An issue honoring Ian S. E. Carmichael

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Fig. 1 Portrait of Ian Carmichael, taken by Joachim Hampel in 1986 for the occasion of Ian's receipt of the Bowen Award from the VGP section of the American Geophysical Union

Ian Stuart Edward Carmichael (b. 1930–d. 2011; Fig. 1), F.R.S., was one of the pre-eminent petrologists of the last century. He was the executive editor of *Contributions to*

Mineralogy and Petrology from 1973 through 1990, during which time he guided the journal to international prominence. The papers that appear in this special issue are dedicated to his enormously creative research career, the impact he made in transforming the field of igneous petrology into a quantitative discipline, and the unparalleled intellectual generosity he showed toward his students and academic colleagues.

Since his passing, there have been many excellent biographical sketches of Ian's life and critiques of his research contributions (e.g., Lange, R., 2012, Ian S. E. Carmichael, 1930–2011, *Eos Trans. AGU*, 93, 68). Our remarks here are not intended to duplicate these. What we wish to call attention to in this preface is the enormous impact that Ian has had through his academic legacy. Throughout his life, Ian devoted himself unhesitatingly to his students, to his academic associates, and to his University. He gave freely of ideas, many of which shaped the careers and reputations of the recipients, yet never demanded recognition of these gifts. If you asked Ian why he was so successful, he would merely say that he was lucky that he had such talented students. This was in fact true, but minimized the enormous impact he had on his student's lives and abilities. He had a remarkable ability to forge his students into inquisitive, precise, and productive scientists. Ian was a university administrator of unparalleled achievement because he believed in service and the notion that a privileged position in society demands a responsibility to others. He was gregarious, funny, engaging, and dominant, both intellectually and physically. Yet, he was kind and gracious, and cared deeply for the success and achievements of those around him. Ian's academic legacy is inspiring. Over his long career, he had over 30 Ph.D. students, and these students in turn have careers that are influencing a second

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Fig. 2 Artistic rendering of the academic legacy of Ian Carmichael. Ian's Ph.D. students are labeled with "horizontal" type and spiral out chronologically. Second, third and fourth generation Ph.D. students and postdoctoral associates are propagated outward from their advisors and labeled in the growing direction of the spiral. Close

academic associates of Ian are labeled in capital letters along with their Ph.D. students to differentiate them from Ian's direct advisory lineage. Concept and artwork by Véronique Robigou. A full scale (36 by 25 inches) high-resolution image of this figure may be downloaded from www.ofm-research.org/Carmichael/

generation of students and beyond. To illustrate this, an academic phylogeny of Ian Carmichael is depicted in Fig. 2. The figure shows his students, grand students, and some great-grand students as well as the colleagues and their academic progeny that he inspired and shepherded. To give some sense of the impact that Ian has made through his extraordinary mentoring, of the individuals

listed in Fig. 2, nine have received the Bowen Award, two the Kuno Award, and three the Macelwane Medal from the American Geophysical Union, eight the Clarke or Goldschmidt Medal from the Geochemical Society, three the Dana Medal or MSA Award from the Mineralogical Society of America, three the Day Medal from the Geological Society of America, and there are 16

Fellows of the Mineralogical Society of America, eight Fellows of the Geochemical Society, and 15 Fellows of the American Geophysical Union. Few great scientists can claim such a legacy, while at the same time having been equally honored for their own transformative research accomplishments in their discipline.

The papers included in this special issue were largely contributed by students and colleagues who knew Ian Carmichael well. They form a diverse selection of topics spanning theory, observation, and experiment. These papers parallel and reflect the breath of his own scientific interests. It is with honor and humility that we present this special issue of *Contributions to Mineralogy and Petrology* in the memory of a great petrologist and scientific mentor, whose contributions will continue to shape the lives of generations to come.

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