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BRIEF PANIC IN WHEAT MARKET TUMBLES PRICES

CHICAGO, Feb. 13.—Stop loss selling of wheat today led to a wild downward swing in prices. Weakness developed right at the outset, but did not become extreme until the approach of the final hour of the session. At that time a violent lurch took place and the market crashed to a point 8½ under Thursday night's close, May going to as low as $1.50 a bushel, whereas the price not many days ago was $1.67.

Trade was on a large scale and individual operations were lost count of completely. Before the excitement was fairly checked, another cent had in some cases been clipped from prices and May wheat sold at $$1.49 with July down 6⅛ at $1.28⅞.

Almost complete stoppage of export demand from the United States for the time being appeared to form the main cause of the general stampede to sell.

The worst of the semi-panic was over in fifteen minutes, but the market remained extremely nervous up to the closing gong. Shorts buying to realize profits helped to rally the market somewhat in the final dealings. The close was 5 to 5⅛ to 5¼ down, as compared with Thursday night, May finishing at 154¼ and July at $1.29⅞ to $1.30.

REMOVES DANGER OF MERE INVASION

BERLIN, Feb. 13.—The morning papers hail the victory in East Prussia particularly as removing further danger of an invasion of that province. They point to the Russian report of the battle as an indication of the completeness of the defeat as it admits that the Russsians are falling back to the protection of their chain of fortresses.

The victory is especially prized because of the frustration of plans for a strong offensive which the Russians are believed to have been preparing in theis region.

The capture of 25,000 prisoners, reported in the German official communication, means that practically an entire army corps has been put out of the fighting. The fact that the number of guns captured is comparatively small is commented on in some quarters as indicating that the Russians who are said already to have lost a third of their artillery through capture are now insufficiently equipped in this arm of the service.

THREE CHINESE DEAD OVER CELEBRATION

VANCOUVER, B. C., Feb. 13.—Three Chinese are dead and three are in a hospital as a result of a New Year shooting affray which took place today in an Oriental rooming-house of Pender street East. Chin Guck killed Chin Ham and Chin Chong. He was himself killed by jumping from the second story window of the place in Market alley, where he landed on his back. The wounded are Chin Gum, shot in the jaw; Chin Hawk, ankle bones shattered, and Chin Wing, shot through hand.

The shooting followed a night of carousing and celebration of the Chinese new year.

LEGISLATIVE ECONOMY

THE legislature is not making a very enviable record. So far all legislation enacted has been trivial or destructive. The economies effected consist of the abolition of boards like the state immigration bureau, that asked no appropriation this session, and of the state conservation commission, which called for no money and which, composed of public-spirited cranks like J. N. Teal and C. B. Watson, who paid their own expenses and gave freely of their time, whose work has been the compilation of the Oregon water code, said to be the best in any state, and other laws for the public good. Other economies were the curtailment of needed improvements in the state insane asylum, the proposed abandonment of the girls' industrial school and similar state institutions.

The session began with a flood of bills to abolish most of the constructive legislation of the past decade, which forced a scurrying to the capitol of persons from all parts of the state. Board after board, which secures no appropriation and is self-sustaining, whose members draw no salary and serve from a sense of public duty, was attacked under the slogan of economy—yet when this economical nightmare is over it is questionable whether any real economies have been effected.

Some orchardist near Corvallis who did not pay attention to his grove had some peach trees cut down by beavers, with the result that the lower house has passed a law exempting the almost extinct beaver from protection. The present law gives a land-owner the right to exterminate beaver on his land, provided destructive work is being done, on permit from the game warden.

But while the legislators are swinging the hammer upon constructive legislation, while they are throttling the development of the state by killing proposed reclamation projects and defeating an increased levy for state highways, while doing their best to retard the progress of the state, they have been removing the safeguards of the people from the encroachments of monopoly.

A strenuous effort is under way to amend the compensation law for the benefit of the liability companies. A vicious bill is pending (H. B. 327), which has a good chance of passage, which presents the streams and rivers of Oregon to private concerns. A paving bill has been debated a week, that destroys competition in paving bids and removes from county courts the right to award contracts according to their best judgment.

