

13th BCPA Symposium 2021

Ashcroft Fossil Field Trip

July 12, 2021

Marine strata of the Upper Triassic (Carnian), Nicola group and Early to Middle Jurassic age (Pliensbachian to Callovian), Ashcroft formation are exposed on both sides of the Thompson River near Ashcroft, BC. Early reconnaissance work in the area was first done by G.M Dawson (1895), H.F. Evans (1905) and C.W. Drysdale (1912, 1914). Then in 1927, a graduate student of the University of California, Colin Crickmay visited the area for study. Crickmay published five stratigraphic sections, proposed formational names, and described and illustrated a number of fossils.

In the late 1970's, with the advent of plate tectonic theory, Ashcroft strata came to be interpreted as part of an island arc subduction complex, allochthonous to the ancestral North American continent. The Cache Creek Melange to the west was seen as a classic subduction melange seaward of an outer arc basin in which the Ashcroft sediments were deposited. The Guichon Creek batholith and largely volcanic Nicola Group immediately to the east were interpreted as products of island arc volcanism related to the subduction zone.

The Triassic Nicola Group represents a volcanic island arc terrane consisting of lava flows, volcanic breccias, tuffs, volcanoclastic sediments, and minor limestones developed as part of a volcanic island arc complex (Schau 1964). This is the main volcano-sedimentary component of the Quesnel arc terrane or Quesnellia (Scharizza 2019).

Fossils are present in the Nicola Group sediments; however, most fossils found in Nicola Group rocks are neither well-preserved nor abundant (Schau 1964). However, this particular locality contains some well preserved fossils. The fossils present are primarily marine in origin and are associated with a nearshore reef and shoreline environment.

The focus of this field trip will be on a late Triassic (Carnian) ammonite locality on the east side of the Thompson River about 14km south of Ashcroft (near Basque station). The locality is within a large exposure of Nicola Group strata consisting of interbedded limestone, chert, and volcanic rock. Some of the limestones here are tightly folded and are overlain by green chert. All ammonites found here have proved to be important index fossils belonging to Tropites dilleri Zone of a late Carnian (Tuvalian) stage. The most common forms are Pleurotropites gabbi, Pleurotropites gracilis, Discotropites, and Spirogmoceratites shastense. Bivalves found include Halobia cf. cordilleran and Halopia cf. pacilis. Preservation ranges from poor (faint impressions) to very good (three dimensional). Apart from Crickmay's treatment of "Paratropites spesumensis," (= Pleurotropites gabbi), no fossil from this locality has ever been described or illustrated in scientific literature. However, there have been several references made in studies on the Nicola group and local geology to this locality (Mark Howard 2014).

What To Bring (Equipment)

The fossils at this site are found in limestone often interbedded with mudstone. So, a rock or small sledge hammer and cold chisels are needed to extract them from the rock. There is a lot of loose scree; so you can also find nice weathered out fossils or smaller pieces of limestone that contain fossils that do not require any tools. But, a rock or brick hammer is still useful for trimming to digging.

Record date, specimen number and the fossil site on the plastic bag, and place the fossil in the plastic zip-lock bag.

Another method is wrapping the shale specimen in newspaper. Newspaper can be cut or torn into suitable sizes. Use masking tape to wrap newspaper and record date, fossil locality, and specimen identification on the masking tape.

Rock (Geology) hammer, brick hammer or a small Sledge hammer.

Medium to large flat cold chisels

Newspaper

Cardboard from a cereal box, and Plastic Zip-lock bags

Cardboard boxes or plastic containers

Scissors

Masking tape

Felt pen or pencil

Camera or Smart Phone

Hat and water bottle

Sunscreen

Snacks and lunch

Note book and pencil

Krazy glue or white glue

Safety First

The VanPS promotes safe collecting practices. You are responsible for bringing and wearing appropriate safety gear on all field trips including gloves, a hat, and eye protection. We ask each member or family unit to have a personal first aid kit, know the contents and how to use it. Members are responsible for keeping themselves warm.

