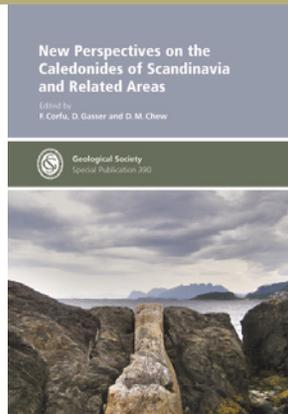


## NEW PERSPECTIVES ON THE CALEDONIDES OF SCANDINAVIA AND RELATED AREAS<sup>2</sup>

The Iapetus Ocean closed and Laurentia collided with Avalonia and Baltica during the Paleozoic Caledonian orogeny. Editors Fernando Corfu, Deta Gasser, and David Chew have compiled 24 papers on the Scandinavian segment of the orogen and 4 on related areas to form the first major collection dedicated to the Scandinavian Caledonides in almost 30 years. Overall the papers are data rich and utilize many new analytical techniques that have become available during that time; but—for the most part—new perspectives are lacking. The editors were unable to prod the majority of authors to use a terminology that is accessible to readers who are unfamiliar with the regional literature, though they recognize the problem. A terrane approach similar to that used in other orogens was advocated by Hossack and Cooper (1986) in this same Geological Society Special Publication series, but has been largely ignored. Instead, many of the authors persist in pigeonholing units of the Scandinavian Caledonides into the Lower, Middle, Upper, and Uppermost Allochthons. The wealth of new information in this volume is a valuable step towards new perspectives and a meaningful tectonic synthesis of the orogen. As the Danish poet Piet Hein wrote, “*Ting tar tid*” (things take time).

What, then, might be of general interest to the *Elements* reader? Quite a bit, it turns out, because a large number of papers employ mineralogy, petrology, geochemistry, and geochronology to elucidate the igneous



protoliths, sedimentary provenance, metamorphic conditions, and timing of events during the Caledonian collision, touching on themes of recent *Elements* issues. For example, two papers address the ophiolitic remains of Iapetus and its subduction zones, and are replete with solid geochemical and geochronological data sets. Eclogite facies metamorphism is the subject of seven papers; highlights include the first documentation of high-pressure conditions in northwest Spitsbergen and new ultrahigh-pressure units in continental crust from central Sweden. One standout contribution illustrates the transformation of baddeleyite to zircon during progressive metamorphism of a gabbro to an eclogite. An example of large-scale crustal melting is presented for north-central Norway. Zircon and garnet are figured in many of the papers. Geochronology is featured in three papers that address sedimentary provenance with detrital zircon geochronology; U–Pb, Lu–Hf, or Sm–Nd data sets are presented in 8 papers; and the volume ends with a thermochronologic analysis of postcollision uplift.

Connoisseurs of Scandinavian geology will find this book to be an essential addition to their library. The curious reader may want to use the well-organized table of contents and index to navigate through the volume to find papers of interest, as many academic libraries carry electronic versions of the Special Publication series.

**Jane A. Gilotti**, University of Iowa

2 Corfu F, Gasser D, Chew DM (eds) (2014) *New Perspectives on the Caledonides of Scandinavia and Related Areas*. Geological Society of London, Special Publication 390, ISBN 978-1-86239-377-6, i-vi + 718 pp, \$200

Hossack JR, Cooper MA (1986) Collision tectonics in the Scandinavian Caledonides. In: Coward MP, Reis AC (eds) *Collision Tectonics*. Geological Society of London, Special Publication 19, pp 287-304

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