DESERET EVENING NEWS TUESDAY FEBRUARY 4 1908



Conditions for Successful Grain Growing in This State.

BEST KINDS AND THEIR CARE.

Agricultural Lessons at State Normal Of Interest and Value to Farming Community.

(Reported by J. H. Paul, At the State Normal on Monday Prof. Hogenson of the Agricultural College continued his interesting series of demonstrations in practical agriculture for the schools. The topics were how to distinguish and iden ify, how to plant and rear, and how to prepare the soll for the successful growing of grains in the west; also how to give these exercises as lesson work. The lecture embodied the most recent results of experimental research along these lines, and was substantially as follows:

THE CEREALS.

Any grass grown for its eatable grain is called a cereal. The five great cereals of the world are wheat, oats, barley, rye and corn. In all ages and in all countries, the cereals have con-stantly formed the main part of the diet of the reople, as well as c as lut-ing an important part of the food of the leading cereals of Europe, while in

the leading cereals of Europe, while to the United States, corn, wheat an oats are by far the m st important. Wheat has been cultivation slice his-tory began. Its native home is be leved to be the Euphrates valley in western Asia. The Chinese also grew wheat in 2700 B. C. and considered it a direct gift from heaven.

DEVELOPMENT OF ROOTS.

When a grain of wheat germinates, it first swells by absorbing soil moisture, and then throws out a number of temporary roots, the radicles, which always go downward. The plumule, or stem, seeks the sunshine. The peror stem, seeks the sunshine. The per-manent roots are developed from the first node, or joint, which is always un-der the ground. The distance between the seed and these permanent roots will depend somewhat upon the nature of the soil but mainly upon the depth of planting. The temporary roots are nourished from the seed itself, and soon die. The permanent roots usual-ly develop at such a depth in the soil that they can obtain an abundance of air and molsture. These roots curve gently outward and downward. They are at the same distance from the soil surface, under the same molsture consurface, under the same molsture con-ditions and therefore they are at vari-ous distances from the seed.

STOOLING OR TILLERING.

The nodes, or joints, of the wheat stem have the power of throwing out both roots and new stems. To besin with, only one joint is found beneath the surface of the soll. From this joint the permanent roots and a number of new branches start. These new branches may form joints under the surface, and from these again, new stems and roots may develop, so that we may sometimes have as many as 100 stems developing from one kernel. Supposing, then, that each straw ma-tures 20 kernels (this is not unusual) and we get 2,000 kernels from one that we planted. In order to stool well, wheat must have (1) an abundance of moisture, (2) firmness of soil, for the sake of moisture, (3) food, and (4) room. If there is not an abundance of moisture and plant food, the develop-ment of the main stem requires all the nourishment furnished by the roots, and little or no stooling takes place. The nodes, or joints, of the wheat



FERD. T. HOPKINS, Prop., 37 Great Jones Street, New York

a bushel for dry and a bushel per acre for irrigated farms is a good average. Seeding with a press drill always gives better results than broadcasting. Seeds better results than broadcasting. Seeds must be deep enough to get moisture-from two to six inches. The land for wheat should be plowed deeply in the fall because more moisture will be col-lected by so doing. It is then, on dry farms, allowed to stand till spring, then harrowed to produce a mulch on top, and finally sown in October.

A Skin of Beauty is a Joy Forever.

PURIFIES as well as beautifies the skin. No other connetic will do the

CULTIVATION OF OATS.

CULTIVATION OF OATS. The cultivation of oats is similar to that of wheat. Nearly all of the kinds we grow are spring varieties. They may be divided into the spreading, or open paincle, and side oats in which the panicle is one sided. Some of the best spring varieties are Giant Yellow, Black American, Lincoln and Sixty Day, A fall variety has recently Leen intro-duced into the slate which is proving valuable for dry farms. It is black in color, resembling wild eats, and was in-troduced by Mr. Stephen Boswell of Nephi, Utah. It produces more per acre than other kinds. As a general rule, onts will thrive in a colder elimate than wheat will. It is considered the hardiest of all the cereals.

cereals.

