

REVIEWS & NOTICES

Climates of North America, Edited by R. A. BRYSON & F. K. HARE. World Survey of Climatology, Vol. 11, Elsevier Scientific Publishing Company, Amsterdam—London—New York: x + 420 pp., 140 figs, 29.3 × 20.6 × 2.8 cm, Dfl. 137, 1974.

The vast undertaking of the Dutch publishing house of Elsevier to present the climates of the globe in a series called 'World Survey of Climatology' is slowly moving ahead under the supervision of the well-known climatologist, Professor Helmut Landsberg. Eight out of fifteen volumes have been published since 1969, and one of the more recent deals with North America—an impressive volume edited under the leadership of two of the most eminent meteorologists and climatologists resident in that part of the world, namely Professors Reid A. Bryson and F. Kenneth Hare.

In contrast to the earlier review of the world's climates, the famous *Grundriss der Klimakunde*, edited and published in the 1930s under the supervision of W. Köppen, this series is not intended to give comprehensive and detailed reviews of the climates of various parts of the world according to any standardized format written or imposed by editors. Instead, the Editor-in-chief has emphasized from the beginning that he wishes the contributions on climates of different parts of the world to reflect the particular approaches of various authors. As a result of this generally laudable policy of freedom, it has been impossible to avoid the problem that the different volumes in the series exhibit some unevenness in quality, content, and manner of presentation.

This having been said, it is a pleasure to state that Vol. 11, dealing with North America, indeed represents an outstanding example of a good presentation of regional climates and how they are generated. A reason for this fact may be that the presentation has been shared between only a limited number of authors, among whom the Editors have played a very important role.

The volume starts with a general chapter by the two Editors dealing with 'The Climates of North America'. This chapter describes comprehensively both the geographical factors and the mean air-circulation pattern which control the large-scale climatic features of the continent. It also summarizes the main historical perspective of these features.

The authors have chosen to present the geographical factors involved, and their influence upon the flux of air-masses at the surface, before discussing the air-circulation pattern aloft. I think that this is a rather normal procedure but it seems that arguments could also be given for doing it the other way around! In principle, it is the upper-air general circulation, as dependent upon the latitudinal radiation conditions, which is the basic factor that controls the air-mass flux at the surface—which in turn is influenced by the geographical features.

Another question may be raised regarding the suitability of choosing streamlines for presenting the air circulation both at the surface and aloft. A more common approach in discussing upper-air circulation than to use streamlines in the 300 mb level would have been to use isohypses of the 500 mb level and to discuss the circulation for instance by introducing the concept of low- and high-index circulation. It seems to the reviewer that the mean streamlines may give a fairly good picture of the circulation to the non-specialist, both at the surface and aloft, but that important information for the specialist is lost by the omission of the isohypse picture for the upper-air circulation. One would also have liked to have been given some ideas about the recent

changes in the general circulation-pattern over North America as a complement to the presentation of the historical perspectives of climate.

These questions are, however, basically academic. The important fact remains that a very thorough discussion of the general circulation has been presented as a firm basis for the following chapters dealing respectively with the details of the climate of (a) Canada and Alaska, (b) the conterminous United States, and (c) Mexico.

It is a pleasure to see all the details which have been presented in particular for the United States and Canada. In pleasant contrast to many chapters in other volumes of the World Survey of Climatology, the maps and figures are abundant. Yet naturally the figures and tables in many cases reflect the availability of data, both for the United States and Canada, of special derived climatic elements which may not exist for other parts of the world. They also reflect the excellent potentialities of the use of tapes and computers to derive such elements. Of particular interest is the presentation of variability of temperature and precipitation, as well as the thorough treatment of elements such as radiation and evapotranspiration conditions for which it is often difficult to find sufficient information and data. It has not been possible to treat all the same sophisticated elements for the Mexico area; but it should be stressed that also for that part of the continent the discussion of the climate, based on a comprehensive discussion of the general circulation of the atmosphere and the variability of climatic conditions in both space and time, is given due consideration as far as information is available. It is a pity, however, that there is no similar discussion about the main historical perspectives of climatic conditions in Mexico to that presented for the United States and Canada. At least there are data available from Mexico to consider the developments over the last 100 years, and comparisons for that period with the developments in Canada and the United States would have been of particular interest.

In summary, there is every reason to believe that this volume will for a long time to come provide an excellent reference basis for discussions on North American climatic conditions and their fluctuations. It would also be desirable if this volume could provide an example for modern presentation of regional climates to be used in the preparation of volumes in the World Survey of Climatology series that have not yet been published, and for new editions of some of those that have.

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Reviewing the International Order (RIO) Interim Report, [Coordinated by JAN TINBERGEN]. Bouwcentrum International Education, Rotterdam, Holland: [32 pp.], 29 × 21 × 0.3 cm, paper covers, [no price indicated], 1975.

It has been said that the art of teaching is judicious simplification. The first report of the Club of Rome, published under the title *Limits to Growth*, was greeted with rapturous applause from the many who felt that 'Man cannot live by bread alone', and by bitter vilification by those who felt professionally and economically threatened by it. The study led by Dennis L. Meadows was obviously highly oversimplified and mechanistic—little more than a cartoon strip—as if to say that Mickey Mouse learns that he can't have his cheese and eat it. The great contribution of the Meadows *et al.* report was to show millions of people that multiple problems need multiple solutions and hence warn them to be suspicious for ever of the simple solutions