

**THE WATERHOUSE CLUB
FABULOUS FOSSILS ACROSS CANADA EXPEDITION
4–17 August 2018**

On 4th August, 16 intrepid Club members converged on the 'Courtyard by Marriott' hotel, St John's, the little capital town of Newfoundland Canada. There they were joined by leaders Trevor & Carol Ireland and the Museum's gun palaeontologist Diego Garcia-Bellido.

The expedition was built around inspections of Canada's noteworthy (World-Heritage-Listed) fossil sites matching South Australia's own Ediacaran- and Cambrian-aged Nilpena and Big Gully (Kangaroo Island) locations. To this core was added the iconic Drumheller dinosaur repository, also World Heritage listed, and the Royal Ontario Museum, holder of the nation's core collections from each of the three aforementioned localities. At each of the three field localities the program was expanded to include access to tourist attractions variously of historical significance, providing wildlife interest and scenic attraction, or showcasing American Indian culture. This resulted in an international expedition program which while remaining palaeontologically rich was sufficiently diverse to attract participants and meet their expectations.

The first two days were dedicated to exploring St John's history as the oldest town in Canada (settled since 1497) and claim to fame as the point of receipt by Guglielmo Marconi in 1901 of first trans-Atlantic radio transmission. For those for whom that was all too dry, we also shared traditional Newfoundland 'Screech' ceremony (Google it!). Moving south on the big bus, we enjoyed a marine wildlife cruise (short on whales but filled with Murre, Puffin, Kittiwake and Guillemot (etc), for the ornithologically inclined).



Figure 1: Murre & Puffin Rookery Witless Bay

A fascinating talk by local Ediacaran expert Jack Matthews preceded dinner (cod, of course) lovingly prepared by Carol-Ann and her team at Edge of Avalon Inn.

Day 4, our first Big Day dawns fine and we set out with Diego, Jack and local Parks Canada personnel to the World-Heritage-Listed Mistaken Point Ecological Reserve, home to the world's oldest Ediacaran fossils, their shapes preserved and their age precisely defined by the thin blankets of volcanic ash which ended their lives.

Longish walks through distinctive sub-arctic 'barrens' vegetation to several beautiful exposures of biota, fractal-dominated styles, mostly unfamiliar to our Nilpena-conditioned eyes, on the wave-washed beds of coastal cliffs. The walk and examinations occupy most of the day. Exhilarating.



Figure 2: Mistaken Point

At the sites, don soft blue booties to avoid damaging the exposures, and crawl amongst 620 million-year-old remains of first complex life. Such a privilege.

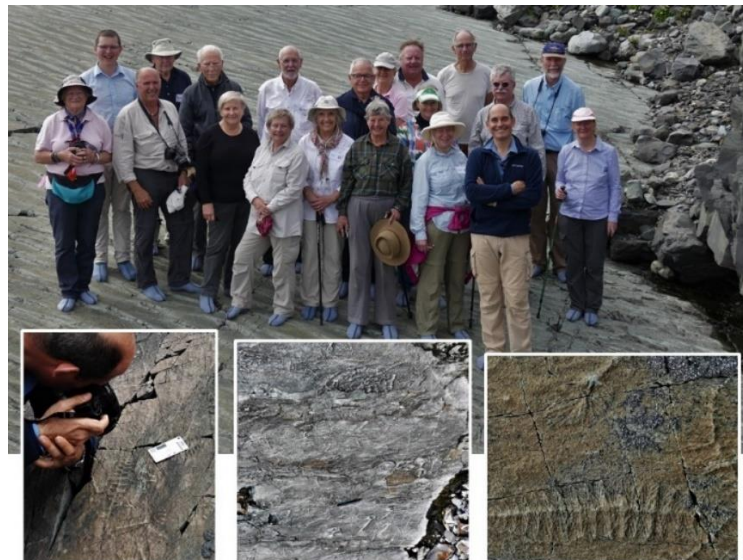


Figure 3: Soft-shoed on the fossil beds

We wrapped up this special day with another presentation, this time from Diego's perspective, to crystallise the comparison with what we know from the Flinders Ranges. Followed by another friendly Trepassey dinner.

Wednesday and Thursday the bus takes us around the Avalon Peninsula – via Salmonier Wildlife Park where moose & caribou, owl and eagle highlight local faunas, in natural environments and on to Cape St Mary's where typical coastal mist casts a mystic shroud over an intense gannet rookery.

Expeditioners deal in good spirit with minor chaos and agree that our diner on the remote southern tip of the peninsula is the closest living example any of us has seen to 'Faulty Towers' – as a party of 19 with a taste for wine and city cuisine is clearly outside the usual range of their visiting clientele.

Next morning is history lesson time as we tour the restored remains of Castle Hill - the 16th Century fort/museum at Placentia, learning about the European arm-wrestle for control of the lucrative cod resource, which in part fuelled the industrial revolution on the far side of the Atlantic. Then it's back to St John's to board Air Canada. Tonight we sleep in slick surrounds in downtown Toronto.



