An ongoing project involving graptolites from the Ordovician of central Newfoundland is producing some useful, and in some cases unexpected, results. The major thrust of the research is aimed at the ubiquitous middle Ordovician black shale (the "Caradoc black shale"), but collections ranging in age from early Arenig to late Ashgill have also been recovered.

Black argillites on Long Island, western Notre Dame Bay, assigned previously to the "Caradoc" shale belong to two stratigraphically distinct units of late Arenig and early Llanvirn age. Graptolite faunas agree well with ages established using shelly macrofossils and conodonts, and are of open ocean affinity. They demonstrate that volcanism on Long Island was entirely pre-Caradoc, and spanned a period of perhaps five million years from late Arenig to early Llanvirn.

Graptolites from Snooks Arm on the Baie Verte Peninsula and Corner Pond at the southern end of Grand Lake suggest two different early Arenig ages (probably lower *D. bifidus* Zone and *P. fruticosus* Zone respectively). Thus there is no one widespread lower Ordovician black shale in the Dunnage Zone. Such localized occurrences of graptolitic black shale are unusual; they clearly represent deposition in partially restricted, periodically anoxic basins, lending support to a marginal plate setting hypothesis, with complex series of back-arc and/or fore-arc basins.

Variation in onset of coarse clastic deposition in the Point Leamington and equivalent greywackes encompasses a maximum of one graptolite zone (perhaps two million years) and probably less. No systematic change across the region may be demonstrated as claimed previously. Graptolites from one interval at Point Leamington indicate a *D. anceps* Zone (mid-late Ashgill) age. These are by far the latest Ordovician graptolites discoveries to date in Newfoundland, and confirm the possible presence of the Ordovician-Silurian boundary within the Point Leamington Greywacke and Goldson Conglomerate.

Most graptolites in the Dunnage Zone have been distorted by tectonic stretching, making detailed taxonomy difficult. This problem is being overcome through digitizing of accurate drawings on a Mac II computer where distortion may be removed and publication-quality images printed on a laser printer. New
Macintosh software now permits high-quality maps and sections to be easily produced which in many cases are indistinguishable from professionally hand-drafted figures (as will hopefully be demonstrated during the talk). Thus the development of Computer Assisted Graptolite Studies is reaching new heights in St. John's, including the possible future development of computer-based identification!