

the public can but point out the evils of the world and warn the unsophisticated against them. It is for parents and guardians to instill right principles into the minds of those under their care, watch over their reading, their amusements and their associations, and give them such common-sense ideas of practical life as will secure them against self-deception and the wiles of the wilfully wicked.

### ARTESIAN WELLS.

THE importance of the water question renders any feasible suggestion likely to lead to the production of an adequate supply worthy of consideration. In this connection we draw attention to the fact that there has been no competent experiment to demonstrate whether or not artesian water is obtainable in this valley.

The solitary attempt in that direction was that made a number of years ago, in the foothills near the northeast corner of the city, in proximity to the cemetery. The enterprise was inaugurated by the City Council about eight or ten years ago, and proved a failure. This fact did not demonstrate that the obtaining of artesian water in this valley is impracticable. If the experiment had been tried in the low lands instead of on the bench ground, it is not improbable that the result would have been the reverse of what it proved to be.

The reason for the selection of the site was that if a good flow was obtained it would partly solve the dry bench water question, which at that time was in process of agitation. Experience in other parts of the country demonstrates, however, that it is in the low-lying portions that artesian wells are successfully sunk. Men who have had experience in obtaining them in California have expressed opinions to the effect that all the conditions of this valley appeared to be favorable to their being secured here.

Perhaps additional force is given to this question by the fact that a large number of the best wells of that character in the world have been obtained in James River valley, Dakota. The *Scientific American* recently published an article upon the wonderful Dakota wells, with illustrations, showing the streams being thrown from them to remarkable heights. We quote from the article in question:

"The early pioneer found the

most of Dakota inclined to drouth, caused largely by extensive fires which left the surface bare. This caused drouth, but since the protection of the grasses by settlement, moisture has so increased that this valley is now teeming with productive farms.

The pioneer well was put down at Aberdeen, March, 1882, by the C. M. & St. P. R. R. Co. It is 961 feet deep, with a tube 5½ inches, made of 3-16 inch wrought iron. Water was found in sand rock. The water is soft, but cannot be used in boilers, as it foams. This well choked up with sand for a time, but afterward opened with its original force.

In 1884 the city put down a well 908 feet deep, 5 3-16 inch tube. A system of water-works was put in. The city with 5000 inhabitants, has the best of fire protection. Four streams at one time can be thrown over the highest of buildings. Aberdeen and surrounding country are very level, so to get drainage a pumping system, such as Pullman, Ill., has, became necessary. Last year the city put down a well for power alone. The system is now completed, and the result is perfect. The pumps have a capacity of 50,000 gallons per hour. A float makes the pumps automatic, so that they work only when there is sewage to be raised. For a cost of only a few thousand dollars this city has water works and a pumping sewage system without cost of fuel, engineers, or even oil. The pressure of these wells is about 200 pounds per square inch. A two-foot vein of coal was struck in the first two wells.

Ellendale, north of Aberdeen, 37 miles, has a well 1,087 feet deep. Water was found in sand rock beneath an impervious stratum of shale. The water is clear and soft, with temperature of 67 degrees, and pressure of 150 pounds per square inch. The city has a system of waterworks costing less than \$7000.

The Redfield well is 960 feet deep. The tube in this well is of three sizes. The first 400 feet is 6 inches, the next 300 is 5½ inches, and the last 260 feet 4½ inches. Water was found in sand rock. Coal was found at different depths, and smelled of oil. The water is clear and soft, has a temperature of 68 degrees and pressure of 200 pounds per square inch. The city has a complete system of waterworks for fire, lawn and house use. It takes four strong men to hold the hose.

The Huron well is 863 feet deep, having a 8 inch tube from top to bottom. Water was found in sand rock. The pressure is upward of 200 pounds per square inch. Water is a little hard, and most of the time clear. Temperature is 60 degrees. Huron has two miles of water mains and two miles of side piping. Besides furnishing water for fire use, it runs motors for two laundries and four printing offices, using about 20 horse power. The Huron and Redfield wells are perhaps the best in the valley.

Yankton has two 6-inch wells, one 610 feet deep and one 600 feet

deep. These wells furnish fire protection through 19,400 feet of pipes, and run the electric light, two printing presses, a tow mill, feed mill, and furniture factory. The water in these wells has a pressure of 56 pounds per square inch, and, unlike most of the other wells, is hard. It is, perhaps, the best drinking water of any of the wells in the valley. The second well did not diminish the flow of the first. Water was found in sand rock, temperature 62 degrees.

The Jamestown well is 1,576 feet deep, and has a pressure of 100 pounds. Water is clear and soft, with temperature of 75°. At 300 feet quite a flow of gas was met. The city has a system of water works with the well.

No one is able to say that such marvelous wells are impracticable in this and other valleys of Utah. Is not then the matter worthy of a thorough test? If they can be found the water question would be solved, and this region would be transformed, so far as natural facilities could make it so, into a veritable paradise. It would create a boom of the right kind, enhancing all real values to a degree that can scarcely be computed.

### VACCINATION.

TO SAY anything against vaccination is in some people's minds equivalent to proclaiming one's ignorance or crankiness. Yet there are many very sensible people who are vehemently opposed to this method of attacking smallpox, and who maintain that it is not a preventive and does more harm than it can possibly do good.

It is nearly a century since Dr. Jenner made the discovery and introduced the practice which has made his name famous throughout the civilized world. It is certain that since its introduction the deaths from that terrible scourge, which once disfigured multitudes where it did not decimate the population, have greatly decreased. At one time in England ninety-six out of every one thousand deaths were from smallpox. The ratio diminished to thirty-five per thousand as soon as vaccination was adopted, and remained nearly so for fifty years.

But there are physicians and other educated and observing men, who contend that though these statistics may be correct that does not prove that the decrease of the ratio of deaths from that disease is due to vaccination. And they bring forth some strong reasons to support a contrary hypothesis. It is further argued that healthy children have