

weight with a relentless mob backed by a perjured governor, and thus closed the last act in the bloody drama enacted in the state of Illinois in which our people played so prominent a part.

Then followed the weary march across the state of Iowa with its attendant perils and sickness. Brother Wareham established himself in western Iowa for a season, crossing the plains in 1853, arriving at Manti the same year, where he resided till February, 1864, when he removed to Sevier county, to assist in colonizing that region. He made a home for himself and family in what is now known as Glenwood, where he was president and acting Bishop.

The breaking out of the Black Hawk war in the spring of 1865 worked great hardship to the settlers of the sparsely settled town on the Sevier river and after being repeatedly plundered of their stock and some of their number having been slain by their savage foes they were finally advised to abandon their homes. Brother Wareham returned to Manti in straitened circumstances from Indian depredations and with his wife a confirmed invalid. She died in 1867, and in the following year he married Rebecca Atwood, who still survives him.

His love and reverence for the Martyred Prophet amounted almost to worship, and it was his greatest pleasure to testify to his divine mission and relate incidents in his life with which he was personally acquainted. His fiery zeal in proclaiming the principles of the Gospel, and his faithfulness to every trust reposed in him were household words among all with whom he was associated. He was a Patriarch of the Sanpete Stake of Zion and also president of the High Priests' quorum at the time of his death. He was an invalid for the last seventeen years of his life, but the record of a long and useful life filled with good deeds and kindly ministrations has preceded him and he is held in grateful remembrance by two generations.

He performed two missions in the United States and crossed the plains five times, once as captain of a wagon train. In every capacity in which he acted it can be truly said of him, "He was faithful to his trust." His passing away was calm and peaceful as a little child going to sleep, a fitting ending to his saintly life.

The funeral services were simple and impressive. His counselors in the High Priests' quorum, offered the opening and closing prayer. Consoling and interesting remarks were made by the presidency of the Stake and Bishop W. F. Reid, each reviewing the life and labors of the deceased and bearing testimony to his blameless career. A long cortege of vehicles followed his remains to their last resting place. His old friend and companion, President J. T. D. McAllister, offered the dedicatory prayer at the grave. He sleeps the sleep of the just and is awaiting a glorious resurrection. A. L. C.

#### SCIENTIFIC MISCELLANY.

Bacteria farming is a future development of whose possibilities we are beginning to dream. Already has the cultivation of the special bacteria become a considerable business, and the production of any desired flavor is now a matter of reasonable certainty. Other industries depend upon other bacteria. Prof. H. Marshall Ward mentions, for instance, the production of indigo, which is formed from the plant only through the combined action of a bacillus and oxygen; the production of tobacco leaves and tea, which at certain stages depends on carefully regulated fermentation; the separation of the best fibers of flax and hemp, which requires the action of water containing a

particular bacillus; and the steeping of skins previous to tanning, which involves bacterial action for removing the hair.

Various non-conducting coverings for steam pipes having proven unsatisfactory and costly in the great works of Schneider & Co., at Creusot, France, a mixture of granulated slag and soot has been tried. This is laid on as mortar to a thickness  $1\frac{1}{4}$  to  $2\frac{1}{2}$  inches, is then wrapped with felt, and if the pipes are exposed to the weather, is finally fitted with a casing of sheet steel. This inexpensive cover has been found very effective.

The cost of cooking by electricity was the subject of a recent series of elaborate experiments at Frankfurt, where current is supplied at somewhat less than four cents per kilowatt hour. The total cost of a dinner for four persons—consisting of boiled beef and soup, cauliflower, cutlets, fried potatoes, broiled fish, boiled potatoes, entrecotes and a pastry dessert—was fifteen cents; that for a meal of different dishes for six persons being about half as much.

It is to the tobacco habit that certain medical authorities attribute the present physique of the Spaniard, the Italian and the French, who are all shorter, lighter and less muscular than at an earlier period.

