

reader as a pretentious and haphazard collection of tedious lecture notes which the student cannot challenge because of their specificity, their obfuscatory interpretation, and their esoteric bases of authority.

The structural confusion of the book is further compounded by weaknesses and shortcomings in the substance of its contents. Maps have been poorly reproduced from other sources without being redrawn or modified to suit this book's objectives; in many cases, they are illegible or devoid of significance. Tables are loosely spaced, wasteful of paper, and of limited analytical value; many pertain only to Poland, not to Eastern Europe. Many items that should be presented in tabular form are found instead in the text (e.g. East European countries' international economic agreements and memberships in organizations, pp. 175-185). Furthermore, these lists should not be accepted by any reader without substantial verification from up-to-date sources which also contain adequate detail on the function and content of the memberships and agreements.

The regression analyses (pp. 115-122) are devoid of graphs of relationships and analyses of residuals. Furthermore, the regression analysis of highly intercorrelated statistical series smacks of chicanery: on the one hand, the reader is warned that "regression analysis does not postulate necessary direct causation" (p. 117), but on the other hand, a subsequent argument commences (p. 119), "If causative relationship is imputed to our [regression] analysis, . . ." Not only do the data violate many of the assumptions of linear regression analysis, but the imputation of causal relation-

ship here is naive and academically irresponsible. Furthermore, although the title of the book is *Transportation in Eastern Europe*, the regressions are performed only for Poland "because to have done so for all countries of Eastern Europe would have taken up much space and (it is believed) would not have yielded substantially different results" (p. 116). The author then states on the basis of a 1965 East German reference that "The conclusions from the Polish example may be taken as representative for Eastern Europe as a whole" (p. 116). In view of the fact that the regressions were performed on Polish data for the period 1947-1973, the author has no right to extend their relevance to all of Eastern Europe, especially on the basis of imputed authority derived from passing reference to a 1965 East German source.

Thus, for many reasons, this book in its present form is inadequate and should be withdrawn from the market by the author or the publisher. The author should have restricted his book to scholarly analysis of specific topics and issues in Polish transportation since that country comprises the heart of the present book, or he should have adopted one of the many alternative productive approaches to the study of transportation in Eastern Europe. Serious students of Eastern European transportation will not benefit from reading this book and must curtail their need for a serious treatment of the subject until an adequate replacement is published.

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REVIEW OF THE MAY 1978 ISSUE OF *ARCTIC AND ALPINE RESEARCH* (Vol. 10, n. 2). Proceedings of the Symposium of the International Geographic Union Commission on High Altitude Geocology, Caucasus Mountains, USSR, July 1976.

In July of 1976, the Commission on High Altitude Geocology of the International Geographical Union conducted a symposium on mountain geocology at the University of Moscow field station in the Caucasus Mountains, U.S.S.R. Sixty experts from the physical, biological and social sciences with interests in alpine and high-latitude studies assembled from ten countries. Thirty-six papers, half of them by Soviet scientists, were presented. After two years of translation and editorial efforts, the proceedings of this symposium were published in *Arctic and Alpine Research*.

Reviewing this volume is a formidable task. Papers range in scope from natural hazards to biogeography, agriculture, and sociology. No one individual, no matter how broadly based, can hope to evaluate the quality or conclusions of all the papers contained in this volume. In all fairness to this writer's readily admitted non-omniscience and partiality to studies of natural hazards, all that can be done is to summarize the contents of the symposium so that the interested researcher may be directed to papers relevant to his or her pursuits. This is not to suggest that this symposium was ill-conceived. It is difficult to bring to mind many other geographically defined areas of study that can more fruitfully benefit from the multidisciplinary approach than alpine studies. This volume may well serve as a significant source for interdisciplinary cross-pollination.

The volume is divided into five topical sections. Section one is titled "Natural hazards and high-mountain land-use planning". This section is extremely practical and should be of interest to anyone involved with land-use planning in mountainous areas. Papers by Kienholz, Ives and Bovis describe approaches and problems associated with mapping and rating natural hazards in the Alps and Rocky Mountains. Ives and Krebs detail case histories of responses by mountain residents and developers to such studies. The balance of the section deals with avalanches. The avalanche papers range from a review by Perla of the mechanics of artificial avalanche release to several papers on the influence of avalanches on alpine ecology in the Soviet Union.

The heading of section two is "Mountain geocological processes and changes through time". Papers range from purely geomorphological such as Luckman's paper on the geomorphic work of avalanches in the Canadian Rockies to those truly geocological in nature such as the contradictory papers on alpine pedogenesis by King and Brewster and Howell and Harris. The papers by the Soviet authors Golubev and Kotlyakou and Gorbunov are good review papers on the geography of glacial landscapes and permafrost.

Section three is titled "High mountain vegetation and landscape structures". This section deals almost exclusively with timberline ecology. Papers describe flora composing timberline communities and the geo-climatic controls and floral responses which determine their geography in such diverse areas as the boreal zone in the USSR, central Mexico and the Canary Islands. The human impact on timberline is also discussed where long term human activities such as grazing and burning have been at work. The papers on timberline in the Canary Islands and central Mexico by Höllerman and Lauer respectively are noteworthy in this account.

The heading of section four reads "High mountain regional studies". The papers in this section deal chiefly with mountain

biogeography. The majority of the papers are by Soviet authors and discuss non-tropical Asia and Eurasia, and should be good overviews for those wishing to acquaint themselves with these areas.

The paper by Zimina in this section is of general interest in that it not only reviews Caucasian natural history but details man-caused extinctions of a number of animal species in the Caucasus Mountains and current Soviet efforts in nature conservation in this region. Other papers by non-Soviet authors deal with biogeographic studies of mountainous areas of Japan, the Pacific Northwest of the United States, the Canadian Rockies and Iraq.

The final section is titled "Renewable resources of high-mountain environments: their use and over-use". Papers in this section draw on ecology in its broadest sense. Changing cultures and land uses are tied to past and present changes in mountain biogeographies. Papers include case histories from the Carpathian Mountains of Czechoslovakia, the French Alps, and the Himalayas. These papers should be of interest to anyone concerned with the myriad ways human economics and sociology impact on the natural world.

One final remark about this volume is in order with respect to North American alpine studies. The papers by European, Soviet and Japanese researchers provide perspectives on human interactions with the physical and biological environments which can be documented for hundreds or thousands of years. Similar records for mountainous areas in North America are fortunate if they span a century. Thus, these papers provide a wealth of information on the long-term resiliency of mountain ecosystems, the degree to which climatic change has influenced them, and histories of coping with natural hazards. Many valuable analogies to North American problems should be found in this volume.

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FLUVIAL SEDIMENTOLOGY. Edited by A. D. MIALL. Canadian Society of Petroleum Geologists. Memoir 5, 1978. 859 pp. \$30.00

The conference was a great success. Virtually all of the foremost fluvial researchers were in attendance, drawn to Calgary in the fall of 1977 for the First International Symposium on Fluvial Sedimentology, jointly

sponsored by the Canadian Society of Petroleum Geologists and the Department of Geography, University of Calgary. The conference organizers, Andrew Miall, Derald Smith and Norman Smith, succeeded in assembling a focussed program of papers by a wide cross-section of workers, including a number of vigorous newcomers along with the established figures. That the conference was so