

## SHORT CROPS AND THE RESULTS.

Discouraging reports of crop prospects are brought from beyond the Atlantic. The shortage in the product of cereals and hay is marked and a source of foreboding. This is bad in one sense and perhaps fortunate in another; bad because of the suffering that must result therefrom during the winter months at least, and fortunate because it may prove the means of warding off a greater calamity—war. Russia wants to control as much of Asia as is contiguous to her already vast possessions, and the slaughter of a million or so of men and the incurring of such colossal indebtedness as no one generation could pay would be small considerations with the Muscovite power if it could only know that subsistence for man and horse was in abundance.

Then, again, the loss of Europe is the gain of the United States. Not that we should or would willingly profit by others' misfortune, but such is the logic of the situation and we could scarcely evade it if we would. Here we are having a magnificent grain and hay season, albeit not quite so large as last year because of the decreased acreage—*about 10 per cent*—and perhaps forty and it may be fifty per cent or it can be spared. Grain, especially wheat, is always a standard article in the Liverpool market, but with the European shortage universal or nearly so the price would increase immensely; and hay is now selling in London at \$40 a ton! With cheap transportation what a harvest of gain this one item would now be to us!

We are advised that the official returns of the harvest prospects in Germany show that the outlook, which was not very bright last month, has become most serious, especially with regard to the hay harvest. Some papers urge the suspension of import duties on fodder, and others recommend also the free importation of oats and maize. In Bavaria, Hesse and Alsace-Lorraine the local authorities are setting on foot active measures for the relief of the distressed peasantry. This does not look very much like readiness for war, either. It is scarcely to be wondered at that on scanning the returns from the late elections in Germany Chancellor Caprivi was enabled to declare that it was "no victory;" people who have not enough to eat sometimes feel savage but not exactly warlike; fighting somebody else for a monarch's selfish aims is about the last thing on the program with them, and there is no nutriment even in a condition of increased militarism.

## ELECTRICAL DANGERS AND DAMAGES

A suggestion has been made in the city of Newark, N. J., that managers of city waterworks whose underground pipes are paralleled by electric street car lines on which high currents are in use should be on the lookout for the destructive effects which have lately been observed and even experienced in other cities. This is not out of place here, where our street railway and telephone wires are not only numerous

but lengthy, necessitating very powerful currents all the time. They have not so far proved too heavy for their conduits, but whether they could withstand a strong counter attraction elsewhere or not is the question; and besides, the wires, conformably to tracks and suburban additions, are constantly being extended, making it necessary to proportionately raise the electric current without enlarging the wire's capacity for carrying it.

The following extract from a paper published in the city spoken of is also applicable here:

A current of great volume and nominal pressure of 500 volts is sent out over the main supply wires from the power house to feed the trolley wires along the line. This tremendous current passes down the trolley arms of the cars, operates the motors on the trucks and then goes out through the wheels to the tracks, which are supposed to conduct it back to the source. The tracks are never insulated from the ground, which is a fairly good conductor of electricity. The joints of the rails are electrically connected, and between the tracks there is a good copper conductor connected at intervals with the rails and running back to the dynamo in the power house. It was expected that these provisions would confine the current to the straight path home, but it did not do so in any instance.

Those who do not already know it are advised that it is a peculiarity of electricity that if it finds two conductors of different resistance it will divide between both in a proportion in inverse ratio to the resistance of the conductors. Thus the current after reaching the ground finds that there is a water main or a gas pipe paralleling the tracks. The pipes are fairly good conductors and the current divides between them and the path provided by the company. Through the pipes the current ramifies in every direction as it proceeds upon its homeward way, and it sets up an action due to differences of potency and resistance which corrodes away the metallic matter just as a silver anode is eaten away in a plating solution. The pipes gradually become thinner and thinner and are finally honeycombed by the powerful agent so quietly at work. It does not require much time to destroy a lead, iron or copper pipe placed in moist ground. Its destruction is not a question of years, but of weeks. So that we are constantly menaced by damages if not dangers underfoot as well as overhead.

In Boston these troubles have so perplexed the managers of one of the railway systems that they have devoted large sums to the employment of scientific and expert men and methods. Similar troubles are reported from Chicago, Cincinnati, Indianapolis and Los Angeles. It is explained that in places along car tracks where the copper conductors are eaten off, if a person places his foot on the rails at such place he will obtain a shock of greater or less intensity; the rail not being grounded and the current seeking the earth will pass into one leg and through the other to its destination.

Professor Weston, the noted electrician, was asked how the difficulty (of electrolytical decomposition) could be met and replied that it could be done in one way only, if a single trolley line continues to be used (as is the case

here) with the earth in circuit, and that is by insulating the pipes in some moisture proof material. "With a double trolley road, that is with two wires above the car and two trolleys, there would be none of this trouble. The managers of electric roads in Newark are keenly aware of the ravages of electrolytic action, but as yet have had no complaints either from the water board or gas companies." The professor, however, did not mention the other trouble spoken of—the disposition of over-charged wires above to "unload" on the first object capable of containing or transmitting their surplus; when this happens to a human or other animal it generally means death.

## THE BEGINNING OF WRITING.

A distinguished German, R. von Liliencron, has an article in a recent number of the *Deutsche Rundschau* on the subject of the origin of writing. It is quite interesting, to those philologically inclined decidedly so. He shows that it was somewhere near the beginning of our era, and he thinks not later than the second century, that this great adjunct to man's education and communication was given to the Tenthons. Some shrewd old Germans were awakened to the significance of letters: & used by the Romans for communicating ideas. The German people were utterly ignorant, according to Tacitus; they knew nothing of corresponding by letter, and if the wise men of that day had known the art of writing, the wisdom of love would soon have found a way to acquire it also.

The writer disclaims mockery in describing writing as a high and secret art. Nowadays, when even young people are proficient in it, it may appear to us childishly simple; but placing ourselves in fancy in primeval times, is it not a fundamentally wonderful conception that the whole wealth of sound and tone in which we reveal all our inner thoughts, sensations and imaginings, could be analyzed into some four and twenty distinct sounds, capable of being represented in visible characters. The discovery of printing in the fifteenth century arouses our justifiable admiration. But infinitely more important and fruitful in results was the ancient discovery of the four and twenty symbols through whose medium human thought could be materialized and transferred to other minds. For all the civilized peoples of Europe the discovery was made only once, and from one point has spread out on all sides. All our alphabets, however much they may have varied in the lapse of centuries, are modifications of one and the same primitive alphabet invented by some old Asiatic-Semitic race in the unknown past. In Europe the Greeks were unquestionably the first to possess an alphabet, and they got it from the Phoenicians. The name of the alphabet is itself evidence of the fact, for it is composed of the names of the first two letters in a Semitic series, aleph, beth, whence the alpha-beta, which is said to have no signification in Greek.

These symbols are what we are told came under the observation of the old