DESERET EVENING NEWS: SATURDAY, FEBRUARY 25, 1905.

ABOUT CORN BREEDING.

New Discoveries Which May Add One Billion Dollars a Year to Our National Wealth.

(Special Correspondence of the Deseret News by Frank G. Carpenter.)

ASHINGTON, D. C., Feb. 22. plenty of barnyard manure, kept the -If a gold field could be discovered which in one year

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would turn out 10 times the value of all the gold and silver now annually mined in the United States it would set our nation crazy and excite the world. Such a gold field has been discovered, within the past four years, in the great corn belt of the] United States, Our corn crop now amounts in round numbers to more than 2,000,000,000 bushels and is annually worth in the neighborhood of \$1,000,000,-000. All the gold and silver mined in this country amounts to but little more than \$100,000,000 so that is worth 10 times as much

Is worth 10 times as much. Now, the discoveries of the last four years have shown that this great crop can be doubled, without adding one nere to the land cultivated or 1 cents to the cost of cultivation. This means in time a possible increase of \$1,000,-600,000 annually in our national wealth, which, on a 5 per cent hashs, means the addition of \$20,000,000,000 to our national means to assets.

CORN IS KING.

These are big figures, but corn is mighty. It is Uncle Sam's biggest crop. It is the greatest crop of the world, and we have the monopoly of it. How great it is few people realize. The figures are so vast one's mind cannot gramp them. In 1902 we raised more than 2,500,000,000 bushels of corn, and grasp them. In 1902 we raised more than 2,500,000,000 bushels of corn, and in 1903 the product was more than 2,200,000,000 bushels. Let me put do a figures into concrete shape. Suppose all the corn raised hast year could be gathered into one pile and loaded on two-horse wagons. Let each wagon, with its team and driver, take up 30 feet of roadway and start the proces-sion eastward, loading wagon after wagon as the corn cop moves of. Put the noses of the horses at the tailboards of the wagons in front, and how far away do you think the first wagon would be when the last wagon was loaded? Suppose them to start at the Mississippi river, would it be down in Ohio? No. In New York? No. Out in the Atlantic? Over in Europe? Away off in Asia? In the middle of the Pacific occin? No. It would be thousands upon thousands of indles further on. It would make as con-tinuous lines of wagon loads from Bos-ton to the wagon would make 88 con-tinuous lines of wagon loads from Bos-ton to San Francisco. If you could bridge the skies and start it to toward the moon it would reach to that dead planet and go on for 60,000 miles beyond. bridge the skies and start it toward the moon it would make a solid wagon train which would reach to that dead planet and go on for 60,000 miles beyond. If you could load it on cars in 500-bushel lots at 40 feet to the car, includ-ing platforms, and start them on a double track the two first cars would have gone from the Mississippi to New York, across the Atlantic, across Europe and almost across Asia before the last two cars were loaded. And this mighty crop can be doubled, as I have said before, without adding one cent to the cost of production or one acre to the cost of production or one acre to the area now used. It not enly can be done but is being done. The discovery was made about four years ago that the right kind of seed has everything to do with the yield of the corn crop, that there is fine blooded stock, and that corn can be bred up like a high

that corn can be bred up like a high strain of Jersey, cattle or a pedigreed trotter.

plenty of barnyard manure, kept the field well worked, and as a result, my first crop smouthed to 1,609 hushels, or 114 bushels to the acre, which was far above the yield of the rest of the farm. That started me to studying the sub-ject, and I kept up my studies when I went to the Illinois agricultural col-lege at Urbana a year or so later. There we had an experimental corn patch, and we trifd every way we could to in crease the yield. One means was by choosing good seed. We found that certain seed corn produced double as many ears as other seed corn, and by investigating where the corn came from we found that the best was furnished by two farmers, cho in Indiana and one that each man had for 25 years been selecting his best seed for pinting, judging the same by the size, stalk and yield. The Indiana men was traising white corn and had, been breeding up that variety. The Illinois man had been doing the same thing with yellow and has seed was such that it produced abait 76 bushels per acre. "This led us to believe that corn could be great it improved by the selec-tion of seed, and by using the best stre-ding the same to that at the seri-rultural college in 1894, and form that the area to be believe that corn while corn and had, been breeding up that variety. The Illinois man had been doing the same thing with yellow and has seed was such that it produced abait 76 bushels per acre. "This led us to believe that corn would be great to improved by the selec-tion of seed, and by using the best stre-ding the sent to do that at the stri-ultural college in 1894, and form that the on the movement has spread un-til there are corn braeding associations in all the great corn mising centers."

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BOY CORN RAISERS.

