

Voyage to Mars I

Thursday 14 August 2014

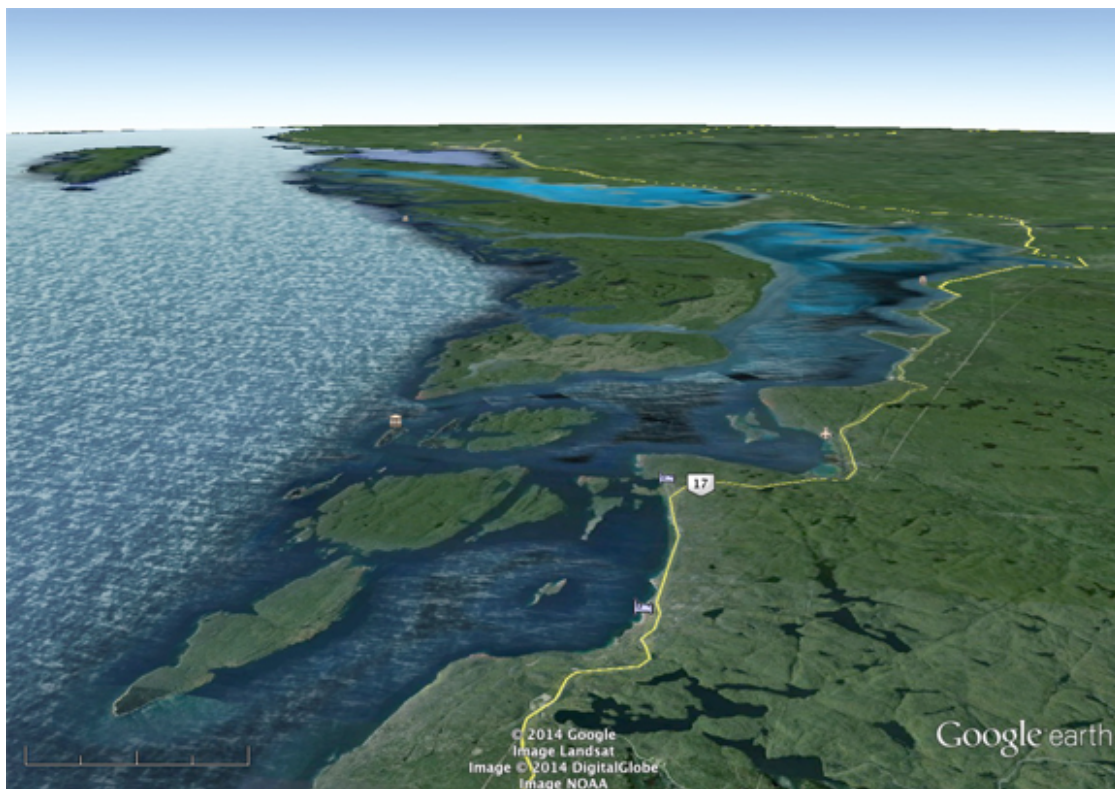
I left Ottawa yesterday (Wednesday, August 13th) at dawn under a downpour. Happily, west of Sudbury, the sky cleared and was mineral blue and sunny right up to Wawa, Ont. that same evening.

The scenery is delightful: road cuts tens of metres high in rock of every colour a geologist could ask for: pinks, greys, oranges, browns, yellows and black, each cross-cutting the other, all of which allows the geologist that I am – and will always be – to come up with an interpretation on the fly thru car windows at 100 km/hr ! I'm really glad I decided to make this trip by road, rather than flying.



A « low » roadcut along the Trans-Canada in Ontario (*Internet*)

Re-launch this morning at ~7.00 from Wawa, under a magnificent clear sky that lasted the whole day. I have to say, the country west of Sudbury is beautiful (Lake Huron), but between Sault Ste Marie and Thunder Bay it is magnificent !! Clearly, geology is the principal factor. When the bedrock is resistant to erosion, there are



North shore of Lake Supérieur – note the Trans-Canada (17)



Lake Superior at Thunder Bay (*skh*)



Overview of the Trans-Canada in Ontario (*Internet*)

superb hills and the road twists and turns. ! Even at 100 km/hr I can attempt to decipher what I see ... volcanic basins that formed ancient sea floors (2.8-2.7 billion years ago) on a light coloured « granitic » basement, itself cut by vertical sheets of dark magma that could have been the feeders to the lavas in the overlying volcanic basins. Reading geology at 100 km/hr is fun !

But it's not just the rocks. The light at 7.00 am over misty lakes is magnificent. As I drive, along the road side I see a family of wild turkeys, a couple of cranes - their eyes delimited by broad bright red stripes - and a red fox who got hit by a car the night before. The shores of the Great Lakes are superb, but there's little point in taking photos : the view is too vast. Better to keep the memory. As a test, I did take photos at Thunder Bay at the Terry Fox Memorial outlook - the best on the Lake. But I don't think they will do justice to what I saw !

Even inland from the Great Lakes, the country is glorious. Between Sudbury and Sault Ste Marie the land is rugged and fascinating. I expected to find a corridor marked by a straight road bounded by jack pine : nothing of the sort ! Uninterrupted sight lines for kilometres - magnificent ! Locally it reminded me of the North Shore that I travelled last year on my way to Rivière au Tonnerre.

The road itself is weird from a European perspective. Away from municipalities – few and far between – cars travel spaced at 100s of metres from each other ... when they're not separated by kilometres. So driving is VERY relaxed : I set the cruise control at 105 – 15 km/hr above the posted limit (but tolerated by the cops) and maybe touch the brakes 20 times per 1000km – the distance I travel non-stop in a day.

This evening is day #2 ; so I have driven 2000km – and I 've braked 40 times since Ottawa !!!

That's all for today... the adventure continues !!

Best to you all ...

Simon (Dryden, Ontario).

Friday August 15, 2014

Arrived at last at Moose Jaw , Saskatchewan (possible deformation of the Cree for warm winds apparently) just before what according to the time zone of my departure from Dryden should've been 6.00 pm, after 11 hours of non-stop driving. But in fact it was 5.00 pm – the same as Ontario time, even tho Manitoba is an hour behind Ontario. You follow me ? You have to understand that Canada is not like other countries. Going west you pass from one time zone to another, but it's neither systematic, nor progressive. This morning, I drove from Eastern time to Central time at the Manitoba border : this I know cos there was a great big sign announcing the fact. But Saskatchewan is the only Canadian province that does not switch to daylight savings time ... so time can in fact advance as you enter Saskatchewan from the East. But I'll then skip two time zones when I drive into Alberta tomorrow. Welcome to Canada !

I left Dryden this morning under a magnificent sunny sky, still driving through rugged country on good quality pavement that twisted and turned, up and down hill, often caught between road cuts tens of metres high, passing next to lakes with their morning mist. At Caribou Lake, I spotted a deer running along the shore right next to the road : happily he did not chose that moment to cross in front of me !