BARLEY AND RYE.

BARLEY AND RYE. The culture of bailey is very ancient. In Egypt it was used as food for man and beast from early times, and has been grown more or less ever since. The plant has much the same appearance as wheat. There are two well marked types—() the six-rowed, and (2) two-rowed. There are both fall and spring varieties, those most commonly grown however, fall kinds are batter than the spring varieties on account of the high-er yields obtained. A mong the best of climate than any other cereal. The ultivation of rye is not nearly. It was introduced into the Roman em-

pire at the beginning of the Christian era from northeastern Europe. The rye plant is more hardy than wheat, its rye plant is more hardy than wheat its stalk is longer, tougher and more slen-der. It grows best on a light, sandy soil, and hence has been called the grain of poverty. The fall varieties are better than the spring.

All these cereals require about the santh culture, and are handled in ex-actly the same way as wheat. They are all more or less subject to the attacks of the fungus discuse called smut,

wheat and oats being the grains most wheat and oats being the grains most commonly attacked. Smul is a fungus growth. The spores adhere to the fuzzy end of the kernel, and are sown with the grain. When the seed germinates, the smut spores germinate also, and the slender stem of the fungus enters the young wheat stalk. As the wheat plant develops, the smut plant also grows up inside the straw of the wheat or other gain until the head is reached. Then the kernels, instead of developing into grain, be-come a mass of smut apores. Farmers say that they have more smut during a wet season then during a dry one. The reason is that warm, dry weather pro-motes the rapid growth of the wheat plant, but retards the growth of the smut, so that the wheat ripens before the smut plant reaches the head of nly attacked.

he smut plant reaches the head of wheat. A cool, wet season retards the growth of the wheat plant but promotes

id growth of smut, so that the smut i reaches the head of grain before ecomes ripe and fills it with smut der-the spores of the fungus. The remedy for smut is the formalin atment. Take one pound of formalit per cent pure), mix with from 40 to 0 gallons of water, and put into a bar-Place the wheat in a burtap sack, soak about a bushel at a time in barrel for 10 minutes, then remove drain for some time, and allow

to dry before sowing. For seed, the largest and plumpest grain should be chosen, because its vi-lality is greater than that of small and shrunken kernels. Grain that has been grown under a certain environment should not be sud-enly changed to other environment, because it takes some years for it to become acclimated. Hence the value of pedigreed grain for arid conditions.



build up the weak and wasted bodies of young and old. All Druggists; 50c. and \$1.00.

THE REPORT OF THE REPORT OF A DESCRIPTION OF THE REPORT OF T

weeds and to conserve the moisture, of which it requires a great deal. FOR SCHOOL WORK.

FOR SCHOOL WORK. In the school room, samples of these cereals both in the straw or stalk and also threshed should be studied. Smutty grain should be carefully examined and a formalin solution made. The stooling of grain should be watched, and ger-mination tests may be made. Large and small seeds should be planted, and the resulting plants examined as to their vigor and health. The tasseling and sliking of corn are also very inter-ceding processes to observe and study. Rice is another very important cereal; but as it is not grown in this part of the country, it has not been considered.

shoulders. Now Engineer Burg will tel

One freight was standing at Layton

Code freight was standing at Layton cooling a hot box when the second swing around the bend and crashed in-to the rear of the motionless train. Mrs. Frandson and child who were living in a house car were killed. The bodies of mother and babe were shipped to Brig-ham City yesterday. Others who sus-tained builders and cutto are solving.

tained bruises and cuts are setting along nicely at the L. D. S. hospital.

TO PREVENT THE GRIP.

STATE LOSES COAL CASE.

cultural Decided Coal Bearing.

coal territory than agricultural, and

PILES CURED IN 6 to 14 DAYS. PAZO OINTMENT is guaranteed to cure any case of Itching, Blind, Bleeding or protructing Piles in 6 to 14 days or money refunded 50c.

