

city itself than by contract with private companies where there is a fair amount of competition? So far as the first question is concerned, it may be said that unless a great saving is to be effected the city is not now financially able to proceed in the direction named, especially as the administration does not seem inclined to be very economical, or to regard with much seriousness the promises of a year ago. But if a large saving is to be effected by a municipal lighting plant, then it may be advisable to go ahead with such a plan.

On the other point, the experience of other cities is such as to suggest that the most careful investigation be made before the step is taken. The figures and estimates of engineers are not to be taken without question, any more than the statements of certain interested parties. There may be "an axe to grind" behind these, and when the plant is in, a failure to meet predicted requirements would only increase the city's burden. On this point the report of Mayor John MacVicar of Des Moines, Iowa, on municipal lighting for that city, offers some suggestions. Mayor MacVicar is a strong advocate of such lighting, and favors it in Des Moines, although the statistics in his report do not fully bear out his conclusions. Among the statements he received during the course of his inquiry, and which he presents no figures to offset, is this from the General Electric company:

As the number of lamps required by Des Moines would be about one-third the number in operation in Detroit, the cost per lamp would be greater than in Detroit, and would be in the neighborhood of \$500 per lamp, which for 542 lamps would be \$271,000. I should not be at all surprised to have the figure reach \$350,000.

As to the cost of the operation, the report by the city of Chicago, published about a year ago, showed that the expense of operating each arc lamp was \$95.65. To this should be added interest on investment, depreciation, insurance, taxes, water, etc., which would readily bring the price up to about \$100 per year.

I understand that the price in Des Moines is \$99 per lamp per annum. If this is the case, it is absolutely hopeless for your city to undertake to reduce the price by putting in a plant and operating it on its own account. There are plenty of consulting engineers seeking employment who can figure out that the lights will cost you \$50 per lamp per annum, but such results cannot be secured either at Detroit or Chicago, and these two plants are the crack municipal plants of the country.

I send you the above information from a disinterested standpoint entirely. If your city determines to put in a plant we shall be very glad, indeed, to bid on the electric machinery and shall try and secure the work. We shall be glad to furnish you any additional information that we have on the subject. Our deliberate judgment is, however, that it will be very much cheaper, and more satisfactory to your city, to patronize some one of the local companies now doing business in your city for such electric lighting as it may require.

The board of public works of St. Paul, Minn., have investigated the subject of municipal lighting, and have come to the conclusion that it would not be advisable to establish a municipal plant, but rather light the city's streets by contract. The Brainard (Minn.) municipal plant was a distinct failure, and has been

turned over to a private company. The experience of other cities, even those much larger than Des Moines, has been that the cost of street lighting has been greater when carried on directly by municipalities than when furnished by some private corporation and paid for at a fixed rate per annum. The reasons for this are many. One important thing is the local companies can afford to make rates because of their income derived from private lighting.

All this does not say that a municipal plant would not be an advantage to Salt Lake City, which now pays \$102 a year per lamp on a moonlight schedule. But it does say that the greatest care is necessary in adopting the plan, to be sure that there is foundation for success; and also that the oft-repeated assertion that Salt Lake can light its own streets for \$50 to \$60 a year for each lamp is to be taken with a grain of salt, in the absence of practical demonstration. In the competition now in prospect, it is quite probable that hereafter a rate of \$84 a year could be secured from local companies, and a municipal plant ought to come below that to be a safe investment under existing conditions. The suggestions here given are made solely with a view to thorough investigation and discussion of the subject, that the facts may be fully understood.

### THE WHEAT PROSPECT.

This year the corn crop in the United States is the largest ever gathered, but the wheat yield has fallen off materially. The rise in price of the last named grain has caused the planting of a larger acreage of winter wheat, so that the outlook for next season is for a marked increase. Commenting on the grain market outlook for the next few months, Bradstreet's suggests that for the benefit of those who think that the meaning of the so-called short crop of wheat in the United States has been fully discounted by the advance in prices, it is in order to explain that it is the unexpected which generally happens. Various estimates of the American wheat reserves this year place them far below quantities held at like periods for many years—some say 65,000,000 bushels less than last year. One of the best indications of this is found in very small receipts at primary markets, notwithstanding comparatively high prices. In commenting on this situation, Beerbohm writes that "it is therefore quite reasonable to expect that America may, at a given time, find itself absolutely independent and in a position to demand, practically, its own price for its wheat." It should also be remembered that the present season differs from previous ones in that both India and Australia are importers, instead of exporters, of wheat.

### LIVE AND LEARN.

Frequently those people who gain the highest fame and admiration from their associations in the world are not above admitting their advancement in learning some things that are matters of common knowledge to many or more limited experience but better situated in the way of receiving cer-

tain information. Among these may be named the Rev. Mr. Moody, who has achieved greatness as an evangelical preacher, and whom the New York Tribune reports as follows in a recent meeting in Cooper Union, New York:

Mr. Moody said that he was a Christian a long time before he found out that the Holy Spirit was a person. He always thought that the Spirit was an attribute of God, just like mercy—just an influence coming from God; but one day he heard an old preacher say that he thought Christians dishonored the Spirit by saying "It" instead of "Him" when referring to this person of the trinity. Mr. Moody read the four gospels through to see whether the preacher was right, and he found that whenever Christ spoke of the Holy Ghost He spoke of Him as a person, and Christians should do the same.

### UTAH AT PHOENIX.

The Chicago Record has a review of the recent irrigation congress at Phoenix, Arizona, which presents some interesting facts concerning the reclamation of arid lands by aid of irrigation. Many of the figures used have been given before, but their reproduction at this time, when there is a general feeling in the nation to push business and industry in every direction in the hope of starting an era of better times, makes them of special interest here and elsewhere. The Record article figures out that in the arid states and territories there is so great an area of land capable of reclamation, and that, "as it has been proved in California, Colorado, Utah and other states where irrigation is used that forty acres of irrigated land equals in productive power 100 acres in regions where rainfall is depended upon, here are 61,000,000 farms for settlers." This showing perhaps is a little affected by over-enthusiasm, yet it impresses the truth that in the reclamation of those lands there is sufficient to support the population of an empire.

Discussing the relative production of irrigated and non-irrigated lands, the Record article gives considerable attention to Utah, and sums up an argument this way: "Does farming and fruit-raising pay on irrigated land? When Utah became a State less than two years ago, government statistics showed that the State contained 18,816 farms, on only 1,132 of which there were encumbrances. Can any state where rainfall is depended upon show such a record?" It remarks that "the Mormons in the last ten years have completed some very large ditches and brought many thousands of acres into cultivation in Utah and Idaho," and quotes as follows from a letter written in the fore part of this month by Chief Clerk MacCunig of the department of agriculture:

In Utah the irrigated lands produced the average of 33½ bushels of wheat to the acre; oats, 43 bushels; rye, 29 bushels; barley, 35 bushels; alfalfa, 5 tons; potatoes, 11½ tons; grapes, 7 tons; apples, 5 tons; peaches, 8½ tons; pears, 6½ tons; plums, 6½ tons; sugar beets, 16 tons. Market gardens in Utah produced 14,000 heads of lettuce; cabbages, 12,000; cauliflower, 7,200; 600 bushels of onions, 1,800 bushels of parsnips, 2,250 bushels