The house has passed H. B. 351, to enable water-power companies to control all the unused water power of the state. This bill, with H. B. 349, enables private monopoly to grab and hold valuable power sites, conferring the right to condemn and take any piece of land belonging to people, state or federal government, which might have been reserved for use in connection with the development of water power needed by municipalities. The object is to secure for a song property worth millions.

The quarter-of-a-cent savers have passed a bill through both houses cutting the county commissioners' salary from $4 to $3 per day. The house has passed a bill restoring to the sheriff the tax-collecting duty, rather than raise the treasurer's office to adequate pay for the work performed. And while these momentous penny economies are being effected, the door is thrown wide open for the theft of millions of the public domain.

No wonder the people are getting to view the legislature as a biennial nuisance and sigh for its abolition.

THE SHIP PURCHASE BILL

WHY is the administration so set in favor of the ship purchase bill?

Because it offers the only practical solution of the problem before the nation of securing an adequate merchant marine and the only relief possible for the manufacturer and shipper from the extortions of the shipping monopoly.

Since the civil war the nation has waited for a merchant marine and the ship builders have refused to comply with the demand. They have tried to force a subsidy and refused ships until the subsidy was forthcoming.

Why should the people pay a subsidy when they can own and operate its own ships? Why is a $30,000,000 subsidy to private monopoly right, and a $30,000,000 appropriation for government-owned ships wrong?

While the people waited for the shipping trust to furnish the ships, and the shipping trust waited for subsidy, American commerce has been seized by foreign owners. And now the war has forced the issue. Foreign ships are lacking, American commerce languishing. Our manufacturers are unable to take advantage of the new markets or to supply the old. And the shipping trust still clamors for subsidy.

It is the old story of private monopoly seeking special legislation and opposing any move that means relief to the people—and the administration again is firm for the people.

Half a Million Bags of Sugar

(From the Omaha Bee.)

The sugar factory of Scottsbluff closed up the job of slicing beets at 2 o'clock Monday, finishing the biggest crop of the best beets ever grown in the North Platte valley or Nebraska. As is usual on such occasions the factory whistle is blown for a half hour. Manager Simmons says that in many way this has been the most satisfactory year since the factory was established.

One million, four hundred thousand dollars was paid to the beet growers of the Scott's Bluff country. Two hundred and ten thousand tons were sliced at the Scotts Bluff factory, and about 40,000 taken to other factories. The campaign has lasted 117 days of 24 hours each, and 700 men have been employed in the mill. After a short rest the greater part of these will go to beet fields for the summer. The crop grown in this vicinity for 1914 is the largest grown under any one supervision in the United States the last season, and there was less waste acreage; the beets were better taken care of. The tonnage per acre was larger and the sugar content better than any previous year. The total output which exceeds 500,000 bags, will fill 1000 freight cars.

Sugar Beets, Their Products and Bi-Products

The following article was written by Leslie Freudenthal, a 15-year-old high school student at Jacksonville. The subject was assigned Monday and the paper read Friday. His standing throughout the week was excellent:

The raising of beets for sugar is a development of recent times. This industry has grown so rapidly that now much more sugar is made from beets than from cane. It is impossible to tell whether sugar is made from beets, or cane either by appearance or taste, but if we could taste the raw sugar we could tell very easily, for the beet sugar has a very disagreeable odor and taste which is removed by refining.

The history of beet sugar is very interesting. It was not discovered by accident like so many of our useful products are, but it was the result of years of painstaking, unsuccessful, and costly experiments. A German apothecary first discovered the presence of sugar in beets in 1747, and soon both French and German chemists were at work trying to devise some method, to extract the sugar from the beets cheaply enough to be comme ieryibaproetaoinshrdl to be commercially profitable. The problem offered great difficulties for it is hard to get rid of certain impurities in the juice of the beet. They made no great success until after the beginning of the nineteenth century, when a new impetus was given to the work.

