

IRRIGATION.

Among the subjects of importance treated of in the report of the Canadian Department of the Interior for 1896, is that of irrigation; a section of 120 pages of the report being devoted to explaining and illustrating it. The means taken to supply artificially with water what is termed the arid region of our North-West, namely, parts of Southern Alberta and Assiniboia, and thus assist not only the cereal, but the root and fodder crops, have gone beyond the experimental stage. And the results therefrom are decidedly satisfactory. Most of those who have resorted to the system of irrigation are stock raisers, and have devoted their efforts mainly to growing hay and other fodder; but good grain crops, both as regards quality and quantity, were obtained last year from these irrigated lands. A remarkable instance of the kind is given among the photographic illustrations furnished in the report. Upon a farm at the mouth of Fish Creek, not far from Calgary, private ditches were built in 1895 to irrigate 800 acres, and so successful were they that from a part of this land, which had previously yielded nothing, 900 tons of hay was taken.

The system has made quiet but remarkable progress. At the beginning of 1895 there were 70 ditches constructed and in operation in Southern Alberta and Western Assiniboia. At its close this number had increased to 112, and the acreage under constructed ditches susceptible of irrigation therefrom to the surprising figure of 79,271 acres. In addition to the canals and ditches already built, 42 ditches and canals have been surveyed. The length of those built is over 350 miles.

Very satisfactory harvest results were obtained last year, and good returns were secured by irrigators from their crops, the British Columbia mining districts affording an excellent market for oats and hay, a market which must, of course, expand very largely. Irrigation surveys have been continued in Alberta by the Department, from the foot hills of the eastern slope of the Rocky Mountains to affluents of the Red Deer river, north of Calgary, and exploration is being made in Assiniboia to determine whether an effort shall be made to divert water from the South Saskatchewan river to the Regina plains.

It is necessary to explain the meaning of the term "arid region" and to see whence the necessity for an artificial supply of water comes. And at the outset Mr. J. S. Dennis, chief inspector of surveys, devotes a page to correcting what he properly terms a very erroneous opinion which prevails regarding the nature and product of the lands in our North-West treated by irrigation. The portion of territory in question is only arid in the sense that there is insufficient rainfall during the majority of seasons to mature crops. "The soil of this region is good; none of it is arid in the sense of its being barren wastes, but the whole region produces a good crop of grass every year." How then is it termed arid and why is it necessary to irrigate it? Let Mr. Dennis reply:—

"Probably the best means of dissipating the erroneous impression referred to, is to state that the so-called aridity constitutes one of the strongest features in the present value of the region, and renders it, even in its present condition and without irrigation, an exceedingly valuable portion of the public domain. This assertion will be better understood by reference to the marked success which has resulted from the stock industry in the arid portion of the Territories, and from the statement that this success is distinctly traceable to the fact of the small rainfall during certain portions of the year. The area in question produces every year a good crop of grass, the moisture from the melting snows and spring rains being sufficient to advance this growth to a healthy condition before the hot and dry summer months. The effect of the lack of rainfall during these months (which has led to the application of the term arid) is to rapidly cure the grass grown in the earlier part of the year in such a manner that its nutritive qualities are retained, and as a consequence, stock will thrive on this sun-dried grass, which to the observer looks hard and useless, in such a marked manner that beef fit for market purposes is provided during the late fall and winter months direct from the range. Were

the moisture sufficient to keep the grass green and growing until late in the season, the effect, which has been experienced during some seasons, would be that instead of being cured and rendered fit for good winter feed, it is largely killed by the early fall frosts, and cattle fed thereon become poor and weak. It will, therefore, be realized that while certain portions of the arid region will, with the aid of irrigation, produce bountiful crops of all kinds of cereals, the total water supply available for reclamation of areas by irrigation, as is more fully explained further on, will only suffice to irrigate a small portion of the region, and that the value of the remaining portion for grazing purposes is mainly due to the very aridity which renders irrigation necessary, and further, that one of the greatest benefits to be looked for from irrigation is the reclamation of districts well suited in all other particulars for grazing purposes, by providing the water necessary for stock watering purposes."

COUNTERFEIT LIFE INSURANCE.

SECOND ARTICLE.

The following is a summary of the foregoing figures relating to the eleven grand lodges of the Ancient Order of United Workmen, whose record we have been presenting each year for thirteen years. From 1884 to 1893, the membership of those lodges made excellent growth. From 91,452 in December, 1884, they grew to have 139,581 members. But the past three years has brought a change, and they now number only 128,887, as the footings for 1896 show. The result upon their combined net death-rate is, that instead of \$9.50 per \$1,000, as in 1884, it cost the members \$15.42 each in 1896, apart from the \$4 assumed for expenses:—

ANCIENT ORDER UNITED WORKMEN.

	Membership December 31st.			Net cost per \$1,000.		
	1884.	1893.	1896.	1884.	1893.	1896.
California	16,655	17,316	16,242	\$ 8 48	\$16 02	\$19 26
Colorado	2,217	5,430	8,347	3 62	5 25	8 48
Illinois	15,392	19,508	17,426	5 51	14 76	15 42
Kentucky	1,484	2,500	1,965	15 73	14 66	19 04
New York	19,674	30,942	26,192	8 37	15 10	17 64
Ohio	3,689	4,939	4,728	14 52	17 59	21 83
Ontario	9,000	27,922	29,909	7 84	7 40	8 07
Pennsylvania ..	14,700	16,854	13,339	7 57	14 42	16 86
Tennessee	1,912	2,004	1,673	17 45	19 75	13 47
Texas	1,895	3,966	3,294	8 10	16 32	14 00
Wisconsin	4,834	7,300	5,772	7 37	11 89	15 58
Totals	91,452	139,581	128,887	\$9 50	\$13 85	\$15 42

Every Grand Lodge jurisdiction shows a decrease in membership during the three past years, excepting Colorado—a young society—and Ontario. They have increased by 4,834 members, and the other nine have decreased by 15,528, making the net decrease in the eleven jurisdictions just 10,694. This is nearly one-tenth. But when we come to look at the death rate cost, we find both Colorado and Ontario have increased, from \$5.25 to \$8.48, and from \$7.40 to \$8.07. Tennessee and Texas show a slight decrease, but both are still high at \$13.47 and \$14.00. The record of New York State for the three years is a poor one, showing a drop in membership from 30,942 to 26,192, and a mortality increase from \$15.10 to \$17.64. Pennsylvania's score (where the Order originated) is nearly as bad. It has dropped 3,515 members in the three years, and therefore ought, theoretically, to be making money rapidly from lapses. The lapses are there, sure enough, but where's the money?

Let us now arrange the others in groups for convenience, and see how they have prospered. Perhaps they have succeeded better than the A.O.U.W. Most of them operate on a better system—the grading of the death-calls according to age.

About one-half the other twenty-two societies in the list are what may be called Fraternal, and the other half Business associations. We, therefore, give their figures in the form of two tables, relating respectively to eleven fraternal and ten business enterprises. In these tables the growth of membership and of net cost of deaths per \$1,000 can be the better seen:—