

erence material apart from those referred in the book is available in Geol. Surv. India, Special Pub. No. 26 for 1989, dealing with geology and tectonics of the Himalaya.

In the description of lithology of various units, some awkward terms like basaltic and tuffaceous intrusives (p. 24), low-grade granitic gneisses (p. 19), varves of sericite quartz schists (p. 24), Himalayan striking bedding (p. 64), Himalayan thrust-strike (p. 65), etc. could have been avoided. I do not find anything in the book or maps regarding the Permian transgression represented by the Boulder Slate Formation, so unique to the Garhwal Himalaya.

At other places more clear descriptions are called for, e.g. Kotga-Banali Group is proposed as the youngest part of Jaunsar Group (p. 23), but the correlation of Paturi (Nagthat) with Rautgara-Berinag etc. and of Bhelunta limestone with Deoban leave one utterly confused. This is true of many of other sections.

Chapter III deals with geology. It is essentially a synthesis of work of Satyendra, Bahuguna, Nainwal, etc. (unpublished Ph D theses) and other coworkers. Most of the material given is again repetition from the chapter on stratigraphy. One is confused with the proliferation of new names and their correlation with those of the already well-established units. Quite a bit of structural data has also been given but this together with the data in Chapter IV on structure and tectonics could have presented a more solid picture.

The chapter on structure and tectonics is the strongest part of the book and will be useful for future workers. However, the cross-sections, their balancing and application of thrust tectonics must wait for support from geophysical data. Until and unless there is some consensus regarding correlation of variation thrust sheets, their age, areal extensions and nature of bounding thrusts, the models of thrust tectonics can only be regarded as tectono-fancifull (term used by Asger Bertelsen).

Figures and tables

The monograph has much data but the synthesis and interpretations have been hurriedly laid down. Even the cross-section in the coloured map shows Chandpur

Formation in the core of Narendranagar syncline overlying the Infra-Krol. No outcrop of Permian is shown. In the map, the colour scheme could have been better, e.g. 13 & 14 have the same colour and no explanation is given for 16, 17, 18 *a, b*. Even names of places are not properly located, e.g. Mussoorie is written 5 km south of the spot marked. No upright fold is seen in Plate 5 *a*—the fold has horizontal axial plane. The nicols are shown as crossed in Figure 15 *b* but the photomicrograph clearly shows it to be under plain polarized light. No units of thickness cm/m are given in Table 1 *a*. Explanation to Figures 5–10 is upside down. These are some of the points which could have been avoided, by proper editing. The quality of some of the maps is also very poor and they are also very old (1972–73 Vintage). These could have been properly redrafted and updated.

The geological studies in the Himalaya are being actively pursued by many organizations and a lot of material is being published everyday. Every new information on this fascinating mountain belt is welcome. However, only few publications will leave their impact behind. The Monograph I have my doubts will cause any major waves in the vast sea of geological information on two accounts, firstly, most of the material is already available in research papers and workers on geology of Garhwal are conversant with it, secondly too much proliferation of names without any sound basis. Even the price tag of Rs 800 seems to be high and not many of us can afford to possess a copy.

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Measurements Principles and Practices.
Harsh Vardhan. MacMillan India Ltd.,
1993. 395 pp.

This book has been written by a recognized authority in the field in the country, who has been concerned with Measurements and Instrumentation throughout his career. As stated in the preface, it is a result of revision of the lectures the author delivered at BITS, Pilani in the Instrument

Technology programme. Such efforts usually end up in a somewhat sketchy and disjointed compilation. This book is obviously much more than revised course notes—it is the experience of a lifetime chronicled in a balanced manner to serve as a comprehensive reference and text for students as well as the practising engineer. Historical background, careful treatment of various methods with necessary analysis and illustrations, critical comparison and objective conclusions, and clear and scholarly presentation in simple English are some of the high points of the book.

The book deals with the measurement of weight, temperature, flow, pressure and level. Starting with general considerations in Chapter 1, where the author defines and explains common terms encountered in measurement practice, including error characterization, the author goes to weights and weighing in Chapter 2. It is a treat to read the various weighing systems used in the past in various countries. The author has discussed all known methods of weight measurement although some have, of necessity, had to be brief. Measurement of temperature forms the subject matter of Chapter 3. Again, historical development precedes the various methods of sensing temperature and processing the resulting signal. I found this to be the most well written Chapter. The next chapter deals with measurement of fluid flow and includes lucid presentation of head, variable area, magnetic, ultrasonic, NMR, laser Doppler, thermal, swirl, mechanical and other flow meters. Measurement of pressure is presented in Chapter 5 with equal lucidity and comprehensiveness. The last chapter deals with the why's and how's of measurement of liquid level.

No human exercise is perfect and the book is no exception. Let me start with the cover design. Yellow letters in dark blue background with an empty enclosed area did not appeal to my eyes. While this may be a matter of personal bias, the quality of paper and printing does not at all match the quality of the material printed. Readability is further reduced by the dense printing on each page, leaving very little margin. The figures, although carefully drawn by a professional, have been reduced by various degrees at different places, resulting in widely differing sizes of lettering, and congestion at many places. Actual photographs of practical

BOOK REVIEWS

instruments would have added to the usefulness of the book. Also, the number of examples is not adequate in most of the chapters and needs to be increased substantially.

Further, there is no uniformity in mathematical presentation; see p. 81 for example. Vectors are sometimes represented by bar above the symbol, and sometimes by arrows over the symbols. Typographical mistakes also abound in the book. See p. 15 for example, where

'dipolar' has been used instead of bipolar; see also the line above (1.17). Figure 1.6 does not mean much and needs improvement. Equation (25) is wrong. On p. 272, the expression 'a magnetic moment is placed in a magnetic field...' is not a scientifically acceptable one. On p. 122, 'magnetic current' and 'strees' in Figure 1.3 need correction. On p. 270, 'velative capacitance' also needs correction. I could go on and on....

In conclusion, I would strongly urge

the author and the publisher to make all efforts to make the next edition relatively error-free, and enhance the readability by attending to the paper, printing and such other aspects as are necessary.

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