The road cuts were magnificent – at 100 km/hr :

- Sometimes there was whitish « granite », with a horizontal planar structure, that comprises an ancient (~2.8 billion years) terrestrial crust that contains black blocks of all shapes and orientations that, in part, may represent even older parent rock from which the whitish « granites » were derived by melting at high temperature.
- At other times there were equally ancient (~2.8-2.7 billion years) sediments and volcanic rocks, whose layers stood on end (vertical), that represent an ancient sea

floor formed over the top of the whitish « granites », and which later, because of their greater density, sank into the underlying rocks like a serviette pulled thru a table ring.

But enough of rocks, today ; I want to talk about people and their environment.

The roadside signage says a lot about what's important in NW Ontario : regulations regarding protected species during hunting season, rules against the moving of firewood in order to protect forests against disease, calls for the end of violence against women, who to call to get rid of a criminal record etc. There were also announcements for plots of land for house construction from \$29,000 !

Just after passing the north shore of Lake of the Woods – one of the most complex large lakes in Canada – I crossed into Manitoba ... and KAPOW ! : everything changed ! Almost without transition, I found myself in the Prairies – flat as a pancake, with few trees, other than those left by the farms (it's farm country) around their gigantic agricultural fields.

When I say flat – I mean flat ! You could've seen the horizon 360° if there weren't the remaining trees. It's so flat that the Trans-Canada is straight as an arrow : you can see down the road for 10 km in either direction. Not only , thanks to cruise control, do you not touch the pedals, you don't turn the steering wheel either ! The bends are so few and far between that they are all marked on the road map. I have to add that the quality of the pavement took a serious turn for the worse, compared with Ontario. I saw a car by the side of the road : the axle of its two wheel trailer had broken with the road vibration and the wheels were nearly flat on the ground.

Saskatchewan – I crossed Manitoba between 9.00 am and 2.00 pm – is also very much a prairie province in this regard, but it has even less trees. Locally, within a radius of 100 km around Regina, there's not a tree between the Trans-Canada highway and the horizon on either side of the road. Nonetheless, it's pretty spectacular. In places it's so flat that the relief is reversed. Usually we think of relief as positive – hills or mountains stand above the plain - but north of Brandon I could see a river valley in the middle-distance as the only (negative) relief on the prairie. Fascinating !!

In both provinces, the view from the Trans-Canada is essentially agricultural – richer in Saskatchewan though. I was struck by the giant industrial silo complexes that dot the countryside, but not in Manitoba. But in both provinces, I was struck by the enormous trains – 0.5-1 km in average length !! The longest was 2-3 km with 3 locomotives at the front, two in the middle and another near the rear. Each wagon was loaded with two full size containers. Trains like these can only exist in flat country, and must take kms to stop !

But let's change subject. This prairie « flatness » is – in my humble opinion – responsible for certain regional character traits that set the Prairies and their inhabitants apart on the national scene. Allow me to elaborate - somewhat tongue in

cheek :

- Let's start with the Trans-Canada highway, which at the provincial border, after having been route 17 for ~2000km, now becomes route 1. In Ontario, it's a narrow road with one lane for coming and the other for going. But once on the flat, it becomes a 4 lane divided highway with a median, and posted speeds go up from 90 to 100 km/hr. Why the change ? Cos you can see for tens of km down the road so folks assume a sense of security. Fair enough, but this gives rise to concepts in the realm of road planning that leave common sense behind. Imagine, if you will, the Ottawa Queensway or a French autoroute, but with 4 lanes, where the traffic runs at 110 km/hr. Now add traffic lights here and there, and side roads (99% of which are dusty unmetalled farm roads) which join the Trans-Canada at 90° without the benefit of off- or on-ramps. Double-rig bulk carriers on these side roads cross the Trans-Canada, they turn into the Trans-Canada traffic, but they also do so after crossing the median ... which means they merge into the fast lane ! The clouds of dust they kick up on the farm roads drift onto the highway : in places it's like driving thru thick fog – you have to slow down !! In addition, you're encouraged to cross the median either to do a U-turn or simply to turn left ... which implies that you slow down in the fast lane to do so ! Good grief : what imbecile came up with this model for this hellish highway road system ? It's the same thing in Saskatchewan ... whence my reasoning that it must have something to do with a deformed or displaced agoraphobique reaction to the vast horizons all around that are the essence of the Prairies.
- But there's more. There's something very special about Manitoba. Let me be clear – I know lots of Manitobans whom I appreciate greatly, though my experience is mostly confined to mining communities in the North. But when I see a prefab house taking up both lanes of the Trans-Canada at 60 km/hr, I have to ask how come no one understood that a prefab is built at its destination, not in the factory !!
- Farm tractors and combine harvesters using the Trans-Canada at 10 km/hr in traffic moving at 110 !!
- What can I say regarding the Chinese pedal rickshaw that was casually rolling along on the Trans-Canada highway just outside of Winnipeg?
- But what struck me the most was the driving of Manitobans on the Trans-Canada highway. Everyone drives at 108 km/hr when the posted speed is 90 – fair enough. It's the way they overtake that's really dangerous. Everyone drives with cruise control, but they overtake with it too. You're doing 108, they overtake at 109. It's not so much overtaking as watching a shadow creep across a sundial as the Sun moves across the sky. OK – so what ? But then instead of sticking to the left lane to get well ahead of you, they pull right across you about 10-15 m in front of your bumper. even when there's no-one closer than a km behind them in the left lane. So you have to slow down, and fast ! They all do it, which makes you wonder if it's part of the highway code they teach at driving school. Interesting observation : all the cars from

Nova Scotia, Ontario, Saskatchewan and Alberta who overtook me in Manitoba did so in the manner dictated by common sense. Second observation, cars with Manitoba plates drove « normally » once they were in Saskatchewan. It's truly bizarre – and I didn't make this up !

- Something I just don't get : unfailingly, contrary to Ontario and Saskatchewan, small towns in Manitoba seem to refuse to indicate what services they might offer ; for example gas, food, motels etc. It's as tho they really don't want you to contribute to their economies.

In short, to be honest, I was happy to leave Manitoba and to enter Saskatchewan.

At the end of 10 hours at the wheel I was ready to stop in Regina, but all the motels were on the Trans-Canada where it enters the city and the road becomes an 8 lane highway and traffic jam. I opted to continue to Moose Jaw, which is where I am this evening in a hotel room as big as the ground plan for many a small house

But I really can't complain. I saw aspects of Canada I did not know, I learned lots of things, I saw lots of diverse country, and I had a blast ... and in addition I'll sleep well tonight. !

Best to you all ...

Simon (Moose Jaw, Saskatchewan).

Saturday August 16, 2014

This evening I arrived near Canmore, in the Rockies , west of Calgary after 9 hours of driving. I left Moose Jaw at around 7.00 am in a mist that extended across the Prairies to the horizon (at least I think it did, I couldn't see the horizon, by definition !). But after half an hour of driving, the ceiling lifted and the Prairies were once again visible.

