The Cache Creek Mélange

Local residents have found it curious that almost all geological field trips that pass through this part of B.C. stop in town at this location – why?

At first glance this road cut looks like pretty typical rocks, there are some layers and the rock is more or less...well...grey. But to trained eyes these rocks hold valuable insights into the geological history of British Columbia, especially the movements of continent-sized tectonic plates and the beds of very ancient oceans.

The scene before you is a jumbled mix of rock types, dominated by argillite (shale) and chert. Both are known to have formed in a deep ocean environment. Micro-fossils within the rocks tell us it formed during the Triassic period, which spanned from 206-248 million years ago. If you have a pocket knife or other hardened steel instrument with you, you may try scratching these rocks and find some are quite soft (argillite) and others exceptionally hard (chert). Area First Nations would seek out rock such as chert for knapping into tools such as scrapers or arrow heads.

If you look up a few meters, at the rock cut just north of the bridge you crossed to get here, you’ll see a light color block of rock that is about 2 meters high and a meter across. It stands out considerably from the darker rock that contains it and is at about the same level of the wires that pass in front of it. Once you have spotted it, you have discovered the essence and significance of this stop.

The block is comprised of limestone and, unlike the rocks around it, formed in a relatively shallow marine environment. Fossils within the rock tell us it formed during the Carboniferous period and is at least 60 million years older than the rock that surrounds it.

Geologists have borrowed the French word mélange to describe such scrambled collections of rock types, a word which simply means “mixture.” What you are looking at here is a small section of the Cache Creek mélange, a geologi-
Bibliography & Sources