Contents

Dedication vii
Memorial for Doug Nelson ix
Acknowledgements x

Introduction

GODIN, L., GRUJIC, D., LAW, R. D. & SEARLE, M. P. Channel flow, ductile extrusion and exhumation in continental collision zones: an introduction 1

GRUJIC, D. Channel flow and continental collision tectonics: an overview 25

Evolution of ideas on channel flow and ductile extrusion in the Himalaya–Tibetan Plateau system

KLEMPERER, S. L. Crustal flow in Tibet: geophysical evidence for the physical state of Tibetan lithosphere, and inferred patterns of active flow 39

HODGES, K. V. A synthesis of the Channel Flow–Extrusion hypothesis as developed for the Himalayan–Tibetan orogenic system 71

Modeling channel flow and ductile extrusion processes

BEAUMONT, C., NGUYEN, M. H., JAMIESON, R. A. & ELLIS, S. Crustal flow modes in large hot orogens 91

MEDVEDEV, S. & BEAUMONT, C. Growth of continental plateaus by channel injection: models designed to address constraints and thermomechanical consistency 147


GRASEMANN, B., EDWARDS, M. A. & WIESMAYR, G. Kinematic dilatancy effects on orogenic extrusion 183

JONES, R. R., HOLDSWORTH, R. E., HAND, M. & GOSCOMBE, B. Ductile extrusion in continental collision zones: ambiguities in the definition of channel flow and its identification in ancient orogens 201

WILLIAMS, P. F., JIANG, D. & LIN, S. Interpretation of deformation fabrics of infrastructure zone rocks in the context of channel flow and other tectonic models 221

Geological constraints on channel flow and ductile extrusion as an important orogenic process

Himalaya–Tibetan Plateau

HARRISON, T. M. Did the Himalayan Crystallines extrude partially molten from beneath the Tibetan Plateau? 237

ROBINSON, D. M. & PEARSON, O. N. Exhumation of Greater Himalayan rock along the Main Central Thrust in Nepal: implications for channel flow 255
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCAILLET, B. &amp; SEARLE, M. P.</td>
<td>Mechanisms and timescales of felsic magma segregation, ascent and emplacement in the Himalaya</td>
<td>293</td>
</tr>
<tr>
<td>ANNEN, C. &amp; SCAILLET, B.</td>
<td>Thermal evolution of leucogranites in extensional faults: implications for Miocene denudation rates in the Himalaya</td>
<td>309</td>
</tr>
<tr>
<td>WANG, Y., LI, Q. &amp; GUOSHENG, Q.</td>
<td>$^{40}$Ar/$^{39}$Ar thermochronological constraints on the cooling and exhumation history of the South Tibetan Detachment System, Nyalam area, southern Tibet</td>
<td>327</td>
</tr>
<tr>
<td>SEARLE, M. P., LAW, R. D. &amp; JESSUP, M. J.</td>
<td>Crustal structure, restoration and evolution of the Greater Himalaya in Nepal–South Tibet: implications for channel flow and ductile extrusion of the middle crust</td>
<td>355</td>
</tr>
<tr>
<td>JESSUP, M. J., LAW, R. D., SEARLE, M. P. &amp; HUBBARD, M. S.</td>
<td>Structural evolution and vorticity of flow during extrusion and exhumation of the Greater Himalayan Slab, Mount Everest Massif, Tibet/Nepal: implications for orogen-scale flow partitioning</td>
<td>379</td>
</tr>
<tr>
<td>HOLLISTER, L. S. &amp; GRUJCIC, D.</td>
<td>Pulsed channel flow in Bhutan</td>
<td>415</td>
</tr>
<tr>
<td>LEE, J., MCCLELLAND, W., WANG, Y., BLYTHE, A. &amp; McWILLIAMS, M.</td>
<td>Oligocene–Miocene middle crustal flow in southern Tibet: geochronology of Mabja Dome</td>
<td>445</td>
</tr>
<tr>
<td>AOYA, M., WALLIS, S. R., KAWAKAMI, T., LEE, J., WANG, Y. &amp; MAEDA, H.</td>
<td>The Malashan gneiss dome in south Tibet: comparative study with the Kangmar dome with special reference to kinematics of deformation and origin of associated granites</td>
<td>471</td>
</tr>
</tbody>
</table>

**Hellenides and Appalachians**

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>XYPOLIAS, P. &amp; KOKKALAS, S.</td>
<td>Heterogeneous ductile deformation along a mid-crustal extruding shear zone: an example from the External Hellenides (Greece)</td>
<td>497</td>
</tr>
</tbody>
</table>

**Canadian Cordillera**

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BROWN, R. L. &amp; GIBSON H. D.</td>
<td>An argument for channel flow in the southern Canadian Cordillera and comparison with Himalayan tectonics</td>
<td>543</td>
</tr>
<tr>
<td>CARR, S. D. &amp; SIMONY, P. S.</td>
<td>Ductile thrusting versus channel flow in the southeastern Canadian Cordillera: evolution of a coherent crystalline thrust sheet</td>
<td>561</td>
</tr>
<tr>
<td>KUIPER, Y. D., WILLIAMS, P. F. &amp; KRUSE, S.</td>
<td>Possibility of channel flow in the southern Canadian Cordillera: a new approach to explain existing data</td>
<td>589</td>
</tr>
</tbody>
</table>

Index 613