To be sure of good seats for the Pad-erewski concert secure your seats early. On sale at Carstensen & Anson's, 74

ADJUDGED BANKRUPT.

Archie M. Vanderlies was dismissed from bankruptcy in the federal court Summit county. The ground in dis-pute is a part of the school of mines grant and was reserved by the statu as agricultural land, McMichael con-tended that it was more valuable as yesterday and the following were adjudged bankrupts: Samuel D. W. ker. J. B. Harrison, James L. Alston, all of Salt Lake; T. J. Foster of Ogden



You-ll be pleased with the advance styles in "Money Back" Shoes for Spring 1908. They are here for your inspection. Our window will show you styles that are up to the minute, and you-ll not find elsewhere for about a year prices in keeping with "Money Back" dealings.

DAVIS SHOE CO.

he has been sustained in this attitude by the local land office. The territory is of considerable extent and consid-ered very valuable. The state filed up-on it in January, 1889, and the pro-ceeds of sales from time to thus were to go towards supporting a school of mines. Porf. J. E. Talmage, goologist, Hiram Bole, W. D. Robinson and Chas. R. Hancock, coal miners, testified to the fact that the land bears coal. Should the state be dissatisfied with the decision it has 30 days to appeal. lecision it has 30 days to appeal.

BARBERS' BENEFIT.

LANATIVE BROMO QUININE removes the cause. To get the genuine, call for full name and look for signature of E. W. GROVE, 25c The journeymen barbers were given : The journeymen barbers were given a matinea yesterday afternoon at the Elite theater, the \$60 proceeds to be used as the nucleus for a sick fund for benefit members of the union unable to work. The Elite management invites charitable organizations to give bene-fit matinees in aid of their several re-blef funds; also, that mathees be given in aid of married men of the city who may be out of work. Land Set Aside Near Coalville as Agri. Robert McMichael has won his suit against the State of Utah in his contest of land reserves near Coalville

NEIGHBORHOOD FAVORITE. Mrs. E. D. Charles, of Harbor Maine, speaking of Electric Bitters says: "It is a neighborhood favorit says: "It is a neighborhood favorite here with us." It deserves to be a favorite everywhere. It gives quick re-lief in dyspepsia, liver complaint, kid ney derangement, malnutrition, ner-vousnes, weakness and general de-bility. Its a ilon on the blood, as a thorough purifier makes it especially useful as a spring medicine. This grand alterative tonic is sold under guaran-tee at Z. C. M. I. Drug Dept., 112 and 114 South Main Street. Price 50c.

INFORMATION WANTED.

Two years ago Arthur Hingle, whose mother resides at 208 Champlain street, Detroit, Mich., wandered from his home, and since that time his parent has not heard from him. She has been caused severe mental strain by reason of the boy's absence, and asks assistance in trying to locate the lad. His height is about four feet ten inches, hair light, eyes brown, complexion fair. A scar is observable over the left temple, and the front teeth are ground down consid-erably. Two years ago Arthur Hingle, whose

SUFFERING AND DOLLARS SAVED E. S. Loper, of Marilia, N. Y., says: "I am a carpenter and have had many severe cuts healed by Bucklen's Arnica Salve. It has saved me suffering and dollars. It is by far the best healing salve I have ever found." Heals burns, cores updoes fover sores arguing and sores, ulcers, fever sores, eczema and piles. 25c at Z. C. M. I. Drug Dept., 112 and 114 South Main Street.

MUSICAL PROGRAM.

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GOVERNMENT TO RESCUE.

James Gibson Offers Solution for Dilem of Unemployed.