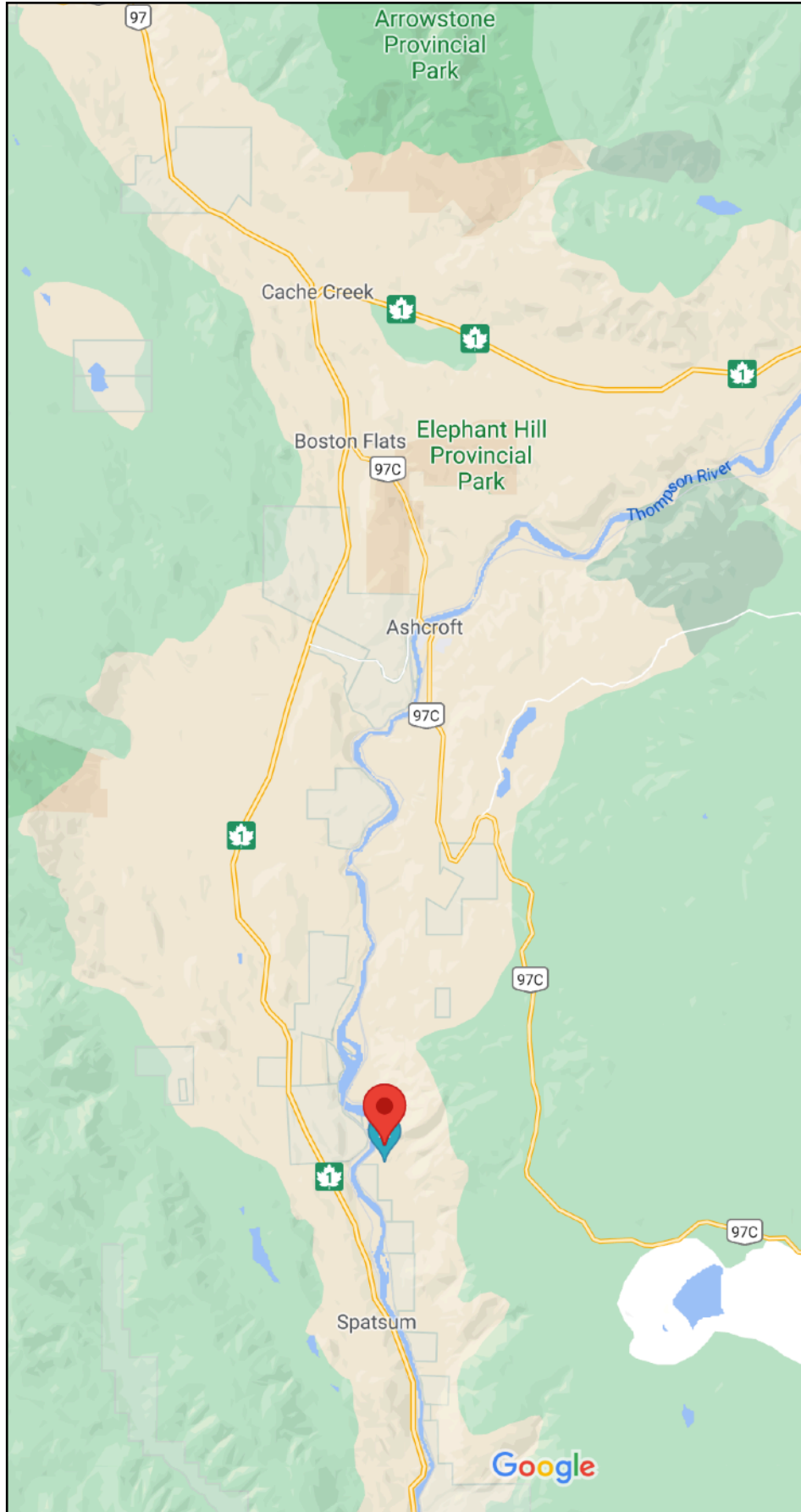
Directions (Due to change fire/smoke conditions in the area, please contact John Fam (604-787-7404) prior to attending this field trip. There is a chance of cancellation due to current conditions).

