

the franchise and building the road would be the cause of many run-aways and other damage. Laid on the table for one week.

On a statement of ex-Selectman Smith and others who had examined the books of the Wells Fargo bank, the assessment of that institution was cut down from \$250,000 to \$150,000.

A communication was received from W. J. Lynch, in reference to the appointment of deputies to collect statistics of the county. Laid over for one week.

It was ordered that the County Clerk make the totals on the appendix to the assessment roll for 1890.

Bonds for a liquor license filed by E. C. Warenski and Henry Keyser were accepted.

BEET SUGAR PRODUCTION IN EUROPE.

The subject of sugar production in the West from beets is worthy of careful study. The immense and yearly increasing great output of sugar in Europe, with soil and climate conditions not unlike ours in the West and Northwest, would seem to warrant a careful study of the possibilities of this industry by capitalists; and if the success in Nebraska prove equal to the anticipations in the early part of the season, capital will undoubtedly seek this channel of industry. Before the late war more sugar was produced in Louisiana than in Germany. As late as 1871 Germany produced 186,422 tons. Since the war the sugar industry has been depressed in a very small area of Louisiana eligible to the growth of sugar cane, while the enormous increase of the beet sugar industry in Europe was from 1,061,350 tons in 1871 to 2,662,136 tons in 1889, a growth of yearly output of 1,061,786 tons, and from the third of the sugar producing countries in Europe in the winter of 1861-72, Germany in 1888-89 had risen not only to the first place, but actually produced more than one-third of all the sugar of Europe.

In connection with the industry of sugar production in Europe, we reproduce from the *Sugar Bowl* an interesting article on the status of sugar-growing in the several European States, which will be interesting to all classes of our readers, but particularly to those in the region of the Missouri River, upon the arenaceous soils of that region. The excerpts are as follows:

Germany holds the first rank in sugar production. In 1871-72 it was but 186,442 tons; from 1880-81 it took an ascending turn, and attained 1,146,730 tons in 1884-85, 1,023,730 tons in 1886-87, and 959,116 tons last year. The next crop is estimated at 970,000 tons. If the actual crop is compared with the ones of 1871-72 it is seen that it gives on this last an excess of 783,568 tons, thus an increase of 420 per cent; besides, Germany's production forms today 38.43 per cent of the total production of Europe, whilst eighteen years ago it only represented 17.75 per cent of this production. The production in Germany developed

itself rapidly, and faster than in any other country.

Austria-Hungary in 1871-72 produced 240,420 tons of sugar; in 1888-89 will have produced 525,000 tons. The increase is 284,580 tons, or 118 per cent. The Austria-Hungary production represented in 1871-72, 22.85 per cent of the European production; in 1888-89 it represented 19.72 per cent. It was in 1884-85 that Austria-Hungary attained its maximum, 677,000 tons.

France produced, 1871-72, 335,352 tons, and in 1888-89, 474,000 tons. Thus an increase of 138,648 tons, or 41 per cent. The French production represents but 17.80 per cent of the European production, instead of 31.90 per cent in 1871-72. The French production attained its maximum in 1886-87—506,384 tons.

Russia in 1871-72, only produced 171,283 tons of sugar; in 1888-89 it produced 500,000 tons—an increase of 328,717 tons, or 192 per cent. The Russian production represents today 18.85 per cent of the European production, instead of 16.30 per cent eighteen years ago. It was in 1885-86 that Russia attained its maximum of production—528,520 tons.

Belgium, in 1871-72, produced 94,310 tons. The crop of 1888-89 is estimated at 124,400 tons, thus an increase of 32 per cent. The Belgium production forms 4.67 per cent of the European production against 8.96 per cent in 1871-72.

Holland produced in 1871-72, 18,523 tons, and in 1888-89, 38,300 tons—an increase of 19,777 tons, or 108 per cent. The production of Holland represents 1.43 per cent of the European production, against 1.75 per cent in 1871-72.

Denmark and Sweden, which appear among the producing beet sugar countries only since 1873-74, enter in the actual production for 25,000 tons, thus 0.94 per cent.

Italy and the sundry countries have only a production of 5,446 tons, thus 0.24 per cent of the total production.

Here is the comparison for 1871-2 and 1888-9:

Production,	1871-2	1888-9
	Tons pr ct.	Tons pr ct.
Germany.....	186,442 17.75	970,000 36.43
Austria Hungary, 240,420	22.85	525,000 19.72
France.....	335,352 31.90	474,000 17.80
Russia.....	171,283 16.30	500,000 18.85
Belgium.....	94,310 8.96	124,400 4.67
Holland.....	18,523 1.75	38,300 1.44
Denmark.....	..	19,000 { 0.94
Sweden.....	..	6,000 {
Italy.....	.20	.446 {
Sundries.....	5,000 { 0.47	5,000 { 0.24
Total.....	1,061,390	2,662,136

Here is the increase of 1888-9 production above the crop of 1871-2:

	Tons	Per cent.
Germany.....	783,558	420
Austria-Hungary.....	284,580	118
France.....	138,648	41
Russia.....	328,717	192
Belgium.....	30,090	32
Holland.....	19,777	108
Denmark.....	19,000	
Sweden.....	6,000	
Italy.....	426	406
Sundries.....	500	
Total.....	1,610,796	

This last table is especially interesting as showing the great percentage of increase in some of the more favored of the countries of Europe.—*The Prairie Farmer.*

THE ARTIFICIAL PRODUCTION OF RAIN.

The question as to whether rain can be produced by artificial means is to be tested by the United States government. On motion of Senator C. B. Farwell, of Illinois, a clause was added to the Appropriation bill which provides that, under direction of the Forestry division of the Department of Agriculture, \$2,000 shall be expended in experiments having for their object the artificial production of rainfall by the explosion of dynamite.

In a communication from Senator Farwell the following theories are advanced: "My theory in regard to producing rain by explosives is based partly upon the fact that after all the great battles fought during the century heavy rainfalls have occurred. This is historical and undisputed. Senator Stanford, one of the builders of the Central Pacific Railway, informed me lately that he was compelled to do a great deal of blasting through a part of the country where rain had never been known to fall in any useful quantities and where it has never rained since, and that during the period of the blasting, which was nearly a year, it rained every day. I feel almost convinced that rain can be produced in this way. The dynamite could be exploded on the ground or up in the air, and I think I would prefer the latter. The experiment should be made in eastern Iowa, Colorado, or in western Kansas, somewhere along the railway, and my own idea would be to commence early in the morning and explode continuously for seven or eight hours."

The subject of rain production by means of concussion has been frequently discussed during the last twenty-five years. A great number of instances were stated by Francis Powers, C. E., in a volume entitled "War and the Weather, or the Artificial Production of Rain," 1791. Many cases are cited in which great battles have been followed by speedy rain. Six occurred during our war with Mexico in 1846 and 1847; nine cases of battles or skirmishes are given in which occurred in 1861 in the war of the rebellion, and which were followed by rain at no great interval; forty cases are cited in 1862; thirty for 1863; twenty-eight in 1864, and six for 1865. Eighteen similar cases are also cited from among the great battles which have occurred in Europe during the past century, making a total of 137 cases. In a criticism of Mr. Powers' theory, *Silliman's Journal* said:

"To this argument it may be replied that throughout the region from which his examples are mainly drawn, rain falls upon an average once in three days, and probably a little more frequently; so that from the conclusion of one rain to the commencement of another, the interval is on an average but little over two days. Now, battles are not usually commenced during a period of rain; generally not till some hours after the conclusion of rain. Rain, therefore, ought to be expected in about one day