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Title of article Terminal Ordovician extinction: Geochemical analysis
of the Ordovician-Silurian boundary, Anticosti Island, Quebec

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Henri, Anticosti Island, Quebec

APPENDIX 1. Stratigraphic Section West side of Cap Henri, Anticosti Island Quebec.

Meters above or below (-) Ordovician-Silurian boundary based on conodonts (McCracken and Barnes, 1981).

Becscie Formation

The base of the formation is as revised by Petryk (1981).

2.64 to 2.72 m. Single bed of coarse encrinuritic grainstone. The top has one of the complex of current ripple forms studied by Dixon (1970) and Petryk (1981). Dixon concluded that the structures were formed by currents not waves.

Ellis Bay Formation

Member 7 of Petryk (1981)

0.70 to 2.64 m. Irregular, rubbly weathering; bedding surfaces undulating; only thicker beds persist laterally. Beds 2 to 8 cm thick, alternate with calcareous shaley intervals 1 to 5 cm thick. These interreef beds tongue into bioherms on either side of the measured section. Light olive gray (5Y6/1) to yellowish gray (5Y8/1) to grayish yellow green (5GY7/2). Moderately bioturbated, pelleted wackestone. Bioclasts small, most less than 1 mm in diameter, few fossils are larger than 5 mm. Lower part of unit has the largest fossils. Open marine fauna includes common bryozoans, corals, echinoderms, brachiopods and less common ostracods, gastropods and stromatoporoids. Three cm high favositid coral colonies at 1.88 m.

0.65 to 0.70 m. Two silty calcareous shales with 1- to 2-mm thick laminations are separated by a 2-cm limestone bed.

0.04 to 0.65 m. Irregular, rubbly weathering, beds 2 to 6 cm thick. Light gray (N7) to greenish gray (5GY6/1) to light olive gray (5Y6/1). Packstone or poorly washed biosparite in lower part grades to moderately bioturbated, pelleted wackestone in upper part. Bio-

clasts more than 50% of rock in lower part grading to less than 40% in upper part. Stromatoporoids to 3-cm diameter common. Open marine fauna of corals, bryozoans and brachiopods. Many bioclastic grains are encrusted on all sides by stromatoporoids and algae (*Wetheredella* sp.). Rare burrows 1 to 3 cm in diameter. Insoluble residue (15%) composed of clay-rich medium to very fine silt, 1% pyrite to 0.02 mm diameter, and 1% subangular, very fine sand.

0.00 to 0.04 m. Recessive weathering calcareous clay with calcareous nodules. Acid insoluble residue 40%, composed of silty clay with 1% subrounded very fine sand (quartz, illite, kaolinite and feldspar by x-ray diffraction). This is the clay at the conodont boundary recognized by McCracken and Barnes (1981a).

Member 6 of Petryk (1981)

0.00 to -0.08 m. Upper part of "platform bed" of Petryk (1981). Resistant weathering in beds 2- to 6-cm thick. Medium light gray (N6) to light olive gray (5Y5/2) to yellowish gray (5Y7/2). Packstone with diverse open marine fauna of brachiopods, echinoderms, corals, bryozoans and encrusting stromatoporoids and algae (*Wetheredella* sp.). Bioclastic fragments rounded and smaller (most 1 to 3 mm) than in unit below. No lithoclasts. Insoluble residue 11%, composed of 60% clay and 40% coarse to fine silt.

-0.08 to -0.25 m. Single resistant bed forming basal part of "platform bed" of Petryk (1981). Medium light gray (N6) to light olive gray (5Y5/2) to yellowish gray (5Y7/2). Bioclastic grainstone with abraided open-marine fauna including corals, brachiopods, echinoderms and bryozoans. Many bioclasts encrusted on all sides by thin coats of stromatoporoids (*Clathrodictyon* sp.) and algae (*Wetheredella* sp.). From -0.15 to -0.19 m is a zone with common rugose corals to about 2 cm in diameter. Lower 3 cm has small burrows and very small fossils. Erosional base with 2 cm undulating relief. In lower half of the unit about 10% of the clasts are 1-mm to 2-cm diameter rounded lithoclasts that resemble the

unit immediately below this bed. Spar cement with common enfacial junctions. Micrite envelopes common on bioclasts. Syntaxial overgrowths on echinoderm fragments. In lower part of bed insoluble residue (7%) composed of clayey, medium to coarse silt with 1% sub-angular, very fine sand. Some rugose corals in shale at 1.65 m. Chondrites burrows to 2 mm diameter throughout unit. Spar, where present, has enfacial junctions. Twelve shales from 1 to 5 cm thick have mm thick laminations. Three samples have insoluble residue content of 18%, 25%, and 18% dominated by medium to coarse silt with about 30% clay. A sample near the top of the unit has 5% insoluble residue of very fine, subangular to subrounded sand.

