IRRIGATION IN UTAH

In the June number of the Historical and Political Studies of the John Hopkins University, there appears a contribution by Mr. Charles Hillman Brough, of Ogden, Utah, entitled "Irrigation in Utah." This description of Utah's wonderful industrial system last year won for Mr. Brough the Fellowship in Political Economy in the John Hopkins University, carrying with it a prize of $500. The study is based on Church records and personal scripts supplied by the Church historians, and letters received from representative irrigators in all parts of the State and the arid region, and required two years of careful research to its preparation. It is written in a direct style and in convenient book form, has already attracted a great deal of attention throughout the east, not only as portraying the possibilities of irrigation, but also the advantages of cooperation, which was the primal principle of Mormon colonization.

The chapter headings are devoted to a description of the co-operative system, through which the Pioneers were enabled to construct the necessary irrigation works without expending any money, contracting any debts or buying any lands. The distinguishing feature of this system, as stated by the author, were:

1. Associated labor in the construction of canals and irrigation works, enabling the laborer to become his own capitalist.

2. A small farm unit devoted to diversified production and intensive culture.

3. The priority of rights system, under which water was distributed among the irrigators in the order of settlement.

4. Water right attached to the land so as to prevent speculation in either land or water.

It is shown in the Monograph how the principles of co-operation, organization carried out in the necessities of Pioneer life and first applied in the irrigation of farms, has since been extended throughout the entire economic elements of Utah. Mercantile enterprises, in which Zion's Co-operative Mercantile Institution is a leading factor, and financial institutions are organized on the principle with the result that consumers are protected against the exorbitant profits of middlemen, and at the same time shareholders are insured a fair compensation for their labor. Home manufacturing is in vogue, the annual sales of the Z. C. M. I. have averaged $300,000, and the average of cash dividends paid to stockholders has been $15 per share per annum, equivalent in 1893, 1897, $120,000, besides such dividends to the amount of $615,000. One thousand dollars' worth of stock invested in the Z. C. M. I. in May, 1868, was worth $1,012.30 in July, 1897.

The author is warm in his praise of irrigation societies, as typified by the Canal Company, and thinks it would be legislative to apply it to the reclamation of large areas of land, because on the whole of such a tract there is a multiplicity of small canals and ditches.

In an interesting chapter on "Catholic Irrigation," Mr. Brough traces the natural evolution of irrigation in Utah from a small stream that a single farmer or group of farmers could divert and use, to the larger work calling for the combined effort of the community and finally to the larger undertaking for which thousands of acres are combined under a single system of works.

He points out the inevitability and elevation has resulted in substituting systems receptive, introducing better agricultural appliances and securing an economical utilization of the water supply. He makes a suggestive comparison of the co-operative and capitalistic systems and thinks the people of Utah would have to pay for operating water rentals being charged by some big irrigation companies, of which the Pioneer Electric Power company, the Bear River Irrigation Company, the Mt. Nebo Bear River and Land Co., and the Lake Peninsula Water and Power Co., are typed. The large irrigation plants, which have been built as well as those in process of construction, are described in detail, and a particularly valuable improvement in the Sanitary Canal, which, by a siphon system, the nature, dates of incorporation, capital stock, presidents, managers, and the phases of business of all incorporated irrigation companies in the country in the state. This list is official, having been compiled from the records of the county assessors.

The development of agriculture and industries in Utah through irrigation, the average yield of the staple crops, the expenses and receipts of farming operations, the difference between irrigated and "dry farm" yields is indicated in numerous forms in tables, which have been compiled from the records of the other official records, one of the most striking of these tables is a comparison of the average yield of the staple crops in the United States, at large with the average irrigated and "dry farm" yields of the same crops in Utah.

Several chapters are devoted to tracing the history of irrigation legislation in Utah, particular stress being given the Utah District Law, passed January 20th, 1896, under which over 1,400 applications have been received, and the irrigation commission created by the last legislature. The connection between irrigation and other features of Utah's industrial system, the influence which irrigation has had in molding our State's present conditions, and the influence of Utah's irrigation system on the arid region as a whole owes to the Pioneers of 1847, is graphically yet truthfully shown. Mr. Brough's references have led him to assert that the Mormons were the first Anglo-Saxons to colonize in the New World, for while he finds earlier traces of irrigation in the colonies of the Spaniards in Mexico, in California, in the canals of the Zuniagoins of Arizona, and in the aboriginal canals of the Aztecs, and by various Indian tribes, there are evidences of Latin rather than Anglo-Saxon civilization. The Mormons, he claims, were the pioneers in the art of irrigation in the sense in which the term is used today, viz: (1) The power of diverting water in exactly the right quantity. (2) The power of applying water exactly when needed. (3) The power of giving water to any crops and watering it at proper times.

As the first part of the monograph is historical, the second is constructive, dealing with the problems confronting Utah's irrigators, which he divides into (1) The reclamation of the whole body of irrigable land in the State. (2) The formulation of a system by which the rights of water users shall be established. (3) The prevention of chaos arising from prior rights in water. (4) A remedy for the error of the commonwealth in monopolizing irrigation products.

At the present time there are eight million acres of irrigable land in the State and under such rights as now obtain this is the Utopian condition. The conditions are practically as follows: (1) It would be for the United States Government to reclaim the arid lands if it would pay for the reclamation of the land, as a loan to the State. (2) Reclamation under the general government through appropriations and surveys. (3) Control of the lands in the State in trust.

Reclamation under the present land laws is rejected, (a) because there was comment the land be surrendered present conditions under conditions which make the virtual confiscation of the entire land; (b) because these laws are so hedged about with restrictions as to prevent speculation in either land or water.

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The second part of the monograph dealing with problems of irrigation in Utah is prefaced by reasons why more land should be reclaimed.

This chapter is especially interesting as a consideration of the general benefits accruing to irrigation. Among the benefits enumerated are: 1. Irrigation protects better methods of agriculture, as by increasing the small farm unit, by fostering intelligent farming, by encouraging the production of special crops.

2. Irrigation, through the introduction of improvements in the methods of excavation, promotes economy and efficiency, as, by increasing the product of the land, it reduces the actual labor required to raise a given quantity of the product, and by placing an insurance policy upon the crops thus greatly lessening the risk of the capital employed, a risk so great that farmers have to contend with weather conditions, as, by renting irrigation rights, it enables the poor farmer to obtain water, and, by dividing the farmers closer together, thereby opening social opportunities now denied them as a class and rendering contiguous to all the information for any public or social purpose.

3. Irrigation through the creation of business opportunities therefore is conducive to the welfare of the State, as, by making a new outlet for human energy thus relieving the congestion of any one city, by taking men more independent and thus creating a desirable citizen and patriotism.

4. Irrigation benefits the state, as distinguished from the individual, by enhancing the value of taxable property. An extension of the irrigable acreage means an increase in the annual assessed valuation and in the revenue taken by the State.

Mr. Brough concludes the monograph by a consideration of the future of the State, and the necessity of the Pioneers of Utah, and the necessity for a thorough survey of its possibilities that government officials be made aware of the need of such a survey.

(1) The preservation of all the irrigable land in the State would enable the State to exercise a paternal supervision over the water supply of each district.

(2) State action would vest the control of the land and water in the same authority and thus ensure the equitable distribution upon divided ownership. (3) Priority according to the common law, would place the State in the position of a riparian proprietor of the appropriated waters, and the government in the service of all unappropriated land.

(4) Industrial precedents exist for the policy of State control, the most notable one being the disposition of over ninety acres of swamp lands.

A problem of equal importance with state control, because the interests of a policy of state control, because the interests of a policy of state control, because the interests of a policy of