Meet at the Safety Mart Foods parking lot (105 Railway Ave) in Ashcroft at 9 AM. Field trip leader John Fam will lead the group to the site. Please contact John in advance if you plan to attend this field trip. Please note that prevailing weather conditions (wildfires and air quality) may cause changes or cancellation of this trip. As an alternative, we may stay an extra day to collect around Princeton.

References

- Andrichuk, John M. 1989. Memorial to Colin Hayter Crickmay 1899-1988. Geological Society of America. Memorials Vol. 20 (<https://www.geosociety.org/documents/gsa/memorials/v20/Crickmay-CH.pdf>)
- Crickmay, C.H. 1930. The Jurassic rocks of Ashcroft, British Columbia: University of California Publications in the Geological Sciences, v. 19, no. 2, p. 23-74, pi. 2-7, map
- Duffell, S; Mctaggart, K.C. 1952. Ashcroft Map-Area, British Columbia. Geological Survey of Canada Memoir 262. 122 pages (1 sheet).
- Howard, Mark 2014. (Vancouver Paleontological Society - Ashcroft Field Trip Notes May 3-4, 2014)
- McMillan, W. J. 1974. Stratigraphic Section from the Jurassic Ashcroft Formation and Triassic Nicola Group Contiguous to the Guichon Creek Batholith. British Columbia Geological Survey Geological Fieldwork 1974, 92I/11E.
- Schau, Mikkel P. 1964. Geology of the Upper Triassic Nicola Group in South Central British Columbia. University of British Columbia Ph.D. Thesis. December 1968.
- Schiarizza, Paul 2019. Geology of the Nicola Group in the Bridge Lake-Quesnel River area, south-central British Columbia. In: Geological Fieldwork 2018, British Columbia Ministry of Energy, Mines and Petroleum Resources, British Columbia Geological Survey Paper 2019-01, pp. 15-30.
- Spatzenegger, Andreas. 2019. (Personal communication. Unpublished field notes. Ashcroft-BC-Tuvalammoniten.pdf) May 2019.
- Tozer, E.T. 1994. Canadian Ammonoid Faunas. Geological Survey of Canada Bulletin 467. 669 pages.
- Travers, William B. 1978. Overturned Nicola and Ashcroft strata and their relation to the Cache Creek Group, Southwestern Intermontane Belt, British Columbia. Canadian Journal of Earth Sciences Vol. 15, pp.99-115.

Location Map



The main exposure





Pleurotropites (Paratropites) sp.



Pleurotropites (Paratropites) sp.



Interbedded limestone



Unidentified ammonite



Pleurotropites (Paratropites) sp.



Halobia sp. & Pleurotropites sp.



Leconteiceras sp.



Discotropites sp.



Traskites (Neanites) sp.



3 example of Paratropites cf. shastensis and Spirognoceras



Spirogmoceras shastense



All images from John Fam or Andreas Spatzenegger.

List of accommodations for around Ashcroft / Cache Creek

Accommodations

Sunset Motel

<https://sunsethotel.ca/>

Bear Claw's Lodge

<https://goo.gl/maps/Z9qboXcAziADrFTP>

Sage Hill's Motel

<https://goo.gl/maps/vZKJVvWJNrv1TqKf8>

Sandman Cache Creek

[https://www.sandmanhotels.com/cache-creek?
utm_source=google&utm_medium=maps&utm_campaign=cache_creek](https://www.sandmanhotels.com/cache-creek?utm_source=google&utm_medium=maps&utm_campaign=cache_creek)

Canadas Best Value Desert Inn & Suites Cache Creek

<https://www.redlion.com/canadas-best-value-inn/bc/cache-creek/canadas-best-value-desert-inn-suites-cache-creek>

Camping

<https://ashcroftbc.ca/campground/> (please note the train tracks are near this campsite so you will hear the trains passing at night)

Barnes Lake Recreation Site (Note: I like this recreation site. Nice and quiet location)

<http://www.sitesandtrailsbc.ca/search/search-result.aspx?site=REC1701&type=Site>

Cache Creek

<https://brooksidecampsite.com/>

Current Wild Fire Activity

<https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-situation>

Air Quality

<https://www.iqair.com/ca/canada/british-columbia/ashcroft>