-0.25 to -1.13 m. Resistant with well-defined, undulating bedding surfaces. Beds 6 to 25 cm thick pinch and swell laterally. Light gray (N7) to light olive gray (5Y7/1). Hummocky cross laminated, pelleted carbonate mudstone. Laminae 0.2- to 1-mm thick. Hummocky cross stratification has an amplitude of 2 to 4 cm and a wave length of 10 to 50 cm (most commonly 10 to 15 cm). Vertical burrows 1 cm in diameter which disrupt the hummocky cross lamination are common, especially near top of unit. Some burrows have collapsed, forming an angular breccia, indicating the substrate was firm. Insoluble residue in two samples is 12% and 29%, composed of fine to coarse silt with minor clay. Platy interval from -0.68 to -0.65 m. Two laminated calcareous shale units from -0.92 to -0.90 m and -0.80 to -0.74 m. The latter unit is medium light gray (N6), finely laminated with individual laminae from 0.1 to 1 mm thick; laminae are crinkled on a 0.5 mm scale and the unit pinches and swells in outcrop. The laminated shale has 32% insoluble residue of medium to fine silt with minor clay. Rare vertical burrows 0.5 mm in diameter traverse several laminae. Fossils are rare but some large brachiopods (strophomenids and Hindella sp.) are present in pockets in the hummocky cross bedded units.

-1.13 to -1.18 m. Dark shale bed.

-1.18 to -2.52 m. Poorly defined beds 1 to 6 cm thick; individual beds can not be traced laterally. Rubbly weathering and shaley interbeds. Bedding better defined in upper 40 cm than below. Light gray (N7) to light olive gray (5Y6/1). Lime mudstone with wispy laminae disrupted by intense bioturbation in lower 50 cm. Slightly compressed Chondrites common. Small scale load casts and flame structures rare. In middle of unit bioturbation is pervasive and no laminae are preserved. Bioclasts comprise 1 to 4% of the rock. Insoluble residue (44%) of medium to fine silt and clay.

-2.52 to -2.58 m. Calcareous shale. Not well laminated, but weathers to shaley chips.

Member 5 to Petryk (1981)

-2.58 to -2.72 m. Poorly defined beds 2- to 6-cm thick. Medium light gray (N6) to light olive gray (5Y6/1). Bioturbated, pelleted wackestone. Rare wispy, organic-rich partings preserved where not bioturbated. Abraided, bioclastic grains commonly less than 1 mm in diameter. More than 50% of bioclasts are crinoids; ostracods and brachiopods also present. Burrows to 3-mm diameter common. Insoluble residue (36%) of medium to fine silt and clay; less than 1% pyrite (to 0.1 mm diameter).

REFERENCES CITED IN APPENDIX 1.

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FIGURE CAPTION

Figure 5. Abundances for 14 selected elements in samples collected from section on east side of Cap Henri. Lithologic symbols are same as in Figure 2.

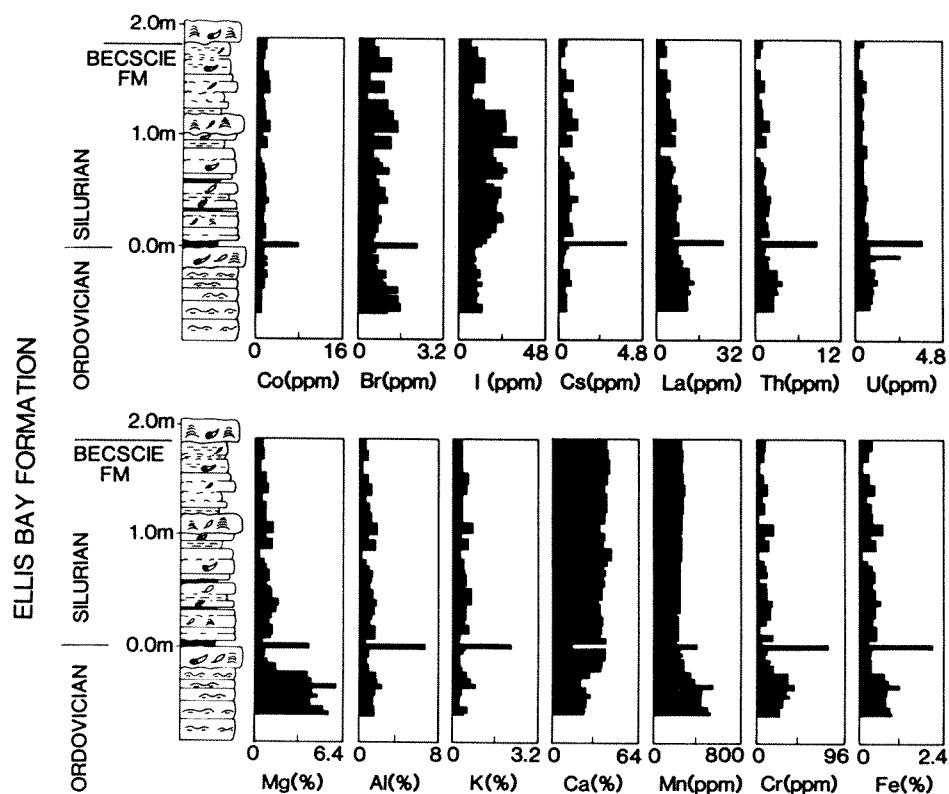


Figure 5. Abundances for 14 selected elements in samples collected from section on east side of Cap Henri. Lithologic symbols are same as in Figure 2.