To summarise the trip between Moose Jaw and Calgary, it's true that the terrain is flat, more or less. But in places there are enormous patches of moderately hilly ground made of aligned, elongate bumps piled one upon the other. These are « drumlins » : mounds of sand and gravel molded by the action of flowing ice at the base of an ice sheet, 4 km thick, that covered Canada until ~10-15,000 years ago. These hummocky areas extend to the horizon in all directions and contain up to 100s of 1000s of drumlins. Then, kms down the road, we're suddenly back in the Prairie plain. This alternation of topography is repeated many times between the two towns.

I think that the best example of drumlin terrain today was just west of Moose Jaw. These low hills covered with stubble after the wheat (short stalk variety) has been harvested resemble the upturned tummies of a pack of teddy bears on their backs !



Drumlins west of Moose Jaw and the ubiquitous duck ponds – note also the Trans-Canada (1)

With this new terrain began yet another new human perspective. First, the presence of cattle grazing outside : from the Ont/Manitoba border I'd been seeing bales of hay everywhere – they even harvest hay in the central median of the Trans-Canada ! But where were the cattle ? Undoubtedly in industrial hangers standing on metal grids ! In addition, in the small hollows between drumlins were small duck ponds, all inhabited by small black water fowl, too small to be ducks – maybe moorhens ? These ponds certainly have their cute charm. In short, a gently pastoral scene. At the same time, the Trans-Canada was bordered by masses of pretty yellow flowers that look like either small sunflowers or large daisies with black centres. They should be declared the provincial flower in either Saskatchewan or Alberta, instead of the red lily or the wild rose, of which I saw nada !!

Driving west I saw lots ! Between Moose Jaw and Swift Current, Saskatchewan, I came upon huge piles of white stuff – like salt says I. Hah, no – I think it was phosphate being mined at surface : impressive ! From time to time I would spot some larger lakes by the road, but they were pretty sad : nothing to compare with the hidden intimacy of the Ontario lakes.

Just prior to and passing the Alberta border, everything changed yet again. All of a sudden I realised that the Trans-Canada was running along a wide, flat-floored, fluvial valley bounded by erosional terraces – the opposite of the depositional



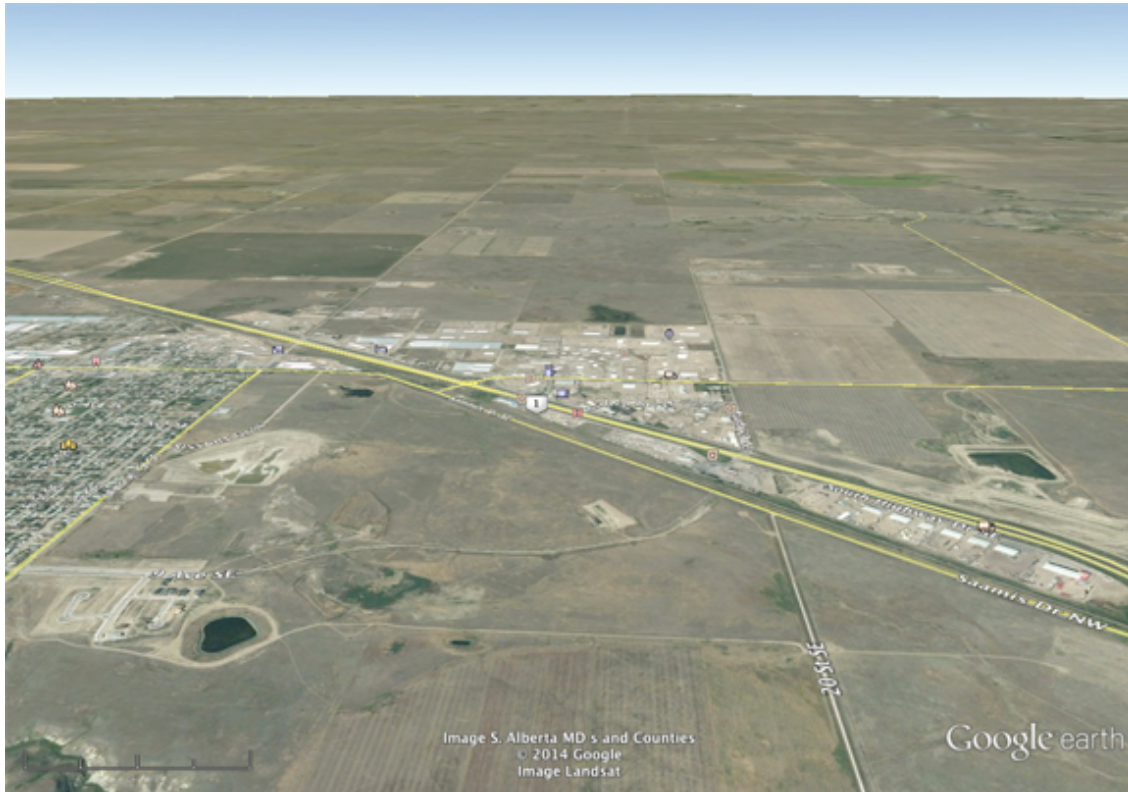
Alkaline lakes at Chaplin, between Moose Jaw and Swift Current – note the Trans-Canada (#1)

drumlin terrain. Then, arriving at Medicine Hat, the terrain was once again flat, but with minor undulations – and remained so until Calgary. What changed between the two cities was the total absence of trees around Medicine Hat versus the increased density of farms around Calgary who protected themselves from the wind by planting trees as wind-breaks.

As an aside : despite their exotic names, Moose Jaw and Medicine Hat aren't worth the detour. They're just like any other town, anywhere, adjacent to a highway !

The other major change on entering Alberta is the increasing presence of donkey pumps, accompanied by small pipes in the form of an inverted U. I really don't know what purpose the pipes serve, but they pepper all fields at 1 km spacing (Martin tells me the pipes are related to gas production). It has to be said that these installations are relatively modest and discrete and do not spoil the scenery. In addition, the presence of abundant waterfowl in the rare natural duck ponds, which are fed by groundwater, shows that the development of hydrocarbons does not deleteriously affect the water table.

Finally, I arrived in Calgary, but I was not going to stop there : I've spent too much of my professional career in the hotels and motels of Calgary. So I pressed on toward Canmore in the Rockies (I'll describe that terrain tomorrow) – but without much hope of finding a room : it's the weekend and Calgary heads for the mountains !! So,



Prairies near Medicine Hat – you can see the Trans-Canada (1)



Dead Man's Flats, Alberta by the Trans-Canada

just 5 km before Canmore, I found a room at Dead Man's Flat (!!) where I'll stay for 2 nights prior to pushing on to the next stage in the adventure. There's also a cute « hippy » restaurant next door which serves a delicious curry and a nice white wine ! So, I got lucky !