BOY CORN RAISERS. "Do you have trouble in getting the farmers to improve their seed?" "No," replied Mr. Shamel; "when one farmer of a community has the right seed his big crop is an object lesson to all his neighbors, and they are ready to follow his example next year and do likewise. The matter has become so important in the west that the state feirs offer premiums for the best corn. The states have special corn exhibits at which from 2,000 to 10,000 samples of corn are shown. Schools of corn-juding have been established through-out illinois and other states, and I might say that there are hundreds of thousands of boys, each of whom has a little patch of corn and who is studying how to raise corn for himself. There were 8,000 samples of coin sent by 8,000 different boys to the St. Louis exposi-tion to form a part of the Illinois corn exhibit there. The same thing is soing on in Jowa, Kausas, Nebraska, Mils-sourl and Ohio."

exhibit there. The same thing is going on in lowa, Kansas, Nebraska, Mis-souri and Ohio." "Where do the boys get that land on which to raise this corn?" "It is given them by their fathers. Instead of letting each boy have a cow a horse or something of that kind, the father gives his son a few acres to put into corn to raise premium seed. All the boys of a farming community will be so treated, and at a certain time of the year each will bring 10 of the bey ears of his crop to the corn-ludging as-sociation. It will be there passed upon by the corn fudges and the best corn will receive premiums of money or machinery. There will often be three premiums for each class of corn shown, ranging from \$25 to \$3 or less. The boys thus learn what constitutes good corn, the principal kinds of corn and how it should be raised."

BIG CORN-BREEDING FARMS.

"It is odd to think of a corn-breeding farm," continued Mr. Shamel, "but we have farms where corn is as carefully bred in respect to seed as horses and cattle are bred on any stock farm in the country. The heads of these farms know the pedigree of the ears of corn they plant, and they take the best of PIONEER CORN EREEDERS. It was to give you the story of this movement that I called at the agri-cultural department tody and had a talk with Archibald Dixon Shamel, who was one of the originators of the dix-covery. He is today scarcely more than a boy, but he is one of the chief corn authorities of the United States. 1 "I was raised on a farm and when I got old enough my father gave me a corn-growing region, I was amblitous to raike the best and most corn. I used the care and the very best produces the the state are Bioomington, II. "A good grain of corn being planted may have a thousand or more children. I have a thousand or more children. I mat that all the profits. My patch corn raised the seered growing." "A that all the seered of a line a stars and the seres thought that the seered of a stars. I in fertilization and cultivation. I used

Corn is Hing-What the Crop Amounts to and How Uncle Sam Monopolizas It-The New Corn Seed Breeders' Association-Corn Judging Schools-Boy Corn Raisers And Their 8,000 Exhibits at St, Louis-Our Best Corn States-The World Market

The Enormous Seed Demand, Out of Which Some Men Are Making Fortunes-Striking Information About One of the Greatest Discoveries of the Century.



A TYPICAL CORN HARVESTING SCENE IN ILLINOIS.

acres and upward. All of these seed, corp breeding farms are doing well. They sell their seed corn at from \$2 to \$5 per bushel, and as yet have not been able to raise enough to supply the do-mand. It requires no special capital to breed seed corn above that needed for ordinary farming: the only increase is in the original cost of the seed. When you remember that there are 200,000 corn growers in Illinois alone and that they need about 1,000,000 bushels of seed orm every year you can see that the demand for good seed is quormous."

BREEDING ASSOCIATIONS.

"Tell me something about the corn breeding associations, Mr. Shamel." "These are now found in all of the chief corn growing states. The II'i-nois Corn Breeders' association was organized in June, 1990, and it heas been so successful that the levislature of that state has appropriated \$10,000 per annum to experiment with corn along the lines laid down by it. Indiana, Io-wa and Kansas have since formed such associations, and the movement is surreading to every corn district of the Enion."

ern Illinois, for instance, in order to test the matter planted 300 acres of im-proved seed. The average vield of the-rest of his farm and of the other corn fields of his vicinity was about 30 bushels per acre, while the average on the 300 acres was more than 60 bushels per acre. It was the same soll, but the improved seed gave him a total gain of 9,000 bushels, which netted him \$4,000 of clean profit from the choice of seed alone. Another farmer planted 80 acres and his increase on that tract was more than 25 bushels per acre above that of his fields planted with the or-dinary seed. This man now plants over 7,000 acres of improved corn annually, and he has also 30 breeding fields to improve his seed corn stock."

OUR BEST CORN STATES.

"What is an average yield of corn to the acre?" I asked. "If you take the whole United States," said Mr. Shamel, "the average yield last year was 25.5 bushels. Nev-ertheless, we have thousands of acres which undure 75 bushels ner acre and You speak of pediareed corn, Mr. Shamel. Do you mean to say that there are variebles of corn which have their genuiogical trees?"
'Yes, I do. The Illinois Cora Breeders' association now recognizes seven special breeds of Indiana corn, fou yellow and three white. The yellow corn breeds are the Leaming, Reids work of the there are the Leaming, Reids work of the there are the Leaming, Reids work of the there are the Leaming and the there are the Leaming the there are the there are the Leaming the there are there are the there are the there are there are the there are t

comparison with the past. In 1901 the average was less than seventeen bushels per acre, and the range for the past generation has been, from sixteen to thirty bushels, the ordinary average be-ing twenty-five or twenty-six bushels per acre the United States over."

