

## THE SUNDAY SCHOOL.

LESSON VIII, THIRD QUARTER, INTERNATIONAL SER. 3, AUGUST 19.

First Disciples of Jesus—Text of the Lesson, John 1, 35-40—Golden Text, John 1, 41—Commentary on the Lesson by Rev. D. M. Stearns.

35. 36. "Again the next day after John stood and two of his disciples, and, looking upon Jesus as he walked, he saith, Behold the lamb of God." During the time of fasting and temptation of our Lord John had gone on preaching and baptizing and preparing the way of the Lord. Then on a certain day he saw Jesus coming unto him and said, "Behold the lamb of God, which taketh away the sin of the world" (verse 29). The opening verses of our lesson tell us of the day following. This cry of John is the answer to Isaac's question asked so long ago, "Where is the lamb for a burnt offering?" (Gen. xxii, 7).

37. "And the two disciples heard him speak, and they followed Jesus." John was not seeking to draw the people to himself, but to prepare them for and point them to the Lamb of God. When he heard later in his ministry that all were following Jesus, he said, "This my joy is fulfilled. He must increase, but I must decrease" (John iii, 30, 31). We do well when our testimony leads men to follow Jesus. Let us live to point him out.

38. Then Jesus turned and saw them following and saith unto him, What seek ye? They say unto him, Rabbi, where dwellest thou? We may imagine him saying to us every time we go to church, or prayer meeting, or Bible class, "What seek ye?" Let us acquire the habit of asking ourselves, What am I going for? And may our hearts ever say, "I would see Jesus." "I would know him" (John xii, 21, Phil. ii, 10).

39. "He saith unto them, Come and see." They came and saw where he dwelt and abode with him that day, for it was about the tenth hour. If the reckoning is the same as in chapter xix, 14, then it was about 10 a. m. and they had several hours with him. We wonder what home was so fortunate as to have him for a guest, and where he entertained those two that day, but it is more important for us to open our hearts to him and have him abide with us continually.

40. "One of the two which heard John speak and followed him was Andrew, Simon Peter's brother." The other was probably John himself, as he would not be likely to mention his own name. From Math. iv, 18; Luke v, 10, we gather that these four, Simon, Andrew, James and John, were partners as fishermen, and all left their boats finally to follow Jesus and become fishers of men, about the same time.

41. "He first findeth his own brother Simon and saith unto him, We have found the Messiah, which is, being interpreted, the Christ." The result of that call upon Jesus was that Andrew (which signifies manly) became a true man—a manly man indeed, for he henceforth lives to bring men to Jesus and make Jesus known to men and begins with his own brother.

42. "And he brought him to Jesus." That is the one thing to do—bring him to a church or prayer meeting merely, or to a truth or doctrine, but to Jesus as a living person. Andrew brought him to Jesus, who was to die a sacrifice, but we bring people to Jesus, who has died and is alive forevermore and has all power, (Eph. i, 18; Math. xxviii, 18). Jesus said, which is, being interpreted, what is in man (chapter ii, 24, 25), told him who he was and gave him a new name. Compare Gen. xlvii, 5; xxxii, 28.

43. "The day following Jesus would go forth into Galilee and findeth Philip and saith unto him, Follow me." Either directly or indirectly, or by the Spirit through the word or some person, God is ever seeking to draw people to himself. He began in the garden of Eden and has been at it ever since.

44. "Now Philip was of Bethsaida, the city of Andrew and Peter." See how Jesus recognizes earthly friendships and continues as friends in himself those who had been friends before, if they are only willing to have it so. Special mention is made of Philip in John vi, 5, 7, 21, 22, and xiv, 8, 9. He seems to have grown in the knowledge of Jesus very slowly and to have been of a reasoning, calculating turn of mind.

45. "Philip findeth Nathanael and saith unto him, We have found Him of whom Moses in the law and the prophets did write, Jesus of Nazareth, the son of Joseph." Can there any good thing come out of Nazareth? Philip said unto him, Come and see. It is not a question of place or circumstances, but it is a person with whom we have to do, about whom we have to speak and whom we must show unto the people. It would seem from this that Nazareth was not a place that it was an honor to hail from, another proof that Jesus made himself of no reputation (Phil. ii, 7).