Before finishing tonight : I still got the time zone story wrong yesterday. Arriving in Alberta there was no time change from Saskatchewan ... nor here near Canmore. But the time zone will change when I push further into the mountains. We'll see ... !!

Best to you all ...

Simon (near Canmore, Alberta).

Sunday August 17, 2014

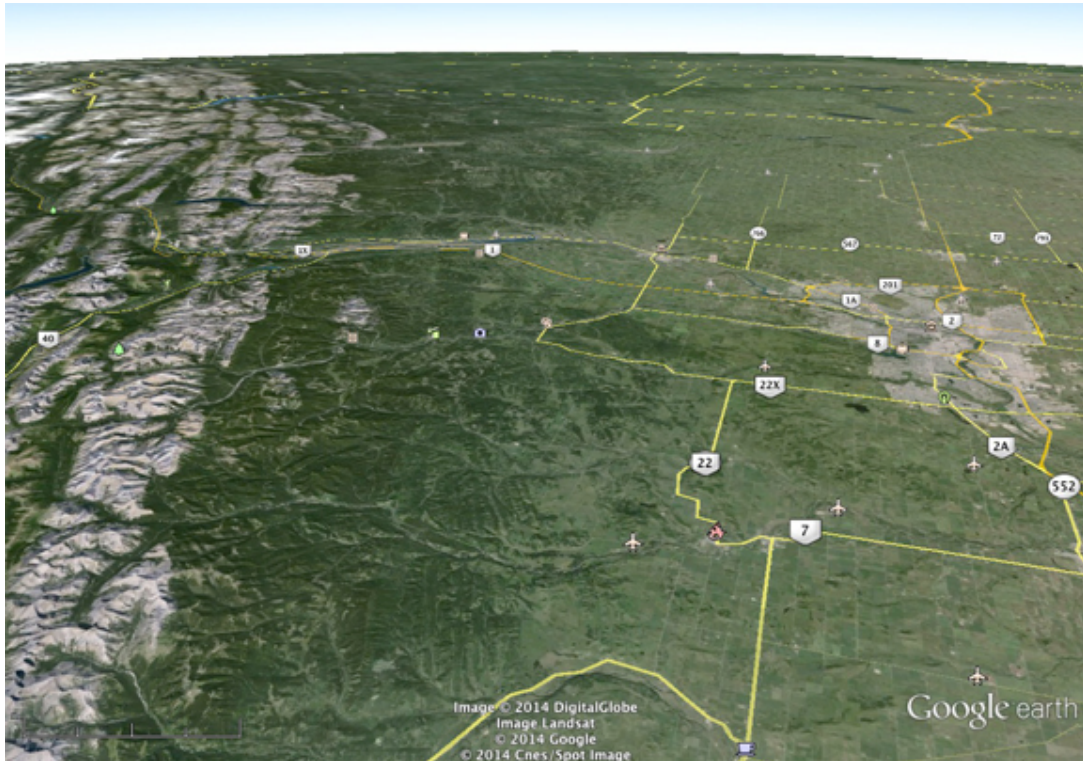
Well, given that I have scooted across Canada way faster than I foresaw, I am in a holding pattern prior to proceeding to the next stage of the adventure : so, what is that next stage ? Those not already in the know will have to wait and see ! Whatever, I'm spending my second night here near Canmore – so I decided to investigate locally.

Last night it rained – and this morning the clouds were low over the summit peaks. So I decided to head back towards Calgary to better scope out the terrain between that city and the real mountains.

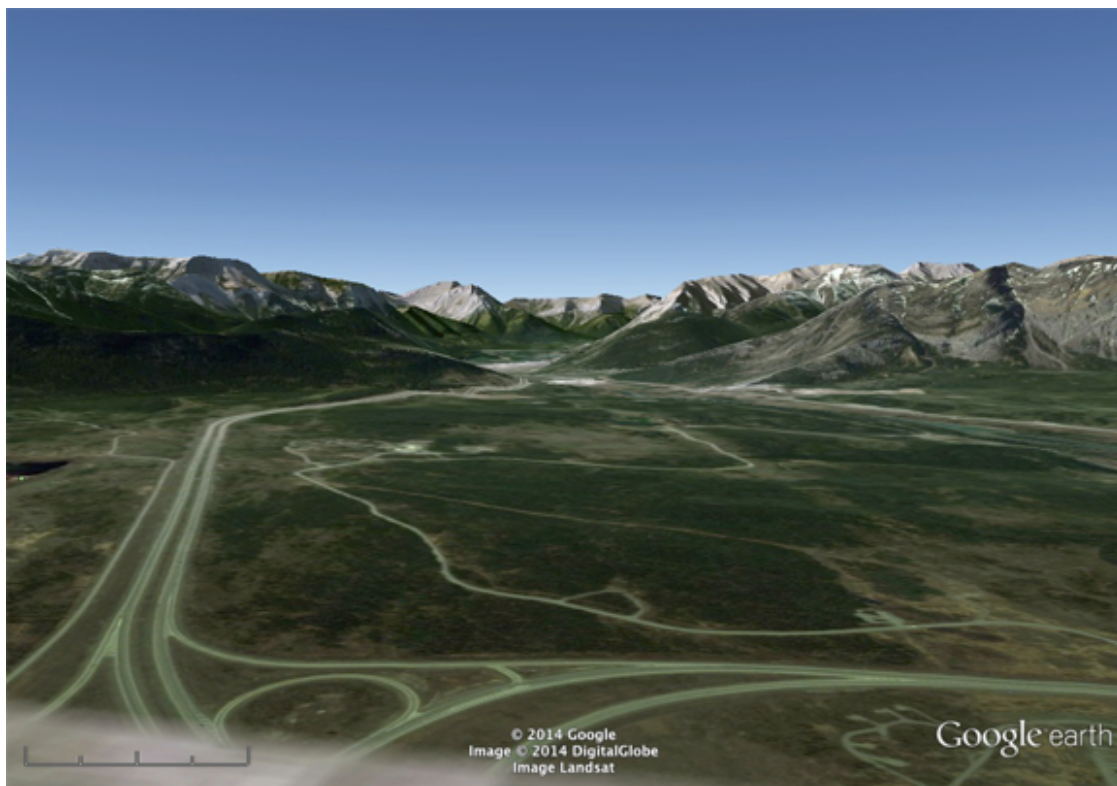
West of Calgary yesterday, the scenery changed dramatically : from the flatness of the Prairies I entered a topography dominated by very obvious ridges, oriented N-S, parallel to the mountain front – that I'll describe momentarily. These ridges, farmed, represent geological structures – associated with faults – that make up the foothills of the Rockies : but you had to know that in advance cos there's no bedrock exposed at the surface.

Then – WAMO ! – the front of the Rockies rises suddenly from the lowlands. If I recall correctly, the « front » coincides with the McConnell thrust fault that marks the change from foothills to the Rockies proper and extends all the way from northern BC to the States. So, despite the poor weather, I managed to get some pretty good photos of the front today.

