**Small Ediacaran fronds of Mistaken Point**

**Sara J. Mason**, University of Toronto; **Guy M. Narbonne**, Queen's University

The Mistaken Point fossil assemblage of Newfoundland is preserved in situ beneath layers of volcanic ash that smothered the deep marine biota. Dated at ~565 Ma, it is among the oldest known communities of macroscopic complex life. The biota, all soft-bodied, sessile, and epibenthic, are probable stem-group animals that fed by osmosis on dissolved nutrients supplied by bottom currents. Ecological tiering patterns of these fossil communities have previously been described, and are similar to those of recent filter feeding communities. The frond body plan, which generally consists of a bulbous holdfast, a stem and/or axial stalk, and a morphologically complex, foliate section called the petalodium, is common in this assemblage. Because the style of preservation favours larger organisms, the lowermost elevated tier of this ecosystem has previously received relatively little attention. These small fronds have been found to include juveniles of the larger fronds *Charnia*, *Charniodiscus*, and *Beothukis*; the small Ediacaran fronds described from other localities *Primocandelabrum* and Avalofractus; and two new monospecific genera. One has a distinctive three-dimensional, mop-like *petalodium* with secondary branching that defines it as a member of the clade Rangeomorpha. The other is unique in that it is the only Ediacaran frond with no clear evidence of discrete branches within its petalodium; it is characterized instead by a radiating lobate morphology. All of these morphologically disparate taxa follow the same frondose body plan, which shows that this tier of the paleoecosystem was a competitive one that promoted convergent evolution toward this first-order shape.