James Gibson, of 778 West North Tem-ple street, is of the opinion that the gov-ernment should come to the resque of the thousands of workmen, and who, with their dependent ones, are in destitution, if not on the verge of starvation. He thinks News."

on, iterprise, snys rt be taxed in which the clubs and in-es, he thinks, the proposi-

FOUR MILLION TONS OF COAL.

The Kemmerer Coal company publishes circular in which it state that it has furnished 4,000,000 tons to the trade from their minated 4,000,00 form to the trade from their mines in the last 10 days. The cent pany has doubled its capacity this year, by opening two new mines at Kenmerer. Under the same management, the com-pany is now developing two mines at Rock Springs, of a capacity of 2,000 tons per day, beginning shipment March is next. Then the Riverside Coal company, an affiliated concern operating in the Sheridan field, at Riverdale, is now ship-ping from its new mine,





Receive our special care and aftention. Satisfaction guaranteed. We have a long list of beautiful and appropriate mottoes and suggestive thoughts that we will gladly furnish upon request. Drop a line or call and see us-we willingly furnish estimates on all kinds of monumental and inscription work. The finest line of mantels ever seen in the state from \$55.00 up. Don't select from a catalog-see them and get our prices. ELIAS MORRIS & SONS COMPANY, Opposite south gate Temple Block A cough or a cold hasn't got a chance in competition with Q Dr. Cooper's Syrup U of White Pine, Tam-A arac, Horehound L and Tar. I. Get the best of a cold. before it gets the best of T you. You never can tall Y what a cold might lead to. The price of the syrup is 50 cents the bottle. It's worth that much a drop if you are suffering. SCHRAMM'S Whore the cars stop. LEYSON TIME PHONE 65 Leysons) for the **Correct** Time Rings Dyspensia Tablets RELIEVE INDIGESTION AND STOMACH TROUBLES Bold by Z. C. M. I Drug Dept., 1124 Main.



nourishment furnished by the roots, and little or no stooling takes place. A cool spell in the spring promotes stooling. The roots have then begun gathering in food material and have started it up towards the leaves. If, now, the atmosphere cools, the evapora-tion from the leaves ceases, the growth of the main stem is checked, and the food material is used in producing new shoots. food m shoots.

PROTEIN AND GLUTEN.

PROTEIN AND GLUTEN. The altrogen compounds of wheat are called protein compounds. They vary is amount from 10 to 20 per cent, and are the flesh forming elements. For feeding we should choose wheat varie-tiles that are high in protein. Another ingredient, the one that causes flour to form a dough when mixed with water is gluten. On leavening with yeast and baking it produces a porous bread. The gluten imprisons the car-bonic acid gas, formed by the action of the yeast. The expanding of this gas causes the bread to become porous and light. The gluten of wheat is a mixture of gliadin and glutenin, is light yellow in color, and is sticky and elastic.

KINDS OF WHEAT.

According to the time of planting wheats may be classified into spring and winter (or fall) wheats, each of which may be bearded or beardless in the head. Both are then sub-divided as

follows: Bearded-Glumes white, berry red berry white; glumes brouze, berry red berry white.

The reds may all be either hard, me-berry white. Beardless—Glumes white, berry red, berry white: glumes bronze, berry red, berry white. The reds may all be either hard, me-dlum or soft in texture; but the white berries or kernels, are always soft. By glumes we mean the chaff that surrounds the wheat grains. The beards are the long bristles, or awns. The qualities most desired in wheat are (1) high yield, (2) density of grain, (3) high quality, (4) early mat. rivy, (5) resistance to drouth, (6) realstance to diseases, (7) stiffness of straw, to prevent the wheat from lodging or ly-ing down.

CHOICE VARIETIES.

PLOWING AND SEEDING.

Fall wheats appear to do best when foun so that they come up in the fall, October seeding is perhaps the most satisfactory. August seeding does well if moisture is plen iful, but is uncertain. The amount of seed to sow per acre depends upon the conditions under which we wish to row the grain and upon the size of the individual kernels. upon the size of the individual kernels. Under irrigation, more should be sown than under dry farm conditions. If the kernels are small less should be sown "men where the kernels are large. Half

treated by our processes to partially transform the starch parts into a form of Sugar, and therefore much easier to digest.