At the same time, I was able to get to see what Martin – a friend with whom I had the great pleasure to work with extensively at the Geological Survey of Canada and who is on this mailing list – had indicated off-line yesterday to be the type examples of drumlins immediately adjacent to the Trans-Canada, several 10s of km east of here. He's right of course – he usually is - but these text book drumlins are separated from one another : a great teaching example, but I prefer my piled-up drumlins west of Moose Jaw – esthetically at least !



The Foothills (dark green) to the Rockies – Calgary to the right – and the Trans-Canada (1)



The mountain front, the Rockies – and the Trans-Canada



Individual drumlin – Morley Flats – next to the Trans-Canada (*Internet*)

So I said to myself, since I'm here and the weather this morning wasn't ideal, let's go into Cranmore and find out what all the fuss is about. It's an alpine-style ski-village such as one can find elsewhere – buildings in chalet style with lots of wood, shops selling knick-knacks, cafés, restaurants etc etc, but larger than most and more elaborate. Folks, mostly Calgarians out for the weekend I think, were in shorts and fleeces pretending not to be cold, whatever the weather : and I understand ! There were those in spandex who were running or cycling on the lower slopes – it's certainly the place to be doing it ! – and those who were simply there to shop and eat outside of the big city. What's striking – and very attractive – is that everywhere in the streets you can see the mountains of the Rockies : impressive ! And yes, I got lots of photos !

Well, so much for today : slow and quiet – I needed it !

Regarding the determining factors – and my confusion – with regard to time zones, I finally saw the light. I had been assuming that the time indicated by my laptop was Ontario time, without realising that it was changing time zones automatically as I travelled west. So, here's a great link that sorts it all out !

<http://www.worldtimezone.com/time-canada12.php>



Canmore – « down-town » with low cloud (skh)

Best to you all ...

Simon (Dead Man's Flats, near Canmore, Alberta)

PS : The origin of the name according to Wikipedia ...

A variety of explanations account for the origin of the hamlet's name. One explanation associates it with a murder which took place in 1904 at a dairy farm situated on the flats of the [Bow River](#). Francois Marret stood trial in Calgary for killing his brother Jean, whose body he had disposed of in the Bow River, but the jury acquitted him by reason of insanity.^[3] Another account states that two or three [First Nations](#) people who were illegally trapping beaver noticed a warden approaching in the distance. Knowing that they did not have time to flee without being spotted, they smeared themselves with beaver blood and pretended to be dead. The warden, fooled by their deception, ran for help. Meanwhile the trappers took their beaver pelts and escaped. This account is regarded as dubious; for example, no known description of this incident appears in the official wardens' reports.^[3] In 1954, the [Calgary Herald](#) wrote that it was "named only 10 to 12 years ago after a man was found shot in a cabin in the area."^[4]

PPS : I got something else wrong yesterday – I said that I saw phosphate between Moose Jaw and Swift Current. I had mispoken, I meant potash. However, it's neither one nor the other ; it's sodium sulphate – a salt derived from the second saltiest lake in Canada !!

Monday August 18, 2014

So here I am near Field, B.C., east of Golden.

Yesterday, for the entire region west of Calgary – and especially in the mountains – Mr Weatherman was forecasting thunderstorms and plenty of rain, plus low temperatures. Regarding rain, he was right : but only on Saturday night. Sunday there was a lot of low cloud and it was indeed cool : $\sim 15^{\circ}\text{C}$. But towards the end of the afternoon, the sky began to clear – and here we are today (Monday) under a mineral blue sky for the morning, and generally sunny during the afternoon at 24°C !! Can't ask for more !



Canmore – down-town with morning sunshine : limestones (*skh*)

What was really obvious today was that, with the low, early morning Sun, and the transparent atmosphere after a cool night, the Rockies really stood out sharply

against the azure sky. But as the morning wore on and we got closer to midday, there was more and more humidity that rendered the mountains somewhat fuzzy – especially in the distance.

As I've crossed Canada at 100 km/h I've been acutely aware of the chance life dealt me in guiding me into geology early in my mid-teens. As I traversed the diverse terrains of Ontario, then the Prairies, and now the mountains, I derive great pleasure from the sense that I can read the topography and the geological elements that underpin it like the pages of a book. I don't mean that I can scope the details at 100 km/h, just the broad outlines of the geological history as the country side flashes by. It's the same in the mountains, except that here you can see it all in the enormous slopes where the bedrock is 100% exposed and in 3D.



Rockies : limestones near the entrance to Banff National Park (skh)

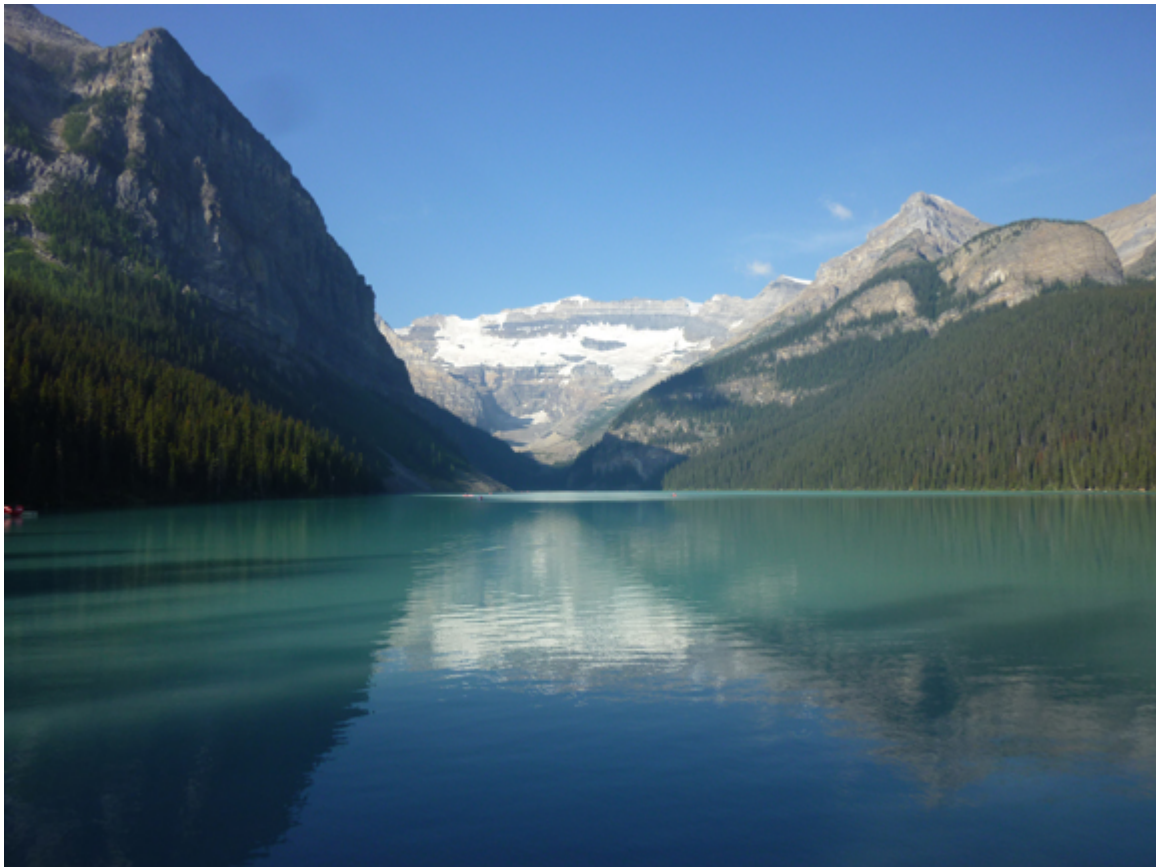
Luckily for me, I've been here before on geological field trips – although I can't recall the details of either the formation names or the principal faults – and there's lots of both !! But I can recognise the fundamental components of the Rockies :

