

from the publisher.

A comparison with Jansen's *Principles of River Engineering* is required. The older book is better as a textbook: sediment transport is covered in greater detail, as are mathematical models and measurement techniques. The earlier text is more useful because it deals with more topics (including water quality), and it does so more authoritatively. Petersen's *River Engineering* has the better edge in one respect, however: it focuses attention on navigational aspects. As such, it is the best summary hitherto available.

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FLUVIAL PROCESSES IN DRYLAND RIVERS by W.L. Graf. Berlin, Springer-Verlag, 1988, 346 pp.

*Fluvial Processes in Dryland Rivers* is divided into three parts: Basic Perspectives, Processes and Forms, and Modifications of Processes and Forms. Part 1 contains an introduction and a chapter dealing with theory. The latter is very interesting, well-written and certainly falls within the second objective of the book; i.e., to put Graf's own research into perspective. One might argue, however, that this chapter is more fitting to a general geomorphology text because the underlying theoretical principles are not directly linked to the main theme of dryland rivers.

Part 2 contains chapters on surface water, fluvial sediment and process-form relations in drylands. The chapter on runoff introduces the reader to the characteristic hydrology of ephemeral rivers, and also refers to paleohydrologic considerations recently developed by Victor Baker and his students. Not being a fluvial hydraulics text, the chapter on fluvial sediment cannot cover most of the essential principles. Fluvial hydraulic principles might have been presented in greater detail by allotting them the space devoted to sediment characteristics (after all, this was not meant to be a fluvial geomorphology textbook), and to the interesting, but irrelevant, problems of contaminants. Table 4.3 summarizes biomass values for common dryland vegetation communities and henceforth should be a valuable and readily available base for those interested in runoff and sediment yield. Some process-form relations are still not well understood as yet. This is seen with respect to the manner in which Graf explains the formation of alluvial fans, badlands, channels, their depositional features and entrenchment, and it is particularly obvious for sediments.

Embracing so many complex topics, it is not surprising that the author has inserted quite a few generalities. For instance, there is no supportive evidence in the book or in the references that factors favorable to braiding are *maximized* in drylands, rather than in rivers cutting into fluvio-glacial deposits and draining steep mountainous terrain. Similarly, because sediment transport has not been measured, it is misleading to maintain or to quote from other sources that sediment-poor reaches do not braid.

Part 3 includes Chapters 7–9 on vegetation, direct human impacts and generalizations for dryland rivers. Chapter 7 is the most valuable part of the book, because

there is a consensus among geomorphologists that vegetation has a very large effect on fluvial processes in general, and especially in semiarid and arid environments. Will Graf is to be congratulated for an excellent review of grazing, fire and riparian conditions with respect to runoff and sediment yields, entrenchment, and bank stability. The direct human impacts are in large part not specific to drylands: upstream and downstream effects of dams have been studied in greater detail than presented herewith; urban effects are merely mentioned briefly; and the most interesting direct human impact, that of agricultural development, would have attracted a large readership had it contained more information.

This is a Springer publication and, as such, delivers what we have come to expect from such a publisher: few typos, superb review editing and immaculate tables, drafting and references. It is an essential text for planners in dryland rivers and an interesting addition to any fluvial geomorphologists' library. Volume 3 in Springer's Series in Physical Environment is different from preceding texts because it is the first fluvial geomorphology book to center on climatic peculiarities, or, as the author states in his preface, to develop "a geographic theory for modern dryland rivers." The mere attempt is more than welcome. The extent to which this objective has been achieved will be assessed by the future generation of geomorphologists.

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CARTOGRAPHY IN FRANCE, 1660-1848—SCIENCE, ENGINEERING AND STATECRAFT by Josef W. Konvitz. Chicago: University of Chicago Press, 1987, 214 pp.

"That better maps would be useful was self-evident to individuals and groups involved in assessing and improving France's geopolitical, economic and social conditions." This is the key to Konvitz's stimulating treatise on the mutual relations between statecraft on the one hand, and the science, technology and art of map-making on the other. As a subtitle to the work, one might substitute the author's definition of the second Cassini national map survey: "The conquest of space through measurement." However, the important role of maps in stability and welfare (not to mention warfare) did not come naturally to the agents of government and science. Konvitz traces in detail the evolution of cartography—and the awareness of the effectiveness of maps—in France in an era which was of great significance, socially and politically, to the geographical region covered, as well as conceptually and technologically to the discipline treated.

All mapping, whether it describes the physical landscape or thematic spaces, requires valid base or background maps, and the book starts—appropriately not only from a chronological viewpoint—with a description of the national map surveys, relating the contributions of some of the great cartographers and cartographic dynasties, foremost among them the Cassinis. At the turn of the 18th century, French science, along with that of other countries, is identified with the revolution in units of measure, and considerable space is devoted to this subject. Indeed, "only a uniform