46. "Jesus saw Nathanael coming to him and saith of him, Behold, an Israelite indeed, in whom is no guile." What a testimony from the searcher of hearts! Nathanael must have been a true worshiper up to the light he had, one who walked uprightly, wrought righteousness and spoke the truth in his heart (Ps. xv, 2), one who walked with a perfect heart in a perfect way (Ps. ci, 2). Jesus will surely make himself known to those who thus sincerely seek to know God. Consider the gentle Cornelius (Acts x, 2) and see how God enlightened him (Acts x, 47, 48, xi, 14).

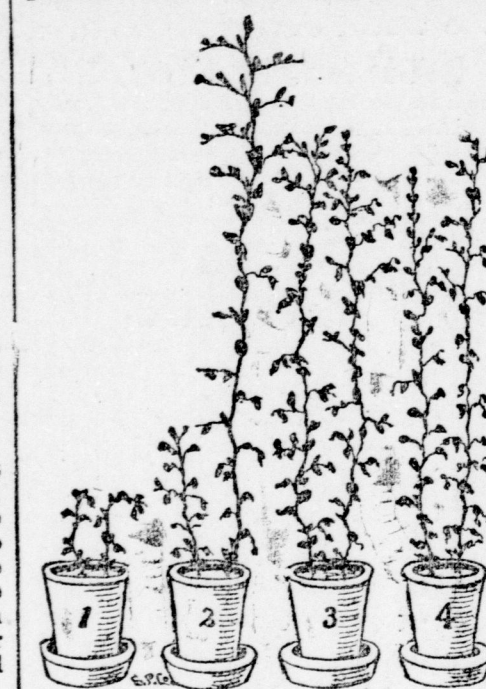
47. "Nathanael saith unto him, Whence knowest Thou me? Jesus answered and said unto him, Before that Philip called thee, when thou wast under the fig tree, I saw thee." The eyes of the Lord are in every place, they run to and fro through the whole earth, to show himself strong on behalf of those whose hearts are perfect toward him (Prov. xv, 3; II Chron. xvi, 9).

48. "Nathanael answered and said unto him: Rabbi, thou art the Son of God; thou art the King of Israel." Philip might have argued with him for hours about the possibility of a good thing coming even out of Nazareth without convincing him, but a moment with Jesus and a word from him settle it all. Jesus himself, and none but He, is the solver of all doubts, the dispenser of all fears, the rest and peace and joy of every soul who comes to him. Nathanael at once proclaims him, divine (see John x, 38, 39), and Israel's Messiah, the long expected King, whereupon Jesus assures him that he shall yet see heaven opened and the complete fulfillment of Jacob's vision.

## LEGUMINOUS CROPS AND FERTILITY.

Some Results of Bacterial Inoculation of Sterilized Soil.

In this issue we present an illustration showing the results of bacterial inoculation of sterilized soil, with the following explanations and comments by Prof. Manly Miles of the Michigan Agricultural College. The cut illustrates one of the Rothamsted experiments, with peas, in 1889: Four pots, precisely alike, of glazed earthenware, were provided, each about 7 inches high, and an inside diameter of 6 inches at the top and 5½ inches at the bottom. Three of these were filled with "a rather coarse white quartz sand, from which the coarser and finer portions were removed by sifting, and more of the finer by washing and decantation, first with well and afterward with distilled water." To this sand was added 0.1 per cent. of the ash of the plant under experiment, and 0.1 per cent. of carbonate of lime, and it was



RESULTS OF BACTERIAL INOCULATION OF STERILIZED SOIL.

then sterilized, or the living organisms it might contain destroyed by keeping it for several days in a water bath at nearly the temperature of boiling water. The fourth pot was filled with a rich garden soil.

A "soil extract" was then prepared for the purpose of inoculation, by "shaking in a large stoppered bottle one part of the garden soil with five parts of distilled water, and after the heavier portions had settled down, syphoning off the turbid liquid, which was then passed through platinum gauze to separate any floating matter."

July 5, pots 2 and 3 were inoculated by adding to each about seven-eighths of an ounce of this "soil extract." Pots 1 and 4 were not inoculated. The peas were planted July 10, two seeds in each pot. They all germinated and grew well from the start, and all were watered as required, with distilled water. The cut shows the plants as photographed October 22, the day before they were finally taken up.

