

Contents

<i>Abstract</i>	1
<i>Introduction</i>	2
Arcs	2
Slab failure	3
<i>Peninsular Ranges Batholith: Setting, geochemistry, and proof of concept</i>	4
<i>Sierra Nevada batholith</i>	7
<i>Idaho-Montana</i>	18
<i>Cascades–Coast plutonic complex</i>	23
<i>Salinia</i>	26
<i>Mid-Cretaceous Oregonian event</i>	29
<i>Cordilleran ribbon continent and westerly subduction</i>	34
Cordilleran fold-and-thrust belt	37
<i>Sevier fold-and-thrust belt</i>	39
<i>Sevier hinterland</i>	40
Plutons of the Sevier event	41
<i>Laramide event</i>	45
Thick-skinned deformation.	45
Laramide orogenic hinterland.	48
<i>Discussion</i>	55
Involvement of subcontinental lithospheric mantle?	55
Crustal input: Fact or fiction?	57

Depth of melting and interactions with lithospheric mantle	58
Zoned intrusive complexes and the absence of crustal input	62
Granodiorites from the mantle?	63
Slab window magmatism and adakites	69
Origin of Archean TTG suites.	74
Formation and growth of continental crust	76
Mineralization	79
<i>Conclusions</i>	83
<i>Acknowledgments</i>	86
<i>Appendix 1: The Belt-Purcell problem</i>	86
<i>References cited</i>	88