

The Future of Arid Lands. Gilbert F. White, editor. American Association for the Advancement of Science, Washington, D. C. (1956). 464 pages. \$6.75.

This volume represents the combined efforts of scientists from seventeen countries to evaluate the present-day problems and status of research of the world's arid lands. The arid land area is huge, covering approximately one third of the world's land surface. This area is of vital interest to those concerned with world resource and population problems since misuse of this land can affect adjacent humid lands.

The varied topics concerning the arid lands are conveniently grouped under five main headings: The Broad View, Variability and Predictability of Water Supply, Better Use of Present Resources, Prospects for Additional Water Sources, and Better Adaptations of Plants and Animals to Arid Conditions. This organization greatly facilitates reading since one can more easily select the specialized topic desired. The reader is informed that two impressions were derived from the discussions of these quite varied papers: first, there is a need for an integrated analysis by the various disciplines on a regional basis, e.g., of drainage basins; second, there is a distinct challenge to convert findings of the natural scientists into reality at the level of the farm or ranch.

Nearly every article contains information which will be of interest to the nonspecialist or layman. Shantz, for example, in "History and Problems of Arid Land Development" states that early use of dry lands in the western United States emphasized the maintenance of a dust mulch as a solution to agricultural water problems. Dust mulch provided no more protection to the moisture below than the same amount of hard soil. It was the repeated cultivation connected with dust mulching that eliminated the transpiration losses by weeds and conserved water. Shantz also points out the difficulties associated with practices of loosening the subsoil, deep planting of trees, and the use of nitrate fertilizers in the short-grass country. Koenig in "The Economics of Water Resources" submits the proposition that twentieth-century use of water for irrigation agriculture is not an appropriate use of water since it follows a historical precedent to increase the value of the land. In the United States the water which will support one worker in irrigation agriculture will support about five dozen workers in manufacturing.

Any over-all appraisal of *The Future of Arid Lands* must of necessity mention what the book is not as well as what it is. From the title one might assume that it would include a step-by-step evaluation of all the arid lands of the world. It is however quite selective and contains very little material on the Soviet and Chinese segments of the great Eurasian arid zone.

Each reader will have his own opinion as to what he considers the most important chapters and will find that some are quite specific while others are quite general. Along these lines it might be well to mention that some of the best detailed geographic descriptions of several of the arid countries are contained in this volume. The inclusion of summaries at the end of most chapters as well as extensive bibliographies makes this a valuable reference book.

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