OUR CORN-RAISING COMPETI-TORS.

"Is, much corn raised outside of the United States?" "Comparatively little. The South American continent seldom produces as much as 100,000,000 bushels annually, and Europe often has less than 500,000,-000. The chief corn countries of Euand Europe often has less than 500,000, 000, The chief corn countries of Eu-rope are Italy, Russia and the states at the southeastern end of the continent, such as Roumania, Bulgaria and Servia. There are about 32,000,000 hushels raised in Africa, of which 2,000,000 bushels come from Cape Colony and the rest from the valley of the Nile. Indeed, we are now shipping Illinois seed corn to South Africa. Australia yields from \$000,000 to 10,000,000 bushels of corn and Mexico often has as much as 100,000,000 bushels per annum. The total corn crop Mexico often has as much as 100,000,000 bushels per annum. The total corn crop of the world in 1902 was a little more than 3,000,000,000 bushels, of which more than 2,500,000,000 were raised in the United States.'

RESULTS OF CORN BREEDING.

"What have the agricultural depart-ment and the corn breeders so far accomplished in improving our corn and cornstalks?"

cornstalks?" "A great deal," said Mr. Shamef. "To show you what is possible I would say that by selecting ears having long shanks, that is, the branch which con-nects the ear with the stalk, we have increased the length of the shank near-ly two feet in five years' breeding. By selecting ears with tall stalks we have increased the height of the stalk almost three feet. By selecting ears from Increased the height of the stalk almost three fect. By selecting ears from plants with wide leaves we have in-creased the average width of the leaf, and by the product of stalks with nar-row leaves. By selecting ears high on the stalk we have been able to raise the average height of all the ears in a field, and by selecting low ears we have been able to lower all the ears. By taking ears high in feeding value we have increased the value of the crop as have increased the value of the crop as a feed, and by taking ears from healthy

vigorous stalks, planting them separ

ately and preserving the seed borne by the most productive Types, we have normously increased the yield per are, arge percentage of barren stalks and produce nubbins and dwarf ears. And the stalks bearing ears, and the pro-duct of the union of the pollen, as well as the stalks bearing ears, and the pro-duct of the union of the pollen from the stalks to produce a stain which stalk is likely to produce a stain which when planted, will yield a large period to barren stalks. In this way the starks the produce the stalk state what the corn breeder wants is a state of barren stalks. In this way the barren stalks reproduce the star of our and the corn-breeder wants is a state the stalk before the pollen falls in the stalk before the pollen falls in the stalks before the pollen falls in the stalks before the pollen falls in the stalks before the pollen falls with the stalks as in this well-developed the bills of an ordinary comfield more than 106 bushels per are, while would be too bushels. The average yield in thinois is a little more than 32 billion the starks to the hill. In other words, two statks to the hill. In other words to statks to the hill. The starks are weak of un-

stalks to the hill. In other words, two-thirds of all the stalks are weak or un-productive. What we want is to elm, inate the barren stalks and to make every stalk produce a good ear of com. FRANK G. CARPENTER.

Failed.

Failed. All efforts have failed, amedy for coughs, cold set than Eoley's Honey the cough, heals the lur iserfour results from a ci-ion, Nashua, Lowa, writ I had a had cold on my at least half a dozen medicines and had tree physicians without restu-friend recommended Fi-Ter and two three a bette is trou it stops revents Patterfriend recommended Foley; Tar and two thirds of a me. I consider it the greate lung medicine in the world." F. J. Hill Drug Co. For sale by

MUSIC TEACHERS.

All who desire to consult the list of the representative professers and music teachers of Salt Lake should read the "Musicians' Directory" in the Saturday "News."



PIONEER CORN BREEDERS.



COLONEL I. A. BENTON AND HIS "BOYS."

The Men Who Get the Passenger Business for the Denver (Rio Grande in the Salt Lake Territory.

The departure of I. A. Benton, general agent of the massenger department, a couple of weeks ago for a well earned rest in Honolulu. The seven gentlemen depicted are employes of the Denver & Rio Grande who need no introduc-tion to the traveling public. Commencing at the left in the front row the gentleman who is posing in a napoleonic attitude is Harry M. Cush-ing, known among his bosom friends.

The accompanying picture is a copy of one taken by C. R. Savage prior to As departure of I. A. Benton, general agent of the passenger department, a couple of weeks ago for a well earned depicted are employes of the Denver & Rio Grande who need no introdue-tion to the traveling public. Commencing at the left in the front magent of is posing in a napoleonic attitude is Harry M. Cush-ing, known among his bosom friends:



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