Figure 4: Expeditioners behind the scenes at the ROM

'Intercontinental Hotel' spells 'business class breakfast buffet' before we convene at the nearby Royal Ontario Museum (ROM) for a fascinating morning guided by collections managers through galleries and more importantly the collections and material preparations facilities. We're saturated with stunning examples from the Burgess Shale collections and Canadian dinosaur material. Wonderful. Lunch with our hosts at local café, and take a short afternoon off at the half-way mark. Come evening, city dining is no less sumptuous.

In the morning it's back to the bush, via Air Canada's 3-hour flight to Calgary, Alberta, then time to break in new bus driver Andy, en route to iconic Drumheller, Dinosaur capital of the world. Having jumped a couple of time zones, the day stretches out allowing the party time for a late-afternoon guided tour of the Royal Tyrrell Museum, and a talk by local researcher Dr Francois Therrien, before a late dinner at the Golf Club. The museum is comprehensive in its scope and dynamic in its presentation. A breathtaking assault on the senses



Figure 5: Royal Tyrrell Museum Drumheller

Our itinerary (and our bus) takes us to the improbably named 'Head Smashed In Buffalo Jump' – World Heritage Listed American Indian cultural site and museum where historically members of the Blackfoot tribe would periodically stampede buffalo herd over a cliff for bounteous gathering of meat, skin, bone and fibre to be utilised for all aspects of their lives. It's a concentrated and classy presentation of their pre-European way and post-European transition, housed in magnificent 4-storey building constructed into the face of the

cliff. The town of Brooks is only a couple of hours' drive, and we sleep within striking distance of 'Dinosaur Provincial Park'.

Complementing the Royal Tyrrell at Drumheller, the Park encloses part of a massive glacial valley carved into the Cretaceous sediments of the prairies. Within these so-called 'badlands' are preserved an amazing abundance of fossilised bones of the abundant and diverse dinosaur fauna of the day.



Figure 6: Dinosaur Provincial Park

Our guide Amber, a budding palaeontologist studying at the local Calgary University, bubbles with enthusiasm and she leads us through a number of key locations illustrating the environment of dinosaur lives and deaths. Such is the abundance of material that we find bone fragments underfoot amongst soil and scree, at every stop

Then when she's done, Parks Canada guide David leads us out to a renowned location designated the 'bone bed', from which one of the early famous whole Hadrosaur specimens was obtained, establishing the reputation of this region as a source of seriously significant dinosaur fossil material.

Tuesday (Day 11) is a soft transit day into the nearby Rocky Mountains, their usual dramatic splendour masked by the haze from hundreds of late-summer bushfires, lightning-lit in recent weeks, and most too inaccessible to effectively fight.

Lake Louise lodgings are hospitable and despite the smoke, we look forward to our penultimate day as tourists along the famed Columbia Icefields Parkway – highway between the ranges and the glaciers. Our vision through the morning hints at the spectacular normality, and our excursion on to the ice needs only fine weather and weak sun – which we are granted. Documentation of the retreat of the glaciers is fairly scary. The glass-floor of the 'Glacier Skywalk' extending out into the thin air atop a mighty gorge to the raging torrent almost 300 metres below, gives the best of us more than a hint of vertigo! Home via beautiful Lake Louise to prepare for the Grand Finale



Figure 7: Glacier Skywalk

On our last day the expedition splits into two almost equal teams. Those with the legs and the confidence launch into the 20km day-trek up to Walcott Quarry, home of the famed Burgess Shale fossils, evidencing the population explosion of ~510 million years ago. The remaining team set out on the gentler program devised by Carol and guide Peter Duck to take in the scenic, ecological and engineering wonders of Lake Louise environs.

Starting early from spectacular Takkakaw Falls, The Walcott ascent yields up fascinating detail of flora, fauna, seasonal cycle and more from our guides as we toil up the steadily inclined track, eventually putting the 850 metres of vertical gain beneath us. Attaining the quarry is supremely satisfying – an intersection of historic scientific advances and personal accomplishments. For an hour we study the type specimens stored there and flip rocks to find our own minor miracles, to re-hydrate and to settle our altitude-swooning brains, before stepping out on the return trip.



Figure 8: Scenic Walcott Quarry ascent. Top left view of glacier with 1911 photo (inset) showing ice load now much diminished

Meanwhile the team at lower altitude has penetrated the haze illuminated by Peter's insightful commentary and mastered the history and the mystery of the Kicking Horse Pass spiral railway tunnels.



Figure 8: Emerald Lake walk & train emerging from (while still entering) spiral railway tunnel

The conquest of the mountain took a little longer than scheduled, imposing minor disarray on plans for the final dinner. Temporary disruptions only. Soon the steaks were served and wine flowing, as our band of intrepid expeditioners brought their little saga to an appropriately cheerful conclusion, with reflections on the adventure, plans for the future and acknowledgement of specialists' contributions.