Reviews

SINGH, V.P., P. SINGH and U.K. HARITASHYA, *eds*. 2011. *The encyclopedia of snow, ice and glaciers.* Berlin, Springer. 1254pp. ISBN-10: 9-048126-41-X, ISBN-13: 978-9-048-12641-5, hardback, US$583.75.

Since the foundation of the International Glaciological Society (IGS) in 1936, the number of scientists working on all matters snowy and icy has grown massively, to the point where the production of a comprehensive volume on glaciological (or, as some prefer, cryospheric) research has developed into an exceedingly challenging task. The *Encyclopedia of snow, ice and glaciers*, forming part of the wider 15-volume-plus series 'Encyclopedia of earth sciences' from the Springer Publishing Group, aspires to this goal. It brings together articles across an impressively broad array of glaciological fields, with contributions from 262 authors.

Weighing in at 1300 Letter-size pages of double-columned small print, and peppered every two or three pages with graphs, diagrams and photographs, often in colour, the encyclopedia is crammed with information and attractively packaged. It is not structured as a textbook; rather it is an alphabetically ordered digest of entry-level material designed to give the reader a brief introduction to a topic and thence direct him/her to further reading. Consequently, all but the shortest entries contain a bibliography to guide further exploration of the topic in question. Overall, the encyclopedia is divided into 463 articles, 64 of which constitute major review essays on an area of snow, ice or glacier research, usually several pages in length, and which have been peer-reviewed. The other articles are divided into 217 'cookbook' mini-entries, a few lines long; and 182 'building block' intermediate-length entries, some of which have also been peer-reviewed. As a practising glaciologist, I found the longer peer-reviewed articles the most rewarding and – in my own areas of expertise – competent reviews of the state of the field. Due to the sheer breadth of entries I also found myself casually browsing articles outside my specialisms, reliving those graduate days of exploratory reading, and being well directed to further articles on their constituent topics, either by cross-referencing to further pieces within the encyclopedia, or moving on to the directed reading at the end of each entry. In a few cases I question the need for inclusion of some of the shorter entries, yet the overall intention to provide reference to as many specialist terms as possible is commendable.

As the encyclopedia claims in its preface to have an authorship reflective of the 'who's who in the cryosphere', it is interesting to compare the authorship spread with that of the IGS as a whole (786 members distributed across 33 countries at the time of writing). Figure 1 shows the comparison. In general, the authorship spread appears reflective of the worldwide distribution of IGSologists, with most of the countries that have many fully signed-up glaciologists well represented within the encyclopedia. However, the stand-out statistic is the proportionally high