The plants in the inoculated quartz sand (pots 2 and 3), had shown more growth before the end of July than the plants in pot 1 in the same sterile quartz sand, but without inoculation with the soil extract.

Finally (Oct. 22) the plants in pot 1 were 8½ and 8½ inches high; in pot 2 they were 14 and 50½ inches; in pot 3 they were 40½ and 39½ inches high, and in pot 4 with the garden soil they were 33½ and 41½ inches high.

The growth in pot 1 was evidently limited to the supply of nitrogen contained in the seed—the main roots descended some distance before branching, and no root nodules could be found. In pots 2 and 3, inoculated with soil extract, there was a better root distribution in the upper layers and throughout the pots. The smaller plant in pot 2 had "several nodules on the main root near the surface of the soil, and a good many small ones distributed along the fibers." Most of the nodules were more or less shriveled. The larger plant in pot 2 "had a large cluster of nodules on the main root, very near the surface, and a very large number of single nodules, mostly small, were distributed on the root fibers quite to the bottom of the pot; upon the whole those on the larger plant were less shriveled."

In the inoculated pot 3, with two tall plants, "the main roots extended to and along the bottom of the pot; throwing off many side branches, with a very large quantity of fine fibrous roots. The greatest distribution was, however, in the upper four inches of the sand. There were two clusters of nodules on one of the plants and three on the other, besides smaller bunches. A large number of mostly single small nodules were also distributed along the roots."

In pot 4 with the rich garden soil, the plants were not higher than in pot 3, but they made a more vigorous growth, and there was a dense mass of root fibers throughout the first six inches of the soil. "There were numerous nodules, the majority single and within the upper two or three inches of the soil—but they were distinctly less than in pot 3 with the inoculated quartz sand."

There are indications that several species of microbes are concerned in the formation of the root nodules of leguminous plants, and that each farm crop in its relations to the soil has an influence that favors the activity of certain species of microbes, and keeps in check certain other species. Lupins failed to grow in a sterilized sand inoculated with an extract of a rich garden soil, but when the same soil was inoculated with an extract of a sandy soil in which lupins were growing, a vigorous growth of the plants was not only made, but the yield considerably exceeded that obtained in the lupin field soil itself from which the extract for inoculation had been prepared. In these pot experiments the greater compactness of the field soils and consequent diminished capacity for the circulation of air through them is a probable explanation of the better growth to the plants in the pure inoculated sand.

In many of the pot experiments there was a larger number and a better development of the root nodules in the inoculated sand than in the natural soils, and a larger number of root nodules have been frequently observed on leguminous plants in light, poor soils than in heavy rich soils; but in the later experiments at Rothamsted in the open air, the general, though not invariable, result was, however, that there was a greater number of nodules found on the roots of the plants growing in rich soils than on those grown in sand. But whilst, as a rule, the individual had fewer nodules on the roots, those grown in sand developed to a much greater size, and the much larger number in the soil were very much smaller.—Ohio Farmer.

**The Earning of Honest Dollars.** It seems to be a much easier thing to set down and formulate a system of national finance than it is to go to work and earn an honest dollar. Honest dollars are made only by hard work.—American Agriculturist.

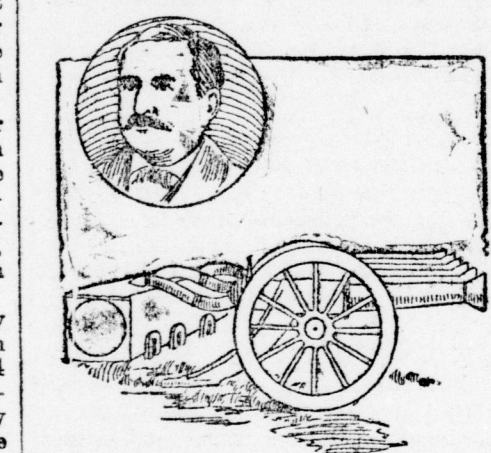
## SATAN'S DEATH ENGINE

THIS IS THE SHORT TITLE OF TURPIN'S GREAT GUN.

It Can Throw Seventy-Five Shots Each Minute Over a Distance of Two Miles—The French Genius Who Invented It—Description.