- All around Canmore the dominant rock type is white limestone (a sediment that forms on the sea floor) that makes up the tall mountain peaks, flanked by near-vertical slopes, all devoid of vegetation up on high. Even in the streets of down-town Canmore you see them everywhere you look ! Between Canmore and around the entrance to Banff National Park the mountains on either side of the Trans-Canada

unequivocally show the presence of enormous folds, kilometres across horizontally, inclined toward the East.

- Beyond the Park entrance you begin to appreciate that the bedrock is progressively changing colour, with beiges, light browns, dark greys. But you also see that they are still sediments that were formed under water (they're layered – what's called bedding – just like the limestones).

So what does it all mean ? Well – skipping over the details – these sediments represent the evolution of the margin of the North American continent hundreds of millions of years ago. The limestones formed in shallow seas on the ancient continental margin. Going westward we move away from the continent toward the ancient ocean, where more sandy and other fine grained sediments (with clay) were deposited. I don't think that the sandstones and shales that I saw today represent the ocean floor proper : more likely they formed on the slope that formed the outer edge of the ancient continental shelf – the remains of the ancient ocean are found much further west in B.C. The origin of the Rockies as a mountain chain is to be found in the fact that the more ocean-ward part was transported on thrust faults over the more continent-ward part – i.e. transport towards the East, which also explains why the folds I talked about above are inclined toward the East too – in response to the action of tectonic plates, tens to hundreds of millions of years ago.



Lake Louise – simply stunning ! (skh)

So, enough of geology (tho I can't get enough of it !). No, I'm here as a tourist. So today I hit the tourist high spots : Lake Louise and Moraine Lake, which are simply spectacular !! I couldn't do them justice in words here – but I did take lots of photos that I'll show you. As you can imagine, getting to and parking at Lake Louise was quite the challenge, but at least it was well organised. There were bus loads of Chinese wandering casually, and hordes of younger local folks out for some serious and delightfully picturesque hiking. And the lake itself was stunning !!! But Moraine Lake was hell ! I couldn't park, but in the traffic jam in the totally inadequate car park (I wouldn't mind, but the majority of vehicles filling the parking spaces had no Park Permit sticker ! ... I did !!! : what's the point of a permit if you don't police its implementation ?) I was able to take some excellent photos of the mountains while sitting in the idling car. Whatever, even Moraine Lake was worth the attempt !!



Parking at Moraine Lake ! – mountains made of sandstones and shales (*skh*)

Then I continued towards Field – that I passed in order to get to Golden in search of a few bottles of real B.C. white wine in a provincial liquor store – that I found without difficulty (I must have a flair !). I should add that the road following the Kicking Horse River down to Golden is magnificent ... but way too dangerous to risk taking photos. Thence, return to Field.

So ... now the \$60K question : why have I come to Field ? Well, it's my first official port of call on my adventure – in other words, the first where I had reserved my

hotel room in advance. I've come to Field to see the Burgess Shale, a geological formation some 505 million years old that contains a global fauna that was totally obliterated several million years after it first appeared (no-one knows how or why). This fauna was frankly bizarre both to our modern eyes, and compared to life



Great Divide Lodge (aka Lake Louise West) (skh)

that followed it in time. But, the key to the story is that among the animals of the Burgess Shale was one with a very primitive spinal chord – and there are those who say that this creature could be the ancestor of all vertebrates – including us. So the question is, had this beast not survived the extinction of its friends and neighbours, would we be here today to talk about it ?

To see the Burgess Shale you have to undertake an organised and accompanied hike into the mountains. It's out of the question to pick up fossils and keep them – something I'm all in favour of : hey, I'll have my camera, right ? !

OK, tomorrow I'm going to drop in on the hike organisers : I've already reserved my place since February ... otherwise I'm taking it easy tomorrow. For those in the know, I'm staying at the Great Divide Lodge (also reserved in advance) – I didn't want to stay in Golden.

Best to you all ...

Simon (just east of Field, B.C.)

PS : Mike Moghadam referred me to the spiral trains lookout en route to Field. Mike – I hate to be the bearer of bad news, but your favourite lookout is still there, with tens of little announcement boards telling us what we would see if they would just cut a useful hole in the damned wall of jack pine that has grown since you passed this way. Rarely have I seen anything quite so daft !

Friday August 22, 2014

Well, it's been 4 days since my last report – and with reason ! I was tuckered out, my legs were stiff, and my email woes persisted.

Tuesday, the 19th, I was Zen ! A visit to the Burgess Shale Research Foundation to say hello and to check that we were still going the next day, despite the discouraging weather forecast.



The Rockies seen from the Burgess Shale « quarry » *(skh)*

So, Wednesday the 20th, we set out with our young guide to see the Burgess Shale.

