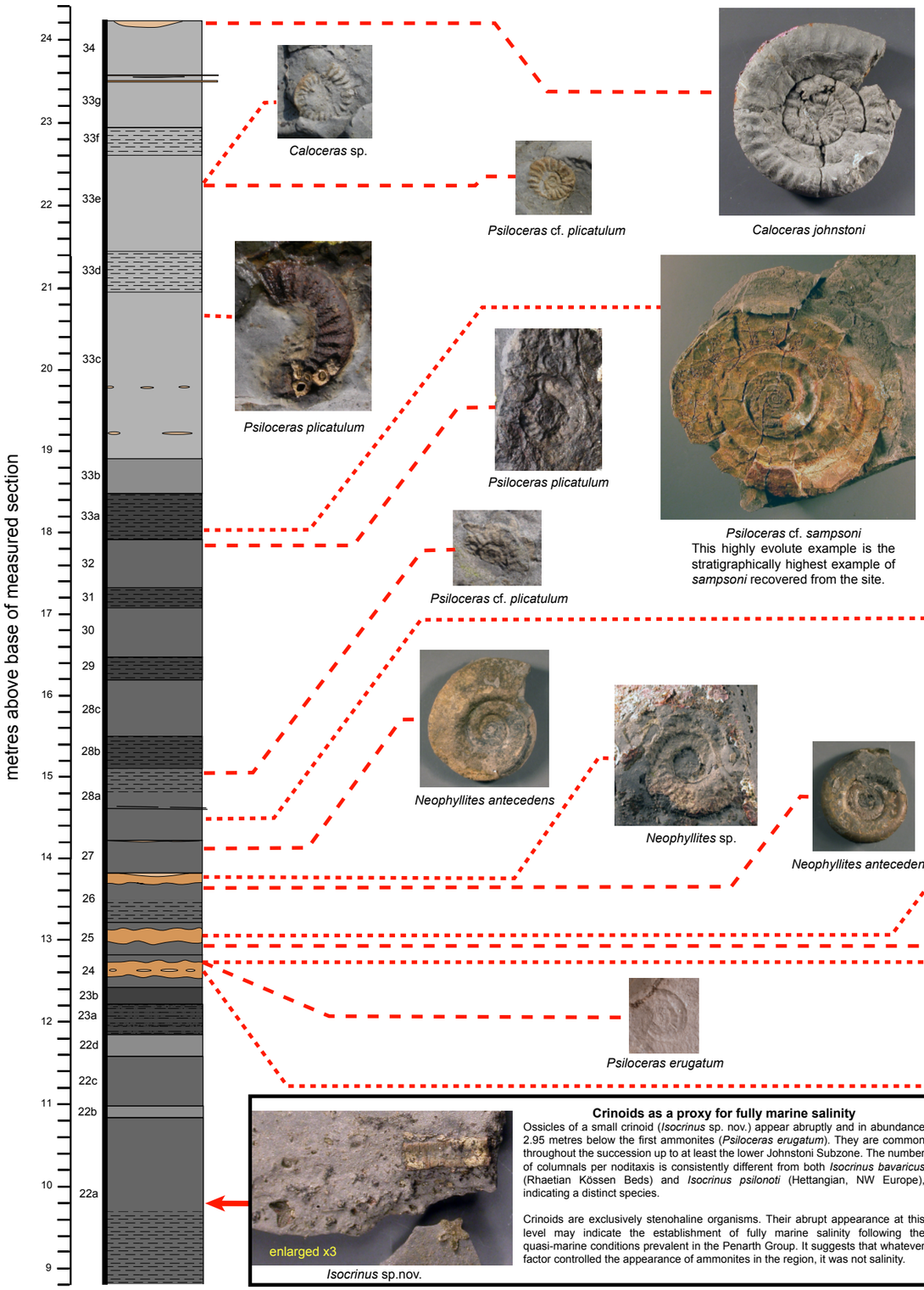
Waterloo Bay, Larne, Northern Ireland: The ammonites of the earliest Jurassic

Michael J. Simms
Department of Geology,
Ulster Museum,
Botanic Gardens,
Belfast BT9 5AB,
Northern Ireland.
michael.simms@magni.org.uk

