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Irrigation Institutions

A DISCUSSION OF THE ECONOMIC AND LEGAL
QUESTIONS CREATED BY THE GROWTH OF
IRRIGATED AGRICULTURE IN THE WEST

BY

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PREFACE

THIS work is based on twenty years' experience in the development of irrigated agriculture in the arid West. Fifteen years of this time were devoted to the study and administration of irrigation laws as assistant State engineer of one commonwealth and territorial and State engineer of another. The duties of these positions brought the writer into personal and official relations with all classes of men to whom the problems of irrigation were of vital interest. These included not only farmers, ditch builders, and investors in irrigation securities, but also legislators and jurists who were shaping the legal principles which are to control the distribution and use of Western water-supplies, and the social and economic fabric under which unnumbered millions of people must dwell.

All phases of the subject had to be dealt with. The plans for canals to carry water far over the thirsty plains had to be passed upon; advice had to be given regarding the best methods of applying water to the land and the amounts required to bring crops to maturity. The problems of cooperation and organization, inseparably connected with irrigated agriculture, had to be studied. Head-gates had to be closed in times of scarcity,

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in order that other users of water should receive their just share of the common supply.

The lesson of these years is that the vital agricultural problem of the arid West is to establish just and stable titles to water and provide for their efficient protection in times of need. Every farmer in this region comes to understand the overshadowing importance of water. Their farms extend along many rivers for scores and even hundreds of miles. Every irrigator from a stream is bound to his fellow-irrigators by their common tie of dependence upon it. The amount diverted by one ditch is a matter of concern to all other ditches below, because it affects the volume remaining for their use. The independent life of the farmer in humid lands is impossible. Irrigated agriculture is an organized industry, and the prosperity and happiness of those engaged in it are largely determined by the character of its institutions.

The changes wrought by irrigation in the last half century have been little less than marvellous. The highest-priced farming lands on this continent are found in areas once regarded as desert and worthless, and great cities have been reared in regions it was once believed would always be dreary solitudes. In some sections material development has outrun the creation of institutions needed to insure enduring success. Irrigation laws are so ambiguous or contradictory that the finite intellect is not able to interpret their meaning. The water rights which govern the value of

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farms have many forms and are acquired by many methods. In one respect, however, they are all alike ; no matter whether acquired by compliance with a statute or by purchase from a ditch company, they are a source of more perplexity at the outset and of more anxious thoughts afterward than are all the other questions of irrigation combined. The irrigator whose water right does not furnish grounds for either an inquiry or a grievance is a rare exception.

Nor are irrigators alone in finding the issues created by the use of streams hard to define. Lawmakers and courts have found them equally perplexing. They involve the determination of the kind of ownership which shall be recognized in the rains and snows which are gathered together in rivers, in order that each user shall receive his proper share and monopolies in water be prevented.

Although the field for the study of the engineering and agricultural problems of irrigation is a broad and inviting one, its problems are not so urgent as those which relate to the ownership and distribution of the water-supply. Neither is there any other issue about which irrigators are so greatly concerned.

The problems of irrigation are not, however, of water alone, but of land and water. In many parts of the arid West ability to control the use of contiguous grazing lands is absolutely necessary to the success of irrigation, since farming can only be carried on with profit in connection with growing live stock. Among farmers so situated, range

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rights are almost as important as water rights, but under existing laws no such rights on the public domain can be maintained except by force.

The opening years of the twentieth century have brought a larger and truer conception of the value of the arid West and of the part it is to play in the industrial life of this nation. It is now realized that its valleys are in time to be the homes of many millions of people, and that under just and wise policies it is possible to create homes which will represent a higher average of human comfort and better social and industrial conditions than can be found elsewhere save in few places on the globe. The interest of the nation has been awakened to the opportunities here presented, and the civic pride of Western communities has been aroused to secure the creation of irrigation codes which will be worthy of a self-governing people. As an aid to local effort, the general government is engaged in gathering facts on which future developments should be based. The Department of the Interior is measuring the water-supply, and finding out where it can be used to the best advantage and with the largest return. The Department of Agriculture is studying the methods of distributing and using water in order to promote its more skilful and effective use, and is inquiring into the social and legal questions created by the use of streams in irrigation, both in this country and in other lands. From its beginning the writer has been in charge of the latter investigation. It is hoped that what is here written will be an influ-

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ence for good. The convictions expressed have been more largely shaped by what has been seen than by what has been read. They are the result of careful study, having at its foundation an abiding faith in the future importance of the arid West, a pride in the success already won, a belief in the future greatness of the regions most concerned, and a profound sympathy for the pioneers in the development of these regions, in the perplexities and uncertainties which have beset them.

This work was originally prepared for a course of lectures on the Institutions and Practice of Irrigation in the University of California. In their preparation, the irrigation bulletins of the Office of Experiment Stations were freely drawn upon. Dr. A. C. True, director, and Mr. R. P. Teele, Editorial assistant, have rendered valuable assistance in this connection, which is here gratefully acknowledged. The writings of Colonel E. S. Nettleton and Mr. William E. Smythe have been full of suggestions, and Mr. C. T. Johnston, Professor J. M. Wilson, Hon. J. E. Field, Mr. W. H. Code, Hon. D. W. Ross, Professor S. Fortier, Mr. Frank Adams, Hon. J. S. Greene, and Hon. Adna Dobson are among those to whom the writer is indebted for information.

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