In European military circles at the present time the one absorbing question is: Is the new engine of destruction invented by M. Turpin as formidable as it seems to be? While being enabled, thanks to the courtesy of one of our ambassadors, says the Naval Military Record of England, to present a rough sketch of this terrible destroyer of life, let us say a few words about the inventor. He is still a very young man and has a remarkable past. He is was who, nine years ago, invented the smokeless powder, which has already been adopted by every country in the world as the only possible propelling force of the future. Later on his researches in chemistry, and particularly in picric acid, enabled him to evolve melinite, for describing the constituents of which at length in a French paper, he was cast into prison by M. de Freycinet and kept imprisoned for nearly two years and six months, during which time he wrote a remarkable treatise on the stars that at once ranks him with our leading astronomers.

M. Turpin eventually, through some newspaper friends, obtained a hearing outside his prison walls, and when France came to find out how bitterly he was being persecuted because in reality he had spoken too plainly of the bribery and corruption running riot through the French government and its immediate coadjutors, there was a loud outcry and he was released. From that moment M. Turpin, an astronomer, an inventor, a chemist and an engineer—per-



Laps one might also add, a genius—has been devising an engine of war which one might well designate as infernal, since it puts one in mind of that mighty machine devised by Satan in Milton's "Paradise Lost" for the overthrow of the heavenly host.

It consists of specially-designed cannon, each of which can, when required, be made to work separately, but can work better together, and with more deadly effect. The cannon are to all appearances ordinary field pieces, but running from under the breach to the ground is a hollowed-out tube full of mechanism, so arranged that nothing but a shot from the enemy could upset its workings. Six of these cannon are placed in line, and the tubes are inserted in a trough on wheels, which has been beforehand filled with small shells. As soon as the joints have been made, which takes seven to ten seconds, the six guns begin automatically to belch out their fire, the artillerymen having merely to direct them. When the guns cease firing, it is, of course, a sign that the trough is empty. It is then instantly wheeled away and the next trough is fastened on. Practically each trough represents the butt of a magazine rifle, only that, instead of ordinary cartridges, shell is used, and there is no need of human manipulation to pull a trigger, the entire action being electrical and, of course, mechanical. A train of twenty-five of these Turpin six-set guns, which are very light, can throw 7,500 shells a minute over a distance of two miles, so that all the battles of the future must be determined at a distance.

**Tragedy of Two Lives.** The life-work of Farmer Millsap's wife was over. Like a head of wheat fully ripe she was about to be gathered in by the grim harvester.

"Obadiah," she said, in a feeble voice, as the end drew near peacefully and painlessly, "you have been a good husband to me."

"I have tried to be, Lucindy," replied Farmer Millsap.

"You have laid yourself out to make things easy and comfortable-like for me."

"I have always tried to do my sheer, Lucindy."

"Obadiah," she went on, "we've lived together fifty-five years, hasn't we?"

"We have."

"And ever since we were married you've eat all the bread crusts, hasn't you?"

"I won't deny it, Lucindy, I have."

"You've eat the crusts for fifty-five years, so I wouldn't have to eat them, hasn't you, Obadiah?"

"I don't deny it, Lucindy."

"Obadiah," said Farmer Millsap's wife, after a pause, "it was very kind of you. And now you won't mind my telling you one thing, will you?"

"No. What is it, Lucindy?"

"Obadiah," and there was a world of self-abnegation in her voice. "I always was fond of crusts."—Chicago Tribune.

**Johnson's Patent Hen's Nest.** Charles Johnson has invented a patent hen's nest that is a very great convenience to Biddy, and it is an automatic persuader for her to do good work. When the hen approaches the nest a wicket door gently opens, and after she passes in it closes and the hen has private apartments all to herself. The egg of its own weight opens a trapdoor and rolls noiselessly out of sight. Then, when the hen arises, puts her hands in her pockets, and gets ready to walk out, not seeing the egg, thinks she has made a mistake and lays another. This sort of thing is repeated until the left of the chicken buds in the box below touches off a spring and Biddy is fired out of the apartment.—Hambal (Mo.) Journal.

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Use that mighty Compound, which can never fail.

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Perfect health and pleasure will for us remain.

Onward then ye weary, etc.

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