England and France were at this time at war, and as ports were blockaded by hostile fleets, the prices of all products were of course greatly raised. Sugar was selling at from $1 to $2 a pound, and knowing well that the sugar beet would grow in French soil, Napoleon offered a prize to any one who would demonstrate how sugar could profitably be made from its juice. The result was that before the close of the first half of the century the beet sugar industry grew to be of great importance in both France and Germany.

Its growth in the United States has been more recent, but during the past few years very rapid indeed. This rapid development has been largely due to the aid given by the department of agriculture, of our federal government, and of our various state governments. They have established experiment stations where crops of beets have been raised, and sugar extracted by the best, and cheapest methods. They have sent seed to the farmers and otherwise aided in familiarizing the people with this new crop. The states which are foremost in the production of beet sugar are California, Michigan, Colorado, Utah and Nebraska and the industry is growing rapidly, both in these and in other states.

There are two sides to the proposition of beet sugar growing and manufacture. That of the farmer and that of the manufacturer. The difficulties of the farmer may first be considered. To begin with he is unacquainted with the methods of cultivating the sugar beet plant, and his first experience usually proves unsatisfactory. He is accustomed to certain methods in farming, and is not inclined to listen to those who know how to raise sugar beets. He thinks from his long experience at farming he knows how to farm, and eventually he finds out his mistake. He finds that in growing sugar beets he must apply principles in many cases the reverse of those necessary in other crops. For instance he has been accustomed to growing large ears of corn, large hogs and large steers, but in the case of sugar beets he finds that the first question is not one of size, but of quality. He must grow beets of a certain size, purity, and sugar content. In order to accomplish this he must give careful attention to the work of preparing the land, planting the seed, bunching, thinning, and cultivating.

In the first place he must have a rich soil, and the proper rain conditions at the proper time. There can be no general fixed rules applying to the kinds and application of fertilizers. There are however some things settled about growing sugar beets.

The ground should generally be plowed deep, and in most instances sub-soiled. Before the seed is planted the ground must be thoroughly pulverized by harrowing and rolling, even if the surface has to be afterward roughened, as it must in Nebraska. The ground must be moist enough to germinate the seed. The seed is planted at depths of from half an inch to two inches, by machines which will sow and cover several rows at once. The beets must be planted near enough together to produce a beet of a certain size. The size and quality of the beet depend on the right kind of spacing. The beets must be thoroughly cultivated, hoed, and hand weeded, because cultivation tends to conserve the moisture of the soil, and clean fields permit favorable action of sunshine and air. This close cultivation should be kept up until the beet tops thoroughly shade the ground, and reach a size where it would be injurious to operate among them further with a plow and hoe.

Harvesting is delayed as late as possible, for as in the case of cane the sugar forms most rapidly as the plant approaches maturity. The beets are plowed loose, and then pulled by hand. Boys are employed to "top" them after which they are sent to the factory. If that is too full to receive them, they are piled up and covered with the tops or with a layer of soil. The problem of correct preservation has not yet been solved, as there is danger from both sweating and freezing.

A field by the factory is filled with large boxes or trenches, into which the farmers shovel their wagon loads of beets. The large trench or box is bottomed with loose boards, and under the boards is a cemented or paved flume for running water. The beets now lie in the upper trench as they came from the farm. Of course some soil adheres to them.

Warm waste water is let into the under ditch or flume, and this lifts the loose boards. The beets fall down and go toward the factory. At the factory they fall into buckets or the rim of a wheel and are carried into the washing-augur, which revolves in an iron trough. As the beets are forced along they become clean. At the end of the trough they fall into buckets and ascend to the top of the building, drying as they go. Arriving at the top the beets fall into an automatic weigher, which tips at half a ton, registers, and drops its half ton into the slicer.

The slicer is on the floor above the diffusion battery. It is a large disc, on which are knives of various shape. These revolve under the mass of beets and cut them into flakes, three sixteenths of an inch thick.

