

IGCP 493 – THE RISE AND FALL OF THE VENDIAN BIOTA
Report on Canadian Activities – 2003

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

Canadian Leader: Guy Narbonne (Queen's University)

Activities:

Project 493 was approved in the spring of 2003, and consequently has not yet had any formal meetings. Nonetheless, 2003 was an important year for studies of the Ediacara/Vendian biota, as the IUGS Subcommittee on the Terminal Neoproterozoic System voted with an 89% majority to formally establish an "Ediacaran Period". The proposed new system immediately overlies the widespread deposits of the Marinoan glaciation and is characterized by world-wide occurrences of the Ediacara/Vendian biota; its top is the base of the Cambrian. A formal proposal has been submitted to the International Commission on Stratigraphy (Knoll, Walter, Narbonne, and Christie-Blick, submitted), and a decision on ratification will be announced at the IGC in Florence in August 2004. If ratified, the Ediacaran will become the 12th geological period and the first new geological period to be erected and approved in more than a century. Canadian voting members on the TPS Subcommittee are Hans Hofmann and Guy Narbonne (who is also its Secretary and Newsletter Editor).

Canadian activities also included our attempt to obtain UNESCO World Heritage Status for the Mistaken Point Ecological Reserve. An application from the Parks and Natural Areas branch of the Province of Newfoundland and Labrador was supported by letters from paleontologists and geoscientists around the world, and is currently being reviewed by Parks Canada. Early in 2003, a report in *Geology* of the discovery of the world's oldest complex fossils in the Mistaken Point Reserve resulted in considerable interest in both the scientific and popular media worldwide. A recent popular article by science-writer Wayne Grady ("Stone Diaries", *Canadian Geographic*, January-February 2004, pp. 48-56) spectacularly illustrates Mistaken Point and its fossils.

The major international activity for IGCP Project 493 planned for 2004 is a 2-day workshop on the Vendian/Ediacaran biota to be held in late August at the Monash University Centre, Prato, Italy to coincide with the IGC in Florence. The international leaders of IGCP 493 (Mikhail Fedonkin, Patricia Vickers-Rich, and Jim Gehling) will convene this workshop. The first day of the workshop will focus on subdivision of the newly named Ediacaran Period, and the second day will be devoted to discussion of the affinities of Ediacaran organisms.

Two IGCP 493 activities planned for 2005 are scheduled to take place in Canada. In June, a symposium on the Ediacara biota (organized by Jim Gehling and Guy Narbonne) and a field trip to examine the Mistaken Point biota in the Avalon Peninsula of Newfoundland (led by Guy Narbonne, Jim Gehling, and Doug Boyce) will be held in conjunction with the North American Paleontological Convention in Halifax. A symposium organized by the international leaders of the project may also be run at the Earth Systems Processes II meeting in Calgary in August of 2005.

Canadian Publications (2003):

Clapham, M.E., Narbonne, G.M., and Gehling, J.G., 2003, Paleocology of the oldest-known animal communities: Ediacaran assemblages at Mistaken Point, Newfoundland *Paleobiology* 29: 527-544.

Hua, H., Pratt, B.R., and Zhang, L-Y., 2003, Borings in *Cloudina* shells: Complex predator-prey dynamics in the terminal Neoproterozoic. *Palaios* 18: 454-459.

Narbonne and Gehling, 2003, Life after Snowball: the oldest complex Ediacaran fossils. *Geology* 31: 27-30

Wood, D. A., Dalrymple, R.W., Narbonne, G.M., Gehling, J.G., and Clapham, M.E., 2003, Environmental analysis of the late Neoproterozoic Mistaken Point and Trepassey Formations, southeastern Newfoundland: paleobiological and tectonic implication. *Canadian Journal of Earth Sciences* 40: 1375-1391.

Canadian presentations at conferences (2003):

Laflamme, M. and Narbonne, G.M., 2003. Morphometric analysis of *Charniodiscus* from the Neoproterozoic Mistaken Point Formation, Newfoundland. *Geological Society of America, Annual Meeting* (Seattle, WA).

Laflamme, M. and Narbonne, G.M., 2003, Morphometric analysis of the Ediacaran frond *Charniodiscus* from Mistaken Point, Newfoundland. *47th Annual Meeting of The Palaeontological Association* (Leicester, England).

Narbonne, G.M., Gehling, J.G., and Clapham, M.E., 2003, Life after Snowball: the Mistaken Point Biota and the origin of animal ecosystems, *Geological Society of America, Annual Meeting*, GSA Pardee Keynote Speaker (Seattle, WA).

Pyle, L.J., Narbonne, G.M., James, N.P., Dalrymple, R.W., and Kaufman, A.J., 2003, Terminal Proterozoic post-rift history of the northwestern margin of Laurentia, *Geological Association of Canada, Annual Meeting* (Vancouver, BC).

Savage, D.A., Mountjoy, E.W., and Hofmann, H.J. 2003. Terminal Proterozoic stromatolite reefs with shelly fossils, Salient Platform, British Columbia. *Geological Association of Canada - Mineralogical Association of Canada, Annual Meeting*, (Vancouver, BC).