Our claim that it is a "Food for Brain and Nerve Centres" is based upon the fact that certain parts of Wheat and Barley (which we use) contain Nature's brainand nerve-building ingredients, viz., Phosphate of Potash, and the way we prepare the food makes it easy to digest and assimilate.

Every analysis undertaken shows this food to be made strictly of Wheat and Barley,

Dr. Geo. W. Carey in his book on "The Biochemic System of Medicine" says:

"When the medical profession fully understands the nature and range of the phosphate of potassium, insane asylums will no longer be needed.

"The gray matter of the brain is controlled entirely by the inorganic cell-salt, potassium phosphate.

"This salt unites with albumen, and by the addition of oxygen creates nerve-fluid, or the gray matter of the brain. "Of course, there is a trace of other salts and other organic matter in nerve-fluid, but potassium phosphate is the chief factor, and has the power within itself to attract, by its own law of affinity, all things needed to manufacture the elixir of life. Therefore, when nervous symptoms arise, due to the fact that the nerve-fluid has been exhausted from any cause, the phosphate of potassium is the only true remedy, because nothing else can possibly supply the deficiency.

"The ills arising from too rapidly consuming the gray matter of the brain cannot be overestimated.

"Phosphate of Potash is, to my mind, the most wonderful curative agent ever discovered by man, and the blessings it has already conferred on the race are many. But 'what shall the harvest be' when physicians everywhere fully understand the part this wonderful salt plays in the processes of life? It will do as much as can be done through physiology to make a heaven on earth.

"Let the overworked business man take it and go home good-tempered. Let the weary wife, nerves unstrung from attending to sick children or entertaining company, take it and note how quickly the equilibrium will be restored and calm and reason assert her throne. No 'provings' are required here. We find this potassium salt largely predominates in nerve-fluid, and that a deficiency produces well-defined symptoms. The beginning and end of the matter is to supply the lacking principle, and in molecular form, exactly as nature furnishes it in vegetables, fruits and grain. To supply deficien-

cies-this is the only law of cure."

BRAIN POWER

Increased by Proper Feeding.

A lady writer who not only has done good literary work, but reared a fam-ily, found in Grape. Nuts the ideal food for brain work and to develop healthy children. She writes: "I am an enthusiastic praclaimer of Grape-Nuts as a regular diet. I for-merly had no appetite in the morn-ing and for 8 years while nursing my four children, had insufficient nourish-ment for them.

Ing and for a years while nursing my four children, had insufficient nourishment for them. "Unable to eat breakfast I felt faint later, and would go to the paintry and ent cold chops, satisfies, cookles, doughnuts or anything I happened to find. Being a writer, at times my head felt heavy and my brain asleep. "When I read of Grape-Nutis I began eating it every morning, also gave it to the children, including my 10 months old baby, who soon grew as fat as a little pig, good natured and contented." "I wrote evenings and feeling the need of sustained brain power, began eating a small saucer of Grape-Nuts with milk, instead of my usual indigestible hot pudding, pie, or cake for dessert at night.

Please observe that Phosphate of Potash is not properly of the drugshop variety but is best prepared by "Old Mother Nature" and stored in the grains ready for use by mankind. Those who have been helped to better health by the use of Grape-Nuts are legion.

"There's a Reason"

Postum Cereal Co., Ltd.,



Quits Sandwiches and Coffee for Lauch

The noon-day lunch for the Deparment clerks at Washington, is often a most serious question.