A revolving chute from the slicer fills tall upright cylinders with clean sliced roots. The contents of each will weigh two or three tons. Eight of these cylinders stand in a series, while two or four others are out of service, getting ready to take places in the active series. Pure water flows into cylinder No. 1 which has been longest in operation, and has the least sugar remaining in the beets. When No. 1 is practically exhausted of sacharose, it is disconnected, and No. 2 becomes No. 1, and the fresh cylinder becomes No. 8. The water goes from cylinder to cylinder acquiring sweetness as it goes. Before it is urged into the last cylinder it is heated and passes under pressure among the fresh beets becoming thick and rich with sugar—in fact the water that comes from No. 8 is 50 per cent sugar, and is free of the nitrogen, fibrine, sulphur, potash, sodium and calcium that are the especial results of any crushing or macerating process.

The sticky chocolate colored liquid now goes in troughs to a strainer, and thence to a vat. Fermentation begins at once. To remove or neutralize the acids, carbonic acid and barytes, milk of lime, or phosphoric acid may be added and heat applied, or the juice may be passed through the fumes of burning sulphur.

The juice goes into clarifiers (that is iron kettles holding five hundred gallons) one of the before mentioned acids are added to the warm juice, and the heat is further raised to less than 200 degrees. A thick scum rises, and thus what is called the defacation of the juice is effected.

The clarified juice then flows into the vacumn pan. It is a vacumn, but not a pan for the vessel is spherical, with copper steam coils in the bottom. A glass window permits the liquid to be seen, and electric lights make the interior still more plainly visible. An air pump and condensor remove the air, and the juice boils with less heat than 212 degrees and with less agitation than in the open air. When the molecules of sugar begin to form into crystals the charge is dumped into the mixer.

The mixer is a long trough, in which a shaft revolves. On the shaft are steel arms that play in the sugar, beating the crystals apart, and bringing them near other molecules still unattached. When the grain or crystal is of the right size it goes to the centrifugal.

The centrifugal machine is a kettle shaped vessel, in which the wet sugar is placed, and which revolves 1200 times a minute. Its sides are lined with brass gauze. The thin parts of the sugar are heaviest and they fly upward to the gauze and outward in the form of molasses. Remaining in the kettle is dry white sugar, which is the sweet coffee of our tables. It is a beet sugar in many respects, but does not compete with the popular granulated sugar of our great refineries.

Hogsheads of unripe or unfit sugar together with molasses arrive in vast quantities at the refineries. The material goes to the top floor where it is dissolved in hot water, and boiled in pans or blow-ups with steam coils. From these pans or blow-ups the syrup passes through from 50 to 200 cloth filters heated by steam. These hot bags retain many impurities but do not remove the yellow color.

Now the real refining begins. The syrup passes through 50 feet of bone-black with which cylinders 50 feet high are filled. The syrup may no be treated as it was at the cane mill, or it may be run into numerable small molds standing in rows. Its crystals are larger, have a higher glaze, and possess greater adhesive power among themselves.

Lime-cake is anotner by-product of the sugar beet. It is used in the construction of pavements, roofing, etc., by drying, pulverizing and mixing with asphaltum.

In Europe efforts have been made to utilize the seed stalks by chopping them up, and mixing them with some of the waste molasses for stock food, but owing to their fibrous condition this attempt proved unsuccessful.

Other waste materials are waste water, the old filter cloth, discarded rubber belting, and gunny sacks. The water is very seldom used, except to wash alkali out of the ground, for irrigation purposes, or to wash the pulp and lime cake away from the factory.

The cloth is sometimes sold to nursery men for wrapping purposes.

Rubber belting finds ready sale as brake-block lining, and for rubber recovery.

The sacks, that the seed arrive in, of which there are not less than 1000 yearly, are sold to surrounding farmers and other dealers at a very low price, for it would not be economy to ship them back to Europe to be refilled with seed.

As it is cheaper to raise the beets in the vicinity of the factory, you can see large fields near the factory devoted to that industry. From three to five thousand acres of beets are necessary to insure product enough for one factory. The sugar making season comes after the harvesting and lasts for three months or more. At the end of this time the factory is idle save for necessary repairs or improvements.

It costs an average of $30 to produce an acre of beets, and the net profits amount from $18 to $25 per acre and sometimes much more, better results depending on soil and skill of raiser.