yet, and will not be until the times of the Gentiles are fulfilled, which is close at our door. Look at Jerusalem after Christ was slain. Look at the trouble and suffering the Jews endured in the great war against Jerusalem, under Titus. Twelve hundred thousand people were taken out of the gates Jerusalem and fell by the famine and by the sword. A remnant was scattered throughout the world, and remains in that condition today. At the present time they are persecuted in Russia, in Austria, in Germany, and in other nations of the earth. They will be persecuted until Christ comes, or near that time.

It is the same in this generation, and in every generation in which God has had a people upon the earth. It costs something to shed the blood of righteous men.

I say to the Latter-day Saints, do your duty, honor God and remember your covenants. I want these young men and young women of Israel to honor God, to honor their parents, and remember their prayers. This Kingdom has got to rest upon your heads. The world do not believe these things; but their unbelief does not make the truths of God of none effect. Therefore, I have a right to urge these young men to qualify themselves and prepare themselves to take the places of their fathers, and to honor God and be united. United you stand, divided you fall. Union is that which God requires of us, as a people. I hope you will lay these things to heart. Read in the Bible and you will find that they are true, and they will have their fulfillment. God bless you. Amen.

ELECTRICITY.

[We give herewith a full report of the second lecture on "Electricity," delivered in the Social Hall, Friday evening, March 15th, by Prof. Jas. E. Talmage, under the auspices of the Students' Society of the Salt Lake Stake Academy. The lecture was made doubly interesting and instructive by practical experiments as explained and illustrated below, and by numerous blackboard drawings, showing the details of construction of the apparatus employed. The room was completely filled on the occasion, with a most attentive audience, and the lecture was listened to throughout with marked interest. ED.]

II.

When I had the pleasure recently of speaking from this stand, on the subject of electricity, I endeavored to direct your attention to the many commonplace manifestations of this mystic force as developed by friction. This evening we will notice some other forms of the electric power. Let us begin with a very simple experiment—first performed, we are told, in the year 1767, by a citizen of Berlin, named Sulzer. I will request this gentleman to kindly assist me. I place upon his tongue a silver half dollar piece, and I put at the same time a bit of zinc on the under side of his tongue, taking care to keep the two metals from actual contact for the present. Now we are ready, and I bring the edges of the coin and the zinc together, when lo! the gentleman jumps in a remarkably queer way; we need not ask him if he experienced any unlooked-for sensation. The fact is, an electric current was generated, and, in passing through the young man's tongue, caused the sensation referred to. This simple discovery was thought little of, except as a passing wonder, until other observations of a somewhat similar nature were brought out in 1790, by Galvani, an Italian anatomist. He noticed that some recently skinned frogs, lying upon his laboratory table, were thrown into a state of convulsive contraction when an electric machine in the neighborhood was set in action. On another occasion, Galvani was occupied in dissecting frogs, and had the bodies of several freshly killed specimens suspended on copper hooks, from an iron railing by an open window. The wind caused the suspended frogs to sway back and forth, and, at times, direct contact was made between the flesh and the iron bar; whenever this was the case, violent contraction was the result. This historical experiment may be readily repeated as follows: (Fig. 1.) The body of a dead frog is skinned and dissected so as to reveal the large lumbar nerves, which will be seen lying like silken threads (n) alongside the spinal column. A strip of copper is placed beneath these nerves, and a strip of zinc is put in contact with the large muscles (m) of the leg.

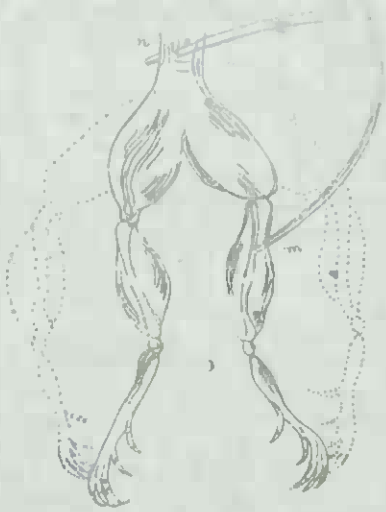

Fig. 1. Frog's legs electrically excited.

When the free ends of these metallic strips are made to touch, the legs strike out with all the energy of life. (Movements are illustrated in the figure, by the dotted lines.) Such a discovery was surely an exciting one, appearing, as it must have done to the first experimenter, as little less than an actual restoration of life to a dead body. Galvani supposed the phenomenon to be due to the existence and action of a *vital fluid* or animal electricity. Another scientist, one Volta of Pavia, made a careful examination and advanced the theory that the contact of the metals was the prime cause of the electric manifestations. It is now generally believed that chemical action on metals is the exciting power. Upon this principle cells have been constructed for the purpose of generating the current, and such are usually named Galvanic, or Voltaic cells, in honor of those two men.

Here is the simple cell (Fig. 2).

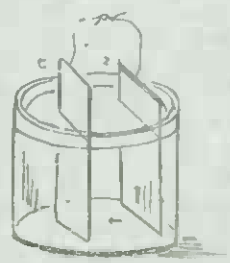

Fig. 2. Simple Galvanic Cell.

It consists, as you see, of a piece of zinc (z) and a piece of copper (c) placed in a vessel containing water, to which a very little sulphuric acid has been added. Whenever the wires, attached to the metallic strips, are brought together, bubbles of gas, due to the decomposition of the fluid, are seen rising from the copper plate; and when the wires are separated, a tiny spark passes. To develop an intense current, we would need many, very many of such cups; but cells of a somewhat different construction, though on the same principle, are common. Several cells connected together constitute a battery; and there are many forms of batteries at present in the market competing for favor. Here is an efficient one. I hold in