

**The Effect of Removing the Tassels on the Productiveness of Corn.**

It has been claimed that if the tassels were removed from corn before they have produced pollen, the strength thus saved to the plant would be turned to the ovaries, and a larger amount of grain be produced. To test the effect of this theory, the following trial was made during the past season.

In the general corn field a plat of forty-eight rows, with forty-two hills in each row, was selected for the experiment. From each alternate row the tassels were removed as soon as they appeared, and before any pollen had fallen. The remaining rows were left undisturbed.

The corn was Sibley's Pride of the North, planted the last week in May in hills, three feet six inches by three feet eight inches, on dry, gravelly, moderately fertile soil.

On July 21 the earliest tassels began to make their appearance in the folds of the upper leaves, and were removed as soon as they could be seen, and before they were fully developed. A slight pull was sufficient to break the stalk just below the tassel, and the removal was easy and rapid.

On July 25 the plat was gone over again for the removal of such tassels as had appeared since the previous work, and at this time by far the greater number of the tassels were removed.

On July 28, when the plat was gone over the third time, the effects of the tasseling became apparent in the increased number of silks that were visible on the rows from which the tassels had been removed. On the 1,008 tasseled hills there were visible 591 silks; on the 1,008 untasseled hills, 393 silks.

On August 4 the plat was gone over for the last time, but only a few tassels were found on the very latest stalks. The preponderance of visible silks on the tasseled rows was still manifest, there being at this time 3,542 silks visible on the tasseled rows, and but 2,044 on the untasseled rows.

The corn was allowed to stand without cutting until ripe.

On September 29 to October 1, the rows were cut and husked, and the stalks and ears weighed and counted, with the following results:

	Aggregate Yield.		Comparative Yield.	
	Tassels left on.	Tassels removed.	Tassels left on.	Tassels removed.
Number of good ears.....	1,551	2,338	100	151
" " poor ears.....	628	885	100	141
" " abortive ears.....	2,566	951	100	37
Total number of ears.....	4,745	4,174	100	88
Weight of merchantable corn, pounds.....	710	1,078	100	152
Weight of poor corn, pounds.....	130	187	100	144
Number of stalks.....	4,186	4,228	100	101
100 stalks weighed, pounds.....	82	79	100	96

It will thus be seen that the number of good ears and the weight of merchantable corn were both a little more than fifty per cent greater on those rows from which the tassels were removed than upon those upon which the tassels were left. This is not only true of the two sets of rows as a whole, but with the individual rows as well. In no case did a row upon which the tassels were left produce anywhere near as much as the tasseled rows on either side of it. In fact, the results given above are really the aggregate results of twenty-four distinct duplicate experiments, each of which alone showed the same thing as the aggregate of all.

By abortive ears is meant those "sets" that made only a bunch of husks, and sometimes a small cob, but no grain. It will be noticed that they were by far the most numerous on those rows from which the tassels were not removed. It will also be noticed that the total of the good, poor, and abortive ears is about fourteen per cent greater on the rows on which the tassels were left, while the weight of merchantable corn is more than fifty per cent greater on those rows from which the tassels were removed.

While for a single trial the results of this experiment seem particularly marked and conclusive, it yet remains to be determined whether it will pay for a farmer to remove any considerable proportion of the tassels from his corn, what proportion it will be best to remove (for some evidently must be left), and whether all that it is advisable to remove may be taken off at one time or not. So far as we could estimate the time taken, it certainly paid us from a commercial standpoint to remove all the tassels from one-half the rows this year. It is also still to be determined whether the removal of the tassels would be followed with the same effect in a season and on a soil where there was abundant moisture for all the needs of the plant at the time when the tassels were shooting and the ears forming.—*Cornell Bulletin, Ag. Exp. Station.*