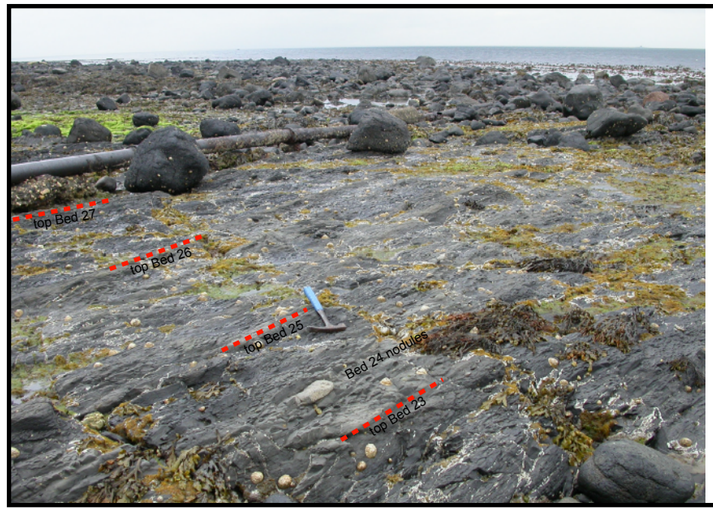
Andrew J. Jeram,
Mullaghdubh House,
27 Gobbins Path,
Islandmagee,
Co. Antrim BT40 3SP,
Northern Ireland.
AnitaJeram@aol.com



Crinoids as a proxy for fully marine salinity

Ossicles of a small crinoid (*Isocrinus* sp. nov.) appear abruptly and in abundance 2.95 metres below the first ammonites (*Psiloceras erugatum*). They are common throughout the succession up to at least the lower Johnstoni Subzone. The number of columnals per noditaxis is consistently different from both *Isocrinus bavaricus* (Rhaetian Kössen Beds) and *Isocrinus psilonoti* (Hettangian, NW Europe), indicating a distinct species.

Crinoids are exclusively stenohaline organisms. Their abrupt appearance at this level may indicate the establishment of fully marine salinity following the quasi-marine conditions prevalent in the Penarth Group. It suggests that whatever factor controlled the appearance of ammonites in the region, it was not salinity.



Ammonites are a conspicuous element of the earliest Jurassic macrofauna at this site. Most taxa are represented by at least some 3-dimensional material, preserved either in pyrite or early diagenetic carbonate concretions.

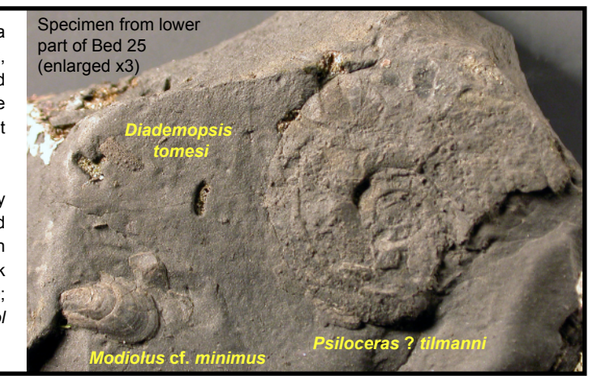
Selected specimens are illustrated here at actual size, unless indicated otherwise.

The strata in the picture to the left encompass the top of the 'Pre-*planorbis* Beds', the *erugatum* Horizon (Bed 24) and the stratigraphic range of *Neophyllites* (beds 25 to 27).

The site has significant potential for designation as a Global Stratotype Section and Point for the base of the Jurassic System. In addition, this part of the foreshore would make an ideal stratotype location for the *erugatum*, *imitans* and *antecedens* biohorizons, for which surface stratotypes have yet to be designated.

A diverse macro- and microfauna (ammonites, bivalves, gastropods, echinoids, crinoids, trace-fossils and occasional vertebrates) is present in the upper Penarth Group and Lias Group at Larne and is currently being documented.

Some published stratigraphic data already exist for fossil macrofauna and palynomorphs through correlative strata in the nearby Larne borehole (Ivimey-Cook 1975, *Bull Geol Surv. G.B.*, **50**, 51-69; Warrington and Harland 1975, *Bull Geol Surv. G.B.*, **50**, 37-50).



To download a copy of these posters, and for further information about the Triassic - Jurassic boundary succession at Larne, visit the website at www.habitas.org.uk/larne

The authors of this poster contribution would be happy to assist any visitors to the site, and freely encourage others to contribute to its scientific investigation.