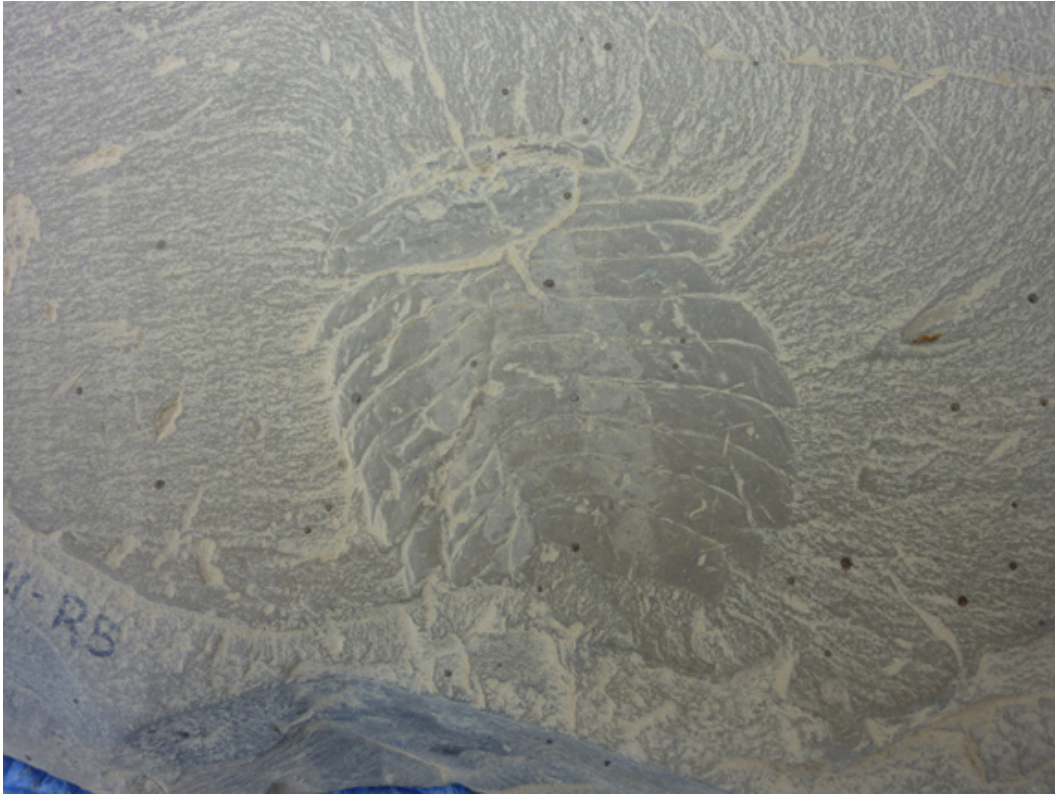
We were six hikers (old folks – 60 +) : me, an ex-geologist, an oceanographer – both from LA – a Swiss surgeon and two women, one of whom introduced herself as a « housewife » (the wife of the Swiss) : OK – no comment – but it was a good group. We left at 7.00am and came down by 7.00 pm : it was long, but it was superb ! We had to climb 750m to reach the protected « quarry » where these magnificent fossils reside.

We started out in a forest of tall pine, under low clouds that lifted whenever we got to a spot where the trees parted and we could get a good look at the mountain sides – totally bare of any vegetation so we could readily see the « stratigraphy » : that's the sequence or piling up of ancient sediments. In addition, the Sun shone on those mountain sides just at the instants we were ready to take photos. For me it was simply stunning. Not only could we clearly see the layered sediments, but we could also see folds and many small thrust faults that had shuffled them.

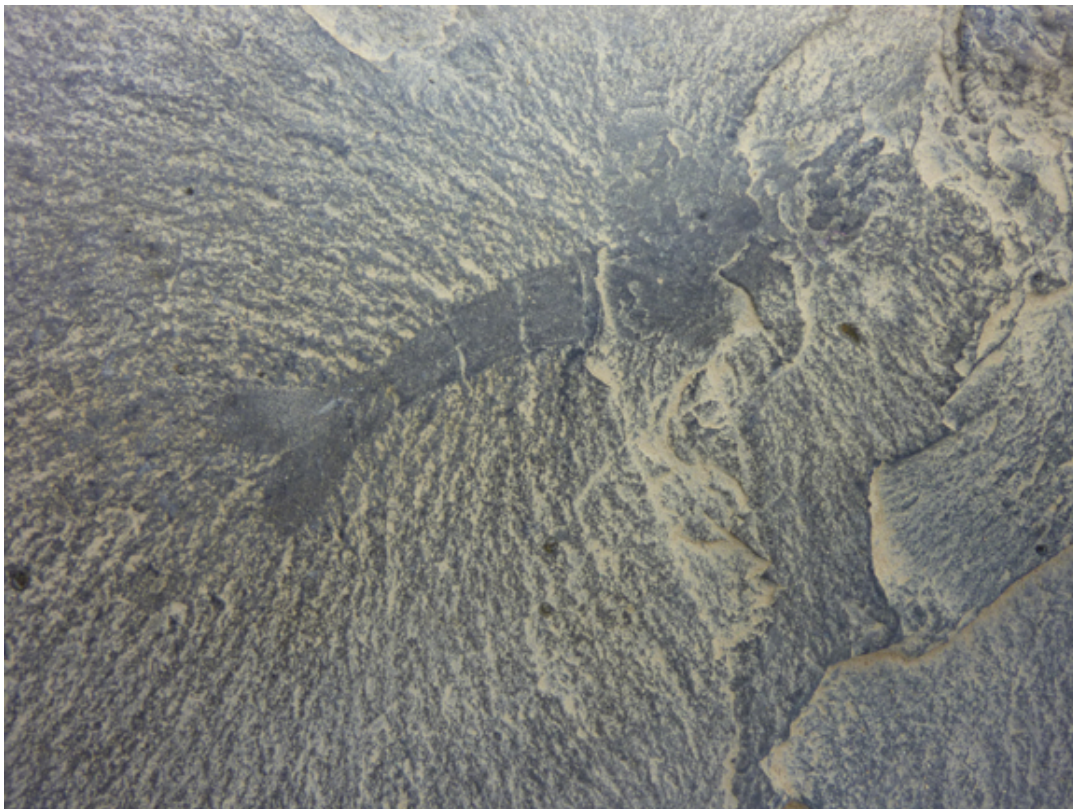
Once we arrived at the « quarry », I was over the Moon !! First, the sky was magnificent. In addition, they had set aside about twenty fossils in excellent condition that they keep in a metal cabinet under lock and key, which our guide presented to us with much explanation and discussion. He laid them out on the ground and we were free to handle and photograph them as we wished. This was already fantastic. Then we started rummaging in the piles of loose rock to see if we could turn up new fossils : and we did !! Our specimens were added to the small piles that had already been started by those who had preceded us this summer. To be there – me – before this scientific treasure, under open skies, really touched me. What a fantastic experience – and I had waited 20 years to do this. As you may imagine, I took lots of amazing photos ... and they worked !

Coming down was a bit harder for me : my boots that had rendered good service hiking in the hills north of Ottawa turned out to be just a tad too tight in these mountains. My feet hurt ! Back at the hotel that night I found that my toes on one foot were a bloody, blistered mess ! Doh ! It's going to take a few days, but they are healing – and it was worth it !!

OK, Thursday 21, I set off at ~7.00 to Golden, where I crossed into yet another time zone (6.00), and turned south down the Rocky Mountain Trench that separates the Rockies to the East from the interior of the Cordillera to the West. In the mountains, I find my classical music playlist more appropriate than the other one which goes from Pink Floyd to Tri Yann !! (you need to know something about Breton music to get that one !). The valley extends to the US border and beyond. I have to say – although impressive by its size - under cloud the valley is rather drab. Contrary to the Rockies, here the mountain slopes are covered with tall pines. With solid high cloud, plus low cloud that seems to stick to the hillsides between the mountain peaks and the valley floor, it resembled something out of an impressionist artist's portfolio : moody ! Michèle would not have appreciated : too much like the Vosges in France, that she never liked !