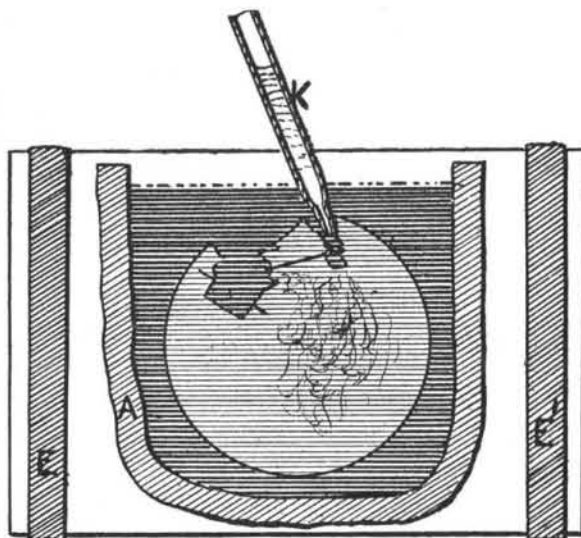
**SUBMARINE TELEGRAPH CABLES.**—With one or two trifling exceptions, the submarine cables of the world, which stretch over 120,000 nautical miles, and have cost \$200,000,000, are of British construction.

**A SMOKE EFFECT WITH A SINGLE LANTERN.**

The effect of rising smoke in magic lantern pictures is generally produced by means of a double lantern. Upon one of the slides there is a picture in which smoke will come in conspicuously. The other slide is a rackwork arrangement, by means of which the effect of moving smoke is produced upon the screen.

The accompanying figure illustrates a method by which quite a natural smoke effect may be produced with a single lantern; though the variety of pictures to which the effect may be applied is more limited than it is when the older method is employed. The simple manner of constructing a transparent cell is not new. A method which is practically the same is described by Mr. Hopkins in his book, "Experimental Science."

In this case the bottom and two sides of the cell are formed by a piece of soft rubber tubing, A, bent as shown in the figure, and clamped between two glass plates by means of rubber bands, E E'. The glass plates are of a size suited to the slide stage of the lantern. If the cell leaks when filled with water, this may be stopped by greasing the tubing with lard. Upon one of the glass sides is pasted a mask of black paper, having a large circular opening in the center. A silhouette of the head and shoulders of a man smoking a pipe is pasted upside down in the upper part of this opening. K is a piece of glass tubing drawn out to a point and broken off so as to leave a small opening at the narrow end. The cell is filled with a moderately strong solution of some soluble sulphate. The glass tube is partly filled with a solution of baric chloride, by dipping the pointed end into that liquid to a depth of about an inch, and then removing it with the finger placed over the upper end. The outside of the tube is then wiped dry. If the small end of the tube is now held in the cell about half an inch above the



bowl of the pipe, and a little of the chloride is allowed to escape by moving the finger at the upper end, a cloudy precipitate of baric sulphate will descend through the liquid. When this operation is projected upon the screen, the cloud will appear to rise from the bowl of the pipe. The tube should occasionally be placed behind the face of the silhouette, to produce the effect of smoke issuing from the mouth of the smoker. It requires a little practice to make sure of producing smoke clouds of a natural appearance. It will be observed that the tube must be kept hidden behind some part of the picture.

Of course this effect may be applied to quite a variety of silhouette slides. It may also be used with transparent pictures whose foreground is dense enough to hide the tube and precipitate. In some cases, where the column of smoke may be of considerable width, the end of the tube need not be brought behind the visible part of the picture at all. No doubt other precipitates than baric sulphate will answer equally well.

LANGTON BYLLESBY.

254 Allegheny Ave., Allegheny, Pa.

**Rapid Telegraphing by the Wheatstone Machine.**

The most valuable factor in carrying on the immense volume of telegraphic business between New York and Chicago, during the breaking of wires by the storm of January 25, was the Wheatstone instrument, as stated by Acting Wire Chief C. B. Mitchell to a reporter of the *New York World*. The Wheatstone is a duplex machine which the telegraph people refer to as the "old mill," because it can grind out such an amount of "copy." An expert telegraph "sender" can transmit forty words a minute. The Wheatstone can do ten times as much and keep it up indefinitely. All that is necessary to do is to take the dispatches which are to be sent and give them to a man who takes a punch and cuts dashes and dots and spaces into a strip of paper to represent the letters of the message to be transmitted. When he gets through this operation, the perforated slip looks not unlike a sheet of organette music, only it is not so wide. When several thousand words have been properly prepared, the strip of perforated paper is fed into the mouth of the old mill