"For fifteen years," writes one of these clerks, "I have been working in one of the Goy't Departments. About two years ago I found myself every afternoon, with a very tired feeling in

atternion, with a very three feeling in my head, trying to get the day's work of my dest. — Thad heard of Grape-Nuts as a food for brain and serve conters, so is heavy breaktrast, then for my usual tests of sandwiches and coffee. — The very short time the tirsd feel, with the head left me, and ever since the definition of the tirsd feel, with the head left me, and ever since the definition of the tirsd feel, work of the same of the serve force and supply of energy work. — "Trape-Nuts for two meals a day supply of energy that does not permit successful producing that reserve force and supply of energy that does not permit successful producing that reserve force and supply of energy that does not permit work." "There's a reaso. — Mame given by Postum Co. Hattle Creek, Mich, Read the "Road to Well-yille," in pkgs.

A musical program will be rendered tonight at the First Congregational church, under the auspices of the Christian Endeavor society. Among those taking part will be the Nettleton orchestra of 10 pieces, Miss Edna Gan-nett, Golden Long, Miss Frazier, Oscar Johnson, orchestra, Walter Smith, Miss Lenora Morse, Prof. C. J. Nettleton, and the Y. M. C. A. male quartet.

KEEPING OPEN HOUSE.

KEEPING OPEN HOUSE. Everybody is welcome when we feel good; and we feel that way only when our digestive organs are working prop-erly. Dr. King's New Life Pills regu-late the action of stomach, liver and bowels so perfectly one can't heip feel-ing good when he uses these pills. 25c at Z. C. M. I. Drug Dept., 112 and 114 South Main Street.

SOCIAL AND PERSONAL. Mr. Charles C. Wilson announces the engagement of his daughter Irene to S. H. McMurrin, the marriage to take place in the hear future.

In the hear future. Mrs. Georgs. Keysor was hostess at a luncheon yesterday at her home the sf-fair being in honor of Mrs. David Tay-lor. The decorations were in pink car-nations and the place cards fancy picture heads. Present besides the guest of honor were Mrs. Louis Cates. and the Misses Marge Miller. Alleen Maelean, Bess Mar-Millian.Louise Sullivan, Enda Balley, Jone Morrison, Gertrude Hansen, Lorine Leary and Lelia Stingley.

Yesterday Mrs. James Dick gave a bridge party, about 20 guests being pres-ent. The decorations were in red car-nations, and assisting the hostess were Mrs. R. J. Glendinning and Miss Jasmine Young. Prinzs were won by Mrs. Fred Dern, Mrs. Elbridge Thomas. Mrs. W. D. Denoher, and Miss McCornick.

Mrs. Edward G. Roberts entertained at an informal tex yesterday, the rooms be-ing prettily decorated and a few friends nesisting.

Mrs. J. W. Guthrie entertained at a iuncheon today her decorations being in white curnations and the following pres-ent: Mrs. F. B. Noper, Mrs. E. E. Shep-herd, Mrs. Goas, Mrs. White, Mrs. H. C. Adams, Mrs. Buileher, Mrs. W. B. Scott, Mrs. Wetherby, Mrs. Thompson, Mrs. Learly Montgomery.

Mrs. Guy Thatcher has been down from Logan Uds week visiting with relatives.

Mrs. William Brown enfortained a few sionds informally at bridge this after-oon at her apartment in the Bronsford.

Mrs. Thomas Cartor has returned to her home in Long Bosch after severy weeks visit with her daughter, Mrs. Grif

Mrs. George Holman was hostors at a yncheon and bridge tea this afternoon it her home the rooms heing bright with variety of flowers and infimate triends malalists.

Mra. Robert Harkness and her daughner Mra. Willom G. Sharp leave this week for California. Mr. and Mrs. W. H. Alexander have gone to New York to visit with their daughter Mrs. Wing B. Allen.

Mrs. L. H. Farnsworth and daughter golin will return tomorrow from a six month's stay in Europe.

Why get up in the morning feeling blue, Worry others and worry you: Here's a secret between you and me, Potter take Rocky Mountain Tea.

Z. C. M. I. Drug Dept. 112-114 So. Main

Battle Creek, Mich.