32-9: REVISIONS TO THE STRATIGRAPHY OF THE FLYSCH FACIES OF THE CHUGACH, PRINCE WILLIAM, AND YAKUTAT TERRANES, SOUTHERN ALASKA: IMPLICATIONS FOR RECONSTRUCTION OF BAJA BC

Friday, May 17, 2019
11:00 AM - 11:20 AM
Oregon Convention Center - Room B117-119

Flysch of the Chugach and Prince William (CPW) terranes consists of a Santonian-Eocene (85- 52 Ma) turbidite assemblage that is ~30 km thick and has been assumed to have been the outboard element of the Insular superterrane, or Baja BC block. The stratigraphy and provenance of these clastic rocks are important in understanding the accretion and translation history of tectonic blocks scattered along the southern margin of Alaska. U/Pb dating of detrital zircon from 18 samples from the Yakutat block allow revision of the stratigraphy of units previously grouped together as the Yakutat Group, which we now know cannot be correlated to the CPW. The Yakutat Group consists of Maastrichtian to Paleocene turbidites and sandstone-rich mélange of the same age, and both have a distinct provenance that allows correlation to rocks of the Western Mélange Belt and Nanaimo in the Pacific NW. However, the adjacent Schist of Nunatak Fiord is correlative to the Orca Group of the Prince William terrane and therefore does not belong to the Yakutat. Sixty-one samples from Prince William Sound and adjacent areas allow resolution of the stratigraphy, age, and provenance of the Valdez Group (part of Chugach terrane) and the Orca Group (Prince William terrane). Clastic rocks of these units are similar and were derived from a deeply exhumed active arc with a meta-plutonic basement primarily between 75-52 Ma. Older elements of the Chugach (Potter Ck, McHugh) are distinct and different. There is an important overlap in age of turbidites of the Valdez and Orca Groups deposited between 62 and 60 Ma: greenschist facies sandstones of the young Valdez Group have remarkably similar grain-age distributions to the old Orca Group in PWS. Greenschist facies sandstone clasts with Valdez affinity that are as young as 62 Ma occur in 59 Ma conglomerates of the Orca Group indicating erosional exhumation of the Valdez Group during Orca Group deposition. Ophiolites of the Orca Group (Resurrection, Glacier Island) erupted into lower strata of the Orca and are smothered by clastic sediments at 57 Ma; thus we favor an upper-plate setting for the formation of the ophiolites during transtension. Finally, the Contact fault system shows little evidence for being a terrane-bounding fault because Valdez and Orca Group turbidites occur on opposite sides of the fault system.

Authors

John I. Garver *
Union College

Cameron Davidson
Carleton College

Final Paper Number 32-9

View Related Events

Day: Friday, May 17, 2019

Geological Society of America Abstracts with Programs. Vol. 51, No. 4, ISSN 0016-7592
doi: 10.1130/abs/2019CD-329716

© Copyright 2019 The Geological Society of America (GSA), all rights reserved.