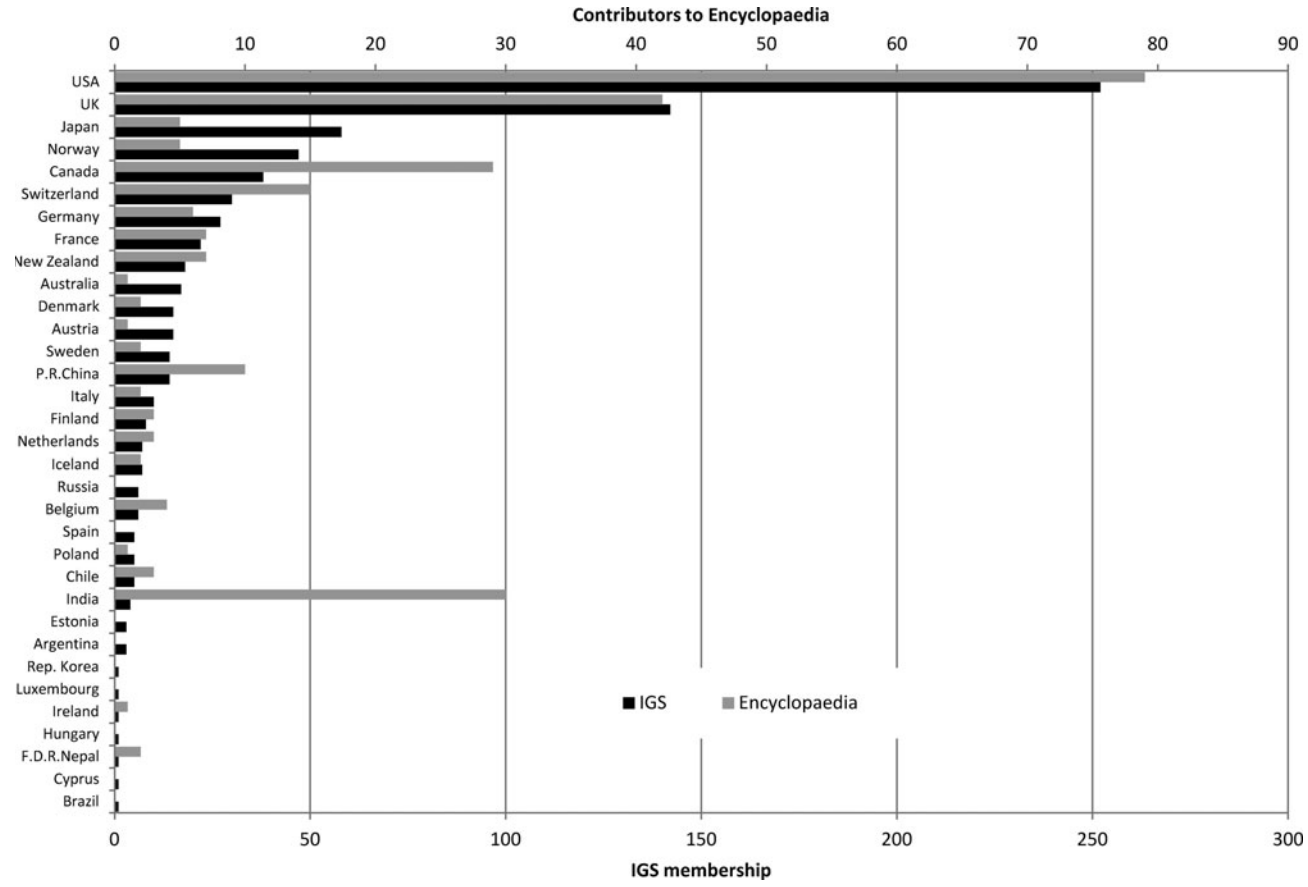

Fig. 1. *Encyclopedia of snow, ice and glaciers* authorship by country (upper scale) compared with IGS membership by country (lower scale).

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level of contributions from scientists based in mainland Asia, notably India and China. While this reflects admirably the explosion of ice and snow research in this part of the world, it seems a pity that most of the contributions from the authors so-based are limited to the smaller 'cookbook' entries. Overall, however, the three editors, supported by a seven-strong editorial board of leading glaciologists, have done an impressive job of persuading a broad range of international experts to contribute entries to the volume.

Much of the success of any encyclopedia – main content and illustrations aside – depends on the indexing, cross-referencing and contents lists, as these determine how successfully and simply one can locate material of interest. The encyclopedia begins with a very clear alphabetical listing of its entries and authors, which is easy to browse as a first port of call and gives a good indication of the breadth of material. The final 13 pages contain an apparently comprehensive index, with upward of 2500 search terms, which on 20 random checks directed me to the correct page each time. Accuracy, however, was not a feature of the author index, which in no fewer than 61 cases (out of 262 authors) misdirected me. This is a very unfortunate oversight for those readers wishing to refer quickly to material by a particular author. The intent to provide a list of cross-references at the end of each of the larger entries is noble and successful when adhered to, but not every article has this.

Though I have mentioned one or two quibbles above, I nevertheless recommend this encyclopedia as an excellent addition to any university library anywhere in the world. As intended, it would comprise an excellent starting reference for undergraduates or for scientists and engineers on the fringes of the discipline just starting to discover for themselves the inexorable draw of all things cold. The editorial team have done an admirable job of assembling a fascinating breadth of articles such that even glaciological experts will find interesting snippets well outside their immediate research fields. The provision of an e-version of the book, in addition to the paper copy, is also welcome, and means that teachers and students alike will be able to browse entries online, significantly enhancing the appeal of the encyclopedia as an accessible and up-to-date teaching and reference device.

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