One of the Burgess Shale fossils – photographed in the « quarry (*skh*)



Another of the Burgess Shale fossils – photographed in the « quarry (*skh*)



Rocky Mountain Trench – looking north

Well, things became entirely Vosges-like to the south of Cranbrook, where I headed SW towards the international border.

Culturally speaking, I have to say that – with the exception of the few small towns like Radium, Invermere and Windemere (the influence of northern English emigrés in the 19th century) – this valley is not rich. Lots of shacks in need of several coats of paint, few farms worthy of the name, and people living in trailer homes in need of TLC. In fact, the overall impression was of an empty, impoverished land. Maybe that explains the plethora of Provincial Parks : an attempt to provide work and shore up the local economy ? If so, it ain't working very well.

Once past US Customs, Idaho is pretty similar to SE B.C. : Vosgien ! After picking up some greenbacks at Wells Fargo (!!), my road took me south past Pend Oreille Lake (the old influence of French emigrés) : a village on its north shore is spelled Penderay, that probably indicates how the lake is pronounced locally. At Cœur d'Alene, I turned to the West and Washington

Spokane – urban sprawl seen from the Freeway - has nothing to recommend it : perhaps it has a charming old down-town ? Finding out where you are on US highways is easier than in Canada or in France. The Yanks aren't daft ; instead of sequentially numbering exits, they're numbered according to mileage from a major

urban centre. Since they also indicate every mile on the roadside, you always know how far you are from your exit.

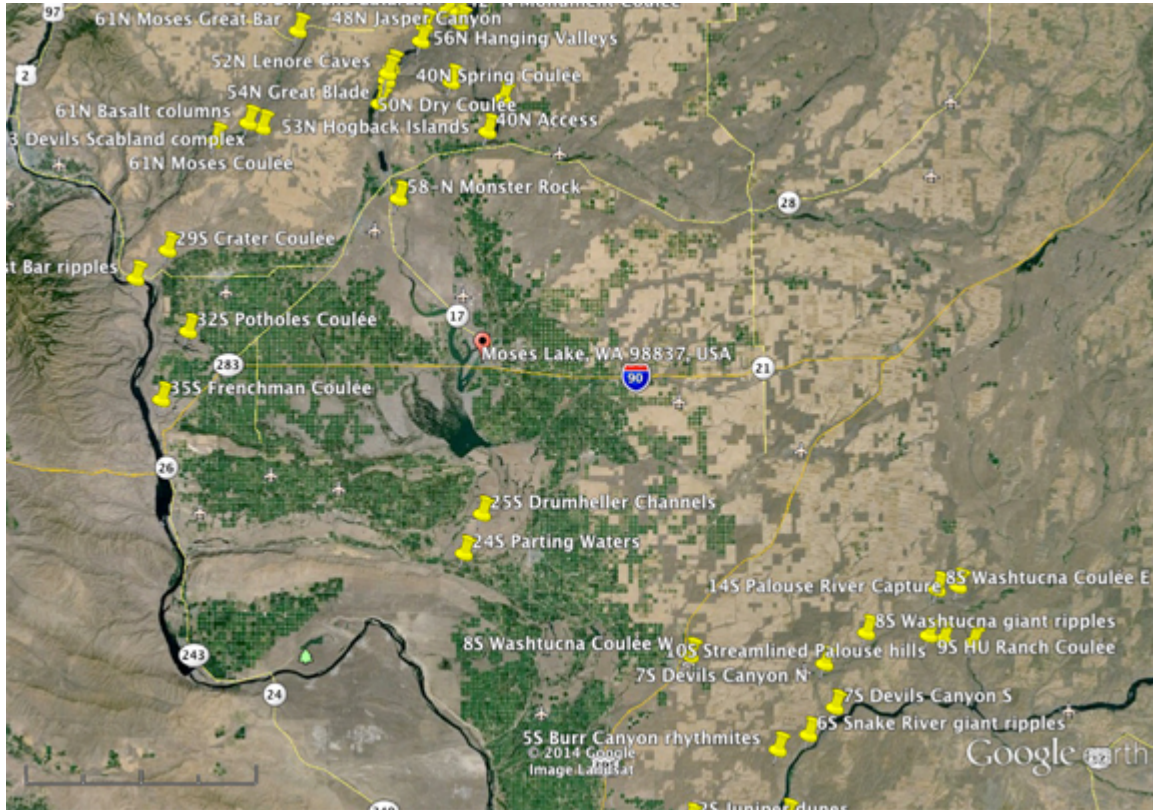
Then, at 50 km SW of Spokane, I saw the first indications that I had indeed arrived on « Mars » : mildly undulating flat terrain like the Prairies, but underlain by horizontal, dark brown lava flows, ~15 million years old, which you could even see in the « fields » on either side of the road at 110 kph (65 mph). I say « fields » because you really can't see how they are divided. The lavas are overlain by sediments : according to the regional geology, they could have been deposited by rivers or represent lake beds, just as old as the youngest lavas – or they could be loess, likely related time-wise to the ice age (<2 million years). Wheat seems to be the dominant crop, but it's only cultivated on hills formed by the sediments : the « fields » underlain by lavas are strewn with blocks of lava and left to cattle grazing. It's a bit weird seeing fields that climb and descend across hilltops.



A pile of horizontal lava flows from the roadside, SW of Spokane (*skh*)

The radio is the first thing that tells you that you aren't in Canada anymore. First, there are the multiple Evangelical stations offering salvation. Then there are the multiple Spanish stations. Here in town there are stores whose external signage is entirely in Spanish. I knew California was Spanish speaking, but I had no idea that held in Washington too.

Here in Moses Lake (WA), I have a room in a decent motel on the main street in town. It's clean, the room is large, fridge, A/C (need it : average T°C = 30++ with lots of Sun), good bathroom, and fast internet ! Just by is a laundromat (I needed it this morning), restaurants, a HUGE supermarket that has EVERYTHING !, and a tourist info centre. So I'm spending today on running errands and repairs – I can still feel the climb to the Burgess Shale, especially in the tendons behind the knees.



Central location of Moses Lake with respect to my planned visits

Why pick Moses Lake as a base ? I realised well before leaving on this adventure that the tourist season in the West – Canada and US – wasn't going to let me improvise when it came to lodgings : everything is still fully booked everywhere until Labour Day. Moses Lake is central to « Mars », and I can easily radiate out from here.

OK ... tomorrow I start my exploration of the « planet ».

Best to you all ...

Simon (Arrived at « Mars » aka Moses Lake, Washington)

PS : Before I forget – the B.C. wines I bought in Golden (2 Pinot Gris and a Chardonnay) were excellent ! I was finishing the third bottle as I wrote these words.

Today at midday I had lunch in town with a glass of Moses Lake white : impeccable !
Things are looking promising !!