The far-reaching influence of the waters of the Gulf of Mexico has been long recognized but little understood, and a better knowledge of the movements of those waters gives promise, in the view of Mr. N. B. Swetzer Jr., of benefits quite comparable with those expected to result to trade and commerce from a stable government in Cuba. Abundant evidence exists of the presence of both deep-stream currents and littoral drift currents. The former enter the Gulf through the Yucatan channel, and, under certain barometric and planetary conditions, pass by the western end of Cuba and flow out through the straits of Florida; or else, under converse planetary and atmospheric conditions, they spread out over the Gulf in all directions, moving on its center. The shore currents owe their origin to the prevailing southeast winds, and they flow northward along the western extremity of the Gulf, and west along the northern boundary, meeting near Galveston to form a stream-current which flows in a southeasterly direction toward the straits of Florida. The future may teach us how much of the world's prosperity and even peace depends upon the variations of these heat-bearing rivers of the sea.

The transparency to the X-rays of the different forms of carbon and the opacity of silicates have suggested to H. Couriot, a French investigator, the use of these rays as a test for mineral fuel. Experiments have fully justified his expectations, anthracite, coal, lignite, peat, coke and briquettes showing plainly upon the radioscopic screen the details of the internal structure of their mineral matter, and the slightest fragment of schist, invisible to the naked eye, being revealed as a spot or band. In place of the usual proportion of ash determined by chemical analysis, this method gives—without destroying the sample—an instantaneous view of the mineral skeleton of the fuel.

"T fol," an argillaceous earth containing free gelatinous silica, is used by Arabs of northern Africa as a substitute for laundry soap. It is capable of absorbing five times its weight

of heavy tar oil, and a French chemist finds that it may be used with such oil producing an emulsion of great value for disinfecting purposes.

The compound steam turbine directly coupled to a dynamo dates from 1884, according to Mr. C. A. Parsons. The first motor ran at 18,000 revolutions per minute, giving 6 horse power, but dynamos and alternators of 500 to 700 horse power are now driven by direct coupled turbines, more than 30,000 horse power of such machines being at work in England. The compound turbines are of two types—the "parallel flow" and the "radical flow." In the former the steam, entering by an inlet all around the shaft, passes through successive turbines of gradually enlarging passage-way, and is expanded in small part at each turbine, finally escaping to the exhaust pipe. In the radial flow type, the rows of turbine blades are keyed into and project from the faces of moving disks attached to the shaft and fixed disks attached to the casing. The steam's course is outward through the rings of blades, then inward, and again outward through the blades of the succeeding disk, and so on. The bearings are specially constructed, with concentric rings that form upon the shaft thin layers of oil to serve as a cushion to prevent hammering. A power plant of this kind is economical in first cost and in maintaining, and offers other advantages.

A bell of new form has been invented in Germany by Herr Appunn. The shape is hemispherical, and the metal is of uniform thickness except for some distance from the edge, where it is suddenly and greatly thickened. The bell is said to have a very deep tone, and to be as powerful as considerably larger bells of the form so long used.

Although the street railways of Paris employ nine systems of mechanical traction, the lines using these systems have an aggregate length of only 52 miles, while the horse tramways still claim 129 miles. In horseless carriages, however, Paris leads the world. A recent trial of cabs driven by petroleum, steam and electricity, resulted so favorably for the last that 100 electric cabs, to run at 10 miles an hour, were at once ordered.

In experiments upon various animals, Dr. W. D. Turner has found iard the most effective antidote for strychnine.

#### IDAHO WEATHER REPORT.

The week ending Monday, July 18, 1898, opened with heavy thunder storms and copious showers, followed by clear weather with an abundance of hot sunshine and frequent high winds.

The rains were of inestimable benefit to dry land crops, which had been greatly in need of moisture, but interfered materially with haying. Much of the cut crop was damaged, and the standing hay was badly lodged in many places. In the extreme southeastern section the rainfall was comparatively light, and the drought has been only partly relieved.

Grain is for the most part in excellent condition and promises more than an average crop: in parts of the western section wheat will soon be ready for harvest. The potato crop is doing nicely, and many early potatoes of fine quality are on the market. Garden truck is in good condition generally. The fruit crop is doing well. Cutting of the first crop of lucern is nearing completion. All hay crops in the northern and western sections are apparently short, but in the eastern they are fully up to the average. The