and the message is ground out at the other end of the line at the rate of four hundred words a minute. The machine works mechanically and does not require an operator of skill. The transmitted message is received at the other end in the shape of a strip of paper punched full of dots and dashes representing the Morse alphabet. This strip is cut up into sections and placed in the hands of expert typewriters who read the Morse alphabet, and the message is reproduced in printed characters. This machine will furnish work enough to keep ten girls busy copying. During one of the most trying days of the recent storm the longest time there were open wires between New York and Chicago was about one hour, and the Wheatstone transmitted 30,000 words in that brief space of time, thus doing the work of ten expert senders. Had it not been for this, there would have been a great load of delayed business that day.

**Joaquin C. G. Vianna.**

The central figure of the India rubber world at the present time is Joaquin C. G. Vianna, or Baron de Gondoriz, who, backed by foreign and native capital, is boldly endeavoring to corner the entire rubber output of the Amazon region. About forty-five years ago, Vianna first saw the light of day in a small village near Oporto, Portugal, and at an early age was sent, as was the custom with well-to-do people in his country, to England, to receive an education. He was bright, studious, and industrious to a remarkable degree, as shown in the letters which he often writes to this country, and which are written in a smooth, flowing hand, and are models of English business diction. He also speaks our language without the slightest accent, and with grammatical accuracy.

Going to Para at an early day, he entered the house of Victor Roiz d'Oliveira & Co., as a clerk, but the senior partner of that company afterward retiring, he succeeded him in the partnership. It was then that he began to show signs of his intrepidity in attempting to control rubber values, for in a short time afterward he formed the firm of Vianna & Co., and attempted to corner the market.

The manufacturers of this country combined against him, and an eventful struggle commenced. Vianna forced the price up to \$1.25; but the united efforts of his opponents were too much for him, and he reluctantly yielded after a campaign of nearly a year's duration, with heavy losses. He was next heard of in the firm of Barros & Vianna; then in the Uniao Commercial, firms which he carried on with good success until 1887, when he formed the Nova Uniao, with increased capital, but its operations were unfortunate, and its affairs soon passed into liquidation.

At this time his brother, much younger than he, had formed the company of J. Vianna & Co., while he himself united his fortunes with the Cia Mercantil de Para, a company which at the beginning of the season was credited with the purpose of controlling the rubber product of the Amazon. Other companies have lately sprung into existence, the Empreza Industrial do Gran Para, under the auspices of the Banco Emissor, and the Empreza Industrial do Norte y Oeste do Brazil—results of the great prosperity in that country in the past year. The bank has a very large amount of capital at its disposal, and as it is credited with an understanding among the rubber men to advance any reasonable amount to them, this feature is a very strong factor in the situation. As a consolidation of all interests in Para has now been made, and placed under the control of Vianna, nothing now remains but to execute the scheme, the success of which seems to rest entirely upon Mr. Vianna. A knowledge of his personality is, therefore, interesting at this juncture.

His abilities command the admiration and confidence of his associates, both at home and abroad. He is clear headed, incomparably bold, quick of decision, fertile in resource, active, and with these qualities is combined a resolute will which does not discern defeat until the last gun has been fired. This is the man who will be carefully watched for the next few months, and whose name will probably be in the mouth of many a person who happens to get short of a contract in the market. In appearance, the Baron de Gondoriz is about five feet four inches tall, of full habit, light complexion, and red hair. He smokes the conventional cigarette of the country, but does not taste liquors. He is a good companion, agreeable in manner, and chummy in conversation. He is married, the baroness being a Para lady of excellent family and wealthy. The title he bears comes to him from the king of Portugal, whose subject he remains. He is a good traveler, visiting this country and Europe quite often, and in New York is quite well known. His acquaintances here say that he is quite able to hold his own, in business matters and leadership, with the best minds in Wall Street.—*India Rubber World.*

**NATURAL GAS IN ENGLAND.**—The Salt Union borings have been proceeding simultaneously in Cleveland and Cheshire. It is reported that in the former district natural gas has been struck and issues in great volumes.