scotland, UK,  
email: mtd@bgs.ac.uk*

Dean [1987] described conodonts from the Lower and Upper Limestone formations (Yoredale facies) of central Scotland assignable to the *Lochriea mononodosa* to lower *Gnathodus bilineatus bollandensis* zones of the standard British scheme. Twelve species were considered to be of biostratigraphical significance and (because the element ranges were unknown) provided the foundation for establishing 2 conodont faunas. The *Gnathodus girtyi* fauna occurred in the upper Viséan (P<sub>2</sub>) Lower Limestone Formation, whilst the *Gnathodus bilineatus* – *Lochriea* spp. fauna characterised the lower Serpukhovian (E<sub>1b</sub>–E<sub>2b</sub>) Upper Limestone Formation. '*Gnathodus*' *symmutatus* was confined to the former whilst *Lochriea commutata*, *L. mononodosa* and *L. nodosa* were dominant species in the latter. At the time, Dean [1987] recognised that the *L. nodosa* P1 element was highly variable in platform configuration, in the development of nodes, and in the disposition of the nodes relative to the carina. He synonymised *L. cruciformis* (found in his specimens) with *L. nodosa*, but noted Higgins [1975] remark that this species may be of stratigraphical value. Present work involves a review of Dean's [1987] P1 elements with particular emphasis on the *Lochriea* lineage present, and a reconnaissance study of conodonts collected from ammonoid marine bands (P<sub>1b</sub>–E<sub>1b</sub>) in the mainly hemipelagic Bowland Shale Formation, Craven Basin, England, UK. The latter study has only just begun.

## References

- Dean M.T.** Carboniferous conodonts from the Lower and Upper Limestone groups of the Scottish Midland Valley // Unpublished M. Phil thesis, University of Nottingham, 1987. UK, 205 pages, 11 plates.
- Higgins A.C.** Conodont zonation of the late Viséan – early Westphalian strata of the south and central Pennines of northern England // Bulletin of the Geological Survey of Great Britain, 1975. 53. P. 1–90, 18 plates.