

**IGCP 493 – THE RISE AND FALL OF THE VENDIAN/EDIACARAN BIOTA**  
**Report on Canadian Activities – 2006**

International Leaders: Dr Mikhail Fedonkin (Russia), Prof. Patricia Vickers-Rich (Australia), Dr Jim Gehling (Australia)

Canadian Leader: Guy Narbonne (Queen's University)

International Activities:

The official meetings of IGCP 493 in 2006 were mainly small-group meetings in Kyoto and Moscow, and no Canadians were involved. The major culminating efforts of IGCP 493 in 2007 will be the publication of a book on “The Beginning of Animals” (John Hopkins Press) and of a special issue of the Geological Society of London on “The Rise and Fall of the Vendian/Ediacaran Biota”, both of which will have contributions by Canadian authors. A paper formally defining the Ediacaran Period (see Knoll et al. 2006 in the reference lists) included one Canadian author (Guy Narbonne). Other Canadian activities in 2006 were aimed at elucidating the fossils and environments of the Ediacaran biota and its transition into the Cambrian.

**Guy Narbonne (Queen’s University)** completed research on Ediacaran oxygen with Don Canfield and Simon Poulton (Denmark) that resulted in a major paper in *Science*. Guy also presented invited talks on the Mistaken Point biota at universities in Australia, Massachusettes, and throughout eastern Canada. **Emily Bamforth** (M.Sc. student) concentrated on taxonomic description of the comb-like and network rangeomorphs, and presented talks on this in Montreal, Kingston, and Calgary. **Lila Flude** (M.Sc. student) studied the bushlike fossils (*Bradgatia*) and a new genus of bush-like fronds and presented a poster on these fossils at the Canadian Paleontology Conference in Montreal in October. **Marc Laflamme** (Ph.D. student) presented talks on Ediacaran fronds in Montreal, Kingston, and Philadelphia.

**Hans Hofmann (McGill University), Art King (M.U.N. and Newfoundland and Labrador Geological Survey) and Sean O’Brien (Newfoundland and Labrador Geological Survey)** continued their work on the Ediacara biota of the Bonavista Peninsula in Newfoundland.

**Duncan McIlroy (M.U.N.)** and coworkers Martin Brasier and Jonathan Antcliffe (Oxford) are continuing their work on the enigmatic Ediacaran discoid fossil *Ivesheadia* in Newfoundland and England.

**Doug Boyce (Newfoundland and Labrador Geological Survey)** has been working on a "vitrines" exhibit for The Rooms, dealing with the *Aspidella* occurrences in downtown St. John's.

**Rob MacNaughton (Geological Survey of Canada)** worked in the Mackenzie Mountains of the western NWT on the uppermost Windermere Supergroup and the basal Cambrian succession, with an eye to clarifying lithostratigraphic correlations in that interval. Rob and **Leanne Pyle (Geological Survey of Canada)** are preparing a chapter on the Windermere Supergroup for GSC's stratigraphic atlas of northern mainland Canada.

Canadian Refereed Scientific Papers (2006):

Canfield, D.E., Poulton, S.W., and Narbonne, G.M., 2006 Late Neoproterozoic deep ocean oxygenation and the rise of animal life. *Science*, Science DOI: 10.1126/science.1135013. [Featured in the "News of the Week" by *Science*, *Nature*, and *New Scientist* (08 December 2006) and as a "Research Highlight" by *Nature* (14 December 2006). Extensive interest in the popular media.]

Knoll, A.H., Walter, M.R., Narbonne, G.M., and Christie-Blick, N. 2006, The Ediacaran Period: A new addition to the geologic time scale. *Lethaia* 39: 13-30.

O'Brien, S.J., King, A.F., and Hofmann, H.J. 2006. Lithostratigraphic and biostratigraphic studies on the eastern Bonavista Peninsula: an update. Current Research, Newfoundland and Labrador Department of Natural Resources, Geological Report 06-1, p. 257-263.

Mapstone N.B.; McIlroy D., 2006, Ediacaran fossil preservation: Taphonomy and diagenesis of a discoid biota from the Amadeus Basin, central Australia, *Precambrian Research* 149: 126-148

Pyle, L.J., Narbonne, G.M., Nowlan, G.S., Xiao, S., and James, N.P., 2006, Early Cambrian metazoan eggs, embryos, and phosphatic microfossils from northwestern Canada. *Journal of Paleontology* 80: 811-825. [Selected as a "Research Highlight" by *Nature* (16 November 2006).]

Canadian Field Guides (2006):

Narbonne, G.M., Greentree, C., Boyce, D., Bamforth, E., Flude, L., and Ward, C. 2006. Earth's earliest animals: The Mistaken Point fossils of Newfoundland. *Canadian Science Writers' Association 35th Annual Conference*. Field Trip Guidebook. June 27th, 2006, 17 pp.

Canadian Conference Presentations (2006):

8 published abstracts (not listed)